The chief industrial features of the finds resemble those of the preceding site. The two sites are half a mile apart.

In all these floors the flints were unpatinated.

TROTTSFORD

This site is in the Sleaford group, just outside the Surrey border; it is on heathland. Repeated triallings in 1945 near a scatter of flakes on a path led finally to the finding of a limited chipping floor 2ft. deep in blown sand. An area three yards by four yards was transected in units of a square yard, with the object of ascertaining how the flints were disposed and also the industrial character of the implements.

The finds were not numerous, but have some value as a comparative study.

Some 200 pieces of flint were collected; the majority were small, and some were fire-injured. Among the finds were:—6 conical narrow-blade cores; 2 microliths (types A and C, both broken); 2 basal rejects; 1 intermediate form, namely a microlith not separated from the blade; and numerous microlith primaries. There were numbers of long blades remarkable for their thinness; one had been converted into a backed knife and was not thicker than one sixteenth of an inch. The usual core trimmings were present and two end scrapers were found together. Some raw material with exceptionally thick cortex occurred; this evidently was brought from the clay with flints overlying the chalk to the north of the site.

The restricted extent of the floor, and the flint assembly, suggests that this site was another hunters' bivouac. The presence of long blades is an unusual feature, but no blade core was found. The occurrence of end scrapers is noteworthy, but the scarcity of microliths is puzzling in view of the well flaked narrow-blade cores, and the numbers of microlith primaries.

The deposit is of interest: its maximum depth is 2ft. The majority of the flints were found in the lower level and were black; a few small flakes were dispersed in the upper zone and these were patinated. A compact pan was encountered at about 9in. Some wind faceted carstones were found in the blown sand.

In 1948 five acres of the Trottsford heathland was ploughed, and a system of bivouacs was revealed. The chipping floors were in a group and were about fifty yards apart.

CONCLUSION

The investigation of mesolithic chipping floors in blown sand deposits by the transect method, offers a wide field of important research which can add materially to our knowledge of mesolithic activity on the West Surrey greensand. Many sites await discovery.

VI. APPENDICES

APPENDIX I

THE PRODUCTION OF MICROLITH PRIMARIES AND SOME FLAKING STATISTICS

The production of microlith primary blades was a basic process in the fabrication of microliths. The conversion of these blades into microliths is discussed in Section III, B3 (d).

These primaries occur abundantly in most chipping floors because great numbers of them were not converted into microliths. On an average the lengths of these blades lie between 1in. and 2in.; the average microlith rarely exceeds 2in. in length. The flaking of microlith primaries was a specialised operation; in this respect the following statistics are of interest in relation to the average lengths of microliths which lie between 1.25in. and 1.5in.

Group I. (A). Analysis of length measurements of a non-selected group of 60 microlith blades excavated from Heath Brow (Site 3).

Length in inches.	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Number.	2	1	1	4	9	4	12	7	7	8	5

(B). Analysis of width measurements of the same group.

Width in inches.	0.6	0.5	0.4	0.3	0.2
Number.	4	13	30	10	3

Group II. (A). Analysis of length measurements of a non-selected group of 160 microlith primaries excavated from the Farnham Pit-Dwellings (Site 6).

Width in inches.	2.6	2.4	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1
Number.	1	1	1	4	6	10	16	18	32	26	26	14	5

(B). Analysis of the width measurements of the same group.

Length in inches.	0.6	0.5	0.4	0.3	0.2
Number.	15	42	51	41	11

It is interesting to note that 60% of the primaries in Group I have lengths varying between 1.4in. and 1.8in., while 62% of the blades in Group II show the same dimensional variation.

In Group I 36 primaries have one ridge and 24 two ridges.

In Group II 64 primaries have one ridge and 96 two ridges.

[See Section III, A2 (a)]

In Group I 9 primaries have bulb scars and 51 have scarless bulbs.

In Group II 39 have bulb scars and 121 scarless bulbs.

APPENDIX II

AN ANALYSIS OF A TYPICAL MESOLITHIC IMPLEMENT ASSEMBLAGE WITH AN INDUSTRIAL INTERPRETATION

The following analysis of an industrial assemblage is based on Clark's report (47) on the flint-work of the Farnham Pit-Dwellings site.

Microliths	690	Percentage	50.0%
Scraping Tools	376	,, ...	28.0%
Cutting Tools	267	,, ...	19.0%
Piercing Tools	8	,, ...	.5%
Gravers	26	,, ...	1.5%
Axes	15	,, ...	1.0%

(Gravers and axes are here treated as specialised cutting tools).

