

PRELIMINARY REPORT ON BANWARI TRACE,
A PRECERAMIC SITE IN TRINIDAD

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For about four years the Trinidad and Tobago Historical Society (South Section) was a small informal group who visited sites collecting specimens. Although our approach was not scientific in the archeological sense, it was still dictated by the desire to better understand how middens were laid down and the significance of the material. In late 1969, a brief meeting with Drs. José Cruxent and Fred Olsen, a day spent at one of their excavations, the gift of their digging equipment and of copies of two of Cruxent's books, rapidly updated our approach. In return for this gesture, as we knew Dr. Cruxent was interested in preceramic charcoal, we made our first real attempt at scientific excavation at Banwari Trace.

About three-quarters way down the west coast of Trinidad, just below San Fernando, the Oropouche Lagoon extends 13 km. inland from the Gulf of Paria. Today, except for a patch of mangrove swamp at the entrance, it is an area of flat crop land dissected by irrigation ditches. Along its southern edge are two preceramic middens: St. John's and Banwari Trace (Fig. 1). The Banwari Trace site is on a small hillock 11 m. higher than the present lagoon land. Its surface, covered with oyster shells, bones, and chert fragments extends over the hilltop and forms an area approximately 24 m. square. In 1969 the land was bought by the present owner, Sonan Jaglal, and ploughed to a probable depth of 25 cm. prior to planting of cane.

Selecting a spot near a pear tree about in the centre of the site, at the western edge of the hilltop, we started a 2- by 2- m. stratigraphic test (Fig. 2). During October and November 1969, we excavated the first 2 levels (25 cm. each) holding the floor of each level parallel to the surface slope. For various reasons we did nothing further until mid-May 1970. Then, working nearly every week-end, we completed the excavation to 8.5 levels with a total depth of 2.25 m. by mid-July. The rain started in early June when we were at level 5, but a canvas cover protected the excavation reasonably well until we finished. Materials were screened and sorted by levels. The work was carried out by myself, one workman, members of the Society, and carefully supervised children of the area.

Our excavation revealed 3 layers from the top downward as follows: Layer III (Levels 1-3) - mainly oyster, Layer II (Layers 4-5) - mainly dirt plus nerites, Layer I (Layers 6-9) - mainly nerites and broken snail shells. This stratigraphy indicated an earlier dominantly fresh water followed by a later brackish water shell environment. We became quite excited as we felt the change of shell food might somehow be connected with the formation of the Gulf of Paria: perhaps the period during which the East-West watershed was breached, and the fresher Orinoco laden waters of the Boca del Sierpe broke through into the Gulf: a date given very approximately by Andel and Postma as 6,000 B. C.

The shell contents of the 3 layers in greater detail are as follows: Layer III - predominantly *Ostrea virginica*, several *Thais trinitatensis*, several *Melongena melongena*, (all brackish water species as found in the Gulf of Paria today), several *Codakia orbicularis*, occasional *Pitar fulminata* (?) (shallow sea water), occasional *Neritina*, *Marisa* and *Pomacea* (fresh water) shells. Layer II - predominantly *Neritina virginica* and *Neritina reactivata* (fresh waters of river, creek and swamp), occasional *Marisa* and *Pomacea*

