SUSSEX

Archæological Collections

RELATING TO THE
HISTORY AND ANTIQUITIES OF THE COUNTY

PUBLISHED BY
The Sussex Archæological Society

VOL. CX

PRINTED IN GREAT BRITAIN BY
ARLES CLARKE (HAYWARDS HEATH) LTD
1972

CONTENTS

For contents and presentation of contributions in these Collections, *and opinions expressed therein, the authors are personally responsible.*

LIST OF ILLUSTRATIONS

The Council of the Sussex Archaeological Society acknowledges with gratitude donations received from the Department of the Environment, Mr. C. F. Tebbutt, F.S.A., and two members who wish to remain anonymous, towards the cost of producing this volume. The Society's Council would be very glad if other members felt able to make voluntary contributions towards printing costs.

Sussex Archæological Society

President

PROFESSOR ASA BRIGGS
VICE-CHANCELLOR OF THE UNIVERSITY OF SUSSEX

Vice-Presidents

THE DUKE OF NORFOLK, EARL MARSHAL
K.G., G.C.V.O., P.C.

THE DUKE OF RICHMOND AND GORDON

VISCOUNT GAGE, K.C.V.O.

THE EARL OF INCHCAPE

THE HON. MRS. WHISTLER

SIR EDWARD MAUFE, R.A.

THE VENERABLE LANCELOT MASON

JOHN L. DENMAN, Esq., F.S.A.

I. D. MARGARY, Esq., F.S.A.

A. E. WILSON, Esq., D.Litt, F.S.A.

L. G. URIDGE, Esq.

Council

ELECTED MEMBERS

Till 1973	*Till 1974*	*Till 1975*
Capt. D. H. F. Armstrong	C. J. Ainsworth	C. E. Brent
H. F. Cleere, F.S.A.	Mrs. M. Holt	G. P. Burstow, F.S.A.
J. H. Farrant	K. C. Leslie	Antony Dale, O.B.E. F.S.A.
L. R. Fisher	Ven. Lancelot Mason	W. E. Godfrey, F.S.A.
E. W. Holden, F.S.A.	Miss K. M. E. Murray, F.S.A.	G. A. Holleyman, F.S.A.
Mrs. P. M. Hughes	F. W. Payne	Mrs. M. H. Rule, F.S.A.
Capt. H. Lovegrove, C.B.E., R.N.	C. F. Tebbutt, F.S.A.	E. A. Wood, M.D.
I. D. Margary, F.S.A.	A. E. Wilson, D.Litt., F.S.A.	R. H. Wood

EX-OFFICIO MEMBERS

Hon. Secretaries

T. T. Harris
H. S. Martin, C.B.E., D.L. } *Barbican House, Lewes*

Hon. Editor of Collections

Francis W. Steer, F.S.A., 63 *Orchard Street, Chichester*

Hon. Curator of Deeds

K. W. Dickins, F.S.A., *Barbican House, Lewes*

Appointments made by the Council or its Committees

Chairman: Miss K. M. E. Murray, F.S.A.

Vice-Chairmen:
G. P. Burstow, F.S.A., L. R. Fisher

Hon. Librarian: Mrs. V. B. Lamb

Hon. Editor of Newsletter:
A. Barr-Hamilton, *226 Hangleton Road, Hove BN3 7LP*

Chairman of Finance Committee: L. R. Fisher

Chairman of Library Committee: K. W. Dickins, F.S.A.

Chairman of Museum Committee: G. P. Burstow, F.S.A.

Assistant Secretary: Brigadier G. B. S. Hindley, C.B.E.

GEORGE DOUGLAS JOHNSTON
1886-1971

By the death of George Douglas Johnston on 20th June, 1971, in the Royal West Sussex Hospital at Chichester, the Sussex Archaeological Society has lost another of its " elder statesmen ".

Johnston was born on 16th January, 1886, at Grove Park, Camberwell, and was the youngest son of John Michael Cramsey Johnston, the manager of the North British Mercantile Insurance Company, and his wife, Sophia. J. M. C. Johnston was the third generation in a long association with insurance: his father, John Brooks Johnston was the first London secretary of the Royal Insurance Company and *his* father, John Johnston, was secretary of the Royal Exchange Assurance Company.

George Johnston was educated at Westminster School where he was a near contemporary of George Bell, Bishop of Chichester. From Westminster, Johnston won a scholarship to Christ Church, Oxford (Bell also went there), to study chemistry. Although he was already far more interested in law, he took an honours degree (1st class) in Natural Science, in 1906. His legal aptitude was such that he was elected a Vinerian Scholar in 1909 and called to the Bar (Inner Temple) in 1910 after having taken the degree (again 1st class) of B.C.L. He practised in the Chancery Division from 1910 to 1962, was elected a Bencher of the Inner Temple in 1939 and, to his well-deserved pleasure, was appointed to the distinguished office of Treasurer in 1963. He was a member of the Council of Legal Education from 1946 to 1963 and a Vice-President of the Selden Society.

We are, however, primarily concerned with G.D.J.'s connexion with our Society; he had been a member since 1909 and was first elected to the Council in 1941. His lucidity and ability were soon recognized and he became chairman of the Council's Finance Committee in 1949. He held that important position for twenty years, and also, from 1949, until his death, Johnston was the meticulous editor of *Sussex Notes and Queries*. Johnston's devotion to Sussex had been inherited from his uncle P. M. Johnston, with whose writings all Sussex antiquaries are familiar. One of G.D.J.'s uncles, Sir Henry Hamilton Johnston, K.C.M.G., the African explorer and Governor of Uganda, discovered the okapi (a giraffe-like animal) in 1899 in Central Africa. Sir Henry Johnston is buried in Poling churchyard. I mention this incidental point

because of his nephew's long period as a Fellow of the Royal Geographical Society.

In the 1914-1918 war, Johnston rose to the rank of Captain in the Special Reserve of Officers in the Royal Artillery, but before the end of the war he was employed in the Judge Advocate-General's Department. In 1922, Johnston married Elfrida Josephine Wallis who died in 1966; there were no children of the marriage.

It will be for his unremitting research into Sussex bridges and roads that G.D.J. will be principally remembered; his extensive collections on these subjects were bequeathed to the Society. Perhaps it is not so well-known that he was an authority on English railway systems both above and below ground. He was elected to the Fellowship of the Society of Antiquaries in 1955 and was one of the brethren in the Essay Club.

He joined the Sussex Record Society in 1942, and was a valued member of its Council from 1945 until his death. His publications were not extensive, but they were characterized by his attention to detail—the product of the disciplined mind. His papers, ' Legal Terms and Phrases ' and ' Boundaries ' in vols. 3 and 4 respectively of *The Amateur Historian*, for example, deserve to be more widely known. Johnston was a modest man; his achievements were many and he never erred a fraction from that precision which is an essential part of the legal training and reputation. The influence of his uncles' antiquarian and geographical interests showed itself in G.D.J. He came from ancient Scottish stock and was, in fact, the probable heir to the Earldom of Annandale if he had cared to pursue his case as a claimant.

Those of us who had the privilege of counting Johnston among our friends will remember him as a rather Pickwickian figure, sometimes impatient—even peevish—as a chairman, but a most staunch supporter of any cause which he knew was worthy and entirely honest and fair; the questionable had no place in the life of this man who knew his law and had a passionate respect for it.

At his cottage in the middle of a field at Wisborough Green, Johnston, as a younger man, welcomed his companions to lunch, tea and clock-golf; his wife, so delicate in manner and physique as to be termed by one person as a living piece of Dresden porcelain, was his devoted partner and they rest together in Wisborough Green churchyard.

F.W.S.

EXCAVATIONS AT A MESOLITHIC CAVE SITE AT CLIFF END, PETT, SUSSEX

By SUSANN PALMER

INTRODUCTION

Approximately 60 to 70 years ago several flint artifacts were found in a small cave at Cliff End, Pett (NGR TQ 88771303) by the father of Mr. S. M. Vidler of Iden, near Rye, who was then a child and entered the cave with his father. These finds were brought to the notice of the present writer by Mrs. M. Rickman of Udimore during 1969 and kindly made available for study by Mr. Vidler. It was decided to conduct an exploratory excavation in the cave in the hope of finding more evidence of prehistoric activity and to determine the stratigraphy of the deposits from which the artifacts could have been derived.

The excavation was carried out during March, 1970 by kind permission of Mr. F. W. A. Gostick, the owner of the cave, and with the co-operation of Mr. E. W. Holden, F.S.A., Mrs. Rickman, Mr. Vidler and five volunteers. The surveying was undertaken by Messrs. N. M. Young and P. S. Covell. The help of all these people is acknowledged with gratitude.

THE CAVE AND IMMEDIATE VICINITY

The cave is of shallow exogenic type, formed from outside by water and subsequently enlarged by erosion. It is formed in fine sandstone of the Ashdown Beds and is situated at the edge of a cliff overlooking Rye Bay, on the western edge of Pett Level. The floor of the cave is 18.2 metres above Ordnance datum, which is approximately the average height for coastal features relating to the Tyrrhenian II (Main Monastirian) sea-level of the Late Pleistocene (Zeuner, 1959, 301). During the investigations, sea-sand was found in some of the crevices in the walls of the cave and at the base of the deposits on the floor, suggesting that the cave may have been formed by the sea entering a fissure in the sandstone, more than 70,000 years ago.

The edge of the cliff in which the cave is located, is rapidly receding and 12 years ago a ledge several feet wide, still existed outside the cave. This ledge is now completely eroded away. This would mean that the cave was originally sited at the rear of a wide platform sloping down to the sea. On the beach immediately below the

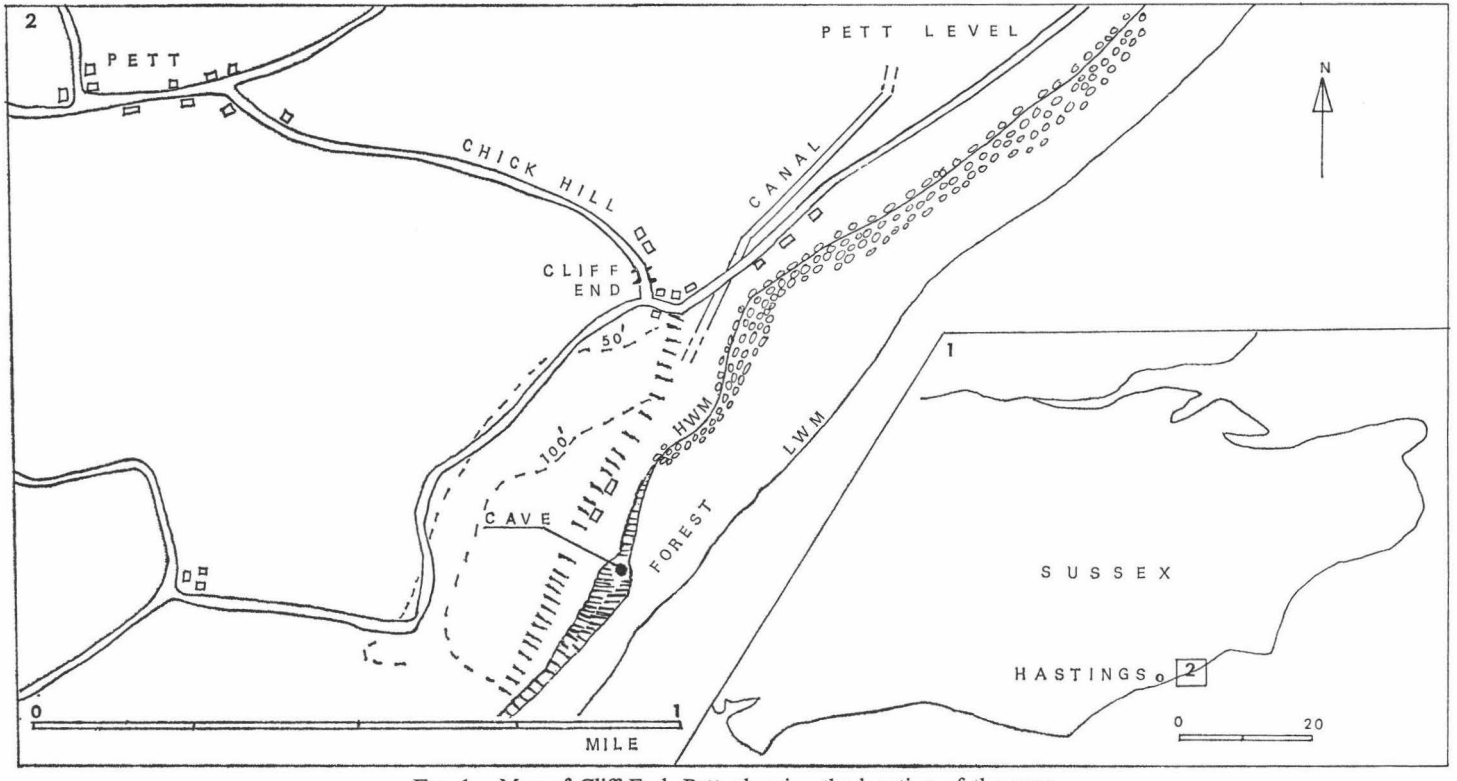


FIG. 1. Map of Cliff End, Pett, showing the location of the cave.
Inset map of Sussex shows the location of the site area.

eastern side of the cave are the remnants of a submerged forest below highwater mark. Similar forests exist at Bexhill and Bognor, and they can probably be related to a low level phase prior to the maximum Flandrian transgression of *c.* 5,500 B.C.

The cave now has two entrances X and Y, facing north-east and south-east and both leading out on to the cliff face; entrance Y was enlarged during the last war for defensive purposes, but never used.

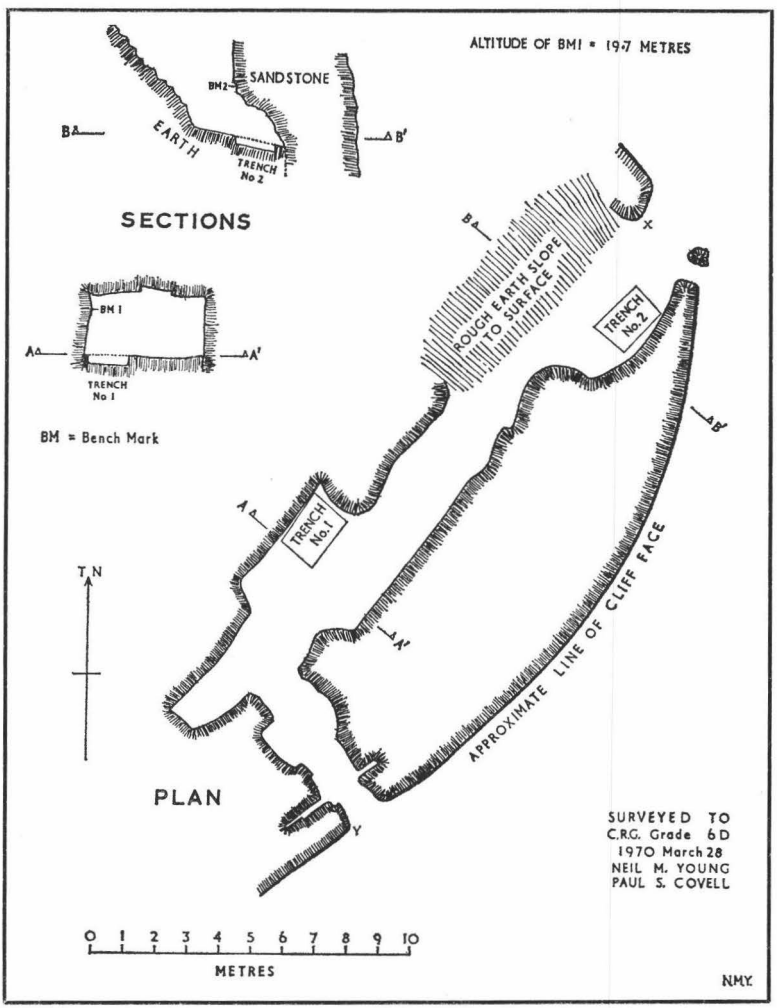


FIG. 2. Plan of the cave at Cliff End, Pett, showing the position of the two excavated trenches.

At present it is also possible to enter the cave from the top of the cliff, down a rough earth slope on the north-west side of the cave where part of the original roof had collapsed. This collapse left a chamber approximately seven metres long and four metres wide, open to the sky immediately inside entrance X. The chamber becomes a gallery with parallel walls, two metres wide, two metres high and five metres long, after which it widens out and then quickly becomes narrower again to form a small end chamber. A side passage leads off in a south-eastern direction, at a right angle from the main gallery and terminates at entrance Y. It is in this side passage where sea-sand with tiny fragments of shells can be found in crevices. All corners and edges in the cave are well-rounded, except in the enlarged part of the side passage.

The Excavation and Stratigraphy

Two trenches were excavated: Trench 1 inside the main gallery and Trench 2 by entrance X (fig. 2). The stratigraphy of Trench 1 along line A-A1 is indicated in figure 3. The upper layer consists of disturbed brown clayey loam, about six inches thick, mixed with leaf mould and recent refuse; below this is approximately 10 inches of fine white Ashdown sand and comminuted particles derived from the roof and walls of the cave. This deposit is very pure and generally undisturbed, except in a few small localized areas. There is no admixture of loam. This suggests a period of thermoclastic decay of the cave walls during which the interior of the cave was left completely undisturbed. It also suggests a steady rate of decomposition, without major climatic changes which might have caused lenses of different deposits. It seems possible that this deposit may date to a moderately cold phase with a fair degree of precipitation, probably towards the end of the Weichsel glaciation or early in the Flandrian period. Below the white sand is a thin deposit of three to four inches of sea-sand lying directly on a bed of fairly even Ashdown sandstone. In one small area of this trench the stratigraphy had been disturbed by the recent burial of a block of wood with corroded nails.

The stratigraphy of Trench 2 is indicated in figure 3. It differed from that of Trench 1, confirming the fact that this area was at or near the original cave entrance. Below the layer of clayey loam and debris is a grey loamy clay, about four to five inches thick, containing large angular pieces of sandstone from the cave walls; below is a layer six to nine inches thick of stiff grey clay with hardly any admixture of debris, suggesting a period of increased precipitation when there may have been a large puddle of muddy water near the cave entrance; below this is a thin and uneven spread of the white Ashdown sand lying directly on the solid stone bed, which is here very uneven. The sea-sand is absent here and was therefore

presumably either washed out of the cave by rain and drip-water or washed into the back of the cave.

No artifacts were found during the excavations and it is therefore not possible to know for certain from which layer the finds of 60 years ago were derived, or what the circumstances were which exposed them. The top of the white sand is probably the most likely layer from which they could have come, but the possibility should be kept in mind that they may have been washed into the cave from the hillside, even though a search there also did not reveal any artifacts. In the limited time available, it was not feasible to excavate the whole cave, so that there is still some possibility of making finds in the unexplored areas at a future date when further excavations may again be undertaken. It is, of course, possible that there are no more artifacts in the cave and that the cave was only used as a short-term bivouac by the tool-makers who discarded a few tools there; the results of the excavations so far do not warrant any conclusions to be reached about the nature of the site or of the archaeological data.

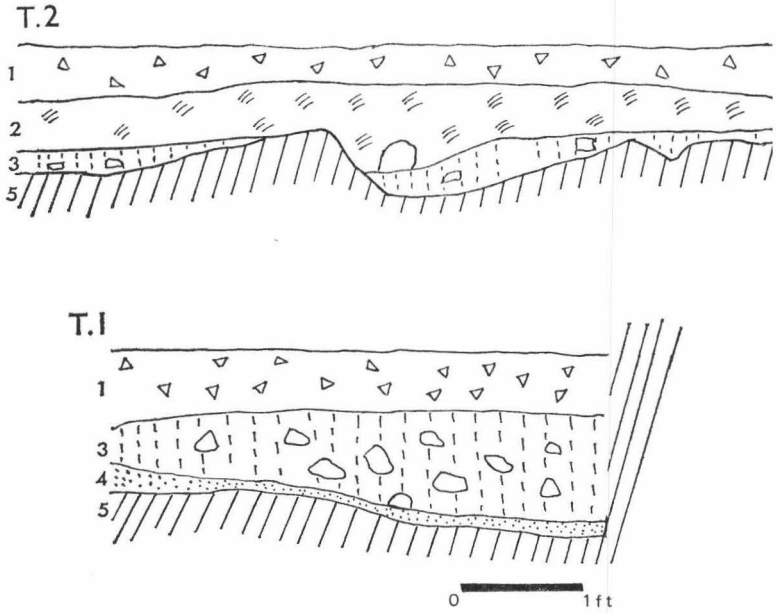


FIG. 3. Section drawings of the stratigraphy in trenches 1 and 2. Layer 1 humic clay and debris; layer 2 clay; layer 3 white Ashdown sand with angular pieces from the roof and walls of the cave; layer 4 sea-sand; 5 solid Ashdown bed and cave wall.

The Artifacts

The finds found earlier in the century, consist of four blades of brown flint, between 9 to 12cms. long, and the major part of a large flint axe. Long blades such as these do occur in some Mesolithic assemblages, but they would not be out of place in a Late Palaeolithic context. The axe is typical of the Mesolithic period, so that this is the most likely date for the whole assemblage, unless it can be shown that the site was occupied twice. There is at present no justification to assume such a multi-period occupation.

One of the blades, from which the bulb of percussion has been removed, has fine blunting retouch along most of the right hand edge (fig. 4, no. 1), whereas another (no. 2) has a small area of inverse blunting retouch at the bulbar extremity. A broad, thick blade 8.5cms. long (no. 3), has been retouched along the right edge, possibly for use as a knife or scraper. The longest blade (no. 4) is 12.5cms. long, has not been retouched, but the slightly jagged edges exhibit some signs of utilization. The axe is 22cms. long and has

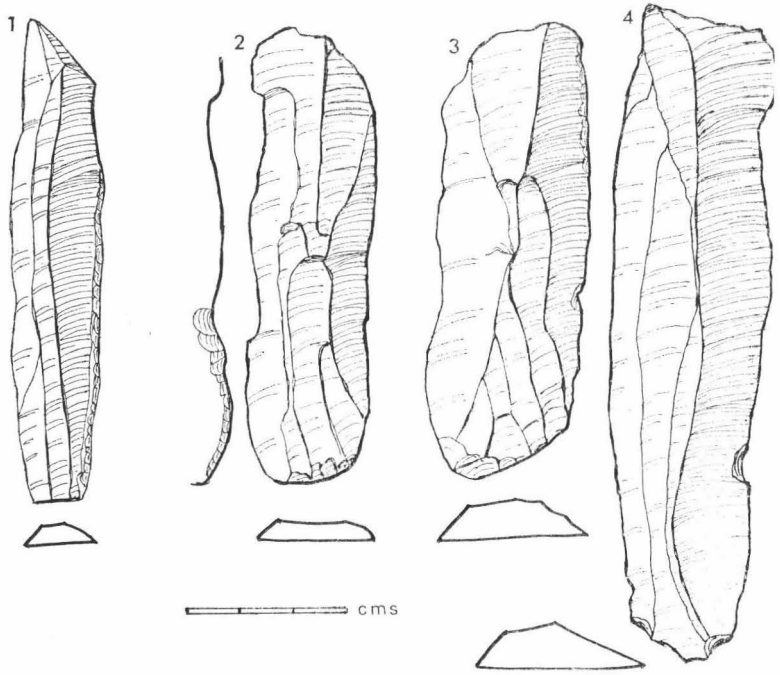


Fig. 4. Blades found earlier this century in the cave at Cliff End.

had a large, very thick flake anciently removed from the butt end, parallel with the long axis of the tool. This may have been a clumsy effort at reshaping the tool or else it was used as a core to provide a flake for another purpose. A small axe, similarly retouched, has been found at Cams, Hampshire, and is in a private collection. The axe from Cliff End has not been sharpened by a *tranchet* blow at the working edge, but it is nevertheless very much in the Mesolithic tradition.

During the excavations, a member of the public found a flake from a Mesolithic-type blade-core at low tide in the mud of a mussel-bed in the intertidal zone, near the submerged forest. It is a further indication of Mesolithic activity in the cave neighbourhood.

Observations

During past years the present writer has made a study[1] of all Mesolithic material found in the littoral zone of Sussex and in the other southern counties. It was found that the ratio of coastal to inland sites is approximately two to one in relation to area size, limiting the coastal zone to four miles from the sea. Many of these sites are situated in areas of cliff coasts, as for instance, Fairlight, Hastings, Seaford and Peacehaven. A study of Mesolithic habitation patterns in the littoral zone must, of course, take into consideration various problems relating to the Flandrian sea-level phases; it does appear, however, as though cliff sites which are adjacent to low-lying access points to the beach, may have been regarded as areas with maximum favourability for camping. The nature of the soil does not appear to have been of importance as the present survey has shown that in every area many sites are not on sandy soil. Although the floor of the Cliff End cave may have been sandy during the Mesolithic period, the cliffs outside are covered with intermediate heavy loam.

Although axes frequently occur inland, it was found that these tools, and picks, have a higher ratio of occurrence in the littoral zone. It is therefore of interest that although the assemblage from Cliff End is so small, an axe is included. Blades (length to breath ratio of three to one or more) are outnumbered by flakes in most of the littoral industries, but long, broad blades do occur, as at Hastings and on several Mesolithic sites in the Fareham and Portsmouth areas of Hampshire. Blades are numerous on a prolific site on Winfrith Heath, Dorset, at present being investigated. Although no detailed comparisons with other industries are possible because of the small number of artifacts from the cave, it can be said that it appears as though the Cliff End assemblage is in the tradition of the coastal Mesolithic industries of southern England.

[1] To be published at some future date.

A ROMAN BLOOMERY AT GREAT CANSIRON, NEAR HOLTYE, SUSSEX

By C. F. TEBBUTT, F.S.A.

On behalf of the Wealden Iron Research Group.

In *Sussex Notes and Queries*, vol. 13 (1950-53), p.100, Mr. I. D. Margary records field-names on Great Cansiron Farm, near Holtye, and mentions a large Roman iron-working site on a field named Far Blacklands (TQ 448382). He informs me that many years ago Miss P. A. M. Keef gave him some scraps of pottery found there, and that he visited the field and noted its blackness. It is probable that the field has been deeply ploughed in recent years as when the writer visited it after autumn ploughing in 1970 it presented an astonishing sight. About 4 acres, the greater part of the field, was deep black in colour in sharp contrast to the surrounding brown arable. This appeared to be due to a heavy impregnation of charcoal and to the vast quantities of cinder and tap slag that lay scattered over its surface.

Since this rediscovery members of the Wealden Iron Research Group have visited the site on a number of occasions to make a representative collection of pottery and building materials from the surface, and to record such details as could be seen without excavation. The most obvious observation is that only about a mile to the E. is the line of the well-known London to Lewes Roman road, near to the excavated section belonging to the Sussex Archaeological Trust, and there can be little doubt that iron slag, of which its surface is made, came from this site. The site is not recorded by Straker in *Wealden Iron.*

Description of the site. The site is on the 200 feet contour just S. of a stream that flows E. to join the Medway river system, and is just above flood level. To the eye the black industrial area appears to be raised above the natural level, and it may well be so as the vast amount of industrial waste spread over it appears to go down some depth. The SW. corner of the field is swampy and from it, to the SW., extends a rather shallow valley from which water flows along the S. ditch of the field. Roman pottery, but little slag, occurs across the ditch in the field to the S., and may indicate dwellings there. At the E. end of the site field is a hollow running approximately N. and S. from the S. ditch. This may be the original water-

course. This hollow forms the E. boundary of the intensely black area, although there is still much slag and pottery on its E. side. It may be that the low swampy area, mentioned above, and the valley from which the stream comes, represent the mining area; there are no apparent mine pits to be seen nearby.

On the industrial site it was noticeable that most of the furnace lining material, as well as a large number of large furnace bottoms,[1] came from the W. and SW. parts of the field. About the middle of the S. side of the field was the greatest concentration of building materials: roof, floor and box flue tiles, as well, in one place, roughly squared stone blocks with mortar adhering.

Communications. If one assumes that a large tonnage of slag was taken from this site to surface the London-Lewes road, and also assuming that the stream was not made navigable, some sort of hard road, or roads, fit to carry wheeled traffic, would be demanded. On the S. side of the stream the 200 feet contour follows what appears to be a terrace running E., parallel with the stream. This may be natural or artificial. It reaches the public road at about TQ 453382. Part of this course is a public footpath and all is now ploughed. Along the whole length is scattered bloomery slag. Should this indeed be a Roman cart way I would tentatively suggest that it may have proceeded to join the present road just N. of Beeches Farm (TQ 457378), from where a fairly straight course takes it to Butchers Cross, only about 300 yards from the London-Lewes road. Here Mr. Margary found the iron slag metalling 16 inches thick.[2]

It is also possible that there was a second cart road from the bloomery site to the London-Lewes road on the N. side of the stream. Scattered bloomery slag can be found here on the field W. of Little Cansiron Farm, and to its E. on Blackfield (TQ 459382).[3]

Surface Finds From The Site

Pottery. Coarse ware pottery was submitted to Dr. D. Peacock and Mr. M. Fulford of the Department of Archaeology, University of Southampton, who commented as follows:—

" The group seems to be homogeneous and contains *local coarse wares* including cooking pots, storage jars, pie dishes, and bowls; *mortaria*, *rusticated ware* (see F. H. Thompson's paper on Hykeham, Lincs., in *Antiquaries Journal*, vol. 38, 1958), p.15; *colour coated ware*, *amphorae*, all of Spanish globular type. A date towards the end of the 1st or the beginning of the 2nd century A.D. would be

[1] These are solid lumps of fused slag that accumulate at the bottom of furnaces which give them a rounded shape on one side.

[2] I. D. Margary, *Roman Ways in the Weald*, 3rd edn. (1965), p.159.

[3] E. Straker, *Wealden Iron* (1931), p.230.

appropriate for most of the sherds. In this context the *colour coated ware* would therefore be imported. The samian ware should however provide the best indicator of date."

The samian ware was submitted to Mr. A. P. Detsicas, who writes as follows:—

" The great majority of your material is so badly worn clearly due to the acidity of the soil in which it was deposited, that it is virtually impossible to be positive as to the centres of manufacture, except in the case of the stamped vessel which is certainly of East Gaulish provenance. Most of your sherds seem to be of Central Gaulish origin, although a few could be East Gaulish. I am almost certain that there is no South Gaulish material in this collection which means that, on the basis of the samian alone, occupation must have begun in the 2nd century A.D., perhaps not before, say, A.D. 150. The following forms are certainly present: 31, 27, 37, 33, and Curle 15, perhaps an 18/31 or two, perhaps a second 27, although it could be one and the same vessel. Your stamped platter is form 31R, of East Gaulish origin, and has a virtually obliterated stamp. I am fairly certain it can be read as N . . . . FEC, but positive reading is not prudent in view of its condition. However it should not be earlier than the second half of the second century A.D., perhaps not before A.D. 170."

Further to the above it should be noted that in the article by Mr. F. H. Thompson he was not able to quote a single example of *rusticated ware* from Sussex. He now informs me that since the date of his article this ware is still relatively rare S. of the Thames, and for Sussex the only others he knows of are those referred to by Professor Cunliffe in *The Excavations at Fishbourne 1961-69*, p.190. Here only 7 examples of *rusticated ware* of nodular type (as are those from Cansiron) were found, and were considered to be of late 1st century date.[1]

Coin. The only coin found was one in poor condition identified by Mr. R. Merrifield, of the Guildhall Museum, as a *dupondius* of Vespasian (A.D. 69-79).,

Furnace Bottoms. Several of those found were large, up to 17 inches across. This must mean that the furnaces in use could not have been of the type found at Holbeanwood[2] or Crawley[3] but perhaps similar to that excavated by Mr. J. H. Money at Withyham[4].

[1] Since the above was written a single sherd of nodular rusticated ware has been found at Barbican House Museum labelled " Hardham."
[2] Sussex Archaelogical Society Occasional Paper 1 (1970), p.11.
[3] Excavated 1971, as yet unpublished.
[4] Recently excavated, as yet unpublished.

Conclusions

This large and important Roman iron-working site must have been selected to use the communication system of the London-Lewes road, and at the same time provide the surface metalling so lavishly used on the section of the road nearest to it. Its primary products probably went both ways along the road.

There appears, superficially, to be some difficulty as to dating, as the coarse pottery and coin appear to be earlier than the samian. I do not think one should make too much of this. All the finds are from the surface and unstratified. Furthermore Mr. H. Cleere has expressed to me his opinion that Roman coarse pottery from the Weald tends to be later than the accepted dating. Mr. I. D. Margary, in *Roman Ways in the Weald*, considers that the London-Lewes road was constructed late in the 1st or early in the 2nd century A.D.; the evidence given above does not, I fear, answer the question as to which work was begun first, or if simultaneously. The pottery and other finds will be placed in the Barbican House Museum, Lewes.

Acknowledgements

I should like to express my thanks to Southdown Farms Ltd. for permission to visit and walk over their land on many occasions. The usefulness of this article depended on the skilled work of identification of finds, so willingly done by Mr. A. P. Detsicas, Dr. Peacock and Mr. M. Fulford, and Mr. R. Merrifield, to all of whom I am especially grateful. Useful advice was given by Mr. H. Cleere and Mr. E. W. Holden.

Postscript

The following note, received after proofs had been passed, applies to the description of the pottery on p. 11:—

Since this pottery group was examined a mortarium with a potter's stamp has been found on the site. This was sent to Mrs. K. F. Hartley, who kindly replied: " This stamp is one of the six dies of Marinus, giving MAЯI/NVS, when the impression is complete. Over 70 of his stamps are recorded from sites throughout England, with 5 from Newstead. Nine of the stamps are from Brockley Hill, Middlesex, and it is likely that he worked there, for a time at least. His working life can be dated to the period *c.* A.D. 70-110 (see also R. E. M. and T. V. Wheeler, *Verulamium*, p. 376, No. 26)."

PORTLAND COTTAGES, BURWASH

By DAVID MARTIN

Portland Cottages, originally Burwash Rectory, consisted in 1969 of a terrace of four dilapidated black weatherboarded cottages, situated in a cul-de-sac at the rear of a 19th century terrace of houses on the southern side of Burwash High Street (Fig. 1a). Their position, reached only by a tunnel through the terrace, literally invited decay, and in 1968 the Battle Rural District Council acquired the property, together with Portland Terrace and the adjacent Congregational Chapel, for redevelopment purposes. A public inquiry followed, and as the building was apparently of no outstanding architectural interest, and in a bad structural condition, permission for demolition was granted.

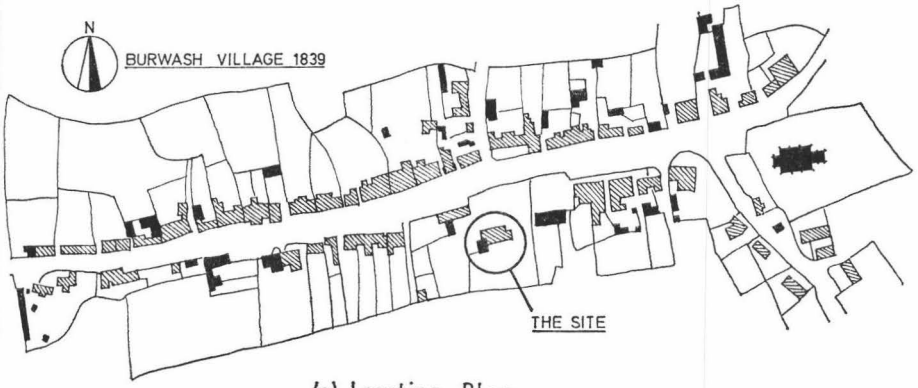
During the stripping, which preceded demolition, it became increasingly obvious that the archaeologists had failed to recognize the true context of the building. What had at first been regarded as a poor example of a typical medieval hall house slowly emerged as the major portion of a lofty, high class Rectory, originally over sixty feet long. In the light of these findings, fresh negotiations were opened with the Rural District Council. Although it proved impossible to save the building on its original site, the Council agreed to dismantle the frame carefully and donate it to the Landmark Trust with a view to its re-erection on a site near Crawley.

THE MEDIEVAL STRUCTURE

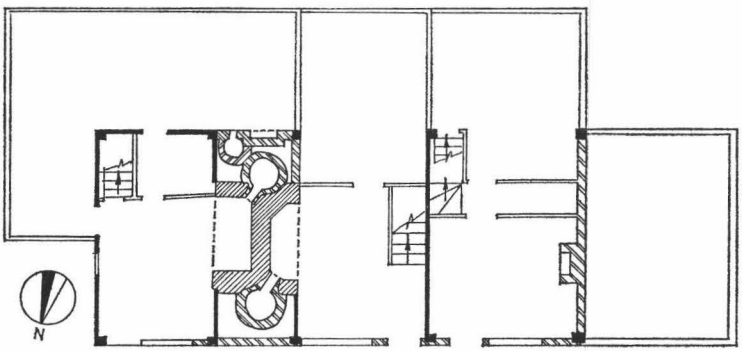
Layout and Design (*Fig.* 2)

The building originally consisted of a two bay hall, solar, parlour, services, great chamber and eastern bay. The western, or ' upper ' bay of the hall was open to the roof, whilst that at the ' lower ' or cross passage end was overshot by the western bay of the great chamber; the remaining bay of the chamber being set over the services, situated immediately east of the hall. The central open truss of the great chamber had a cambered tie-beam with free-standing crown-post above, and knuckle type spandrel braces below.

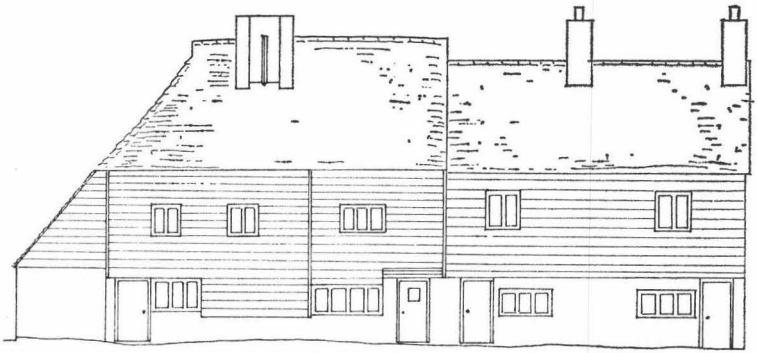
Access to the chamber was by way of a stairladder which was reached by a plain square-headed doorway at the southern end of the service/hall partition. This doorway remained and was rebated on the hall side clearly showing that the door was hung to open outwards into the hall, unlike the remaining doors in this partition



(a) Location Plan.



(b.i) Ground Floor Plan.



(b.2.) North Elevation.

(b) DETAILS OF BUILDING 1969.

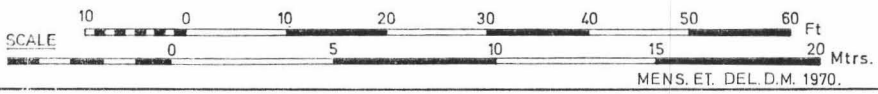


FIG. 1

which opened into the services. The trimming in the joists for the stairladder was still visible, as was the groove in the underside of the trimming joist for the wattle and daub partition dividing the staircase from the southern service room.

The remainder of the ground floor of the service bay was divided by a central access passage into two service rooms, these being reached by three centrally set doorways in the service/hall partition. The partitions between the services and the passage had been removed, but originally consisted of puncheons morticed into the soffits of two of the longitudinally-set ceiling joists.

The passage originally gave access to an eastern bay, demolished *c.*1600, and was the only link between this and the remainder of the house. Mortices for joists showed that this additional bay was originally of two stories, a gap in the mortices at the northern end of the cross-beam marking the position of a stairladder giving access to the chamber above.

At the opposite end of the hall a single bay accommodated the parlour on the ground floor, and solar above; both apartments were reached by a single door set at the southern end of the hall/parlour partition. The original joists in this bay had been removed, but it seems probable that the stairladder giving access to the solar was set against the south wall, close to the doorway. The principal feature of the solar was its oriel window set in the north wall; this is described in greater detail later.

The main entrance to the house was by way of a door set in the northern wall of the lower bay of the hall. Another doorway in the south wall opposite probably led to a detached kitchen.

The Demolished Eastern Bay

As has been stated, the sole method of communication between this bay and the remainder of the house was via the central service passageway. This meant that both this and the adjacent service bay had to be equipped with stairladders giving access to the chambers above.

What was the purpose of this bay? It is unlikely to have been an attached kitchen as it was not only of two stories but all existing timbers were clean, showing no signs of sooting. The answer is probably found in the status of the structure; namely that it was a Rectory attached to a high class living[1]. Prior to the Reformation, indeed for several years afterwards, the celibacy laws prevented the English clergy from marrying, consequently the higher class clergy often employed full-time housekeepers. A section of the house

[1] The Rectory was a sinecure, being held by a priest other than a vicar until the middle of the 18th century. (V.C.H., *Sussex*, vol. 9, p. 199).

