

ABORIGINAL FLAKES AND TOOLS

of

NEWCASTLE, N.S.W. and DISTRICT.

All drawings to be reduced
to the same scale as marked & >
& to be reduced to come within the
extreme limits of collection.

1-23
44-55
56-61

"The Eternal said to Joshua 'Make flint knives'
so Joshua made flint knives ".

(Joshua V. 2 and 3).

"He (man) falls to work upon the flinty rocks".

(Job XXVIII. 9.)

Dr. J. Moffatt's New Translation.

ABSTRACT OF PAPER ENTITLED :

"ABORIGINAL FLAKES AND TOOLS OF NEWCASTLE (N.S.W.).
AND DISTRICT.

By D. Fred. Cooksey.
Newcastle.

Preliminary: On the objects of the Paper.

Local History: of this Study.

Sites: The sites of the factories and of finds of scattered implements described.

Classification & Description under the following heads:

Class I. Simple pebble tools described.

Class II. Flakes and rough tools made with a minimum of labour, described.

Class III. Unground tools but more highly specialised and finished than Class II. Described & illustrated.

Class IV. Ground Stone Axes not considered.

Classes V. & VI. Miniature flakes and tools, reserved for future consideration.

CONCLUSION:

LIST OF BOOKS QUOTED:

MAPS: Map of Newcastle and Map of Newcastle and 30 miles of adjacent Coast.

ABORIGINAL FLAKES AND TOOLS OF

NEWCASTLE N.S.W., and DISTRICT.

P R E L I M I N A R Y.

That the tools of primitive man excite world-wide interest is shown by frequent reference in the current journals to finds made in this and other countries. The implements of our own aborigines have an especial attraction as they reveal by their design and execution something of the mental capacity and physical skill of our fore-runners in Australia, and they shed much light on the European tools of earlier times.

In some districts, such as Newcastle, the black-fellow has disappeared during the lives of some of the present inhabitants. The advance of the big cities now threatens to wipe out, in such cases, the relics they left so abundantly around. Some of the places from which specimens were taken, and described here, have been destroyed and others of them are threatened. It is, therefore, very necessary that as much information as possible should be collected about these interesting people whilst it can be easily reached.

The place of our aborigines in man's ancestral tree, which has been estimated from his bony structure, may also be gauged from the shape of the stone tools he made. At present the period at which man first crossed the land bridges from the Dutch Indies to Australia can be surmised only. This is due to the fact that the tools found have been mostly on the surface. More careful examination of the drift gravels may bring new evidence on the question and may make it possible to divide the Australian Aboriginal story into cultural periods as has been done in the case of early man in Europe.

In this paper the aim has been, in bringing together specimens, to follow Lubbock's advice in "Prehistoric Times" page 541 - "We hope in future that those who have the opportunity of observing stone implements --- will collect not only the well made weapons but also, and even more, the ruder implements of every day life". This has not been the rule in Australia if we may accept the statement in "The Guide to the Stone Implements of the Australian Aborigines" in the National Museum (Victoria) 1914: "The general European estimate of our native stone implements is that the collectors have gathered fancy specimens of the higher types". The fact is that stone axes are recognised by nearly everyone but the important domestic tools have been rather overlooked. Hence it is possible to visit collections at Home and in this Country and come away believing that the only tools primitive man used were grindstones and axes. An examination of the tools found lately in one small district would make such an idea untenable.

LOCAL HISTORY of this STUDY.

In the year 1907 a paper was published in the Records on the Australian Museum by R. Etheridge, Junr. and Thos. Whitelegge, on "The Aboriginal Workshops on the Coast of New South Wales and their Contents". This appears to be the only published matter dealing in detail with the domestic stone implements of this State. The writers mention that one of them visited Newcastle "with little result". In the Museum of the Newcastle Technical College are a few poor specimens from Toronto, and in the hall of the Australasian Society, Newcastle, are a fair number of ground stone axes. In Sydney the University has a small collection from this District, and the Australian Museum, through the energy of their ethnologist, Mr. W. Thorpe, has a rapidly growing one, which, for want of space, is not exhibited.

From time to time finds of stone axes have been made in Newcastle and flakes and scrapers have been exposed near the Broken Hill Pty Co's Steelworks. The first public notice of a factory site was made by Mr. C. A. Sussmilch, Principal of the Newcastle Technical College, about the year 1920. In a letter to the "Newcastle Morning Herald" Mr. Sussmilch drew attention to the exposure of such a site on Shepherd's Hill, Newcastle.

Last year (1925) Mr. G. W. Loch, then of the B.H.P. Co. (Now of the Straits Settlements), suggested that Tirrikiba paddock in Crebert Street, Mayfield, would be a good place to examine, as there could be seen much black earth mixed with shells. This led to a careful study of the field and eventually to a general survey of the surrounding district. At first difficulty was experienced in knowing what to look for, as the more obvious forms, such as ground axes, were not present. Illustrations of known types were scattered over many books, while the majority of the forms awaiting recognition on this site had never been pictured.

Fortunately Tirrikiba proved to be most prolific and certain types quickly asserted themselves by their mere numbers. From this start the search expanded until now it may be said that wherever an old sand bank is found lying 5 ft. to 80 ft. above high water mark there almost as certainly will be seen cores, chips, scrapers, etc. in large or small quantities. The attached maps will give an idea of the number and distribution of the finds.

THE SITES.

(1). The Tirrikiba Paddock, owned by Messrs. Kitchen & Sons, between Crebert Street and their Works at Mayfield. This lies on the North East corner of the hill on which Mayfield is built and is 30 ft. above high water mark and about 20 ft. above the adjacent low ground (once covered with a mangrove swamp). It is about half a mile from the present channel of the Hunter River. This was an excellent position for a camp, and as good chert is fairly common in the District, it became a factory site, largely devoted to the making of miniature knives and chipped back scrapers. The surface is of sand overlying a rocky point. It should be noticed that there is also at the foot of the hill a line of shell heaps with chips lying very little above the old swamp level.

(11). Near-by scattered finds of flakes and scrapers have been made in the B.H.P. Co's property at the Works entrance and also near the Ammunition Shed.

(111). Close by, on the Mayfield School Ground, 40 ft. above high water mark, a rather remarkable flint scraper and many miniature knives were discovered by Mr. J. Cowie, Junr.

(1V). A few scrapers have come from the corner of Bull and Ingall Streets.

(V). Following the bank of the Hunter River from Ingall Street there is an almost continuous line of shell heaps with scrapers, to the B.H.P. Golf Ground, at a few feet only above river level.

(VI). A second line of shell heaps appears to follow the winding line of the 30 ft. contour and extends for some distance along Crabert Street.

(VII). From the Golf Ground the shell heaps are again almost continuous to Shelly Beach.

(VIII). At the river end of the Mill Paddock (Sandgate) some fine stone axes and many rougher tools have been discovered.

Continuing past the Government Quarry to the Chinamen's Garden, which is stated to have been a favourite Corroboree Ground, many good scrapers, etc. can be found on the muddy shore and amongst the shells on the bank.

(IX). Returning once more to Tirrikiba Paddock and following the line of an old sand bank to Tiches Hill, flakes and shell heaps can be seen at the Tramway cutting, and at Tiches' Hill similar finds have been made. (Near the Council Chambers at Carrington Mr. D. N. Morison found scrapers in a shell heap.)

(X). From Tighe's Hill a sand bank extends through Islington Park to Wickham Park and, wherever the sandy surface can be examined, as at the last named spot, shell heaps can still be seen with cores, chips and scrapers.

Taking now the Coast Line North to South.

(XI). Stockton has almost continuous lines of shell heaps both on the river side and along the ocean beach. These are often at two or more distinct levels - one very little above high tide, the other twenty to thirty feet above high water mark. Here the implements are more sparsely distributed. A stretch of 10 miles from the Harbour entrance has been examined and throughout the whole way tools, big and little, have been found. Some good work has been done at the Port Stephens end of the Bight near Morna Point by Mr. W. Thorpe of the Australian Museum and Miss L. Hall B.Sc., who will no doubt publish some account of their finds.

(XII). The Newcastle Beach has been so altered that nothing has been found there. The first notable site south of the Hunter is that on Shepherd's Hill, discovered by Mr. Sussmilch.

(XIII). Continuing along this hill to the Bar Beach a piece of land, owned by the A. A. Company, formerly covered by large sand dunes, is reached. This Company has done much levelling work between the Hill and the Merewether Tramline and in doing so exposed old land surfaces over a large area. At six widely separated points are clearly defined factory sites where a great variety of finely shaped tools has been found. These sites are at levels varying between 30 ft. and 80 ft. above high water mark.

(XIV). Between Bar Beach and Merewether tools are occasionally found.

(XV). The next important position is a sand bank close to the Colliery railway between the 2nd tunnel and Glen Rock Lagoon. For about 30 yards the sand is thickly covered with chert chips, cores, small knives and some larger tools. This site is about 30 ft. above high water mark.

(XVI). A little beyond this factory on the South side of the Lagoon is another smaller one from which have come some good specimens. Dudley Beach has not been thoroughly explored and only one scraper comes from there.

(XVII). From Red Head, 9 miles South of Newcastle, to Swansea, say about 18 Miles South, 9 distinct factory sites have been located. Two of these (Nos. 5 and 6) are remarkable for the beauty of the material and the workmanship of the small knives and chipped back scrapers. No. 5 is about 2-1/2 miles South of Red Head. The nearest point is about 130 yards from the sea and is about 35 ft. to 60 ft. above high water mark. The area runs back a further 88 yards in depth and at present is about 48 yards in exposed width. No. 6 is about 1/2 mile beyond No. 5. and lies in a sand gully. Here the tools are few but good, and are more widely distributed. Most of them are chipped backed knives.

(XVIII). Beyond the entrance to Lake Macquarie on the sand dunes in Swansea Head Bay is another small factory with miniature knives and cores still scattered around.

(XIX). Returning now to Newcastle Hill a spur runs to the West known as Cook's Hill. Here, at a site known as Arnott's Paddock, Mr. AM. Pratt, of Cook's Hill, found many chips, small knives and scrapers.

(XX). Between Cook's Hill and Merewether, and between Hamilton and Bar Beach, extends a large open space lying on the 20 ft. and 30 ft. contours. This is still to a large extent a sandy waste. Here again the A. A. Company has done a lot of levelling and tools with chips can be found in a large number of places.

Lake Macquarie is known to have sheltered the blacks long after they had disappeared from the best of the District but its shores have not been properly explored.

(XXI). At Belmont some tools have been found on the beach.

(XXII). Others have been found at Jewell's Swamp.

(XXIII). Mr. F. Filmer, of Toronto, has a nice little collection taken from his own garden, a site known to the natives as Bunde Bunde
(xxv) (An isolated find of chert flakes & scrapers was made by a creek
near Broad meadow station.
(xxvi) Messrs WW Thorpe & H.S. Stanley have found chipped back knives & scrapers at
Winnace Farmstead Torowai

sent
to
xiv

(XXIV). Some rather good specimens have been found by the Rev. A. J. Barrett, at the Manse Speers Point, at Cockle Creek, and at the Sand Spit, Warners' Bay, all on Lake Macquarie.

See note
bottom of
pg. 4 →

Generally it will be noticed that these finds have been on sand banks, very often on old much bleached sand, sometimes mixed with china clay which has been covered for years by a darker drift sand of modern times. Almost all are within a quarter of a mile of the water - sea or river. The tools found are usually made of chert but occasionally of quartzite, sandstone, tuff, etc. and two are of black flint.

The Methods of Manufacture: are fully set out in Dr. Herbert Basedow's - "The Australian Aboriginal" - page 367.

T R I B E S.

According to A. W. Howitt in "Native Tribes of S.E. Australia, the nation inhabiting the district from Botany Bay to Port Stephens was possibly the Kuringal, and the local clans were: the Awabakal, around Lake Macquarie to Newcastle; the Geawegal on the lower reaches of the Hunter River and its tributaries, and northward to Port Stephens were the Gringai. The actual dividing line between these tribes is not stated and, ~~as far as can be seen at present, there is no outstanding difference in the tools they manufactured but there are features in the distribution of the smaller tools which rather confirm Mr. C. W. Howitt's opinions & suggest tribal boundaries.~~

C L A S S I F I C A T I O N.

For convenience in describing the specimens they have been grouped into six main divisions.

- I. Unworked stones used as tools.
- II. Flakes and rough tools made with a minimum of labour.
- III. More highly finished but unground implements.
- IV. Axes with ground edges.
- V. Miniature flakes without secondary chipping.
- VI. Miniature flakes with secondary chipping.

^{three} The specimens are numbered consecutively through the first ~~four~~ classes. As specimens of Classes I. and II. are simple in character they are not illustrated and as those of No. IV. are well known to everyone, they will not be dealt with individually. Classes V. and VI. will be reserved for a future paper as the specimens are numerous and important.

The names given to the numbered examples follow, as far as possible, those already applied to similar specimens. They are not used as rigid definitions of the use of the object described, but as suggestive aids to memory in handling a large number of rather similar shapes.

laying

The plan views in the illustrations were made by laying the objects on the paper and scribing all round them. The dimensions given are in all cases the greatest in length, breadth, and depth, and they do not always coincide with the views given.

CLASS 1.

1. Pounders:

Large oval pebbles bruised at one end by use. One specimen from Tirrikiba measures 115 mm. x 83 mm. x 70 mm.

2. Hammer Stones:

On most of the sites flattened pebbles measuring about 112 mm. x 79 mm. x 20 mm. thick, are found. These were probably used in striking off the smaller flakes.

3. Grindstones:

On most of the sites pieces of coarse sandstone are found showing on their surfaces grooves formed by their use in grinding wood or stone tools.

4. Pallets:

One of these from Bar Beach is of hard close grained ironstone. It is of nearly rectangular outline and measures 125 mm. x 87 mm. x 25 mm. One surface is covered with a black pigment which suggests its possible use as a pallet or muller.

