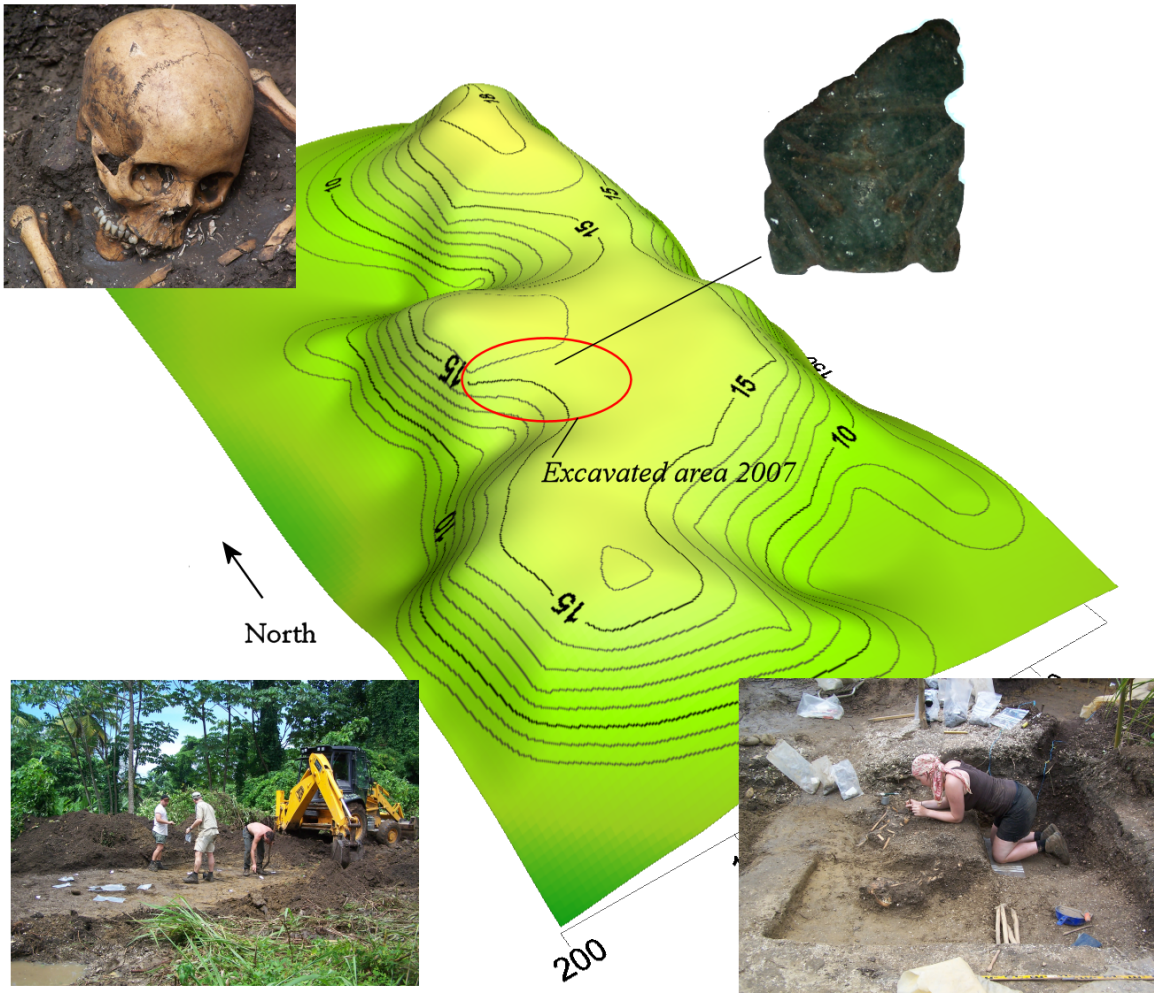
National Archaeological Committee
of
Trinidad and Tobago

The pre-Columbian SAN-1 site, Manzanilla, Trinidad

Preliminary Research Report

Fieldwork October 2007



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Preliminary Research Report

Archaeological investigations at the Pre-Columbian SAN-1 site at Manzanilla, Trinidad
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1. INTRODUCTION

In the month of October 2007 a team of nine archaeologists continued investigating one of the four habitation locations at the pre-Columbian SAN-1 site near Manzanilla on Trinidad's East Coast (Fig. 1). Research by Dutch archaeologists at this site started with an inventory survey in 1997 (Dorst, 2000; Nieweg, 2000) including an augertest mapping program and small testpits. In 2001 the first large scale excavation was made, of which the results showed that the SAN-1 site provided ideal conditions for Amerindian settlement research. Human and animal bones are excellently preserved here and the spatial patterning of the village is, according to Caribbean archaeological standards, fairly undisturbed and rather easily recognisable.
In 2003, 2004 and 2006 these large scale excavations were continued. The Department of History of the University of the West Indies took the initiative for these research campaigns and also partly supported them.

The 2007 fieldwork was funded (housing, food and material costs) by the National Archaeological Committee of Trinidad and Tobago. The individual team members paid for their own air tickets. The Archaeological section of the Department of History of the West-Indies supplied some excavation equipment such as a Total Station. Part of the grant was used for buying additional fieldwork materials which were afterwards stored at Dougies Guesthouse in Manzanilla.

The 2007 team consisted of the following persons:
M.C. Dorst (MA, Leiden University), project director, spatial division and ceramics.
R. Jansen (MA, Leiden University), Total Station operator, house structures.
S. Baetsen (MA, Leiden University), osteo-archaeologist, specialist on physical anthropology and Caribbean mortuary practices.
P.H.J.I. Ploegaert (MA, Leiden University), fieldwork.
A. van de Meer (BA student, Leiden University), fieldwork.
C.R.C. Schamp (MA, Leiden University), fieldwork.
S. Arnoldussen (MA, Leiden University), fieldwork.
C. van der Linden (MA, Leiden University), fieldwork.
M. Kuijpers (MA, Leiden University), fieldwork.

The following persons, who made this research program possible, receive our special thanks for providing this opportunity, their help and friendly corporation:
Professor Keith O. Laurence, Department of History, University of the West Indies.
Dr. Basil A. Reid, Lecturer in Archaeology, University of the West Indies.
Mr. Rohan Sinanan, owner of the SAN 1 site hill area.
Mr. Douglas of Dougies Guesthouse, Manzanilla.

1.1 Current state of research at the SAN-1 site

The 2007 fieldwork campaign was focused on the same area, which was examined in 2001, 2003, 2004 and 2006 (Dorst, Nieweg & Baetsen, 2003; Dorst, Nieweg & Altena, 2004; Dorst, & Altena, 2005; Dorst, 2006). This is the northwestern habitation area in the central part of the site (Fig. 2).