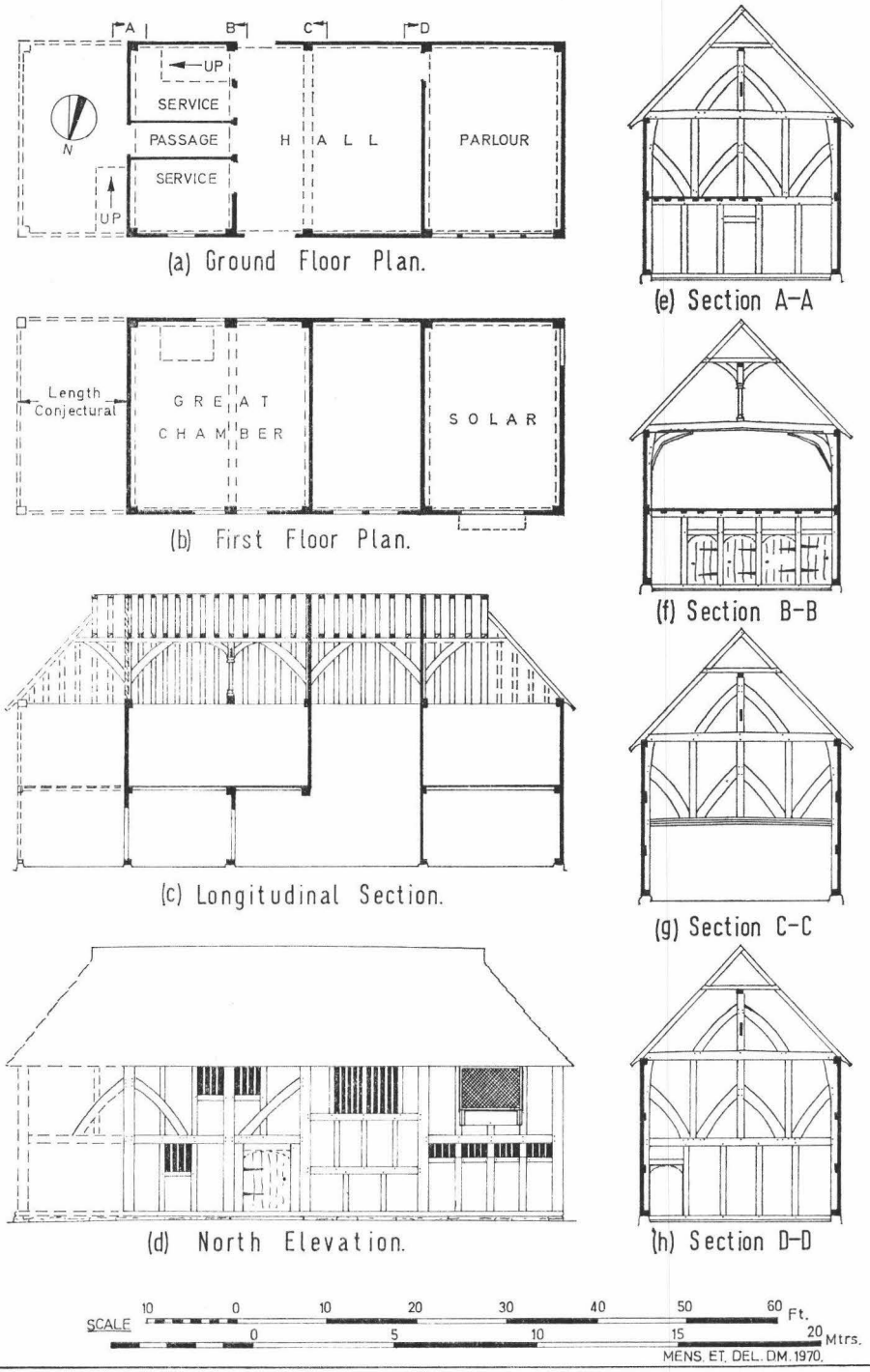


FIG. 2
Details of building, *c.* 1450

was usually divided off to form a virtually self-contained flat and it seems probable that this additional bay at the service end formed such a flat.

Wall Design (*Fig.* 2*d-h*)

All cross-partitions within the building were based on the same design, having three vertical studs with foot-bracing to the principal posts and central stud at first floor level, and four vertical studs at ground floor level.

The design of the external walling was more varied. On the street elevation the framing to the two-bay great chamber was taken as an entity. At the ends the principals were foot-braced whilst that in the centre was flanked on either side by a small four-light window. The bays had two and one stud respectively, the studs being notched on their external face to accommodate the braces where these crossed. The design on the rear elevation appears to have been a copy. The northern wall of the service below consisted of an intermediate stud set on either side of a centrally set four-light unglazed window. The design of the corresponding south wall is not known.

On both the south and north elevations the lower hall bay was taken up by an external doorway. The northern main entrance door occupied the whole of the bay, having jambs set against the principals. The southern door was smaller and had a wide stud acting as a jamb on its western side, the eastern jamb was formed by the principal.

The upper bay of the hall had twin bressumers to both its northern and southern walls, one bressumer being set near the base and the other near the head of the wall. The lower panel was divided into three by a pair of sturdy vertical studs whilst the remainder of the wall was fitted with three vertical studs. The two central panels at the head of both the north and south walls were occupied by five-light unglazed windows, the central stud forming a massive mullion between the two openings.

The design of the southern solar/parlour wall is not known but that on the north elevation was divided into four panels by vertical studs. It would appear from the mortices that this ground floor section had a range of four shallow four-light windows set just below the bresummer.

The first floor section of this wall is of considerable interest as it originally contained an oriel window, possibly glazed. The evidence is rather mutilated and an accurate reconstruction is not possible, but from what remained it would appear to have been of the ' square-cheeked ' type, a good example of which can be seen in the High Street of Westham village. It would appear that the ' splayed-cheeked ' oriel was by far the more common type used; although, to the author's knowledge, there has never been a survey

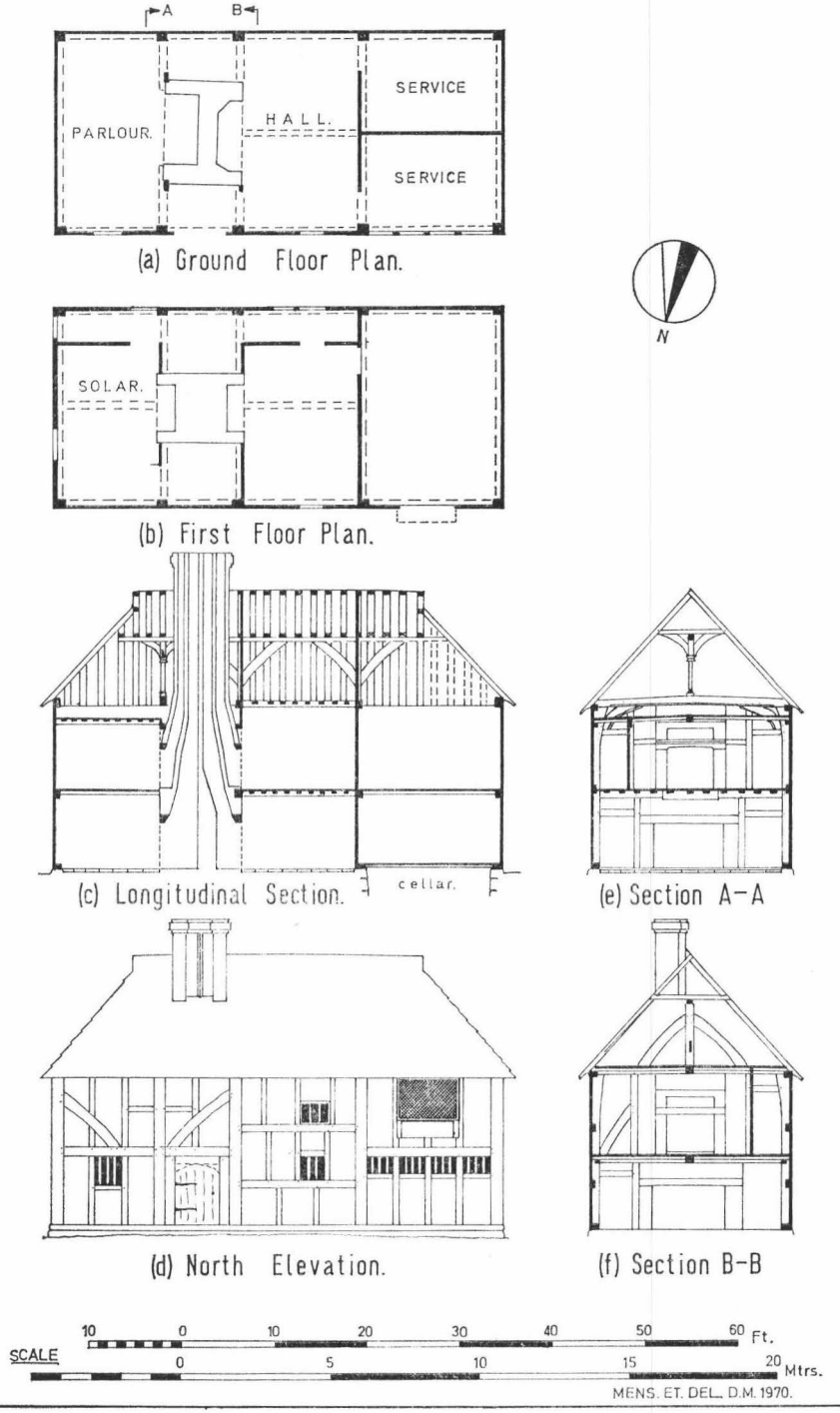


FIG .3
Details of building after the 16th century modifications

undertaken to establish the distribution or chronological significance of the varying forms. The only other square-cheeked oriel known to him is at 'The 15th Century Bookshop', 99 High Street, Lewes, a sketch of which is shown in Fig. 4A. As at Lewes all that remained at Burwash was the blank opening consisting of a pair of strong vertical studs with deep horizontal rail set between them, just above the line of the bressumer. This timber, which had been removed at Burwash, would have supported the brackets to the underside of the bay window. Two horizontally set mortices in the plate above marked the positions of the cheeks of the oriel.

Decor

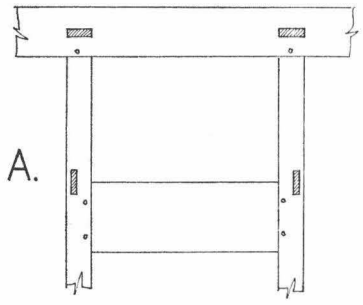
The parlour doorway, together with the range of three service doors, originally had shaped spandrel heads morticed into a moulded headbeam and jambs. The shape of these spandrel heads is not known as all had been removed. The head beams and jambs however did remain and these were of two orders, the outer order consisting of a plain chamfer and the inner one a hollow chamfer (Fig. 4D). The rear of the openings were rebated to accommodate a square-headed door. Only the mortices for the two external doorways remained, but that on the north elevation would almost certainly have had a shaped spandrel head.

The cross-beam between the upper and lower bays of the hall was moulded with large hollows and rolls, a simple but effective treatment (Fig. 4B). The crown-post over the open truss in the great chamber was of equally simple design (Fig. 4C) consisting of a square shaft with neatly stopped chamfers, a plain rounded hollow and roll base and a cup comprising merely of a roll set between two rounded hollows. It had high-set fourway head-braces.

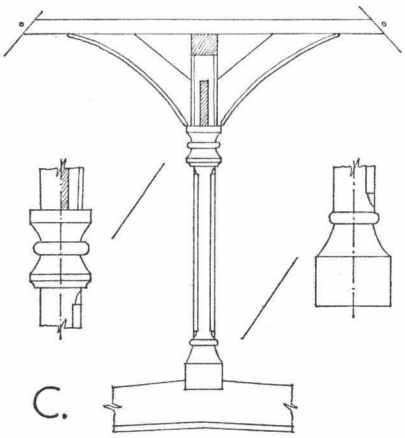
The remainder of the beams within the house were plain save for a neat stopped chamfer to all leading edges, including those of all joists, which were straight and very unlike the usual rough, unstraightened medieval joists.

It is interesting to note that although the windows in the southern elevation were of the usual type with diagonally set diamond-shaped mullions, those on the west, south and probably east elevations, which were visible from the street, had octagonal mullions. The two outer chamfers of these mullions were hollow, as too were those to the external leading edges of the head, cill and jambs (Fig. 4E). There were no grooves for sliding shutters and it must therefore be assumed that these would have been side hung.

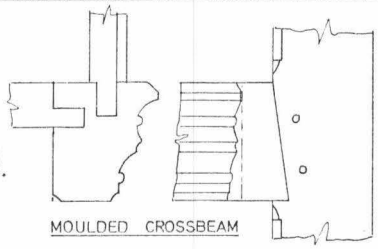
Where the medieval plasterwork remained, its surface had been decorated with simple line patterns formed with a five toothed comb (Fig. 4F). The best preserved panels were in the end partitions of the hall, at both first and ground floor levels, and on a small section of the north wall of the solar. The latter was also decorated on the external surface suggesting that, at least on the



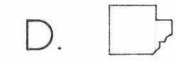
REMAINS OF ORIEL AT 'THE 15TH C. BOOKSHOP' LEWES.



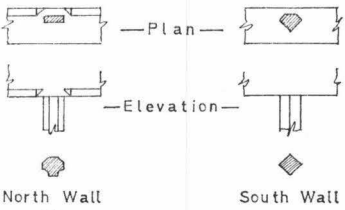
DETAILS OF CROWNPOST



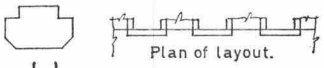
MOULDED CROSSBEAM



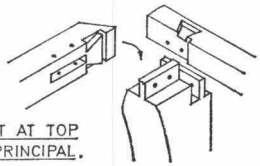
SECTION THRO' DOOR JAMB



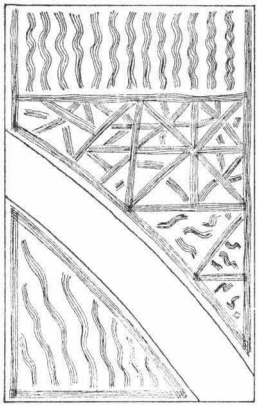
E. DETAILS OF WINDOWS.



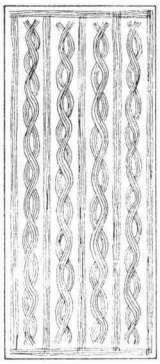
H. JOIST DETAILS

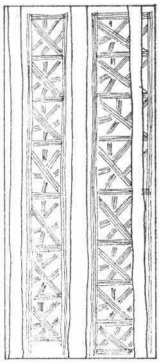


JOINT AT TOP OF PRINCIPAL.

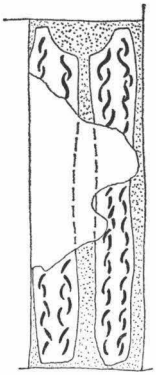


F[1] PLASTER PANEL IN HALL [HALL/SOLAR PTN.]





F[2] Hall side Parlour side PANEL IN HALL/PARLOUR PTN.



G. WALL PAINTING ON REVEAL OF FIREPLACE

SCALE NO'S. A.C.F. 0 1 2 3 4 5 6 FEET

SCALE NO'S. B.D.E.G.H. 0 1 2 3 FEET

MENS. ET. DEL. D.M. 1970

FIG. 4

north elevation, the external plastering was also treated in this way. All surfaces were left showing their natural yellow colouring, with the exception of those in the hall which were smoke-stained to a light grey colour. This staining was very thin and at no point was there any soot encrustation. It is worth noting that the laths to the panels were nailed to the side of the puncheons and not woven around them as is usual practice.

Construction Details

It is only when a house is demolished that a comprehensive study can be made of the types of joints used in the construction of the frame.

The most common form of joint was, as usual, the mortice and tenon. This was used at the junction of bressumer to principals and at every point where an intermediate stud met the main frame, it was also utilized at the ends of window cills and door jambs.

There are three standard methods of jointing collars to the rafters, the straight halving, the dovetailed halving and the mortice and tenon. The latter was the most expensive and seems to have been used in most early buildings of any consequence in the south of England[1]. During the 15th century however the dovetailed halving was adopted more and more for use in upper vernacular buildings, a trend which was probably caused by the realization that this form of joint was quite adequate. At Portland Cottages this change in thought appears to have reached a transitional phase, as although all the common rafters are jointed to the collars by dovetailed halvings, those over the trusses were still morticed and tenoned. All full-length rafters contained a blind peg hole in the side just above plate level, these being without exception sited at the same point and on the same side of each pair of rafters. These are found quite commonly in medieval buildings and it has recently been suggested that they were used for fixing side sprockets to the feet of the rafters.[2] This is certainly not the case here, however, as the rafters extended a full twelve inches beyond the plate and were equipped with splay cut and slightly concave feet. Furthermore the holes were absent from the unpaired jack rafters, which they would not have been if used for sprockets.

The joists were of considerable interest as they were rebated on their upper leading edges to accommodate either floor or ceiling boards, which ran with the joists instead of spanning across them (Fig. 4H). The rebate was also found on the cross-beams, pre-

[1] Most early crown-post type roofs utilized the mortice and tenon, two examples being the 13th century king-post roof at Robertsbridge Abbey and the crown-post roof at Old Soar Manor, also of the 13th century. Halvings appear to be used however in the more primitive 13th century roofs over timber-framed constructions as at Old Court Cottage, Limpsfield, Surrey, and Purton Green Farm, Stansfield, Suffolk.

[2] *Weald and Downland Open Air Museum Guide*, p. 11.

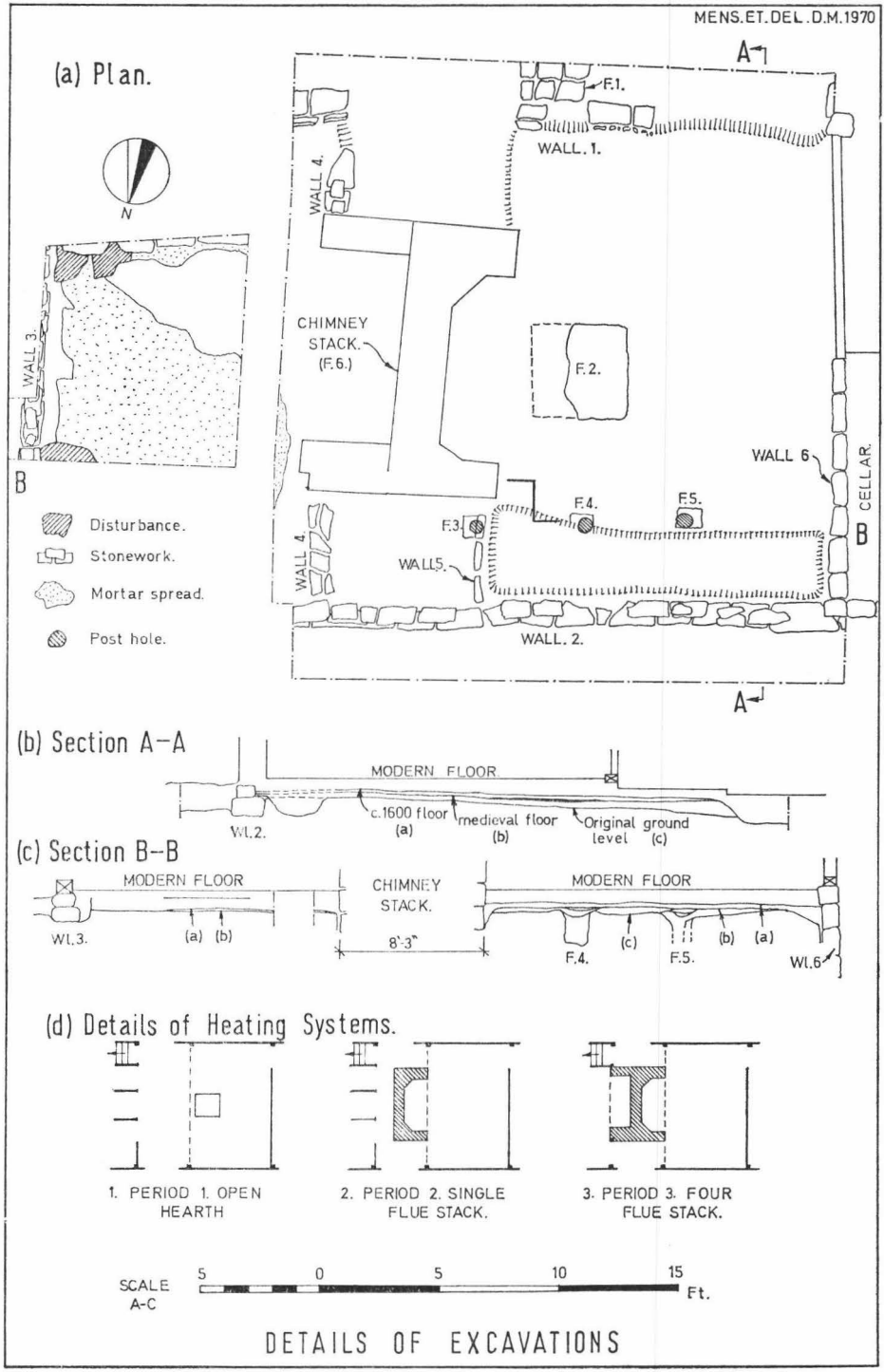

MENS.ET.DEL.D.M.1970
(a) Plan.
N
WALL 3.
B
Disturbance.
Stonework.
Mortar spread.
Post hole.
A
F.1.
WALL. 1.
WALL 4.
CHIMNEY STACK. (F.6.)
F.2.
WALL 6
CELLAR.
F.4.
F.5.
F.3.
WALL 4
WALL5.
WALL. 2.
(b) Section A–A
MODERN FLOOR
Wl.2.
c.1600 floor (a)
medieval floor (b)
Original ground level (c)
(c) Section B–B
MODERN FLOOR
CHIMNEY STACK.
MODERN FLOOR
Wl.3.
(a) (b)
8'-3"
F.4.
(c)
F.5.
(b) (a)
Wl.6
(d) Details of Heating Systems.
1. PERIOD 1. OPEN HEARTH
2. PERIOD 2. SINGLE FLUE STACK.
3. PERIOD 3. FOUR FLUE STACK.
SCALE A-C
5 0 5 10 15 Ft.
DETAILS OF EXCAVATIONS

FIG. 5

sumably to accommodate the end of the boards. It is usually thought that these rebates accommodate floor-boards, but this is a comparatively weak form of construction as not only does the grain of the boarding run in the same direction as the span of the joists, but as soon as the boards begin to rot the edges would break away and the boards lose their bearing. An alternative explanation is that ceiling boards were laid between the joists, floor-boards being laid over them spanning across the joists in the usual way. Both methods would give a high-class ceiling finish which would be in keeping with the quality of the joists. A variety of joints for fixing joists to cross-beam were used; in at least one bay they were housed at one end, instead of morticed, so that they could be fitted after the frame was erected.

The cross-beams were morticed to the principals, but as in some other local houses the shoulder of the tenon was splayed and set on a notch cut out of the face of the principal post. This feature was apparently aimed at giving the joint greater strength vertically (Fig. 4B). The moulded cross-beam, being of additional width, was equipped with double tenons.

All splices in wall plates and collar purlin were achieved by the use of a typical horizontally halved scarf as illustrated in *Archaeologia Cantiana*, vol. 81, p. 4, Fig. 1D. The joint of wall-plate and tie-beam to principal post however was not typical (Fig. 4J). In general format it was quite normal but it contained two peculiarities; the wall-plate was reduced in width at the principal post and the dove-tailed joint between tie-beam and wall-plate was ' stopped ' on the external surface.

Summary and Dating

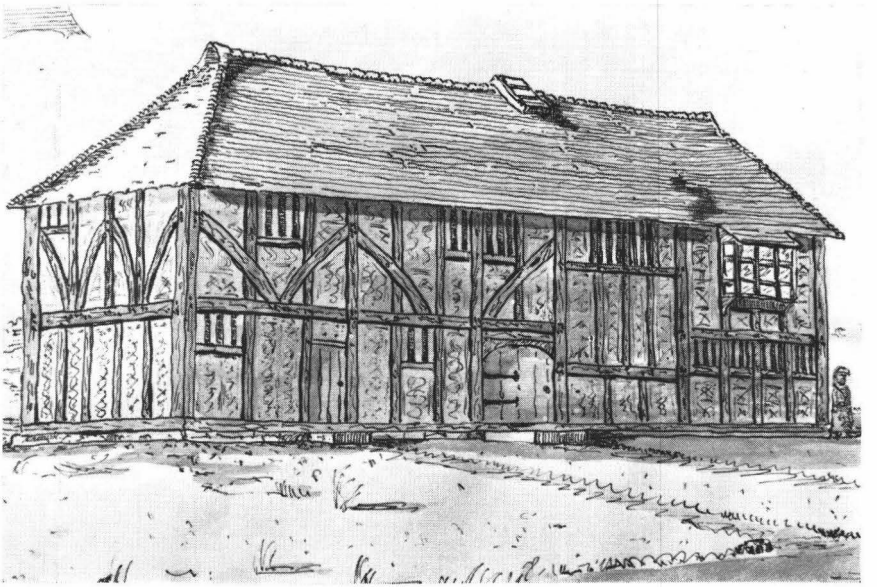
The most striking feature of the building was its plainness for a structure of such high class. It is usual for upper vernacular and manorial buildings to be liberally decorated with mouldings, but here there was less elaboration than in the normal yeoman's hall. This had not effected the character of the building; where used, the mouldings were clear, simple and effective. The construction generally was exceptionally good, the timber was of massive scantling and had without exception been well finished with smooth surfaces and neat chamfers; the joints, too, were well cut and of quite adequate proportions.

The roofs were of tile[1] and were thus pitched at a slight angle. As the building was relatively narrow compared with its height, the roofs appear slight against the vast area of exposed side wall and this does to some extent detract from the building's otherwise perfect proportions.

Dating a structure is always difficult and it is here increased by the absence of parallels for comparison. The overshot lower bay

[1] See below under ' The Excavations ', p. 27.

PLATE I

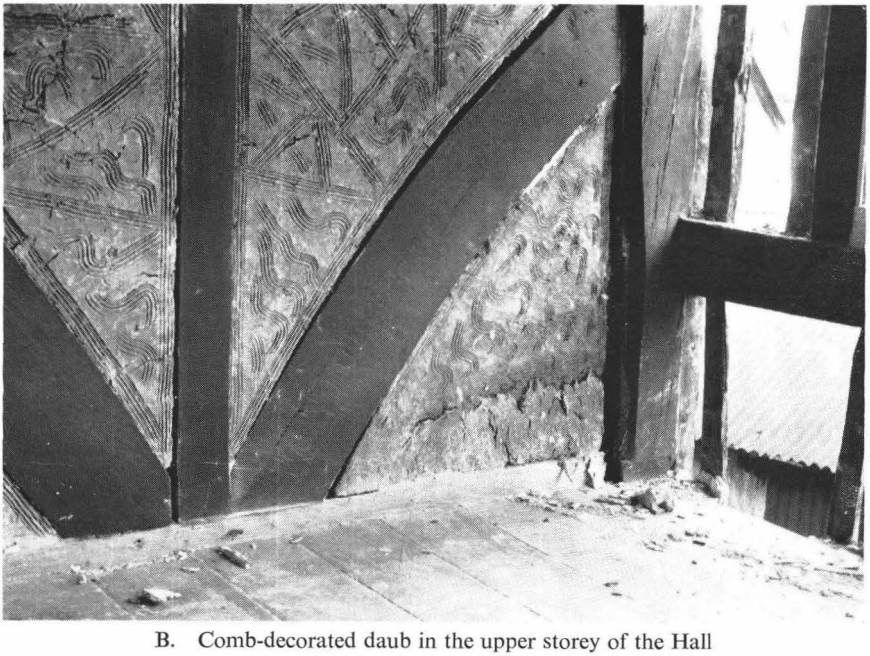


A. North Elevation *c.* 1450

B. Interior of Hall, *c.* 1450 showing overshot lower bay

PLATE II

A. Roof to the open bay of the hall



B. Comb-decorated daub in the upper storey of the Hall

PLATE III

A. Original west wall showing scale of structure and false walling to north elevation

B. South elevation of building during stripping, 1968-9

of the hall is thought to have been in use from the beginning of the 15th century or earlier[1] and became more and more common towards the end of the medieval era. The dovetailed halving joints between the majority of collars and rafters in a building of this status suggests a relatively late date, although not as late as if no mortices and tenons had been used. Bearing these points in mind the building is most likely to have belonged to the second half of the 15th century, although the absence of some of the expected refinements, such as sliding window shutters, may suggest a slightly earlier date.

Alterations and Modernizations

Modifications of circa 1500

It seems likely that at the close of the medieval period a lath and plaster chimney stack was inserted into the open hall, just east of the central truss. The lower six feet of what was probably a stone screen was discovered incorporated into the lower section of the central chimney stack when it was demolished, but all traces of the chimney above had been destroyed when the brick stack was inserted. The eastern face of the cross-beam was badly charred at this point, a feature which is unlikely to have occurred after the insertion of the brick stack. The roof to the open hall was remarkably clear of soot blackening although there was some smoke staining. This either suggests a very short life to the open hearth or the use of relatively smoke-free fuels such as charcoal.

Late 16th Century ' Modernizations '

During the second half of the 16th century the entire structure underwent a massive ' modernization ' which completely changed both the character and layout of the building (Fig. 3).

The adjustment which most altered its external appearance was the demolition of the eastern bay. It would appear that this had been made redundant either by the change in law which allowed clergy to marry, or through a severe drop in the status of the building. The former seems the more likely as the modernizations do not give the appearance of economic restriction. The partition crown-post between the flat and the great chamber was dismantled and the roof at this end reframed to form a hip.

As was usual at this period, a floor was inserted into the open bay of the hall at first floor level. This consisted of neat small scantling lateral joists trimmed into a central girder and supported at the perimeter by an inserted longitudinal trimmer.

The insertion of this floor rendered the existing hall fenestration obsolete and the windows were consequently blocked. They were replaced by smaller ones set at ground and first floor level. That

[1] It has been suggested that the hall at Bodiam Castle (1385) incorporated an overshot lower bay; cf. P. A. Faulkner, ' Castle Planning in the 14th Century ', in *Archaeological Journal*, vol. 120 (1964), p. 230.

on the ground floor was unglazed and had diagonally set mullions, whilst the first floor windows consisted of a three-light glazed casement with ovolo moulded jambs, head, cill and mullions. A vertical circular section dowel divided each light into two.

The most impressive feature of this period was the massive four-flue chimney stack which replaced its single-flue predecessor. The two inglenooks on the ground floor were quite plain having stone jambs and slightly cambered timber lintels. That heating the chamber over the hall was of similar character but here a crude overmantel was formed above the lintel and the jambs were plastered and painted. The wall painting on the northern wall had almost disappeared, but that on the southern jambs was tolerably complete (see Fig. 4G). It consisted of two wide yellow vertical bands on a dark blue background. Each yellow band contained a pair of blue and red intertwined spirals. The first floor fireplace in the eastern face of the stack was similar to its counterpart with the exception of its lintel, which was fully moulded and shaped to form a shallow four-centred head with sunken spandrels.

The modernization works also included the provision of a stone cellar under the northern section of the old parlour, and at this time the services were moved from the eastern end of the building into the old parlour bay. The partitions were stripped out from the old services and the room converted into a new heated parlour. The great chamber above became the new solar, hence the more elaborate fireplace in this room.

Ceilings were inserted into two first floor rooms. Owing to the lofty proportions of the structure these were set considerably below plate level in one of the bays in order to reduce the storey height.

Modern Alterations

In the 18th century the structure lost its Rectorial status and was converted into three cottages. During the following two centuries it slowly fell in importance, this being aided by the construction of Portland Terrace and the Congregational Chapel in front of it early in the 19th century. During this period a small tenement was attached to the rear of the building towards the eastern end, a lean-to added at the eastern end and an additional terraced house built to the west. At the same time as this house was added the western bay of the medieval building was re-roofed at a lower pitch and false walled, the latter being necessary to plumb the walls after severe settlement and movement of the frame. At this time the joists in the western bay were removed, ripped into two and reused as new floor and ceiling joists.

Several sections of the northern ground floor wall were underbuilt in brickwork during this period and all the external wall-framing was clad in creosoted weatherboarding.

This then was the state of the building in the late 1960s when it received its final blow. During December 1968 it was stripped to its frame and left standing as a skeleton for nine months awaiting the decision of its fate. During September and October 1969 the building was carefully dismantled and transported to a site near Crawley where it awaits re-erection.

The Excavations (Fig. 5)

During the winter of 1968-69 a small excavation was undertaken at the eastern end of the building, prior to its demolition. The aim was to determine the size of the demolished eastern bay and to ascertain the construction of the service floor. The following winter a somewhat larger area was investigated. During this season the complete hall area was stripped in the hope of finding traces of an earlier structure, as well as examining the drystone walling and chimney stack foundation. It was also hoped to ascertain the position and construction of the medieval open hearth.

The Demolished Eastern Bay. Two trenches were cut on an east-west alignment in order to determine the original eastern edge of the house platform. Unfortunately during the 18th and 20th centuries no less than four drain runs had been laid through the area and these, together with extensive cultivation, had long obliterated any signs of the vanished bay.

Service Bay. This consisted of the area between walls 3 and 4, and had generally, in the 20th century, been floored in timber, laid on a bed of ashes. Prior to this, the area had been paved in brick as was evidenced by a small area of paving found buried in the north-eastern corner. Below these modern coverings was a flat trampled dirt floor having slight remains of a lime mortar bed spread over it. The spread of mortar was explained along the southern edge of the excavations where the remains of a stone paved floor was discovered. This was bedded on mortar and had originally covered the whole of the service bay. It was probably contemporary with the late 16th century remodelling and had been laid directly over the original medieval compacted earth floor. Both the medieval floor and the 16th century mortar spread had been cut along the eastern edge by a later construction trench which had evidently been formed in the 18th or 19th century, when the whole of sleeper wall 3 had been rebuilt in brick and reused sandstone.

At the same time the sole-plate above was replaced, the ground floor timberwork to the wall re-framed and the south-eastern principal post, having presumably become rotten, was replaced by one having square cut gunstock.

Wall 4 between hall and services, though partially destroyed by the insertion of the central chimney stack, appeared to be original.

It was formed by a single course of stones the top surfaces of which were set approximately 6ins. below the top of the external side walls. The wall retained its timber cill-beam showing that the cills of the cross-walls were set lower than those of the external walls. It seems likely that the ends of the lateral cill beams were laid directly under the longitudinal ones, and possibly incorporated a dovetail or lap joint.

The Hall. The area generally had been covered with 19th century brick paving laid on a levelling layer of earth, which in turn had been screeded in cement and sand after becoming worn. After these modern coverings had been removed the outline of the original house platform was clearly visible. The platform was raised approximately one foot above the surrounding ground, the edge being retained by a rough drystone wall 2-3 courses high. The upper course, of roughly shaped stones, was situated above floor level and served to raise the cill beam off the floor, unlike the cross-walls the tops of which were set only 2-3ins. above the floor. The majority of the northern sleeper wall remained, that along the southern edge was evidenced by four stones only. Where this wall had been robbed the line was marked by the rough escarpment at the point where the floor met the external ground floor level.

As in the service bay there were basically two ancient floors. The upper, consisting of a layer of dirty sand topped with a coating of earth tramp, was continuous to the edge of both the chimney stack and cellar wall and sealed the construction trenches for these. It therefore post-dates these features and, as there is no other topping over the trench backfill, probably formed part of these alterations.

Below this the majority of the original medieval floor remained intact though its surface had obviously been trimmed in places. It consisted of a layer of loam tramp formed over the construction build-up. In this floor just west of the central stack was discovered the impression of part of the open hearth. This is described in greater detail later.

The construction build-up on the whole consisted of a layer of sand and loam varying from 2ins. thick in the north to up to 9ins. thick on the south. Its purpose was to level an area to form the house platform without making the floors below the level of the surrounding ground. In places the build-up was mixed with ash, and near the centre of the hall it incorporated a large scatter of broken clay roofing-tiles. These were as clean and fresh as when made and had obviously not been subjected to weathering or smoke for any length of time. The tiles have both peg-holes and nibs, the latter being formed by pinching the clay up when still green.

To a builder the meaning of this spread of fresh tiles under the floor is obvious. When tiles are unloaded and stacked a certain percentage become broken, even under the most careful handling.

These broken tiles have to be disposed of, and the obvious place is where the ground is being made up. One must bear in mind that the frames were often initially erected on wooden or stone blocks, the sleeper walls being infilled after the frame was up and pegged. The floors were probably not added until the structure was virtually complete, and certainly not before daubing had been undertaken.

The Features

F1. This feature consists of a patch of flat sandstones situated south of the southern wall and laid on the original ground level. Their use is not known. In appearance they resemble paving and may therefore be connected with the rear doorway which was situated slightly to the east.

F2. The impression of the central hearth. It was probably square though this could not be checked as the eastern half had been destroyed by levelling works. The feature measured four feet north to south and had been filled with make-up for the later earth floor. The slight impression of what appeared to be square hearth tiles was found in the base of the depression. By the very slight smoke staining on the roof timbers it would appear that the hearth was only used for a very limited period.

F3-5. A row of post-holes showing clear signs of having accommodated posts of 6-9in. diameter. They had been cut prior to the placing of the earth make-up under the floor and may have been associated with the initial erection of the frame. The posts were all set vertically.

F6. The stone base to the chimney stack. This stonework originally reached up to the cross-beam level, the remainder of the stack being constructed in brick. During the demolition it was noticed that it was clearly of two periods. The two eastern side walls had plainly been added, there being a straight joint between them and the spine wall of the stack. The brickwork above was all of one period and appeared to be late 16th century in style.

It would appear then, that the massive central chimney was preceded by a single flue stack having a stone base, and either a lath and plaster, or brick head, set against the hall/great chamber partition. The charred rear face of the cross-beam suggests that the reredos under the original stack was open at the front for the full height of the ground floor (Fig. 5).

A 2ft. 6in.-3ft. void was left between the rear of the reredos and the hall/service partition. This space is adequate for the passage of people but it cannot be certain whether the three centrally set service doors remained in use after the stack's construction.

Finds. Apart from the scatter of tiles previously described and the bulk of modern artifacts, finds were exceptionally rare. Only three body sherds were discovered, one of coarse unglazed grey ware and the others of green glazed fine grey ware; neither groups had any datable features.

Conclusion

Although the building was important for several reasons, it was not until it was demolished that these became apparent. The demolished celibacy bay is of particular interest as very few Rectories have survived which incorporate accommodation for a housekeeper. The scale of the building was also outstanding, especially when compared with the meagre proportions of other medieval Rectories which survive in the area. Although large and obviously extremely well built, the building lacked the over elaboration which often accompanies buildings of this status; instead it was simple, even austere in its internal appearance.

It is rare that one can establish such detailed reconstructions for three periods within the life of a dwelling, especially when each period is so different in character; it is therefore important from this angle. The ironical fact is that the archaeologists, the author included, decided against fighting the demolition order on the grounds that the building was of no great outstanding architectural interest. In making this decision the ancient village of Burwash was allowed to lose one of its three most important historic buildings.

Acknowledgements

The author wishes to thank the Battle Rural District Council; Messrs. B. Stevens & Partners, architects, and the contractors, Messrs. Wm. Ellis (Etchingham) Ltd., for their co-operation throughout the recording and excavation of the site. He also wishes to acknowledge the help of the members of the Robertsbridge and District Archaeological Society who spent many long hours on the site, often under arctic conditions, and to Mr. R. King for supplying the artist's impressions of the building in *c.*1450.

Above all, however, acknowledgement must go to Mr. R. T. Mason, F.S.A., without whose initial encouragement and guidance this article would have been impossible. To him the author is truly indebted.

TWO NEWLY-DISCOVERED MEDIEVAL SITES

By C. F. TEBBUTT, F.S.A.

1. BUXTED

The 13th-century church of Buxted, standing alone in Buxted Park, with the present village a mile away, is bound to invite speculation as to there having been a medieval village near to it. This was assumed in the two histories by K. H. Macdermott, *Buxted the Beautiful* (1929), and G. V. T. Cooke, *Chronicles of Buxted* (1968), but neither author noted any surviving evidence for a village. Macdermott reproduces an illustration made in 1783,[1] which shows at least two houses immediately N. of the church tower. Other pictures in *Views and Plans of Buxted Estate*, 1798[2], show a few houses, together with the stocks and whipping post, just outside the churchyard wall on the N. side. Macdermott says that the last of these survived until 1835. The old Buxted Park mansion, built about 600 yards S. of the church at the end of the present long lime tree avenue leading from Buxted Bridge, was burnt down in 1722. The new mansion, built about the middle of the 18th century, was placed further N. with its gardens next to the churchyard.

Buxted is not mentioned in Domesday Book but there is a reference to it in 1199[3] when it appears to have been an important parish which included the present separate parishes of Uckfield, Hadlow Down, High Hurstwood and part of Crowborough. In the 16th century Ralph Hogge made it an important centre of the Sussex iron industry.

My interest in the supposed deserted medieval village site was first aroused in 1971 when I noticed a heap of earth piled up on the inside of Buxted churchyard wall, E. of the church. This proved to be surplus soil from recent grave-digging about 40 yards N. of the NE. corner of the chancel. Lying on the soil heap were some sherds of unglazed early 13th-century pottery. Permission having been obtained to turn the heap over, some 40 sherds, all of the same period, were found. Soon after Mr. J. G. Hurst, F.S.A., secretary of the Deserted Medieval Village Research Group, visited the site and at once pointed out signs of the old village street, with its house platforms, running WNW. and NE. of the church across the park, and

[1] B.M., Add. MS. 5671, No. 191.

[2] A copy of this is in the Sussex Archaeological Society's library at Barbican House, Lewes. There are also some copies hanging in Buxted church.

[3] See A. Mawer and F. M. Stenton, *The Place-names of Sussex*, part 2 (1930), pp. 389-392.

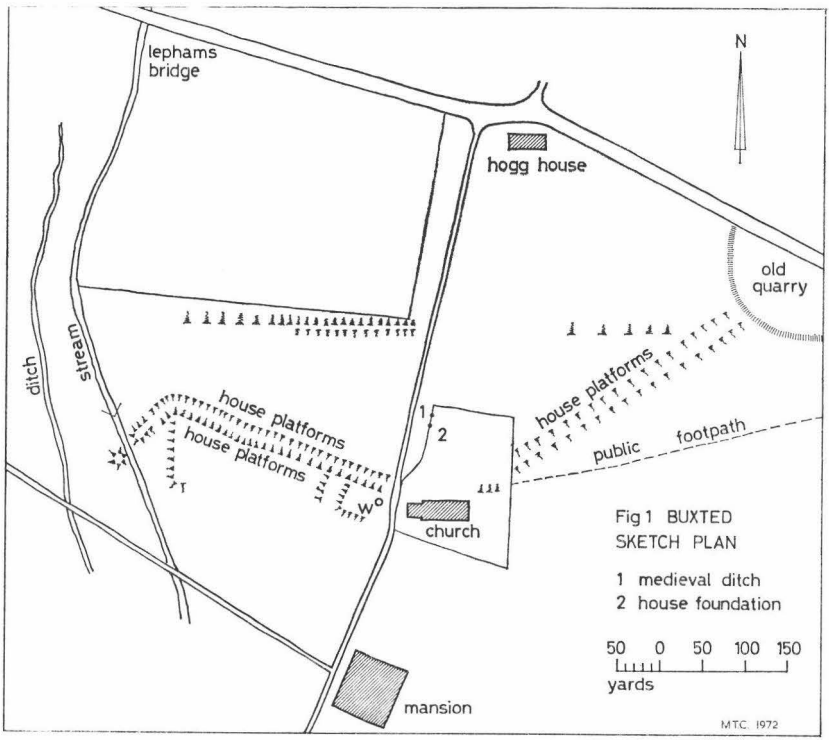


Fig. 1

passing through the present churchyard close to the N. side of the church. Since that time the site has been further examined and walked over and a rough sketch plan made of the surviving earthworks (Fig. 1).