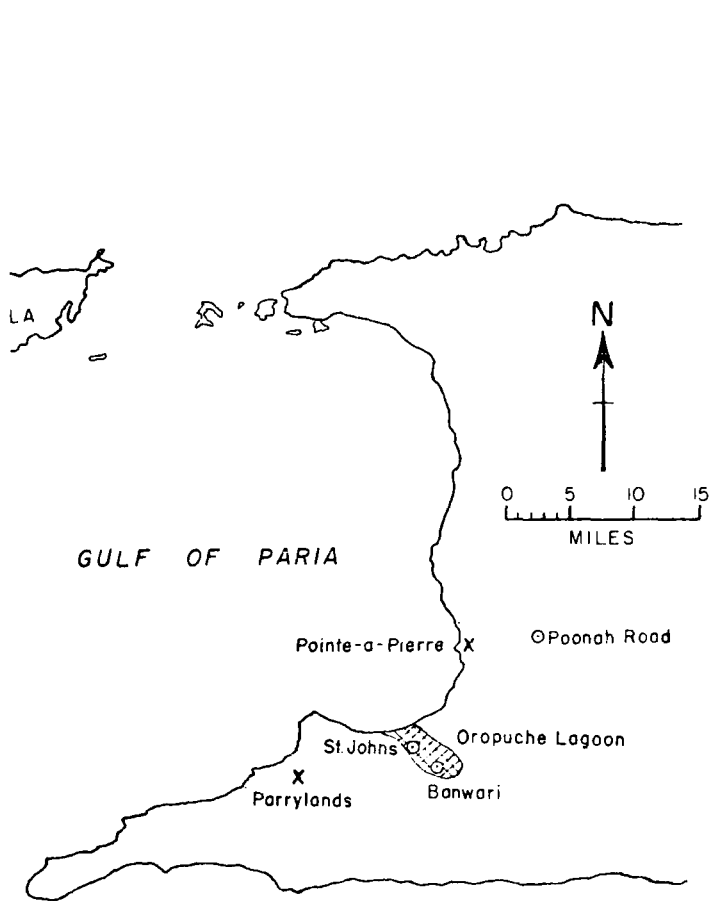


Fig. 1. Map of western part of Trinidad locating sites in and near Oropuche Lagoon.

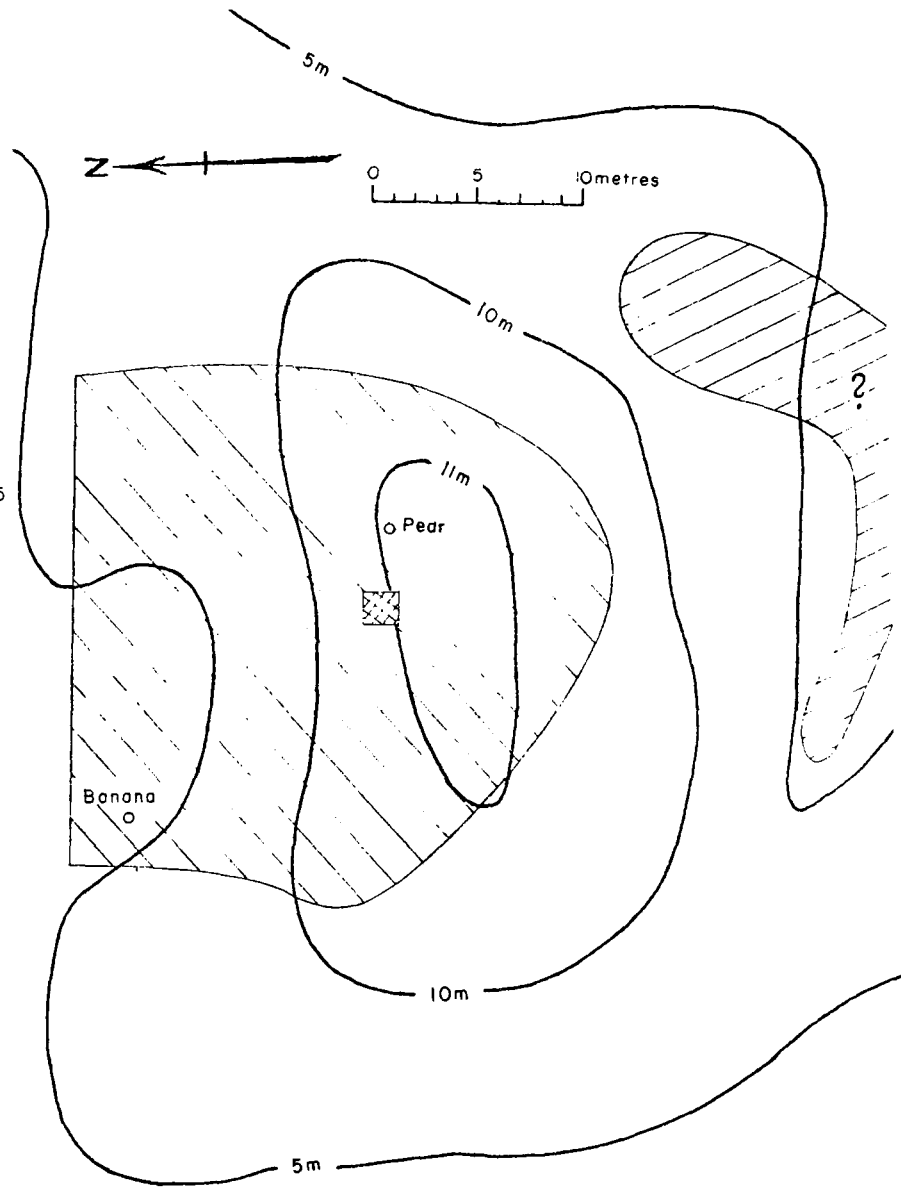


Fig. 2. Sketch map Banwari Trace.