5. Pebble Scraper:

Irregularly shaped pebbles which show signs of being used as scrapers, and are similar to the Eolithic Scrapers from the Kent Plateau, Fig 19, Page 27, Britt. Museum Cat. 1902.

When an undisturbed factory site is discovered the first thing that attracts attention is the large number of stone chips which have had little work done on them. Some are rejects, others were in the way of becoming finished tools, but all were useful as rough scrapers or knives. These form the next class. They can only be dealt with here in broad classes which could be indefinitely expanded.

CLASS 11. Flakes and rough tools made with a minimum of labour.

6. Rough Scrapers:

For these the projecting corner of a rock was broken off. It had some sharp edges and points and these have been utilised without further chipping.

Flakes

7. Bulbous Fragments:

These show a marked bulb of percussion and are usually shell-like in outline. They may be of three forms;

- (a). Flat on one side, convex on the other.
- (b). With both surfaces more or less convex.
- (c). With a convex surface on one side and a concave surface on the other.

Hundreds of these, mostly of (a) form have been found at all the sites described, and evidently served as scraper

8. Rough Pebble Picks:

Oblong pebbles roughly dressed into a pick having a beak which is characteristic of many of the tools. Specimens from Mill Paddock, Hunter River, Tirrikiba, and other sites.

9. Oyster Spoons?

Thin chert flakes nearly circular in outline having sharp edges all round. About 35 mm. diam x 4 mm. thick. Their use except as spoons is difficult to suggest. They do not seem strong enough to serve any other useful purpose, and yet their presence in large numbers round the shell heaps, etc. can hardly be accidental. Specimens from Tirrikiba, etc.

10. Flat Flakes:

These are found in great numbers at all the Factory sites and would serve as knives or scrapers or sometimes as blanks from which the more finished forms were made - nearly all of chert.

11. Prismatic (usually triangular) Flakes:

Suitable for knives, spoke shaves and scrapers.

12. Prismatic Flakes thinned off towards one end:

Similar flakes but with sharp curved ends.
to 11.

13. Triangular Flakes:

Formed by knocking the corner off a rectangular block and following this up by further parallel flakings, thus producing triangular plates with two cutting edges inclined at about 30° to 40° to the base.

14. Points:

Pointed flakes forming rough tools suitable for borers, rymers, or scribes.

In the next class of tools are many which are peculiar to this District and all of them show some amount of care in their fashioning.

CLASS III. Unground Tools - more highly finished than Class II.

X

X

15. Chipped Backed Knives:

This type of tool is one of the most common in this District. The ideal shape was that of a section of an orange, with one end brought to a point and the others well rounded to rest in the palm of the hand. Most have two flat sides but in some cases they are curved - all are more or less finished on the back by secondary chipping. There are at least four grades:

- (a) A few of almost ideal shape with finely chipped backs and some giving evidence of long use.
- (b) A similar tool but with the edge also finely retouched.
- (c) The ordinary tool with coarse finish on the back
- (d) Tools with an irregular cutting edge and generally of poor workmanship.

In size they vary greatly. The largest specimens are:

*Note
Drawings
to be inserted
in the letter
press where
marked X*

From Redhead, measuring 169 mm. x 78 mm. x 60 mm.
 From Bar Beach do 150 mm. x 75 mm. x 52 mm. (Loch)
 From Merewether ~~East~~ South 148 mm. x 80 mm. x 60 mm.
 From do ~~Glen Rock~~ Lagoon 146 mm. x 86 mm. x 72 mm. (Syd. Uni).
 From ~~Warriners Bay~~ ~~South~~ 123 mm. x 77 mm. x 54 mm. (Rev. Barrett)

About 120 were found at Tirrikiba and their sizes are approximately:

27 specimens between 113 mm. and 65 mm. long.
 63 specimens between 65 mm. and 38 mm. long
 12 specimens between 38 mm. and 30 mm. long
 18 specimens under 30 mm. long.

and a few are classed with the miniature tools. The nearest illustration to these tools is that of a chopping tool of Mousterian type from Kent's Cavern in B.M.C. 1902, Fig 72, p.63, and the Chipped Backed Knives p.98 Horne & Aiston's "S.L.in A.". The specimen illustrated is from Tirrikiba. See also Thorpe and Hall's paper "Chipped back and other remarkable Stone Implements from Newcastle".

16. Kidney Shaped Scraper:

A hollow edged scraper made from a quartzite pebble chipped all over on the back, from Shelly Beach, Hunter River.

X

17. Hand Chisels:

A flake which strongly resembles a small tomahawk. It has been chipped to improve the hand hold. It is of chert and comes from Tirrikiba.

Compare with fig. 69, page 57, B.M.C. 1902. A flint implement from Klutken Midden Denmark, and with the "Tranchet" Robert Munro P.B. P.113.

X

Munro's

X

18. Heavy Planing Tool:

This is perhaps the most interesting example yet found in this District. Viewed in front it is wedge shaped with a semi-circular cutting edge below and the point above. Seen at the side it is also wedge shaped but with the widest part on top. It is flaked all over but the back shows a good deal of the original bulbous fracture. The hand hold is well formed and the edge improved by a good deal of secondary chipping. So far no counterpart of this tool has been illustrated but it suggests affinities with some of the work of the Aurignacian Period - See Osborne's "M. of the O.S.A.", fig. 130 p.309, also compare B.M.C. 1902, fig 128, P.109.

Specimen of chert from the Bar Beach was found by Mr. W. J. Cooksey, B.Sc., and Mr. Harry Lipscomb.

19. Planing Tool:

This chert specimen is also from the Bar Beach and is another fine example of stone chipping. It was unfortunately broken when discovered. It is in the form of a thick wedge, the handle being the pointed end. The cutting end has been carefully chipped to a hollow edge. This also is akin to the work of Aurignacian times in Europe.

X

X

20. Beaked Peck:

The specimen illustrated is a triangular prism of chert with beaks worked up at the ends and the sides formed for use as a scraper. It is from Tirrikiba.

Other examples of a dagger like, roughly circular in cross section, have been found at Mill Paddock and Tirrikiba, 3 between 10" and 12" long on the Stookton sand hills, and another was thrown out by men laying a water main in Orbert Street, Another of rougher design (20E) from N.C.W. Loch's collection comes from Mill Paddock, Hunter River

Mayfield. They appear to be likely tools for digging earth or smashing large bones.

21. Hand Adze:

A very large flattish flake showing the original marked bulbous fracture. It has been turned by a few bold strokes of the hammer stone into a well balanced broad bladed adze. It was found on the mud flats beyond Bingle Hill (Tighe's Hill). It is of chert now stained to a dark red.

X
X

X

22. Common Scrapers:

Usually with length nearly equal to breadth. Specimen illustrated is from Tirrikiba and is of chert. These occur at every factory site and usually appear in one of four forms:

- (a) As example - finished all over by bold flaking.
- (b) Finished by fine secondary chipping on the upper grasping surface.
- (c) With the cutting edge finished by secondary chipping.
- (d) With the whole of the periphery finished by secondary chipping.

23. Gouges:

Under Class 7C a form of flake was mentioned convex on one side and concave on the other. This type of flake was taken by the maker and the upper surface remote from the cutting edge was roughened by secondary chipping. This was done in order to attach them by native pitch to a stick. In this way was formed an adze or gouge for hollowing out wooden articles. Five others were found with the specimen illustrated, at Tirrikiba

24. Oval Double Ended Graver or Pick.

Tool of brown chert from Stockton near the Northern Breakwater. Another, similar in size and design, was found by Mrs. D. N. Morison at Kuringai Chase immediately below a rock carving of a fish. Little imagination is needed to suggest the suitability of such a tool for cutting grooved patterns in rocks or wood. The specimen, like many other of the Stockton tools, is much worn by the action of the loose sand. See No. 140, Fig 172, page 346. Osborne's "M. of the O.S.A." This is a smaller tool of the Solutrean period and is called a drill or borer; also see beak-shapedolith from the Kent Plateau B.M.C. 1302 p. 27

X

25. Hand Chopper:

Tool, formed from a flat pebble of yellow chert by flaking one end to a cutting edge - from Redhead (1).

26. Radial Edged Planer:

A tool of coarse chert from creek at Warner's Be Lake Macquarie. It approximates to a quarter of a sphere. One edge has been roughly sharpened by secondary chipping and one end forms a rough pick.

X

X

27. Dagger-like Knife:

Of chert and comes from the Bar Beach. These knives were often made suitable for use by winding fibrous material round the haft. Compare knives illustrated p. 86-8 in Lord Avebury's "P.T". Also Spencer & Gillen's "N. Tribes of C.A." P. 588.

28. Coarse Scraper or Hammer:

This tool is made of hard conglomerate and comes from Tirrikiba.

X X
29. Hump Backed Scraper:

This tool may be considered as a specialised form of the chipped backed knife (15) with an enlarged grasping surface for heavy work. It is of a porphoritic rock and comes from Tirrikiba.

30. Spoke Shave, or Double Scraper:

These triangular prismatic flakes are finished at the ends by secondary chipping to give a good hand hold and were probably used very much as the modern spoke shave. This can be seen by the polished surfaces produced on some by the actual work in dressing the surfaced of spears and bommerangs. Specimen from Tirrikiba. See Illustration, fig 35, page 42, and fig. 7, page 18, Brit. M.C. 1902.

31. Denticulated Scraper:

A chert flake from Hunter River near Mill Paddock. It is similar to the tools used for scraping bone or wood to make needles on the Magdalenean period. See Brit. M.C. 1902. page 47, fig 48, also Osborne's M. of the O.S.A." fig 194, page 390. Another scraper of this type comes from Red Head (7).

X X
32. Chipped back knife or scraper (2nd form).

This tool is the only specimen of its sort. It is of grey chert and comes from Merewether South. The edge is nearly straight and the back chipped to an oval outline by striking off flakes for half its length from the front and the other half from the back.

33. Oval Scraper or Chopper:

This large oval scraper is of pale greenish chert and comes from North Stockton. It is triangular in mid section and, save for a small amount of chipping on one edge, was used exactly as it was taken from a big boulder.

X X
34. Graver or Pick:

Specimen of brown stratified chert from Glen Rock Lagoon (South of Merewether). Somewhat like No. 24, but of lighter make and with only one pointed end. Specimen worn by moving sand.

35. Small Chopper:

A Sandstone pebble roughly shaped for hand hold or for attachment to a stick and with the cutting edge coarsely sharpened on one side only by flaking. From Merewether South.

X X
36. Double ended Chisel or Planer:

Tool of greenish chert from Stockton Bight about 4 miles North of the Harbour entrance. On these beaches there two levels at which tools are found:

(1) on the sides of the sand dunes 30ft to 40 ft.

above high water mark

(2) a lower shelf about 15 ft. above high water mark.

On the higher level the stones are often much sand worn. On the lower they are sometimes, as in this case, almost as sharp as when made. Almost rectangular in outline and sharpened at the two ends by secondary chipping.

37. Borer:

This is flaked all over and the point carefully worked up by secondary chipping. It is of chert and comes from the B.H.P. Golf Ground, Mayfield. Compare with the flint borer of probably Magdalenian period from Les Eyzies, Fig 40, page 44 B.M. Cat. 1902.

X

X

38. Elongated Celt or Scraper:

Specimen of dark grey chert from Tirrikiba. It agrees very closely with the long celt of early Palaeolithic to Neolithic times and is also akin to some of the scrapers of Class 15. Possibly used as a combined pick and scraper. See Fig. 265, p. 494, Osborne's "M. of the O.S.A.", and there called a pick of the Campignian stage of Neolithic culture.

39. Chopper - Scraper:

From Tirrikiba, of chert. Of unusual form but the secondary chipping on the working edge proves that it was carefully made. This tool has affinities with the chopping tool, fig 12, page 23. Brit. M.C. 1902, of late Palaeolithic times.

X

X

40. Handled Chopper:

This specimen from Tirrikiba was looked upon at first as a mere chance shape, but three others have since been found at the same site.

The nearest illustration of this type is the axe head of chert from Egypt, fig 104, page 96. Brit. M.C. 1902.

41. Two-edged Handled Chopper:

This has a good deal in common with No. 40, but it will at once be noted that it has two cutting edges formed by a large amount of secondary chipping. It is of chert and comes from Tirrikiba.

X

X

42. Pebble Scraper:

Scraper formed by breaking off the end of a hard pebble, from Redhead (5). *Of green chert*

43. Plane:

A notable example of a plane-like tool formed out of an almost rectangular water worn chert pebble. One end has been chipped to form a semi-circular hollow cutting edge. It is strongly reminiscent of Aurignacian work, see fig 150, page 309, Osborne's "M. of the O.S.A."

X From Bar Beach

X

X

44. Crushing Tool:

A bold form of crushing tool, triangular in section having a long and somewhat rounded edge. Specimen of chert from the river end of the Mill Paddock, Hunter River. From Mr. C.W. Loch's collection.

45. Mincer or knife:

A knife which seems to be the ancestral form of the mincer. Its general outline is like many of the Aboriginal miniature knives. The back has been very carefully shaped by secondary chipping. This appears to be a left handed tool. It is of chert and comes from the Bar Beach site.

46. Mincer or Knife:

This tool follows the general outline of No. 45, but, as it is made of tuff the flaking is much coarser. ~~The~~

It is made for the opposite hand. From the highest point of the Bar Beach site (not illustrated.)

X

X

47. Three-edged scraper, or hand Chopper:

It has a thick side for the hand grip and is flaked on the other sides to sharpened cutting edges. It is of chert and comes from the Bar Beach Site. This is a type of a good many of these tools.

48. Celt like Pick:

An unusual triangular chert flake with original cleavage planes at a slight angle to each other. The sides have been brought to sharp edges by chipping each face on the right hand side.

From the Merewether ^{South} ~~(extended)~~ sand Bank.

X

X

X

49. Flat backed celt:

One of the fairly common forms of this District. They may be described as large and thick trigonal flakes which have been roughly chipped into a form suitable for picks. Specimen comes from Tirrikiba.