In the present churchyard, N. of the church, nearly all signs of the village street have disappeared through disturbance by grave-digging, but the ancient churchyard yew tree stands on a mound which is probably one side of the hollow way forming the street. At the churchyard gate that gives access to the public footpath to Buxted Bridge, the street can be easily seen as a terrace running NE. and slightly N. of the line of the footpath, with house platforms visible on its N. side. Before reaching the Buxted to Maresfield main road the street runs into what appears to be an old pit or deep natural hollow which the above-mentioned footpath, with its rather more southerly course, avoids.

W. of the churchyard the line of the street can be seen as a hollow way running WNW. across the park with house platforms on either

side. About 100 yards from the church road, growing out of the hollow way, is a large oak tree, with a girth of 14 feet, but unlikely to be more than 250 years old. Beyond the oak tree, westward, the hollow way reaches the edge of a fairly steep natural slope to the flood plain of a stream. Here it appears to pass through an artificial bank, probably that which once surrounded the medieval village. At this spot a few small sherds of early medieval pottery were found on the surface, which may indicate that the medieval village once stretched as far as this point.

Descending the escarpment, the hollow way turns sharply S. to reduce the fall and on reaching the valley floor changes to a raised earth causeway over the flood plain. This causeway stops abruptly at the edge of the small stream but opposite to it, on the far bank, is an isolated mound of equal height, obviously to support a timber bridge across the stream. However beyond this mound there is no corresponding earth causeway and from it one can only surmise that there was a wooden causeway which allowed flood water to pass beneath it. Once across the valley the road probably joined that now leading to the Buxted Park mansion.

I have referred above to the probability of a bank and ditch surrounding the village site. This can be seen most convincingly on part of the N. side, where a slight bank and ditch run W. from the church road about halfway between the church and the park entrance. Very faint traces of it can also be seen on the E. side of the church road but it is lost on the E. and S. sides of the village.

In 1968 new water pipes were laid along the W. side of church road to the mansion and a large, stone-lined well was discovered and filled in. Mr. Broad, the late church caretaker, told me about this and kindly showed me the slight hollow where the well is, 30 yards due W. of the NW. corner of the church tower. This is almost certainly the village well.

In 1971 a small area of the park was taken to add to Buxted churchyard on the N. side, and a stone wall built along its W. face, parallel with the church road. The digging of the foundation trench, 120 feet long and 2 feet wide and deep, was watched by the writer. It started at the N. end of the existing wall, 169 feet N. of the NE. corner of the chancel. For the first 12 feet, at a depth of 9 inches, a level layer of blast furnace slag, put down to form a roadway or yard, was cut through. At 22 feet the foundations of a house wall were uncovered, running at right angles to the trench. They consisted of a stone door cill laid on bricks (2¼ inches thick), and these again laid on roofing tiles. The work was probably Tudor. At 43 feet the edge of a ditch could be seen in section. This proved to be 9 feet wide and 2 feet 3 inches deep with a flat bottom and signs of recutting. It appeared to be running approximately at right angles to the wall trench. From its bottom came a few sherds of early 13th-century pottery. It may have been the

ditch that originally defined the N. end of a croft. From unstratified levels came more medieval pottery sherds as well as some of Continental 16th-century Raeren, and later Sussex wares.

Conclusions

At Buxted church the course of the old village street has been found running through the present churchyard close to the N. side of the church, and can be seen as a terrace to the NE. and a hollow way to the W., across the park. To the W. it descends to and crosses the stream flood plain as an earth causeway leading to the probable site of a wooden bridge and a further causeway of wood on the far side. It is likely that the village site was once surrounded by a bank and ditch of which traces still remain on the N. and W. sides. Houses may have been built along 700 yards of village street and possibly also along the present church road if, as is likely, it is an ancient road. The date of the earliest pottery found is contemporary with that of the earliest part of the church.

On present evidence it would seem that the disappearance of the village was due to the building, in the middle of the 18th century, of the new Buxted Park mansion near the church and the enlargement of the park to include the old village site.

I acknowledge gratefully the help I have had from Messrs. J. G. Hurst, A. Hunter and A. and D. Meades. All finds will be placed in the Barbican House Museum, Lewes.

2. Buckham Hill, Isfield

In 1971 members of the Wealden Iron Research Group noticed significant earthworks in a grass field just S. of Beeches Farm, Buckham Hill, Isfield (TQ 452206). The site is on a prominent hill at a height of about 125ft. O.D., and mainly on Tunbridge Wells sand but with a strip of Grinstead clay on the E. side. There is a spring on the N. side of the field and the London-Lewes Roman road passes about 250 yards to the W. The name Buckham, which itself suggests an early settlement, occurs at least as early as 1215.[1] By kind permission of Mrs. V. Thomas, of Beeches Farm, the site was again visited by Mr. E. W. Holden and the writer and we agreed that the earthworks were probably of medieval date; a rough sketch plan was made by the writer (Fig. 2).

The main feature of the earthworks is a hollow way which runs ESE. across the field from the main road and from which other banks and ditches run on both its N. and S. sides. Another bank and ditch runs parallel to it just S. of the abandoned railway cutting.

[1] A. Mawer and F. M. Stenton, op. cit., p. 396. I am also indebted to Mr. G. R. Burleigh, who is making a study of the deserted medieval villages of East Sussex, for referring me to *Sussex Record Society*, vol. 10 (1910), p. 39, where names of men from Buckham are recorded in the Sussex Subsidy of 1296.

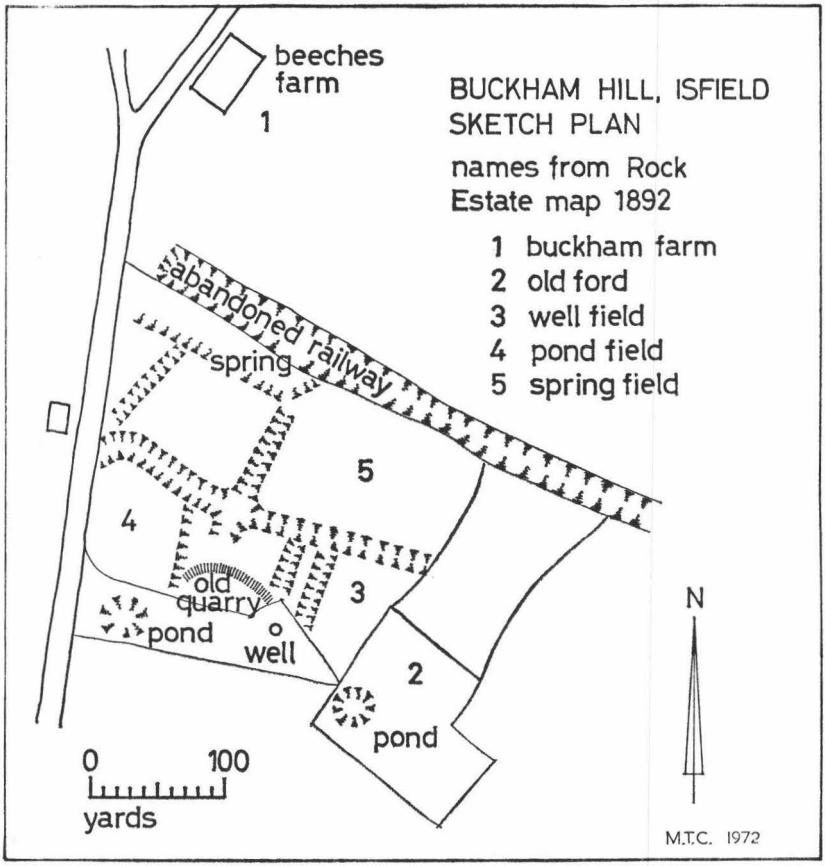


Fig 2.

On the S. side of the field a large quarry seems to have destroyed further earthworks in that direction. A large patch of nettles, growing over the W. end of the hollow way, may be a sign of human occupation, as are scraps of early medieval pottery turned up all over the site by moles.

Mr. J. Pettitt has kindly drawn my attention to a *Survey and Plans of the Rocks Estate*, 1829[1], which includes this area and gives the names of all the fields. Those thought to be significant are given on the sketch plan. The present Beeches Farm was then called Buckham Farm and the large field containing the site was divided into four. The small field called Old Ford is not near a stream and

[1] East Sussex Record Office, D 864.

the name is probably a corruption of Old Forge. From its surface have come several large pieces of iron-working cinder, a scatter of building materials, 17th or 18th century pottery and oyster shells. It also has a pond with a cobbled approach.

KIRDFORD: SOME PARISH HISTORY, by Hugh Kenyon (1971).

Few parishes can have had a more devoted chronicler than Kirdford has had in Hugh Kenyon. Our *Collections* and *Sussex Notes and Queries* include several contributions by him which are all written with that expertise which only comes from a long and intimate association with a parish or a locality. Mr. Kenyon's writings all bear that hallmark of real understanding of local history which develops after much practice, constant attention to the lives and habits of past generations and a basic love for those who share, by circumstances entirely fortuitous, present-day conditions in a particular area.

It is no wonder that the Vicar of Kirdford, the Rev. V. E. Winch, who was instituted in 1969, persuaded Mr. Kenyon to write a " piece " at regular intervals for his *Parish News*. These excursions into Kirdford's long history have been reprinted as a booklet of 28 pages with a reproduction of the 1813 Ordnance Survey map of the parish; the booklet is being sold for the benefit of Kirdford church at 10p a copy. Seldom has a pocket-sized historical study been so beautifully produced and seldom have more facts been compressed into so small a compass. Extending from prehistoric to modern times, this booklet tells the Kirdford resident and the casual visitor much about the parish, its houses, families, sports, farming, living conditions, emigration and preparations in the event of a Napoleonic invasion.

The idea behind the writing of these glimpses into Kirdford's past was " to stimulate the pride of parishioners, present and future, in their parish, and their desire to care for it ". To be prodigal with words is easy; it is a severe discipline to be accurate, brief and entertaining, but Mr. Kenyon has achieved all these requisites. When he published his comprehensive book, *The Glass Industry of the Weald* in 1967 he was fully entitled to rest on his laurels, but he has now written, most successfully, for an entirely different public, thereby putting more and more readers in his debt. This booklet is on sale in Kirdford and Plaistow churches or may be obtained by post (15p, including postage) from the author at Iron Pear Tree Farm, Kirdford, nr. Billingshurst, Sussex.

A NEW LIST OF SUSSEX PIPEMAKERS

By D. R. Atkinson, F.S.A.

My first attempt at a list of Sussex pipemakers, published in *Sussex Notes and Queries*, vol. 16, pp. 73-81, 125-128, numbered approximately 50 different persons. Subsequent correspondence on the subject has resulted in additions from time to time and these are scattered through several issues of *Sussex Notes and Queries*.

The total has now passed the 100 mark, for which we must thank the interest and enthusiasm of the many people who have supported my original appeal for further information. As a lot of people in Sussex are now collecting clay pipes (though regrettably pipes never seem to turn up in Sussex excavations) I feel that a new and up-to-date list is warranted. The purpose of this list, which includes several newly discovered makers previously unpublished, is to enable people finding pipes to identify them. This can usually be done by matching initials on the pipes with those that correspond on the makers' list. Care should be taken, however, to ensure that the pipe is dated approximately by its bowl type (see 'Chronology of Bowl Types ', in *S.N.Q.*, vol. xvi, 3, May 1964) or other characteristics first, as identical initials sometimes occur for several makers of different periods, i.e., T.C. in Sussex could range from pre-1692 to post-1841. A more complete chronology of south-eastern bowl shapes will be found in *London Clay Tobacco Pipes* by Oswald and Atkinson (1969) which is available from the Guildhall Museum in London.

Many initials are still awaiting identification, and there were certainly other makers in Sussex, particularly in the 18th century, who are still known only by the initials on their pipes. One of the chief difficulties in tracing makers is that old documents, where available, are difficult to search, records are often incomplete and frequently omit to mention the trades of people listed. Quite a few of the earlier makers so far identified for Sussex were discovered by chance when other lines of research were being followed.

Very few 17th century Sussex pipes can be attributed to any maker. Stamped initial marks are almost unknown in the county and the few that occur probably originate elsewhere. The numerous spur pipes made from *c.*1670 onwards are only marked in the Chichester area; the first with initials moulded to appear in the county are probably those of the second John Holcom of Lewes who died in 1699, though similar pipes with initials yet to be identified have recently been found by R. J. Goulden in the Heathfield district. No pipes have yet been reported from Hastings, in spite of a good list of makers, so it can be seen that a great deal still waits to be discovered.

I shall be extremely grateful for any further information at any time, and particularly for records of pipes found.

Apart from those I have published myself in *The Archaeological News Letter* and *Sussex Notes and Queries* very few Sussex pipes have yet been illustrated. From the time decoration started with the ' armorial ' types in the mid-18th century numerous very attractive designs were produced by Sussex makers, and the moulds for some may even have been produced locally.

Mr. T. Backhouse of Pulborough, whose house is an old inn, has dug up in recent years numerous pipes in his garden from what appear to be rubbish pits, judging by the amount of pottery and other artifacts of all periods which accompany them. Some of the finest examples are decorated ones, and he has allowed me to have four photographed. Although one is a plain bowl it has a straight-line incised stamp of Harrington & Sons on the back, a most unusual form of such marking. Further details are appended with the photographs.

During more than 20 years of research on the pipemaking industry in Sussex many Sussex people have taken the trouble to write to me, reporting finds or supplying information. Without their valuable help this present list could never have been compiled and neither could most of the articles which have appeared over the years in *Sussex Notes and Queries* have been written. I wish to place on record my gratitude to the following people:—

A. J. Pudwell (Arundel), A. F. Outen (Bognor Regis), R. H. Cooper (Epsom), G. H. Kenyon (Kirdford), Dr. J. Scrivener (Tangmere), A. Douglas Rose (Chichester), R. J. Goulden (Horam), E. W. Holden (Brighton), N. E. S. Norris (Barbican House, Lewes), T. Backhouse (Pulborough), S. Jepson (Worthing), J. Manwaring-Baines (Hastings Museum), R. Gilbert (Eastbourne), G. P. Burstow (Brighton), Lady Wilkinson (Sharpthorne), C. F. Tebbutt (Wych Cross), R. B. Rector (Lewes), Mrs. E. Gibb (Wadhurst), R. H. Wood (East Grinstead), Paul Ayling (Houghton), the late G. D. Johnston (Wisborough Green), R. F. Jones (Eastbourne), N. Peacey (Five Ashes), D. Kaye (Worthing), L. A. Buckland (Chelwood Gate), Air Commodore R. H. Knowles (Coombes), C. Peckitt (Chailey), M. Ruscoe (Steyning), S. Beckensall (Ifield).

The illustration opposite shows:—

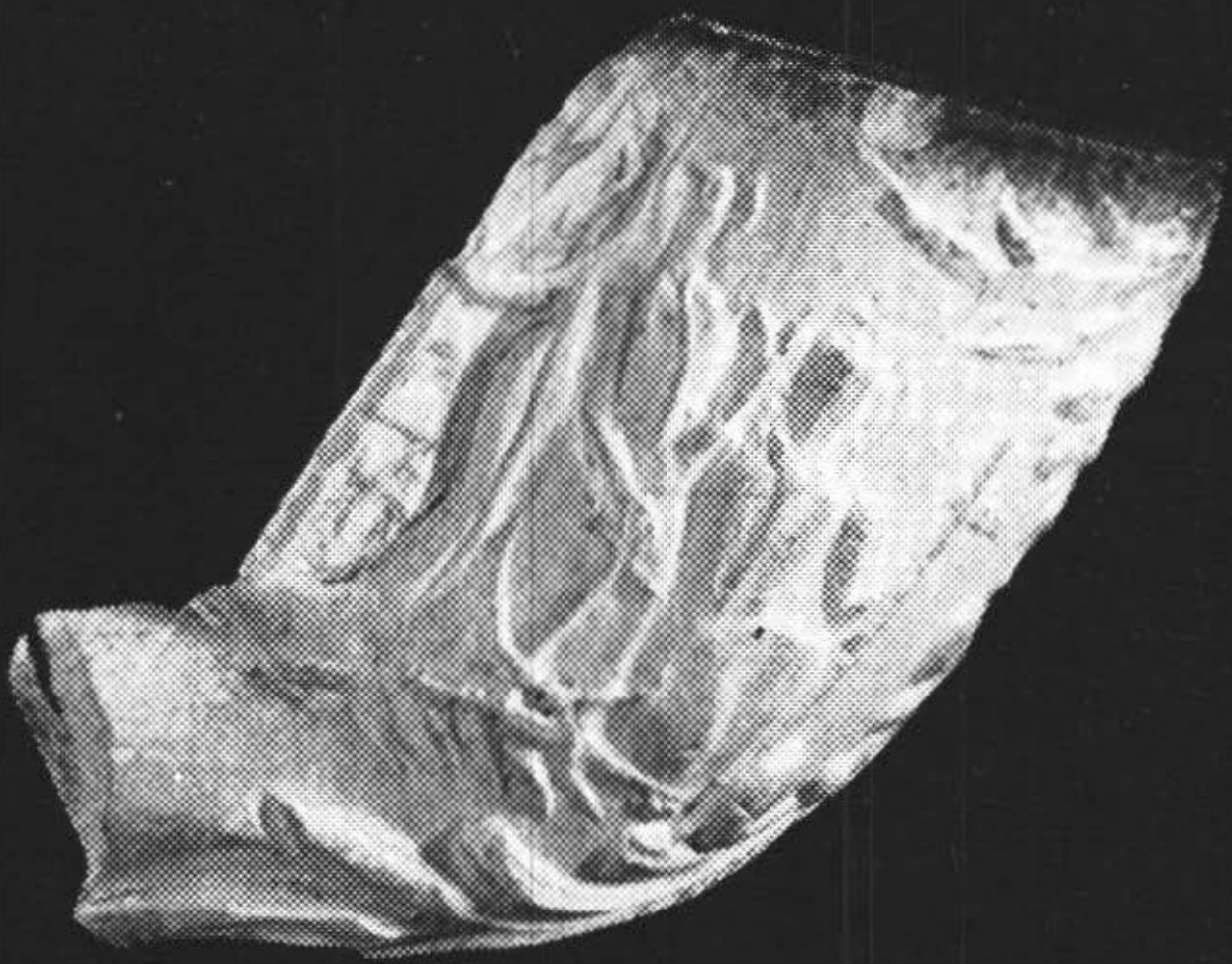
Upper left: Mid-18th century armorial pipe of exceptional quality. Initials T/W on spur. Maker unknown. (Pipe damaged).

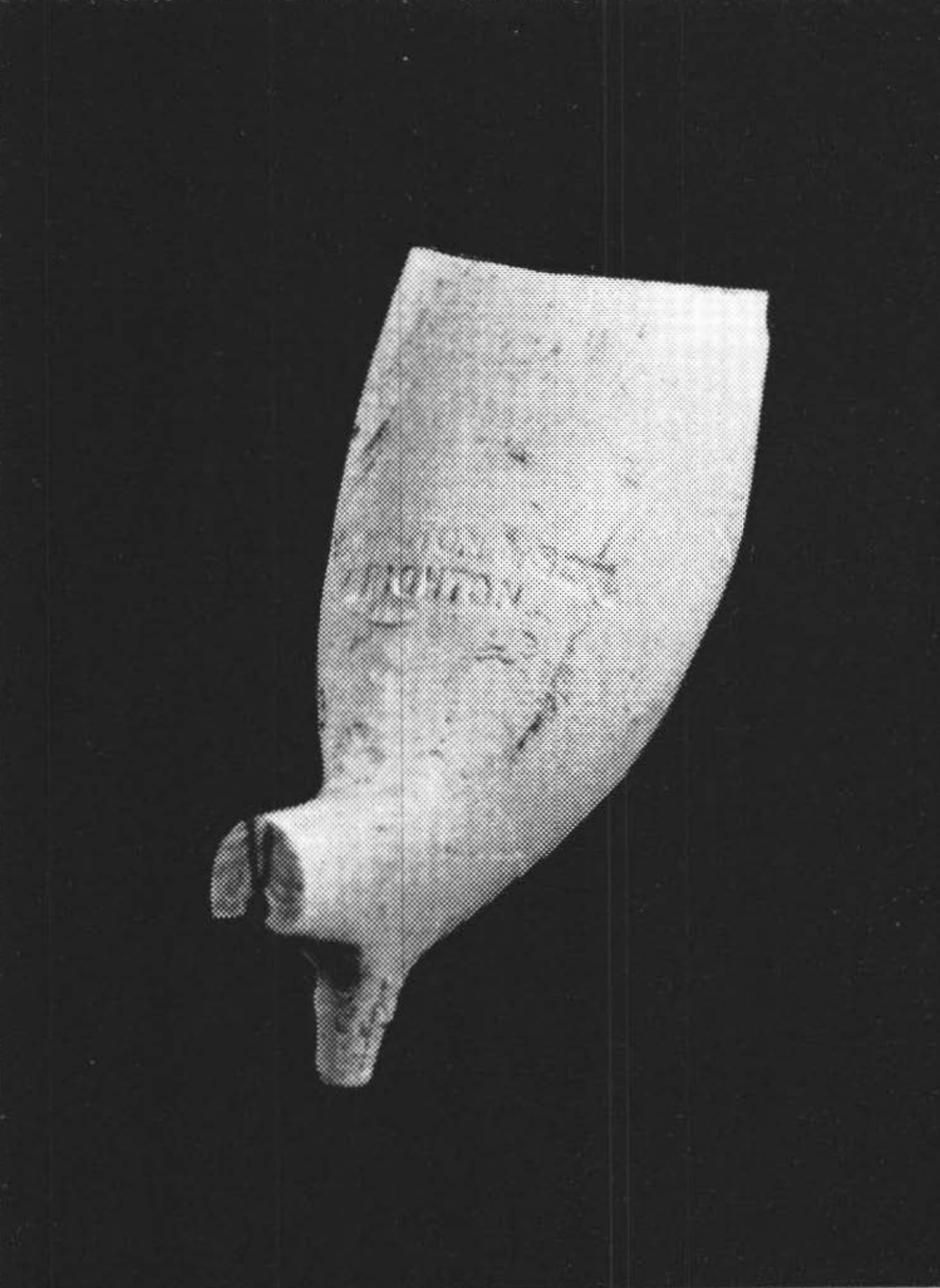
Upper right: Fully decorated bowl with religious scenes. Lacks ornamental spur. Shield of arms on the back of the bowl. Type made by William Swinyard at Horsham *c.*1850.

Lower left: Decorated pipe by Stephen Leigh of Chichester, *c.*1850. Maker's name etc. round the lip of the bowl in relief.

Lower right: Large plain bowl, *c.*1880, with incised straight line stamp of Harrington & Son, Brighton, which was previously only known on stems. Initials I/H on spur.

(*Photographs by kind permission of Mr. T. Backhouse, the finder*).





APPENDIX A

A Sussex Pipemaker's Inventory

Extract from the probate inventory of William Artwell, pipemaker, of Arundel, dated 1727 and totalling £37 13*s.* 2*d.*:—

In the shop he had 2 pairs of screws and moulds and boards and greats [grates], £3 5*s.* 6*d.*; 2 benches and 1 tub, 3*s.*; one beating block and trough and 1 hogshead and firepan and poker, 6*s.*; in the stable, a horse and bridle.

Pipemaker's clay valued at £4; pipes burnt, £1 5*s.*; pipes unburnt, 10*s.*; a pair of hampers on a packsaddle, 4*s.*

The original of this inventory is in the West Sussex Record Office, Chichester. It was originally published by G. H. Kenyon (to whom I am grateful for this extract) in *S.A.C.*, vol. 96, p. 106.

William Artwell was married at Chichester in 1693. So far only one pipe fragment is attributable to him—a stem from Old Erringham Farm, Shoreham, bearing a stamp with his name. The most interesting item in the inventory is the two hampers on a packsaddle. Clay pipes were mostly sold in the immediate vicinity of where they were made but their brittle nature and awkward length must have made transport extremely difficult over even short distances before the days of metalled roads. Baskets were always used for packaging pipes in Holland from the beginning of the industry in the 17th century. William Artwell must have marketed his pipes in this way. The sight of pipemakers going the rounds of the inns and villages in this manner must have been common in 17th and 18th century Sussex.

APPENDIX B

Extract from will proved in Prerogative Court of Canterbury, 1692, *Fane*, 41.[1]

In the name of God, Amen. Samuel Lucas of the City of Chichester tobacco pipe maker. To be buried at the discretion of his executrix. "The disposition of all such goods and my working tools as it hath pleased God to bestowe upon me I give and dispose thereof as followeth: to wife 1*s.*, oldest son Francis, 1*s.*, to my middle son John 1*s.*, to daughter Margaret 1*s.* All the rest of my goods and working tools whatsoever I doe give and bequeath unto my youngest son James." Dated 22nd day of November 1691. Samuel Lucas his marke. Present John Cole his marke, Sarah Cole her marke, Thomas Cole.

Probate granted 15th March 1691/2 to Elizabeth, widow, natural mother and guardian assigned to James Lucas, minor, son of executrix as named in will of Samuel Lucas deceased.

[1] I am very grateful to R. H. Cooper of Epsom for drawing my attention to this will and for supplying the extract quoted here.

NOTES

* Journeymen pipemakers who did not as far as is known make pipes of their own.

[1] Married at Chichester in 1693 but working at Arundel at time of death in 1727.

[2] His apprentice was William Ottway.

[3] Apprenticed to John Moth of Portsmouth.

[4] When initials began to be placed in the mould, *c.*1690, the 'J' is invariably found as 'I'. All pipemakers whose Christian names began with 'J' will therefore be found in their products using the 'I' until *c.*1820-40. During this latter period the 'J' began to be used, but there is a time of overlapping during which both the 'I' and 'J' appear. Pipes of John Drape (1832-67) for instance are found with 'I/D' on the earlier ones but always have 'J/D' after *c.*1850, by which time the practice of writing 'J' as 'I' had virtually fallen out of use. In this list all makers before about 1820 are therefore given the initial 'I' for 'J' to help aid identification.

[5] According to Oswald this apprentice of Thomas Clarke was T. Briggs. Bright may be an error of transcription. No pipes are known in Sussex with these initials so he probably never became a pipemaker, or if he did, produced plain pipes only.

[6] His kiln was excavated in Pipe Passage, Lewes, some years ago. See also Mr. N. E. S. Norris' paper on this excavation in *Post-Mediaeval Archaeolgy*, vol. 4 (1970) pp. 168-170.

[7] May possibly have been Richard Slayde. The writing is not clear in the registers.

[8] A Jonathan Goble (trade not given) married Anne West at St. Michael, Lewes, in 1734. She died in 1758.

[9] Occupied four or five different addresses in Brighton between 1826 and 1846.

[10] Wife of John.

[11] Established branches at Horsham and Chichester by 1866. Some of his Brighton pipes were made in the Pipe Passage kiln at Lewes.

[12] Wife of Thomas Holness.

[13] Became a fisherman by 1841 (census). Journeyman pipemaker at time of death in 1855.

[14] Moved his business to Porchester by 1840 and established the firm of Leigh & Co. which lasted until 1920.

[15] The name is spelt Neeves in the Lewes Survey, 1790-92 and 1812. This is probably an error.

[16] In the 1826 directory the name is spelt Pepper. In 1839 it is found as Petter.

[17] Not mentioned as a pipemaker until 1840.

[18] Probably the same person.

[19] There were probably two or three James Swinyards. One is recorded in London in 1828-54 and another at Guildford in 1839 and 1851.

[20] Later moved to Guildford.

[21] The earliest recorded Sussex pipemaker. No makers have been reported at Brighton in the 18th century.

[22] Apprenticed to John Wood.

[23] Information supplied by Iain C. Walker. A full note concerning this discovery appeared in *Post-Mediaeval Archaeology, vol. 4 (1970), p. 167.*

A List of Sussex Clay Tobacco Pipemakers discovered by 1970

Initials	*Name*	*Town*	*Dates*	*Reference*
G A	Allcome, George	Brighton	1841	Census
W A	Apps, William	Rye	1839	Robson's Dir.

Initials	*Name*	*Town*	*Dates*	*Reference*
M A	ARTWELL, Michael	Chichester(?)	*c.*1740	Pipe
W A	ARTWELL, William	Chichester[1] Arundel	1693-1727	S.M.L. & P.I.
T A	ASHFOLD, Thomas	Hastings	1711-13	Appr. recs.[2]
J A	ATTREALL, John*	Brighton	1841	Census
R B	BARBER, Robert	Arundel	1724-25 (appr. 1692)[3]	Portsmouth Sessions Files
H B	BARTLETT, Henry	Brighton	1841	Census
J B	BIGGS, John	Lewes	1724	Appr. rolls Date of appr.
C B	BIGNELL, C.	Brighton	*c.*1860-80	Pipe
C B	BISHOP, Charles	Lewes	1838-45	Robson's Dir.
J B[4]	BLAKE, John	Lewes	1835	Lewes Poll Book
M B	BRIANT, Mark*	Chichester	1841	Census
R B	BRIANT, Richard	Lewes	1706/07	Date of burial
T B	BRIGHT, T.[5]	Horsham	1754	Appr. rolls Date of appr.
W B	BURSTOW, William	Brighton	1841	Census
I C	CARTER, James	Rye	1689	Surrey Rec. Soc.
T C	CARTRID, Thomas*	Brighton	1841	Census
T C	CLARKE, Thomas	Hastings	1692	Date of burial
T C	CLARKE, Thomas	Horsham	1754	Appr. rolls
W C	COLLIS, William	Horsham	1715	Surrey Rec. Soc.
G C	CORNER, George[6]	Lewes	1866-74	Sussex Dir.
R D	DAVIS, Richard	Brighton	1826-28	Lond. & Prov. Dir.
J D	DRAPE, John	Brighton	1832-67	Dir., etc.
J D	DUNK, James	Ore	1841	Apprentice (Census)
J D	DUNN, John	Hastings	1857	Debtor
T E	EVANS, Thomas*	Brighton	1841	Census
W F	FARR, William	Brighton	1868	Directory
E F	FENTON, Ellis	Brighton	1841	Census
J F	FENTON, Jesse	Hastings	1826-32	Parish Registers
R F	FLAYDE, Richard[7]	Lewes	1719	Parish Registers
C F	FREEMAN, Charles (I)	Worthing	1837	Son married
C F	FREEMAN, Charles (II)	Worthing	1839-73	Directories, etc.
G F	FREEMAN, George	Worthing	1854-67	Registers
J F	FREEMAN, James	Worthing	1842	Date of death
J G	GOBLE, Jonathan	Lewes	1725-(58)[8]	Appr. rolls Parish Registers
J G	GOLDSMITH, John[9]	Brighton	1826-46	Directories
M G	GOLDSMITH, Mrs. Mary[10]	Brighton	1841-45	Census Directory
S G	GOLDSMITH, S.	Brighton	*c.*1820-30	Pipes
W G	GOLDSMITH, W.	Brighton	*c.*1830-40	Pipes
G G	GREEN, George	Brighton	1832-46	Pigot's Directory
H G	GREVATT, Humphrey	Worthing	1833-59	Registers
I H	HARMAN, John	Lewes	1734	Lewes Poll Books
T H	HARMAN, Thomas (I)	Lewes	1697-1781	Parish Registers, Poll Books, etc.

Initials	*Name*	*Town*	*Dates*	*Reference*
T H	HARMAN, Thomas (II)	Lewes	1758-74	Appr. rolls Lewes Poll Books
J H	HARRINGTON, James (later Harrington & Son)	Brighton[11]	1862-1910	Directories
I H	HOLCOM, John (I)	Lewes	1688	Date of burial
I H	HOLCOM, John (II)	Lewes	1699	Date of burial
I H	HOLNESS, John	Hastings	1770-98	Will, etc.
S H	HOLNESS, Sarah[12]	Hastings	1740-69	Paid Scott
T H	HOLNESS, Thomas	Hastings	1714(?)-40	Buried, 1739/40
J H	HUTCHINGS, Joshua[13]	Worthing	1827-55	Registers
R L	LANCASTER, R.	Rye	*c.*1860	Pipes
H L	LAUNDER, Henry	Chichester	1790-1823	Parish Registers
T L	LAUNDER, Thomas	Chichester	1823-27	Directories
A L	LEGGATT, Andrew	Chichester	1844-62	Parish Registers
H L	LEIGH, Henry[14]	Chichester (Portsea, 1840)	1836-	Parish Registers
S L	LEIGH, Stephen	Chichester	1841-55	Directories, etc.
E L	LOWTHROUP, E.	Chichester	1846	Directories
S L	LUCAS, Samuel	Chichester	1691-92	Date of death
J M	MAYNARD, Joseph	Brighton	1832-34	Pigot's Directory
C N	NEEVE, C.[15]	Lewes	1812	Lewes Survey
R N	NEEVE, Richard	Lewes	1774-1818	Lewes Poll Books, Parish Registers
T N	NEEVE, Thomas	Lewes	1775-1802	Lewes Poll Books, Parish Registers
W N	NEEVE, William[15]	Lewes	1790-92	Lewes Survey
W O	OTTWAY, William	Hastings	1712	Appr. rolls, date of appr.
I P	PAIN, John	Petworth	1733	Sussex Marr. Reg.
W P	PAIN, William	Petworth(?)	*c.*1720	Pipe
J P	PETTER, James[16]	Horsham	1826-39	Directories
G P	PHILLIPS, George*	Ore	1851	Census
H P	PINK, Henry (later Pink & Co.)	Lewes	1820-45	Lewes Poll Books, Directories, etc.
A P	PITT, Ann	Brighton	1826-28	Directories
J P	PITT, James (I)	Chichester	1770-1810	Parish Registers
J P	PITT, James (II)	Chichester	1771-1817	Parish Registers
J P	PITT, John	Brighton	1823-24	P.O. Directory
M P	PITT, Mary	Brighton	1832-33	Directory
W P	PITT, William (I)	Chichester	1779-1841	Parish Registers
W P	PITT, William (II)	Chichester	1820-23	Parish Registers
E P	PLOWMAN, Edward[17]	Worthing	1829-43	Registers
W P	PRIVETT, William	Lewes	1827	Parish Registers
E S	SEQUIN, E.[18]	Brighton	*c.*1870	Pipe
E S	SEQUIN, E.[18]	Hastings	*c.*1870(?)	Pipe
F S	SEQUIN, F.	Eastbourne	1862	P.O. Directory
S	SEQUIN	Bexhill	*c.*1870(?)	Pipe
J S	SHOESMITH, James E.	Ore Fairlight Down	1862-66 1841-54	Directories

Initials	*Name*	*Town*	*Dates*	*Reference*
C S	SWINYARD, C.	Horsham	1855	Home Cts. Directory
J S	SWINYARD, James[19]	Horsham	1845-62	Directories
W S	SWINYARD, William	Horsham[20]	1851	P.O. Directory
J T	TANNER, John	Lewes	1823-29	Directory
H T	TAPLIN, Henry	Chichester	1723-74	Parish Registers
I T	TAPLIN, John	Chichester	1720-52	Parish Registers
W T	TAPLIN, William	Chichester	1716-38	Appr. rolls, Parish Registers
G T	TAYLOR, G.	Brighton	1845-46	Directory
T & B	TAYLOR & BOUND	Brighton	1843	Directory
J T	THOMSON, J. H.	Brighton	*c.*1870+	Pipe
J T	TIMS, James	Ore	1851	Census
J T	TUCKNOTT, J.	Lewes	1851-67	Directories
H V	VEZI, Hugh[21]	Brighton	1659-74	Brighton Register
C W	WALKER, Charles	Hastings	1832-35	Parish Registers
J W	WALKER, John	Rye	1798	Univ. Br. Directory
J W	WATKINSON, John	Hastings	1838-41	Parish Registers, Census
J W	WATKINSON, Joseph	Hastings	1836-45	Voter's List
H W	WESTON, Henry	Chichester	*c.*1700	Bristol Apprentice Rolls[23]
C W	WHITE, Charles*	Brighton	1841	Census
W W	WHITE, William*	Brighton	1841	Census
W W	WHITE, William	Ore	1837	Ore Parish Registers
T W	WHITEWOOD, Thomas	Hastings	1693-1711	Parish Registers
J W	WINTER, John	Lewes	1832-34	Directories
I W	WOMHALL, John[22]	Lewes	1754	Appr. rolls, date of appr.
I W	WOOD, John	Lewes	1723-54	Appr. rolls

THE EVOLUTION OF NEWHAVEN HARBOUR AND THE LOWER OUSE BEFORE 1800

By JOHN H. FARRANT

Dr. P. F. Brandon's paper in the last volume of the *Collections* is an important addition to the literature on the history of the lower Ouse.[1] His main conclusion is that in all probability a new outlet for the river was made beneath Castle Hill by the Commissioners of Sewers in the late 1530s, and thus that the " new haven", whose name superceded that of Meeching for the nearby village, was an artificial rather than natural creation. This conclusion is the starting point of the present paper which seeks to complement Dr. Brandon's work. His concern was principally with what happened in the 16th century and with the drainage of the Lewes and Laughton Levels. This paper concentrates on the later period and on the harbour and river navigation, with a terminal date of about 1800 when, as Brandon says in his concluding sentence, " Man could at last claim to have harnessed the Ouse ", while the 19th century improvements to the harbour have been described fairly adequately by other writers.[2] In section I are described the physical changes in the harbour and its immediate environs, while the individuals and groups responsible for man-made changes, and a number of abortive plans for changes, are discussed in section II.

By way of introduction, it is necessary to emphasise the interdependence of harbour, river navigation and drainage. Before the days of mechanical dredging, the size of vessel which could use an esturine harbour such as Newhaven was determined by the depth of water maintained at the mouth by the outflow of the river; land drainage also required an unimpeded outfall to the sea. Normally

[1] " The Origin of Newhaven and the Drainage of the Lewes and Laughton Levels," in *Sussex Archaeological Collections* (abbreviated hereafter to *S.A.C.*), vol. 109 (1971), pp. 94-106.

[2] e.g., W. Stevens, *Newhaven Harbour from 1827 to 1859* (Lewes, 1861), F. D. Bannister, *The Modern History of Newhaven, with proposals for its improvement* (1879), A. E. Carey, " Harbour Improvements at Newhaven, Sussex," in *Min. Proc. Inst. Civil Engineers*, vol. 87 (1887). The present article does not deal with the trade of the port of Newhaven, on which see J. C. K. Cornwall, " The Agrarian History of Sussex 1560-1640 " (unpub. M.A. thesis, Univ. of London, 1953), app. IV, and J. H. Andrews, " Geographical Aspects of the Maritime Trade of Kent and Sussex 1650-1750 " (unpub. Ph.D. thesis, Univ. of London, 1954), *passim*.

the gradient of the river and the volume of water (made up of fresh water draining off the land and salt water brought in on the flood-tide) were sufficient to scour out a deep channel, but the inning of marshland on the margin of the river reduced the size of the river and so the volume of water entering on the flood-tide. Detritus washed into the river settled on the river bed to form shoals and, on the Sussex coast, shingle carried eastwards offshore by wave action was no longer kept in motion and was deposited in the river mouth. However it was not until the later 18th century that engineers generally recognised how an unimpeded influx of the tide was advantageous to land drainage, and previously the tendency was to exclude the tide by building sluices. These sluices were held to assist drainage, by excluding salt water from the land; river navigation by maintaining a proper level of water; and harbour, by penning fresh water to be released at low tide for scouring the river mouth. But experience was otherwise: at Pevensey Haven in 1694, a sluice near the outfall made the river a drain and entirely destroyed the small but regular trade by coasting vessels which had sailed up to Pevensey Bridge; while at Rye sluices built by the landowners from 1623 onwards contributed to the harbour's deterioration, and only in 1830 did the landed and trading interests find a *modus vivendi*.[1]

I

F. G. Morris argued that the course of the Ouse in the early 16th century, before it was superceded by a more direct outlet to the sea, was still traceable in modern times: " Near Newhaven, however, the ancient channel is preserved in the Mill Creek, which extends eastwards as far as Bishopstone Tide Mills. From this point the course past Hawth Hill and Blatchington Hill was traceable as late as 1795, when portions of it were shown on a map published in that year by Gardner and [Yeakell] " and in the 16th century extended as far east as Seaford Head.[2] On this argument, the shingle spit responsible for turning the river eastwards from its southerly course may have been little more than quarter of a mile wide, at high tide, at its western extremity where it touched Castle Hill—a width similar to that of the spit which turns the Adur eastwards opposite New Shoreham.

[1] A. J. F. Dulley, " The Level and Port of Pevensey in the Middle Ages," in *S.A.C.*, vol. 104 (1966), p. 34. J. H. Andrews, " The Last Years of the Port of Pevensey," in *J. & Trans. Eastbourne Nat. Hist. & Arch. Soc.*, vol. 13 (1953), pp. 18-19. B. M., K. Mar. III, 67, " A Survey of the Ports of the South West Coast of England from Dover to Lands-end by Edm. Dummer . . . and Capt. Thomas Wiltshaw . . . Delinated in July & Augst. 1698," ff.5, 6. J. H. Andrews, " Rye Harbour in the Reign of Charles II," in *S.A.C.*, vol. 94 (1956), pp. 35-8. J. Meryon, *An Account of the Origin and Formation of the Harbour of . . . Rye . . .* (1845), *passim.*

[2] F. G. Morris, " Newhaven and Seaford: a study in the diversion of a river mouth," in *Geography*, vol. 16 (1931), p. 29.

Brandon does not directly question whether that was the course of the river before the " new haven " was made in *c.*1539, though the comparison of Christopher Gunman's chart of 1676 and Dummer and Wiltshaw's chart of 1698 may be intended to imply that a channel on the line of the Mill Creek was formed by natural causes between the two dates.[1] That this was the case is the present writer's view, though the evidence is not conclusive.