A percentage analysis of the microlith types is noteworthy:—

Points of all kinds	68.0%
Triangles	28.0%
Crescents	2.5%
Chisel ended type	1.5%

The total number of pieces of flint collected and examined amounted to 39,675, and of this total 3% were finished implements. (At Selmeston, in 1933, Clark found over 6,400 pieces of flint in two mesolithic pits, and the percentage of finished implements was between 3% and 4%).

Summarising the functional interpretation of the implements as discussed in Section III, B, 1 to 8, we obtain a fairly comprehensive picture of the industry in which they were used.

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(47) Clark and Rankine, Excavations at Farnham, Surrey, *Proc. Preh. Soc.* (1939), Jan. - July.

The microliths, as regards their functions, cannot be totally explained satisfactorily; some points could have been used as arrow-tips or, perhaps, as needles, and others could have been employed as composite tools. But, whatever their functions may have been, they remain as incontrovertible evidence of a specialised industry, conducted by craftsmen endowed with most extraordinary sight and remarkable digital deftness.

Knives, scrapers, and borers are basic tools, and are common to every industry. The scrapers, generally accepted as tools used in preparing skins, invite some notice on account of their high frequency of occurrence. Excepting microliths, they are the dominating implement type and, consequently, imply an intensive hide industry.

Both axes and gravers indicate a wood industry and, in the case of the latter, probably a bone industry. With knives, scrapers, and borers, they could have been used in the preparation of wooden implements, such as lances or digging sticks.

The small, finely serrated saws imply a specialised bone industry, and the production of small bone implements, such as needles, which, employed with microlithic piercers, could have been used in converting hides into clothing, flint carriers, or hut covers.

APPENDIX III

BROWN FLINT (of unknown origin).

Implements of brown flint are occasionally found in West Surrey. This flint is remarkable for more reasons than one. Its colour range includes reddish-brown and greenish-brown. For reference in this discussion the former colour will be called shade A and the other shade B. Shade A matches with burnt sienna colour and shade B with raw umber. Both shades are clearly distinguishable from brown flint coloured by superficial staining. The West Surrey brown flint is brown throughout, and Dr. K. P. Oakley, of the British Museum (Natural History), agrees with the writer that this flint was coloured before it was flaked, and suggests that the colour was probably original.

The texture of this flint is also remarkable; it is practically free from inclusions, and implements made from the material have an attractive appearance. It may be a fact of some significance that the implements of brown flint so far recorded in West Surrey are of mesolithic type.

BROWN FLINT IMPLEMENTS FOUND IN WEST SURREY.

About 1933 an exceptional double graver was found by L. S. V. Venables on Moor Park B (site 9). It is shade B in colour and the texture is remarkably pure, with a few inconspicuous yellowish cherty inclusions; it was in fresh condition, although found on the surface. Soon afterwards another graver of the same colour and texture was found; with little doubt, both came from the same core. These gravers are illustrated in Volume XLIX of Collections on page 13.

In 1934, during a trial investigation of the Snailslynch deposit (site 7), a nucleus of shade A flint was found. About the same time a tranchet axe, or it may be a core, of shade A flint was noted among some oddments in Guildford Museum; this flint came from Cutt Mill. In 1936 a shade A microlith primary was found among the rejected flints of the Edge Collection, and probably came from Chapel Field (site 14). Also a sharp flake of the same shade was found in the same collection.

In 1937 a farm worker on Badshot Farm (site 10) found a lustrous worked shade B flake and, in the following year, the same worker found another of the same material at the same spot. Both flakes appear to be lateral trimmings from mesolithic cores.

In 1941 a core of shade A flint was found among Canon O'Farrell's collection; it came from the Ranges (site 4). Another core, apparently mesolithic, of shade B flint, from the same site was noted in the same collection.

In 1945 a shade B core was found by the writer on the extreme northern margin of Badshot Farm (site 10); it is in fresh condition and in colour, texture, and yellowish inclusions matches exactly the graver found on Site 9, nearly a mile away. This core appears to be mesolithic. An intensive search around the find spot resulted in finding a rough core with yellowish cortex, two trimming flakes, a broken blade with unmistakable mesolithic retouch, a small flake with one edge trimmed, and a small typical mesolithic end scraper. All are of shade B flint.

In 1948 Mr. C. E. Vulliamy, of West Horsley, provided the writer with the following detail of a core trimming found by him about one-quarter of a mile north of West Horsley Place: Length, 3in.; width, 1½in. Shade B flint. Near the find-spot there is a London Clay sub-soil.