(also fresh water), and occasional *Ostrea* (brackish water) shells. Layer I - predominantly *Neritinas*, *Marisa cornuaretis*, *Pomacea glauca* (fresh water estuarine river, creek and pond), occasional *Ostrea* (brackish water), and occasional *Codakia* (marine) shells, and *Pomacea*. This confirms the pronounced environmental difference between the predominant shells of Layers I and II (fresh water snails and nerites) and Layer III (brackish water oysters). We feel the change of shell food is unlikely to have a cultural significance, as oysters are present in the nerite layers and vice versa. It seems more likely that oysters had become plentiful enough in Layer III to supersede the smaller nerite as the main shell food source. The shells show a progression of environmental change consonant with a rising water level in the Gulf of Paria - fresh water pond/estuary (I), fresh water estuary (II), brackish water (III). Provided the shell collecting area remained approximately the same, this suggests the Oropouche Lagoon moved from fresh water lake (I) to fresh water estuary/swamp (II) and brackish water swamp (III). Also one can anticipate from the C-14 dates an occupation break between Layers II and III to allow time for the development of sufficient oysters to account for the almost complete change of shell food between these layers.

It will be seen that most of these shells are fresh or brackish water rather than sea shore. The fresh water-marine progression today is as follows: *Marisa* and *Pomacea* - fresh water mud, *Neritinas* - on rocks in fresh water estuarine, *Oyster* - on roots or rocks in brackish water, *Thais* - normally brackish, but several excavated specimens show the spine erosion typically caused by acid from fresh water swamps, *Melongena* - brackish water mud nearer the sea, *Codakia*, *Pitar* sea water mud or sand. Only *Codakia* and *Pitar*, which anyway occur in minor quantities, are really sea shore. One is left with the impression that shell food collecting was largely limited to the lagoon area.

Only one shell showed definite signs of work - a *Melongena* with a hole in the outer wall which neatly fits the end of a finger (Fig. 3, j). Some other *Melongenas* also show more than normal wear at the base of the columnella.

Throughout the excavation we found charcoal - sometimes free in the earth, sometimes adhering to shell or bone. Fragments varied in size from 5-22 mm. We collected directly into plastic bags, one in the excavation and one at the screen. Contents were combined before sending to the laboratory, only in Levels 1, 2, 4 and 5, where quantity seemed small. In Levels 3, 6, 7, 8 & 9, the second bag was retained by us. This bears out the subjective impression of our excavation notes that charcoal increased as we got deeper.

Level 1 charcoal came from the top 10 cm. where the deposits were very loose, presumably due to long cultivation and the recent ploughing. Its date may be suspect. Level 7 charcoal was very damp and disintegrating and difficult to collect due to weather conditions at time of excavation. Some raindrops got into Level 8 bags, and we placed these open over a low heat for 4-5 hours to reduce moisture. We did not feel the dates of these 2 levels would be affected.

Radiocarbon tests were carried out by Dr. Murray Tamers of IVIC Laboratory with the kind permission of Dr. J.M. Cruxent in accordance with international conventions: 5568 years as half life of Carbon 14, modern reference being 95 % of the activity of the NBS Oxalic Acid, reference year in the BP scale being AD 1950, and standard deviation errors (68% probability).

Results are as follows: Level 1 - 2550± 100 BP, 2 - 5650± 100, 3 - 6170± 90, 4 - 6100± 90, 5 - 6190± 100, 6 - 6780± 70, 7 - insufficient charcoal, 8 - 7180± 80, 9 - insufficient charcoal, before 1950.

As expected, Level 1 appears to be quite out of line with the others and we have disregarded it. Quite unexpectedly Levels 3-5, representing 75 cm. of excavation have almost the same date. Some 40 cm. of this belong to Layer II. Unlike Layers I and III which are compact midden deposit, Layer II consists largely of loose earth mixed with normal midden material--shells, bones, stones, and charcoal. It would therefore seem to represent, not occupation, but an artificial or unusual natural deposit, laid down around 4,200 B.C. (6150 B.P.). As this date is the average of 3 charcoal results within 90 years of each other, we can consider it fairly reliable.

This leaves Layer I with two points of reference 6780 and 7180 B.P. This is not a satisfactory basis for extending the curve back to estimate the beginning of occupation, or forward to check the break in occupation suggested by the suddenness of the nerite-oyster change. Additional charcoal from Levels 7 & 9 is luckily available, and in due course further dates should become available. Meanwhile, unreliable dates for Layer I are 5430 - 4680 B.C. The large amount of deposit in relatively few years suggests a sizeable settlement.