The argument starts from the map made in 1620, probably for the Commissioners of Sewers, and reproduced in part in Brandon's figure 2.[2] The water course leaving the main river opposite Courthouse and running eastwards to Hawth Hill (which lies east of Home Brook) appears to be the remains of the pre-1539 river[3] and can be plotted on a modern map, following the boundaries (not reproduced by Brandon) of the pieces of meadow to its north. These boundaries show an irregularity which contrasts with the regularity of the drainage ditches in the salt-marsh to the south, and suggest that the marsh was drained in one operation. Much of the line of the old course is today preserved in an embankment, between N.G.R. TQ 452012 (east of the gasworks) and 460008.

At two points there appears to have been encroachment by 1620 on the river course of a century before. At the east end, across the Bishopstone valley, is marked a parcel of land called Newlands which Brandon shows to have been reclaimed when the new haven was cut;[4] its boundaries can tentatively be related to two embankments now crossed by the railway at TQ 46460017 and 46530006, and the " Armada survey " of 1587 shows a " decayed rampier " which from its shape and orientation could have been the east boundary.[5] Secondly, at the west end, to the east of the main river and north of the old river, was a parcel of thirty acres called Penudes, its landward boundary corresponding to the parish boundary between Meeching and Denton. In addition, Long Drove (now called The Drove) in 1620 extended only to the eastern edge of Penudes and not to the river bank: presumably it had been constructed as a causeway to the bank of the old river. Thus the river may have flowed to the west of the modern Denton Island and then eastwards across the site of Newhaven Town railway station to TQ 452012—and the cut of *c.*1539 may have been nearly a mile long, which serves to emphasise the ambitious nature of the undertaking.

[1] Brandon, p. 104.

[2] The copy at East Sussex Record Office (abbreviated hereafter to E.S.R.O.), XC. 16 (formerly PD. 137), has been used.

[3] Brandon, p. 104, refers to " the eastward arm of the Ouse, the old course".

[4] Brandon, pp. 103-4.

[5] M. A. Lower, ed., *A Survey of the Coast of Sussex, made in 1587* (Lewes, 1870), no pagination.

This suggested course of the river before 1539 corresponds to the parish boundary as evident on, for instance, the Tithe Map only so far as TQ 456008 (due north of the Tide Mills), but the river's continuation eastwards, Par Gut, was stated in 1732 to be the boundary between the marsh land of the manors of Newhaven and Bishopstone. The parish boundary south from TQ 456008 may reflect a later exchange between the manors.[1]

The cut of *c.* 1539 was evidently unprotected by piers and thus a shingle bar accumulated and had to be negotiated by shipping; on occasion it was swept into the mouth and seriously endangered both shipping and drainage. The Armada survey shows just such a bar, uncovered at low tide and adjacent to Castle Hill. *The English Pilot*, compiled in 1670, said small vessels could approach from the south, but the best entrance was from the east south east and " upon the Entrances you cannot well make any reckoning for they keep no certain depths; for with southerly winds and stormy weather, they are often cast too with a shindle, and opened again with a free-shoot."[2] The Commissioners of Sewers' minutes, which survive from 1626, record contributions to clearing the mouth under Castle Hill in 1633, 1644-5, 1647-8 and 1660.[3] Impediments to a free outflow probably caused the river to spread itself beyond the confines of the cut (which on the 1620 map appears to swing slightly to the west under the north face of Castle Hill), for by 1676 the river flowed both west and east of " a hard Chalkie Rock " immediately inside the mouth.[4] By 1768 this rock was known as Sleepers Hole.

Between 1664 and 1673 a permanent solution was attempted by the erection of a pier on the east side of the 1539 cut, with the intention of keeping the ebbing tide within a narrower compass and concentrating its force on any shingle brought in on the flood. The result was not so much an increased depth of water, as a less variable entrance, with beacons on Castle Hill to guide vessels in.[5] Later engineers emphasised the need for a west pier to hold up shingle travelling eastwards, but no further contributions by the Commissioners to clearing the mouth are recorded, and a writer in 1693

[1] Sussex Archaeological Trust muniments (abbreviated hereafter to S.A.T.) A.440, evidence taken in dispute over marshland, between Duke of Newcastle and Edward Gibbon, 25 Oct. 1732.

[2] John Seller, compiler, *The English Pilot* (1671), bk. 2, pt. 1, p. 4.

[3] Minutes of Sessions of Sewers for Lewes and Laughton Levels (abbreviated hereafter to Minutes), 17 June 1633, 5 Oct. 1644, 31 May 1645, 1 May 1647, 3 June 1648, 17 Oct. 1660. I am grateful to the Sussex River Authority, as successor to the Commissioners of Sewers and custodians of their records, for access to these minutes. These records have since been deposited in E.S.R.O. (Acc. 1,461).

[4] Bodleian Library, Rawlinson MSS., A.185, f.278, chart of Newhaven harbour by Christopher Gunman, 1676.

[5] ibid. The pier is discussed in section II.

stated that in the opinion of those who built the east pier, a west one was unnecessary, "to which we may add our own experience that whilst [it] stood the harbour continued good."[1] Similar testimony was given to a Commons committee considering a petition for a harbour Act in 1730. Captain Richard Lemon stated that he had known Newhaven for over 50 years, for the first 13 of which the harbour was good and safe for ships of considerable burden, but the pier was now entirely decayed, the harbour very bad and the mouth stopped up.[2] Andrew Yarranton viewed the harbour between 1676 and 1680 and implied that the pier was functioning.[3] Lemon's evidence suggests that it ceased to function about 1690; the actual date may have been a few years earlier. A serious deterioration at a recent date is implied by a petition drafted in November 1689, but not presented to the Commons, which stated that the depth of water over the bar at high tide was reduced to eight feet and that several times the entrance had been dug out at considerable expense, giving temporarily a depth of 24 feet, but within a year had been blocked again.[4] A recent disruption of the drainage may be implied in the statement of 1732 that the marsh south of Par Gut (some 100 acres) was leased on condition of its enclosure, which was effected in 1687.[5]

It seems, then, that the pier collapsed in the 1680s, the shoals which had obliged vessels to approach from the ESE. built up and moved landwards, formed a spit across the mouth and past the remnants of the pier, directing the river through a long ess bend and over the south edge of the marshes, for just over half a mile. The outflow of water was impeded and the river sought a more direct outlet by breaking its banks about 500 yards to the north, invading the marshes and forming the channel parallel to that behind the spit and shown on the Admiralty plan of 1698. In 1732, local residents recalled that 25 or even 50 acres of marsh had been eaten up by the river and buried under shingle.[6] The breach of the

[1] B.M., Add. MSS., 33,058, f.144, Ambrose Galloway to Thomas Pelham, 6 May 1693.

[2] *Journals of the House of Commons* (abbreviated hereafter to *J.H.C.*), vol. 21 (1727-32), p. 492.

[3] A. Yarranton, *England's Improvement by Sea & Land. The Second Part* (1681), pp. 98-99. His visit was presumably since the publication of the first part, dated 1677, but published Nov. 1676.

[4] B.M., Add. MSS., 33,058, f.140.

[5] S.A.T., A.440 (evidence of Robert Palmer and John Dunston).

[6] B.M., K.Mar. III, 67, f.10. Brandon's figure 3, based on this chart, is inaccurate, in that what he shows as (apparently) a road to Seaford is a water course, which also branched northwards, as far as Rookery Hill, with the road following roughly its present line; also, a comparison with T. Marchant, "A Survey and Plan of Part of the River Ouse . . . May 1771" (E.S.R.O., Acc. 1,461) suggests that the scale of his figure should be about 3in. to 1m., not 2¾in. S.A.T., A.440 (Robert Palmer and John Cooper).

river's bank would not necessarily be recorded in the sewer minutes, as the commissioners were not responsible for the banks that far south, and may have occurred during a storm which later tradition backdated by a century—a distortion of the time scale similar to that in 1730 when the pier of the 1660s was said to have stood since time immemorial.[1]

In the 35 years after the 1698 survey, the mouth was periodically blocked and cut out at the Tide Mills site, and a narrow channel to as far east as Hawth Hill was formed.[2] In 1731-5, the Harbour Commissioners (established by Act of Parliament in the former year) reopened the outfall beneath Castle Hill by cutting through the spit and building a pier on each side, with the east pier extended northwards as a dam in order to close the existing entrance behind the spit.[3] Thus closed at its west end, that channel was rapidly blocked by shingle at the Tide Mills site, but continued to be fed by the channel created by the breach of the 1680s and to extend to the lagoon beneath Hawth Hill which is evident on the 1698 plan. In 1762 it was possible at spring tides to navigate barges from the main river to a wharf near Hawth Hill.[4] No attempt was made to restore the drainage of the marshes overrun in the 1680s, but after 1761, when the Tide Mills were built, the eastern extension and the lagoon disappeared into the millpond, while what by then was called Oldhaven Creek was largely recut to form the Mill Creek.[5]

The works of the 1730s were not confined to the piers. The Commissioners of Sewers constructed a navigable sluice on the north side of what is now Denton Island, the name " Lock Reach " appearing on a map of 1842. As the same engineer was responsible for both, the lock was presumably intended not merely to assist drainage but also to complement the piers, the pent-up waters being released at low tide to scour the harbour. In 1736, four years after its erection, the sluice was damaged beyond easy repair and was taken up.[6]

It was 30 years before another determined step was taken to improve drainage. In 1766, John Smeaton was invited to report and

[1] On the districts paying scots, see Minutes, 16 Jan. 1657, index to vol. 1, 27 May 1801. Brandon, p. 106. *J.H.C.*, vol. 21, p. 461.

[2] *J.H.C.*, vol. 21, pp. 492, 615, 625.

[3] Marchant, " Survey . . . of the River Ouse . . . 1771."

[4] B.M. Add. MSS., 32,689, f.378, petition of W. Wood and T. Woolgar to Duke of Newcastle, 7 Sept. 1734. B.M., K.Top. xlii, 11, survey by William Roy, 1757. Sussex Arch. Soc., " Plan of the Coast of Sussex from Rye to Chichester " (?1757). *J.H.C.*, vol. 29 (1761-4), p. 142.

[5] E.S.R.O., D.1100, " Survey and Plan of Bishopstone and Norton Farms by T. Marchant, 1777." Marchant, " Survey . . . of the River Ouse . . .1771." *J.H.C.*, loc. cit.

[6] Minutes, 1732-6, *passim*. E.S.R.O., Shiffner MS. 3,649, plan of the River Ouse by J. W. Woollgar, 1842.

this he did two years later. The report (which is discussed in section II) was not implemented, except for a new cut at Piddinghoe and a programme of widening the river elsewhere between 1769 and 1776, at a cost of some £1,700.[1] Smeaton attributed the blockages of the harbour mouth to a rapid influx of the tide and a languid outflow. The latter was encouraged by a sinuous channel which by then ran round the western edge of Sleepers Hole, parallel to the present road to the west pier. As a remedy, the Harbour Commissioners built a chalk embankment across Sleepers Hole, blocked the river at both ends and gave it a straight course from the inner end of the piers to Pennants Eye (as the river adjacent to the Penudes of 1620 came to be called). That was probably undertaken in the 1770s as the first substantial work of the Commission since the 1730s, though a northwards extension of the east pier, at an angle to the dam, may have been built in 1761.[2]

When William Jessop inspected the levels in 1787, he noted that the small scale improvements had gradually " altered the appearance of the country for the better " and a simpler plan than Smeaton's would now suffice. The Trustees of the Ouse Lower Navigation, under an Act of 1791, made several long cuts, while between 1791 and 1793 the Harbour Commission rebuilt the piers on a new orientation, in line with the embankment.[3] With these changes, not only were the drainage and navigation improved, but the lower reaches of the river acquired, essentially, the configuration they were to retain until the further changes wrought under the aegis of the London, Brighton & South Coast Railway from 1864 onwards.

II

An examination of such attempts to improve the harbour and the navigation of the river as are known shows a changing balance between the two interest groups, the one representing land drainage, the other shipping and river navigation. Until 1729, the latter—principally the traders of Newhaven and Lewes—are seen to have sought no more than the bare minimum of removing the shingle when a storm blocked the mouth, while the proponents of harbour improvement were concerned with the national rather than local objective of a harbour of refuge for all vessels in distress either

[1] Minutes, 26 June 1766, and 1769-76, *passim.*

[2] *Mr. Smeaton's Report on Lewes Laughton Level* (Lewes, 1768), pp. 9-10. Marchant, " Survey . . . of the River Ouse . . . 1771", is overdrawn with both the embankment and the reconstructed piers, but these could be later additions. E.S.R.O., LH. 39, " Plan and Profile of the Shoal . . . in the New Haven Harbour", 1802, implies that the embankment was built by 1785. *Sussex Weekly Advertiser*, 4 May 1761.

[3] *Correspondence between The Right Hon. Thomas Pelham, and Mr. Jessop, relative to the Improvement of the Navigation of the River Ouse, And the Drainage of the Lewes Levels* [Lewes, 1787]. *Report of Capt. Washington and Capt. Vetch, on Newhaven Harbour and the River Ouse, Sussex*, Brit. Parl. Papers, 1847 (628), vol. 61, p. 105.

from the weather or from the attacks of enemy privateers. No serious conflict of the two groups is in evidence, and it was more by luck than design that they did not successfully collaborate in a measure which would have damaged both, namely a sluice on the lower reaches of the river.

The cut of *c.*1539 created the harbour of Newhaven, though it was made by the Commissioners of Sewers and its purpose was to improve land drainage. But if Seaford harbour was so silted as to be described as "a duckpool" in 1539, the facilities for shipping at Newhaven were probably considerably better. The blockages of the mouth in 1633 to 1660 are recorded with reference to their effect on the drainage, but, at least in 1644-5 and 1647-8, the cost of re-opening was shared with the local merchants, shipowners and masters—who were held partly responsible for the blockages by their dumping ballast in the harbour.[1] The case for substantial harbour works was first advanced in 1662, in terms of a harbour of refuge with no reference to the requirements of trade. The initiative was taken by William Halsted, the Collector of Customs for Lewes, Newhaven and Seaford, who, distressed by the number of wrecks on the coast, drew up a certificate to the King; this was forwarded to Colonel Culpeper who arranged for it to be presented by George Digby, 2nd Earl of Bristol.[2] (Culpeper was possibly Edward Culpeper, son of Sir Edward of Wakehurst.)[3] Probably the certificate was presented in 1662, after the royal leases to Digby of Ashdown Forest and of Broyle Park, Ringmer, with leave to fell timber—for which the Ouse was the obvious means of transport.[4]

Halsted then arranged a petition, collecting 80 signatures, for letters patent to improve the harbour.[5] But in August 1663, Digby had to flee the Court, and the letters were granted in July 1664 to four army officers, John Russell, Edward Russell, Silius Titus and Edward Andrewes.[6] John Russell, younger son of the 4th Earl of Bedford, was Colonel of the King's Regiment of Foot Guards, and also Digby's brother-in-law; Edward was possibly John's younger brother and captain of a troop in his regiment.[7] Probably the

[1] Brandon, p. 99. Minutes, 31 May 1645.

[2] P.R.O., S.P. 29/254, f. 153. Halsted was Collector from at least April 1665 (B.M., Add. MSS., 33,058, f.110) until 1678, when dismissed for connivance in smuggling (*Calendar of Treasury Books 1676-9*, pp. 958, 1,074, 1,102).

[3] A Royalist Colonel Culpeper is recorded in 1656 (M. Phillips, "The Family of Pellatt of Steyning, etc. part II," in *S.A.C.*, vol. 39 [1894], 63); for Edward Culpeper (born 1604/5, date of death unknown), see F. W. T. Attree & J. H. L. Booker, "The Sussex Colepepers, part II," in *S.A.C.*, vol. 48 (1905), p.94.

[4] *Calendar of State Papers, Domestic* (abbreviated hereafter to *C.S.P.D.*) *1661-2*, pp. 78, 559.

[5] P.R.O., S.P. 29/254, f.153.

[6] *C.S.P.D., 1663-4*, pp. 254, 656.

[7] *D.N.B.*, under Francis Russell (1593-1641). M. F. Keeler, *The Long Parliament 1640-41* (Philadelphia, 1954), pp. 157, 329-30. *C.S.P.D., 1679-80*, pp. 247, 264.

Russells were safeguarding Digby's interests during his concealment which ended with the Earl of Clarendon's fall in 1667. Silius Titus was also a colonel, and Keeper of Deal Castle and Groom of the Bedchamber;[1] Andrewes is recorded as a captain. The undertakers thus had little specific interest in Newhaven and its welfare, or even in the preservation of shipping, except, perhaps, as military men and in anticipation of war with Holland,they saw the value of a Sussex base for English, and refuge from Dutch, privateers. Probably they were being rewarded for past services, as the letters patent gave potentially valuable privileges: with the power to improve the navigation to Lewes and to build a pier, lighthouses, fortifications and slaughter houses, went the right to dues for wharfage, anchorage and ballastage, and to wrecks, for an annual rent of £5. A royal letter to the local gentry and Commissioners of Sewers suggested that the co-operation of local landowners might allow drainage and navigation up to Sheffield Bridge to be improved at the same time: the works would help one another by checking the tides and holding up the fresh to preserve the outfall to the sea—that is, a sluice should be built.[2] A lighthouse on Beachy Head is also mentioned.[3]

Work was begun but had halted by January 1669 when eight Newhaven inhabitants petitioned the King for an inquiry into the sums owing for the supply of materials, lodging of workmen, &c.[4] In 1670, the undertakers also petitioned for assistance from public funds, and an inspection was made by some Brethren of Trinity House. The result was grants of two prize ships in 1672 and 1673 to defray the cost of completion, though in May 1674 Russell's failure to pay the brethren's expenses was claiming the attention of the Lords of the Admiralty.[5] What were completed were an east pier and two beacons on Castle Hill to guide ships into the harbour, at a cost later estimated at £4-5,000.[6] Andrewes may have acted as director of works, as the 1669 petition reports that he, his wife and family lodged at Newhaven when work began.

The letter of Ambrose Galloway, a Lewes merchant, quoted earlier, suggests that while the pier stood, the harbour was entirely adequate for the demands of shipping. Indeed, a study of the Port Books from 1663 to 1714 has revealed no tendency for the trade figures to

[1] *D.N.B. C.S.P.D., 1660-1*, p. 598; *1670*, pp. 334, 421. Bodleian Library, Rawlinson MSS., A.289, f. 22, warrant of 1673 referring to Titus as Groom of the Bedchamber.

[2] S.A.T., Misc. box 10; printed in *S.A.C.*, vol. 64 (1923), pp. 195-6.

[3] *Historical Manuscripts Commission, 8th Report*, pt. 1 (1881), p. 255.

[4] P.R.O., S.P. 29/254, f.153. The petition recites Halsted's efforts in preparing the certificate and petition in 1662/3.

[5] Bodleian Library, Rawlinson MSS., A.182, f.20. *C.S.P.D., 1672*, p. 466; *1673*, p. 565. J. R. Tanner, ed., *A Descriptive Catalogue of the Naval Manuscripts in the Pepysian Library*, vol. 4 (Navy Records Society, 1923), p. 46.

[6] Gunman's chart, 1676. Yarranton, p. 98.

vary with the state of the harbour. Throughout the period the tonnage of vessels using the harbour was very small—in the coastwise trade, an average of 17 tons in 1668 and 23 tons in 1673—and no evidence has been found that sea going vessels went up river to Lewes, though navigation for barges may have been improved.[1] The undertakers must have hoped to attract new trade by improving the access, but iron exports previously through Pevensey seem to have been the only gain.[2] The harbour remained inadequate for naval purposes: in 1673 the Navy Board advised the king to use Shoreham for embarking troops rather than Newhaven where there was not a sufficient depth of water " for the convenient shipping of men".[3] Nor could shelter be offered to deep-sea vessels passing through the Channel to and from London. It is this deficiency as a harbour of refuge which is prominent in the three abortive proposals for improvement between the completion of the east pier *c.*1673 and the harbour Act of 1731, and in each case there is reference to apathy in the neighbourhood and no evidence that the initiative was other than that of a few individuals.

First, probably between 1676 and 1680, " at the desire of a Person of Quality, and the inhabitants of *East Greensted*, in Sussex," Andrew Yarranton (who may be identified as an early " consulting engineer ") inspected the harbour. The interested parties may have been local ironmasters who had seen the failure of the proposals (which would have greatly benefited them if completed) to make the Ouse navigable to Sheffield Bridge and the Medway to Penhurst in 1664 and 1665.[4] Yarranton reported that Newhaven " lyeth over against the Naval of France, and there is no safe or convenient Harbour to secure shipping all along that coast, for at least Sixty Miles [i.e. between the Downs and Portsmouth], and what strange Reke and Damage are our Merchants and Strangers put unto continually upon that coast, and if some of our greatest Merchants are not mistaken, that Harbour, if well opened and secured, would be to them, and their Trade very advantageous, and in time of war, the kings ships which draw not above Twenty Foot Water, may there lie well secured, and on all occasions be quick out to Sea." Yarranton expounded all the arguments for a harbour of refuge which were to be repeated time and again up to the mid-19th century. These

[1] J. H. Andrews, " The Port of Chichester and the Grain Trade 1650-1750," in *S.A.C.*, vol. 92 (1954), p. 98, and Ph.D. thesis, p. 73. It may be just chance that the first mention of barges on the river in the Minutes is not until 2 July 1681.

[2] J. H. Andrews, " . . . Port of Pevensey," p. 19.

[3] Tanner, vol. 2 (Navy Records Society, vol. 27, 1904), pp. 104, 172, 177.

[4] The quotations in this paragraph are from Yarranton, pp. 98-99, which also is quoted *in extenso*, and his plan reproduced, in M. A. Lower, " Notes on the Churches of Newhaven and Denton," in *S.A.C.*, vol. 9 (1857), pp. 99-101. *D.N.B.* C. W. Chalkin, " Navigation Schemes for the Upper Medway, 1660-1665," in *J. of Transport History*, vol. 5 (1961-2), pp. 113-4.

were the danger of the coast around Beachy Head, particularly in south and south-west gales, the need for a good harbour to the west of the Head, and the advantage to both trading vessels and the Navy, especially on account of the proximity of the French coast.

Yarranton proposed a west pier and two sluices across the river, by which flashes could be let down to scour the harbour, at an estimated cost of £6,000. In attributing the limited scale of the earlier works to the lack of an Act of Parliament, he no doubt had in mind that letters patent could not authorize interference with private property—and it may be noted that the first Act for a harbour commission empowered to levy pier dues was not passed until 1697.[1] He observed that " in this . . . there was not that helping hand given . . . by the publick as it merited; nor I fear countenanced as it deserved by the Gentlemen of the Countrey."

The second attempt at improvement was in late 1689, when a petition to Parliament was drafted. Nothing came of it, and in sending a copy to Thomas Pelham in 1693, Galloway referred to " the Public so little minded, because sitting still is easier to so disposed minds "—words which scarcely suggest widespread demand for harbour improvement and devalue the assertions of the petition that because the harbour was blocked up the trade of Lewes and neighbourhood was greatly decayed, with the farmers unable to ship their corn. England was at war with France, and privateering tended to decrease trade and strengthen the argument for a harbour of refuge, which both the petition and Galloway's letter emphasise.[2] In February 1696 Pelham obtained a grant from the crown for clearing the harbour: £300 out of the receipts from brandy seized in Sussex.[3]

The third initiative is, because it is well documented, clearly an individual one. Thomas Fuller, M.D., practiced throughout his life at Sevenoaks, but his parents were of Hellingly and his wife came from Ringmer. In 1724, his seventieth year, he took up the cause of Newhaven harbour, with an exclusive emphasis on refuge. His proposals were very similar to Yarranton's, and may well be derivative; he likewise commented on the " want of publick spirits to advance the money " for the earlier works.[4]

[1] Bridlington Harbour Act, 8 & 9 Wm. III, c.29.

[2] B.M., Add. MSS., 33,058, ff. 140-1, 144.

[3] *Calendar of Treasury Books 1693-6*, pp. 1,333-4, 1,436.

[4] I am grateful to Miss M. C. L. Salt for the information on Fuller's parentage; she considers that he was not a member of the Heathfield iron-founding branch nor the purchaser of Brightling Park, as stated in *D.N.B.* (personal communication, 9 May 1971); see also her paper, " The Fullers of Brightling Park," in *S.A.C.* vol. 104 (1966), pp. 64-6, 80. Because of Fuller's advancing years and failing eyesight, the correspondence on Newhaven was conducted by John Warburton, Somerset Herald, and is preserved among the latter's papers at B.M., Lansdowne MSS., 846, ff. 3-17; extracts are printed in J. D. Parry, *Coast of Sussex* (1833), pp. 183-6.

A series of questions on the harbour's potential was put to Captain William Markwick, who, unlike Yarranton, was a local man. He came of a well-established Sussex family (though his father had spent his working life as a clockmaker in London), living on the family property in Catsfield near Battle to which he seems to have added land in four other parishes by the time of his death in 1740.[1] What is known of his activities suggests that by the early 18th century a man could derive a sizeable income just from hydraulic engineering in a limited area. He was for many years employed by the Lords, Bailiffs and Jurats of Romney Marsh, and was responsible for the sluice at Pevensey in 1694 (mentioned above), piers at Folkestone in 1709, and sea defences at Brighton in 1724. He replied to the questions on Newhaven on the basis of recollection of visits at the request of the Duke of Newcastle, for he had been involved in protecting Bishopstone marshes from encroachment. He saw no difficulty in building a strong pier on the west, three or four groins on the east, a lighthouse and a fort, at a cost of £5-6,000, but felt that sluices on the river would not justify the expense nor could assist land drainage, and might worsen the drainage above Lewes[2]—an interesting dissension from what was otherwise the united opinion of engineers up to and possibly including Jessop. Markwick implied that Newhaven could be made a very good tide harbour, which he defined as one able to take a vessel of 800 to 1,000 tons at half flood, at a quarter of the cost of Rye for which an Act had been passed that year.[3]

Fuller proposed to finance the works by a tax on the Jews or on any ship entering the harbour, but Henry Pelham, one of the local M.P.s, while sympathetic, doubted whether merchants would tolerate another impost on shipping, and noted that a tax on the Jews had often been rejected and that the Rye Act had already passed that session, which was nearly over.[4] There the matter rested.

Only in 1731 was an Act obtained for Newhaven. Was there anything to explain why this attempt was successful when three previous proposals had not got off the ground? Yarranton and Galloway wrote in the context of war or recent war, which strengthened the national case for harbour improvement but weakened the local case. The port's trade was adversely affected by the French wars of 1702-13

[1] E. E. Markwick, " A Memoir of the Old Sussex Yeoman Family of Markwick " (typescript in Sussex Arch. Soc. library, 1920), pp. 24-5. J. E. Ray, " The Ancestry of William Markwick," in *Hastings & East Sussex Naturalist*, vol. 3 (1923), pp. 235-6.

[2] B.M., Add. MSS., 42,653, ff. 96-130, *passim*. S. J. Mackie, *A Descriptive and Historical Account of Folkstone and its Neighbourhood* (Folkestone, 1856), p. 66. B. M., Lansdowne MSS., 846, ff. 3-4, 11-12.

[3] I have read Markwick's letter—which is ambiguous at this point—to say 800 to 1,000 tons, on the basis of the draft petition which refers to access at half flood for vessels of 20ft. draught.

[4] B.M., Lansdowne MSS., 846, ff. 16, 13, 14.

though probably had recovered by 1724, and that Fuller's plans were not pursued may well have been because local support was not canvassed. Six years later, trade may have increased and the harbour deteriorated to the point where the demands of the local economy for shipping outstripped the harbour's capacity, and where the traders were forced to act. A writer in the late 1720s stated that a vessel above fifty or sixty tons loaded would not venture into the harbour; though the average tonnage of a coaster may have been little more at that time, a growing number of vessels, particularly colliers, were larger and more economic to operate, while opportunities for corn exports may well have been appearing. Petitions for an Act were examined in both 1730 and 1731, and the evidence heard on the second occasion suggested a situation which had worsened since the previous year: in December 1730, 13 ships loaded with corn were trapped in the harbour, and the river entered the sea at several points.[1] Such series of "trade statistics" as survive give an impression of the expanding trade:

	(1) Tonnage of shipping (including repeat voyages) trading with foreign ports		(2) Tonnage of ships registered at Newhaven		(3) Gross receipts of Customs (£)
	Entering	Clearing	Foreign trade	Coastwise trade	
1701			115 (4 ships)		
1709*	nil	nil	40	120	
1710*					4
1716	nil	50	45	115	
1720					945
1723	135	745	85	245	
1730	40	656	100	217	431
1737	147	523	292	138	
1740*					405

*war years

Sources: (1) B.M. Add. MS., 11256, f.25.
(2) 1701: J. H. Andrews, "Trade and Ships of Brighton in the Second Half of the 17th Century," in *Sussex Notes & Queries*, vol. 14 (1954-7), p. 48. Other years:
B.M., Add. MS., 11255, f.3.
(3) B.M., Add. MS., 8133A.

Perhaps no Bill was brought in during the 1730 session, pending negotiations about land drainage, for in 1731 one petition repeated that of the previous year, on the damaged trade of the harbour, while a second added that a repaired harbour could serve as a refuge for ships and to drain many thousands acres of pasture land.[2] Indeed collaboration between the Commissioners of Sewers and the

[1] T. Cox, *Magna Britannia et Hibernia, Antiqua et Nova*, vol. 5 (1730), p. 526. T. S. Willan, *The English Coasting Trade 1600-1750* (Manchester, 1938), pp.11-13. *J.H.C.*, vol. 21, pp. 461, 492, 615, 625.
[2] *J.H.C.*, vol. 21, pp. 461, 615, 617.

Harbour Commissioners is well evidenced. When the harbour Act was obtained in May 1731, there were 20 Commissioners of Sewers, of whom 13 were among the 71 Harbour Commissioners named in the Act.[1] An engineer named John Reynolds gave evidence in support of the 1730 petition, and most probably he supervised the building of the piers—and in June, 1731, he was retained by the Commissioners of Sewers as both engineer and contractor for the sluice near the Newhaven/Piddinghoe boundary.[2]

Sluice and piers were thus part of a single plan, and that the sluice was erected by the Commissioners of Sewers may have been the result of an agreement between the Commissions so that the land should bear part of the costs of improvements—though the Harbour Commissioners had their own powers under the Act to erect sluices. The Act for Littlehampton harbour passed two years later was very similar to Newhaven's and no doubt based on it, and Reynolds was again the engineer employed, but the division of labour was different: the Harbour Commission improved and maintained the river up to Arundel and proposed, if funds allowed, to build locks in the tideway above Arundel.[3]

The sluice, described in the minutes as a lock or pair of floodgates, was intended to assist navigation of the river as well as drainage, thus reflecting the traders' growing demands on the river. It was to be open on the day tides, Monday to Saturday, unless the water-bailiff considered closure absolutely necessary and gave a day's public notice in Lewes. But having been completed in 1732-3, it was declared as beyond repair in September 1736, and ordered to be taken up. The cost of the sluice was £650 and was met by scots on the levels at five times the normal rate for about four years.[4]

The new entrance beneath Castle Hill was opened on 15 October 1733, and the piers and associated works completed in 1735. Clearly a substantial improvement was achieved, for a visitor in 1754 reported that vessels of 150 tons often entered, and the Customs receipts show a rising trade, though interrupted by the French wars and though the harbour continued to be plagued by a shingle bar.[5]

[1] Minutes, 1728-31. Newhaven Harbour Act, 4 Geo. II, c.17.

[2] *J.H.C.*, vol. 21, p. 492. Minutes, 4 June, 8 Dec. 1731.

[3] 6 Geo. II, c.12. West Sussex Record Office, MF. 25, minutes of Littlehampton Harbour Commission, 13 July 1733. Reynolds is unusual at this date in acting as both engineer and contractor—a practice reflecting his background as a trademan rather than as a man of some scientific training (as Markwick probably was), for he is found as a " carpenter of Poplar, Middlesex " building a bridge at Rye in 1725 (E.S.R.O., S/RH/SO1, minutes of Rye Harbour Commission 13 Jan. 1725).

[4] Minutes, 4 June, 8 Dec., 1731, 19 May 1733, 11 Sept. 1736.

[5] B.M., Add. MSS., 32,688, f. 527, William Hay to Duke of Newcastle, 19 Oct. 1733. *Calendar of Treasury Books & Papers 1735-38*, p. 146. J. J. Cartwright, ed., *The Travels through England of Dr. Richard Pocock*, vol. 2 (Camden Society, new series, vol. 44, 1889), p. 103. *Mr. Smeaton's Report*, p. 4, mentions the bar.

But very little is as yet known about the harbour and its trade in the 18th century, after the 1731 Act, as the Port Books end in 1714 and as the records of the Harbour Commission, unlike those of the Rye, Shoreham and Littlehampton commissions, have not been located. What is known of the physical changes has been summarised in section I: the construction of an embankment across Sleepers Hole after 1771 and the rebuilding of the piers in 1791-3.

For the levels, however, the records are better and show the continuing concern for maintaining a proper balance between the users of the river. When Smeaton was invited to report on the most effectual means of sewing and draining the levels, he was asked to consider whether any proposed new works would be beneficial or detrimental to navigation or to the harbour works. He reported, in 1768, in favour of a large sluice on a new cut opposite Piddinghoe, as part of a programme costing £10,800, which would benefit the navigation and not damage (but even improve) the harbour. " Happily for the navigation of the Ouse and Newhaven harbour", observed Captain Washington, of the Government's Tidal Harbour Commission, in 1847, the sluice was never built. The cost was quite beyond the Commissioners' means and the experience of 1736 was no encouragement.[1] The programme of widening the river, which was undertaken in 1769-76, does not seem to have improved the navigation, as grounding on shoals for several days seems to have been as common for a barge of 20 tons in 1787 as in 1764.[2]

The improvements which have been taken as the terminal point of this article came in the decade from 1786, which saw a notable spate of activity in improving the transport facilities of the Ouse valley. The activity was provoked by two men, Thomas Pelham of Stanmer, later 2nd Earl of Chichester, and John Baker Holroyd, 1st Earl of Sheffield. First, late in 1786, a meeting in Lewes chaired by Sheffield opened a subscription for " a plan to alleviate the distress of shipwreck "—mobile cranes to winch men and goods up the cliffs. By implication these machines were a partial substitute for a harbour of refuge. A few weeks later, the Harbour Commissioners voted to spend an accumulated balance of £3,000 on extending the piers and deepening the harbour. In early July, 1787, local traders met to discuss making the Ouse more easily navigable to Lewes. These meetings must explain Pelham's invitation to William Jessop to view the lower river and harbour, which he did in August. In October a meeting at Sheffield Park, chaired by Pelham, proposed improvement of the river above Lewes and invited Jessop to survey and make estimates.[3]

[1] *Mr. Smeaton's Report*, pp. 6, 9, 13-15. *Report of Capt. Washington . . .*, p. 104.

[2] S.A.T., Misc. box 21, Abraham Baley's notes on the Ouse, 1764, 1769. *Correspondence between . . . Pelham, and Mr. Jessop.*

[3] *Sussex Weekly Advertiser*, 15 & 22 Jan., 2 July, 22 Oct. 1787.

Subsequent progress was much slower than the initial rush of public meetings. The rebuilding of the piers was completed in 1793. The Upper Ouse Navigation, above Lewes, was authorised by Act of 1790, but never reached its intended terminus and was completed a mile short, at Upper Ryelands Bridge, Cuckfield, in 1812. As for the lower river, the powers of the Commission of Sewers were so circumscribed as to prevent it undertaking the works now wanted for its navigation. So an Act of Parliament was obtained in 1791 to allow a body of Trustees (which included the Commissioners *ex officio*) to levy tolls on barges and ships passing along the river. To the tolls were to be added scots levied by the Commissioners and paid over to the Trust, according to a formula so that " the trade " bore two-thirds and " the land " one-third of the cost of making and maintaining the improvements. The completion of the plan again was not achieved. The income from tolls was less than anticipated and in 1800 the proportions were altered to half and half; at that time several shoals had still to be removed and a towpath to be built. The former (or some of them) were not taken up until 1839 and the latter was never built, but the drainage element was probably effected by about 1800 and barges of 30 tons enabled to run between Lewes and Newhaven within a matter of hours when previously it took days.[1]

The works on the Ouse which have been described in this paper appear to have been promoted and carried out without any serious sectional conflict with, for instance, those concerned with shipping ranged against the landowners. This conclusion needs to be emphasized only because the histories of conflict over other rivers have attracted the attention of historians—the propaganda and law suits generated by controversy have provided them with their materials.[2] Events, however, might have been very different on the Ouse if Reynold's sluice had not been washed away or Smeaton's had been built, and the unanimity may have been maintained more by luck than judgement, but it does serve to underline the economic unity of the Ouse basin. In that Brighton, which was growing in importance from the earlier 18th century, had an extensive beach trade and was nearer Shoreham, and that the Cuckmere basin can have produced little trade, Newhaven's hinterland for bulk cargoes did not extend to any degree beyond the basin, while for the towns and villages situated in the basin there was no viable alternative to Newhaven as the port for their imports and exports. Newhaven was in fact

[1] D. F. Gibbs & J. H. Farrant, " The Upper Ouse Navigation 1790-1868," in *Sussex Industrial History*, no. 1 (1970), pp. 24, 26, 29. 40 Geo. III, c. liv. *Report of Captain Washington*, p. 104. John Ellman in T. W. Horsfield, *The History, Antiquities & Topography of the County of Sussex* (Lewes, 1835), vol. 2, p. 24.

[2] See, for example, T. S. Willan, *River Navigation in England, 1600-1750* (1936), pp. 16-21, and H. C. Darby, *The Draining of the Fens*, 2nd ed. (Cambridge, 1956), *passim*.

acting as the port of Lewes, to and from which passed the bulk of the goods forming Newhaven's trade (thus making a navigable tideway particularly desirable), for Lewes was, at least by the later 16th century, a " regional capital," the trading and administrative centre for much of East Sussex, and the meeting place of the river's users.[1]

[1] C. E. Brent, " Elizabethan Lewes: A Regional Capital " (lecture to Sussex Arch. Soc., 12 Nov. 1971).

THE REBUILDING OF MADEHURST CHURCH

By FRANCIS W. STEER, F.S.A.

The little church of St. Mary Magdalen at Madehurst, in a lovely setting, only retains from the original fabric a very plain, 12th-century, round-headed west doorway, an early 14th-century two-light window in the south wall of the nave, and a west tower (heavily restored and buttressed) with a doorway having a two-centred, hollow-chamfered arch continuous with jambs and probably dating from the late 12th or early 13th century. The appearance of the old church, preserved for us in a drawing by S. H. Grimm,[1] 1791, and another reproduced as Plate I, does not differ to any appreciable extent from the present building; the solidarity of the structure is still very apparent and the nave roof still impinges on the pyramidal capping of the tower.

The church now comprises a chancel, nave, organ chamber, north aisle, vestry and west tower. On the west wall of the nave are memorials to (i) James Montague, 1794,[2] erected by his brother-in-law, Sir George Thomas, 3rd bart.; (ii) Sir George Thomas, 3rd bart., 1815;[3] (iii) Sophia Thomas (née Montagu), 1759-1854, wife of Sir George. On the south wall of the nave is a memorial to another of Sir George's brothers-in-law, Edward Montagu, 1799. A metal plaque on the south wall of the chancel records the gifts of the Fletcher family to the church; on the north wall of the north aisle is a bronze cross and plaque in memory of Laura Marjoribanks, 1826-1920. In the vestry is a tablet, erected by Sir George Thomas, 3rd bart. in 1789, to Roque Ferdinand, a native of the Island of Bona Vista, who died on 7 May in that year, aged 67, and came to England with Sir George Thomas, 1st bart. (d. 1774), at the conclusion of the latter's term of office (1753-1766) as Governor of the Leeward Islands.

Except for some of these memorials,[4] the two pre-Reformation

[1] *Sussex Views selected from the Burrell Collections*, ed. by W. H. Godfrey and L. F. Salzman (Sussex Record Society, 1951), Plate 104.

[2] The arms described in *Sussex Archaeological Collections*, vol. 73, p. 122, are now missing. For the Montagu family, see *Burke's Peerage, Baronetage & Knightage* under Manchester, Dukes of.

[3] For this family, see W. Berry, *Pedigrees of the Families in the County of Sussex* (1830), pp. 290, 291, and *Burke*, op. cit., under Thomas of Yapton. See also *Sussex Archaeological Collections*, vol. 73, p. 121.

[4] Copies of monumental inscriptions at Madehurst are in the library of the Sussex Archaeological Society; see *Collections*, vol. 60, p. xi. Another incomplete copy is with the Madehurst parish records in the Diocesan Record Office, Chichester, Par. 132/7/11.

bells[1] and an Elizabethan chalice and paten[2] are the only pre-1863 fittings that survive in Madehurst church. A water-colour sketch of the old, crude font by C.R.W., June, 1850, is reproduced as Plate II. A bomb which landed near the church in 1944 destroyed most of the glass in the two windows in the south wall of the nave. This glass, by Sir Edward Burne-Jones, was a memorial to J. C. Fletcher, who died in 1875, and a few pieces of this pre-Raphaelite art of 1876 remain in the tracery lights as a reminder of what we have lost.[3]

While we regret the loss of an early church even if described as 'small and of the plainest architecture',[4] we must acknowledge that the rebuilding was sympathetic to the style of the original and in harmony with the surrounding countryside. In his *Recollections*, Thomas Graham Jackson[5] (1835-1924) refers to his restoration of Madehurst church for his school and college[6] friend the vicar, Henry Nicholls. This work was one of Jackson's earliest commissions for he did not set up in practice at 7 Salisbury Street, Strand, London, until 1862, when he was twenty-seven. A small collection of letters in the West Sussex Record Office[7] is of interest for the information given about the costs of church building plus some sidelights on life and attitudes in a small parish a century and more ago.

The correspondence begins on 5 March 1863, with a letter from Nicholls to his patron, lay rector and churchwarden, John Charles Fletcher,[8] of Dale Park, Madehurst, and Eaton Place, London. Nicholls reported that the lowest tender was that of one Smart[9] who quoted £220 for the chancel and £625 for the church, plus £43 13*s*. 0*d*. for carving[10] and a further £50 if oak seating was pro-

[1] See *Sussex Archaeological Collections*, vol. 16, pp. 143, 144, 218, vol. 57, p. 7 and vol. 95, p. 149; see also G. P. Elphick, *Sussex Bells and Belfries* (1970), pp. 230, 349.

[2] See J. E. Couchman, *Sussex Church Plate* (1913), p. 38.