Among the flints in Charterhouse School Museum the writer found a very fine graver of shade A flint; it is 2¾in. long and has double facets; with it are some flakes of the same kind of flint and all are labelled "West Surrey."

The source of brown flint is unknown, and in West Surrey at least it would appear to be imported material.

EXTRA-REGIONAL COMPARATIVE MATERIAL OF BROWN FLINT

1. The authors of Neolithic Man in North-east Surrey refer to implements of dark brown flint from Addington and Riddlesdown.

2. A typical mesolithic scraper of shade A flint, exactly like the Farnham material, recently came into the writer's possession with flakes of the same kind of flint. They were found on Barnes Common.

3. Implements of shade A flint are found in East Anglia, but these include neolithic and Bronze Age types. There are several in the Sturge Collection and in the British Museum Memoir it is stated that the colour is due to inclusion in peat deposits.

4. Many implements of shade B flint are found in southern Scotland, particularly in Lauderdale; some of these implements come from mesolithic sites, but, as in East Anglia, neolithic and Bronze Age types occur.

APPENDIX IV

AFFINITY OF THE WEST SURREY MESOLITHIC FLINT INDUSTRY WITH THE LATE PALÆOLITHIC INDUSTRIES.

Our native mesolithic represents a mingling of the Tardenoisian (48) tradition with that of Maglemose (49). The former contributed the microlithic element, and the latter the transversely sharpened axe and the macehead. This fusion developed into the Horsham industry, with which the West Surrey mesolithic is identifiable.

The Tardenoisian has its roots in the French Cave industries — the late palæolithic —of which the Aurignacian is a typical example. Therefore it is not surprising that features of the late palæolithic survive in our native mesolithic. In this connection, without attempting an elaborate discussion, the following points are of interest:

(*a*) The gravers of West Surrey closely resemble the gravers of Aurignac and Solutré;

(*b*) Some end scrapers on blades are very suggestive of the French Cave types. One particularly fine specimen found at Ripley could easily be accepted as a late palæolithic scraper. A few examples of double end scrapers from West Surrey resemble French Cave types;

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(48) From La Fère-en-Tardenois, Aisne, in France.
(49) From Maglemose in Denmark.

(c) Before the mesolithic was recognised in West Surrey, implements from the locality submitted to experts were frequently assigned to the upper palæolithic.

(1) Horsell. The cores, long flakes, and gravers found here were described as of late palæolithic facies. R. A. Smith, *Ant. Journ.*, Vol. IV (1924).

(2) Heath Brow. The implements found on this site by Canon O'Farrell were submitted to R. A. Smith, who compared them with material from Bruniquel.

(3) Snailslynch. The flints excavated from this site were assigned to a Cave Period industry. See *Stone Age Guide*, 2nd E. (1926).

(4) Weydon. A backed knife from here was described by Reid Moir (1929) as Aurignacian. See S.A.S., *Preh. Farnh.*, p. 50, fig. 26.

(5) Waddon, East Surrey. Aurignacian types were claimed from this mesolithic site, particularly an end scraper found by Mr. Prescott Row. Vol. 36, *S.A.C.*, p. 112.

These points are cited only to emphasise the close resemblance of the industries. In this connection, although extra-regional to the discussion, it is of interest to note that Dr. Allen Sturge in 1912 (50) published a paper on *Implements of the Cave Type in East Anglia.* These implements were mesolithic.

APPENDIX V

OBJECTS OF MATERIAL OTHER THAN FLINT (EXCEPTING EOCENE PEBBLES) FOUND IN WEST SURREY MESOLITHIC CONTEXTS.

Objects of non-local material are of great importance as evidence of folk-movement.

(1) Pebbles of Siltstone.

A series of pebbles, measuring some four or five inches in length, were found in the Farnham Dwelling Pits (site 6), both in the excavations of 1937 and 1938, and also in the preliminary investigations. These pebbles show signs of usage; some have polished areas, and others abraded ends. Six were found prior to 1937, and Dr. Grahame Clark obtained four more from Pit II.

Four of the specimens from the preliminary digging were submitted to Dr. K. C. Dunham, Chief Petrographer to the Geological Survey, who identified them as siltstones, probably derived from the Devonian sediments of S. Cornwall or Devon. One pebble can be matched very closely with a sandy bed exposed near Helford, Cornwall. The pebbles found in the 1937-8 digging are of the same material.