It is similar to fig 26, page 31, Brit. M.C. 1902. a chert implement from San Isidro, Madrid, probably of Chellean times.

50. Pick:

A roughly formed tool of a rather shaly chert found with many chert chips about half a mile South of Hunter Street on the A.A. Co's ground.

51. Crown Shaped Tool:

A fairly common shape in this District. It has a circular flat base from which a sharp edge springs in a semi-circular form making a ridge like that of a crown. Specimen is of chert from A.A. Co's ground half way between Hamilton and Bar Beach. Many others of this type have been found at the Bar Beach, Swansea Head Bay, Shelly Beach, etc.

X

X

52. Heavy thick backed Scraper:

A bold type of scraper of almost triangular section and with one clean radial cutting edge, made of tuff, from the Bar Beach. *The largest tool yet found in this district of this type & comes from Merewether, South. It measures 172mm x 145mm x 152mm.*

53. Pebble gouge:

A nuggety quartzite pebble which has been roughly chipped at one end to give a good hand hold and at the other to a nicely shaped gouge-like cutting edge. From the Bar Beach.

X

X

54. Bark Stripping Wedge:

A large flat wedge-like chert flake roughly chipped to a pentagonal outline. It has one wide cutting edge having some secondary chipping. The upper end forms a good hand hold. It is suggested that these would be useful in stripping bark from trees. Specimen from Bar Beach. Another of similar form comes from close to Red Head.

55. Scraper and Pick:

An oval tool wedge-like in cross section with a strong beak at one end and with one side brought to a cutting edge. It is of hard yellow ^{quartzite} ~~chert~~ and comes from the Mill Paddock Hunter River, and is in Mr. C. W. Loch's collection.

X X
56. Knife or Chopper:

A chert tool of a well balanced type almost triangular in elevation with a fine cutting edge and carefully worked hand hold. Specimen from Mr. C. W. Loch's collection and comes from the Bar Beach area.

57. Heart Shaped Celt:

A large, boldly fashioned chert flake. It has two sharp edges ending in a point. Specimen from Mr. C. W. Loch's collection, and comes from Toronto.

X X
58. Oval Celt:

An oval flake with a smooth bulbous fracture on one side and a nicely chipped surface on the other. It is of hard yellow chert and comes from Rothbury. It is similar in character to many of the Acheulean "Coups de poing" or hand axes. See Osborne's "M. of the O.S.A." page 178.

59. Chopping Knife:

A chopping tool formed of a fragment of gritty chert. It has been ground on the edges with a piece of coarse brown sandstone which was found with the tool. From Red Head (5).

X X
60. Rectangular shaped chopper:

Flaked on one side only. The cutting edge has been sharpened by secondary flaking. Found near Shelly Beach, Hunter River, by Mr. W. W. Thorpe (Ethnologist) and is now in the Australian Museum collection.

61. Obtuse angled Scraper:

An irregularly shaped scraper flaked all over with a cutting edge formed by secondary chipping, of chert, and comes from Bar Beach. The treatment of the edge is like that of the primitive "Gratoir" or planing tool of Chellean type from St. Acheul, fig 62, page 129, Osborn's "M. of the O.S.A."

63. Coarse Planer:

A particularly heavy type of planer having a rounded head for the hand hold and a roughly serrated cutting edge. It is of dark purple chert and comes from Red Head (5).

X X
64. Chopper shaped Cutting Tool:

An unusual chopper shaped tool of purple coloured shaly chert with rather pronounced stratification lines. From Red head (5).

65. Oval Axe with one Chipped Face.

A very heavy flake struck from a quartzite pebble. The fractured side has been chipped all over. Specimen from the Bar Beach.

This is similar to the "coups de poing" of the Acheulean period, pages 178 and 179, Osborne's "M. of the O.S.A.". It differs from them because this specimen is flaked on the side of the bulbous fracture whilst the Acheulean work was done on the original pebble surface.

Another specimen comes from the Mill Paddock and two from Copeland, Barrington River.

66. Bulbous Flake Axe:

A bulbous flake struck off a large pebble and formed into a hand axe by striking off a few flakes at the thick end. From Jewell's Swamp, Belmont, and comes from Mr. C. W. Loch's collection.

67. Core:

This typical core is from Tirrikiba, It should be noted that in order to obtain thin knife-like flakes the pebble or block was prepared by first flaking the top and bottom into saucer like depressions. In this way the blow of the hammer stone fell on the surface layers.

CLASS IV:

Tools with ground edges:

As has been stated these axes, etc. are well known. They occur so widely all over Australia, and illustrations are so common that they will not be considered here.

CLASSES V. and VI.

Miniature Flakes and Tools:

So many varied, and excellent have been the finds in these classes that their consideration is held over for a further paper.

CONCLUSION.

Taking the specimens dealt with as a whole, it is clear that there are some patterns which occur in large numbers over the whole District, viz: Nos. 9, 13, 15 and 22. The outstanding feature is, however, the large variety of shapes and the great range from crude unworked pebbles to highly finished products. It is true that in some classes, as in spear heads, the finish is far behind that of the N.E. coast natives, but there are other specimens which equal the work of any people in any place. The relation of many of these finds to the 30 ft. and 20 ft. contours suggests that some of these factory sites were in use before the last 20 ft. rise of the Coast. This has been more fully dealt with in the paper written by Mr. W. Thorpe of the Australian Museum and Miss L. D. Hall, B.Sc. of the Sydney University. It is entitled "Chipped back and other Remarkable Stone Implements from the Newcastle District, N.S.W." and was read lately at the Perth meeting of the Australian Association for the Advancement of Science.

All the tools dealt with in this paper are surface finds but, as some had been buried under very deep sand drifts, it is possible they may be of great age.

BOOKS QUOTED IN THE TEXT.

- "A Land of Opportunity", by C. J. Stuart.
- "Prehistoric Times". by Lord Avebury.
- "Guide to the Stone Implements of the Aborigine in the National Museum". By A.S. Kenyon and D. J. Mahony.
- "The Aboriginal Workshops on the Coast of N.S.W. and their Contents". Records of the Australian Museum, Vol. VI. part 4. By R. Etheridge, Junr. & T. Whitelegge
- "Stone Spear Heads". Records of the Geological Survey of N.S.W. Vol 11. Part 11. by R. Etheridge, Junr.

"Guide to the Stone Age" British Museum Catalogue of 1902".

by Chas. H. Read.

"The Australian Aboriginal" Dr. Herbert Basedow.

"Native Tribes of S.E. Australia" by A. W. Howitt.

"Savage Life in Australia", Horne and Aistow.

"Prehistoric Britain" by Robert Munro.

"Men of the Old Stone Age" by M. F. Osborne.

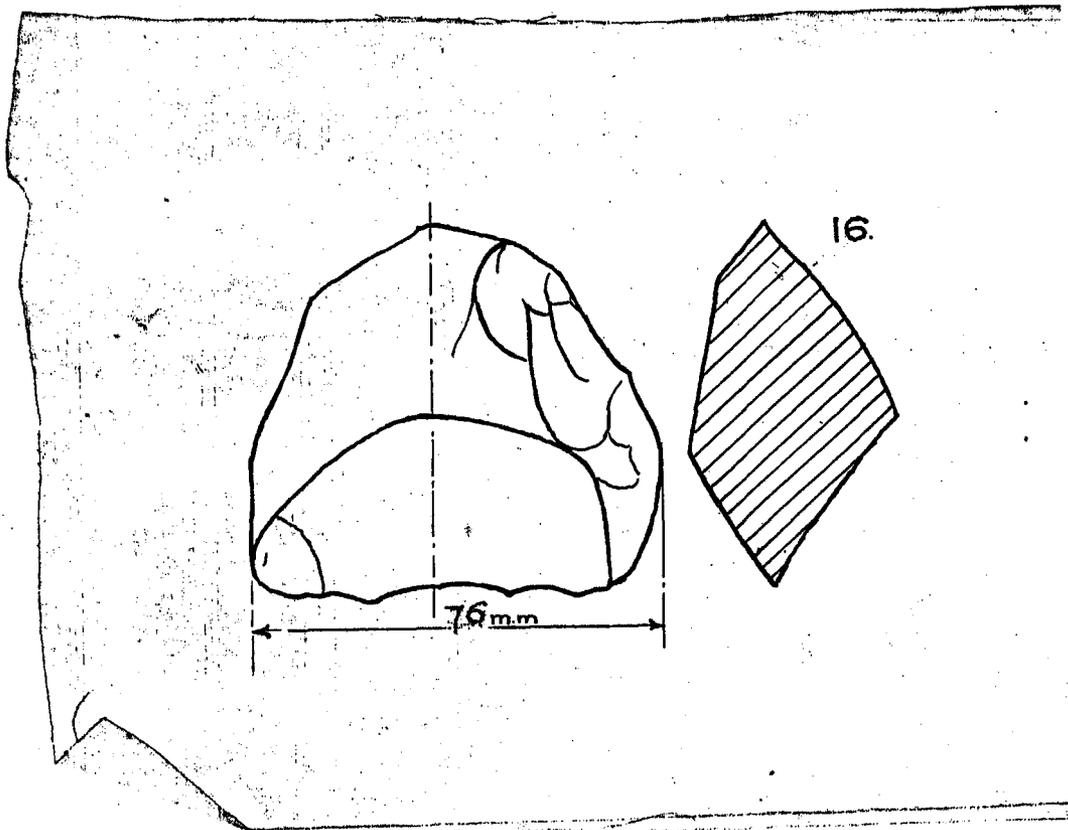
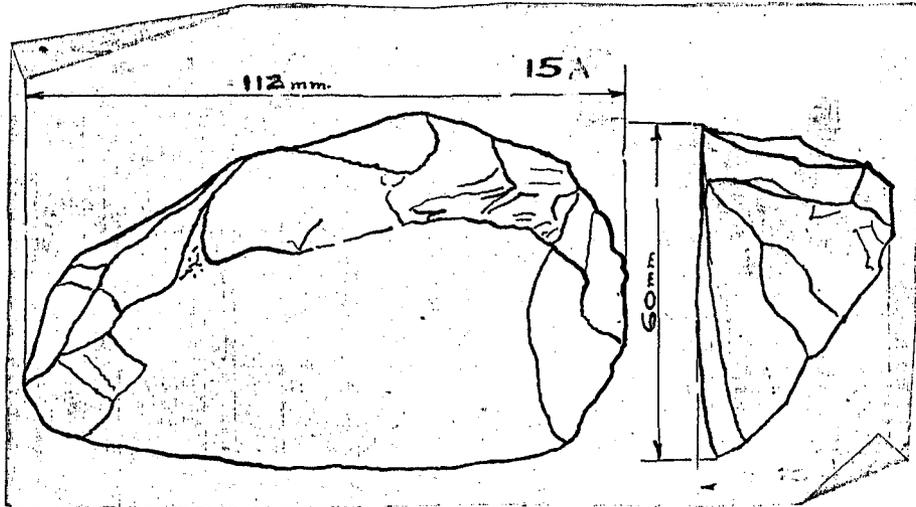
"Northern Tribes of Central Australia" by Spencer and Gillen.

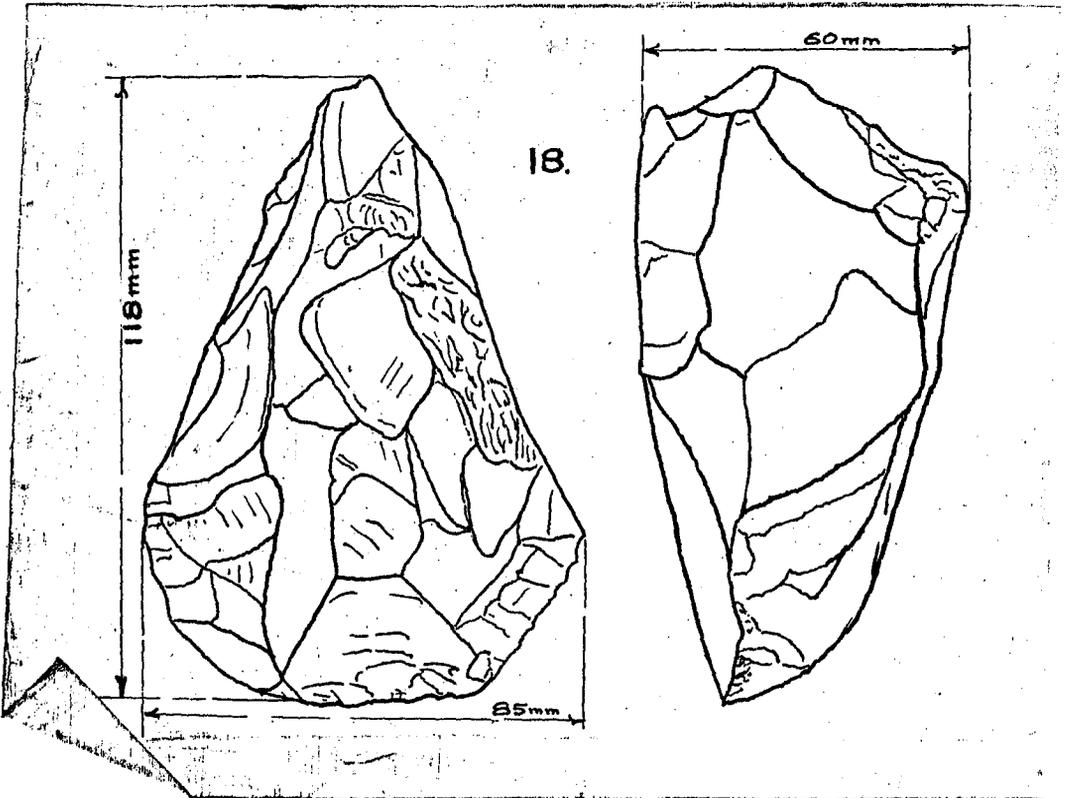
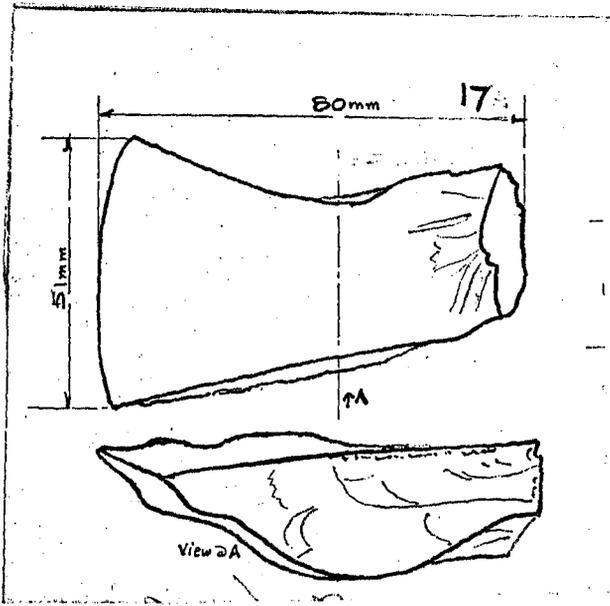
* Catalogue of Exhibits of Tardeneisian & other Micro-Industries" 1926