[3] Illustrated in the *Chichester Observer*, 20 August 1971.

[4] J. Dallaway, *A History of the Western Division of the County of Sussex*, vol. 2, Rape of Arundel (1819 ed.), p. 189.

[5] Arranged and edited by his son, Basil H. Jackson, and published in 1950. See also *Dictionary of National Biography*.

[6] Brighton College and Wadham College, Oxford.

[7] W.S.R.O., Add. MS. 6817. The restoration scheme was first discussed at a vestry meeting on 4 Dec. 1862. Madehurst parish records in Diocesan Record Office, Par. 132/12/1.

[8] Born 1798, died 1875. He bought Dale Park (now demolished) in about 1852; see *Burke's Landed Gentry* (ed. by H. Pirie-Gordon, 1937), for a pedigree of the Fletcher family.

[9] Almost certainly Alfred Smart, stone statuary mason, builder and slate merchant, Tarrant Street, Arundel (J. G. Harrod and Co's *Postal and Commercial Directory of Sussex*, 1867). Charles and Charles J. Smart of Tower Street and Southgate, Chichester, respectively, were only stonemasons. Melville and Co.'s *Directory & Gazetter of Sussex* (1858) lists a William Smart, mason and builder, Arun Street, Arundel.

[10] Presumably the carved capitals of the north arcade and the carving of the oak choir stalls.

vided throughout—a total of £938 13*s.* 0*d.* The other tenders were those submitted by Fabian of Brighton[1] (£1,387), Bushby of Littlehampton[2] (£1,333) and R. V. Ellis of Chichester[3] (£1,150). Having given these figures, Nicholls goes on to quite another matter; he writes—' I find that Mr. Hart[4] & others in Arundel have collected £200 to be spent in feasting some 1,800 of the Arundel poor on the Prince of Wales' Marriage Day,[5] & as this is I believe about to be done by many of the neighbouring places, I do not think we ought to be behind hand—I propose therefore to give a good dinner consisting of about the same quantity of meat as you usually give at Christmas, together with the materials for a good plum pudding & a fair quantum of ale, to every Cottager in the Parish . . . If you feel disposed to join (I intend to ask the Farmers & Lord S.[6] also) I shall thankfully receive anything which you may be pleased to give.'

On 6 March, Jackson sent to Fletcher the tracing of the new east window for Madehurst church. ' The glass of the two lights of the present window,' he wrote, ' will (with a very few trifling alterations at the head) fit the two *side* lights of the new window which I have made of the proper size purposely '.[7]

In thanking Fletcher for the promise of three guineas towards the cost of the celebration dinner, Nicholls said that he returned Mr. Prime's[8] letter although not altogether agreeing with the concluding sentence—' We will shew our loyalty by increasing the fruits of the earth & leave others to consume them '. Nicholls' comment was that ' When such a sentiment is used by an employer of labour in defence of not giving his labourers a feast on a special occasion like the present of which only 2 or 3 can occur in a lifetime, it might be more truthfully worded thus—We will show our

[1] John Fabian, builder, 7 Clarence Square, Brighton (Melville, op. cit.); J. Fabian, builder, 6 Western Street, Brighton (Harrod, op. cit.).

[2] Robert Bushby, builder (Melville, op. cit.); Robert Bushby, builder and contractor, Arundel Road, Littlehampton (Harrod, op. cit.).

[3] Robert Vincent Ellis, builder, timber merchant, and agent to Leeds and Yorkshire Fire and Life Office, Westgate, Chichester (Melville, op. cit.). R. V. Ellis is not listed in Harrod's *Directory*, but there is John Ellis, builder, statuary, stonemason, and stone merchant, &c. of Cemetery Works, Chichester, and at Westhampnett.

[4] The Rev. George Augustus Frederick Hart, vicar of Arundel.

[5] Albert Edward, Prince of Wales (afterwards King Edward VII) married Princess Alexandra of Denmark in St. George's Chapel, Windsor, on 10 March 1863.

[6] Was Lord S., Viscount Somerton (afterwards 3rd Earl of Normanton) who, with his wife, was one of the more substantial subscribers to the Madehurst church restoration fund?

[7] The present east window is of three lights, but except for that in the tracery, the stained glass was destroyed in 1944.

[8] Richard Prime of Walberton House. See also Francis W. Steer (ed.), *I am, my dear Sir . . .* (1959), pp. 82-84, and *The Hawkins Papers: a catalogue* (1962), pp. 10, 11, 14.

loyalty by consuming the fruits of the earth ourselves, instead of giving others, who have the burden of producing them an opportunity of doing so.' He continued, 'The County is getting wiser & more liberal every day, & soon the more countrified places will not submit to a sentiment which has long since been exploded from our Towns—I confess I am glad that here in Madehurst we shall follow a worthier example than that of Aldingbourne, Slindon & Walberton.'

On 10 March, Nicholls asked Fletcher what was to be done with the soil that would have to be moved in order to build the north aisle of the church. He did not see what use it could be in the churchyard and thought that some could be put over the wall and the better mould in the School garden. 'The only difficulty,' he wrote, 'is about *consecrated* ground, a matter of small moment in *my* estimation, but perhaps a finger hole for the Bishop's secretary &ct &ct.'

A letter, 20 March 1863, suggests that Jackson's action in publishing the estimates in a paper was thought unnecessary. On 31 March Jackson wrote to Fletcher to say that Smart had discussed additions to his estimate which by then was £369 5*s*. 0*d*. for the chancel and £720 3*s*. 0*d*. for the church. There seemed a shadow of doubt about Smart's integrity but Jackson wrote (31 March): 'I received the impression that he was an honest man, and that though he has given us a great deal of trouble in this matter he has not done so from any improper motive.' Economies were possible if the chancel roof was of fir instead of oak, or the chancel seats of deal, 'but I need not say,' Jackson continued, 'that the effect of the work when done will be much spoiled by the loss of the very things which will be the first to be sacrificed when "*reduction*" becomes the order of the day.'

Alarm in one direction was dispelled on 7 April when Nicholls told Fletcher that the reconsecration expenses would be £16 odd—'therefore my friend at Horsham who suggested £80 is altogether wrong.' There was uneasiness about Smart's increased price; Nicholls demurred (9 April) at the extra £100 added to his share (i.e. the church as opposed to the lay rector's responsibility for the chancel) and said that all in excess of £600 would probably have to come out of his own pocket. So it was thought fairer to make a fresh start and invite new tenders although Nicholls wrote on 13 April, 'As for the additional £100, sooner than spoil the plan in any material part, I will find it—No doubt I *could* get it or a £1,000 if I wanted it from my friends, but when they have been liberal already, I must say it goes against my grain to ask for more'.

The new tenders arrived. Smart was still the lowest at £1,089 8*s*. 0*d*. with J. Ellis (nephew of R. V. Ellis)[1] runner-up at £1,131 (£473 11*s*. 11¾*d*. for the chancel and £657 8*s*. 0¼*d*. for the church, but

[1] See footnote 3 on p. 63.

PLATE 1—Madehurst Church in 1850
(*From a drawing in the West Sussex Record Office*)

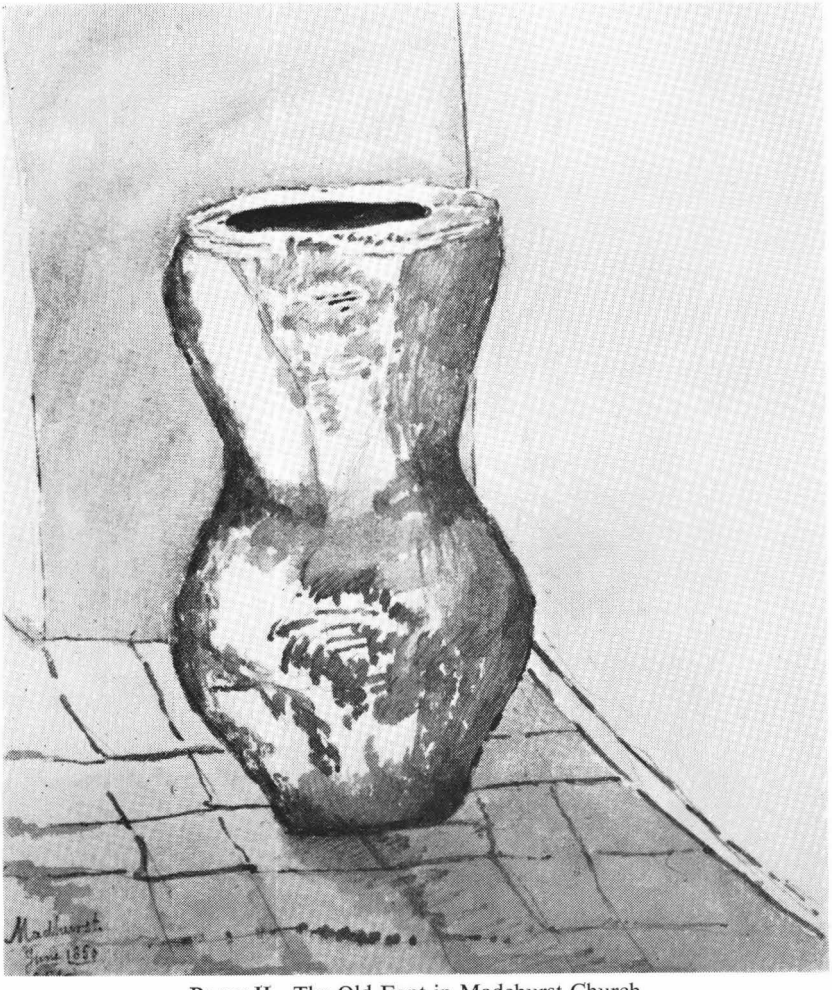


PLATE II—The Old Font in Madehurst Church
(*From a water-colour, 1850, in the West Sussex Record Office*)

apparently afterwards reduced to £384 5*s*. 11¾*d*. and £657 8*s*. 0¼*d*. respectively—a total of £1,041 14*s*. 0*d*.), but difficulties arose because Ellis's price for the church was lower than Smart's, thereby putting the heavier burden on Fletcher which led Jackson to write a long letter to Fletcher recommending Smart. The idea was unacceptable to Fletcher who agreed that Ellis of Chichester should have the contract. Nicholls was obviously pleased and thought that his patron had ' acted very kindly and wisely.' In this same letter (7 May) Nicholls advanced what he called ' two or three minor points which we had better settle now.' First, the site for a stonemason's shed, and second, a ' place where a horse can abide, for the Builder will require *one* on the spot. On thinking this over I have no objection to giving up a stall in my stable, with strict conditions as to the man who has charge of the horse not being a nuisance.' A third point was the question of a water supply and on this Nicholls hoped that Fletcher would allow his pond at New Farm[1] to be used rather than endanger the supply of the school house and cottages by using the water coming from off the church. In this letter Nicholls thanks Fletcher ' for your kind present of Rooks.'

On 31 May 1863, after nearly three months of haggling mainly by correspondence, Nicholls wrote ' The Builder will *really* begin tomorrow '; by 5 June, the church was a ruin, the earth removed for the north aisle, the chancel nearly pulled down, and the sittings and gallery were out. The letter, 5 June, goes on to record that—

' In taking up two of the stones upon which the Communion Table (or Altar as it is often wrongly called) rested—we found *immediately* under only about 1 foot deep, the Coffin of Sir G. Thomas. The little vault in which he was placed was only 2ft 7 deep 5ft 9 wide and 7ft 4 long and the same stones which formed a cover for the vault were made also the floor of the Church—a thing which ought never to be and is now directly contrary to law.' Nicholls outlined a plan for lowering the stones so that tile paving could go over them and he hoped that Sir F. A. Roe[2] would have no objection. Nicholls continued: ' We have not found anything of interest,[3] though I have carefully searched for paintings &ct. I discovered the Lords prayer & Creed written on the East Wall of the nave & two or three little scraps of painting in other parts, but nothing good . . . Mrs. Nicholls has managed to catch in a *very mild* form—Scarlet Fever—she is going on very well the rash having now nearly subsided.'

Jackson wrote to Fletcher on 26 June to say that the work of rebuilding had begun but, as the walls were in a bad state, great

[1] Newbarn Farm, about 400 yards NW. of the church.

[2] Susannah Margaret, eldest daughter of Sir William Thomas, 2nd bart., married William Roe of London in 1775; she died in 1822 having had, with other issue, Sir Frederick Adair Roe, 1st bart., who died without issue in 1866.

[3] But see p. 68 of this article for something of great interest!

care would be necessary in underpinning and shoring during the insertion of the new arches in the north wall of the nave. Jackson thought that the engagement of a clerk of works was indispensable for two to two and a half months; a Mr. Sweeting was eventually appointed at a weekly wage of £2 10*s*. 0*d*.

The correspondence stops here, but there is a printed notice saying that the foundation stone of the new chancel and aisle would be laid on Friday[1] at noon. The notice includes a subscription list showing that the vicar gave £100, C. Poynder of Henley-on-Thames gave £105, Mrs. N. and Miss N. Southborough £100 each, two people and the Incorporated Church Building Society each gave £20, two gave ten guineas each, three £10 each, one five guineas, eight £5 each and twelve others sums ranging from £3 to 7*s*. 6*d*. making a total of £576 13*s*. 6*d*. out of the estimated £715 (including architect's fees and the salary of the clerk of works) for which Henry Nicholls had made himself responsible.

But this is not quite the end of the story. Among the Diocesan records is correspondence which is interesting in the light of present-day faculty jurisdiction, but before coming to this it must be noted that on 5 December 1863 was enrolled the conveyance from John Charles Fletcher of a piece of land, 76ft. from north to south and 26ft. from east to west, bordering on the highway and formerly waste ground; this extension to the churchyard is walled on the north, west and south and forms a dignified entrance.[2]

The matter of reconsecration of the church is mentioned above. On 26 February 1864, Edward William Johnson[3] wrote to the Rev. Henry Nicholls:

'I have received the Deed of Conveyance of the additional Burial Ground and I shall now be able to prepare the necessary papers for Dr. Phillimore's[4] approval.

With regard to the Church, if the Area is increased or altered or the Monuments interfered with a Faculty would have been necessary but if this has not been done I do not quite see the necessity for a reconsecration of the Church. Perhaps you will be good enough to let me know while the other papers are in preparation how this really is.'

Nicholls replied somewhat tartly the next day, 27 February, as follows:

'The Bishop[5] has long ago decided the question that a Faculty was not necessary & that a Re Consecration was required—

[1] I have not succeeded in tracing any newspaper or other reference to this ceremony.

[2] The wall was built by J. Ellis at a cost of £42 10*s*. 0*d*.; Madehurst Vestry Minutes, 8 Oct. 1863, in Diocesan Record Office, Par. 132/12/1.

[3] Secretary to the Bishop of Chichester, Chapter Clerk, etc. and partner in Johnson & Raper, solicitors, West Street, Chichester.

[4] Johnson does less than justice to Sir Robert Joseph Phillimore (1810-1885), the eminent judge, for whose career see *Dictionary of National Biography*. Although Phillimore had been a D.C.L., Oxon., since 1838, he had been knighted in 1862; he was created a baronet in 1883.

[5] Ashhurst Turner Gilbert (1786-1870); Bishop of Chichester, 1842-1870. See *Dictionary of National Biography*.

We have enlarged the area & altered the position of certain Monuments, but as we have the permission of the Family to which they belong, we anticipate no trouble on that point. The Bishop considered these circumstances before giving his decision.

What I want now is to have the Petition prepared & anything else that may be requisite, without delay, so that all may be quite ready before Easter.'

On 9 April 1864, the Bishop of Chichester wrote to George Holmes[1] from 31 Queen Anne Street, London:

'I conclude from your letter that Sir Robert Phillimore finds all right about Madehurst, and that it must be a re-consecration—the day Tuesday 19th inst at 11. I hope to be in Chichester, D.V. the preceding ev'ning. I think the Privy Council may wait until I can sign it[2] there.

The Bishop added a postscript: 'Pray send Mr. Nicholls, the Madehurst Incumbent, 20 copies of the Form of Consecration—or rather tell him to apply to Mason[3] for them.'

The petition for consecration gives a summary of the work done at Madehurst:

That certain alterations repairs refittings and restorations have lately been made and done in and about the parish church . . . namely The Rebuilding of the Chancel on a larger Scale. The Building of a North Aisle to the Nave. The removal of the Gallery. The opening out and repairing the Nave and Tower Roof. Seating the whole Church with low open seats. And generally restoring and repairing all the outer walls and other parts of the Building which had fallen into decay.[4] That these several repairs alterations and additions have been done by and with the consent in writing and authority of the Lord Bishop and the Archdeacon of Chichester[5] and the Rural Dean That the extension of the New Chancel Eastward a space of Eight feet or more beyond the limit of the former Chancel renders Reconsecration necessary . . . That John Charles Fletcher hath conveyed a piece of ground [see p. 66] . . .

The *West Sussex Gazette*[6] announced the forthcoming ceremony in its issue of 14 April 1864; the act of re-consecration was effected on 19 April by the Bishop in the presence of the Archdeacon of Chichester and a great number of local clergy; the sermon was preached by Frederick Vincent, rector of Slinfold, the Bishop's chaplain. The *West Sussex Gazette* gave generous space in its issue of 21 April to the proceedings: the day had been fine; 80-90 people had sat down to a splendid luncheon at Dale Park; the poor were provided with beef, bread and ale; the women and children had tea at the vicarage.

[1] Presumably George Holmes of Richmond Terrace, South Street, Chichester (Harrod, op. cit.).

[2] The significance of this statement is obscure.

[3] Undoubtedly a partner in Mason and Wilmshurst, booksellers, printers, stationers, etc. in East Street, Chichester.

[4] In the draft petition is a pencil note at the side of the six clauses from "The Rebuilding" to "fallen into decay"—'This is merely conjectural as there is nothing whatever in the Registry to show what has been done to the church or by what authority anything *has* been done.'

[5] James Garbett, 1802-1879; see *Dictionary of National Biography*.

[6] I am most grateful to the proprietors for their courtesy in allowing me to consult their files of this County paper.

In his letter, 5 June 1863 (see p. 65), the Rev. Henry Nicholls said, ' We have not found anything of interest . . . '; in June 1964, his grandson, Mr. A. B. Nicholls, deposited in the West Sussex Record Office fragments of early service books[1] found in the roof of Madehurst church at the time the rebuilding was in progress. These fragments, in a very poor state, were skilfully repaired and my friend, Sir Roger Mynors, F.B.A., former Corpus Christi Professor of Latin in the University of Oxford, most kindly identified them as:—

1. Eight pages from a 12th-century breviary. (*a*) A bifolium, with music, of part of the services for the 3rd Sunday in Lent; p. 1 begins *In Manu tua, Domine* [*Ad Matutinas*] and continues overleaf (p. 2) to *dum bene tibi* [*In secundo Nocturno*]. The conjugate leaf (p. 3) continues with the service for Passion Sunday and begins [*Ad Completorium*] *ne derelinquas nos* and overleaf (p. 4) to *insurgentibus in me* [*In secundo Nocturno*]. (*b*) A bifolium (pp. 5-8) with music, of part of the service *In Dedicatione Ecclesiae.*

2. Three leaves from a 13th-century breviary. (*a*) pp. 9, 10, fragments of the services for the second Sunday in Lent; pp. 10, 11, part of the services for Passion Sunday, finishing before the 5th lesson *In secundo Nocturno;* pp. 13, 14, part of the lessons for the 9th Sunday after Trinity.[2]

A fragment of a printed and unidentified book in Welsh, and a memorandum of the Rev. Henry Nicholls concerning the discovery of these fragments is now W.S.R.O., Add. MS. 7241.

A note on Henry Nicholls

Henry Nicholls was ordained deacon in 1859, priest in 1860 and held a curacy at Shirley (now in the county borough of Southampton) from 1859 to 1861 when he became vicar of Madehurst. He retired in 1866 and does not appear to have held any other benefice. His name first appeared in the list of members of the Sussex Archaeological Society in 1863, but it was not until 1869 that his address was changed from Madehurst to Petworth; thereafter Nicholls lived in various places and in 1912 his style, reduced to H. Nicholls, M.A., occurred for the last time in the list when he had two addresses —one was at Deal in Kent and the other was Brownings, Billingshurst.[3] His death was noted in the Council's report for 1913.

[1] Now Add. MS. 7240.

[2] Anyone wishing to work on these fragments is advised to have F. Proctor and C. Wordsworth (eds.), *Breviarium ad usum insignis ecclesiae Sarum*, Fasciculas I (Cambridge 1882) at hand.

[3] *recte* Kirdford.

A note on Plate I

This reproduction[1] of a drawing in the Borrer Collection in the West Sussex Record Office shows Madehurst church as it was on 11 June 1850. The small extension on the south side of the chancel (and a similar one on the north side) was erected by Sir George Thomas, 3rd bart., late in 1802 or early in 1803. Letters proclamatory[2] dated 18 Sept. 1802 and read in Madehurst church on 3 Oct., recite that Sir George had lately built a mansion,[3] at a cost of several thousand pounds but there was no pew or seat-room in the church large enough to accommodate him and his family. He therefore sought authority to take in from each side of the chancel, from the body of the church up to, or even within, the rails of the Communion Table, a piece of ground measuring 8ft. 2in. from north to south and 10ft. 3in. from east to west to afford sufficient space for the erection, of two pews or seat-rooms. The south room is shown in the drawing.

[1] Like Plate II by courtesy of the County Archivist of West Sussex.

[2] Diocesan Record Office, Ep. I/40/38.

[3] Dale Park was actually built in 1784-1788 for John Smith, M.P.; the architect was Joseph Bonomi (1739-1808). The house was demolished in 1959. It would have been nearer the truth to say that Sir George had *acquired* the mansion at a cost of several thousand pounds.

A BRONZE AGE CEMETERY-BARROW ON ITFORD HILL, BEDDINGHAM, SUSSEX

By E. W. HOLDEN, F.S.A.

(With contributions by Richard Bradley, Ann Ellison and H. B. A. Ratcliffe-Densham)

SUMMARY. *This report describes the rescue excavation of a small barrow surrounded by 12 postholes in a penannular ditch. There was a central cremation in a large Middle Bronze Age (M.B.2) urn, also a number of cremations, some in urns, adjacent to the S. and SW. margins of the barrow, between 14 and 19 individuals being represented. The barrow was situated close to the Itford Hill Bronze Age settlement and probably was the latter's cemetery. Pottery resemblances between the two sites are apparent, especially part of a decorated globular vessel excavated at the settlement in 1951, which belongs to a cremation urn (part missing) excavated in 1971.*

INTRODUCTION

The site (Fig. 1) of the cemetery-barrow is at TQ.44670541, some 100 yards (90m.) north of the well known Bronze Age farmstead on Itford Hill, excavated 1949-53,[1] just below the 500ft. (152m.)

[1] G. P. Burstow and G. A. Holleyman, 'Late Bronze Age Settlement on Itford Hill, Sussex,' in *Proceedings of the Prehistoric Society* (abbreviated hereafter to *P.P.S.*), vol. 23 (1957), pp. 167-212. Some members of the Society may wonder why what was called *Late* Bronze Age in 1957 is now *Middle* Bronze Age. The matter is complicated and is largely answered in Mrs. Ann Ellison's report on the B.A. pottery (this report, p. 108). Professor Hawkes' *Scheme for the British Bronze Age* (1960) suggests approximate dates for divisions within the Bronze Age, the L.B.A. commencing 900/850 B.C. and the M.B.A. at *c.* 1400 B.C. Thus, any site with a date falling between 1400 and 900 B.C. must (all the while we continue to use stone and metals to define periods) be classed as Middle Bronze Age (further subdivided into M.B.A. 1, 2 and 3). According to the evidence available in 1957 Burstow and Holleyman considered the date of the Itford Hill settlement to fall somewhere within the date range 1000-750 B.C., in what was then Late Bronze Age 1. It is now known that such B.A. settlements are earlier than had been thought, recent confirmation (1971) coming from the carbonised barley from the settlement site which has a radiocarbon date of *c.* 1000 B.C. (see details on p. 89). Unfortunately radiocarbon years do not equate with calendar years at certain periods (discovered through research on the bristlecone pine tree), so that a C14 date of *c.* 1000 B.C. is likely to be nearer a *calendar* date of 1200 B.C. In any event both dates are earlier than the start of the L.B.A. at 900/850 B.C. and so the Itford Hill settlement is now firmly within the Middle Bronze Age according to current terminology.

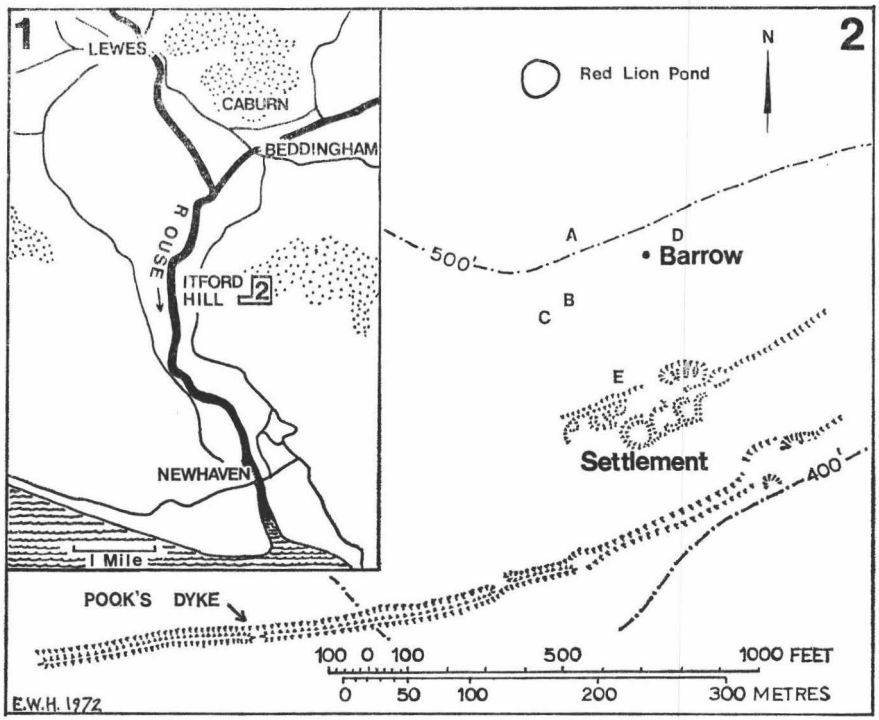


FIG. 1. SITE PLAN. Land over 400 feet stippled.

contour, some 160 yards (145m.) south of the downland ridge, which rises to a maximum of 540ft. (165m.) at Red Lion Pond (a fairly modern dewpond). The subsoil is Upper Chalk covered with a thin layer of brown topsoil in which flint nodules are abundant, often in localised areas, as seen after ploughing. Gorse clearance and ploughing of the hillside for the first time in living memory in 1971 allowed the land to be searched for signs of occupation. While doing this, Mrs. Hilda Holden noted a roughly circular group of medium to large flint nodules, where the ground was a few inches higher than that nearby and where there appeared to be faint traces of a ditch on the N. and SE. sides. There was a scatter of coarse Bronze Age sherds of pottery of a fabric similar to that found at the farmstead (in which the writer and Mrs. Holden had taken part), one or two Beaker sherds and struck flint flakes. A second visit by Mrs. Holden produced from the ploughsoil (now once harrowed) 5¼lb. (2.38kg.) of coarse and fine B.A. sherds, plus cremated bone, in one small area, *c.*6ft. (2m.) diameter, 25-30ft. (7-8m.) S. to SE. of the approximate centre of the flinty area (possible

Cremations 2 and 3 were in this circle) (Fig. 2). There appeared to be a very faint lynchet crossing 4½ft. (1.5m.) N. of the 40ft. S. peg, travelling between SW. and NE. for some distance either way, at a true bearing of 65 degrees. It was hardly discernible, but helped confirm that the barrow area had been lightly ploughed in the past.

As the land was required for cultivation within a few weeks permission was kindly given by Mr. D. Gribble, the farmer, for a ' rescue ' excavation to take place. Work started four days later, on 6 October and finishing in December, 1971, being done by volunteers, directed by the writer, on two or three days a week. Owing to the exposed position of the site and the necessity for speed, there was no time to arrange for site huts, barrows and boards, so dumping had to be done where convenient. The quadrant method, with long N.-S. and E.-W. trenches, was adopted and work filled in after recording each section. Consequently, at no time was the whole excavated area clear of spoil. The SE. and NW. quadrants were dug simultaneously, followed by the SW. and then the NE. quadrants. The exceptionally fine spell of weather for the time of year enabled the excavation to be completed, as the exposed situation of the site did not permit of work during other than fine weather.

The presence of the barrow was not suspected as the hillside between the settlement and Red Lion Pond on the crest has been covered with clumps of gorse (furze) for many years. Intensive fieldwork in 1949 by Messrs. Burstow and Holleyman assisted by the writer failed to reveal it then. The settlement, being a Scheduled Ancient Monument, has not been ploughed, neither has the linear earthwork (also Scheduled) which runs SW. of the settlement a total distance of *c.* 1900 feet (580m.) (Fig. 1). This bank, with its ditch on the uphill side, was known to A. Hadrian Allcroft in 1923 as ' Pook's Dyke,'[1] but there is no evidence of its relationship to the settlement, if any, as it has not been investigated.[2] A plan of the eastern part of this dyke has been published,[3] but the whole length was surveyed by Mr. G. A. Holleyman and the writer in 1949 and it is therefore convenient to show the full length in Fig. 1. Lynchets abutting the southern side of the bank are not depicted.

The nearest barrow appears to be 1,000 yards (900m.) NE., evidently opened in the past and unrecorded, while other barrows dot the ridgeway further east. A large collared urn and four smaller vessels were found in 1878 by workmen digging for flints on the Downs near Itford Farm (the latter is ¾ mile (1200m.) W. of the B.A. settlement). The large urn was inverted, covering cremated

[1] Recorded by Allcroft on the Society's 6in. O.S. map 67 SE.

[2] *P.P.S.*, vol. 23 (1957), p. 168.

[3] ibid., Fig. 2.

bones in a hole in the chalk, surrounded by ashes and covered above with flints. The surface was said to be level without any signs of a mound.[1] The nearest known B.A. site resembling the Itford Hill settlement is SW. of Black Patch, Alciston, about 3¼ miles (5¼km). to the east.[2]

During the course of the excavation several very slight, apparent depressions were discovered in the ploughsoil, again mostly because of Mrs. Holden's fieldwork, which are lettered A-E on the site plan (Fig. 1). There were one or two similar sites SE. of the barrow, but these were too indistinct to be surveyed and they may be where gorse had been removed coupled with rabbit warrens. Site C was subjected to an excavation (Cutting C) after work had finished on the cemetery barrow, while A and B were trial trenched; D and E were not investigated.

THE EXCAVATIONS

THE BARROW (Figs. 2 and 3). A circular area of large flints almost agreed with the irregular inside edge of a shallow barrow ditch, *c.* 18ft. (5.5m.) diameter internally, which had a gap or causeway, *c.* 9ft. (3m.) wide, on the south side. The 'ditch' was not a true circle, being an irregular series of quarries connected together, the width varying from 3ft. (1m.) to 10ft. (3m.), with an average width of 4ft. (1.25m.) and a depth averaging 9in. (230mm.). Not only in the barrow area, but over the whole of the excavations, the chalk had been much disturbed by generations of burrowing rabbits. The filling of the ditch consisted of a large number of struck flakes, cores, some worked flints, utilised flakes and flint waste, plus whole flint nodules often of large size and with some trimmed ends; the interstices of this mass being filled with brown soil (same as topsoil). There was no evidence of silting of the ditch, and little trace of the chalk rubble extracted by the barrow builders, which material is usually spread over the area within the ditch. The extant capping of the barrow was only the topsoil, intermingled with a single layer of large flints, recently disturbed by the plough, and a scatter of flint flakes. There were no signs of a buried soil.

The bottom of the ditch contained twelve postholes,[3] mostly well dug into the solid chalk and filled with flints, flakes and soil. Seven had flat or rounded bases, but five were conical[4] (PH. nos.

[1] *Sussex Archaeological Collections* (abbreviated hereafter to *S.A.C.*), vol. 29 (1879), pp. 238-9; illustrated in E. C. Curwen, *The Archaeology of Sussex*, 2nd edn. (1954), Pl. XV.

[2] Curwen, op. cit., p. 193, Fig. 55.

[3] Posthole numbers 1-12 will be preceded by the letters PH., to distinguish them from Cremations, or Cremation Holes, 1-16, which have prefixed, C. or CH.

[4] A tendency for some postholes at the settlement site to be conical in section may be noted in the *Analysis of Postholes*, *P.P.S.*, vol. 23 (1957), p. 172ff.

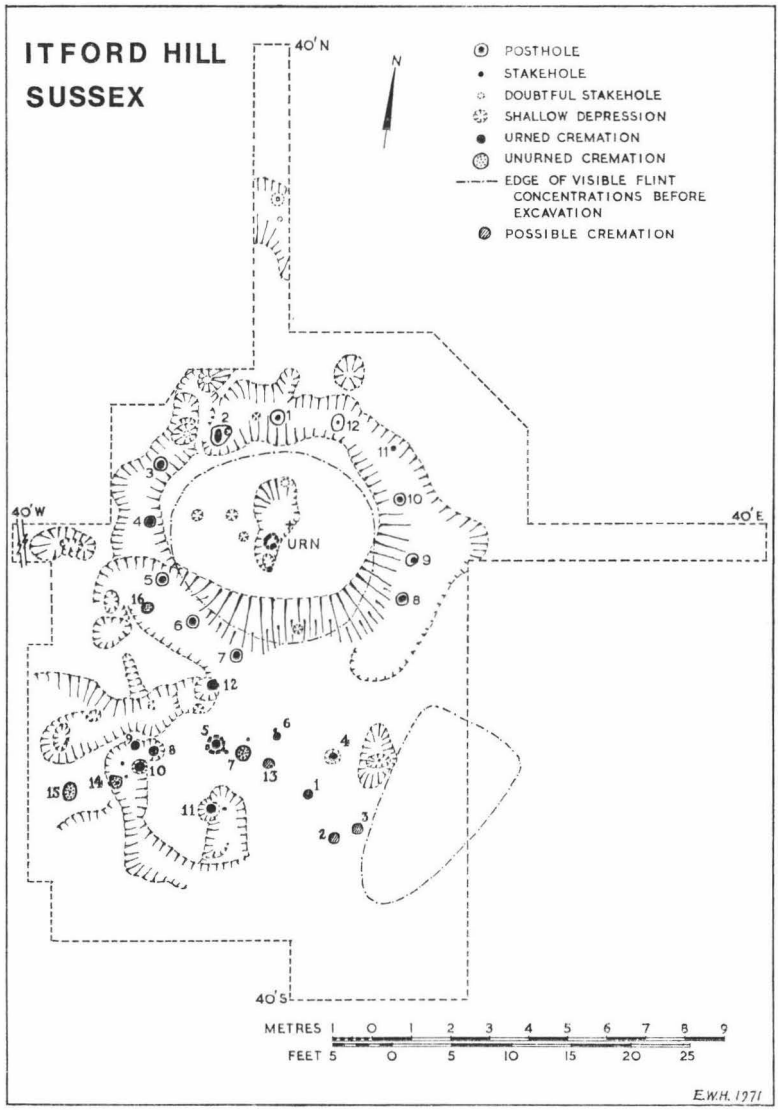


FIG. 2. CEMETERY-BARROW. Plan of excavations. The western trench extended 40ft. from the centre peg (marked +).

1, 9, 10, 11 and 12), though no. 11 might be described as a stakehole, being only 4in. (100mm.) diam. and 4in. (100mm.) deep. The other holes ranged in depth from 7in. to 17in. (180-430mm.) (see Table 1). When first exposed, PH. 12 contained packing flints around a soil-filled void *c.* 5in. (125mm.) diameter. The other holes, even PH. 11, could have taken this size of post, provided that the ends of the posts were pointed where required to fit into the conical holes. Flints and flakes were homogeneous over the postholes indicating that the posts were unlikely to have rotted in situ, but that they were removed before the flints and flakes were deposited. The lack of silting suggests that the filling of the ditch took place soon after the construction of the barrow. Nine of the postholes lie on the circumference of a circle having a diameter of 21ft. (6.4m.), PH. 3, PH. 4 and PH. 11 being just outside this circle.

TABLE 1. DETAILS OF POSTHOLES IN BARROW DITCH
(Measurements in inches)

PH. No.	Top Diameter	Bottom Diameter	Depth below Solid	Remarks
1	14	2½	13	Conical. Beaker sherd in ditch bottom adjacent hole.
2	14 x 8	10 x 3	7	Possible stakehole in same hole on E. side.
3	12	6	9	
4	9	5	6	
5	12	11	7	
6	11	6	7	Packing flints tumbled in.
7	11	6	7	Packing flints.
8	13	7 x 5	13 + 2	Packing flints. The extra 2in. conical depth on E. side as if for a pointed post, or for a composite post- and stakehole.
9	13 x 12	7	8 + 5	Packing flints. The extra 5in. conical depth on E. side (as for PH. 8)
10	12	5	12	Conical tendency.
11	4	1½	4	Conical. Possibly only a stakehole, but could be for a pointed post.
12	16 x 14	1	17	Very conical. Packing stones in situ for a *c.*5in. diam. post.

The ditch between PH. 6 and PH. 7 is only an inch or two (25-50mm.) in depth and has no apparent termination. Chalk has, however, been lost by weathering, or removed, over the causeway (see Sections Fig. 3) and over the very shallow ditch ends. The termination of the SE. ditch is only a little deeper than on the SW. side. One might have expected there to have been another posthole

near PH. 8, thus making the gap or causeway to stop level with the postholes on both sides of the gap. Too much importance should not be placed on this apparent discrepancy of layout, for the ditch is so ill-defined (as it now exists) that no end could be seen in the SW. quadrant and it was only with difficulty that the SE. one was traced. One could walk over the ' solid ' chalk at this point and be hardly aware of any dug depression. The surface of the natural chalk of the causeway was smoother than in the ditch bottom, the latter being rough and uneven in places. The solid chalk rises somewhat steeply from the causeway towards the centre of the barrow, also from the SE. and SW. sides, so that from the south, the excavated barrow appeared as a low knoll of chalk.

An irregular depression in the centre of the barrow contained an inverted urn (Fig. 8, 1) which is assumed to be the primary cremation deposit. The vessel, which was much damaged, had been set into a second depression towards the southern end of the larger scoop, and was close to the estimated centre of the barrow (the centre peg being shown by a + in Fig. 2). Some 24in. (600mm.) away to the south was a depression within the main one containing a Beaker sherd and possessing a stakehole. Apparent stakeholes E. of the urn and at the N. end of the large depression were probably caused by rabbits, whereas the southern one was much more convincing as an archaeological feature. Three shallow depressions W. and NW. of the centre, from 4in. to 7in. (100-180mm.) deep cannot be explained, except perhaps as the result of rabbit burrowing. A similar round depression, 3in. (75mm.) deep, was in the scarp of the chalk of the causeway, between PH. 7 and PH. 8. This is not a posthole (apparently) and may again be the result of rabbit activity. All four depressions, however, do resemble some of the shallow cremation holes.

Around the Barrow. The north trial trench produced a hollow (Figs. 2 and 3) some 25ft. (7.5m.) N. of the centre peg, which had an irregular bottom containing a somewhat conical hole and another small circular depression. The contents of the hole and of the lower part of the filling were sterile brown soil, covered with an accumulation of flints in which were two Beaker sherds. At the time it was thought that this might have been a solifluxion hollow (these troubled excavators at the settlement) and time did not permit the feature to be followed. It is more likely man-made, and the hole at the bottom resembles a somewhat conical posthole, though without packing flints. The sterile soil might be explained as possibly wind-blown, while the ditch or pit was open, for it was noted that a combination of rain and high winds during the excavation deposited clean soil in cleared postholes and depressions overnight.

Another pit, with two conical depressions, was found in the SE. quadrant 3ft. (1m.) E. of CH. 4 and the same distance N. of CH. 3. There were many struck flakes in the topsoil over the pit, a hammer

stone and some coarse sherds. The filling of the pit was of flints, not struck, and medium to dark brown soil plus a little fine chalk rubble. Unlike the ditch and the hollows in the SW. quadrant (to be described) this filling was void of pottery, flakes, or any other finds. This feature was again considered on site to be possibly natural (a solifluxion pipe or a tree-root hole). The maximum depth was 2ft. (600mm.). A similar pit 1½ft. (500mm.) deep without any finds in the filling of flints and soil, was encountered *c.* 20ft. (6m.) W. of the centre peg at the start of the W. trial trench.

There was a small pit below the flint spread, 4ft. (1.2m.) N. of PH. 12, again filled with naturally fractured flints and sterile soil. The filling therefore was very different from the nearby ditch filling. This hole, too, was conical, averaging 33in. (840mm.) diam. and 16in. (405mm.) deep, with rough sides. Two other holes, somewhat smaller, were near PH. 2 and PH. 3, with fillings the same as the ditch, being part of it.

The SW. quadrant contained several uneven ditch-like hollows, none of which exceeded a depth of 15in. (380mm.). For the most part they lay below a compact spread of flints and brown soil, with some flake concentrations and a general scatter of struck flint above and passing through the flint layer. The topsoil was deeper in this quadrant especially where the flints had sunk into the hollows below.

FLINT DISTRIBUTION. Fig. 3 attempts to show by diagonal hatching the distribution of flints both nodular and broken (all interspersed with brown soil) as revealed after the topsoil and two concentrations of nodules had been removed. The latter are depicted in Fig. 2, but are omitted for clarity from Fig. 3. It will be seen that the flints, following their usual habit, occupy all hollows. Where not occurring over hollows, the thickness of the flint layer was between 3in. and 6in. (75-150mm.). Struck flakes and waste formed a large proportion of all flints and were easily distinguished by their bluish patination, though some were white patinated, but these were fewer in number. Where flakes were especially prevalent on and in the ground they are shown in Fig. 3 by opposing diagonal hatching. Scattered flakes cover practically the whole of the remaining excavated area, except the extremities of the long trenches and peripheral margins of the NW., NE. and SW. quadrants. There was no physical junction, ' straight-joint ' or the like between the SW. ditch flints and those continuing south and west, the only difference appearing to be the greater number of blue patinated flakes in the ditch flints.