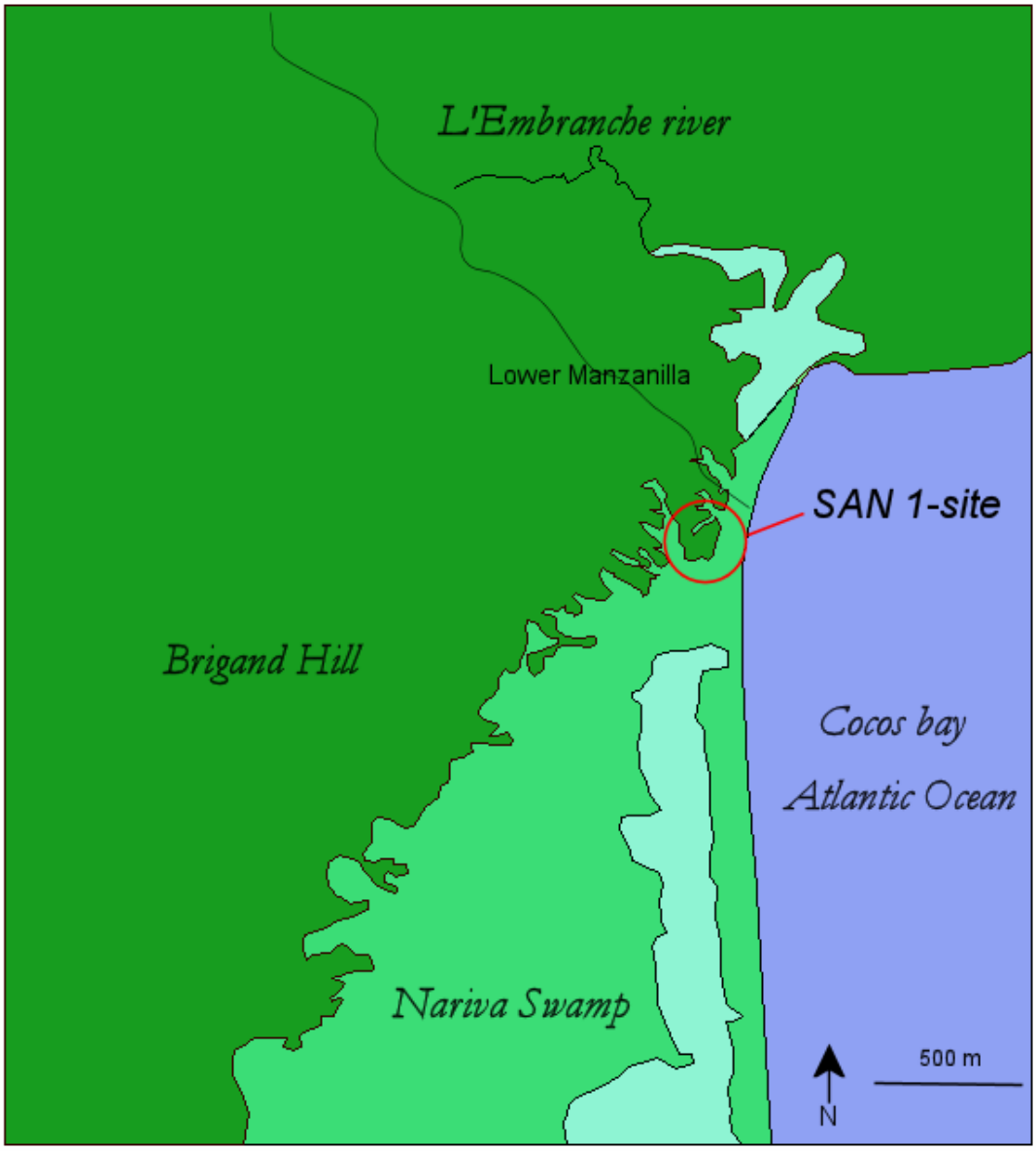


Fig. 1. Location of the SAN-1 site

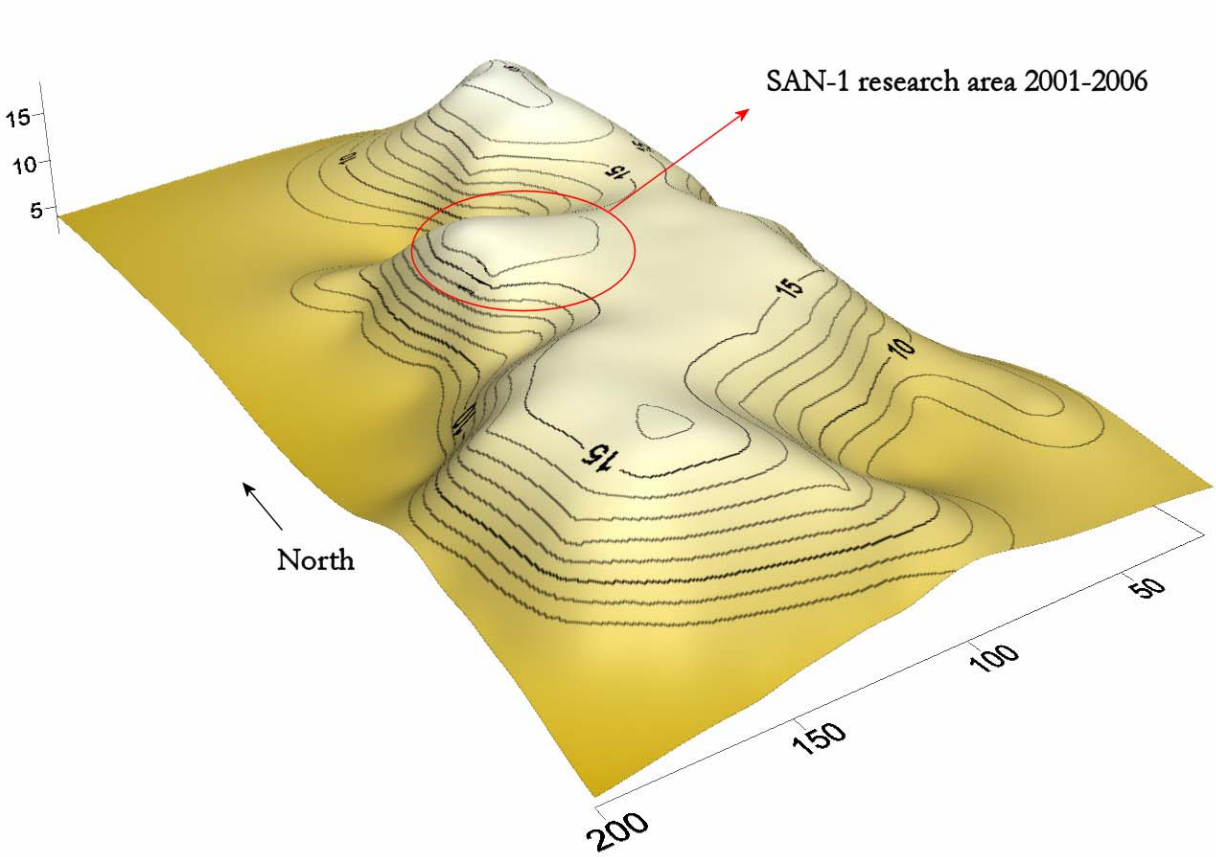


Fig. 2. Location of the research area on top of the SAN-1 hill

The fieldwork program of 2001 revealed that on the plateau an Amerindian habitation location is present (Dorst, Nieweg, Baetsen, 2003). At this vacant space features of two distinct periods of habitation were found. These are the Saladoid Late Palo Seco period (AD 350-650) and the succeeding Arauquinoid period (AD 650-1400).
The Saladoid period is represented by an area consisting of the lower levels of a midden deposit. Below, in and around this midden are at least nine burials which are considered to be associated with this midden. For now, this midden configuration and associated burials are interpreted as the outer ring of a Saladoid village.
The second, Arauquinoid, period is represented by a small midden, two house structures with least 20 associated burials. Based on C14 radiocarbon analyses made by Trent University of Calgary, Canada, the Arauquinoid habitation period can be dated between AD 1010 en 1410. The Arauquinoid settlement configuration consisted most likley of a ring of (single-family) houses around an open, communal space. Burials of both periods are present at the site.

2. RESEARCH OBJECTIVES AND FIELDWORK STRATEGY 2007

The objective for this fieldwork campaign was to excavate the area east of the already excavated area, because here the Late Saladoid house structures were expected. However, excavating here was not possible since the area was now used as a garden by Mr. Joseph. Instead, a small strip east of the already excavated area was opened (Large Unit 6) and an extra block area south of it; (Large Unit 7, Fig. 4). Furthermore, two Small Units (SU 8 and 9) were excavated in the midden deposit on the edge of the slope to obtain ceramic, stone and faunal remains from a stratigraphic context (Fig. 4).

The excavated areas are situated on locations where additional features dating from the Arauquinoid period were expected.
Therefore, the main research objectives for the 2007 fieldwork campaign were the following:

1. Locating and excavating more (house) structures from the Arauquinoid habitation phase.
2. Excavating as many burials as possible. Since these burials are very complex, excavating, drawing, describing and lifting them is a time-consuming work. As a result, each fieldwork season more burials were found then could be excavated. This year it was aimed for to investigate most of the burials encountered during previous fieldwork campaigns.

The same strategy as designed for the fieldwork programs in 2001, 2003, 2004 and 2006 was followed during this campaign. This involved opening a large area by using a backhoe and thus revealing the level where subsoil features were visible. Excavated areas were mapped by using a Total Station. A plan view of the excavated area was drawn. Features of postholes and pits were sectioned, photographed and drawn to scale. The feature fill was wet-sieved (mesh 0.3 cm) and cultural remains such as ceramics, stone artifacts and faunal remains were sorted out and taken as a sample for analysis. Burials were excavated by removing the dirt from the pit. Inhumations were photographed, drawn to the 1:5 scale and studied as detailed as possible *in situ*. All inhumations were removed and taken back to the Netherlands for further study.

2.1 Small Units (SU)

Small Units were dug for the purpose of testing specific site area characteristics. In this case the purpose was to collect artifacts from a midden deposit on the edge of the slope. Artefacts were collected from 10-cm stratigraphic levels. In 2007 two new Small Units were dug: SU 8 and SU 9.
Small Unit 9 measured 2x1.5 m. As a burial was found (F294), this unit was rejected as a stratigraphic samples unit. Instead, the burial in this unit was excavated.
Small Unit 8 measured 2x2 m and was divided into four squares named A, B, C and D.
In two squares burials were found: F 291 in square D and F292 in square C. Therefore, only squares A and B were used as stratigraphic sample squares. These squares were excavated in 10 cm levels. Artefacts were collected per 10-cm level and both squares were excavated until the undisturbed subsoil below the midden deposit was reached.

2.2 Large Units (LU)

Large Units were made for the purpose of revealing the spatial patterning of the site, based on the location and orientation of features. This was done by using a backhoe and scraping was stopped at the first level where features became clearly visible.
Two Large Units were made: LU 6 and 7 (Fig. 4). Their specific objective was to examine the direct adjoining area east and south of LU 4 and 5, which was excavated in 2006. Goal of these Large Units was to look for more (house) structures that belonged to the supposed Arauquinoid village ring.
Large Unit 6 measured 8x4 m and Large Unit 7 had a length of 11 m and was about 4 m wide.

3. PRELIMINARY FIELDWORK RESULTS AND INTERPRETATIONS

The preliminary fieldwork results are presented here in two categories:

3.1 Features: postholes, undetermined features and burials
3.2 Material categories: ceramics, stone, coral, shell and bone artefacts
3.3 Ecofacts

3.1 Features: postholes, undetermined features and burials

During this fieldwork season a total number of 46 features were discovered, mostly in Large Units 6 en 7. In all 15 (new) features are certainly of anthropogenic origin and these include postholes and burials. Six features could not be identified. The rest were explained as natural depressions and tree roots or animal burrows (Fig. 3).

Square	*Feature*	*Interpretation*	*Artefacts & ecofacts in fill*	*Period*
SU6	118	primary burial with secondary bundle of bones	ceramics, stone	Arauquinoid?
LU5	244	secondary burial in posthole	ceramics	Arauquinoid?
SU7	251	primary burial	--	?
LU6	255	primary (double) burial	ceramics, faunal remains	Arauquinoid?
LU6	256	secundary burial	--	Arauquinoid?
LU6	257=178	primary burial	--	?
LU6	261	unidentified feature	faunal remains	?
LU7	265	primary burial	ceramics, faunal remains	Arauquinoid?
LU7	267/269	multiple primary burial	ceramics, faunal remains	Saladoid?
LU7	268	(primary) burial	faunal remains	Saladoid?
LU7	270	unidentified feature	faunal remains	?
LU7	273	primary burial with secondary bundle of bones	ceramics, faunal remains	Arauquinoid?
LU7	276	posthole	ceramics, faunal remains	?
LU7	279	unidentified feature	ceramics, faunal remains	?
LU7	280	unidentified feature	ceramics, faunal remains, coral	?
LU7	281	unidentified feature	ceramics, faunal remains	?
LU7	282	posthole	ceramics, faunal remains	Saladoid/Arauquinoid?
LU7	283	possible burial (not excavated)	--	?
LU7	284	posthole	ceramics, faunal remains, stone	Saladoid/Arauquinoid?
LU7	285	posthole	faunal remains	Saladoid/Arauquinoid?
LU7	287	posthole	ceramics, faunal remains	Saladoid/Arauquinoid?
LU7	288	posthole	faunal remains	Saladoid/Arauquinoid?
SU8	291=97	primary burial	--	Arauquinoid?
SU8	292	primary burial	shell bead	Arauquinoid?
SU9	294	primary burial	--	Arauquinoid?
SU7	295	possible burial (not excavated)	--	?
SU7	297	burial below or in burial F251 (not excavated)	--	?
LU7	298	unidentified feature	--	?