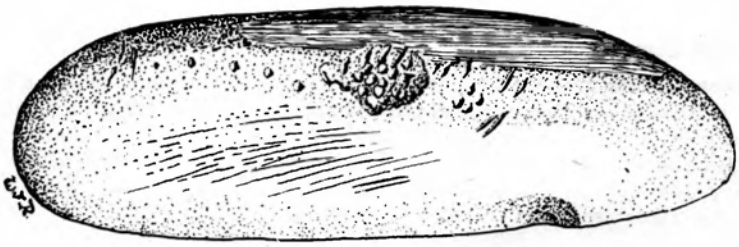

Fig. 15.— SILTSTONE PEBBLE (Scale ½)

Excavated during preliminary digging of the Farnham Pit-Dwellings. Note pecked and polished areas. Now in British Museum (See Appendix V. 1).

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(50) *P.P.S.E.A.* (1912).

One pebble, of exceptional interest, excavated by the writer, is shown in figure 15; it has a polished area on one side indicating that it functioned as a polisher. One surface, besides being scratched, has a small pecked out depression suggesting that the pebble was used as an "anvil." It is now in the British Museum.

In Haslemere Museum there are two other siltstone pebbles dug from the Blackdown chipping floor (site 45) in 1903.

(2) PORTLAND CHERT.

A small piece of bluish-grey stone, suggestive of an angle graver, was found by the writer on the basal floor of one of the pits investigated prior to 1937. It has been identified by Dr. K. P. Oakley, Department of Geology, British Museum (N.H.) as Portland chert. In 1948 the writer found a fragment of a blade of bluish-grey material in the chipping floor of a site at Frensham Great Pond, South (site 26). This was sliced and identified by the same authority as Portland chert. The presence of material of south-western origin in the Farnham mesolithic contexts is sufficiently significant to stimulate research. (See Appendix X, Mesolithic folk-movement).

(3) QUARTZITE.

A natural quartzite pebble macehead with hour-glass perforation was found in 1903 by Mr. Allen Chandler in the Blackdown chipping floor (site 45). It is in Haslemere Museum, where there are other maces of similar type and material, but without association data.

Two or three fragments of quartzite were found in the preliminary investigation of the Farnham Pits. Mr. A. Richards has collected pieces of quartzite from Thursley mesolithic sites, but it must be stressed that these were found on the surface. Calkin reported quartzite pebbles on his Peacehaven mesolithic site.

(4) OCHREOUS NODULES (51).

In every pit opened on the Farnham Pit-Dwellings Site (site 6) nodules of ochreous material were found. In a hardened form, they occurred among the grit and flint chips enclosed by clusters of large stones on the pit bottoms. In a softer form they occurred in the infilling and imparted a yellowish smudge to freshly cut faces in the matrix. An analysis (52) of the substance showed the presence of Oxide of Iron (47.75%) and Oxide of Aluminium (12.40%) as the chief mineral constituents. The Geological Survey (30/1/1933) were of the opinion that there is nothing in the analysis to disprove a natural origin for the material, and that the composition is quite normal for ferruginous nodules in a variety of deposits such as the Reading Beds. It should be noted that these beds outcrop close to the site.

(5) EOCENE PEBBLES.

Although these pebbles are local material, their presence in quantities in the Dwelling Pits demands some record. They are comparable with the pebbles of the Bracklesham Beds, which outcrop to the north of the site. Also they occur on greensand surface sites. Calkin mentions (53) their occurrence on his Peacehaven site, and says: "They vary from 1in. to 2in. across and usually are stained brown. They usually turn up where the flakes are found in large numbers."

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(51) Similar nodules were found in a mesolithic chipping floor at Prestatyn, Flintshire; *Proc. Preh. Soc.*, 1939 (Jan.-July), N.S. vol. V, Pt. I, 201.

(52) Rankine, *A Mesolithic Site at Farnham*, S.A.C., vol. XLIV, 1936, p. 42.

(53) Calkin, *Sussex A.C.*, vol. 45, 234.

APPENDIX VI

MESOLITHIC SITES "OFF" THE GREENSAND.

In addition to the sites Heath Brow (3), The Ranges (4), Caesar's Camp (5), Horsell (49), Camberley (50), and Blackwater (51), which are on Eocene Beds, and the three Chiddingfold sites (46), (47) and (48), with Alfold (79), which are on Wealden Beds, there are other sites in Surrey "off" the greensand. These sites are listed here for reference:—

Esher, Sandown Park; Burchell and Frere, *Ant. Journ.*, Vol. XXVII, 1947.
Barnes Common; microliths, ex J. Pierce Coll. Rankine Coll.
Wimbledon Common; microliths, ex J. Pierce Coll. Rankine Coll.
Ewell, Purberry Shot; Lowther, *S.A.C.*, Vol. L, 1949, 15.
Tayles Hill; Lowther, *S.A.C.*, Vol. L., 1949, 12 f.n.l.
Council School Site; Batstone, *S.A.C.*, Vol. XLVIII, 1943, 150.
Carshalton; Lowther, *S.A.C.*, Vol. XLIX, 1946, 73.
Epsom Downs; Batstone, *S.A.C.*, Vol. XLVIII, 1943, 150.