Layer III is even less satisfactory. Firstly, like Layer I, it has only two points of reference. Secondly, cultivation of the site probably means no chance of ever obtaining a date for Level I. Thirdly, the date for Level 3 does not seem representative. Ideally, the probable average for this level should be 100-200 years later than the level below it, not 70 years earlier. Estimated dates for Layer III are 4,200 - 3,200 B.C. The smaller amount of deposit over the period, suggests a smaller settlement than Layer I.

Let us now consider the other food refuse beside the shells. After an enormous amount of work had gone into collecting, cleaning and preliminary sorting of the bones, it became apparent that we had neither sufficient expertise nor reference material in the zoology specific to Trinidad to achieve more than a preliminary report. With further assistance from the Department of Biological Sciences at U.W.I., St. Augustine, we hope this situation will be much improved in the near future.

In this situation we compared 4 main categories in terms of quantity: limb bones from large mammals in terms of L, from medium mammals and birds (M), from small mammals and birds (S), from fish (F); in addition we considered individually jaws and teeth, and human remains. The results are given in Table 1. We felt Level I quantities to be unrepresentative, probably due to displacement of midden material for human burial, and have omitted them from the general comparison. In addition we doubled the quantities excavated from Levels 4 and 5, because they belong to the earthy stratigraphic Layer II, and the quantities from Level 9 which is only half a level.

Table 1
Adjusted table of food bones

Category	Layers I	II	III
Large bones	10 - 6 L	4 L	2 L
Medium bones	3 - 2 M	3 M	2 - 1 1/2 M
Small bones	av. 2 1/2 S	3 - 4 S	3 S
Fish bones	2 - 1 F	2 - 6 F	8 - 11 F

We see a major change of food from large mammals in Layer I to fish in Layer III. Medium and small bones seem fairly constant, but we expect further investigation to show an appreciably greater number of bird bones in Layer III. We are back to the same two major alternatives: environmental change from fresh water to brackish water lagoon, where animals no longer came to drink; or a new cultural influence with emphasis on fishing; or a combination of the two.

Other bones included those of pig (peccary?), deer, large rodent, agouti or porcupine, small rodent (rat or squirrel), turtles, wild cat, howler monkey, dog, iguana, alligator or caymen, birds and fish. The last include cat fish and vertebrae of fish in the 5-10 lb. and over 50 lb. weight brackets. Crab claws except for Levels 1 and 3, were rather common.

The crab claws from Level 6 were analysed. It showed about 75 per cent blue crab, 25 per cent hairy crab, and a few claws from Xanthids and one from a swimming crab. All of these normally inhabit the edge of mangrove swamps.

Most of the stone material excavated was quartzitic sandstone of which various grades were present. This stone is the material from which are manufactured the ground stone implements of Banwari, and two nearby sites, St. John's and Poonah Road (Fig. 1) e. g. grinders, edge-grinders, hammerstones, grooved axes, mortars, and certain of the pestles. Some fragments may also represent large flaked implements for scraping skins.

Coloured and calareous sandstone was also present in small quantities. Some small lumps of finer grained material did occur in red, yellow and white. They show signs of lick or wear, and paint quite satisfactorily. However they represent rather less than 1 percent of the total quantity of coloured sandstone. A good quantity of mudstones occur, either as 2-9 cen. pebbles or as flaked fragments. Most are yellow in colour, with some red. Quality of the flaked edge varies from poor, the majority, to medium, depending on the degree of silicification. A small quantity of grey argillite also occurs, again as pebbles and flaked fragments. The edge produced is medium quality.

A fair amount of chert was found, almost all as flaked fragments, 1-6 centimetres in size. Most are black in colour, a few are red or fawn. Cutting edge varies from medium quality in some, to good in most. All of these materials indicate a collecting range of about 20 kilometers.

COMPARISON OF LEVELS AND STRATIGRAPHIC LAYERS

For the comparison we estimated all quantities visually in terms of the same unit of volume, approximately 320 cc. The only adjustment is in the half level 9 where we have doubled actual excavated quantity.

The greatest difference lies with the soft quartzitic sandstone and the coarse coloured sandstone.

Levels	9	8	7	6	5	4	3	2	1
Quartzitic	2	3	4	<1	4	7	7	9	11
Coloured	1/3	1/4	1/3	2	9	13	6	2	3

Only the hard quartzitic sandstone is present in Layer I, and in relatively small quantity; the soft grade appears first in Layer II together with a general increase in quantity; in

Layer III increase continues, and the great majority is soft and broken down. The coloured sandstone is barely present in Layer I, increases dramatically in Layer II, and declines in Layer III, though never to the minimal quantities of Layer I. Mainly due to this, the average quantity of stone per level in Layer II is twice the average of Layers I and III. Good quality flaked cherts had an approximately even vertical distribution. A few occurred in each level.