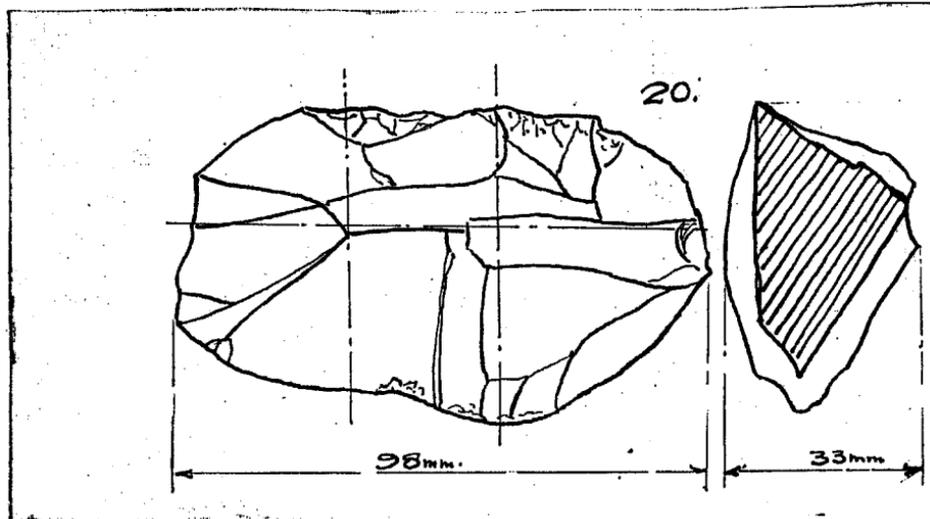
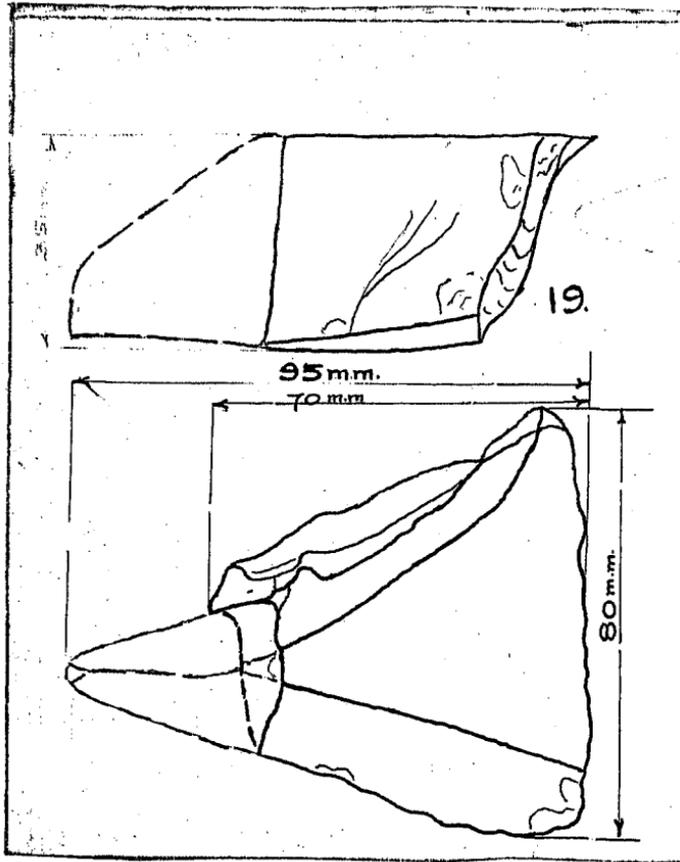
← Royal Anthropological Institute of St. Britain & Ireland.

Thanks are due for many useful suggestions received from Messrs. W. Thorpe, of the Australian Museum; J. Mitchell, late Principal of Newcastle Technical College; and T. H. Pincombe B.A. New Lambton; to the following for valued help in collecting: Messrs. T. Chambers, C. Francis, D.R. Cooke; and H. R. Cooksey, and to Mr. F. E. Cooksey for the preparation of the maps.

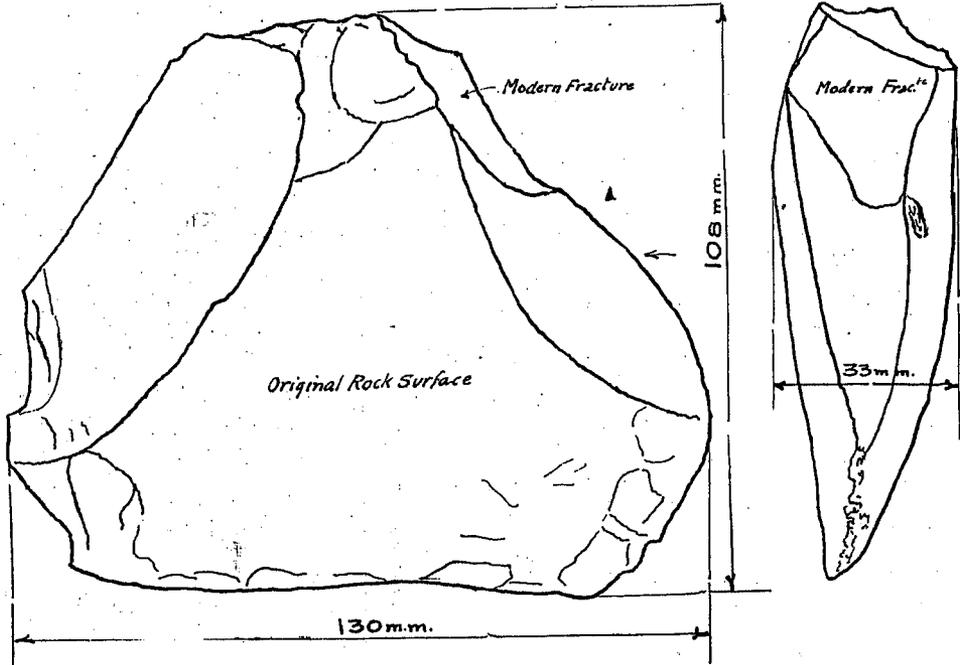
Mayfield,
Newcastle.



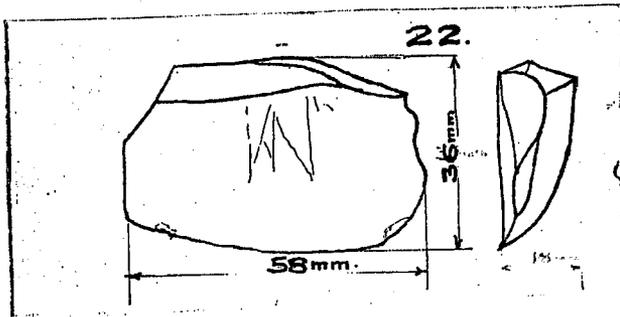




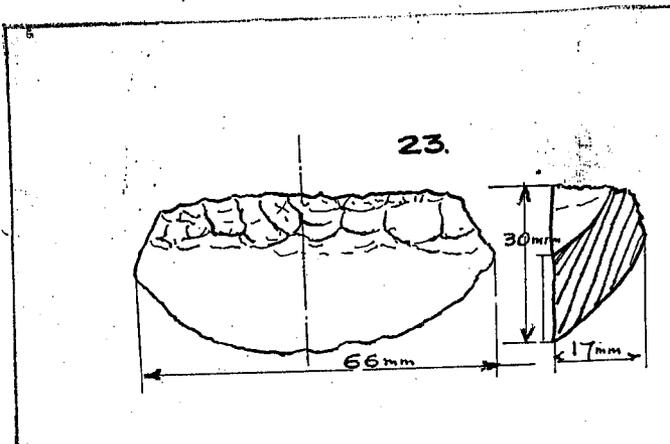
21.

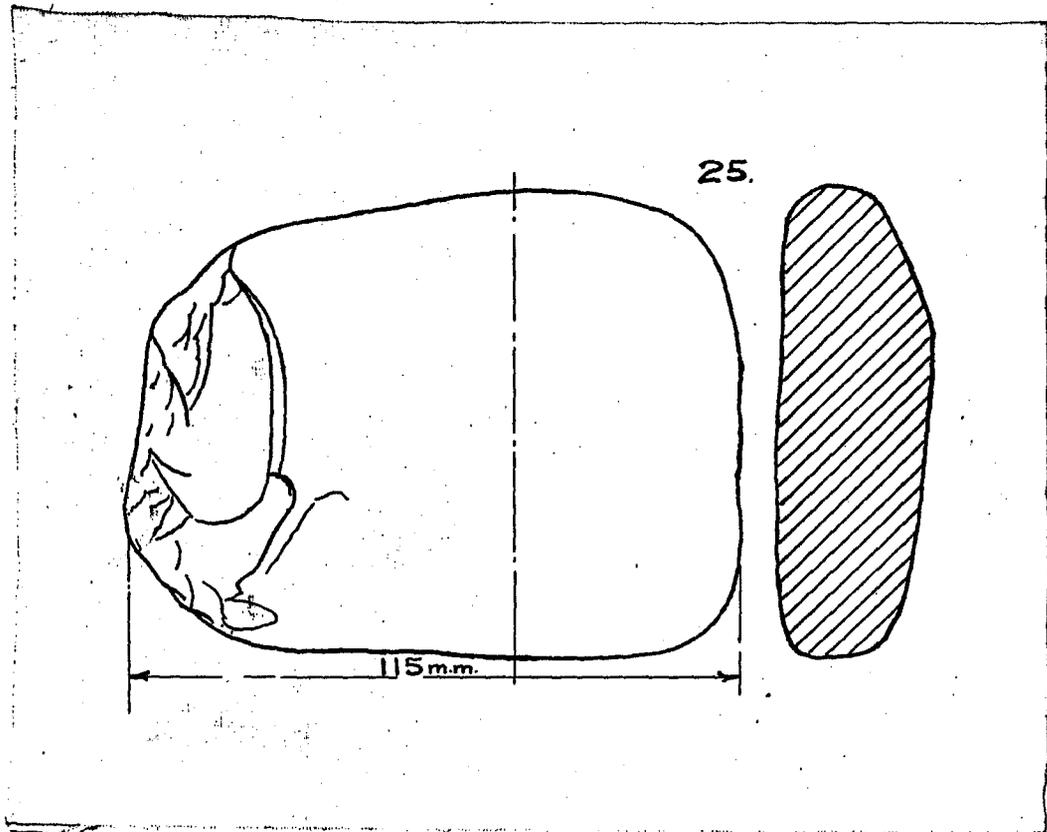
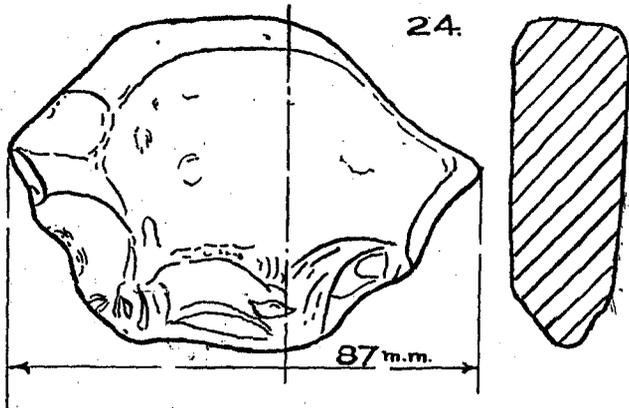


22.

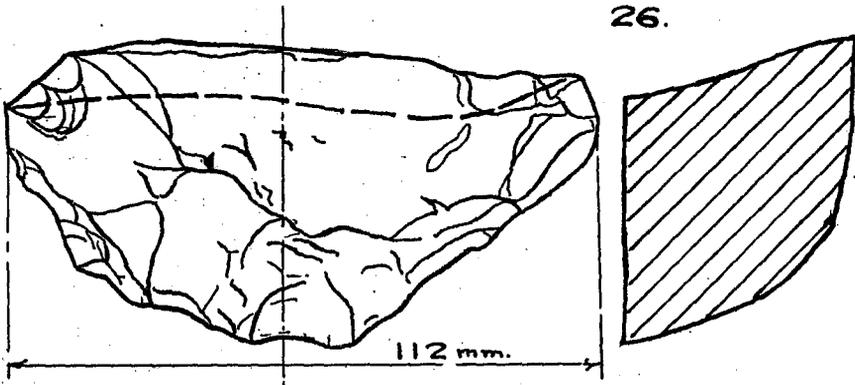


23.