The following sites in East Surrey have been located by Mr. Brian Hope-Taylor, to whom I am indebted for the information:—

Sanderstead; Purley Oaks; Shirley; Ewell Spring; and near Beddington Church. (These sites appear to be on Thanet Sands).

Much of the material from the Headley and Addiscombe districts, described in *Neolithic Man in North-east Surrey* (54) is evidently mesolithic.

APPENDIX VII

NOTES ON FLINT FLAKING TECHNIQUES

Flakes may be detached from a flint nucleus by:—

1. Direct blows with a hammer-stone; this method produces thick flakes and deep flake beds.
2. Indirect blows with a hammer-stone on a punch of wood or bone; this method reduces shatter and produces narrow blades. (See Section III, A, a).
3. Direct blows with a bone, or bar of wood; this method produces flat bulbs.
4. By striking the flint nucleus on another nucleus; this method produces thick flakes and deep flake beds with prominent bulbs of percussion. Clactonian flakes were thus produced.
5. By pressure; this method was used in the production of neolithic and Bronze Age arrow-heads.

APPENDIX VIII

THE BLACKDOWN (ALLEN CHANDLER) MACEHEAD

This important implement is in Haslemere Museum; it was found in the Blackdown mesolithic chipping floor which was excavated in 1903 by the late Allen Chandler, of Haslemere. It was found in association with microliths. Blackdown (45) is in Sussex and near Haslemere; the site overlooks the Weald at a height of 900ft., O.D. With the macehead two siltstone polishers (See Appendix V, 1, page 40) were discovered.

The writer has recently inspected the deposit at Blackdown in which the mesolithic material is found; it is a thin layer of wind-blown material overlying the Hythe Beds. It is probable that a system of pit-dwellings existed here, but this can only be ascertained by systematic digging.

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(54) By Johnson and Wright.

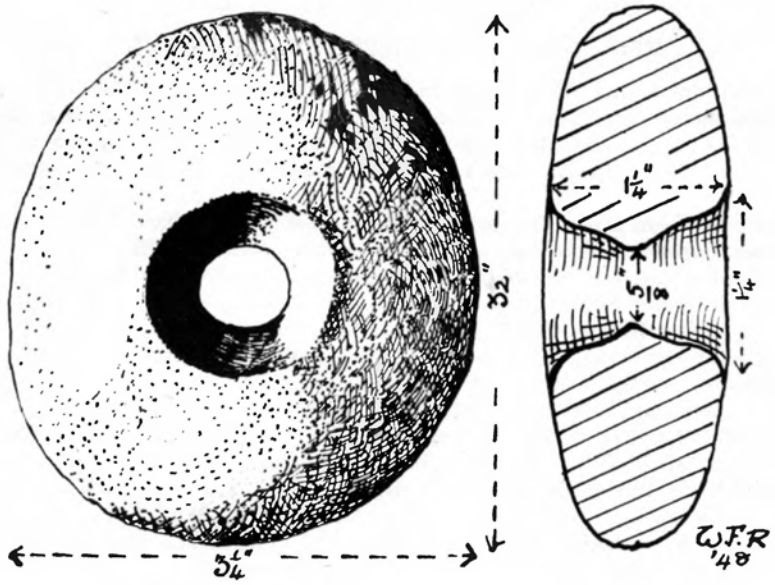

Fig. 16.— THE BLACKDOWN, SUSSEX (Allen Chandler) MACEHEAD

The macehead is made from a natural Bunter quartzite pebble by hour-glass perforation; it is greyish brown in colour, and the periphery shows no sign of bruising. The aperture has been polished by haft-wear. The implement is nearly circular in plan; its length is 3½in., breadth 3¼in. and thickness 1¼in. The aperture has a surface diameter of 1¼in. and the neck has a diameter of ⅝in. The macehead weighs 1lb. 2½oz. (See Fig 16).

It should be mentioned that eight other quartzite maceheads have been recorded from the Blackdown region, but, unfortunately, they have no association data and therefore are not datable. They resemble typologically the macehead described here, and this fact, together with the presence of a large mesolithic settlement on Blackdown itself, is very significant. (See Section IV. C).