The stones confirm the impression given by the shells of a settlement with a limited range of contact, probably by boat; and add the suggestion of occasional visits from outside. There is a strong impression of difference between layers I and III, apparently associated with these visits and with the settlement's presumed methods of cooking.

Various human bones, apparently broken and scattered by ploughing, were collected from the surface. Preliminary sorting shows partial presence of at least 3 adults. In Levels 1 and 2 we found bones we thought to be human, but we could not detect the continuity of a skeleton. Preliminary sorting confirms the partial remains of 2, possibly 3 adults, and a child. All long bones have been snapped at some time in the past, some into 5 or 6 pieces. Distribution of pieces between levels is not always logical. It would appear that the skeletons had more or less collapsed within the soil, probably due to cultivation or the weight of tractors passing over them; and that our excavation included only a part of the resulting mixed bones.

Considering all the available data, we feel reasonably sure that Layer II is artificial, and was added to an existing midden surface. The idea of a deposition of rubbish over a period of time, from different sources and influenced by different factors, seems a reasonable basis from which to develop our explanation. The suggestion of site clearing by a small but expanding new settlement, although not implausible is our best guess to date; but it is not felt to be very satisfactory.

ARTIFACTS

It seems right to include in this section, artifacts from other preceramic sites in Trinidad, apparently related to Banwari Trace. There are St. John's, Poonah Road, Pointe-a-Pierre, Parrylands (Fig. 1).

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| St. John's | Like Banwari, this site is on the south side of the Oropouche Lagoon, but only 3 km. inland. It possesses the same oyster-nerite change in shell food part way down, and a similar range of artifacts. The site was tested by Dr. Rouse in 1953 and, tragically, has since been destroyed. We recovered what artifacts we could from the earth moved. |
| Poonah Road | This site is in the Central Range approximately 10 km. from the sea. Plenty of flaked chert has been found on the surface and some ground stone artifacts including edge grinders. A small test hole confirmed the complete absence of shell or bone rubbish. Very hard quartzitic sandstone and cherts are available from this area. |
| Pointe-a-Pierre | This is where the Central Range meets the Gulf of Paria coast, and is another source of quartzitic sandstone of variable quality. Some years ago, a large grooved axe was found on the ridge within 1 km. of the sea. |

Parry- This is not far from a good source of cherts in the hilltop gravels west
lands of Fyzabad; another fine grooved axe was found here some time ago.

Bone Artifacts

Bone artifacts (Fig. 3, k) were found only at Banwari and St. John's. They include projectile points, possible nose or ear ornaments, pins and some suspiciously smooth deer horn tips. Forty-eight projectile points were found at Banwari; 4 in a flat style occurring only in Level 4. These would appear to be fishing arrow points, predominating as expected in stratigraphic Layer III. Provisionally we have included with this group, pieces of 7 small flat sided artifacts from Levels 1, 2, 3, and 4; and pieces of 7 large flat tapering artifacts from Levels 5, 6, 7 & 8. Splinters of deer bone of varying length are found in all levels. Their size and shape suggest intentional splitting to provide the raw material for the above projectile points.

The next artifacts have been ground with particular attention to symmetry, and are mostly made out of teeth. Their shortness and shape make them seem unsuitable as points. The shape of the first found seemed particularly suited to thread the nasal septum and sit across the nostrils; so we provisionally named this group nose/ear ornaments. Ten were found from Levels 3, 4, 5, 6 & 7. One piece of catfish spine, which shows preliminary work, should probably be included with this group.

Four pieces of pins occur from Levels 3, 5 & 7. Three are indeterminate, but the fourth is an almost complete needle. The eye shows typical countersunk drilling from both sides. Four smooth deer horn tips were found, from Levels 4, 7 & 8. We have no suggestion as to their possible use. Finally, mention should be made of the numerous front fin bones of fish. These are sharp and strong, and would require no work to make implements suitable for piercing or for picking out marrow and snails. Among 400 we only noticed one with marks of grinding.

From the destroyed St. John's midden we only retrieved 1 raised bone arrow point, a piece of possible nose ornament, and 2 smooth deer horn tips; all of which is further confirmation of its close relationship with Banwari. In addition, we found a triangular piece of fossilized prehistoric bone, about 9 cms. wide, with what may be signs of use.