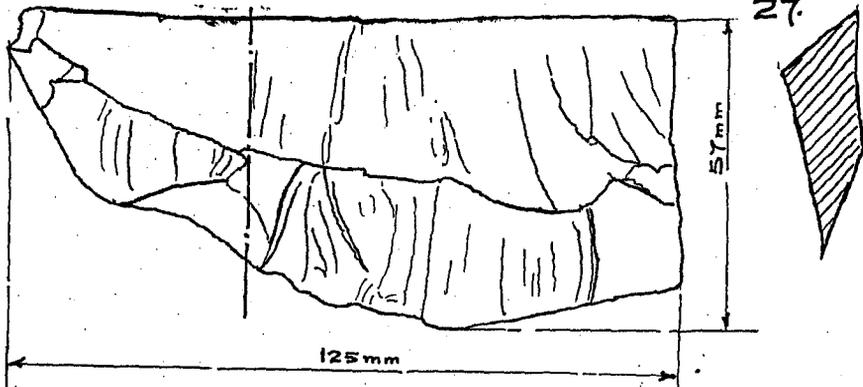




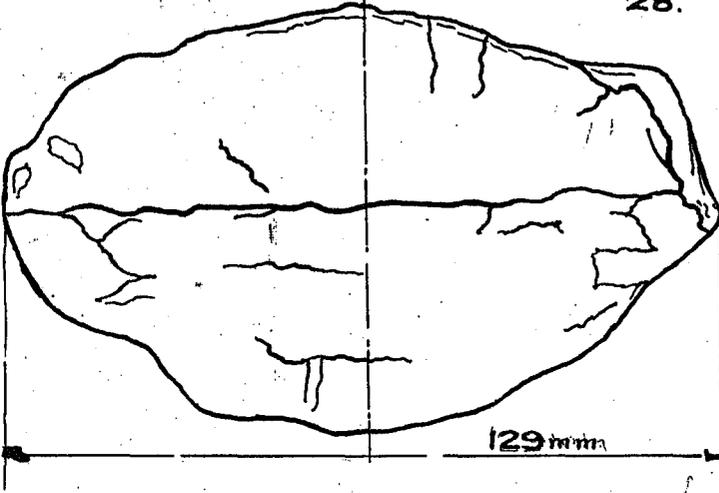
26.



27.

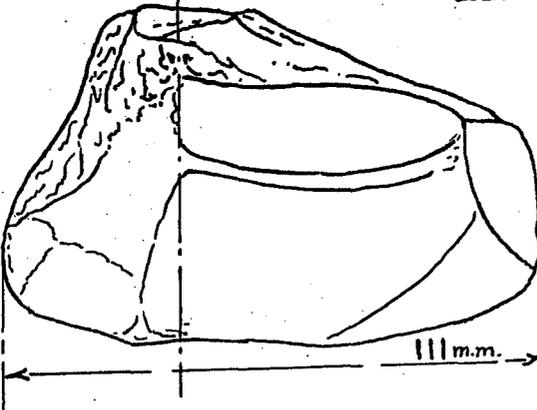


28.

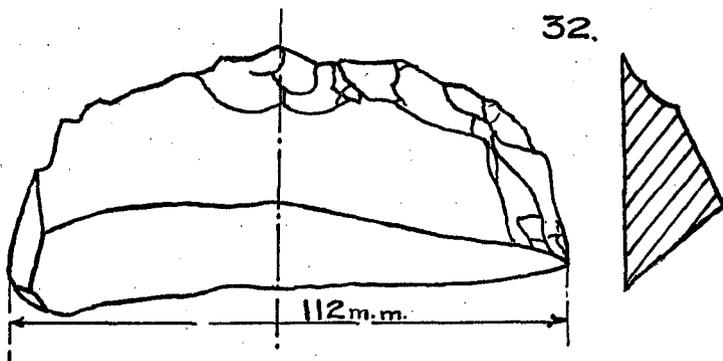
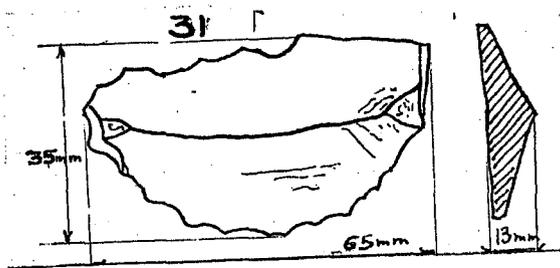
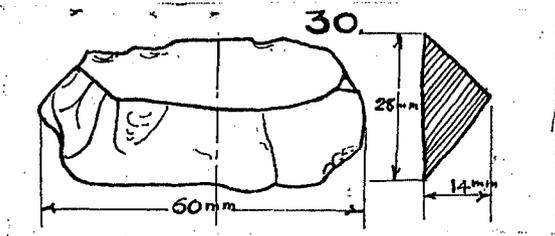


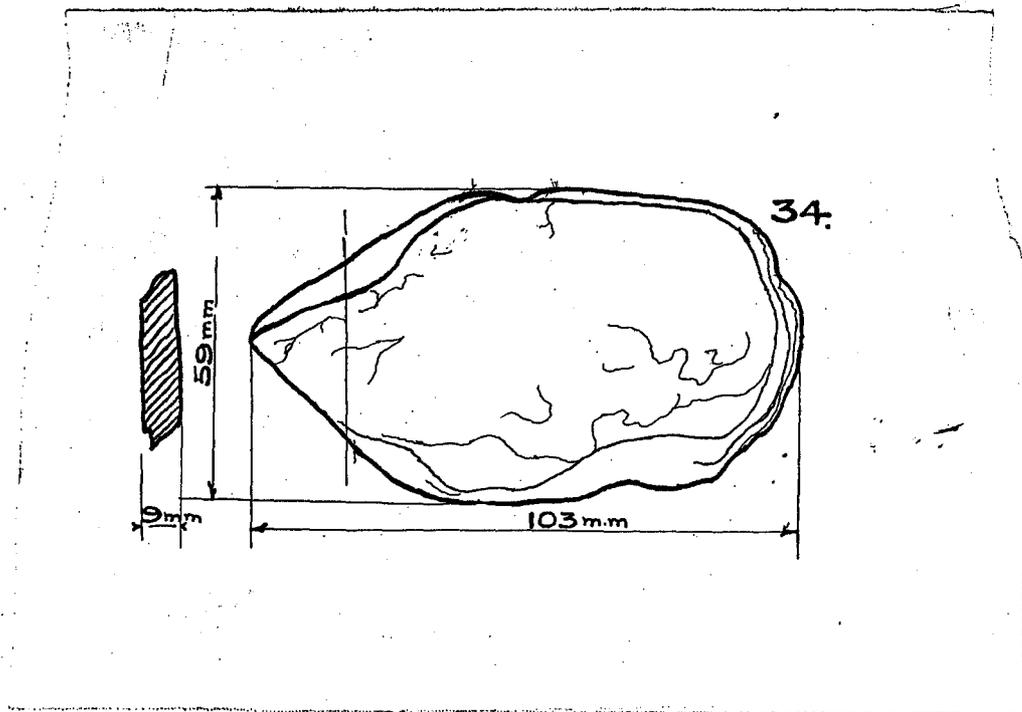
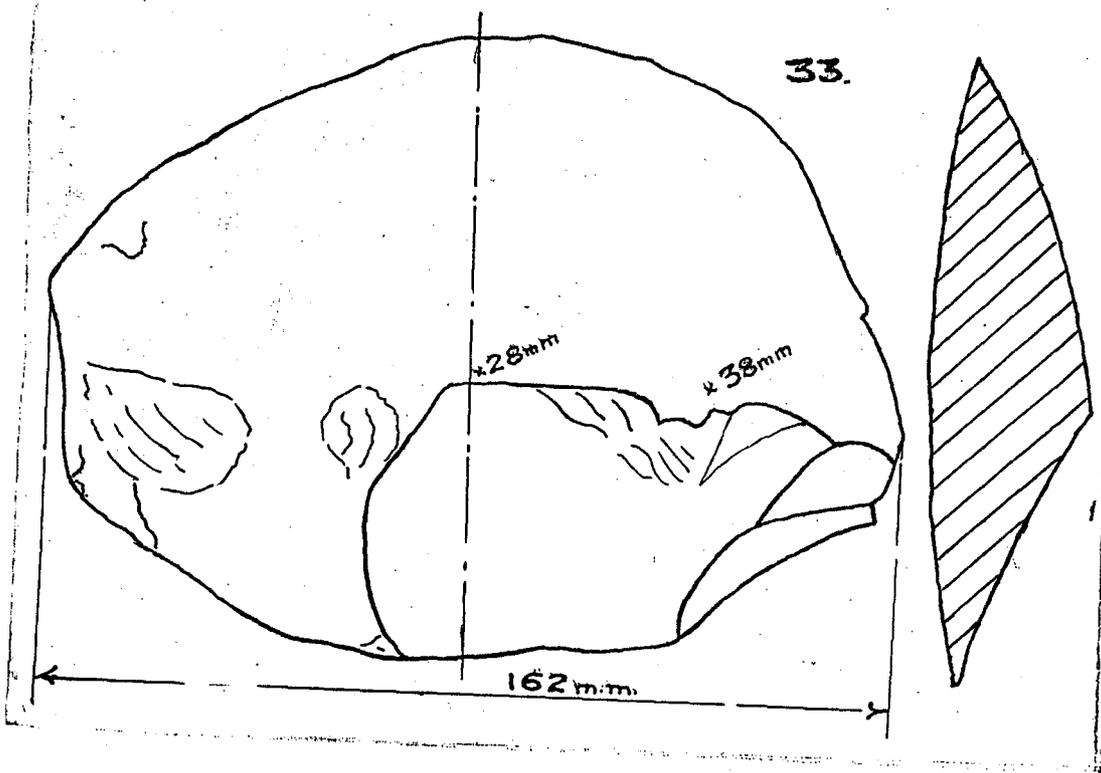
129 mm

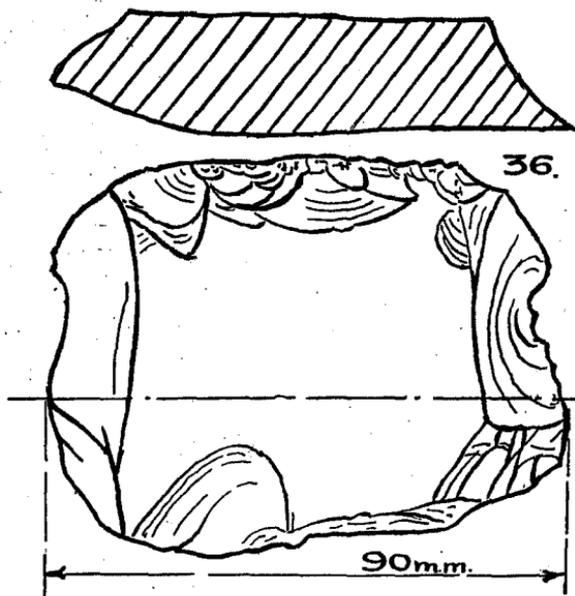
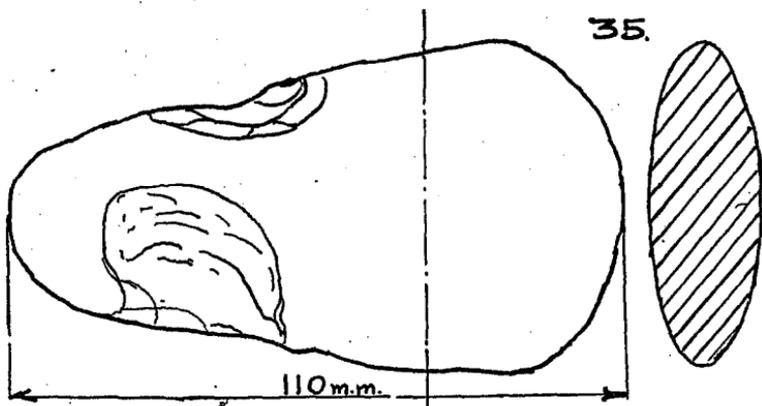
29.

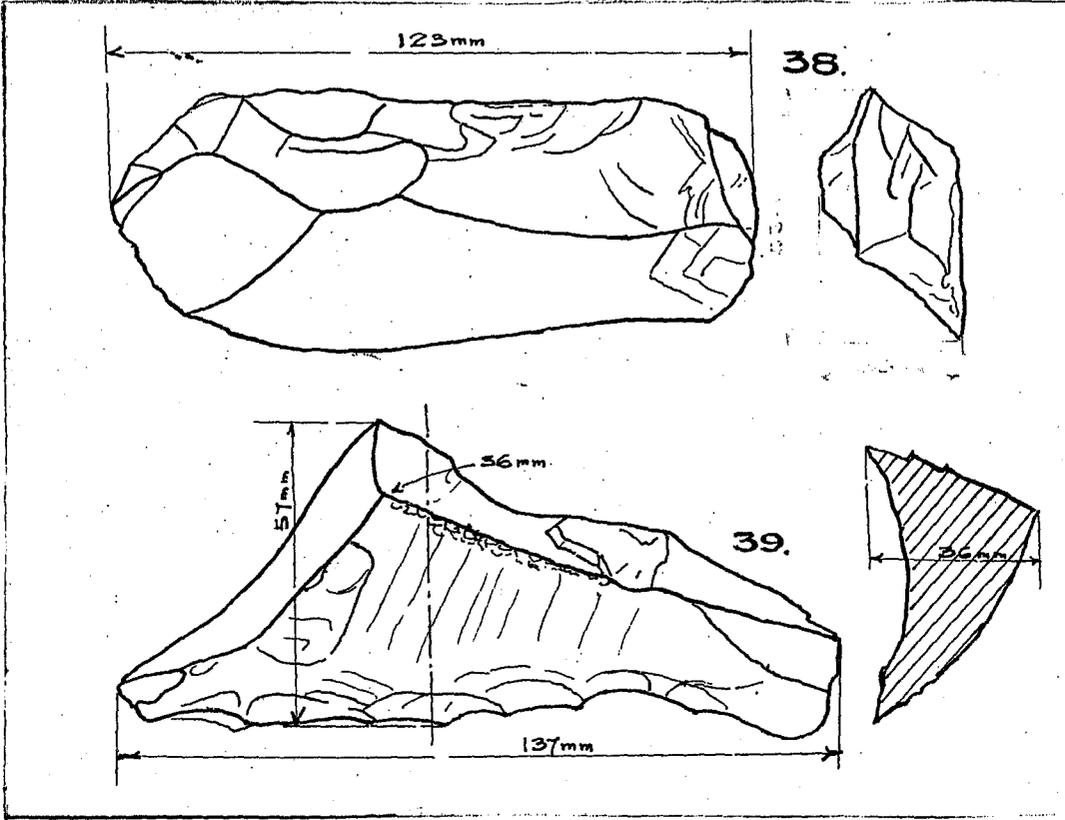
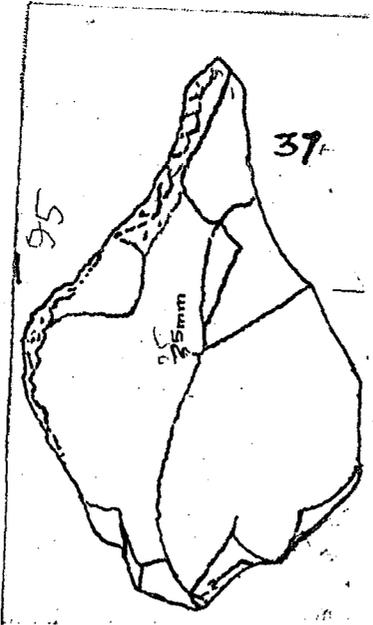