Fig. 3. List of all excavated and newly found features during the 2007 fieldwork

The features on the plateau were found at a depth between 25 and 30 cm below the present surface. Burials in the midden deposit on the slope were found at a deeper level.
A number of features yielded ceramic sherds with diagnostic (visible by eyesight) characteristics, which made it possible to present a (relative) date for these features.
Only three types of features were found: postholes, unidentified features and burials. A feature plan is presented in Fig. 4.

1. Postholes (F276, F282, F284, F285, F287, F288)

At this side of the plateau only the deeper part of the postholes survived. Due to erosion the original Amerindian surface level and the depth of the posts could not be determined. The posthole features had depths ranging between 12 and 63 cm and had diameters between 20 and 30 cm. Except for posthole F282, all had rounded bases. The fill consisted of dark greyish-brown sandy clay (anthrosol) with a lot of shells (Fig. 5). Some also contained artefacts such as ceramics or lithic materials. These postholes most likely represent the posts of an additional (house) structure. Posthole F21, which was found in a test pit (SU4) in 2001, is also part of this structure. Together these postholes form circa 1/3 of a circular or semi-circular (house) structure (Fig. 4). This structure is partly located on the plateau and partly on the midden-filled gully. Based on the pottery style that was found in the feature fill of these post, it could be dated to the end of the Late Palo Seco Saladoid and beginning of the Arauquinoid period.

Fig. 5. Example of a feature of one of the wall posts of the newly discovered house structure, feature 284, scalebar = 30 cm.

2. Unidentified features (F261, F270, F279, F280, F281, F298)

These six features could not be interpreted. All have the same fill as the postholes, but they are characterized by irregular or vague contours. It is unknown if these are natural disturbances such as tree roots or men-made pits.

3. *Burials (F118, F244, F251, F255, F256, F265, F267, F268, F273, F283 (not excavated), F291, F292, F294, F295 (not excavated), F297 (not excavated))*

Five of these burials (F118, F244, F251, F257, F291) were already known from previous excavation seasons, but left unexcavated. Burial F118, which was found in 2003, was excavated this year. Burials F244 and F251 which were found in 2006, were also excavated this year. Burial F291 was already found in 2003 and then labelled F97. It will be referred to as F191 from now onwards. Burial F257 is also found in 2003 and labelled F178. Since the preservation of the bones of this burial was very bad, it was also left unexcavated this year. Feature 269 appeared to be part of F267. This is a burial with multiple individuals. The whole burial was named F267 and the feature number F269 was rejected. Ten new burials were found this year (F255, F256, F267, F268, F273, F283, F292, F294, F295, F297). In all 12 burials were excavated this year, including a total of 19 individuals. The inhumations include:

1. primary, single individual burials (F291, F265, F292, F294)
2. primary, (possibly) double individuals burial (F255)
3. primary, multiple individuals burial (F267)
4. primary, single individual burials with secondary bone depositions (F118, F273)
5. secondary bone depositions (F244, F256)
6. unknown (F251, F268)

The burials most likely date from both the Late Palo Seco Saladoid period as well as the Arauquinoid period. Orientation of the burials varied and adults and sub-adults, of both male and female sex, were found. Some burials indicated complex post-mortem rituals. Only one individual was accompanied with a burial gift: just below the mandible of the individual in F191 a shell bead was found.

Excavation and identification methods

The burials were excavated in horizontal levels. When required, for example in cases when the bone material was positioned vertically, this strategy was adjusted to the circumstances and sections of the burial pit were made.

Physical anthropological observations, which may hold indications of sex and age determination, possible pathological deformations and indications of burial processes, were noted in the field (Maat and Mastdijk, 2004). All the different levels of the excavated burials were photographed and drawn to the 1:5 scale and fixed in a local grid. Height measurements were taken from the top and bottom of the burial pit and of some specific bones. After documentation, the bones were removed, washed, preserved, and labelled individually. Morphological sex determination was based on the characteristics of the pelvis and the skull (Acsádi & Nemeskéri, 1970; Workshop of European Anthropologists, 1980). Skeletal age determination for non-adults was based on dental eruption (Workshop of European Anthropologists 1980 and Ubelaker, 1989), ossification of the axial skeleton (Rauber Kopsch, 1952; Wolff-Heidegger, 1954) and epiphyseal fusion of the postcranial skeleton (Workshop of European Anthropologists, 1980; Brothwell, 1981). During the fieldwork the age of adults was determined according to toothwear (Brothwell, 1981). The dental status was recorded (Brothwell, 1981; Bouts & Pot, 1989) and pathological indications described (Aufderheide and Rodriguez-Martin, 1998; Mann and Hunt, 2005; Ortner, 2003; Rogers and Waldron, 1995). All the skeletal remains were taken to the Netherlands for a more detailed study, especially on pathologies.

Results

Two burials (F265, F268) can probably be dated to the Late Palo Seco period. This is based on the extended position of the individuals and the less well-preserved condition of the bones. The others may date from the subsequent Arauquinoid period.
However, these dating assumptions can only be verified by radiocarbon dating.
A short description of all excavated burials is given below.

F118

Burial F119 concerns a, probably male, sub-adult individual that was buried in a dorsal extended position. Originally the legs were probably in a flexed, upright position. This can be observed by the upright position of the right fibula and the location of the feetbones, close to the pelvic girdle (Figs. 6 and 7).
At a certain moment in time, possibly after the body had decomposed, a bundle of bones containing at least two other individuals was placed on top of the primary interred individual. This bundle contained long bones and one cranium of adult individuals. Most of the leg bones of the primary interred individual were removed and were, possibly, replaced in this bundle.
The primary interred individual had an extra sutural in his cranium, i.e. a variant which is known as an Inca bone (*Os incae*). This burial probably dates from the Arauquinoid period.

Fig. 6. Burial F118, a primary, interred individual (left, level 4) with a secondary bone bundle deposition on top (right, level 1)

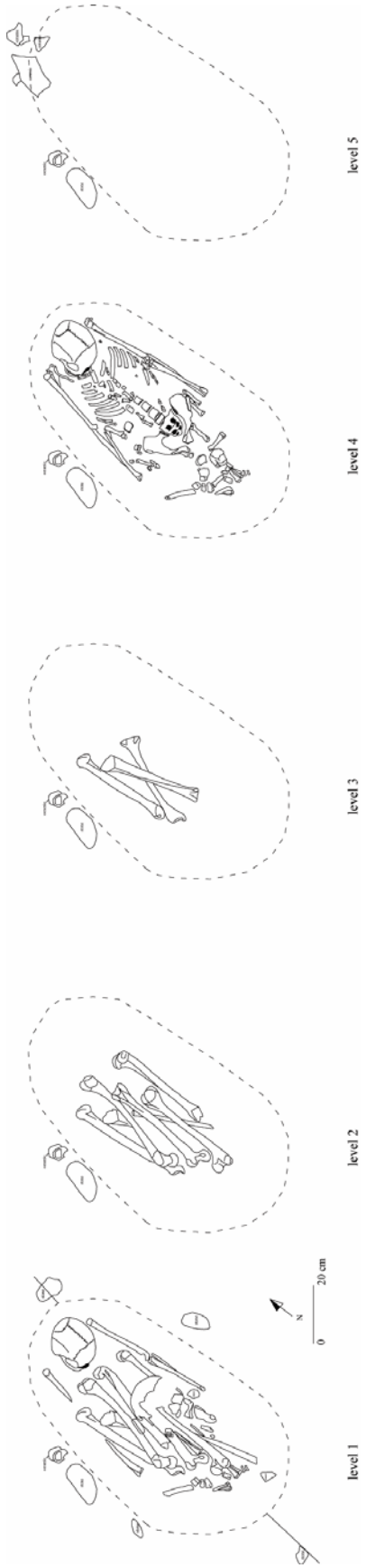


Fig. 7. Burial F118, drawing of all levels; note that some bones are redrawn in different levels for orientation

F244

Feature 244 is a secondary deposition of several longbones and a cranium (Fig. 8). The pit of these bones was probably one of the holes of a wall post of house structure D. Based on a C14-date of another burial (F197) in one of the other wall posts, this structure has a *terminus ante quem* between cal. AD 1010-1170. Consequently, F244 is probably associated with this structure and can also be dated to the Arauquinoid period. Age and sex of this individual still have to be determined.

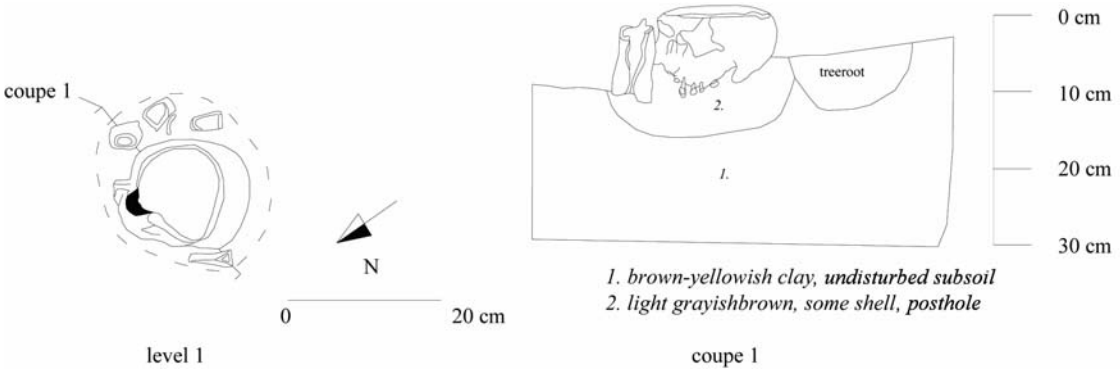


Fig. 8. Level drawing of burial F244 (left) and section drawing (right)

F251

Only the most upper parts of the skeletal remains of this individual were still *in situ*, while a small part of the burial pit is still unexcavated in the south and eastern profile wall of Small Unit 7 (Fig. 9). This concerned probably an adult female that was originally interred in a dorsal position. To the left of the cranium are several bones, longbones and a patella, that probably belong to burial F187. This burial was likely disturbed when the individual of F251 was interred. The removal of the majority of the bones of the individual in F251 was likely done in Amerindian times. However, the nature of this removal has the character of a disturbance rather than that of a selective removal of specific bones. Possibly it was disturbed by a later burial, Feature 297, which intersected the burial pit. This burial was not excavated. It is unknown if burial F251 dates from the Saladoid or the Arauquinoid period.