APPENDIX IX

THE FARNHAM PIT-DWELLINGS

"Easily the most prolific site of the period yet excavated in the British Isles."—GRAHAME CLARK, *Archæology and Society, 1939.*

The story of the discovery and the preliminary investigation of this classic site is to be found in Volume XLIV of our *Collections*. The report on the two excavations carried out in 1937-8 was published in the *Proceedings of the Prehistoric Society* for 1939.

It remains to record briefly some aspects of this remarkable settlement in relation to topography. The site was based on a vigorous spring which issues from the base of a chalk bluff. This spring sends its water into the Wey which here turns southward to flow through a valley until it joins the Frensham Wey at Tilford. This valley, as marginal sites testify, served as a corridor connecting the pit-dwellings with the hunting grounds. Thus the Farnham site was well watered, commanded unlimited flint supplies, both from the chalk outcrop and the gravel spread (55) in which the pits were sunk, and, moreover, had easy access to the greensand.

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(55) D Terrace, Farnham Gravels.

The pit-dwellings seem to have been focal to a system of settlements as the distribution map shows. The most important of the satellite sites was Snailslynch, which is half a mile south of the spring; it is on the 300 contour and lies within a bend where the river turns into the corridor. Most probably there was a system of dwelling-pits at Snailslynch.

A quarter of a mile south-east of the spring was a large settlement, the Alma Nursery site, which is now obliterated; it was on a gravel spread which at one time was exploited in the Junction Pits. During the course of quarrying, a great quantity of archæological material was collected here, but, unfortunately, not systematically; traces of pits were observed in the quarry face and a sump hole, sunk into the ground near the railway, revealed a swallow-hole (56) containing microliths with other mesolithic material.

Alma Nursery abuts on the chalk outcrop at Badshot, and in the cemetery nearby the digging of graves has revealed a quantity of cut and dressed flint which appears to be flint mining debris (57). In connection with this there is scope for research; there is a hollow just north of the old Badshot chalk quarry which resembles a filled-in flint mine shaft and an oblique aerial photograph (58) of the Badshot Long Barrow, taken by the late Major Allen, clearly shows hollows just east of the quarry. There seems no doubt that Badshot was the flint-gathering ground for the pit dwellers, but its exact significance in this respect can only be ascertained by excavation. (59).

North of the pit-dwellings are three sites of some importance—Heath Brow on gravels overlying Eocene Beds two miles to the north-west, Caesar's Camp, similarly sited, 1¾ miles to the north-north-west, and the Ranges, on Bagshot Sands, 1½ miles to the north; of these, Heath Brow was the largest settlement and a prolific flint factory.

Three miles slightly east of south of the pit-dwellings is Chapel Field, an important settlement comparable, in extent and siting, with Snailslynch. It is perched on the 200 contour in a river bend formed by the confluence of the Farnham Wey with the Frensham river. I think there must have been a system of dwelling-pits on this site. Years ago, after ploughing, the flints were conspicuously grouped—nucleated—especially near the edge of the river bluff.

Between Chapel Field and the Farnham settlement there are sites like Moor Park A and B, Sheephatch, and Crooksbury which prove that the corridor was well frequented. Noteworthy here, too, are the river cliffs of sandstone which flank the flood plain, and the possibility that these provided shelters, suggests itself.

Then south of Chapel Field are the numerous hunter camps on the open heathland—sites like Kettlebury and Lion's Mouth—which complete the remarkable group of which the Farnham Pit-Dwellings site was the focus.

APPENDIX X

MESOLITHIC FOLK-MOVEMENT

From the evidence of the siltstone pebbles and the limited Portland chert material, described in Appendix V, it would appear that the folk who dug the Farnham shelters came to the site from the south-west; similarly the Blackdown settlers came from the same direction. Siltstone pebbles, apparently, have not been recorded from any other site and further, they are not likely to be noticed on the surface. Portland chert flakes and a core have been recorded from Iwerne Minster, Dorset; also, very significantly, a Horsham point was found on the same site, and since this point is the type microlith of the Horsham industry, the Dorset mesolithic folk may be identified with those of West Surrey.

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(56) Similar to the swallow-hole excavated in 1938.
(57) *Preh. Farnh.* p. 131, f.n.
(58) Ashmolean Museum.
(59) The chalk here is in the base of the Upper Chalk and contains no tabular flint.

More research with regard to non-local material, and comparative study of the mesolithic industries of south-west England, is imperative to establish the full implication of the siltstone pebbles, Portland chert, and the Iwerne Minster finds.