The needle with its associated date of 6170 BP \pm 90 for Level 3 is a useful piece of chronology. The ivory ornaments are distinctive, and should provide helpful markers in tracing the movements and settlement patterns of this people. It seems possible that these ornaments bridge the presumed cultural change between Layers I and III. The change from possible spear point to arrow point nicely parallels the change from large mammals (Layer I) to fish (Layer III) indicated by the section on bones.

Shell Artifacts

In general shell implements are rare to absent. At Banwari the only shell showing signs of work is one *Melongena* with a hole in the outer wall (Fig. 3, j), which we mentioned earlier. At St. John's we found one long flat implement (11 cms.) made from the outer wall of a conch shell. This is presumably a trade implement and may relate to the Manicuaroid series of *Margarita* in Venezuela.

Ground Stone Artifacts

We found ground stone implements at Banwari, St. John's and Poonah Road as follows:

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|-----------------------|--|
| Banwari excavation | - 8 edge grinders, 1 grinder, 1 green stone, 1 pestle. |
| Banwari surface | - 12 edge grinders, 1 grinder 2 hammerstones, 3 pestles, 1 grooved axe, 2 possible parts of small axes, 1 fragment of a serpentine bowl. |
| St. John's | - 3 edge grinders, 4 grinders, 3 hammerstones, a fragment of a milling stone, 8 pestles. |
| Poonah Road (Surface) | - 5 edge grinders, 3 hammerstones, 1 used stone, 1 mortar, 2 milling stones, 5 pestles. |

Edge grinders - Originally water-rounded flat stones, all share in common evidence of coarse grinding round the edge; in other respects they show considerable variety (Fig. 3,i). In some the edge has been ground off to give the stone the same thickness throughout, in others part of the extreme edge only have been bevelled. In many stones one or both faces have a silky feel as though used for polishing. Shape varies from more or less oval to round. Size varies with long diameters of 5-12 cms, and thickness of 2 1/2- 5 3/4 cms. While very variable, the future will probably show that all belong to one highly variable class of workstone. The use of this group of implements is not known. Their present value to us has been in demonstrating some degree of relationship between Banwari Trace and Poonah Road.

Grinders - This group of 7 may be described as primitive pestles. They are naturally shaped but suitable stones, with a grinding face at one or both ends. They seem to have been used at a slant so that the grinding face makes an 80° angle with the long axis. In this they are reminiscent of three of the side edge-grinders.

Three of them are round in cross-section, slightly tapering, and have grinding faces at either end. Two are from St. Johns, one from Poonah Road: length 6-9 cms, diameter 5 1/2-7 cms. Three others are more or less square in cross section, and taper sharply like ill-defined truncated pyramids. A grinding face is at the broad base, and abrasion suggestive of hammering at the apex. One is from Banwari level 9, two are from St. Johns: height 8 1/2-10 cms. bottom width 7 1/2-9 cms. The grinding face of one from St. Johns has all but disappeared from subsequent use as a hammerstone. One from St. Johns is square in cross section and within the above dimensions. However it does not taper, and has grinding faces at both ends.

Hammerstones - Any stone with marks of rough abrasion at one or both ends we called a hammerstone. We seem to have found surprisingly few: a green stone from Banwari Level 4; 2 from Banwari surface; 3 from St. Johns; and 3 from Poonah Road (Fig. 3,f).

Mortars and Milling Stones - 1 mortar and 2 probable milling stones were found at Poonah Road. The mortar is round, diameter 13 cms., thickness 5 cms., with a 2 cm. deep depression, and made from hard quartzitic sandstone. The milling stones are both of soft fine grain sandstone. One is flat (5 cms. thick) and more or less oblong (17 x 25 cms). The other is thick (10 cms.), and seems to be half of a flat sided oval (24 x 15 cms.). Depression from wear occurs on both faces. There is also a probable fragment from St. Johns of 6 cm. thick hard quartzitic sandstone. It shows wear on one face, and subsequent use as a heating stone.

Pestles - So far a total of 16 pestles has been found. Two styles, bottle-shaped and blunt, are oval in cross-section and normally made from Trinidad stone. The other 2 styles, truncated cone and pointed, are round in cross section and normally made out of stone from the Lesser Antilles. We have classified them as Bottleshaped (Fig. 3, a), Blunt (Fig. 3, c), Truncated Cone (Fig. 3, d), and Pointed (Fig. 3, e).