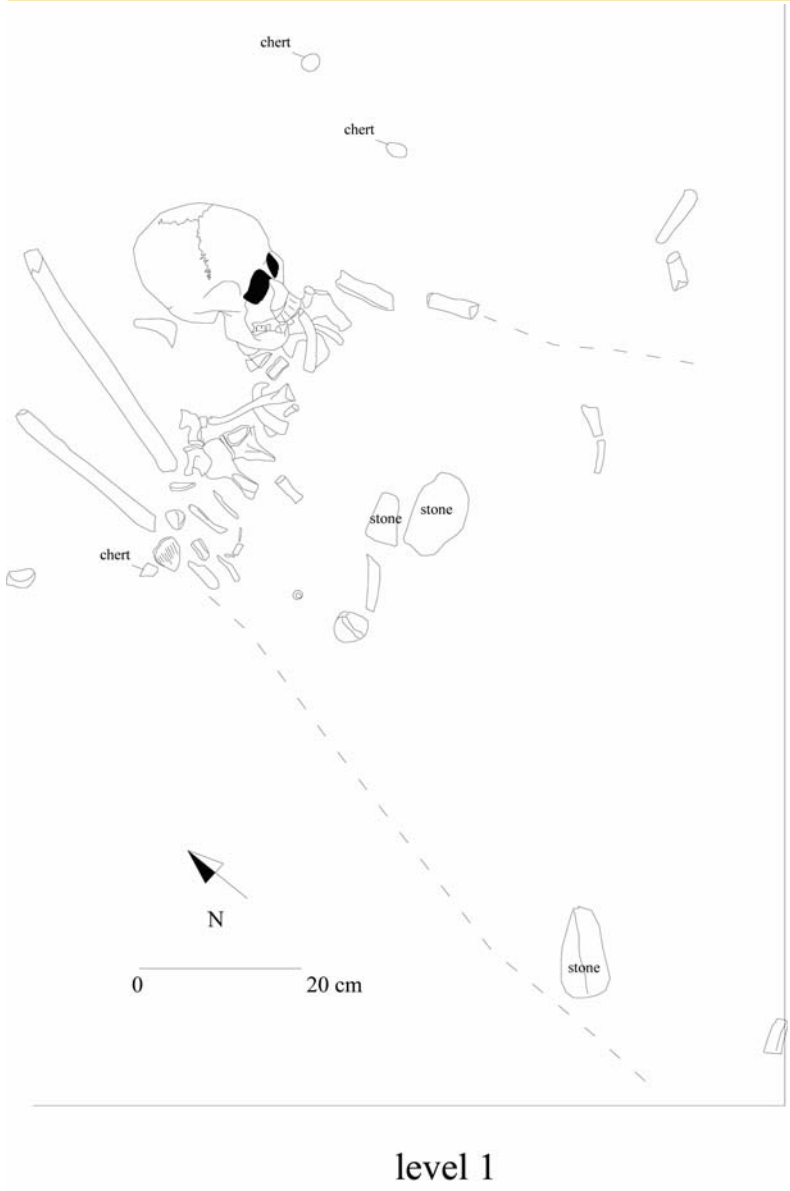


Fig. 9. Burial F251

F255

The burial pit of feature 255 contained the bones of an adult and a sub-adult (Fig. 10). It may have been a primary double burial or a primary single buried individual with a secondary bone deposition. Because some bones are still in articulated position, the burial contains at least one primary interred individual. After decomposition of the body, the burial pit was re-opened and several bones were removed, disturbing the original position of the skeletal remains. This burial can be associated with the secondary deposition of bones in feature 256 (Fig. 11). Possibly some bones of F255 were reburied in a small pit directly next to burial F255. The possibility of matching bones of these two burials will be studied in the Netherlands in the next months. Also the age and sex of both individuals still have to be determined. Burial F255 probably dates from the Arauquinoid period.

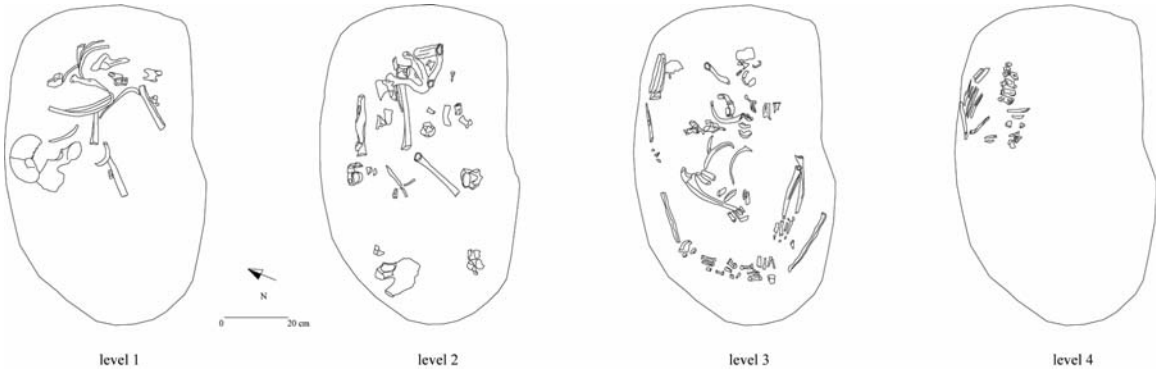
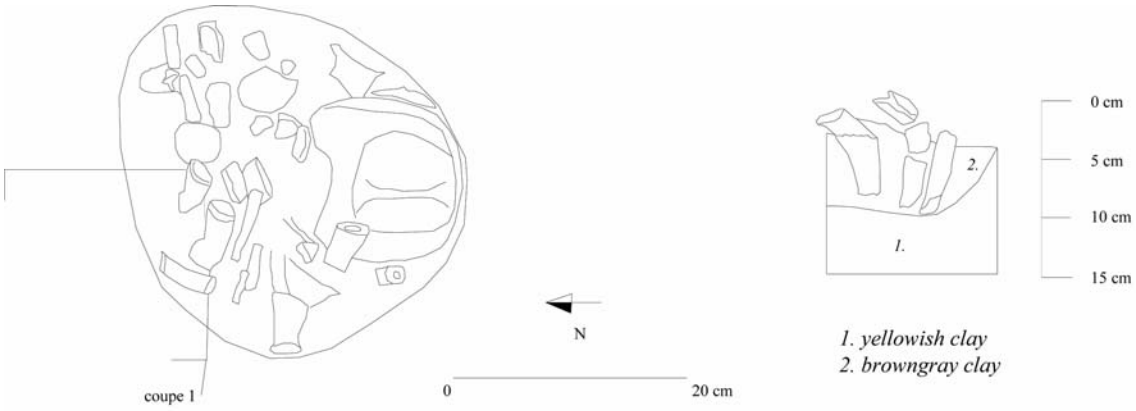


Fig. 10. Burial F255, drawing of all levels

F256

Burial F256 concerns the deposition of several (long)bones and a cranium in a shallow pit, next to burial F255 (Fig. 11). These possibly belong to the individual(s) that were initially interred in the burial pit of feature 255. Burial F256 probably dates from the Arauquinoid period.



level 1 coupe 1

Fig. 11. Above: burial F255, level 1 with the secondary deposition of bones in a small pit, F256
Below: burial F256, level 1 (left) and a section drawing of F256 (right)

F265

Burial F265 concerns a primary interred, adult individual (Fig. 12).
The individual was buried in a dorsal position while the legs were strongly flexed.
The burial pit was partly dug into the undisturbed subsoil but largely into the midden deposit on the hill slope. The burial most likely dates from the Arauquinoid period.
A more exact age indication and the sex of this individual will be determined in the next months.

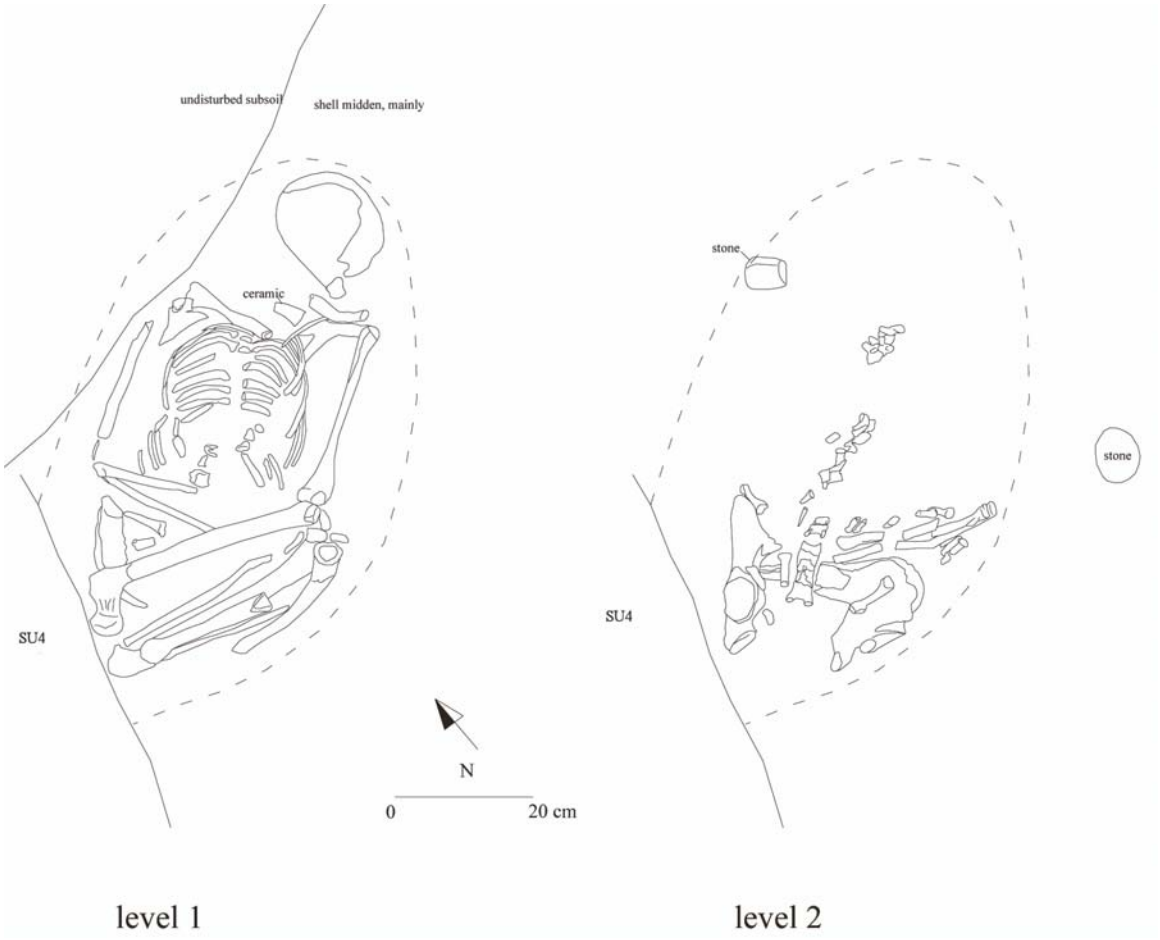


Fig. 12. Burial F265, drawing of all levels

F267

F267 concerns a multiple burial (Fig. 13). In the burial pit the skeletal remains of four individuals were present, most likely two adults and two sub-adults. Most likely the different individuals were not interred in one single action, but at subsequent times. Initially, an adult individual was interred in a, probably extended, dorsal position with the head bearing south (Fig. 13, level 4). Later, the burial pit was (partly) opened and another adult individual was interred, also in an extended dorsal position, but with the head bearing north.