Midway along the eastern trench was a flint-knapping area, marked by many flakes, waste and cores; likewise at the SE. corner of the SE. quadrant was a larger than usual number of cores and flint-knapping debris, including a hammerstone of flint, suggesting that

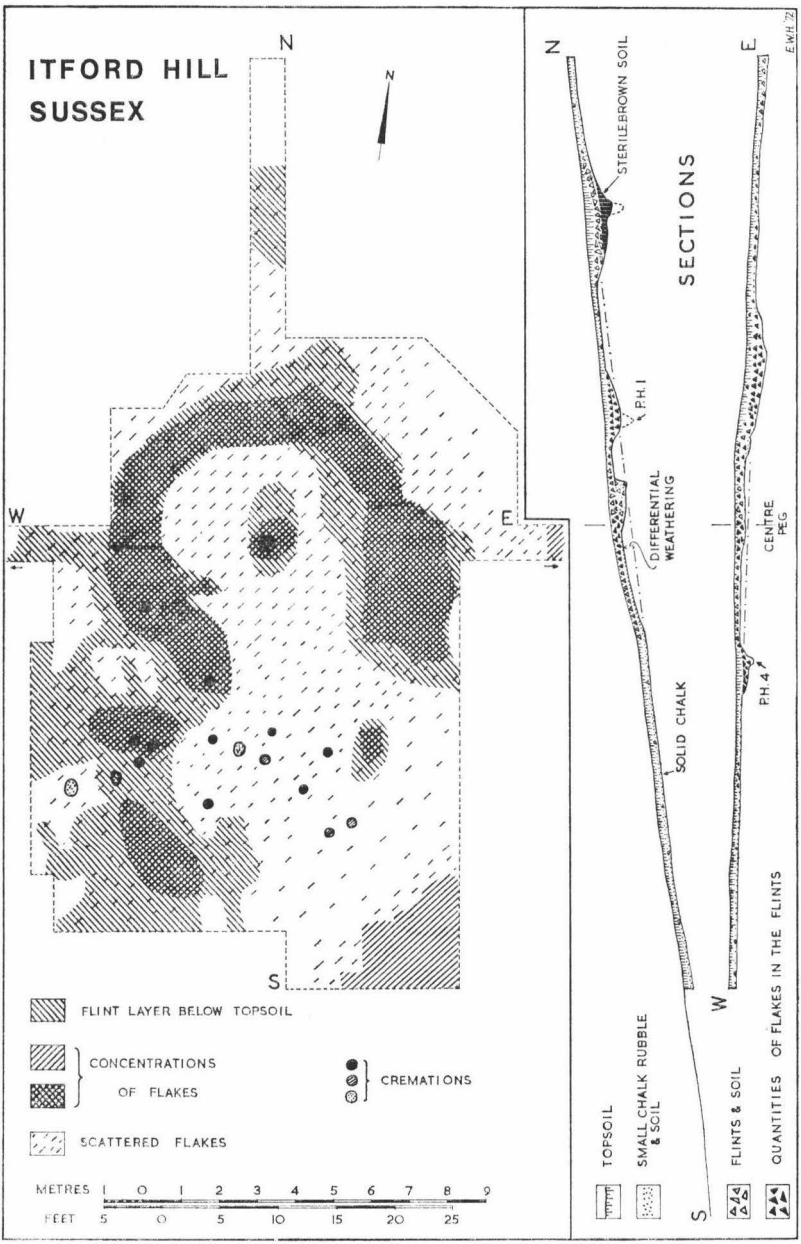


FIG. 3. CEMETERY-BARROW. Distribution plan of flints and flakes (left). Sections (right) at same scale.

this was another actual working area. The concentration of flint nodules adjoining this spot (Fig. 2) if not removed from the barrow capping, or drifted by ploughing, may be raw material for flint knappers. Here, much of the flint was patinated white.

In order to estimate the number of struck flint flakes on the site, several counts were made of measured volumes of flakes, including the surrounding soil, which gave an average of 1,002 (say 1,000) flakes per cubic foot (.028 cu. metre). Allowing for 50ft. (15m.) run of ditch, of which 2½ft. (750mm.) in width is assumed to be massed flint flakes in soil, and (from site experience) taking the thickness as an average of 3in. (75mm.), the volume is 31.25 cu. ft. (0.89 cu. metre), i.e., approximately 31,000 pieces of struck flint. To this must be added, say, one-third, for the two knapping areas and the flakes other than in the ditch, giving a total of rather more than 40,000.

THE CREMATIONS (FIGS. 2 AND 3)

PRIMARY CREMATION. The large urn (Fig. 8, 1) was inverted in the hole near the centre of the barrow, with most of the base and lower walls missing and the remainder in many fragments. The vessel contained much calcined bone infiltrated by soil, 20 flint flakes, a flint scraper, 3 burnt flints and a very small quantity of charcoal. Over and around the urn were 25 flakes, 13 utilised flakes, 2 cores and 46 burnt flints. A stakehole, presumably for marking the spot, was on the south side.

SECONDARY CREMATIONS. There were 16 other deposits or possible cremations in addition to the primary, B.A. urns (inverted) or potsherds being associated with all except C.7 14, 15 and 16. Whole or nearly whole urns (i.e. after restoration as all were broken or crushed in situ) are represented by C.8, 9 and 11; C.10 about 75% complete and C.5, 40%. With the exception of C.12 and 16, cremations were well clear of the ditch, and all but four were situated in the SW. quadrant. No cremations were found elsewhere. Four deposits, C.8, 9, 10 and 14 were below the flint spread outside the ditch in the SW. quadrant. This flint layer contained abraded Beaker sherds as well as Bronze Age sherds and it did not appear to have been disturbed by the plough; neither were there positive indications that cremations had been inserted through the layer. It must be admitted that any disturbance could be hard to detect in an amphorous layer of flints, flakes and soil, the latter being well within the ambit of earthworms. It has been assumed that these cremation deposits were made before the flints were spread. C.12 is close to where the ditch fades out and was flint covered. Here there was no cremated bone but many sherds from a big, cordoned, pot, some of the sherds being right on the solid chalk, while others were found through the flint layer above, with burnt flints. This one may have been inserted through the flint layer. C.16, in the

ditch, had a large number of calcined flints and dark soil in the depression made in the chalk, and piling up above the hole in a rough circle 24ins. (600mm.) diameter. This deposit was, therefore, probably made before the ditch was filled, though it would not be impossible for it to have been inserted afterwards and flints and flakes pushed back without leaving firm traces of disturbance. If C.16 was put in before the ditch was filled, then it could be classed as a *satellite*, rather than a secondary burial, i.e., put in at about the same time as the primary.[1]

Each deposit was placed in a hollow or hole dug into the solid chalk (CH. 8, 9, 10, 11, 12 and 14 having their holes wholly or partially in earlier ditch-like hollows), (see Table 2). In seven cases (eight if the Primary is included) the cremation holes were accompanied by a small stakehole, a point of some interest, for it demonstrates that cremations were respected, being marked in some way, utilising a small stake as an upright. Such markers would help to account for the fact that deposits did not impinge on one another, provided that renewals of stakes when rotted were made from time to time.[2]

Burnt flints, some of which were struck flakes were present singly here and there throughout the excavated area, there being larger numbers near, or accompanying cremations. Many of these flints showed only moderate changes in structure caused by only one burning when compared with the typical cracked and pock-marked ' potboiler ' as found on a domestic site. There were no traces of funeral pyres, burnt areas of chalk, masses of charcoal, etc., but the actual place of burning might not have been too far away, for the presence of struck flakes among the burnt flints may point to local pyres, there being large numbers of flakes in the vicinity of the barrow.

Deposits C.2, 3 and 13 have been shown in Fig. 2 as ' Possible ' cremations, because there were no cremated bones present. However, this is possibly unduly pessimistic, for C.2 and C.3 are closely associated with the 5¼lbs. of pottery and bone surface finds, while C.13 has only a few scrappy sherds of pottery, but the hole in the chalk has an integral stakehole. Not all cremations have pots and not all the latter are whole or nearly whole. As incomplete pots have been utilised for some of the deposits, so others have what may be only token numbers of potsherds placed underground. Others, like C.14, 15 and 16 are unurned and without B.A. pot-

[1] P. Ashbee, *The Bronze Age Round Barrow in Britain* (1960), p. 41.

[2] Published plans of B.A. urnfields show that damage to one cremation deposit by another is extremely rare. At Cock Hill, Patching, two cremations out of only three were associated with posts; H.B.A. and M. M. Ratcliffe-Densham, ' An Anomalous Earthwork of the Late Bronze Age, on Cock Hill, Sussex,' in *S.A.C.*, vol. 99 (1961), pp. 78-101, see pp. 87-8.

TABLE 2. DETAILS OF CREMATION AND STAKE HOLES. ASSOCIATIONS OF POTTERY AND BURNT FLINTS (Measurements in inches)

CH. No.	CREM. HOLES			STAKE HOLES			No. of Sherds			No. of Burnt Flints	REMARKS
	Top Diam.	Btm. Diam.	Deep	T.D.	B.D.	Deep	B.A.	Beaker In	Beaker Out		
P	18 x 15	12 x 9	9				Urn		1	49	
1	8	3	6				25			18	Plus 5¼lbs. B.A. sherds from surface, also some burnt flints (uncounted)
2	10	H	2				53		4		
3	10	H	4				2				
4	12	H	2				2				
5	14 x 12	H	4	4	2	3	Urn		1	12	Nodules around CH.
6	8	H	5	4	H	2	50			75	2 tiny beach pebbles also.
7	12	2	13	3	H	3	—	3		200	Conical CH.
8	18	H	6				Urn	5		170	20 B flints around urn, 150 tiny do. inside.
9	13	H	9				Urn			12	
10	15	H	8	3	H	3	Urn	1		Many	Urn surrounded with packed burnt flints.
11	24 x 18	15 x 12	10	3	H	3	Urn			Many	
12	24	H	2				Urn	2		12	
13	9	H	1½	3	H	2½	12			5	SH. is inside the CH.
14	11	3	16	2½	H	11	—	1		Many	Conical hole full of burnt flints and 2 pces. fired clay (? loom-weight). SH inside CH. Group of flakes on top of CH.
15	15 x 12	1½	18				—			30	Conical CH
16	13 x 9	H	9				—			142	

P—Primary H—Rounded Hollow SH—Stakehole
IN—Inside the urn or CH. OUT—Outside the urn or CH.

TABLE 3. CREMATIONS

Crem. No.	Urned with bone	Urned without bone	Unurned with bone	Unurned without bone	Possible—no bone	Burnt flints	Charcoal/Dark soil	Stakehole	Unable to sex	Possible sex	Child	Not an infant	Young Adult	Middle-aged	Elderly
P	X					X	X	X		M					X
1	X					X			X		X				
2					X										
3					X										
4	X						X		X			X			
5	X					X		X		F			X		
6	X					X	X	X	X			X			
7			X			X	X	X	X		X				
8	X					X	X		X	F	X		X		
9	X					X	X			M			X		
10	X					X		X	X		X				
11	X					X		X		F				X	
12		X				X									
13					X	X		X							
14			X			X	X	X	X						
15				X		X	X								
16			X			X	X		X						

sherds, and C.15 has no bone. Nevertheless, burnt flints and dark earth or charcoal are associated with the unurned burials and these are taken as definite cremation deposits.

A detailed description and discussion of the cremated bones by Dr. H. B. A. Ratcliffe-Densham will be found on p. 113.

DEPRESSIONS A, B and C (Fig. 1). These looked like levelled hut platforms cut into the 7-degree natural slope of the hillside. Each had a roughly oval, almost flat, area (which made them look like depressions in the sloping field, but none was actually concave), some 12-20ft. (4-6m.) E.-W. and 12-15ft. (4-5m.) N.-S., there being a faint suggestion of a scarp on the N. side, never more than 6in. (150mm.) high (see plan of Ctg. C., Fig. 4, lower). Surface finds suggested that some investigation should take place, all three sites having burnt flints and flint flakes (many of which were blue patinated) on the surface. In addition, there were at:— B. One fragment of vitrified sandstone, 1 white spatulate flake tool, 1 chopper-like piece of waste flint. C. One white sidescraper, 2 huge, undamaged nodules from just S. of the site, possibly raw material for knapping.

CUTTING C. (Fig. 4, lower). A thin stoneless topsoil covered a flint layer which spread over the greater part of the area, leaving bare patches in places. Where not found later to be over hollows, the flints were only one or two deep, principally medium and small in size, though with a few larger flints among them. The same applied where flints were in the hollows, all being mixed with brown soil (as the topsoil); everywhere there was a sprinkling of burnt flints and blue patinated flint flakes, very reminiscent of the hollows around the barrow. A local concentration of struck flakes occurred in the centre on the E. side. Flakes and burnt flints were visible on top of the flint layer in addition to being mixed with the flints below. Flakes tended to be scarce at the N. end of the cutting. The slight scarp noticeable before excavation and which led to the investigation, was found to be only the change in level plus irregularities in the solid chalk where the central bare patch met the northern flints.

Irregularly shaped hollows were encountered in the NE. part, up to 15ins. (400mm.) below the solid, filled with flints, flakes and here and there, a burnt flint. What looked like the end of a curving ditch was met in the southern half of the cutting. Between 4-5ft. (1.2-1.5m.) wide and 2ft. (600mm.) deep, it had a rounded bottom, in which was a 6in. (150mm.) layer of very compact small chalk rubble and silt. This contained a small piece of ox tibia, near the SW. corner. The bottom sloped upwards at the eastern termination, the compact rubble and silt fading out some feet before the end. There were patches of fine chalk rubble and brown soil above the base layer and then occurred a concave layer of flints and soil. Once again, this layer contained in it blue flakes and burnt flints.

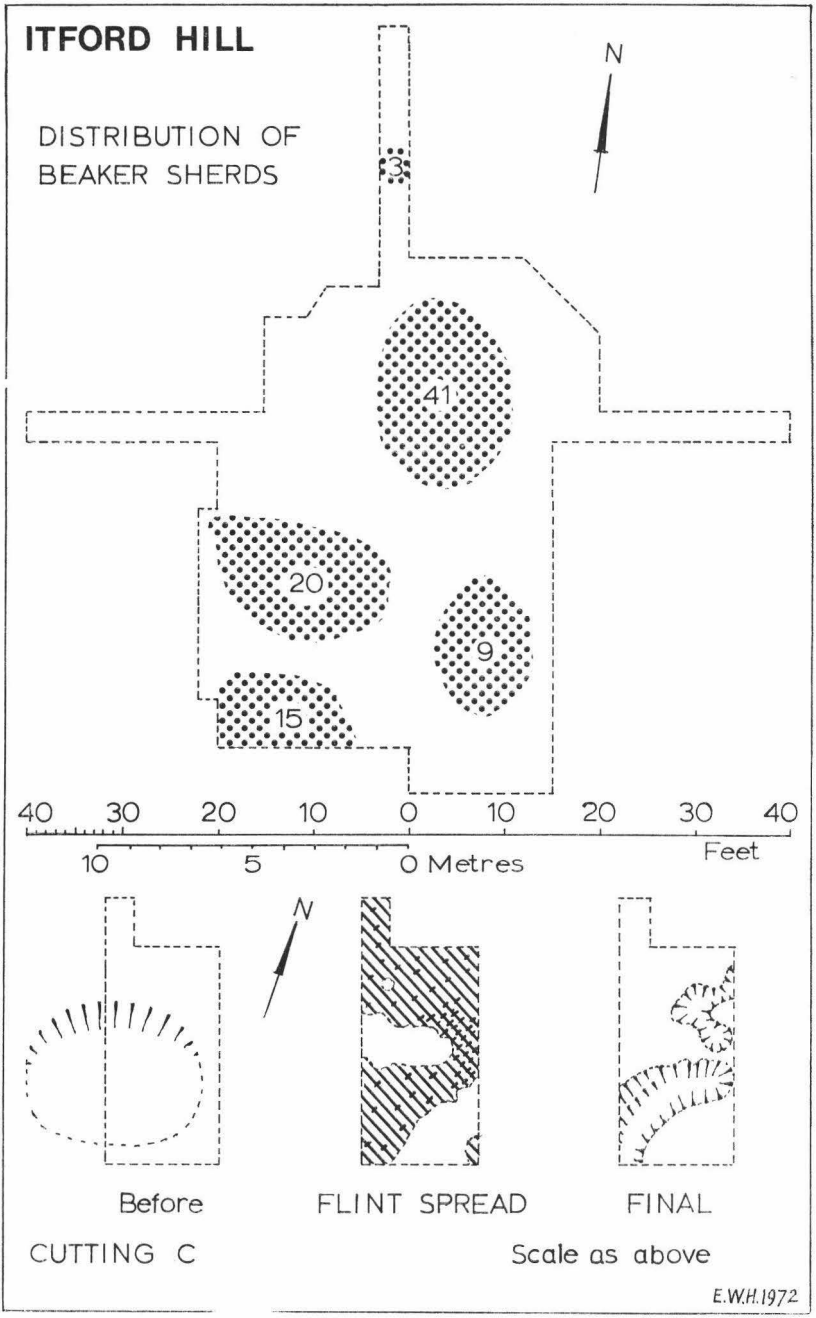


FIG. 4. CEMETERY-BARROW. Upper. Distribution of Beaker sherds. Lower. Plan of excavation at Cutting C.

No pottery came from the N. section, but some sherds of M.B.A. pottery, of Fabric B. (see Pottery report, p. 106), a rim, part of the body and one lug from one pot closely resembling Cremation 5 urn (Fig. 9, 10), were below the flint layer, on the solid chalk, in the centre of the hollow, 2ft. (600mm.) from the end. One foot (300mm.) W. of the sherds, 8ins. (200mm.) down in the flint layer and almost on the solid, was a collection of 14 rounded beach pebbles (pigeon to hen egg size), a burnt flint and a large piece of flint waste, one edge being in the form of a chopper. One coarse Fabric B sherd and a tiny beach pebble came from the group of flints in the SE. corner.

The number of struck flakes was not taken, except for a random sample of 200,[1] but judging by the size of the heap and the sample, there would be between 1,000 and 1,200 flakes present. Burnt flints would total about 100.

As the curved ditch might have been part of a penannular ditch like that at the barrow, a trial trench was made from the SE. corner of Ctg. C. going in a SE. direction sufficiently far to cross any ditch that belonged to a circle of which the exposed portion of Ctg. C. was part. No ditch was encountered, only two small patches of flints and a cluster of white patinated flakes and waste, 2 cores and a few burnt flints, some 8-12ft. (2.5-4m.) SE. along the trench.

CUTTINGS A and B. There was no time for large excavations, only one trial trench across the centre of each ' depression ' or ' platform ' in a N.-S. direction. Neither trench produced anything other than networks of rabbit tunnels and no flint layers or other features were encountered. These two sites were written off as rabbit warrens. In 1971 rabbits were making and using burrows not far from the excavations and it was noticeable that where several holes clustered together, the rabbits tended to tunnel in a northerly direction, rather than to E. or W., i.e. into the slope of the hillside—the most natural way. The consequence was that the ejected chalk and soil was thrown downhill where it would weather and spread. Later, tunnels could collapse and a roughly level ' platform ' would come into being.

INTERPRETATION OF DEPRESSION C. The curved ' ditch ' and the strangely shaped hollows in Cutting C. are unlikely to be of natural origin because if they are the product if solifluxion in periglacial times one would expect to see the typical ' ginger '-coloured, sterile, clayey soil in the bottoms (well known to excavators on chalk and which was prevalent in places at the Itford Hill settlement), which was absent. Potsherds and pebbles were at the base of the flint layer, therefore the hollow was open and only partially silted up with small chalk rubble from the primary weathering before the flints,

[1] Too late to be added to Richard Bradley's statistical report on the flints.

burnt flints and flakes were deposited. All these materials and the hollow itself can be matched at the cemetery-barrow site, which similarities reinforce the theory that the ditch-like hollows around the barrow are the work of the people who lived at the settlement.

Depression C probably was another place on the hillside not far from the settlement where raw material for flint knapping was gathered and possibly extracted from dug hollows and pits before being worked into finished implements close at hand. The flakes are testimony of such activity.

GENERAL INTERPRETATION AND DISCUSSION

For the first time in Sussex a barrow possessing a post-circle[1] set in a penannular ditch has been excavated. The barrow had a low mound incorporating flint nodules, but which would have been somewhat higher originally, part being spread downhill during the more recent past by ploughing and more depth having been lost through chemical weathering of the chalk rubble capping. The barrow ditch and other hollows in the SW. quadrant appear to be quarries for the chalk and flint nodules, although the main ditch also performed the function of surrounding the central cremation. Masses of flint flakes, waste, cores and a few artifacts were in the filling of the ditch and over some of the cremations in the SW. quadrant. Tiny spalls of flint and trimmed nodules in the ditch show that some knapping took place there, while utilised flakes suggest that some of the flint flakes were brought in from knapping sites outside the ditch, of which two were found. Ritual knapping and the deposition of large quantities of flint waste, especially in the barrow ditch, seem to have been established beyond doubt. Ritual knapping has been noted elsewhere, especially at a barrow at Amesbury[2]. Indeed, the barrow may have been situated where it is because of the quantity of flint available at what could well have been an already established flint-working site. The waste flint in the SE. corner working area, being in a more advanced state of patination (more white than blue) supports this view. Other reasons for siting the barrow midway between the settlement and the highest part of the Downs are unlikely to be apparent to 20th century people. One factor sometimes applicable to barrow siting is ' false-cresting,' but when viewed from the top of the bank on the N. side of Enclosure IV, the barrow is not false-crested.

[1] In 1933, following work by van Giffen in Holland, L. V. Grinsell carried out a small excavation at a bell-barrow on Bow Hill, Sussex, to see if there were postholes in the berm. No postholes were found. *S.A.C.*, vol. 82, (1941), pp. 115-17.

[2] P. M. Christie, ' A Barrow-Cemetery of the Second Millenium B.C. in Wiltshire, England,' in *P.P.S.*, vol. 33 (1967), pp. 336-66, see pp. 357-8. Cf. P. Ashbee, op. cit., p. 55.

Barrows with stake circles are not common in Britain,[1] and those that are found have, as a rule, holes for flimsy stakes rather than fairly substantial posts. Nearly all are associated with phases of the Bronze Age earlier than that of Itford Hill and the same applies to the presence of worked flints in quantity at barrows. These factors, when coupled with flintwork techniques, resembling the Neolithic, suggest the survival of earlier practices through folk-memory. Barrow 2 at Crichel Down, Dorset,[2] while not strictly comparable with Itford Hill, has a penannular ditch and then inside, in one quadrant, another penannular trench in which are postholes, the same number as at Itford Hill, 3ft. (1m.) apart (Ashbee's Category B.1.)[3] The diameter of the inner structure is about half that of Itford Hill.

The function of stake or post circles is not known, but they have been likened to houses or mortuary huts. Most circles seem to have been of a temporary nature, the stakes being withdrawn at an early stage,[4] and this agrees with the evidence at Itford Hill. That the postholes at Itford Hill represent the traces of an actual hut has been considered, but rejected primarily because of the slope of the ground which would make occupation difficult. A study of coeval settlements will show that hut sites are invariably made flat by digging into the hillside and forming a level platform whenever required. The diameter of the barrow postholes agrees reasonably well with some of the huts of the settlement, and on paper, the plan looks well as a hut, but it does not agree with alternative interpretations of hut plans put forward recently.[5] Furthermore, from a practical point of view the slope of the ground would make the space within the posts a most undesirable residence. A symbolic hut is a possibility.

The tendency towards some postholes being conical at the barrow, the cemetery and the settlement, suggests a common practice and assists in linking all together as products of the same people. Two cremation holes and two postholes (CH. 14 and PH. 1, CH. 15 and PH. 12) when paired have almost identical dimensions and might conceivably have been made by the same person.

[1] P. Ashbee, 1960, op. cit., pp. 60-5 and more recently published papers, e.g., *P.P.S.*, vols. 26 (1960) (Arreton Down, Isle of Wight), 33 (1967) (Amesbury).

[2] S. and C. M. Piggott, 'Excavation of Barrows on Crichel and Launceston Downs, Dorset,' in *Archaeologia*, vol. 90 (1944), pp. 47-80.

[3] P. Ashbee, 1960, op. cit., p. 65, Fig. 22.

[4] ibid, p. 65.

[5] *P.P.S.*, vol. 35 (1969), pp. 345-51; *Current Archaeology*, no. 21 (July, 1970), pp. 267-70.

The presence of Beaker sherds, coupled with the fact that most known stake or post circles in barrows are early and, not as a rule, found in the latter part of the Middle Bronze Age, might lead to the assumption that we are dealing with a Beaker barrow with later burials. The absence of any Beaker interment, coupled with the central burial being accompanied by a definitely later urn, enables any thought of a Beaker barrow to be dismissed.

South and SW. of the barrow was the cemetery area containing secondary urned and unurned cremations representing a minimum number of 14 persons, 2 of whom were middle-aged or elderly, 3 young adults, 3 individuals—' not infants,' 4 children, and two bone deposits yielded no information. Two other deposits had no bones, but are considered to represent cremations, which would bring the total to 16, and the 3 ' possibles ' (almost certainly cremations) give a maximum number of 19 individuals. Not a large number and only about half the size of the urnfield at Steyning Round Hill.[1] If this is the only cemetery-barrow or urnfield connected with the Itford Hill settlement (and there is no guarantee that it is, or that it does not contain burials from other M.B.A. groups), the number of deaths does not seem to be an unreasonable one for the life of the settlement suggested by Burstow and Holleyman of about 25 years.

It is obvious from at least two cremations, C.8 and C.10, which were sealed by a flint layer, that they had been buried with parts of the pots missing. This was confirmed when it was found that a section of rim and decorated shoulder of a pot from the settlement, excavated over 20 years ago, belonged to the same vessel as C.10 (see p. 110). Others such as C.5, or the primary urn had so much of the walls and base missing, that even if broken by the plough, not being protected by a thick flint layer, a sufficiently large area of ground was uncovered by excavation so that some missing sherds ought to have been found. Repaired pots (C.5 and C.8) were favoured also. It seems not unreasonable to conclude that, despite the need felt by M.B.A. people for ritual activity involving barrow building, cremation and burial of token amounts of burnt bones[2] from the deceased (or occasionally, no bone at all), sometimes in pots, they were content to utilise on occasion broken or mended pots that had already exhausted their useful life. Some burials received only a few token sherds and these not necessarily from pots in current use, e.g., C.7 and C.14 (unurned with bone in conical holes), had only Beaker sherds.

[1] G. P. Burstow, ' A Late Bronze Age Urnfield on Steyning Round Hill, Sussex,' in *P.P.S.*, vol. 24 (1958), pp. 158-64.

[2] It was noted at Pokesdown, Hants., that only 56% of urns had cremated bones with them and in no instances were enough bones found to represent the complete human skeleton. R. C. C. Clay, in ' A Late Bronze Age Urnfield at Pokesdown, Hants.,' in *Antiq. Journ.*, vol. 7 (1927), pp. 465-84, see pp. 468-9.

Unlike the great magnates buried in earlier rich Wessex barrows, the Itford Hill burials suggest that they represent the remains of humbler folk to whom death was no stranger. Not for them the trappings of rank or fortune, but the cast-off pots as used in daily life.[1] Yet overall there is a feeling of orderliness and decency. Respect is shown by the trouble taken to cremate (no easy task) and bury, some at least, of the remains, or burnt soil, in the customary resting-place. We can only speculate as to the deaths by natural casuses or human tragedy of the double burial in Cremation 8, which may well be those of mother and child.

DATING. It is fortunate that well before the discovery of the barrow Professor Stuart Piggott had sent a sample of the carbonised barley from the Itford Hill settlement[2] to Groningen for a radiocarbon test. This has been given as 2950 ± 35 years B.P. (GrU-6167), which equals *c.* 1000 B.C., but this is uncorrected for the bristlecone pine curve and a *calendar* date is likely to be around 1200 B.C.,[3] which appears to be a very satisfactory one archaeologically. As the cemetery-barrow is considered to be coeval with the settlement, the same date would apply to both.

The total weight of charcoal found with the cremations (see p. 113) is little more than 5 grams and is, at the present time, insufficient for radiocarbon dating purposes.

DIFFERENTIAL WEATHERING. In 1957 Professor R. J. C. Atkinson reminded archaeologists that the so-called ' solid ' chalk on downland sites (also other subsoils) is particularly vulnerable to chemical weathering by percolating surface water, which is, in effect, a weak acid.[4] The rate of weathering is variable being slowed down underneath banks and mounds because of the protection afforded by the thicker soil above. A short list of sites was published of sections showing significant differences in level between the subsoil beneath a bank or mound, where it has been protected from weathering, and that outside the earthwork, where it has not so been protected.[5] Included in this list is one (chalk) Sussex example, one of the B.A. enclosures on Plumpton Plain, where the chalk below

[1] Our member, Miss M. Ash, has pointed out that the finds made at the cemetery-barrow have their echo in *Hamlet*, Act. V, Scene I, in the speech of the First Priest:—

' She should in ground unsanctified have lodged till the last trumpet: for charitable prayers *shards*, *flints* and *pebbles* should be thrown on her; yet here . . . '

[2] *P.P.S.*, vol. 23 (1957), pp. 206-9.

[3] For a simplified explanation of the effect of the bristlecone pine C14 dating see *Current Archaeology* no. 18 (Jan., 1970).

[4] R. J. C. Atkinson, ' Worms and Weathering,' in *Antiquity*, no. 124 (Dec., 1957), pp. 219-33, see pp. 228-33.

[5] ibid., pp. 232-3.

a bank is *c.* 10in. (250mm.) above the general level.[1] Published sections of a barrow at Stanmer, near Brighton, show the solid chalk to be 4-5in. (10-13cm.) higher below the mound in a N.-S. direction (3-deg. slope), but there is no change in level from W. to E. (5-deg. slope).[2] The covering mound of large flints and soil, which had been ploughed in the past, in 1950 was only 12in. (300mm.) thick, very little more than at Itford Hill.

Fig. 3 (Sections) shows the solid chalk of the Itford Hill barrow to be *c.* 10in. (250mm.) higher than the surrounding chalk in a N.-S. direction (7-deg. slope) and *c.* 6in. (150mm.) from W. to E. (2-deg. slope). The N.-S. section shows a 6in. (150mm.) change of level for a short distance outside the N. ditch.

It has already been mentioned that there was little, if any, small chalk rubble within the penannular ditch, but the raised surface of the natural chalk within the ditch (Fig. 3) means that there must formerly have been a mound which afforded sufficient protection to permit the natural chalk to weather at a slower rate than that outside the ditch, which was not so protected. The material forming the mound, apart from the flint nodules, if following normal barrow construction, would be the chalk rubble obtained from the ditch and possibly from the nearby hollows and pits. Such chalk rubble will have been dissolved at a faster rate than the surrounding natural chalk, simply because it has been broken up and therefore presents a larger surface area per unit volume than does the natural chalk, even though the surface of the natural has itself been broken up by frost and the action of roots. From this it follows that the spoil from the hollow in the north trench was deposited to the south and accounts for the differential weathering outside the ditch to the N. side.[3]

It is clear that chemical weathering could account for the shallowness of some of the cremation holes, e.g., C.5, where the hole is only 4in. (100mm.) deep. The urn, if inserted unbroken (which is doubtful), would have projected *c.* 7in. (180mm.) above the hole in the chalk into the topsoil, if there were no such factor as chemical weathering to affect the chalk level. The extremely shallow termination of the SE. ditch and the absence of an end to the SW. ditch can also be explained as caused by the natural process of chemical weathering over more than 3,000 years.

[1] *P.P.S.*, vol. 1 (1935), pp. 23-5, Fig. 9.

[2] *S.A.C.*, vol. 98 (1960), pp. 133-6.

[3] The writer is grateful to Professor R. J. C. Atkinson for advice on chemical weathering.

THE FINDS

LATER MATERIAL. A small number of Romano-British potsherds and some fragments of a sandstone rotary quern were found in the soil and flints above the NW. quadrant of the barrow. Pottery of this period is also recorded in several areas of the settlement.[1]

PEBBLES. Twelve water-rolled beach pebbles from marble to pigeon's egg size were found in and around the barrow, plus a group of 14, rather larger in size, from Cutting C. Such pebbles would be readily available from the estuary or seashore not far away. About 50 are recorded at the settlement.[2]

PEBBLE ? RUBBER. Fig. 5, 9. One quartzite pebble, originally oval, but broken and all waterworn, was found in the ditch filling E. of PH. 9 and PH. 10. There were no distinctive polishing marks on it.

MARCASITE. Several nodules of marcasite or iron pyrites were recovered, but as such material is commonly found in the chalk they are not likely to possess any archaeological significance. Similar nodules were found at the settlement.

WHETSTONES. Fig. 5, 8. The upper part of a small whetstone in which there is an hourglass perforation, a shallow V-shaped groove and scratches on one face, while other faces and edges show signs of wear. Such whetstones are commonly found in Bronze Age barrows, though usually earlier within the period.[3] It was found at the base of the topsoil *c.* 2ft. (600mm.) SE. of the pebble (Fig. 5, 9). Dr. Ian Cornwall of the Institute of Archaeology, London, kindly tested the whetstone chemically to see if any traces of metal remained from the sharpening of metal tools. He reported that brown spots present over the whole of the stone and not only the abraded parts are iron oxide, so probably are not any residue of a metal tool sharpened by the stone; the iron could easily have been deposited from the soil since burial. Tests for copper and tin were negative. A thin-section prepared by Mrs. M. Barton and the specimen were submitted to the Institute of Geological Sciences, London, where it was kindly examined by Mr. R. W. Sanderson, who reported as follows:

Greywacke siltstone. A brown fine grained rock composed of angular grains of quartz (0.035mm. in diameter) and a little feldspar with abundant biotite and muscovite flakes averaging 0.06mm. in length. The clastic grains are set in a plentiful cement of iron-stained clay mica, with some sericite. This specimen is of a Palaeozoic type and may be derived from the SW. peninsula or Brittany.

[1] P.P.S., vol. 23 (1957), p. 200.

[2] ibid., p. 204.

[3] E.g., Guide Catalogue of the Neolithic and Bronze Age Collections in Devizes Museum (1964), nos. 267, 345. The Hove Barrow, illustrated in E. C. Curwen, 1954, op. cit., Pl. XIII. Another more recent find was at Chalton, *Antiq. Journ.*, vol. 50 (1970), p. 9, Fig. 5, 2.

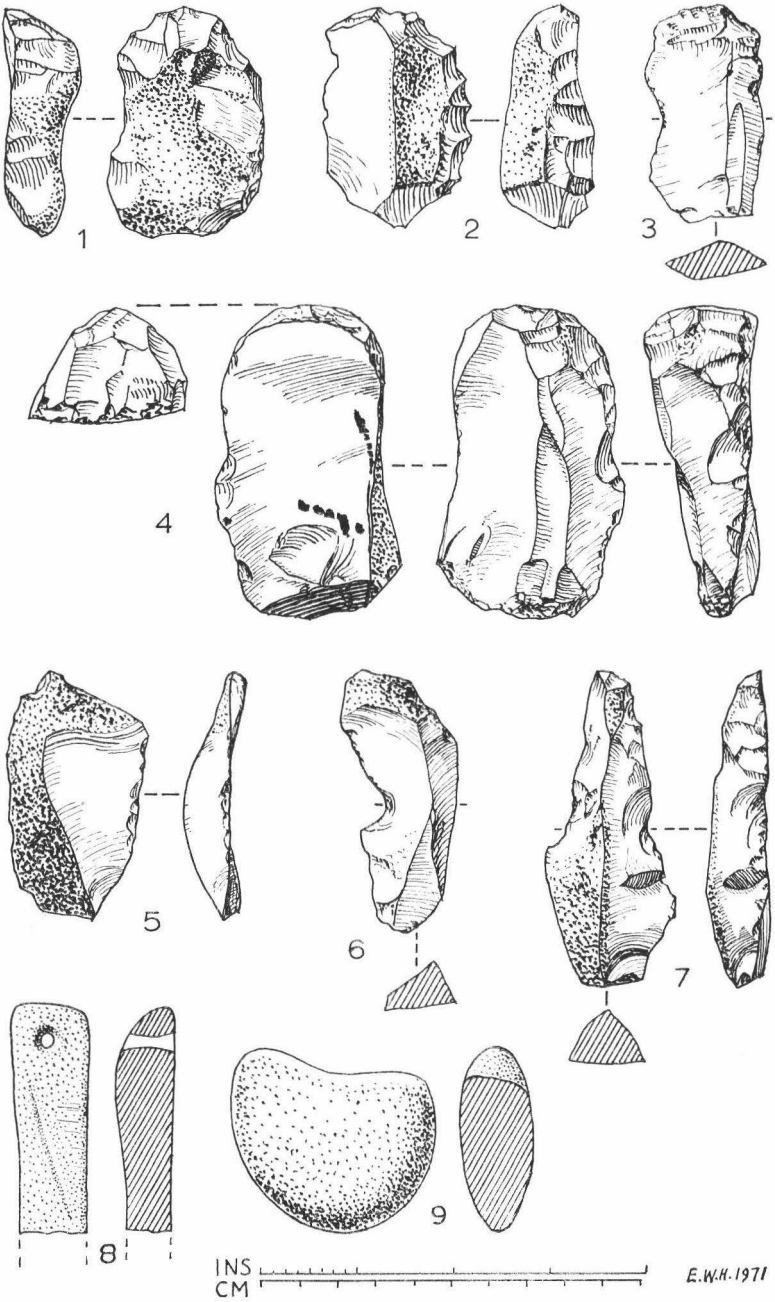


FIG. 5. ITFORD HILL CEMETERY-BARROW. 1-7, Flint artifacts (silica lustre on 4 shown in solid black). 8, Whetstone. 9, Quartzite pebble.

Not illustrated. A second broken whetstone was in the topsoil above the knapping area in the S. part of the SE. quadrant, its present length being 3½in. (88mm.), av. width, 1½in. (37mm.) and 1in. (25mm.) thick; all faces are much worn. It resembles the usual type of bar-whetstone used for many centuries until the present day for sharpening scythes, sickles and hooks. Dr. I. Cornwall found only ferruginous spots on the stone (as above) and he considers it too coarse for use on bronze tools. It is probably of medieval or more recent date. Sectioning and examination were carried out as for the first whetstone and Mr. Sanderson's report follows:

Brown medium grained feldspathic sandstone. This rock is composed mainly of angular to subangular grains of quartz and feldspar averaging 0.33mm. in diameter. Grains of quartzite, chert, flakes of muscovite and zircon are uncommon constituents. There is a sparse cement of kaolin and clay mica concentrated locally and some secondary overgrowths on the quartz grains. Rock of this type is common in the Upper Carboniferous (Millstone Grit) strata of the Pennines, e.g. Yorkshire, Derbyshire. However, erratic frangments are also abundant in the Glacial Drift deposits of Eastern England.

Mr. Sanderson also mentioned that there is the possibility in both the above cases that the material was transported by glaciers during the Ice Ages and redeposited in a quite different area before their utilisation by man.

THE FLINT INDUSTRY

By RICHARD BRADLEY

Fig. 5, 1-7 illustrates a selection of flints found at the cemetery-barrow.

An unusually large quantity of worked flint was represented on the site and, even though the circumstances under which the excavation was carried out prevented its systematic collection, representative samples are available for analysis. The details of these are as follows:—

Raw Material. All the flints examined made use of rough, heavily weathered nodules indistinguishable from those making up the barrow. Three sources can be suggested. Some of the material may have been gathered from areas originally covered by Clay-with-Flints, while other nodules might be collected where seams within the natural chalk outcropped on the sloping hillside. A third contributory source might be the barrow ditch and nearby hollows which certainly contained material of this type. It is possible that much of this material was originally exposed in cultivation and that its incorporation in a burial mound was partly determined by the process of land clearance.[1] Frost damage to nodules exposed in this way might be one explanation for the rarity of wholly cortical flakes in this group.

[1] This point has been mainly discussed for the Highland Zone. See for example, A. Graham, 'Cairnfields in Scotland,' *Proc. Soc. of Antiq. of Scotland*, vol. 90 (1956-7), p. 21-3.

Cores. Despite the nature of the excavation, it is considered that most of the cores upon the site were recovered (54 found). A random sample of 50 of these has been examined on the lines set out by Clark.[1]

Type A.	One platform:		
(i)	Flakes removed all round	7	14%
(ii)	Flakes removed part way round	18	36%
Type B.	Two platforms:—		
(i)	Parallel	6	12%
(ii)	At oblique angle	6	12%
(iii)	At right-angles	2	4%
Type C.	Three or more platforms:—	7	14%
Type E.	Keeled, but with one or more platforms:— ..	4	8%
		50	

From this it appears that the majority of the nodules were systematically exploited over limited areas. Half the cores had only one platform, while only 14% had more than two. The rarity of flakes with markedly obtuse angles between the bulb and platform argues against the use of alternate flaking techniques. The cores themselves are irregular in outline with platforms which give no evidence of preparation. Some flakes were struck directly from the cortex while the cores are severely battered throughout and show signs of many mis-hits. The flake scars are deep and sometimes stepped, though the poor quality of the flint may be partly responsible. None of the cores had been retouched but seven examples of average weight 10ozs. (283grams) had been used as hammerstones. The average weight within the sample as a whole was 11ozs. (312 grams), while maximum dimensions ranged from 4 to 10 cms. It is possible that larger nodules in the cairn showing single flake scars were also meant originally as cores.

The total number of cores is estimated as less than 100 and this raises problems in view of the vast number of flakes encountered in the excavation. In a closely associated group of over 150 flakes only two cores appeared, while the imbalance generally may be much greater. It is possible therefore that the cores described here are those which were found unsuitable for further use and that the majority were worked right down. Another suggestion, discussed below, is that only the earlier stages of knapping were carried on at this point and that the partly worked cores were then taken elsewhere.

[1] J. G. D. Clark, 'Excavations at the Neolithic site at Hurst Fen, Mildenhall, Suffolk, 1954, 1957 and 1958,' in *P.P.S.*, vol. 26 (1960), pp. 202-45, see p. 216.

Flakes. The estimated number of flakes on the site may have been in excess of 40,000. Because of the limited time available for excavation, it was quite impossible to recover all of these systematically, but a closely associated group of just over 150 taken from one square foot can be analysed in detail together with a random sample of the residue. In the first group 12% of the flakes showed signs of use and accordingly a sample of comparable material will be analysed in this paper.