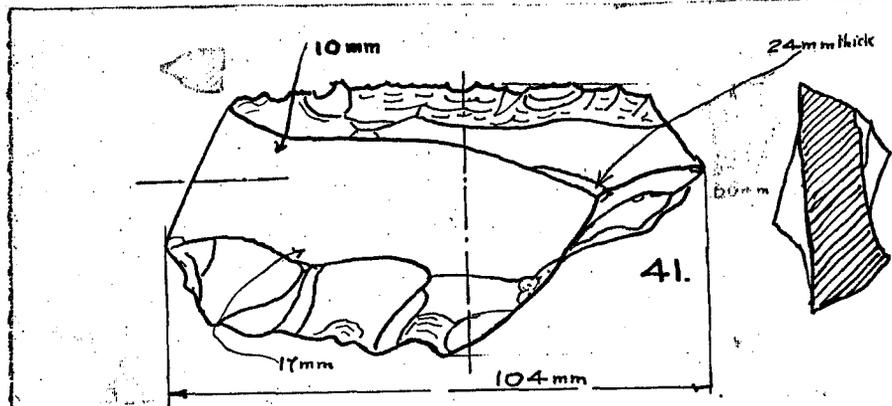
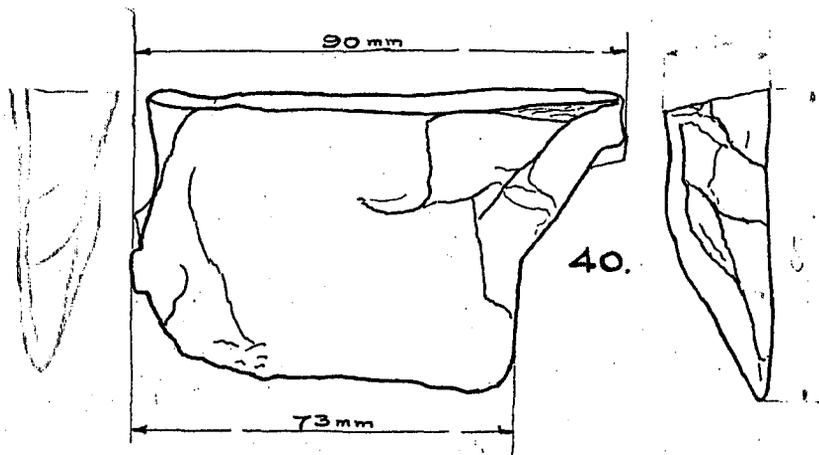
111 m.m.

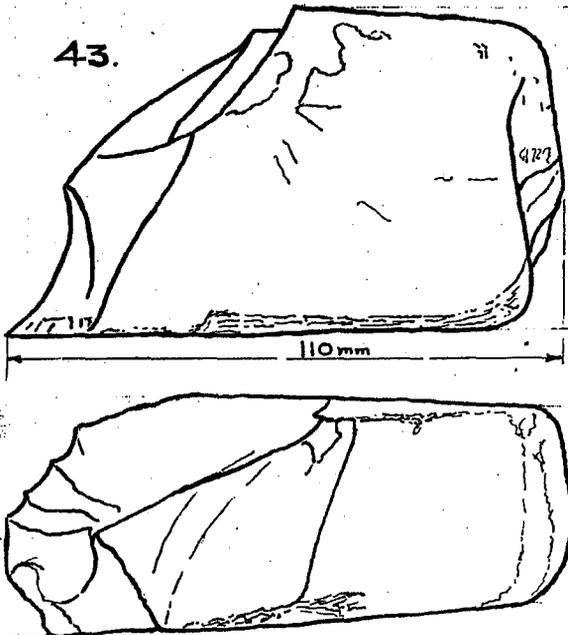
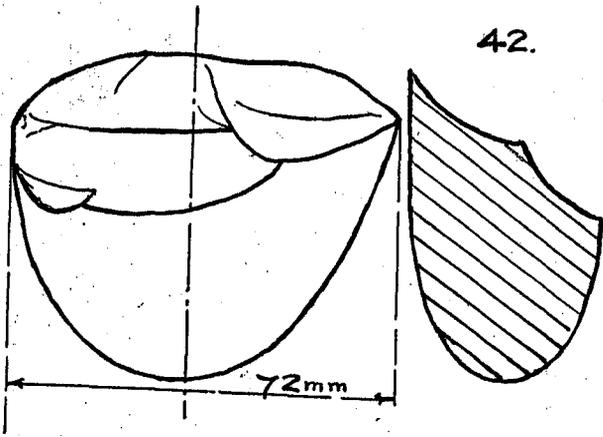




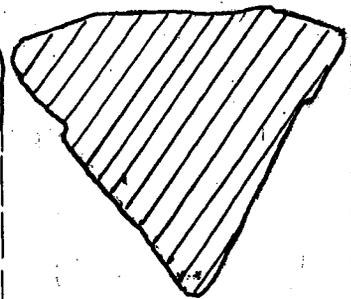
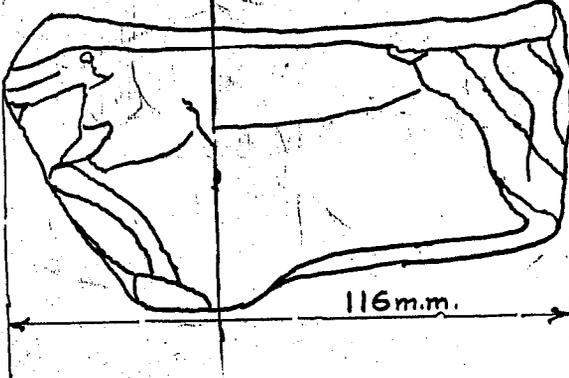




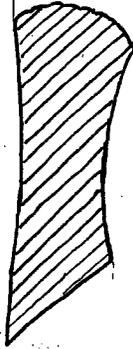
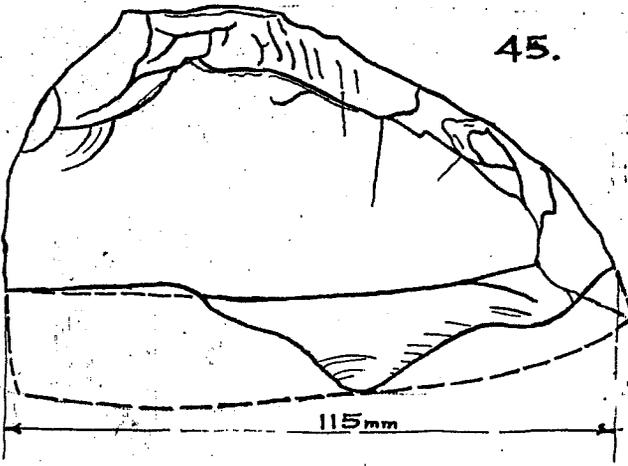




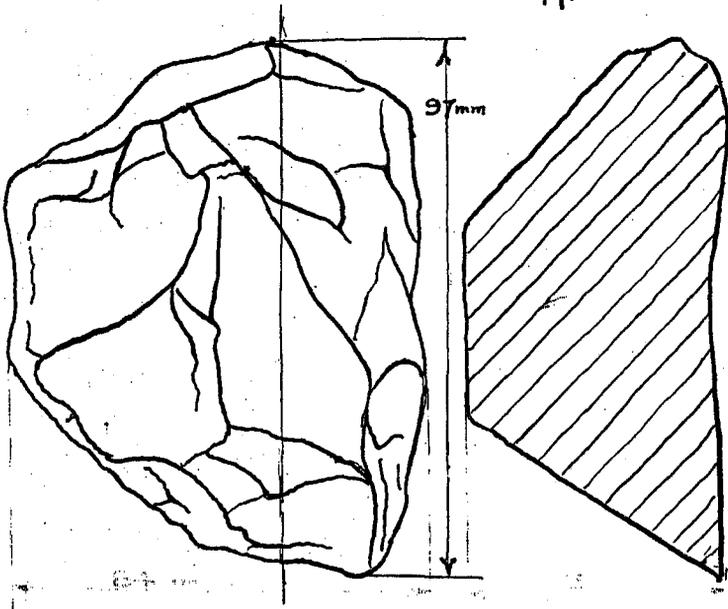
44.



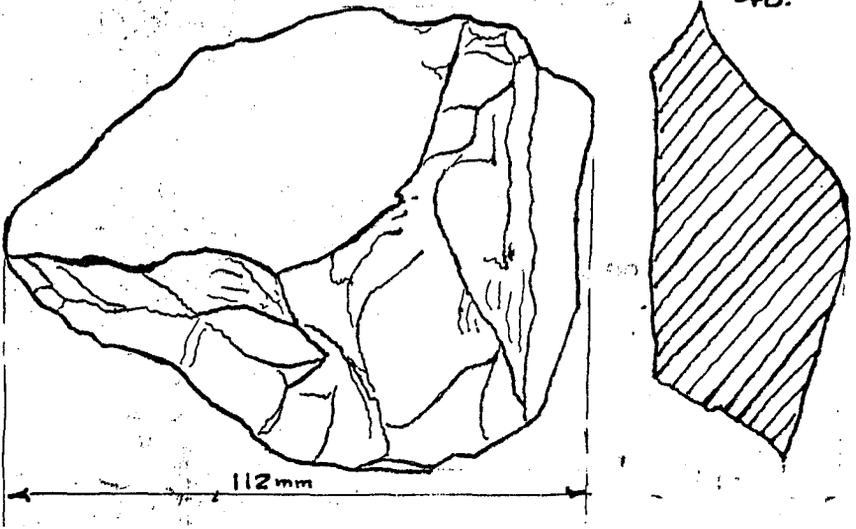
45.

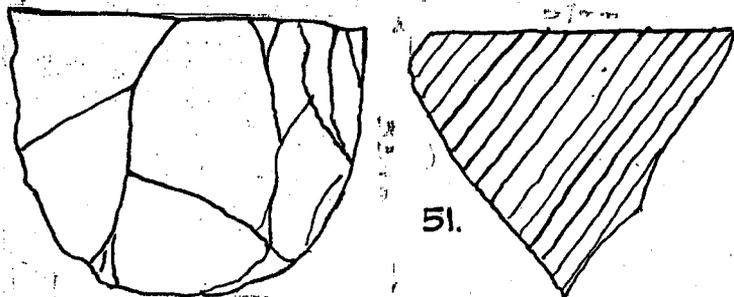
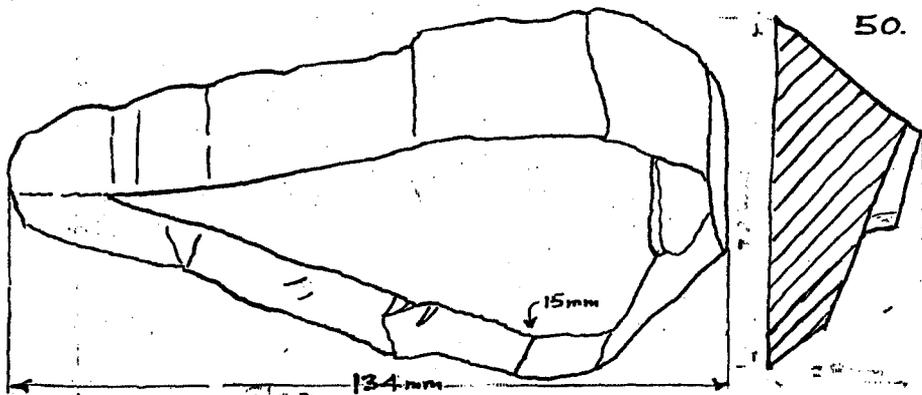
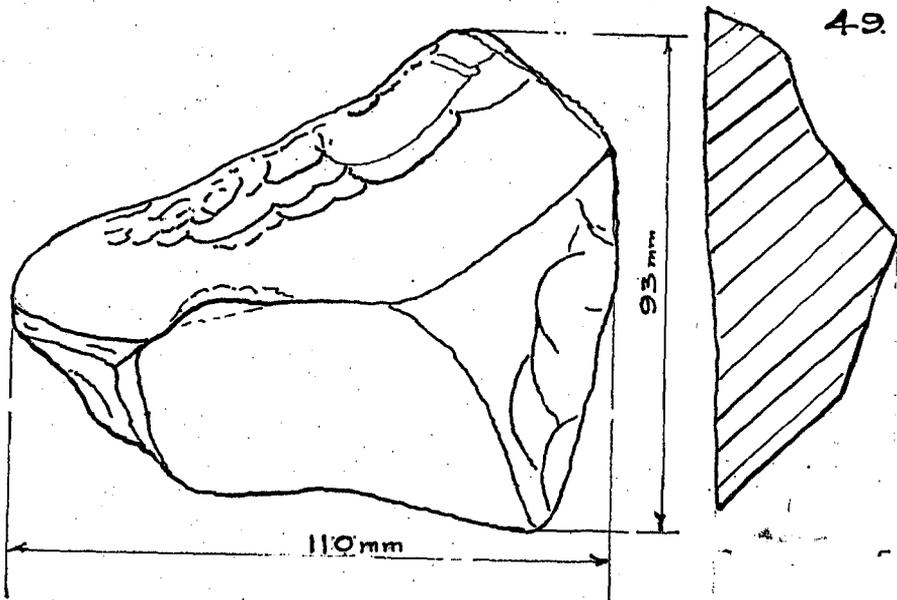


47.