On top of the latter individual the remains of two sub-adult individuals were found. Although some bones of these sub-adult individuals are in articulated position, not the complete skeletons of both are present. The remains of the first sub-adult are located on the lower leg bones of the second adult and include a mandible, parts of the cranium, parts of the right arm bones and possibly a vertebra. The head was bearing south (Fig. 13, level 1). The remains of the second sub-adult were located on the pelvic area of the second adult. This sub-adult was probably interred in a strongly flexed position. The cranium was located on the right pelvic bone of the second adult and was bearing south. Furthermore, some ribs are present and, still in an articulated position, a pelvic bone, a femur and tibia in a flexed position (Fig. 13, level 1).

The burial pit was located on the plateau. Based on the extended position and fractured condition of the bones, this burial can possibly be dated to the Late Palo Seco Saladoid period. Based on the presence of multiple individuals in one single burial pit, which were probably interred during different occasions, it can be concluded that the location of the burial pit was marked in some way. Age and sex of these individuals will be determined in the next months.

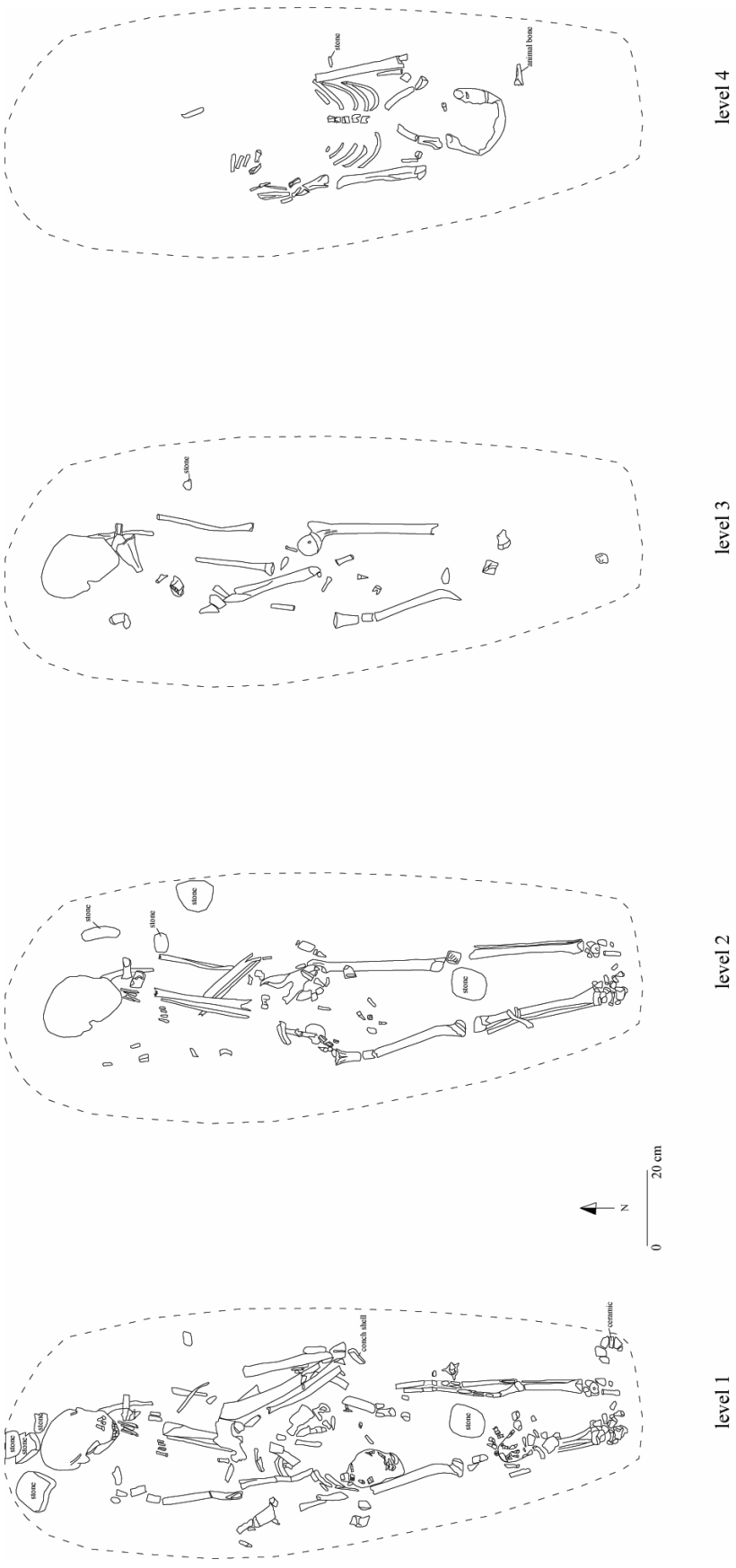


Fig. 13. Burial F267, drawing of all levels

F268

Burial F268 concerns a heavily disturbed burial; only some bones were present. It was located next to burial F267 and this probably also was a dorsally extended, interred individual (Fig. 14).

This burial probably also dates from the Late Palo Seco Saladoid period.

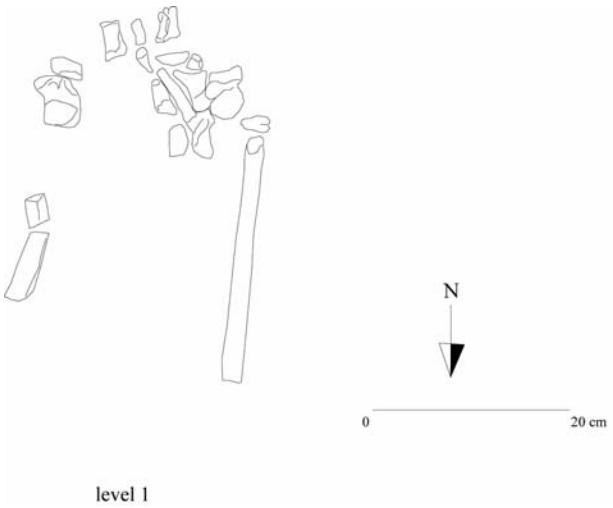


Fig. 14. Burial F268

F273

Burial F273 concerns a primary interred, adult individual, that was buried in a dorsal position with strongly flexed legs (Fig. 15).

On top of the right side of this individual some bones of a next individual have been found. This could be a later, secondary bone deposition, or alternatively these bones belong to next burial which protruding this one. There are additional bones in the profile of Large Unit 7, but these were left unexcavated. The burial most likely dates from the Arauquinoid period. The exact age and identification of sex of this individual will be determined in the next months.

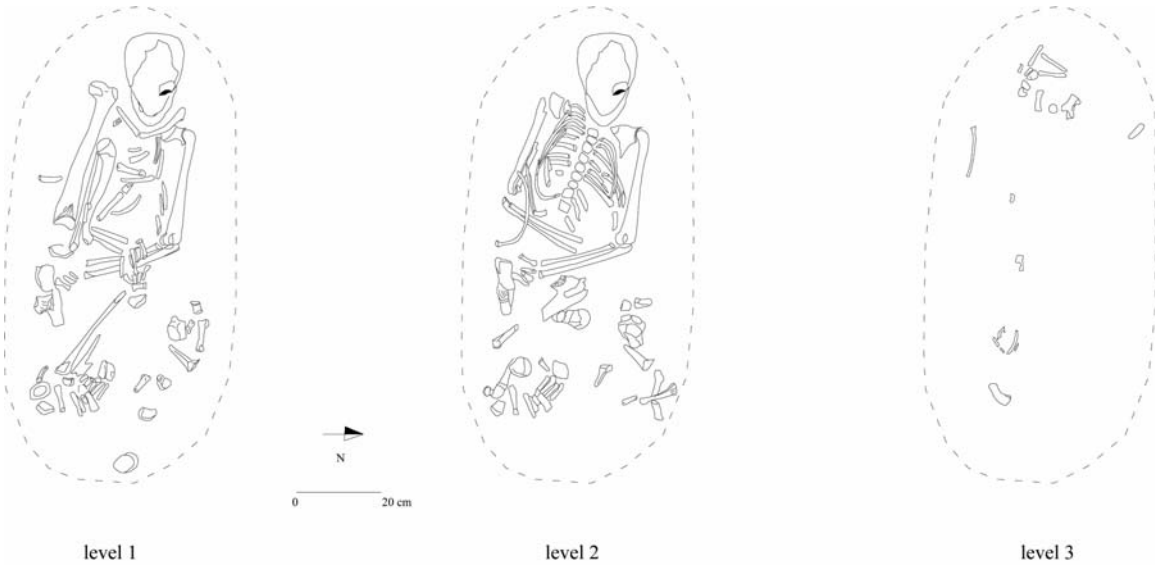


Fig. 15. Burial F265, drawing of all levels

F291

Burial F291 concerns a primary interred individual buried in dorsal position with strongly flexed legs (Fig. 16). The burial pit was located on the edge of the plateau, partly dug into the undisturbed subsoil and the midden deposit on the hill slope. The burial most likely dates from the Arauquinoid period.