Further evidence of some identity between the mesolithic of the west country and that of West Surrey is to be found in the tranchet axe which, certainly, was in use on the Somerset sites; there is an axe sharpening flake from Shapwick Heath in Taunton Castle Museum. It is interesting to note that Blackdown chert was extensively used on the Somerset sites. This chert comes from the Blackdown Hills, Somerset.

APPENDIX XI

THE MESOLITHIC POPULATION OF WEST SURREY

The question of the probable numerical extent of the personnel involved in the mesolithic occupation of West Surrey introduces some interesting points for discussion. Unfortunately, on account of very limited data, a discussion cannot lead to definite conclusions. Reviewing the large number of sites in the region, and remembering the extensive concentrations of flint debris seen on sites such as Snailslynch, Chapel Field and Blackheath before large scale collecting began, one is inclined to assume that the mesolithic population was an extensive one. But was it?

Dr. Grahame Clark in *Archæology and Society* estimates that the mesolithic population of England and Wales was between 3,000 and 4,000. Now, within assumed limits, let us attempt a broad estimation of the probable number of inhabitants of the most important settlement in West Surrey—the Farnham Pit-Dwellings. During the preliminary investigation and final excavation of this site, some score of pits were located in the eastern half of the area around the spring. We know that there were pits in the western counterpart of the site. Thus, probably, the system of shelters comprised some 40 pits. If these were fully occupied at one time by family units of five there would have been a community of 200; by family units of three, then a community of 120. In either instance the economic strain on local food resources would have been severe. It, therefore, seems reasonable to assume that the village was never fully occupied, and even a community of 50 would have rendered sustenance precarious. But whatever the size of the tribe, it was probably the same group of nomads who were responsible for the flint litter left on the other sites south of the outcrop sector.

Much importance cannot be attached to the extent of flint debris as an index to the probable number of persons engaged in its production. Any amateur who has experimented with flint flaking is well aware that an amazing amount of waste can be accumulated in a short time. We cannot argue that a large concentration of flint debris indicates a large population on the site where it occurs, because we are ignorant of the time factor. A given number of flint workers in occupation for a given period could produce as much waste as twice the number of knappers in occupation for half the time.

Our data is scanty and far from exact, but one cannot escape from the impression that the mesolithic occupation of this region involved a relatively small personnel and was not of long duration. It is obvious that any food-gathering unit, family, or group would, in its intensive and continuous quest for food, quickly tend to exhaust the resources of its living space. Hence a food-gathering folk must necessarily be nomadic. Therefore, also, the intensity of nomadic population per space unit must bear some relation to the intensity of food resources within that unit. These economic principles operate today among the food-gathering group (60) in Cape York Peninsula, North Queensland, and, in all probability, the operation of these principles caused the mesolithic hunters to leave the Weald.

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(60) Thomson, The Seasonal Factor in Human Culture, *Proc. Preh. Soc.*, 1939, vol. V, N.S. (July - Dec.).