In the associated group of 167 flakes the length and breadth of each item was incorporated in a series of histograms (Fig. 6, A). For this purpose *primary* flakes are defined as those retaining all their cortex, *secondary* flakes are partially cortical and *tertiary* flakes as those entirely lacking in cortex. While the scarcity of primary flakes (9%) has already been mentioned, the small number of non-cortical flakes (25%) presents another problem. Even though secondary flakes are both large and frequent (66%), it is just possible that the half-used cores might have been removed for further work elsewhere. More probably the size of the present sample is insufficient.

The flakes as a whole lack secondary retouch while the platforms are often heavily battered and may retain traces of cortex. The prominence of the bulb varies considerably. The flakes are fairly small and squat with a most common length : breadth ratio of 7:5. Examples in which breadth exceeds length occur fairly frequently. In the detailed sample the shape of the flake varied according to the stage at which it was detached (Fig. 6, A). The most frequent length:breadth ratio on secondary flakes was 7:4 while on tertiary flakes it was 1:1.

A random sample of another 200 flakes was examined for further evidence of shape. For these purposes *blades* were distinguished as parallel-sided flakes with a minimum length:breadth ratio of 2:1. These made up only 11% of the total. The lengths of all items in this sample were also recorded in two histograms for comparison with the utilised material discussed below (Fig. 6, B). The results are essentially compatible with the figures already discussed though the rather skew distribution of the flake lengths suggests that the smallest examples may be under-represented in this group.

Utilised flakes. In the associated sample 12% of the flakes were found to have been utilised. They could be distinguished by persistent edge damage patterns or by areas of silica lustre usually upon the dorsal surface. A random sample of 100 such flakes has been examined in detail. Again a basic shape classification has been adopted and lengths are recorded in two histograms (Fig. 6, B). It appears from this that the proportion of blades was as high as 28% compared with 11% amongst the unused waste. With so few blades overall the lengths do not allow close comparison,

but the flakes proper are longer than those left unused. Since the distribution of utilised flakes approximates to a flattened normal curve it is likely that a full range of material is represented in this sample.

Implements. As far as possible an attempt was made to recover all implements in this large assemblage. Even so only 37 items were recovered. Details are as follows:—

Scrapers. A useful group of 33 scrapers is represented. Of these 8 use primary flakes, 17 secondary flakes and 8 tertiary flakes. The quantity of primary flakes contrasts with their rarity in this assemblage as a whole. Since the forms are essentially symmetrical they may be classified according to the scheme set out by Clark.[1]

A. End scrapers:—		C. Disc scrapers:—	5
(i) Long[2]	9	D. Side scrapers:—	
(ii) Short	15	(i) Long	2
		(ii) Short	2

These scrapers are sparsely but fairly finely worked. Some scale flaking is represented, though particularly large areas of cortex remain on the dorsal surface. Almost all could be the product of direct percussion. The bulbs, with one exception, have not been removed and retouch seems to be confined to the dorsal surface. Despite the size of this sample some attempt at metrical analysis has been made. The results are given in a set of histograms (Fig. 6, C). These confirm the tendency for the scrapers to be relatively short and squat with a preferred length:breadth ratio of 5:4. The angle of retouch is most often between 60° and 70°, though the overall range is between 50° and 100°. The thicknesses show no clear tendency and run from 5mm. to 25mm. with the majority in the lower part of this range. Their affinities will be discussed below.

Miscellaneous. Only three retouched knife fragments have been recorded. One example of steep triangular section has two finely retouched edges and might also have served as a borer (Fig. 5, 7, from NW. ditch filling). The remaining two are roughly parallel-sided flakes with fitfully retouched edges. The majority of the cutting equipment is probably represented amongst the utilised flakes. In addition to these one deliberately notched fragment was recorded (Fig. 5, 6, with C.2). Finally three unworked flint nodules are included each with local areas of battering suggesting use as hammerstones. Their average weight is 11ozs. (312 grams). A further flake with local battering seems to have a similar source.

Discussion. At the outset it is important to consider how far this assemblage may include Beaker survivals contemporary with the sherds reported on p. 101. In this group, however, there are

[1] ibid., p. 217.

[2] These are defined by a minimum length:breadth ratio of 3:2.

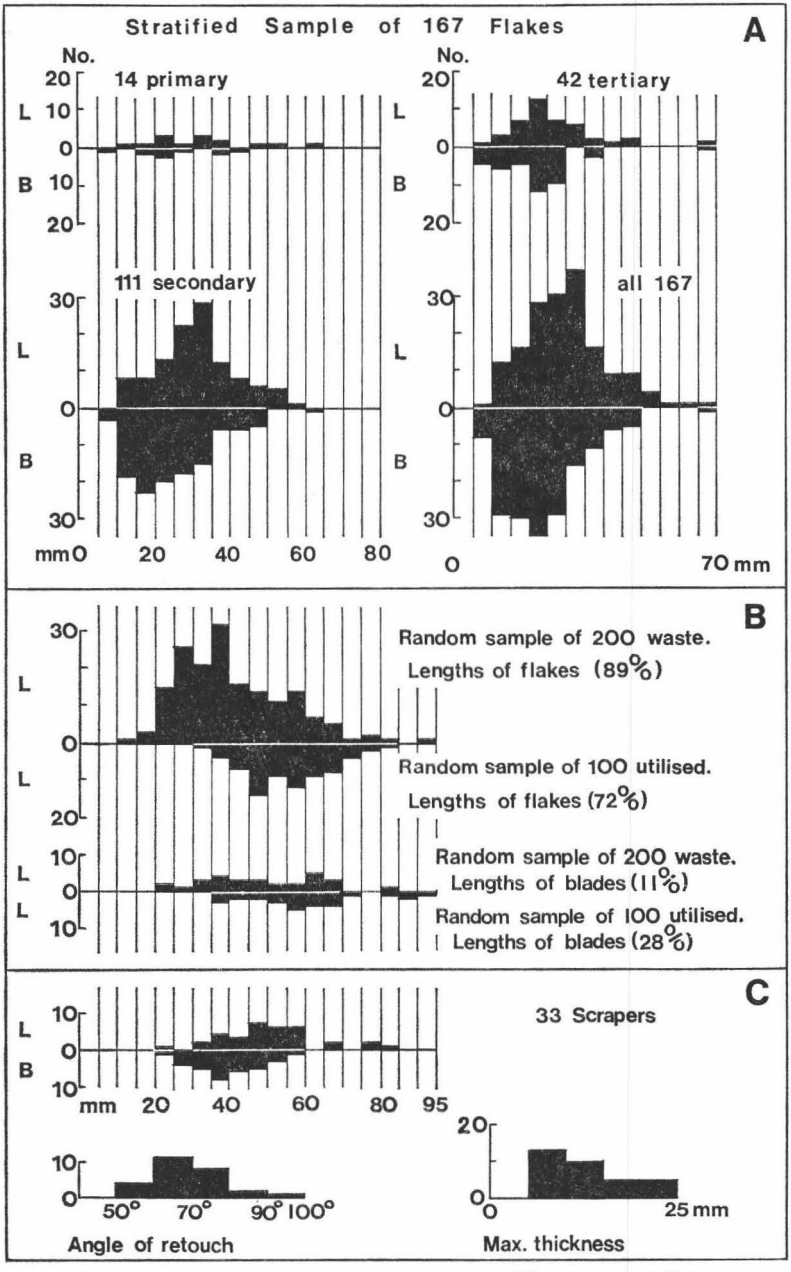


FIG. 6. ITFORD HILL CEMETERY-BARROW. Histograms of flints.

only five scrapers of the commonest Beaker form, Type C, while the prevalence of broad squat flakes again suggests only a limited Beaker presence while the tendency of most histograms towards a normal curve suggests that this assemblage is substantially homogeneous. This may not apply to all the scrapers. In the discussion which follows therefore it will be assumed that the greater part of the industry is contemporary with the cremations on the site.

In seeking the affinities of this industry a number of characteristics can be considered. The range and proportions of core types themselves closely compare with the published figures for Durrington Walls in the Late Neolithic,[1] though here they could be an unrepresentative residue in a site where most nodules were completely worked. This imbalance between the number of cores and flakes has not been discussed for the Bronze Age, but is one which seems to increase throughout the Neolithic period, although the ratio here cannot be nearly matched. The flakes align themselves even more plainly with the native Late Neolithic tradition and most closely compare in shape with those from the West Kennet Avenue[2] and Durrington Walls. In the Early Bronze Age there is a parallel at Oakley Down in Dorset.[3] On each site a proportion of the flakes have greater breadth than length. In size, too, the material in these four groups is virtually the same. The proportion of long narrow flakes is equally more limited on these sites than on the late Beaker site at Belle Tout, where some contribution from the indigenous tradition itself seems likely.[4]

The scrapers compare very closely with those from the settlement nearby and with a larger assemblage from a similar site of this period at Thorny Down in Wiltshire.[5] The latter shares the clear tendency at Itford Hill towards bold stepped flaking, while the illustrated scrapers at least retain substantial areas of cortex and favour short squat flakes. These features are shared with a broadly contemporary assemblage from Mildenhall Fen in Suffolk.[6] Here too there is evidence for many mis-hits and little sign of pressure flaking. Apart from the possible survivals at Itford Hill, direct percussion could have been used on all these sites. At Mildenhall

[1] G. J. Wainwright and I. H. Longworth, 'Durrington Walls: Excavations 1966-1968,' in *Soc. of Antiq. Res. Rpt.* XXIX, (1971), pp. 156-81.

[2] I. F. Smith, *Windmill Hill and Avebury* (1965).

[3] D. A. White and R. Reed, 'The Excavation of a Bowl Barrow at Oakley Down, Dorset, 1968,' in *Proc. Dorset N.H. & A.S.* vol. 92 (1970), pp. 159-67.

[4] R. Bradley, 'The Excavation of a Beaker Settlement at Belle Tout, E. Sussex,' in *P.P.S.*, vol. 36 (1970), pp. 312-79.

[5] J. F. S. Stone, 'The Deverel-Rimbury Settlement on Thorny Down, Winterbourne Gunner, South Wiltshire,' in *P.P.S.*, vol. 7 (1941), pp. 114-33.

[6] J. G. D. Clark, 'Report on a Late Bronze Age Site at Mildenhall Fen, West Suffolk,' in *Antiq. Journ.*, vol. 15 (1936), pp. 29-51.

Fen disc and end-of-blade scrapers were absent, but it would be dangerously subjective to assume that the few examples on the present site must therefore be survivals. On this site the less obtuse bulbar angles remain another point of difference.

In dimensions these scrapers again come closest to the Late Neolithic material from Durrington Walls. The very skew distribution of thicknesses make comparisons more difficult, though the relative thickness of Late Neolithic scrapers has been attributed to core preparation which is not in evidence here. Finally the preferred angle of retouch is more closely matched in native than in Beaker contexts. The other implement types are undiagnostic.

This is the first group of later Bronze Age flints which has been examined by metrical analysis and it is unfortunate that so little of related date is available as comparative material. Even so the indications of a distant background in Late Neolithic and Early Bronze Age flint working are not to be set aside any more than the signs of a comparable tradition in the early Iron Age evidenced at West Harling.[1] Despite the time span involved the recognition of the early roots of this material only matches the increased appreciation of ceramic continuity over this period.[2]

Two final points deserve brief comment. Firstly the complete contrast between this very prolific assemblage and the relative rarity of flint on the settlement site should be considered. It may be argued that the contrast is principally a functional one and that it was more convenient for flint knapping to take place where the raw material had been gathered in quantity. It is possible that the apparent rarity of flint on other sites of this date is merely the product of dispersed activities. The problem is the more acute with the surprisingly close resemblance of this material to the Late Neolithic industry. The rarity of implements is not in its turn to be given a chronological explanation on the present evidence. The contrast in fact may be between sites where tools were made for use on the spot and pure knapping sites from which they were usually taken to another area. The wide ratio of scrapers to flakes, the former the commonest implement type at any date, can be seen from the following approximate figures; which appear in rough chronological order:—

[1] J. G. D. Clark and C. I. Fell, 'The Early Iron Age Site at Micklemoor Hill, West Harling and its Pottery,' in *P.P.S.*, vol. 19 (1953), pp. 1-40.

[2] C. B. Burgess, Chronology and Terminology in the British Bronze Age," in *Antiq. Journ.*, vol. 49 (1969), pp. 22-9.

Windmill Hill (primary levels)[1]	1:30	Bishop's Waltham Great Barrow[3]	1:16
Hurst Fen	1:40	South Lodge Camp[4]	1:80
Arreton Down[2]	1:92	Martin Down	1:80
Durrington Walls	1:55	Angle Ditch	1:30

The presence of a proportion of utilised flakes nonetheless indicates some other activity on this particular site. One suggestion might be the use of some of these flakes in preparing hafts for implements manufactured here.

The second point is one of more general significance and is the apparent contradiction between the great quantity of flint on the site and conventional designation of this period as 'Bronze Age'. In fact this assemblage is not unique save in its size; for example, Pitt Rivers recovered 18 scrapers and fully 1,600 flakes from Martin Down. The problem is not removed by such figures however, for even on that site three bronzes came to light while on the Itford Hill settlement only flint was found. Increased boneworking could never bridge the problem. In fact this imbalance is fully characteristic of what Binford has termed a 'curated technology,'[5] one in which the most important items of equipment are the ones most carefully maintained, with the result that the representation of different items in the archaeological record will be in inverse proportion to their actual significance to the community. With this useful concept may be linked the observations of Rowlands concerning 'recycling' of worn metal implements among many primitive groups.[6] Instead of discarding worn bronzes, as the prehistorian might require, they may be used as the raw material for their own replacements or taken by the smith as part payment. Nowhere is this clearer at this date than at Mildenhall Fen where a large flint industry survived together with animal remains but, despite entirely favourable conditions, no bronze was found. Even so the excavator

[1] I. F. Smith, 1965, op. cit.

[2] J. Alexander, P. C. and A. Ozanne, in 'Report on the Investigation of a Round Barrow on Arreton Down, I. O. Wight,' in *P.P.S.*, 26 (1960), pp. 263-302.

[3] P. Ashbee, 'The Great Barrow at Bishop's Waltham, Hants.,' in *P.P.S.*, vol. 23 (1957), pp. 137-66.

[4] For this site and the two following: A. Pitt Rivers, *Excavations in Cranborne Chase*, vol. 4 (1898).

[5] L. R. Binford, 'Interassemblage Variability—The Mousterian and the 'Functional' Argument,' in a paper to *Research Seminar on The Explanation of Culture Change*, Univ. of Sheffield, 1971, publication in press.

[6] M. J. Rowlands, 'The Archaeological Interpretation of Prehistoric Metalworking,' in *World Archaeology*, no. 3 (1971), pp. 210-23.

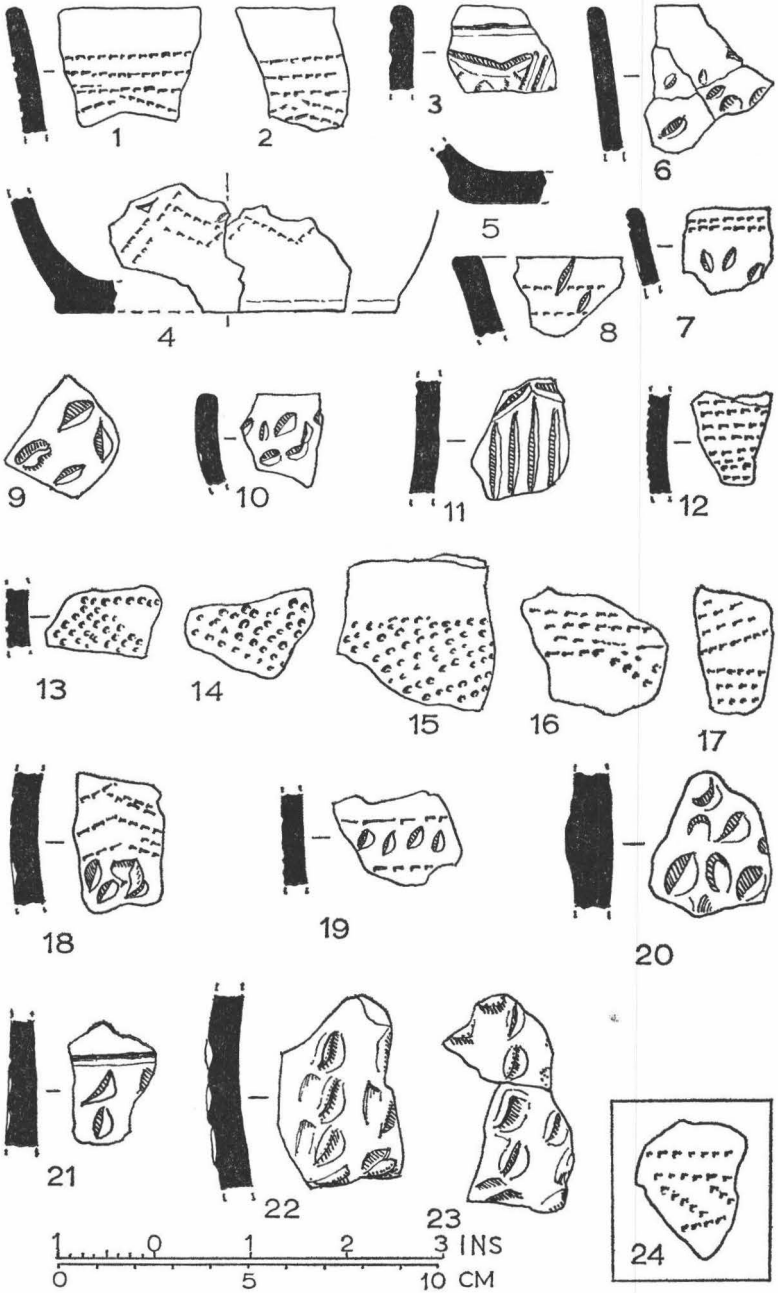


FIG. 7. ITFORD HILL CEMETERY-BARROW. 1-23, Beaker pottery. 24, Beaker sherd from settlement site.

remarked that many of the cuts found upon these bones could only have been produced by metal tools.[1] In these aspects at least the finding of the Itford Hill flints may go beyond a typological nicety and become a cautionary tale.

THE POTTERY

All pottery drawings are by E.W.H. and have been done in a stylistic, not a representational manner, without texturing. Cracks in pots have been shown only where they are necessary to indicate their relationship with repair holes.

THE BEAKER POTTERY (Fig. 7)

By RICHARD BRADLEY

A number of Beaker sherds were found scattered throughout the material of the cemetery barrow, upon its surface, at the bottom of the topsoil, within the ditch filling, flint layers, and within the filling of several of the cremation urns and pits. In almost every case pottery of the later Bronze Age was also present and the Beaker material can be regarded as residual.

Ninety-five small weathered sherds are represented in this assemblage, but are so fragmentary that the overall number of vessels cannot be estimated. The few sherds retaining any evidence of overall form seem to indicate vessels with straight sided, almost vertical, necks and rather globular bodies. It is likely that the overall shape is closest to Clarke's VII.[2]

The surviving decoration on these sherds may be set out as follows: to avoid confusion with the numbering of the fabrics there is no Type I.

		No. of Sherds
A.	Square comb (Fig. 7, 17)	1
B.	Short broad rectangular comb (7, 8)	10
C.	Long broad rectangular comb (18, 19)	8
D.	Short narrow rectangular comb	11
E.	Short oval comb	1
F.	Round pointed comb (13-15)	13
G.	Dimpled roughened surface	1
H.	Upright paired finger pinching (22, 23)	15
J.	Scattered fingernail (10)	10
K.	? Rounded twig impressions	1
L.	Decoration indeterminate (3, 11)	2
M.	Undecorated	22
	Total	95

[1] At the Itford Hill settlement the excavators considered that the sides and floor of Pit 26, Enclosure IV, Hut E, had been trimmed by a bronze palstave. *P.P.S.*, vol. 23 (1957), p. 177.

[2] D. L. Clarke, *Beaker Pottery of Great Britain and Ireland*, 2 vols. (1970).

The ratio of plain to decorated sherds is 22:73 and that of combed sherds to the remainder is 44:51. In each case a subjective judgment has been made where sherds retain more than one form of decoration (7, 8, 18, 19, 21).

The material is in four fabrics:

1. Reddish brown throughout with some grey core, rough body often untempered but with some occasional grog.

2. A similar ware but more evenly fired and with some medium flint filler.

3. Smooth very worn pink to grey body with some small flint filler.

4. Grey exterior and yellow-buff interior, slightly sandy body with almost no inclusions.

The relations of these fabrics to the decorative techniques already outlined are as follows:

	A	B	C	D	E	F	G	H	J	K	L	M
1	—	x	x	x	—	—	—	—	—	—	x	x
2	x	—	x	x	x	x	x	x	x	x	x	x
3	—	—	—	—	—	—	—	—	—	x	—	—
4	—	—	x	—	—	—	—	—	—	—	—	—

None of these features can support too close a date for this fragmentary material which in any case need not be contemporary overall. Even so, a very few characteristic decorative motifs may be helpful. Clarke has already suggested that the tendency towards plastic finger pinching of domestic wares was one which developed gradually among Beaker types and this view is supported for Sussex by the possible horizontal sequence at Belle Tout,[1] in which these types were late in date. At the same time the flattened horizontal triangle or lozenge motifs which are represented by a number of sherds in this group (Fig. 7, nos. 1, 2, 3, 4, 13, 14, 15, 16, 17 and 18) are well represented on complete vessels in the Southern British Beaker series. It is interesting to see that this is matched by no. 24 (Fig. 7) from the pit on the main site.[2] This is not to deny their appearance in the Northern tradition, but the first suggestion would generally be more consistent with their known distribution. Equally the fragmentary no. 11 with its vertical lozenge decoration seems to fall into Clarke's Southern British motif group. Closer discussion would be unhelpful, save to say that a Southern 2 or 3 context would possibly be the most satisfactory. The limited evidence for the vessels' overall form is entirely compatible with this view. If so an interval of five or six centuries might have elapsed between the two occupations of this site.

[1] *P.P.S.*, vol. 36 (1970), pp. 312-79.

[2] *P.P.S.*, vol. 23 (1957), Fig. 24, G.

Beaker Pottery (A note by E. W. Holden). Of the 95 sherds found only seven were surface finds close to or on the barrow. None was collected from elsewhere in the field (though searching over such a large area was not so intensive as around the barrow) and it is worth noting that not a single Beaker sherd came from Cutting C, or from the trial trenches A and B. Ignoring the few surface sherds, Fig. 4 (upper) shows how the remaining 88 were distributed in four groups with an outlier of three sherds in the depression in the N. Trench. All groups contained a mixture of sherds of varying fabrics and decorative motifs, so that no further sub-division is worthwhile.

The grouping may be coincidence, but it is remarkable how 41 sherds are over a section of the barrow, 20 in and over the SW. group of cremations (see Table 2 for sherds associated with cremations) and 9 sherds with the SE. smaller group. A further 15 in the SW. corner are not associated with any features. Of the 41 in the barrow area, 14 came from the filling of the ditch in the NE. quadrant. There was a lack of later sherds in the SW. corner, only 5 very minute later Bronze Age sherds being found. No Beaker sherds were in the western or eastern trenches.

From the limited evidence to be derived from the distribution of the Beaker sherds, south of the barrow might be a likely place to look for earlier occupation.

THE BRONZE AGE POTTERY (Figs. 8 and 9)

By ANN ELLISON

The Bronze Age pottery from the site consisted of six complete or almost complete vessels and fragments of at least twelve more. The complete pots were found inverted in the small holes shown on the plan (Fig. 2), and they all contained cremated bones. The 5¼lbs. of sherds which were found in the SE. quadrant of the barrow at the time of the discovery of the site contain the sherds of at least eight vessels, some of which can be partially reconstructed. These were probably originally contained in some or all of the cremation holes (CH. 1-4) which, although having been disturbed by the plough still contained some burnt bone fragments (CH. 1 and 4) and some small sherds (CH. 2 and 3), whose fabrics could be matched against the 5¼lbs. of sherds found on the surface and around the holes. A general scatter of sherds was found throughout the barrow, and the remains of two pots, represented mainly by body sherds, were found on the chalk surface. These two were not accompanied by cremated bones.

The vessels varied in colour from shades of buff and pink through to medium and dark grey. The colour often varied greatly over the surface of a single pot due to differential oxidation during firing.

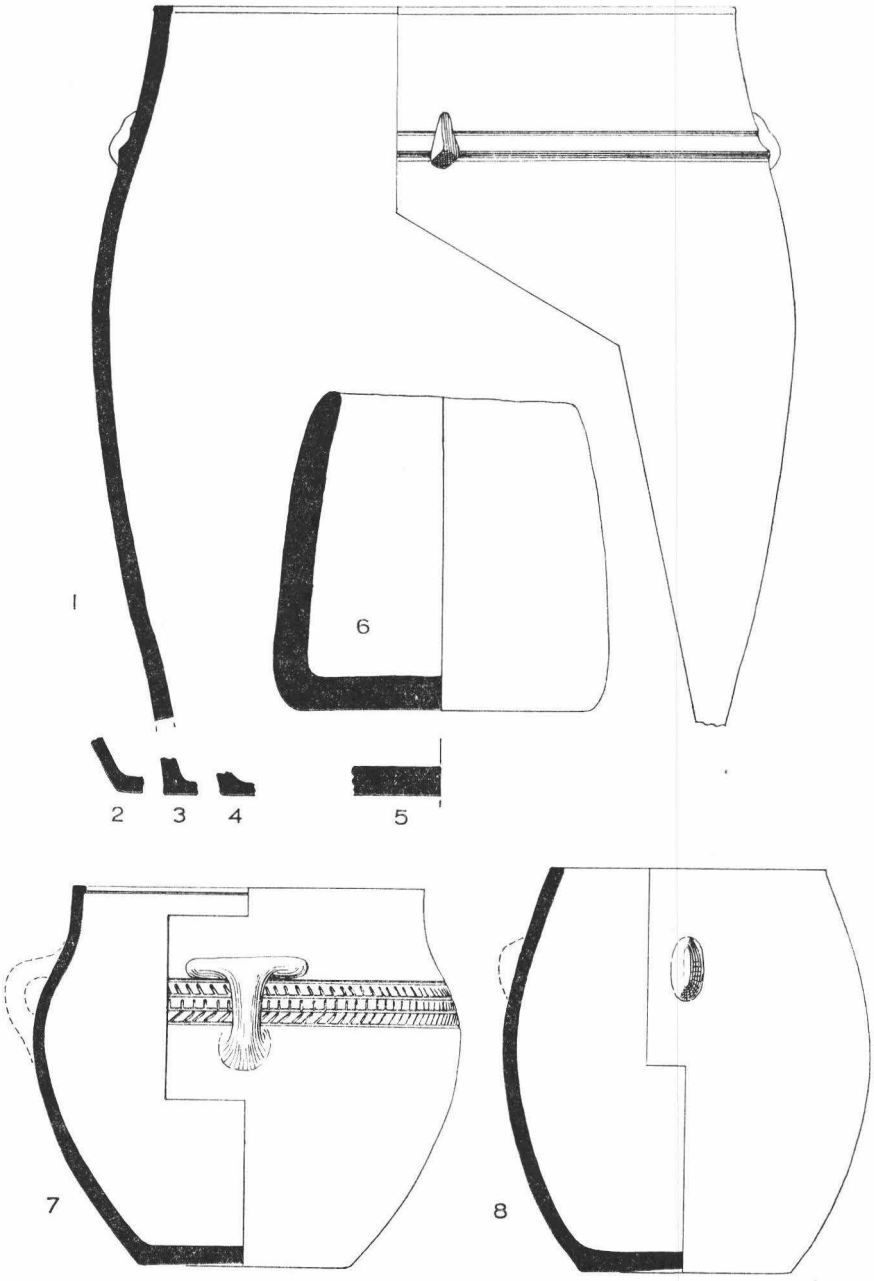


FIG. 8. ITFORD HILL CEMETERY-BARROW. 1-8, Bronze Age pottery. Scale ¼

In some cases the outer surface of the vessel had been carefully smoothed, thus concealing the amount of contained calcined flint filler. The fabrics can be divided into three main categories:—

A. Hard, fine, clay matrix with fine calcined flint filler (<2mm. diameter).

B. Hard, coarse, clay matrix with fine to coarse flint filler. There is a lot of variation within this category (to which most of the vessels belong) but this variation is continuous, and no valid subdivisions can be made. Many of the vessels tend to have much very fine (<1mm. diameter) and very coarse (*c.* 5mm. diameter) flint inclusions, at the expense of medium-sized ones.

C. Buff to black, soft, soapy clay matrix with sparse medium flint filler.

There is a direct correlation between the fabric types and vessel forms—the thin-walled globular pots being of Fabric A or of the finer fabrics contained within the B category, while the more straight-sided vessels are all of Fabric B. Fabric C is only represented by one vessel and by other single sherds.

Fig. 8.

1. *Central cremation*, Fabric B. Large, thin-walled, convex-sided vessel with a mouth diameter of 12in. (31cm). Base sherds with angles were found (Fig. 8, 2-4) but they may not belong as they appear to be too thin for the centre base sherds (Fig. 8, 5). The overall height cannot be determined accurately. Four vertically applied, unperforated lugs, triangular in shape (3 remaining) at 90-degree intervals, joined by a regular groove. Outer surface slightly smoothed.
6. *Cremation 11.* Fabric B. Plain, small bucket with narrow neck. Very thick-walled, rounded rim. No surface treatment. No decoration.
7. *Cremation 10.* Fabric B, with more fine than coarse filler. Globular with bulbous shoulder. Square rim with slight folding-over just below rim on inner surface. One bar handle with T-extension at upper end (probably two originally, but one upper side of this vessel is completely missing). Light incised decoration consisting of four horizontal lines delimiting three zones which are filled with diagonal and vertical strokes. Surface slightly smoothed.
8. *Cremation 9.* Fabric B. Small convex-sided vessel with square rim and three equally spaced vertically positioned unperforated applied lugs (two fallen off). Surface roughly smoothed.

Fig. 9

9. *Cremation 8.* Fabric B. 'Short' bucket urn with a simple rounded rim. Slight rise towards centre of base. Row of finger-tip impressions in body of pot 1in. (2.5cm.) below the rim. Twelve repair holes bored from both sides after firing, associated with cracks in the vessel. One portion of rim missing. No surface treatment.
10. *Cremation 5.* Fabric B. Thin-walled bucket with slightly convex profile. Two pinched-up vertical unperforated lugs at roughly 180 deg. above the widest point of the vessel. Four repair holes (two pairs) bored from both sides after firing. One portion of rim missing. Surface slightly smoothed.

11 and 12. *Cremation 6.* Fabric B. Mostly featureless body sherds plus one inclined rim sherd with slight groove just below the rim on the outside (Fig. 9, 11), possibly from an open bowl, and two joining sherds with a slight raised plain horizontal cordon (Fig. 9, 12). Two separate vessels of similar fabric are probably represented. No surface treatment.

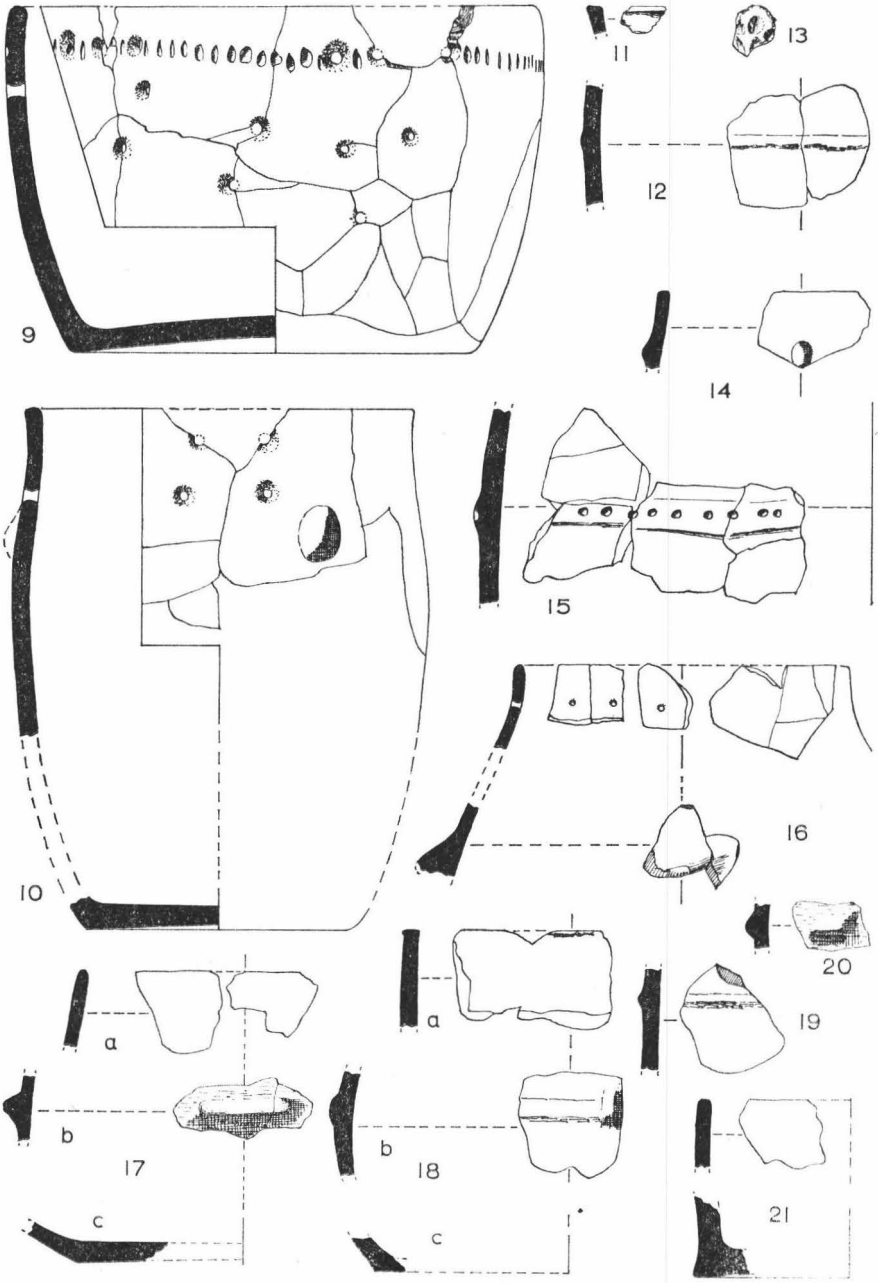


FIG. 9. ITFORD HILL CEMETERY-BARROW. 9-21, Bronze Age pottery. Scale ¼

13. One body sherd found inside the central urn (Fig. 8, 1). May be intrusive. Fabric B. Decorated with one and a half finger-tip impressions, possibly part of a row.
15. *Cremation 12.* Fabric B, but with fairly sparse grit. Body sherds only—three joining ones with a pinched-up cordon decorated with an uneven row of circular impressions formed by a blunt instrument. Outer surface smoothed well to conceal the flint filler. One sherd of Fabric C was also found associated with this group of sherds. Original size probably greater than that of the pot containing the central cremation (Fig. 8, 1).

Sherds from the SE. Quadrant. From the 5¼lbs. from the plough-soil, together with the sherds found from a similar area during the excavation, the pieces of at least eight vessels could be isolated.

Fig. 9.

14. Fabric B. Rim sherd of small globular vessel with small oval pinched-up lug 1¼in. (3cm.) below rim. Inside surface smoothed.
16. Fabric A. Rim and body sherds of a large thin-walled globular vessel. Horizontal unperforated lug, and bored (after firing) holes ¾in. (2cm.) below rim. A continuous row of holes might have been expected, but plain rim sherds are also present. Surface well smoothed.
17A and B. Fabric A. Rim sherd and body sherd from a thin-walled vessel. Long horizontal unperforated lug. Well smoothed surface.
17C. Fabric identical with 17A and B, but the wide angle of this base sherd suggests it must be from a different vessel—either an open bowl or a very large globular pot (?possibly Fig. 9, 16).
18. Fabric B. Square rim with some folding over under the outer edge; base sherd and body sherd of convex-sided vessel. Low vertical unperforated lug and horizontal raised plain cordon at the level of the lug.
19. Fabric B. Body sherd with narrow plain raised cordon.
20. Fabric B. Body sherd with horizontal unperforated lug.
21. Fabric C. One square rim sherd and heavy base with very slightly protruding foot and rising towards centre of pot.

Other Pottery (not illustrated).

CH.13. Body sherds: two of Fabric A and ten of Fabric C.
CH.14. Two pieces of burnt clay which could be pieces of broken loom weight, daub or potting clay.
SW. Quadrant. Body sherds: seven of Fabric B and two of Fabric C.
SE Quadrant. Body sherds not obviously belonging to the eight vessels isolated above: three of Fabric B and one very small plain rim sherd of Fabric C.
Ditch Filling (NE. Quadrant). Twenty-one body sherds of Fabric B, probably from two separate vessels.

Discussion of the Bronze Age Pottery. In 1959, the nature of a group of bronze ornament types common in bronze hoards and in several ' Deverel-Rimbury ' settlements in south England were investigated by Margaret Smith.[1] They were found to have close parallels in Montelius III contexts in Northern Europe and seemed to represent a phase of trade which has been called the ' Ornament Horizon ' in south England. On the basis of this continental correlation, the hoards and settlements containing these objects were redated from the Late Bronze Age to the Middle Bronze Age. Subsequent authors have dated more and more Bronze Age settle-

[1] M. Smith, ' Some Somerset Hoards and their place in the Bronze Age of Southern Britain,' in *P.P.S.*, vol. 25 (1959), pp. 144-87.

ment evidence as Middle rather than as Late Bronze Age, and this has led to a definition of a Late Bronze Age filled with the evidence of bronze hoards but empty of any evidence for settlements or burials. This situation has recently been discussed by Burgess[1] who envisages much of the British Bronze Age material occupying the Early Bronze Age, leaving unexplained 'gaps' in both the Middle and Late Bronze Ages. This trend in thought was initiated by Longworth's study of collared urns,[2] which established their predominantly Early Bronze Age dating.

However, in recent years, evidence for settlements and burials in the 'empty' Late Bronze Age has been increased both by new excavations containing stratified settlement material (e.g. at Eldon's Seat, Dorset[3] and by new consideration of earlier literature. The latter approach has been most important in Sussex, where chronological division of the Middle and Late Bronze Ages supported by stratified settlement evidence has been in use since 1935 (when it was devised by Professor Hawkes),[4] and at Highdown Hill, a stratified sequence of pottery was found running from the Middle Bronze Age right into the Iron Age.[5] Hawkes' dual scheme is still applicable in Sussex, although with slight modifications. In fact, marked continuity in pottery styles from the early Bronze Age until well into the Iron Age can be demonstrated for the South Downs area. The main Middle Bronze Age settlement sites which have produced Hawkes' earlier categories of pottery (Plumpton Plain A, 1-4) are Plumpton Plain,[6] Park Brow,[7] Cock Hill,[8] and Itford Hill,[9] and it is in this broad grouping of pot types that the vessels from Itford Hill cemetery-barrow can be included.

[1] C. B. Burgess, 'Chronology and Terminology in the British Bronze Age,' in *Antiq. Journ.*, vol. 49 (1969), pp. 22-29.

[2] I. H. Longworth, 'The Origins and Development of the Primary Series in the Collared Urn Tradition in England and Wales,' in *P.P.S.*, vol. 27 (1961), pp. 263-306.

[3] B. Cunliffe and D. W. Phillipson, 'Excavations at Eldon's Seat, Encombe, Dorset,' in *P.P.S.*, vol. 34 (1968), pp. 191-237.

[4] C. F. C. Hawkes, 'The Pottery from the Sites on Plumpton Plain,' in *P.P.S.*, vol. 1 (1935), pp. 39-59.

[5] A. E. Wilson, 'Report on the Excavations on Highdown Hill, Sussex, August, 1939,' in *S.A.C.*, vol. 81 (1940), pp. 173-203; 'Excavations on Highdown Hill, 1947,' in *S.A.C.*, vol. 89 (1950), pp. 163-78.

[6] Hawkes, 1935, op. cit.

[7] G. R. Wolseley, R. A. Smith and W. Hawley, 'Prehistoric and Roman Settlements on Park Brow' in *Archaeologia*, vol. 76 (1927), pp. 1-40.

[8] Ratcliffe-Densham, 1961, op. cit.

[9] Burstow and Holleyman, 1957, op. cit.

Most of the vessel forms can be matched among the pottery found at the Itford Hill settlement. The small, convex-sided pots with lugs (Fig. 8, 8; Fig. 9, 14, 17, 18, 20) are matched by Burstow and Holleyman, 1957, Fig. 21, K and Fig. 23, B, F, G, H, J, the raised cordons (our Fig. 9, 12 and 19) by Fig. 20, C and Fig. 23, L and M,[1] and the rows of finger-tip impressions on the body (our Fig. 9, 9 and 13) are paralleled in Fig. 21, G and F.[2] The slightly turned-over rim of Fig. 9, 18a also occurs at the Itford Hill settlement (Fig. 22, A),[3] as do the punched cordon (our Fig. 9, 15 cf. Fig. 23, K[4] and the shape of our Fig. 8, 1 pot (cf. Fig 23).[5] The most overwhelming evidence for the similarity of the two assemblages and their approximate contemporaneity, however, concerns the handled globular vessel with the incised decoration (Fig. 8, 7). A large part of the upper portion (including one handle) of this pot was not present in the cemetery. The pot had therefore been broken before its use as a cremation urn. One rim sherd (and possibly the handle) from this pot were found on the settlement site.[6] This sherd does not join on to the pot from the cemetery barrow site, but a detailed study of the fabric, filler, colour, form, decoration and disposition of black reduction patches has convincingly demonstrated that it comes from the pot shown here (in Fig. 8, 7). It therefore seems highly probable that this cemetery-barrow was directly connected with the Itford Hill settlement, although, of course, it may not have been the only cemetery for that site, and may possibly have served other settlements as well. This is the first proven instance of the direct association of a burial site with a Bronze Age settlement in Britain and is therefore of some importance.

The Itford Hill settlement pottery is all paralleled at Plumpton Plain, Site A, where further parallels for the cemetery material can be found, e.g., the holes below the rim of our Fig. 9, 16, cf. Hawkes, Fig. 1, D.[7] However, the Plumpton Plain example was a coarse ' bucket '-shaped pot and not a fine globular form. The small, thick-walled bucket pots (Figs. 8, 6 and Fig. 9, 9) are not found on the settlement sites, but such simple vessels have been found elsewhere in Sussex from burial sites, e.g., Broadwater,

[1] ibid.