The age and sex of this individual will be determined in the next months.

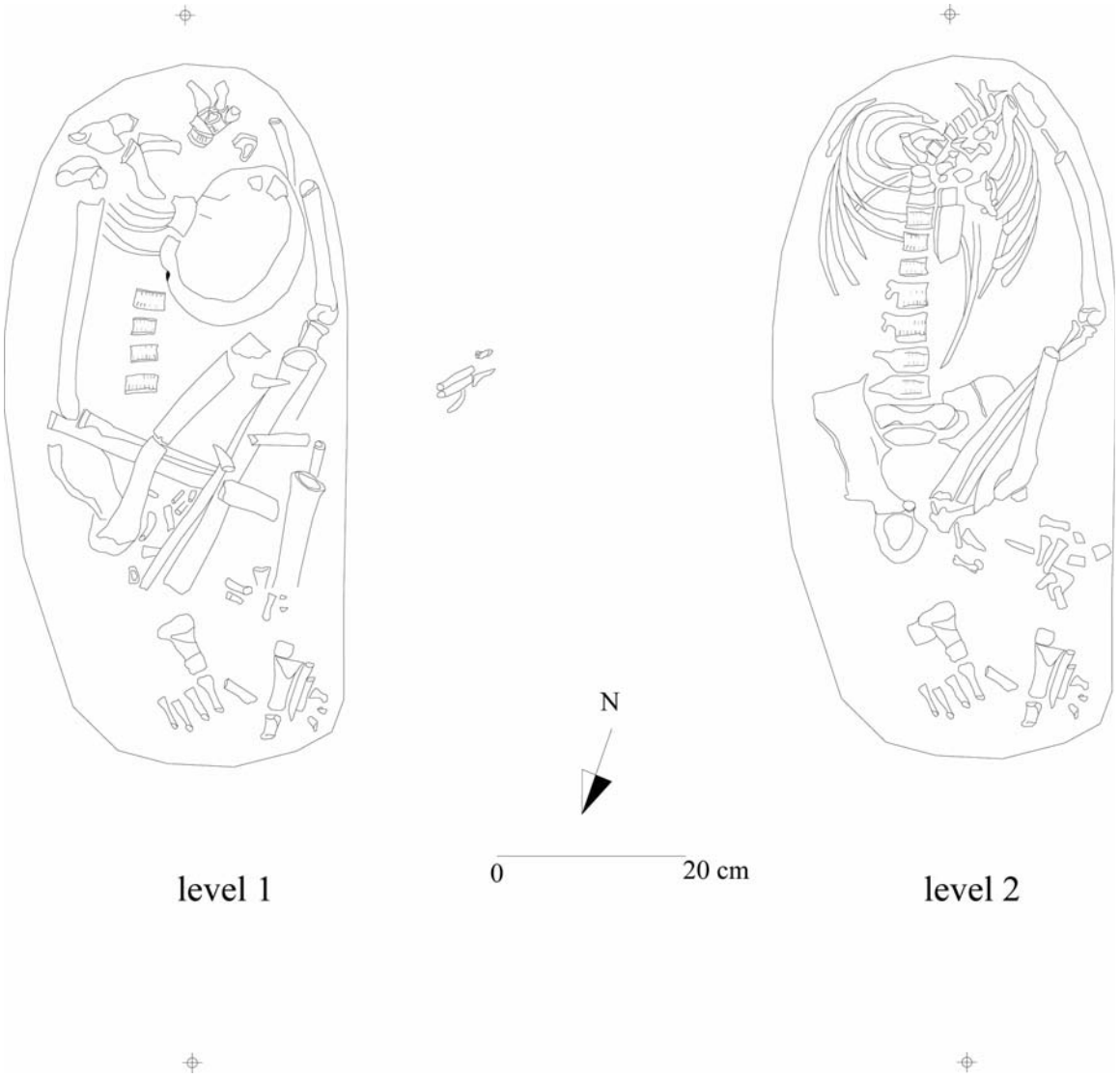


Fig. 16. Burial F291, drawing of all levels

F292

Burial F292 was located next to burial F291 and concerns also a primary interred individual buried on the right side with strongly flexed legs (Fig. 17). The burial pit was located on the edge of the plateau and dug partly into the undisturbed subsoil and the midden deposit on the hill slope. The burial was somewhat eroded by roots and because the fill contained very little shell, not all bones were preserved. In the neck area, just below the mandible, a small shell bead (probably *Strombus* sp.) was found. The burial most likely dates from the Arauquinoid period.

The age and sex of this individual will be determined in the next months.

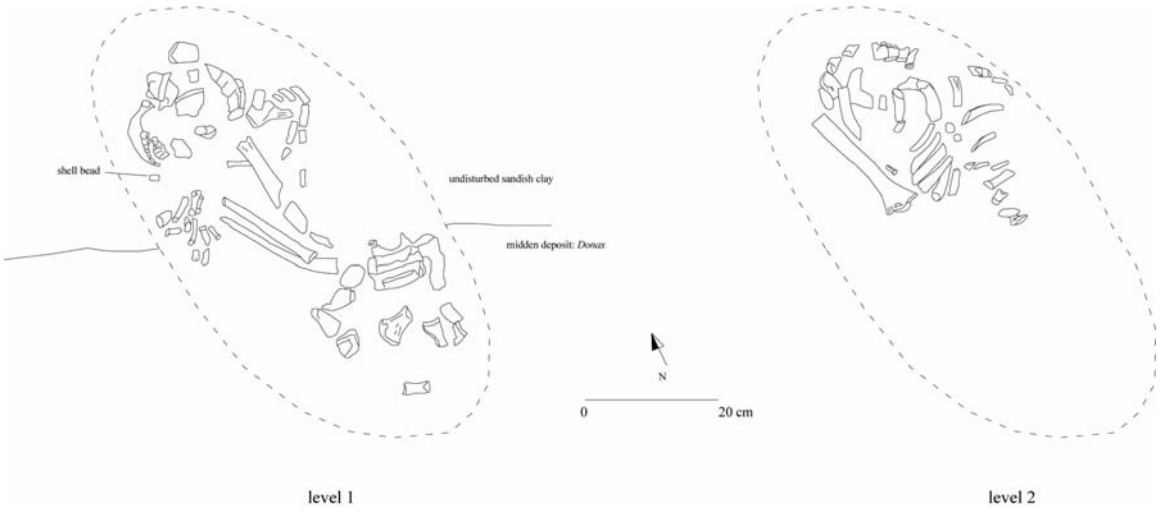


Fig. 17. Burial F292, drawing of all levels (above) and the location of the shell bead (below)

F294

Burial F294 concerns a primary interred, adult, probably male, individual that was buried in dorsal position with strongly flexed legs (Fig. 18).

He was interred into the midden deposit on the slope of the hill. The burial is partly disturbed by a tree root or animal burrow. This individual has an extra sutural in his cranium, called an Inca bone (*Os incae*). The burial most likely dates from the Arauquinoid period. A more exact age indication and definite sex of this individual will be determined in the next months.

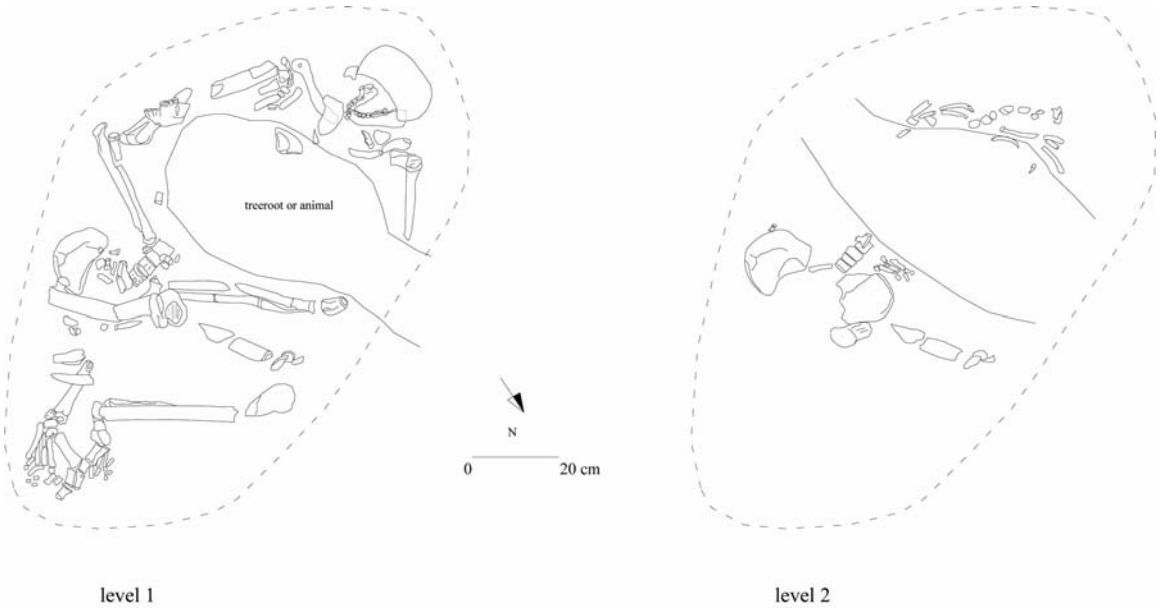


Fig. 18. Burial F294, drawing of all levels

3.2 Material categories: ceramics, stone, shell, coral and bone artefacts

The following artefacts were found: ceramics, stone, shell, coral and bone artefacts.
The final analysis of the various material categories is still in progress, and, as a result no substantial information can be presented here.

- Ceramics
  Some pottery was found in Large Units 6 and 7 during working with the backhoe. Most of the ceramics were encountered in the midden deposit on the slope of the hill, where Small Units 8 and 9 were dug. In smaller quantities ceramics were found in the feature fills of the postholes and burial pits. The majority can be dated to the Saladoid period, i.e. the Late Palo Seco complex, AD 300 – AD 650. Arauquinoid pottery (AD 650-1400) was found in lower quantities. However, since this latter style pottery is not easily recognized at the SAN-1 site, absolute numbers can be presented only after analysis. Pottery of the Saladoid period includes flanged rims, incised sherds and pieces showing simple and complex modelling such as nubbins, 'slid eyes' and *adornos*. Of some sherds a more or less complete vessel profile could be reconstructed.