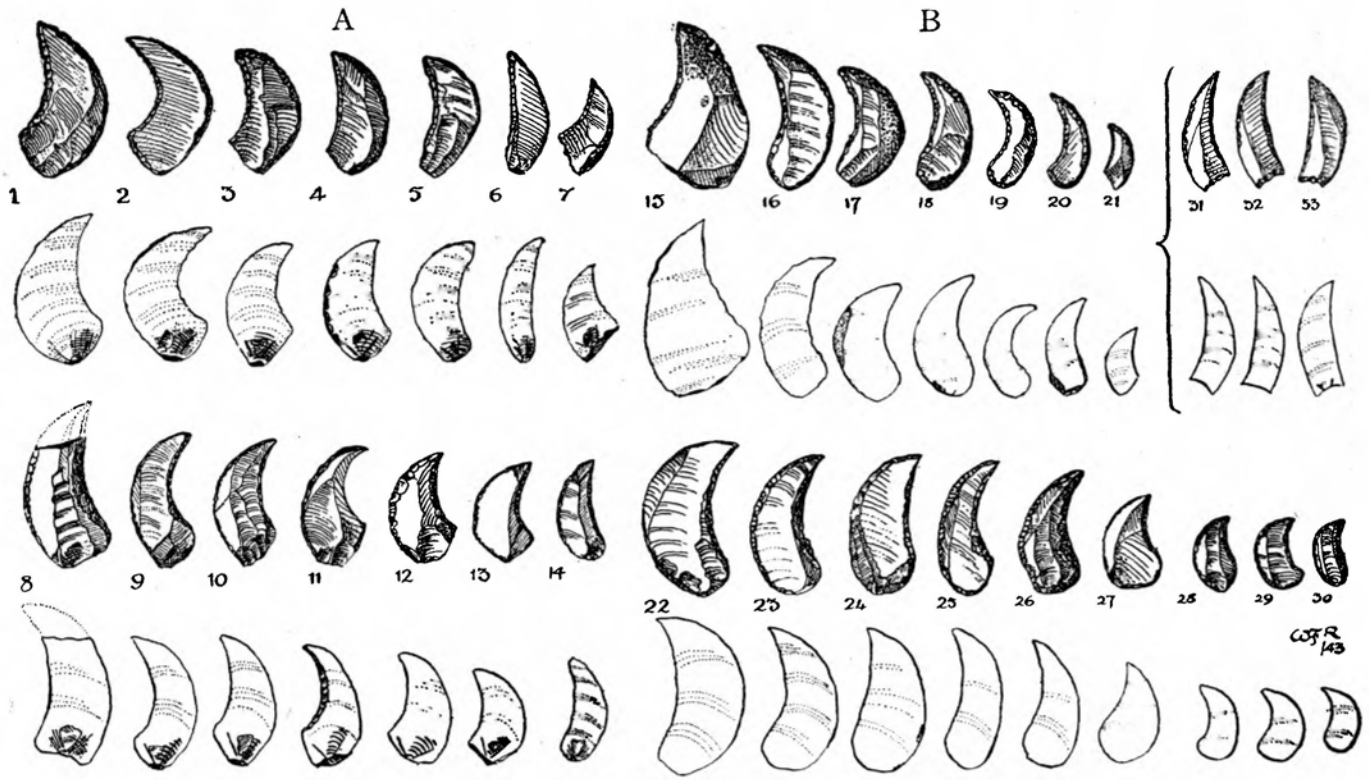

Fig 17.—FRENSHAM POINTS OR CURVED POINTS FROM SPREAKLEY AND BRON-Y-DE
(Scale ½)

Group A (Nos. 1 to 14) have bulbs intact; Group B (15 to 30) have been de-bulbed. A sub-group (Nos. 31, 32 and 33) simulate Horsham points.

Provenance: From surface; Spreakley — Nos. 1, 2, 8, 9, 12, 14, 15, 16, 19, 20, 23, 24, 25, 28, 30
Bron-y-de — Nos. 3, 4, 6, 7, 11, 13, 17, 21, 26, 27, 29, 31, 32, 33.
Excavated: Kettlebury — Nos. 5, 10, 18 and 22.

See Appendix XII, p. 46.

APPENDIX XII

FRENSHAM POINTS OR CURVED POINTS

These remarkable points are described in full in Volume XLIX of Collections (Some Remarkable Flints from West Surrey Mesolithic Sites) and are included in this paper as tentative mesolithic material.

For the opportunity of studying these points I am indebted to my friend L. S. V. Venables who, with his brother, R. G. V. Venables, collected the series from Bron-y-de, Kettlebury and Spreakley (Frensham). The first of these sites is now covered with greenhouses and the last is a pastured orchard.

Thirty-three of these implements are shown in Fig 17. They exhibit some variety as regards size, curvature and shaping technique. In each case, however, the curvature has been effected by the shallow notching of one edge of a primary flake—sometimes on the left and sometimes on the right. The shaping, which in many instances is pleasingly precise, has been carried out by blunting and trimming comparable with the best work seen in mesolithic retouch. Usually the point itself is sharp and strong.

Typologically these points fall naturally into two groups, viz.:—

A — Points with bulbs intact and

B — Points with bulbs either entirely or partially removed.

NOTES

(*a*) In both groups the edges are blunted and trimmed.

(*b*) Both groups contain left and right curvatures in equal proportions.

(*c*) A small but interesting sub-group (Fig 17, Nos. 31, 32, 33) with bulbs partially removed is tentatively attached to Group B. These have notched bases similar to Horsham points—in fact, at first sight, these specimens could well be mistaken for such points—but each specimen displays a remnant of a bulb which indicates that they are not Horsham points. All three examples were found on the surface at Bron-y-de.

So far as the writer is aware, Frensham points have never been recorded from any other locality; they are, apparently, restricted in their distribution to Spreakley, Bron-y-de and Kettlebury where four were excavated. This fact, together with the evidence of retouch technique, attaches to them a mesolithic association.

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LANGHAM,
PRINTER,
FARNHAM AND
HASLEMERE.