[2] ibid.

[3] ibid.

[4] ibid.

[5] ibid.

[6] ibid., Fig. 24, A and B. [The rim and body sherds (7) of A have been found at Barbican House Museum, Lewes, where the settlement finds are stored. The handle, B, could not be readily found, so no comparison of this with the single remaining handle on the urn has been made. E.W.H.]

[7] Hawkes, 1935, op. cit.

Haywards Heath and Goring.[1] A group of urns possibly similar to that in the Itford barrow was found at Alfriston[2] although neither the vessels nor illustrations of them have survived. The ' short ' bucket (Fig. 9, 9) is a very unusual form and the only good parallels that can be found are from a barrow at Landford, Wilts.[3] However, many of the ' top halves of bucket urns' found inverted in burial sites throughout southern England may in fact originally have been vessels of this form, and many of the sherds from the Sussex settlement sites could be from ' short ' vessels rather than from taller bucket forms.

One vessel form is notable for its absence at the Itford Hill cemetery-barrow—the bucket urn with finger-printed cordon. This form was fairly common at the only other cremation cemetery of the period in Sussex yet discovered, that on Steyning Round Hill.[4] This burial site was situated fairly near to the Park Brow settlement[5] and may have been related to it in the same way as the Itford Hill settlement and cemetery barrow seem to have been. Such a hypothesis is strengthened by the fairly frequent occurrence of cylindrical urns with finger-pinched cordons at Park Brow[6] and Steyning Round Hill, while the lack of the vessel type in the Itford Hill barrow is matched by a very low percentage of sherds with finger-printed cordons relative to the very many bag-shaped pots at the Itford Hill settlement. If these assemblage differences do not represent a great chronological disparity (and the occurrence of similar globular pots at Plumpton Plain, Park Brow and at the Itford Hill sites argues against this), they may represent the presence of distinct small localised groups within the Sussex Middle Bronze Age.

The repair holes in the pots illustrated in Fig. 9, 9 and 10 are the first to be recognized in Sussex, although they are extremely common on later Bronze Age urns in Wessex, the Thames Valley and East Anglia and also occur on some earlier classes of pottery. Holes on prehistoric pottery can be bored before or after firing and from one or both sides of the vessel wall. They seem to have two main functions: firstly as repair holes, in pairs either side of cracks or breaks in the fabric of the pot. Presumably this would enable the

[1] R. C. Musson, ' An Illustrated Catalogue of Sussex Beaker and Bronze Age Pottery,' in *S.A.C.*, vol. 92 (1954), p. 106, nos. 405, 406 and 482 respectively.

[2] *S.A.C.*, vol. 37 (1890), pp. 193-4.

[3] J. P. Preston, *Excavations of Early Iron Age Site at Landford* (Cambridge, 1929), nos. 2, 4, 12 and 36.

[4] G. P. Burstow, ' A Late Bronze Age Urnfield on Steyning Round Hill, Sussex,' in *P.P.S.*, vol. 24 (1958), pp. 158-64. Typologically later Bronze Age pots are also present at this site.

[5] ibid., Fig. 1.

[6] Wolseley, Smith and Hawley, 1927, op. cit., Figs. 1 and 3.

cracks to be held together with leather thongs or sinews. There is some evidence that iron rivets were used for this purpose in the Iron Age,[1] but there is no evidence for the use of bronze for this purpose. The implications of the occurrence of repair holes in different percentages of different types of vessel throughout the later Bronze Age are of great interest but are also of great complexity. They will therefore be dealt with at some length elsewhere. The other function is that of apparent decoration. The rows of holes found below the rims of pots exemplified by Plumpton Plain A[2] and at Park Brow[3] fall into this category, and this trait is also found in Dorset.[4] The holes below the rim of the pot shown in Fig. 9, 16, above, may be decorative, but as they were bored after firing and do not form a continuous row, and as all three holes occur adjacent to breaks, the repair hole interpretation cannot be ruled out. Such rows of holes may have been decorative in themselves or have been devised so that strings or thongs could be passed through the holes in varying directions so as to produce various linear patterns or for the purely functional purpose of providing a balanced and stable way of hanging up the vessel.

The Sussex Middle Bronze Age pottery assemblages as a whole are very different from the contemporary assemblages in Wessex. Contrasting with the situation in Wessex, in Sussex there is no sharp division by form or fabric into the bucket and globular urn categories. Most of the vessels have a more or less convex profile and there is no great variation in fabric or wall thickness. In Sussex, the only example of the true ' Deverel-Rimbury ' globular urns as defined by Calkin[5] is the fragment of a Type I globular from the ditch of a linear earthwork on Glatting Down, in the extreme west of the county,[6] while the M.B.A. sites we are concerned with all lie much further east, beyond the River Arun.

The best British parallel for the Sussex Middle Bronze Age assemblage with its predominance of bag-shaped vessels is in fact the ' Ardleigh Group ' of SE. Essex which has been recognised and described by Erith and Longworth.[7] This assemblage contains

[1] D. P. S. Peacock, ' A Petrological Study of Certain Iron Age Pottery from Western England,' in *P.P.S.*, vol. 34 (1968), pp. 414-27.

[2] Hawkes, 1935, op. cit., Fig. 1, d.

[3] Wolseley, Smith and Hawley, 1927, op. cit., Fig. 1.

[4] J. B. Calkin, ' The Bournemouth Area in the Middle and Late Bronze Age, with the Deverel-Rimbury Problem Reconsidered,' in *Arch. Journ.*, vol. 99 (1962), pp. 1-65, see p. 53, Fig. 12, 6.

[5] ibid.

[6] E. and E. C. Curwen, ' Covered Ways on the South Downs,' in *S.A.C.*, vol. 59 (1918), pp. 35-75; also C. M. Piggott, ' Five L.B.A. Enclosures in North Wiltshire,' in *P.P.S.*, vol. 8, pp. 48-61, Fig. 8.

[7] F. H. Erith and I. H. Longworth, ' A Bronze Age Urnfield on Vince's Farm, Ardleigh, Essex,' in *P.P.S.*, vol. 26 (1960), pp. 178-92.

' baggy ' squat globulars with lugs and taller lugged pots with convex profile which are very similar to some of the Sussex M.B.A. vessel forms.[1] However, the heavily rusticated buckets, often with relief horseshoe motifs, which are so common at Ardleigh are completely absent in Sussex and the decorative motifs on the globular urns in Essex consist mainly of filled triangles, while the Sussex globulars tend to have simpler decoration made up of horizontal and oblique lines.

Therefore, even this parallelism is by no means close when the material is considered at the assemblage level and the unique character and integrity of the South Downs group should be emphasised. The local groupings of Middle Bronze Age pottery styles, which may be due either to the existence of limited exchange or redistribution networks or to the presence of distinct social groupings, is also reflected in the distribution of particular types of bronze artifact. Thus the distribution of the M.B.A. twisted rod armlets, known as ' Sussex loops ' (which Curwen has suggested may be the products of a single craftsman), is concentrated in the Brighton area.[2] This distribution roughly coincides with that of the South Downs M.B.A. pottery group. Within this integrated pottery group we can even begin to detect smaller local groups such as the Itford Hill sites and the Park Brow plus Steyning Round Hill assemblages, which suggest the presence of small social units possibly making some or all of their pottery. However, this remains to be verified by detailed analysis of the pottery using petrological techniques, and a programme of such work is at present being undertaken by the author (A.E.).

CHARCOAL

By JOAN M. SHELDON, B.SC.

Very small amounts of charcoal were associated with the Central (primary) cremation, and cremations 4, 6, 8, 9. The charcoal, some of which is too minute for indentification, includes: Oak (*Quercus* sp.), Ash (*Fraxinus excelsior*), *Prunus* sp. (excluding *P.* spinosa) and *Crataegus* type.

THE CREMATIONS

By

H. B. A. RATCLIFFE-DENSHAM, M.B., B.S., B.SC., M.R.C.S., L.R.C.P., F.S.A.

There were eleven samples of cremated bone which appeared to represent parts of twelve skeletons.[3] The fragments of bone were very comminuted; they had been subjected to great heat, were

[1] ibid., e.g., Fig. 7, H16, D21, and D4.

[2] Curwen, 1954, op. cit., pp. 200-2.

[3] Cremations 14 and 16 both contained minute amounts of burnt bone, too comminuted to yield any information.

apparently much calcified, and had lost nearly all their carbon. They were mixed with small pieces of flint which had also been comminuted by fire.

In every sample the identifiable fragments derived, almost exclusively, from the skulls and from the shafts of the long bones; the rest of the axial skeletons, the limb girdles and the extremities were scarcely represented. Ribs, pelves and digits do not decay easily while awaiting cremation, so that the absence of the bones of the trunks must have had some other cause, such as intense heat at the centre of the pyre, or relative inaccessibility for collection. Their absence seriously limited the available information.

The first four peripheral cremations were represented by two very small samples, C.1 and C.4, which were found in situ in hollows near the 5¼lbs. of sherds. In the three most intact cremations the urns appeared to have been about one-third filled with brown loam, topped up with comminuted bone and flint, and sealed with chalk sludge, before being capsized into their holes.

The following information derives mainly from the thickness of crania and long bones, the state of the cranial sutures and of dental root canals.

Primary (central cremation). Adult; elderly; small boned but possibly male. Cranial walls 2½-6mm. thick (11mm. at the Torcula). Cranial sutures closed but visible. Small teeth; root canals closed. Only moderate markings of the extensor muscles of the hand on the radius. Thickness of femoral shaft, not at the linea aspera, =7mm. Platycnemic and, probably, sabre tibia.

Cremation 1. Ten small pieces of burnt bone. A child. Sections of fibula, femur, and, probably, humerus.

Cremation 4. A few tiny fragments of long bone, apparently from a small individual. Age and sex unknown. Not an infant.

Cremation 5. Adult; young; small boned; probably female. Cranial walls thin. Cranial sutures open. Small ear and petrous temporal bone. Small, permanent teeth and sockets; root canals patent. Femur moderately pilastered; shaft thickness 5mm. (8mm. at linea aspera). Tibia platycnemic and small. Tiny fingers.

Cremation 6. Twelve tiny fragments of small bones. A small individual, but not an infant.

Cremation 7. Child. A tablespoonful of burnt fragments. Cranium 3mm. thick. Lower border of a child's mandible. A piece of femoral or humeral shaft 3mm. thick, and another 1.5mm. thick.

Cremation 8. Two individuals. 1. Adult, in early twenties; small boned; female. Cranial walls thin and sutures open. Slender, narrow chin. Small, unworn teeth, including an upper 'wisdom.' Root cavities open, but tips nearly closed. Long bones slender and thin.

2. Child; probably about three years old. Part of the ramus, the coronoid process and the inferior margin of the mandible. An erupted, two year old, temporary molar with the roots still long. Fragments of cranial wall.

Cremation 9. Adult; young; small boned; possibly male. Cranial walls about 5mm. thick in vault; sutures open. Dental root canals open. Wall of shaft of humerus 5mm. thick and that of femur 6-7mm. Small hands (metacarpal).

Cremation 10. Child. Cranial vault about 2.5mm. thick; sutures wide open. Part of a crown and of a root of a temporary tooth, and part of an unerupted permanent one. Wall of shaft of humerus 2mm. thick. Fragments of shafts of tiny long bones.

Cremation 11. Adult; middle aged or old; small boned; female. Cranial vault thin walled; temporal squamous suture open. Basi-occipital-sphenoid suture closed and invisible. Petrous temporal bone very small. Odontoid process of axis vertebra suggested a slender mobile neck. An articular process of a dorsal vertebra, small and unworn. Condyle of the mandible smooth and small. Shafts of humerus and, probably, femur small but, relatively, thick walled. Tibia apparently platycnemic.

Surface. Among the 5¼lbs. of potsherds, from near Cremations 1-4. A dense felt of fine roots containing tiny particles of burnt bone, softer than the roots. These had to be picked out individually. A few pieces of long bone appeared to belong to a small person who was not a baby.

Discussion. Five of the twelve individuals represented were adults, four were children, and three gave no indications of their age at death. Steyning Round Hill[1] and Cock Hill[2] are the only other published sites of the later Bronze Age in Sussex where cremated, human bones were found. The remains from Steyning were not reported on; those from Cock Hill consisted of two infantile inhumations and three cremations, representing in all, probably, three adults and six children.

The site at Cock Hill was less exposed than at Itford Hill and the cremations from the former were more complete, had been subjected to less heat (apparently), and contained more charcoal than those from the latter. It chanced that parts of one adult skeleton from Cock Hill had been only charred, which renders it the best source of our knowledge of the physique of the people of Sussex during the later part of the Bronze Age. The subject, a young woman, had been cremated with an infant (Cremation III)[3] and their remains had been buried in a bag and marked with a stake.

Certain matters now require consideration:—

1. Bone is a complex of tissues which may be summarised as an elastic, organic, and a rigid, inorganic framework, sandwiched between a soft, organic marrow and a tough, organic periosteum; the whole being enclosed in a variable thickness of soft organic tissues.

2. Cremation of a cadaver causes both chemical and physical changes.

3. The main chemical change is the oxidation of the organic into mainly volatile inorganic substances. The speed of this depends on the temperature, the supply of air and the removal of the organic gases. The extent of the change depends on the time for which the heat and the oxygen are available.

[1] *P.P.S.*, vol. 24 (1958), p. 158-64.

[2] *S.A.C.*, vol. 99 (1961), pp. 78-101.

[3] ibid.

4. The first physical change is the evaporation of the volatile products of combustion which can distort, crack or burst impermeable tissues, which have not been completely oxidised.

5. The next physical change is the thermal expansion of the bony framework. The amount of distortion and comminution caused by this depends on the thermal conductivity, the surviving elasticity and the co-efficient of expansion of the tissues, all of which depend on the chemical changes, and so on the supply of air and on the temperature.

Thus it will be seen that the distortion of bone caused by cremation on an open pyre will be very variable and that any morphological deductions which are made from such bone must be treated with great care. With the above proviso the following information derives from the bones of the young woman from Cock Hill:—

A cranial vault 3-6mm. thick, with open sutures and narrow markings for the meningeal vessels. The ears were small, the cheeks probably rounded and the temporal muscles of mastication not strongly developed. The jaws were small, with healthy alveoli and small tooth sockets. The digastric muscles for eating were well developed. The occipital arteries were poorly marked. The neck was lightly boned and muscled. The trapezius, deltoid and great pectoral muscles of the shoulders were well marked. The upper end of the shaft of the humerus was 3mm. thick and about 64mm. diameter. The elbows were small, with shallow olecranon fossae. The fingers were tiny but fairly well muscled. The ribs were slender. The great sciatic notch was rather wide angled (a female characteristic). The femoral shafts were 5.5mm. thick and markedly pilastered (buttressed); the epicondylar lines were moderately defined. The knee joints showed no obvious signs of wear. The small kneecaps could only have belonged to a tiny woman. The tibiae were moderately narrowed from side to side (platycnemic). The fibulae were relatively stout, with strong markings for the extensor and the abductor muscles of the feet. The feet were probably of moderate size, with straight big toes.

The finds at Itford Hill do not add much to this picture, but they reinforce it in places; confirming the awful child mortality. The small size of the Itford Hill men was at variance with the sexual dimorphism which seems to have existed in the preceding Neolithic and in the succeeding Iron Age, but the evidence for their masculinity was by no means conclusive.

ACKNOWLEDGEMENTS. It is pleasing to record thanks for the help and guidance given in so many ways. Firstly, to my wife, Mrs. Hilda G. Holden, not only for discovering the cemetery-barrow, but for practical work on the site. The excavation could not have taken place without the permission and full co-operation of the farmer, Mr. D. Gribble, and who so kindly agreed that the finds should be given to the Sussex Archaeological Society for Barbican House Museum, Lewes, where they will join the material from the settlement site.

Site labour was on a voluntary, unpaid basis, given mainly by Society members, especial thanks being offered to Mr. and Mrs. K. Suckling, Messrs. G. P. Burstow, N. E. S. Norris, L. Suggers and C. F. Tebbutt. Dr. and Mrs. H. B. A. Ratcliffe-Densham also worked at the site and the former's valuable report on the cremated bone was produced very quickly. Miss J. Biggar, Mrs. H. G. Holden and Dr. H. B. A. Ratcliffe-Densham all undertook restoration of the fragmentary pottery. Another most useful service was provided by Mr. R. Brickell who helped fill in with his tractor. Other valuable contributions to the final report have been made by Miss J. Sheldon, Mrs. A. Ellison and Mr. R. Bradley, for which grateful thanks are offered. Dr. Ian Cornwall and Mr. R. W. Sanderson kindly advised on the whetstones while Professor R. J. C. Atkinson and Mr. Paul Ashbee gave profitable advice.

Free labour enabled costs to be kept to the minimum, but such expenses as were inevitably incurred have been supported financially by the Brighton & Hove Archaeological Society and the Department of the Environment (Ancient Monuments Inspectorate). To the officers of both organisations thanks are offered. The Sussex Archaeological Society and the author are especially grateful to the Dept. of the Environment for a financial grant towards the publication costs.

LATE NOTES. Since this report was printed:—

1. The radiocarbon date quoted on p. 89 and f.n.1, p. 70, when calibrated with the tree ring curve may be as early as 1230-1330 B.C., according to *Current Archaeology*, 32 (May, 1972), pp. 232 and 242.

2. It has been discovered that the pottery assemblage found at Alfriston in 1889 (see p. 111 and f.n.2) is in Hastings Museum, Acc. nos. 952.52.1/2/3. It is hoped to publish these three vessels in a future volume of *S.A.C.*

THE CRICKET MATCH AT BOXGROVE IN 1622

By TIMOTHY J. MCCANN and PETER M. WILKINSON

1972 marks the three hundred and fiftieth anniversary of a game of cricket played in the churchyard at Boxgrove. This is not the earliest mention of the word cricket, or even the earliest recorded mention of people playing cricket. It is important, however, as the earliest recorded instance so far discovered, of a game of cricket played by several named players, in Sussex, or, for that matter, anywhere else. The record of the game was first discovered by Dr. Hilda Johnstone when editing a volume of Churchwardens Presentments[1] and it has been written about frequently since that date.[2] However, recent research among the records of the Consistory Court at Chichester, has brought to light fresh documentary evidence about the game.

On Sunday, 28 April, 1622, Anthony Ward, servant to Daniel Earle, the vicar of Boxgrove, and Edward Hartley, played cricket together during the time of Evensong. On the following Sunday, 5 May, Edward Hartley together with Raphe West, Richard Slaughter, William Martin, Richard Martin junior, and others whose names were not recorded, played another game in the churchyard at Boxgrove, and were aided and abetted in so doing by Richard Martin senior and Thomas West, the two churchwardens of the parish. As a result of these two games, the participants were presented by the new churchwardens in their Easter Bills. Unfortunately, the original churchwardens' presentment for 1622 has not survived, but a record of it was written in to a contemporary register of presentments.[3] Under the heading of Easter Bills for 1622, the entry for Boxgrove reads:—" I present Raphe West, Edward Hartley, Richard Slaughter, William Martin, Richard

[1] Hilda Johnstone, *Churchwardens' Presentments, Part I, Archdeaconry of Chichester*, (Sussex Record Society, vol. 49, 1947), pp. 27, 28.

[2] The Boxgrove presentment has been printed in whole or in part, and discussed in the following books and articles:—Hilda Johnstone, *op. cit.*, H. F. and A. P. Squire, *Henfield Cricket and its Sussex Cradle* (1949), p. 32; H. F. and A. P. Squire, *Pre-Victorian Sussex Cricket* (1951), p. 4; John Marshall, *The Duke who was Cricket* (1961), p. 11; John Marshall, *Sussex Cricket* (1963), pp. 1, 2; R. F. Hunnisett, " Early Sussex Cricket," in *Sussex Notes and Queries*, vol. 16, pp. 217-221; and Rowland Bowen, " Some More Seventeenth Century Cricket," in *The Cricket Quarterly*, vol. 4 (1966), pp. 249-253.

[3] Register of Churchwardens Presentments, 1621-1670. West Sussex Record Office (hereafter abbreviated to W.S.R.O.), Ep. I/23/8, f.13.

Martin junior, together with others in theire company whose names I have no notice of, for playing at crecket in the churchyard on Sunday, the fifte of May, after sufficient warning given to the contrary, for three speciall reasons: first, for that it is contrary to the 7th article; secondly, for that they use to breake the Church-windowes with the ball; and thirdly, for that a little childe had like to have her braynes beaten out with a cricket batt. And also I present Richard Martin senior and Thomas West the old churchwardens for defending and mayntayning them in it . . . . Wee present Anthony Ward, servant to Mr. Earle, our minister, and Edward Hartley, for playing at creket in the evening prayer tyme on Sunday the xxviij th of Aprill."

Following their presentment, the cricketers would have been cited to appear before the Consistory Court in Chichester Cathedral, and although no record of their citation has been found among the miscellaneous working papers of the Consistory Court, the record of their appearance is extant.[1] The record of the court, which has not been published before, is headed:—" In Ecclesia Cathedrale Cicestriense loco consuetudinale ibidem die Veneris duodecimo die mensis julii anno domini 1622. Coram reverendo in Christo patre domino Georgio permissione divina Cicestrensis episcopo et Francisco Ringsted in legibus baccalario surrogato etc," and it continues under Boxgrove:—" Radulphus West personaliter citatus per Jo Butler litteratum viij die instantes julii pro causa sequente viz for playing at crecket in the Churchyard on Sunday the fifte of May after sufficient warning given to the contrary by Mr. Earle the minister Quo die comparuit dictus West cui obiecta per dominum indicantem detectione supra scripta fassus est se pecasse publice obiurit unde domine cum pia monicione eum dimisit.[2]

Edwardus Hartley personaliter citatus per eundem eodem die pro causa predicta & also for playing at kreket in evening prayer tyme on Sunday the xxviijth of Aprill Quo die comparuit Hartley ut supra pro West.

Richardus Slaughter personaliter citatus per eundem eodem die pro causa predicta Quo die ut supra pro Hartley.

Williamus Martin personaliter citatus per Jo Butler litteratum 8° die instantes julii pro causa sequente viz for playing at crekett in the churchyard ut supra pro West Quo die comparuit ut ante pro Hartley.

[1] Detection Book for the Archdeaconry of Chichester, 1622. W.S.R.O., Ep. I/17/20, ff. 11, 12.

[2] The following is a rough translation of the first entry: " Ralph West personally summoned by the letters of Jo Butler on the 8th day of this instant July, for the following cause . . . on that day, the aforesaid West appeared and confessed that he was guilty of those accusations of the aforesaid lord in the detection written above, and he publicly abjured, after which, the lord dismissed him with a pious admonition." We would like to thank Miss Alison Edwards for her help in transcribing and translating the document.

Richardus Martin junior personaliter citatus per eundem eodem die pro causa predicta Quo die comparuit ut ante pro Hartley. Anthonius Ward quesit per eundem eodem die pro causa sequente viz for playing at kreket in evening prayer tyme on Sunday the xxviijth of April. Quo die comparuit ut ante pro Martin junior. Richardus Martin senior et Thomas West nuper gardiani ibidem personaliter citati per eundem eodem die pro causa sequente viz 1 present the old churchwardens for defending the said Raphe West Edward Hartley Richard Slaughter Wm Martin & Richard Martin junior in there said play and maynteyning them in it Quo die comparuit Thomas West et fassus est eundem esse verum unde dominus cum monicione eum dimisit."

The procedure must have been sufficiently unpleasant to make the players wary of a future game. It involved a four mile journey from Boxgrove to Chichester, and more important, probably the loss of a whole day's work. There in the Cathedral, they had to endure fairly ignominious treatment of both their self esteem and their pocket. First came the public confession. This would involve each of the men reciting in open court a suitably penitent statement of their offence and their repentance. They were then admonished by the judge—on this occasion the Bishop himself. This must have given the occasion a greater sense of gravity than might be expected, for during this period most of the courts were conducted neither by the Bishop himself nor his commissary, but by a more lowly surrogate. Bishop Carleton[1] was perhaps rather exceptional in presiding at a number of the sittings of his court at this time; and in detection cases[2] where the rôle of the judge was frequently to deliver a moral lecture rather than a legal judgment, his presence must have added considerably to the efficacy of the sentence. Finally came the fees. Opposite the name of each offender in the Detection Book the scribe has scribbled the figure xiid presumably the amount extracted for the court's expenses. Although this might not seem too formidable a sum to the husbandmen among the players, it would be a fairly crippling sum for a mere servant like Ward.

Other contemporary records give us an idea of the age and social standing of the players. The baptism entries in Boxgrove parish register[3] at least suggest that the game was more than a schoolboy lark in the churchyard; for Ralph West was christened in 1588,

[1] George Carleton, Bishop of Chichester, 1617-1628.

[2] A detection case was tried by summary jurisdiction in which cases were dealt with in a single hearing, without the extended formality of a defended case, which would often run to several months.

[3] W.S.R.O., Par. 27/1/1/1.

William Martin in 1594 and Richard Martin junior in 1606.[1] The register, together with the wills proved in the Chichester ecclesiastical courts also show why the old churchwardens defended and maintained them in the game, for the three players we have mentioned prove to be their sons. This in turn sheds an interesting light on their social status, for churchwardens had to be at least respectable householders. In their wills[2] both Thomas West and Richard Martin senior describe themselves as husbandmen, which would suggest they were probably tenant farmers. Their probate inventories[3] show that they both lived in similar six-roomed houses, and each left personal estate valued at £89—quite a substantial sum. Ironically, one of them seems, before the game, to have been on friendly or even intimate terms with the vicar Daniel Earle. Two depositions in the church court[4] indicate that in 1612 Richard Martin senior and Earle had been summoned together to the bedside of a dying parishioner, while his will, made only three months before the game, names his " wellbeloved friend " Earle as his overseer.

Finally, there are three points of interest about the presentment itself. First, that playing cricket was considered to be contrary to the 7th Article. When they were preparing their Easter Bills, the churchwardens would, presumably, refer to a set of Visitation Articles, which must have provided them with a general framework for making presentments even when they were not actually making their return at a Visitation. Unfortunately, no articles for 1621 or 1622 appear to have survived, but those administered by Bishop Montague in 1628, throw an interesting light on the affair. In the section headed, " Articles concerning the Church, the Ornaments, sacred utensills, and possessions of the same," the 7th article reads, " Whether is your churchyard well mounded, and fenced, kept cleane without Nusance, or soyle cast into it: is it incroached uppon, and by whome: doe any offensively keepe doores, outletts, or passages into your churchyard: doe any use to quarrell, fight, play or make meetings, banquets, Church-ales there, doe any keepe Courts, Leetes, Lawdaies, Musters there, or otherwise use it being a consecrated place, prophaned contrarie to the 88 Canon."

Secondly, the fact that there was a danger of breaking the windows of the church suggests that some sort of hard ball was used for the game. Several writers have remarked on the third point—the reason why the little child was in danger of having her brains beaten out

[1] Baptismal entries for Anthony Ward, Edward Hartley and Richard Slaughter have not been found.

[2] W.S.R.O., STCI/18, f. 74, and B. Dean, f.3, 1622.

[3] W.S.R.O., Ep. I/29, Boxgrove, 2 Feb. 1630, and 27 Dec. 1622.

[4] W.S.R.O., Ep. I/11/12, ff. 30, 31.

with a cricket bat. Both Rowland Bowen and R. F. Hunnisett have suggested that the rules under which the game was then played, allowed the batsman to hit the ball twice, not just if he was in danger of being dismissed, but also for his "general advantage." Certainly the West Hoathly inquest[1] on Jaspar Vinall who was killed after being struck on the head by Edward Tye, who was playing cricket with him, in 1624, and the death of Henry Brand of Selsey from a similar injury in 1647[2], powerfully support this argument.[3]

[1] Public Record Office, Clerks of Assize, S.E. Circuit Indictments (Assizes 35) 67/8, m. 68.

[2] W.S.R.O., QR/W 61, f.59/63. See also F. H. W. Sheppard, "Cricket Bat," in *Sussex Notes and Queries*, vol. 12 pp. 42, 43.

[3] A commemorative match between a Boxgrove team and an XI representing the West Sussex Record Office was played at Boxgrove on Saturday, 13th May, 1972. The Record Office XI won by five runs.

SHORTER NOTICES

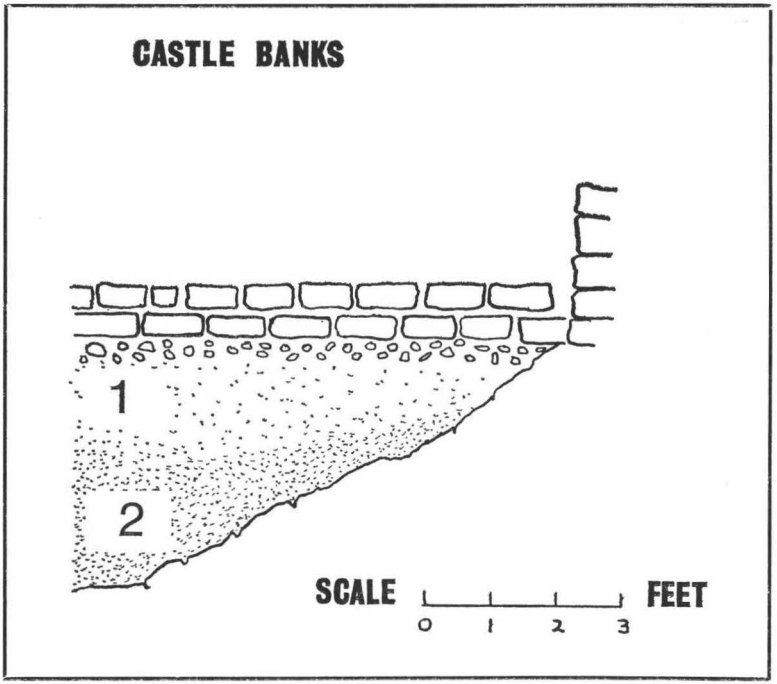
The Council of the Society recognizes that many finds of archaeological significance are made in the County each year, either by chance or as a result of small-scale excavations. Material of this kind all too rarely gets published in the archaeological literature, although it may be of great importance in improving our knowledge of the prehistory and history of Sussex. For this reason, the Council has decided to introduce a new feature into the *Sussex Archaeological Collections*, designed to bring discoveries of this kind to the attention of archaeologists both inside and outside the County.

Short definitive reports on small-scale excavations and on stray finds that have been authenticated should be sent to Mr. H. F. Cleere, F.S.A., Little Bardown, Stonegate, Wadhurst, Sussex, for incorporation in this new section. Those without previous experience in writing up such material for formal publication should not be discouraged from submitting information; Mr. Cleere will be happy to help in the preparation of texts and illustrations for publication.

The first selection of Shorter Reports appears below. These are representative of the type of material that is needed. Progress and interim reports of major and continuing excavations should be sent to the Editor of the *Sussex Archaeological Newsletter*, at Barbican House, Lewes.

THE LIP OF THE BRACK MOUNT DITCH, LEWES—During the summer of 1971, a cellar was excavated beneath the floor of No. 4 Castle Banks, Lewes, by the owner, Mr. Yarrow. He notified the Society's Museum at Barbican House of the discovery of a brick structure found immediately beneath the floor, which turned out to be a cess-pit constructed when the house was built in the late 19th century. In excavating for the cellar, Mr. Yarrow had cut into the chalk bedrock, and in section this could be seen sloping down to the west. Several factors made it impossible to do more than clean and draw the section (see Figure), and to check that the slope appeared in plan in the opposite face of the excavation. Brick and pottery of the 19th century appeared in the upper layer (1), which lay immediately below the brick and concrete floor of the house. The lower level (2) contained no finds in the small area excavated. There was no visible evidence of a turf line, but from the composition of the two layers it seems certain that the ditch had been partially filled by normal silting and that layer 1 represents the levelling done in the 19th century, before the house was built.

A. B. PAGE



THE WINBOLT COLLECTION AT CHRIST'S HOSPITAL, HORSHAM—At the request of the Society's Research Committee, I visited Christ's Hospital, Horsham, in December 1971, having already ascertained from the Archivist, Mr. N. Plumley, that there was in store there some archaeological material collected by the late Mr. S. E. Winbolt, F.S.A., a former master there.

About half the collection consisted of objects from outside Sussex, some of it from the Mediterranean. The material plainly labelled as coming from Sussex was as follows:

Chilgrove: Many sherds of coarse Roman pottery, five bone pins, tesserae, box flue tiles, oyster shells, animal bones, nails, mortar, plaster, forging cinder, and charcoal. There was also a complete round glass vessel, about 1½in. high by 1½in. wide, with a nine-sided base.

Alfoldean: Fragments of Roman window and vessel glass, sherds of Samian ware (one with the potter's stamp of VINTANVS), Petworth marble, and a poppy-head beaker.

Sussex Glass Works: A collection illustrating the Sussex glass industry, with specimens of glass, foundation bricks, glazed firebricks, fused glass, etc., from Couchland, Kirdford, and a plan of a furnace at Vann, near Chiddingfold.

Saxonbury: A box labelled "Saxonbury" contained Tudor (?) bricks and Roman roof and hypocaust tiles. (The pottery from Saxonbury is in Tunbridge Wells Museum.)

In addition to this material, which was labelled, there were two boxes that were unlabelled. They contained the following material, which may be of Sussex origin:

1. Seventeen sherds of what appeared to be Anglo-Saxon grass-tempered pottery.
2. Two pieces of a broken Bronze Age sword, consisting of the hilt (with four rivet holes) and part of the blade, and the point. There was also the broken blade end of a small iron axe.

I am most grateful to the Headmaster of Christ's Hospital, and in particular to Mr. Plumley, for their willing help and co-operation.

C. F. TEBBUTT

SUSSEX BRONZE AGE POTTERY—Our late member, Mr. R. C. Musson, F.S.A., contributed a valuable paper entitled ' An Illustrated Catalogue of Sussex Beaker and Bronze Age Pottery ' to Volume 92 of the *Collections* 1954, (pp. 106-124). He made an error in attributing a vessel found under the church floor at Arlington to the Bronze Age; this is most definitely medieval. The pot in question is No. 530 in Musson's list (p. 115 and Fig. 9). The drawing is, moreover, not correct, since the vessel has a convex (otherwise known as sagging) base, and not a flat base as depicted.

In 1954 the writer first noticed the discrepancy between the label in the case at the church, describing the pot as a Bronze Age cinerary urn and the form of the vessel. Shortly afterwards, Dr. G. C. Dunning, F.S.A., accompanied the writer and confirmed that the pot was medieval. It was taken out of the wall case and examined thoroughly. Musson had obviously not removed it from the case, and had assumed that the base was flat.

The pot was in a number of fragments, and it was restored by the Technical Department of the University of London Institute of Archaeology. During the restoration it was discovered that the finger-impressed bands were echoed in a similar band around the neck of the pot, and between this and the rim there was a row of impressions.

This vessel, or storage jar, is still on display at the church, now correctly labelled. Students of Bronze Age pottery should delete No. 530 from Musson's list.

E. W. HOLDEN

ARCHAEOLOGICAL MATERIAL FROM WASHINGTON—The western sandpit at Washington has recently been extended to the south (TQ 124 135), removing what remained of The Old Furze Field of Sandhill Farm and the adjacent part of the Sand Corner Lane Field. While the surface was being cleared, an assortment of Roman, medieval, and later pot sherds, together with a coin of the 4th century A.D., were collected by Mr. T. Dewey and the writer. They were mostly found near the line of the ancient north-south footpath, which eventually crosses the Greensand Roman Road further north, near Spring Cottage. Mr. Dewey also found the base of a fire, containing tiny fragments of bone, which might have been an unurned cremation.

H. B. A. RATCLIFFE-DENSHAM

STONE IMPLEMENTS FROM MADEHURST—A polished flint axe was recently found in a field of stubble at Madehurst, near Slindon (SU 981 107) by Mrs. Ratcliffe-Densham, a quarter of a mile south of The Kennels. It measures 94mm. x 40mm. x 19mm., and has a straight cutting edge and almost parallel sides, although it

widens slightly at the cutting end and thickens at the base. The butt was chipped into an almost flat face in antiquity, but not by a single tranchet blow. The patination is white, with narrow ochreous bands, and there is more recent chipping, presumably by farm machinery. This tool may well have belonged to one of the inhabitants of Barkhale Camp and have been made at Longdown.

Half of a large polished perforated macehead was found by Mr. Oliver of The Kennels, Madehurst, in a plantation 200 yards south-east of Barkhale Camp (SU 978 124). The weapon was made of light-grey quartzite, spotted and veined with brown. The original shape was an ellipse, with a half-maximal diameter of 84mm. and a minimal diameter of 92mm. The greatest thickness, 41mm, was at the centre, along the axis of the perforation. The weight of the half-implement was exactly 15oz. The break was through the central hourglass perforation and across the shortest diameters. The minimal diameter of the perforation was 25mm. The weapon was characteristically devoid of flat faces and any edges, all the surface being curved symmetrically. It has been sent for petrological examination and for inclusion in the National Register.

H. B. A. RATCLIFFE-DENSHAM

MOUND AT FOREST ROW—Mr. C. F. Tebbutt and the writer recently inspected a mound near South Lodge, Kidbrooke Park, Forest Row (TQ 4215 3410), which is marked on the 6in. Ordnance Survey Map. It is not far from the road and is surrounded and partly covered by trees. The mound is about 110ft. in diameter, with an estimated height of 18 feet; the sides slope up to a small oval top, about 19ft. by 15ft., which shows signs of having been disturbed. There are no signs of a surrounding ditch, and at only one point was there the slightest trace of a hollow at the foot of the mound. The purpose of the mound is unknown. The area at the top would seem to be much too small for a motte. It might be a recent landscaping feature, although there is equally nothing to support this possibility. It remains a mystery.

E. W. HOLDEN

ROMAN SITE AT FINDON—A section was cut near the mouth of the Roman well at Findon (TQ 11140 09168). The surface soil contained Roman sherds, and this overlay a layer of spoil heaped up when the well was originally dug. Below this was an old land surface containing sherds from the Early Iron Age and the Roman period. None of this pottery, which obviously pre-dated the sinking of the well, appeared to be later than the 1st century A.D. The sherds were worn, which suggests that the well might have been dug in the 2nd century A.D.; it was filled in during the 4th century A.D.

Air photographs, taken by Mr. M. Macey, show a large rectangular enclosure and probable buildings on the slope to the west of the well. Quantities of Roman sherds, querns, building material, animal bones, and an *as* of Hadrian were collected by Mr. F. N. Allcorn and the writer when this area was ploughed recently.

H. B. A. RATCLIFFE-DENSHAM

STONE AXE FROM PATCHING—A broken stone axe-head was found by Mr. T. Dewey about 25 yards NW. of the westernmost semi-detached house at Lee Farm, Patching (TQ 078 105). It was composed of schist containing garnets which Mr. Allchin believes may have come from Scotland or the Alps.

Miss Jane Evans writes (Implement Petrology No. Sx 143): "A Neolithic axe-head of coarse-grained igneous sandstone, the butt end only. The surface has

been ground down, and probably the blade was polished. The sides do not show signs of rolling, but some of the minerals have been weathered out, and it was broken in antiquity. The rectangular form of the butt is less usual than a more pointed one. The shape is paralleled by a green-stone axe, found some 12½ miles away at Horsham (No. Sx 55), the length of which was 9cm.

Few stone axes have been found on the South Downs of West Sussex. John Pull found one at High Salvington, close to the Church Hill flint mines; this was from one of the Cornish axe factories. To the west of the county, two were found at Stoughton and one at Chilgrove. Some have been found on the coastal plain (at Goring and Highdown), and their occurrence around estuaries, such as Chichester Harbour, suggests that they were brought in by coastal trade or by invaders from Devon and Cornwall. The scatter found along the Arun valley, at Toddington, Greatham, and Rowner, suggests that the river was a line of communication. The finding of this axe on what may well be a prehistoric route over the Downs suggests that it was lost by a traveller.

Curiously, considerably more stone axes are found on the South Downs of East Sussex (over 20 east of the Adur), perhaps because no flint mine area found there (see *Sussex Notes and Queries*, vol. 17, May 1968, pp. 15-21)."

H. B. A. RATCLIFFE-DENSHAM

FINDS FROM HARROW HILL, PATCHING—The south side of Harrow Hill, Patching (TQ 080 095-085 100) is now being ploughed regularly. A Roman lynchet system, two probable hut sites, and a rectangular medieval enclosure have been surveyed by the writer, as they are in danger of destruction. Quantities of Roman sherds and some building materials have been collected from the area by the Worthing Museum correspondents and the writer. About 15 damaged flint axes have been collected from the surface of the mines, higher up the hill.

H. B. A. RATCLIFFE-DENSHAM

EARTHWORK AT BUXTED—In 1967 the writer was informed by Mr. G. Kerridge of a large mound on Uckfield Manor Building Estate (TQ 478 221) that was to be removed to allow building to progress. The mound was covered with trees, but could be seen to resemble a huge long barrow. In size it was 150ft. long, 90ft. wide at its widest ends and 70ft. at the other, and 12ft. high, with the line of its axis lying roughly NW.-SE., the broad end being at the SE. The site was visited by Mr. Paul Ashbee, F.S.A., an authority on long barrows, who agreed that, although its position relative to the other Sussex long barrows (which are situated on the Downs) was unusual, investigation should proceed.

The contractors arranged to remove by machine a small part of the tail of the mound, which was composed of sandy clay, similar to the local topsoil, with little signs of tip-lines, except near the bottom. A piece of brick and a post-medieval sherd came from material pushed aside by the bulldozer. A test hole was dug by the writer and Mr. C. F. Tebbutt into the natural soil, from which came a piece of clay pipe stem, a fragment of roof tile, and another post-medieval sherd. It was therefore certain that the mound was not prehistoric, and that it must have been constructed in post-medieval times. A 17th or 18th century landscaping mound would seem to be a reasonable guess, the land being parkland belonging to Uckfield House at one time.

It was during the course of this investigation that Mr. Tebbutt discovered the Roman corn-drying oven not far away (*S.N.Q.*, vol. 17, 1968-70, pp. 25-26).

E. W. HOLDEN

INDEX

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

Y