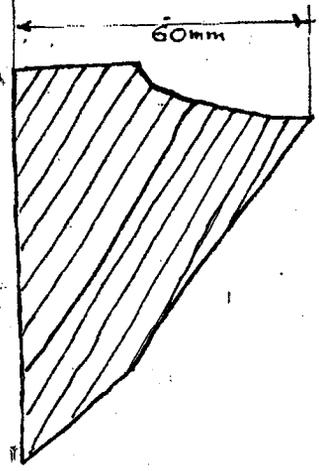
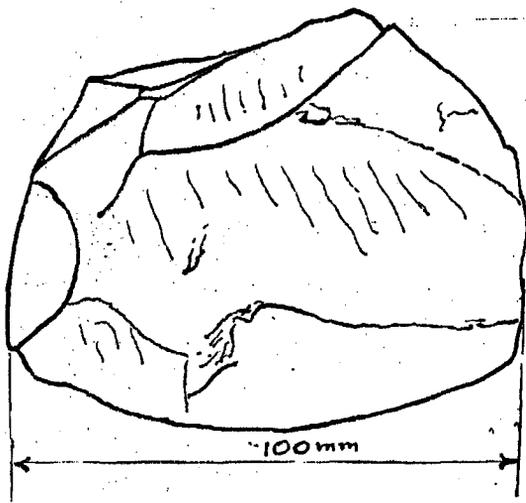


48.

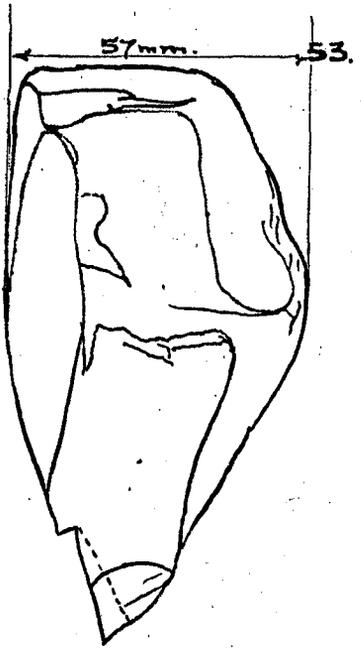
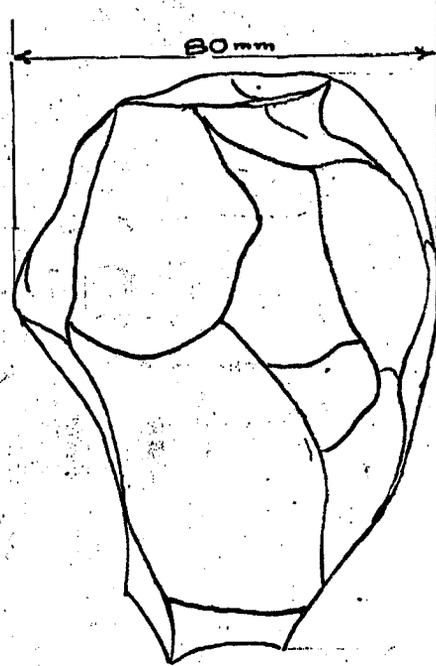




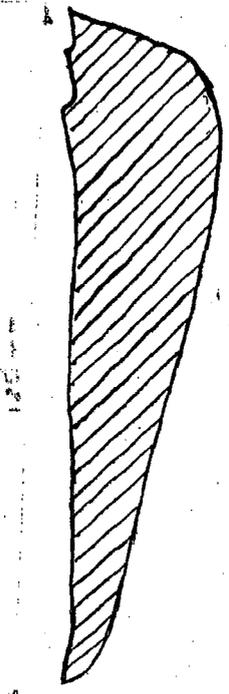
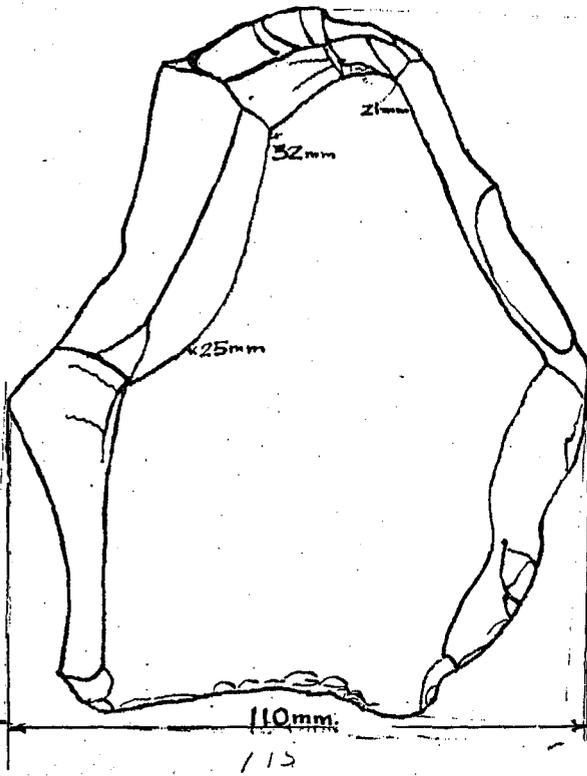
52.



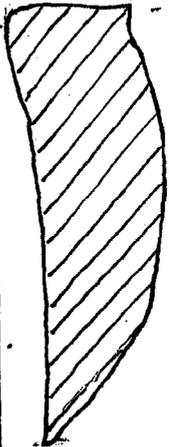
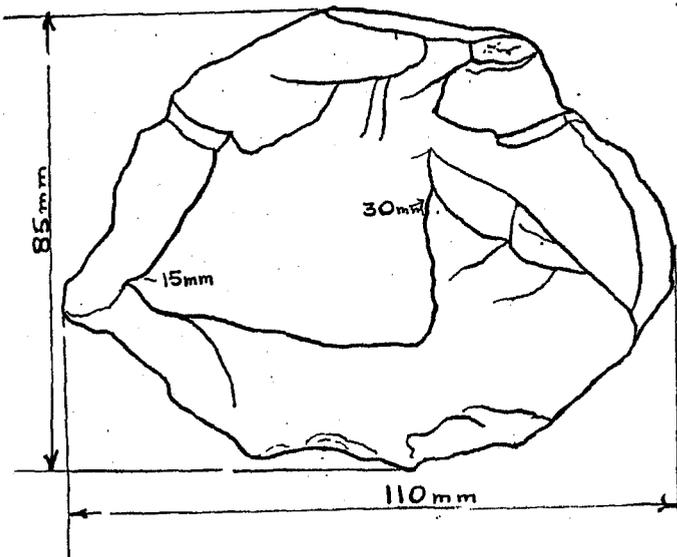
///



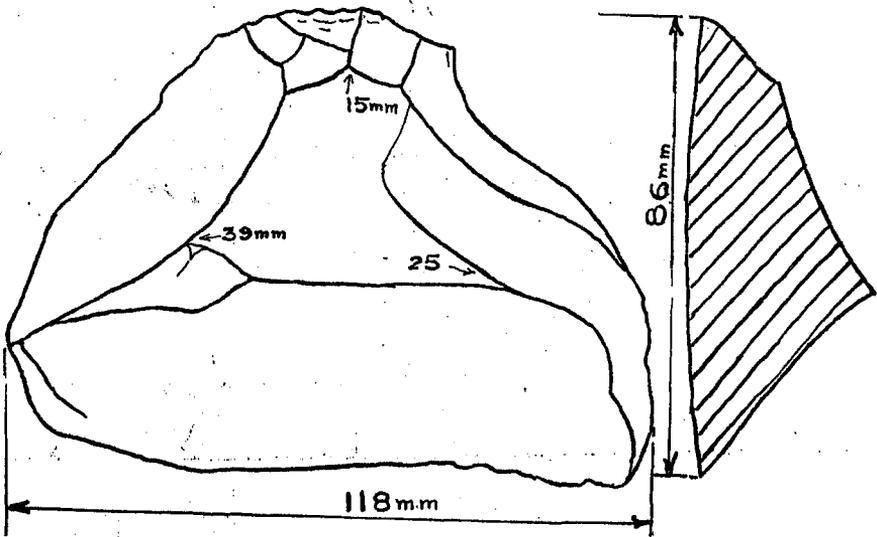
54



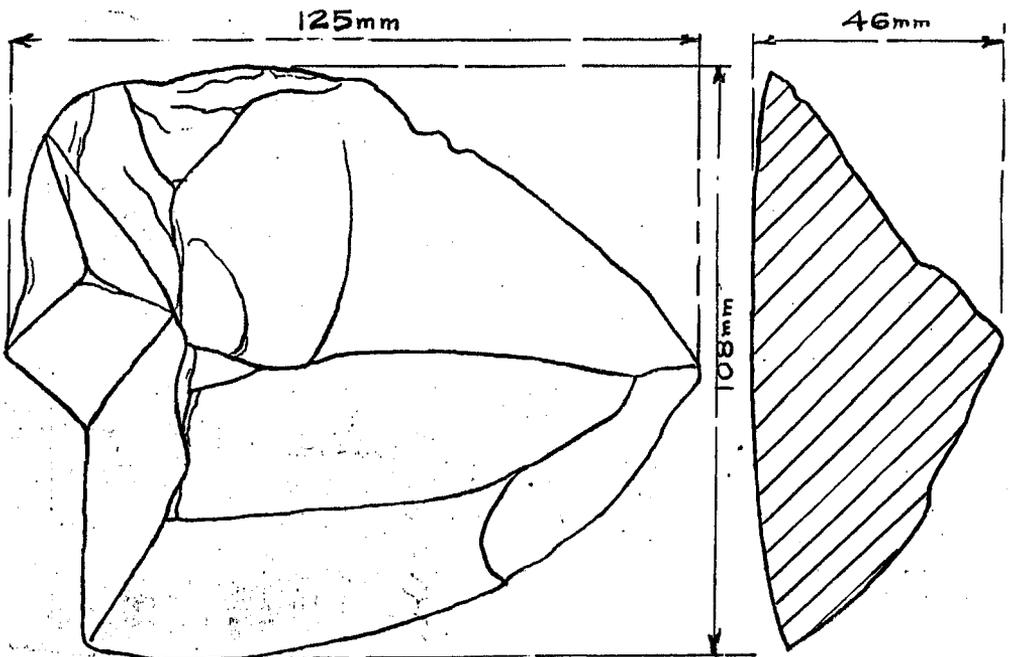
55



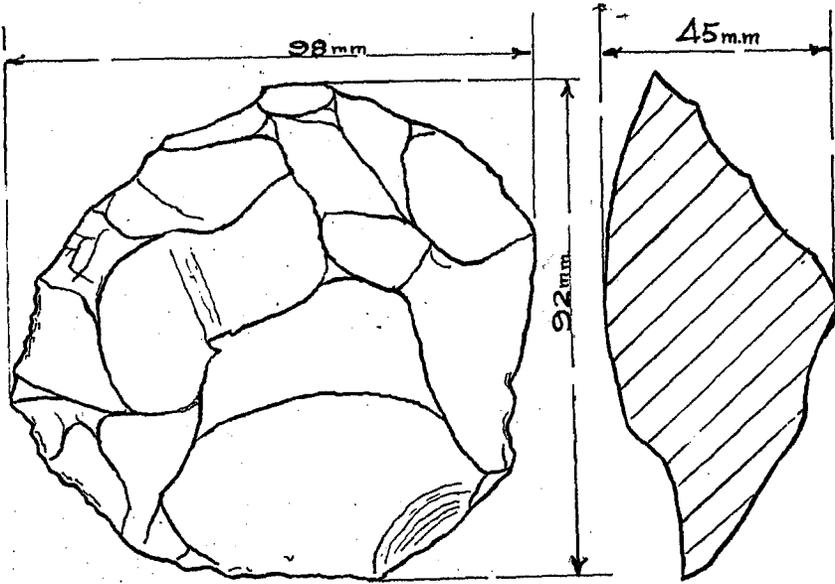
56



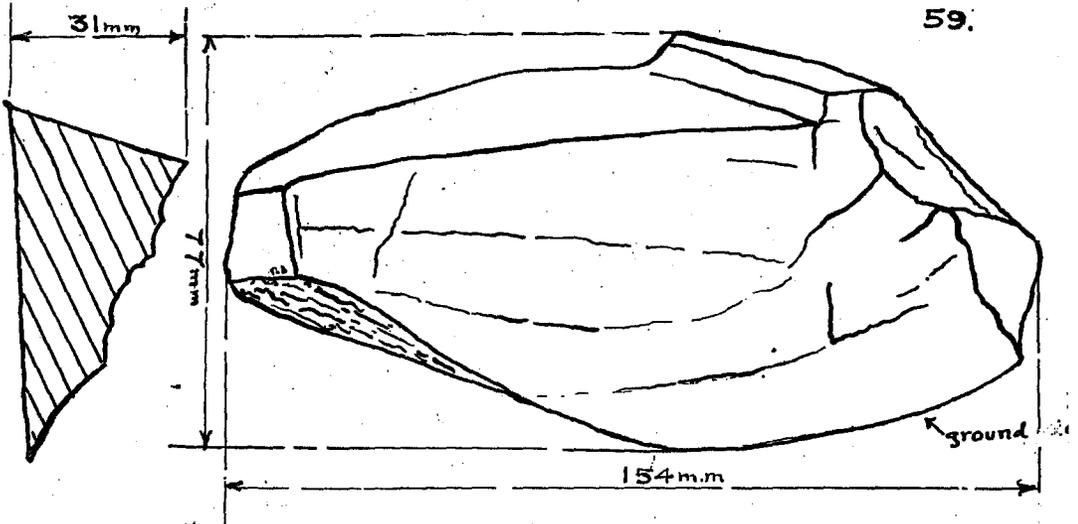
57.