  In Small Unit 6 a large piece of a griddle was found in the upper level of the midden deposit on the hill slope (find number 40). This griddle has an orange-coloured fabric and non-plastic inclusions are siltstone particles, an incidental shell fragment and some grit. The griddle is flat, some 1.8 cm thick and has a slightly upturned, straight simple rim (Fig. 19).
  The size of this griddle is unknown. The shape of the griddle is difficult to reconstruct because of the uneven and crude nature of the fabric. It probably represents a round or semi-round griddle and if so, its size must have been close to a meter in diameter. This griddle probably dates from the Late Saladoid or Early Arauquinoid period.

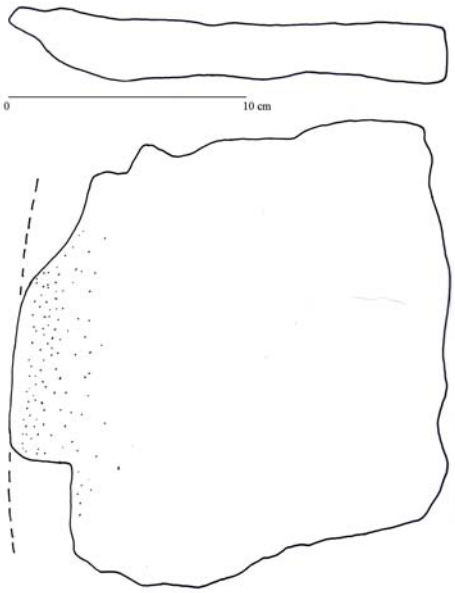


Fig. 19. Fragment of a ceramic griddle

Furthermore, a special anthropomorphic *adorno* must be mentioned (find number 1). This *adorno* was found in Large Unit 7 in the transitional level between the disturbed topsoil and the top of the midden deposit on the hill slope. This *adorno* shows a human face with coffee bean-shaped eyes, a realistically shaped nose and a wide mouth with thin lips (Fig. 20). It shows a hard orange-brown fabric with red sandstone particles, possibly some grit and very little sand with an occasional glimmer particle. Most likely it was fitted on a boat-shaped open bowl. It can be dated to the Arauquinoid period and its style shows a strong relation with the mainland Arauquinoid styles from the Guianas and the central coastal zone of Venezuela (Boomert, personal communication; Versteeg and Bubberman 1992: picture S15).

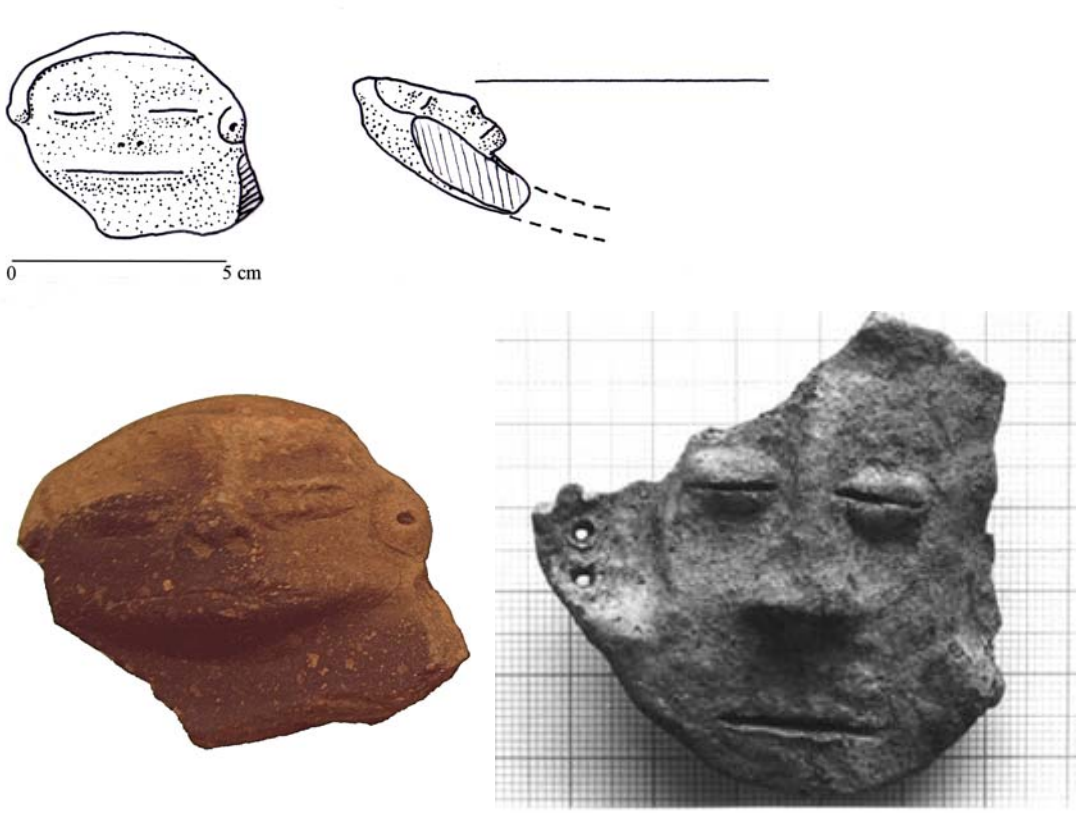


Fig. 20. The Arauquinoid anthropomorphic adorno from the SAN-1 site (above and below left) and an Arauquinoid Late Hertenrits style adorno from the Prins Bernard Polder site in Suriname (below right, after Versteeg and Bubberman 1992: picture S15)

- Stone artefacts
  Several stone artefacts were found, among which polishing stones, grinding stones, percussors, a butt fragment of a stone axe, a re-used (petaloid) stone axe head and a large frog-shaped decorative bodily ornament. Most of these artefacts were found in the midden deposit on the hill slope. A more detailed presentation of some of these artefacts is given below.

  In the upper levels of the midden deposit on the hill slope (Small Unit 9) a re-used stone axe head was found (find number 38). This is probably a waterworn pebble of metamorphic sandstone, which was shaped as an axe (Fig. 21). Originally, it probably was a flat, rounded petaloid axe with a flat butt end and side notches. The sharp edge-part of the axe is completely worn because it was re-used as a grinding tool or percussor. It was found in the midden deposit just above the bones of burial F294. Since the contour of the burial pit could not be observed in the shell refuse, it is unknown if this axe was just dumped in this midden or if was buried with the interred individual or maybe deliberately deposited here afterwards. Because of this, it is also unknown to which period this axe head can be ascribed. It concerns a non-inclusion-hafted type axe. The butt end of this type of axe is normally fixed against the wood of the axe handle and kept in place with fibres or lianas such as *Bromeliacées*, *Aracées*, or the bark of *Lecythidacées* and possible covered with resin (Versteeg and Rostain 1999). These types of axes are characteristic of the Ceramic age cultures of the Guiana region (Boomert 2000:315, personal communication). For example, this particular axe shows strong similarities with an axe which was found at the Tourépé Falls, Lower Approuague River in French Guiana (Fig. 21). This axe still had part of the handle attached which was carved in the shape of an upright human figure. Probably this axe had a ceremonial, symbolic value (Versteeg and Rostain 1999). Also, Harris has noted that the side-notched type axes are Guiana style axes, which can possibly be dated between AD 700 and 1700 (Harris 1981:17; Harris axe type 18, Chart 10). This date-range is based on sites where this axe type was found, such as in Suriname (Hertenrits, Kwatta, Koriabo, Barbakoeba and Brownsberg) and Guyana (Rupununi) (Harris 1981:List 3:Sources of Chart 10; Dates).

Fig. 21. Re-used stone axe head from the SAN-1 site (left) and the stone axe from the Tourépé Falls, Lower Approuague River in French Guiana (right, after Versteeg and Rostain 1999: Fig. 15).

The first (10-cm) level of the midden deposit on the hill slope (Small Unit 8, Square D), yielded a frog-shaped bodily ornament (find number 21). It was close by burial F291. If this object was deliberately deposited, it could have been associated with this interred individual. Only a small part of the head is missing. It is probably made of chlorite and has characteristic large mica/glimmer particles. It measures 4.8x3.7x1.2 cm and is all-over incised, accentuating the neck, lower legs and the remaining right eye (Fig. 22). The object has two perforations: holes were drilled in both sides of the object exiting in its back. The back of the object is flat, and shows a lustre, probably a wear due to friction. Most likely this object was attached to a cotton band or belt. Based on its size and the broad-lined, 'Barrancoid-like' incisions, this ornament can be dated to the transitional period between the Saladoid and Arauquinoid periods. Frog images occur frequently in archaeological contexts of the South American Tropical Lowlands and Caribbean, and in ethno historic and anthropologic sources. A less elaborate and smaller, frog-shaped ornament was found at the Atagual site in Trinidad (Boomert 2000:408-409, Fig 6). This one was identified as made of chlorite. Comparable frog-shaped stone object are known from the Arauquinoid Kwatta Tingiholo site in Suriname (Versteeg and Bubberman 1992: Fig. S20).

Frog images are associated with rain (water), fertility, the Underworld, the wet, i.e. planting, season and the female sex (Boomert 2000:470). It is likely that this type of bodily ornament was worn by a female person (Boomert 2000:405).

Ceramic figurines from the Santarém culture[1] in Brazil show women with elaborate body paint and headbands with zoomorphic ornaments attached (Fig. 22). Here, these ornaments are called *muiraquitãs*. They are fashioned in translucent, greenish gemstones and a great number mimic the form of frogs (Gomes 2001:141).

These kinds of objects were exchanged in a wide-ranging trade network which linked the mainland Orinoco region, the Guianas and the Caribbean archipelago. This trade network had socio-political use as a means to conclude social and political transactions such as alliance formations, marriage pacts, ritual services and homicide compensations (Boomert 2000:422-423). Most likely these transactions were performed on a group level as well as on a personal level, and by all members of the society. This complexity makes it difficult to interpret the presence of these primitive valuables. However, at most sites these objects are rare and were certainly not used by every member of Amerindian society. By the time when the Europeans arrived, Amerindian society in the Lesser Antilles, the Orinoco region and the Guianas can be described as 'minimal' chiefdoms (Boomert 2000:382) or as short-term chieftaincies (Redmond 1998:10). Within this system it is likely that large (green) stone and gold (*guanín*) bodily decorations were reserved for the (semi-)elite family and religious leaders.