Grooved Axes

Three have been found, 14 3/4 - 17 1/2 cms. in length and all made from brown quartzitic sandstone (Fig. 3, l-m). Two styles occur: one with a plano-convex cross section, the other double concave. The first is symmetrically shaped with the cutting blade limited to the front and a blunt rounded backend. The left side face is flat, and the right side symmetrically convex so that the thickest part of the axe is at vertical and horizontal centre. The part left of the longitudinal axis is narrower, presumably to allow for hafting on this side. The lashing groove runs right round the axe. The flat left face would facilitate wedging to secure the blade.

The axes from Pointe-a-Pierre and Parrylands are double concave. In general shape they are similar to the Banwari axe - single cutting edge, groove and blunt backend. The left part also is narrower. Differences lie in the cutting blade, which continues below the front along part of the lower edge; in the concave portions, which are ground out of each side face of the axe from immediately behind the start of the blade back to the groove - in one it actually effaces the groove; and in the wedge shape, where the axe narrows forwards and downwards from a thicker back and top. The concave faces are presumable for a different style of hafting, possibly to fit a horizontal piece on both sides to keep the heavy blade from slipping. Both these axes are single finds, apparently unaccompanied by refuse. Because they are heavier, require more labour to manufacture, and look less sophisticated than the Banwari axe, my guess is that they are earlier.

OTHER STONE ARTIFACTS - In Level 4 at Banwari we found a smooth green club shaped stone 9 cms. long with abrasion marks at either end. Apparently a superior hammerstone from overseas. On surface of the excavation area, we found a small fragment (3 cms. square) of serpentine bowl. We still do not know whether to relate this to the period of the site, or to regard it as an isolated piece of post Columbian rubbish. On the western slope we came across a piece of chalcedony, one edge of which seemed worked: possibly a broken piece of ornament or early celt. Just off the site, at the southeast part of the hillock, a 5 cm. long portion of an elementary celt in grey stone was found. It is 3 cms. thick, square ended, and has a neatly bevelled edge in place of a cutting blade.

SUMMARY

The complete absence of bipointed stones, together with the general absence of shell implements show little if any relationship of these sites with those of the Manicuaroid series of the Margarita area, mentioned earlier. The presence of all 3 styles of edge-grinder at both Banwari and Poonah Road indicates some degree of relationship between these two sites. The presence of side edge-grinders in Trinidad (ca 5300 BC) adds to the developing picture of the spread of this implement: Cerro Mangote in Panama (ca 4860 BC), Cabo Blanco and El Heneal in Venezuela (ca 2450 BC). The indication of 3700 - 3200 BC for the plano-convex grooved axe reaffirms the relationship between northern South America and the USA at this time. On its own however, it does little to clarify the direction of migration, north-south or south-north or both from a common third source. Finally the apparent presence in Layer III of pestles made out of stone from the Lesser Antilles offers

further confirmation of possible resettlement at Banwari and St. Johns around 4,200 B.C. As the stone from which they are made occurs widely in the Lesser Antilles, it has not been possible to specify its origin. We were given an educated guess of Grenada and Tobago; a search for preceramic sites in these islands may prove rewarding.

Occupation at Banwari seems to extend over 2000 years (ca 5400 to ca 3200 B.C.), with a possibility of a dwindling population or a break during the 400 years preceding 4200 B.C.

Prior to this date the site stood on the edge of an apparently freshwater lake or swamp, Period I; the swamp appears to be brackish after this date, Period II. This concurs with an estimated 4300 B.C. for the date at which the rising sea level in the Gulf of Paria reached its present height.

Certain changes in living habit parallel the change in environment. In Period II fish and crab replace pig and deer as major food sources; oysters replace nerites as shell food; the use of small bone arrowheads increases significantly, as may also the consumption of birds.

Other changes in living habit seem to be better explained by new cultural influences: the consumption of Melongenias, the presumed use of pestles made from Antillean stone, the increased use of heating stones. Generally there are indications that the people of Period I were replaced by a new migration shortly before 4200 B.C. Apparently, the Period II people came from the Lesser Antilles, perhaps prompted by the generally rising sea level.

The normal shell food and stone collecting area of both peoples seems to have been limited to the lagoon and the nearby coastline. The presence of a site with a similar history (St. John's), near the mouth of the lagoon and only 5 1/2 kms. away, makes one consider the possibility of seasonal occupation. The differing but related site at Poonah Road, and the two differing but related axes found at good sources of stone just within and not far outside the collecting area, show that settlement at this time may have been more widespread than evidence has hitherto suggested.

To develop our knowledge of the local settlement pattern, we need to search for additional sites at known sources of implement stone, we plan to study further the Banwari excavation material, and in due course to carry out further excavation at Banwari and other sites.