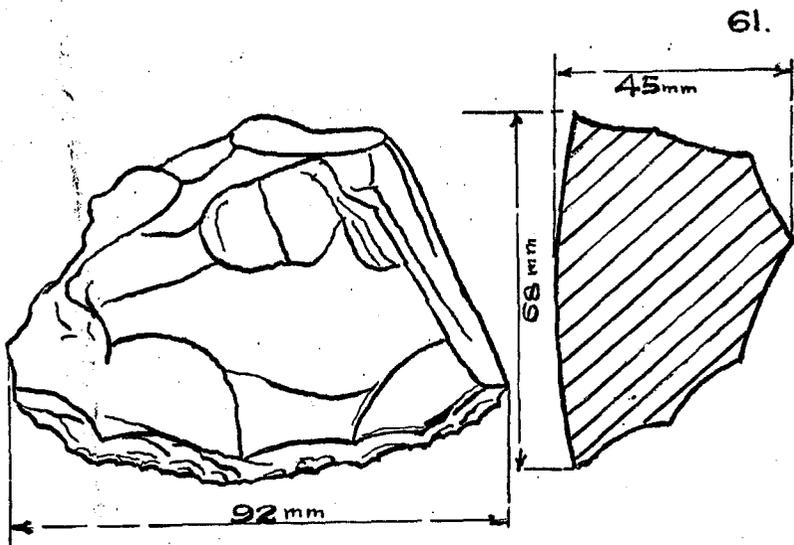
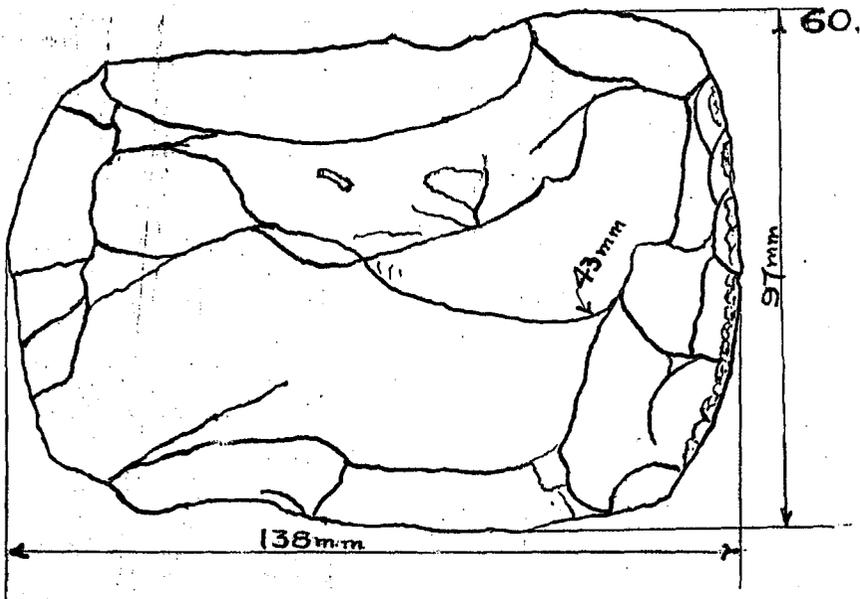


58.

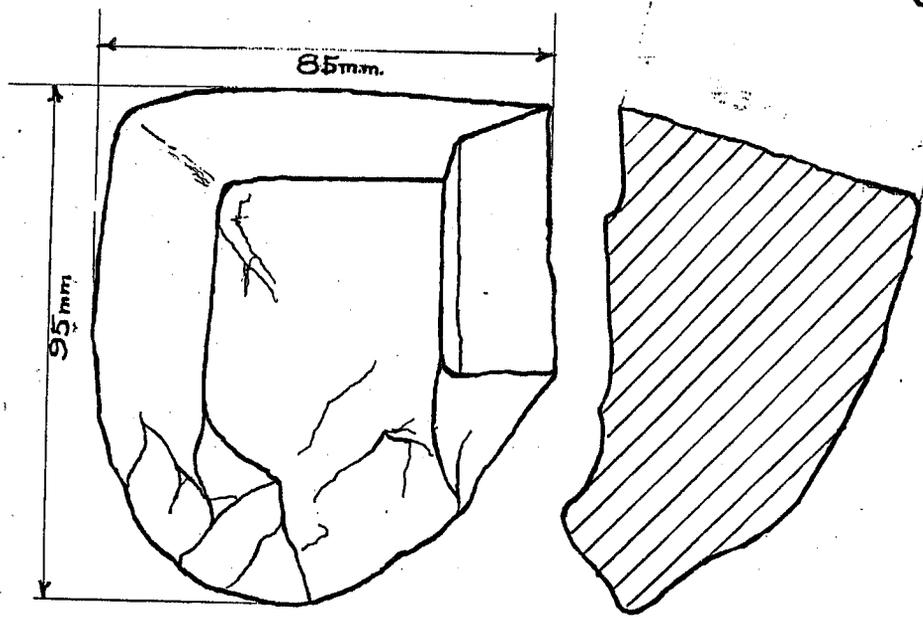


59.

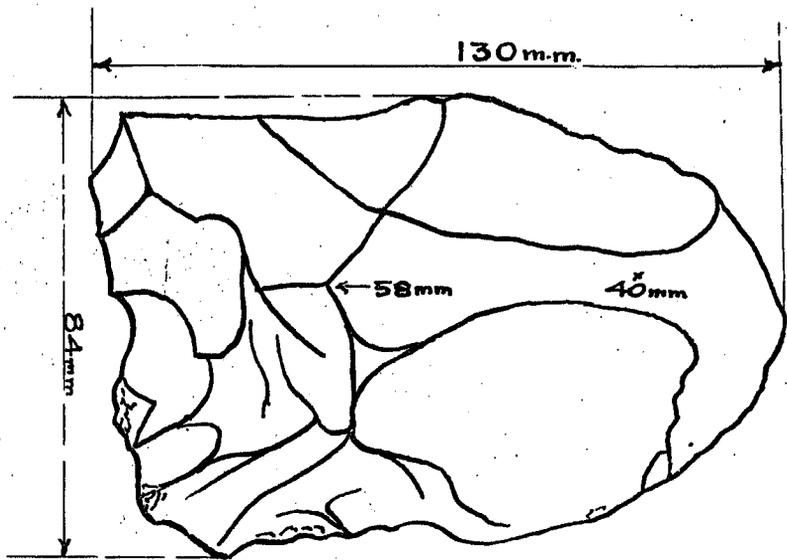


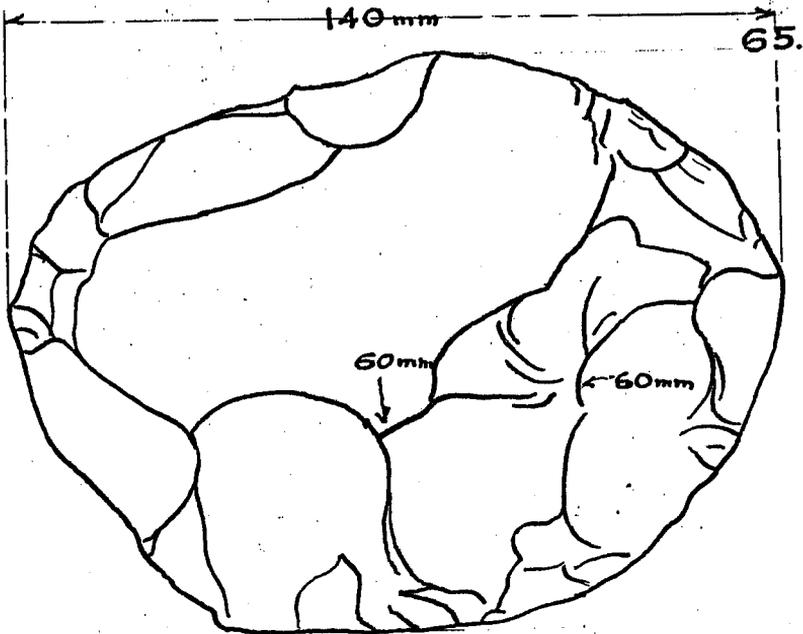
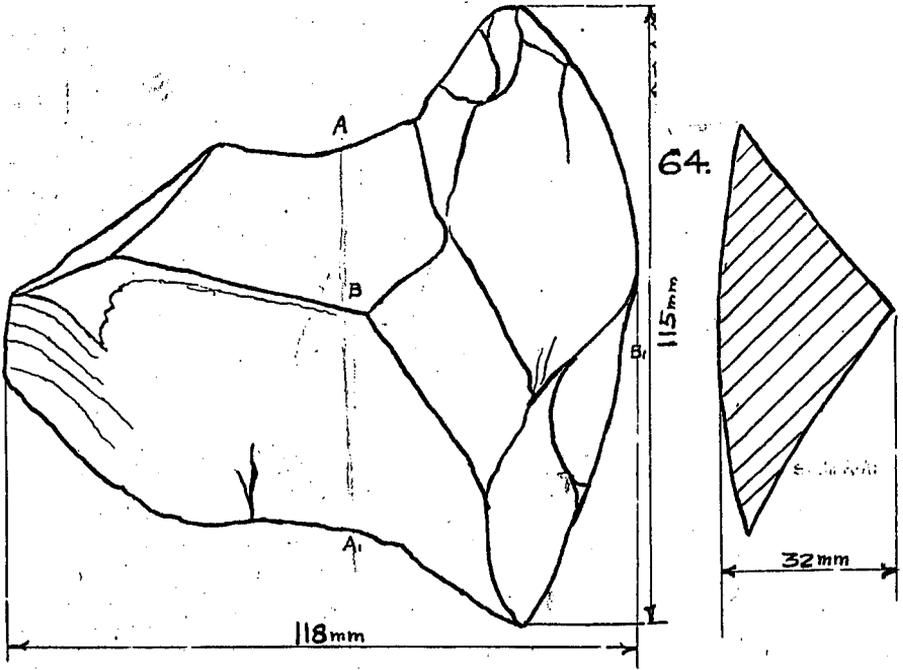


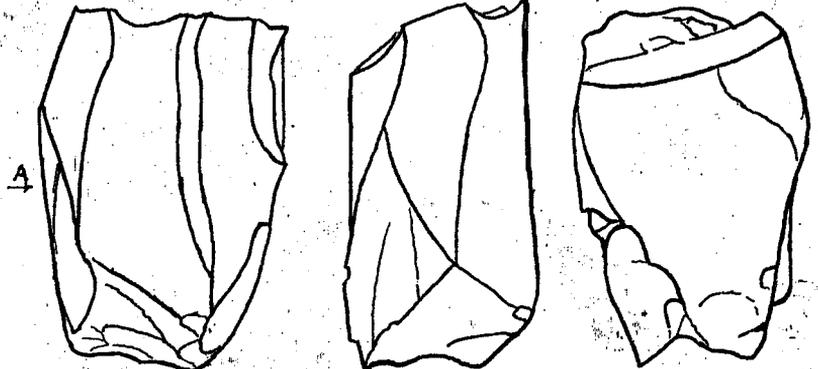
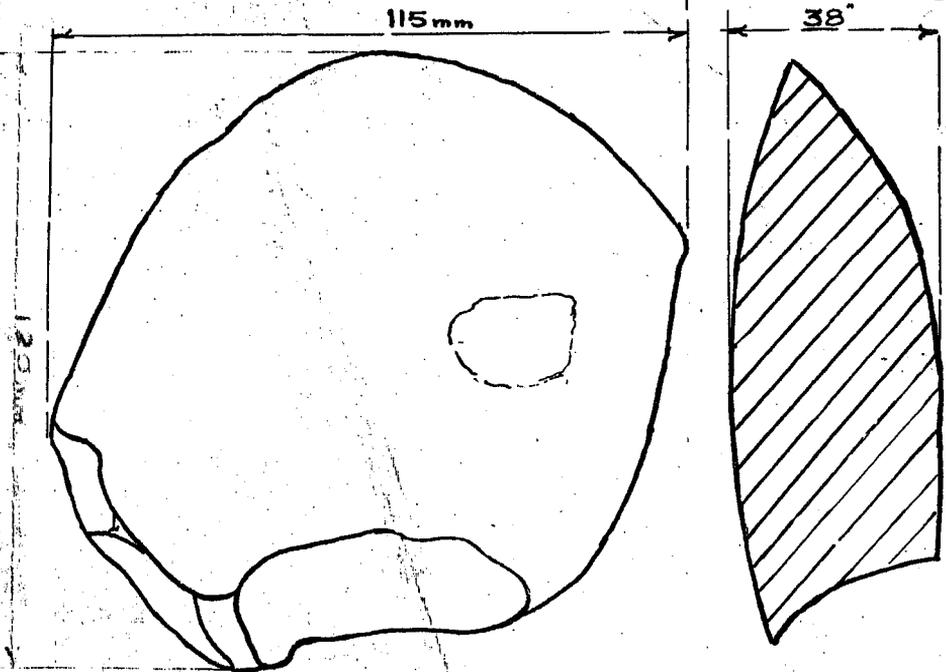
41
62.



63.







Front View from which flakes have been struck.

Side View at A

Back View showing the back cut away to allow the blow to fall right on the front edge