[1] It is understood that the Santarém site was the centre of a great chiefdom located on the Amazon, Brazil, which can be dated to AD 900 – 1200. Most likely this culture had some influence on the Guyana cultures.

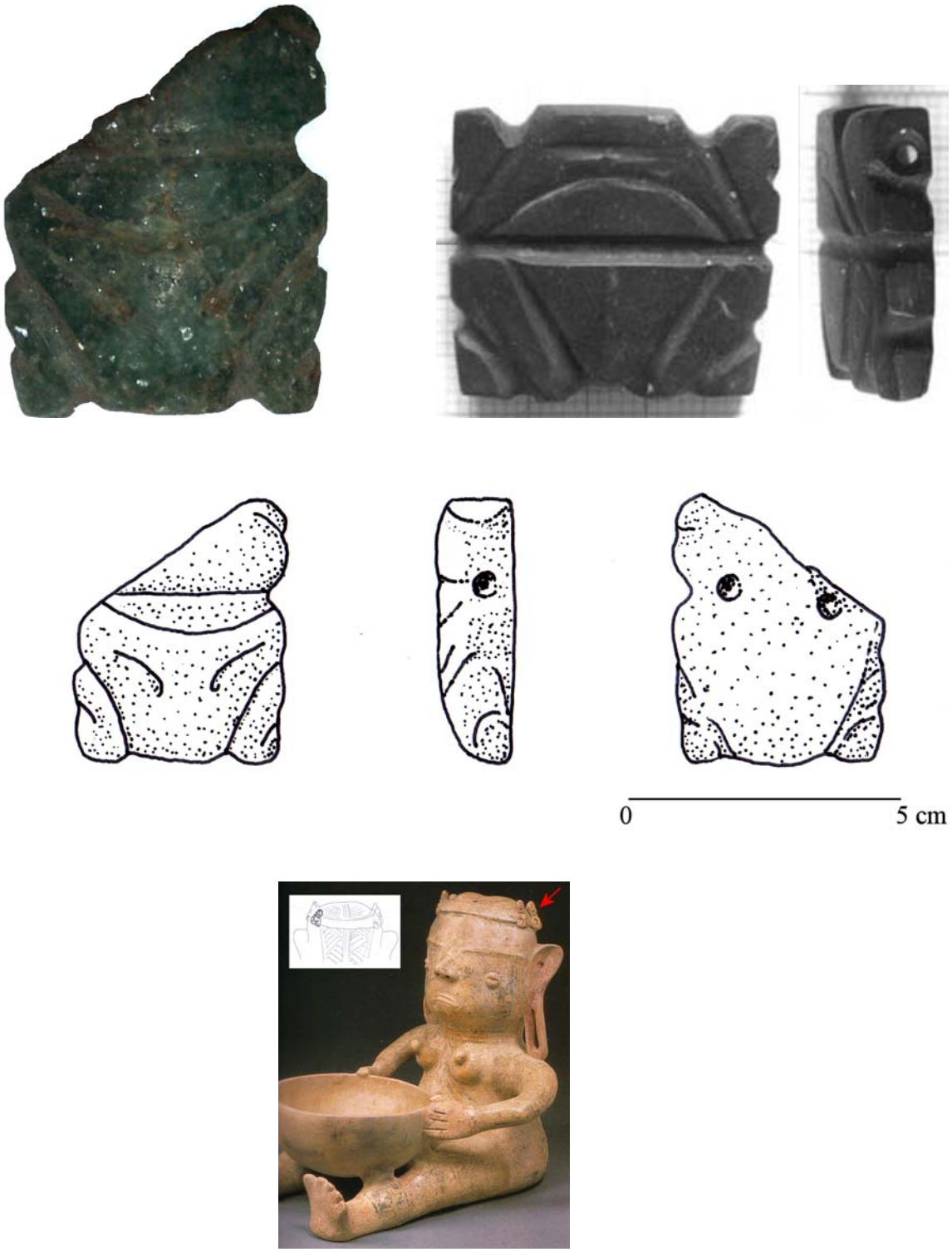


Fig 22. Frog-shaped, stone bodily ornament from the SAN-1 site (above right and middle) and a frog-shaped stone object from the Kwatta Tingiholo site in Suriname (above left, after Versteeg and Bubberman, 1992: Fig. S20). Below: a ceramic female figurine wearing a headband with attached muiraquitãs (Santarém culture, Brazil, after Gomes 2001:141 Figs. 5.7 and 5.8).

- Shell, coral and bone artefacts
  One shell artefact was found: a small bead which was buried with the individual in burial F292 (find number 37). It is a barrel-shaped bead with a length of 1.6 cm and a diameter of 1 cm (Fig. 23). It is probably made from a *Strombus* species. Barrel-shaped beads have been found at sites in Trinidad such as Erin and Palo Seco and in Tobago at the Golden Grove site (Boomert 2000:408, 410-411: Fig. 1). These are made from bone and stone (diorite).
  Furthermore, two coral branches were found. Both showed considerable wear: all sharp pores were smoothed. Similar coral tools are found at many Amerindian sites on the Caribbean Archipelago. Probably they were used as rasps.
  One bone artefact was found: a small sharpened piece of bone.

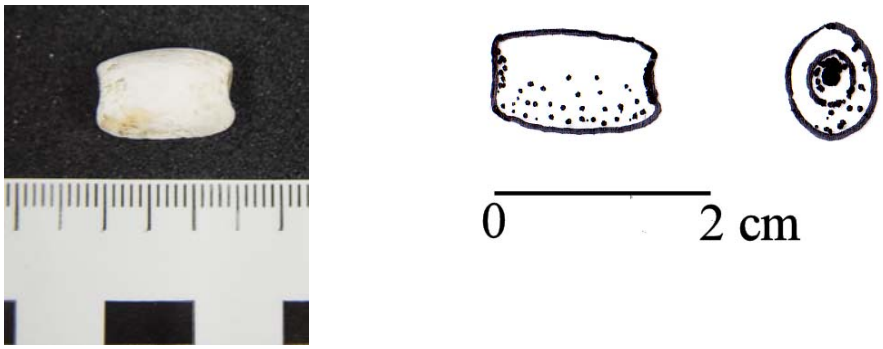


Fig 23. Shell bead from the buried individual in feature 292

3.3 Ecofacts

Many faunal remains were collected, mainly from the sample squares A and B in Small Unit 8. The following ecofacts wer encountered: animal and fish bones, shells and burned nuts.
All the sieve residues and the collected ecofacts from feature fills and found during shovel scraping were taken to the Netherlands for analysis.

4. SUMMARY AND CONCLUSIONS

Just before the fieldwork in October 2007 a new ^{14}C date was presented by Trent University. It concerned a date for the skeleton of a child that was interred in one of the wall postholes of Structure D, feature 197. It was dated between cal. AD 1010 and 1170, and consequently, Structure D dates from the Arauquinoid period. However, this date is somewhat earlier than the date for Structure A, which is located next to it and was dated between cal. AD 1290-1410.
This could mean that the houses were not contemporaneous, or that the burials from which the ^{14}C dates were obtained, are not associated with this Structure A.
Dating the secondary deposition in the central posthole of Structure A could solve this problem and possible present a more matching date. In 2008 this burial will hopefully be dated.

During the 2007 fieldwork an additional house structure was found. Approximately 1/3 of this structure was excavated. Based on the pottery that was found in the feature fill of these postholes, it could be dated to the end of the Late Palo Seco Saladoid or beginning of the Araquinoid period. Since the house structure next to this one was dated AD 1010-1170, it seems unlikely that these houses consisted of a contemporary line or ring of houses. However, it must be mentioned that the newly found house structure was located on top of a midden deposit that yielded Arauquinoid pottery in the upper levels.
Ten new burials were found this year, while in all 12 burials were excavated which included a total of 19 individuals. Two burials can probably be dated to the Late Palo Seco Saladoid period. One of these was a complex burial of multiple individuals, which were probably interred with some time-interval between them. However, the way these different individuals were buried probably indicates a close relationship between them. Furthermore, it shows that burial locations were clearly marked for a longer period of time. Also, the presence of multiple, primary interred individuals in one single burial pit have not been observed at the SAN-1 site. Maybe the (Arauquinoid) custom of placing bundles of bones with primary interred individuals can be interpreted as having evolved from this (Saladoid) type of burial.
One of the, presumably, Arauquinoid individuals was buried with a shell bead close to the neck. This is the second interred individual that, without any doubt, was accompanied by mortuary gifts.

This year also the first piece of complex modelled Arauquinoid ceramic decoration was found. This represents an anthropomorphic *adorno*, whichshows stylistic affiliations with the Guiana region. A stone axe head that was found this year may be related to the Ceramic Age cultures in the Guiana region. Another new special find concerns a large frog-shaped stone (possible chlorite) bodily decoration. The characteristics (in style and the way it is perforated) of this frog-shaped item also indicates affiliations with the Mainland culture groups. It can possible be dated in the transitional period between the Late Palo Seco and Early Arauquinoid period. This rare, exotic item can be interpreted as a prestige object, and probably indicate that the society during this period cannot be labelled as a 'true' egalitarian society.
Some of the artefacts that were found during this year's fieldwork, indicate that the SAN-1 people during the Late Saladoid/Early Arauquinoid transition and throughout the Arauquinoid period were participating into an interaction network with the mainland cultures, possible especially those of the Guiana region. It is unknown if these artefacts (except for maybe the stone axe) are true imports from this region.
It seems more likely that during this interaction ideas and concepts were exchanged, resulting in copying stylistic items by the Amerindian groups in Trinidad.

Certainly, this process also involved the actual movement of mainland (Guiana/Venezuela) Amerindians due to intermarriage and small-scale migrating of groups from these regions in order to facilitate their sociopolitical bonds in the most favourable way. In archaeological terms, this would have resulted in an artefact complex which is a mosaic of different culture styles, forming a blend of 'traditional' island (Palo Seco) Saladoid-style items, copied items by originally island-born local groups, mainland-style produced items by migrated people using local island resources (clays and stone) and truly imported mainland items.

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