But, first of all, because of the overseas relationships indicated with Venezuela and Panama, we need access to overseas expertise, and the opportunity to study comparative reference material, to see if the Banwari site has a significance in the overall settlement pattern of the Americas of this time.

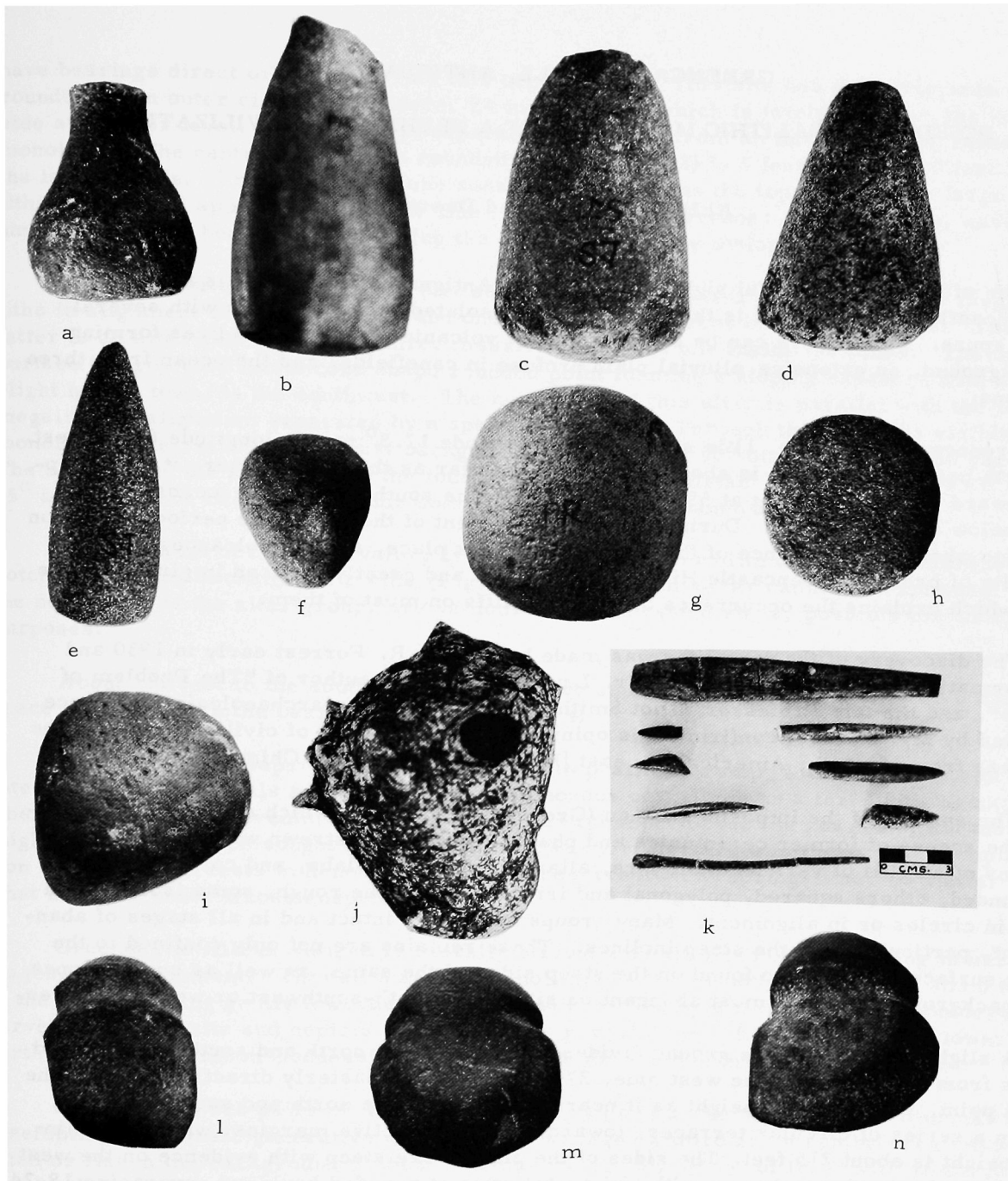


Fig. 3. Preceramic stone specimens from southwestern Trinidad.

a, bottle-shaped pestle; b, intermediate pestlé; c, blunt pestle; d, conical pestle; e, pointed pestle; f, shaped hammerstone; g, mano; h, stone disc; i, edge grinder; j, Melongena hammer; k, bone implements; l-n, grooved axes. All a little under half size except l-m, about quarter size. a-b, f-g, from Poonah Road; c-e, i, St. Johns; h, j-l, Banwari Trace; m, Pointe-à-Pierre; n, Parrylands.