Archaeological investigations between Cayenne Island and the Maroni river : a cultural sequence of western coastal French Guiana from 5000 BP to present

Bel, M.M. van den

Chapter 3

A short history of archaeology in the Guianas

3.1 Introduction

Three major stages can be distinguished with regard to the history of archaeological research in the Guianas (Boomert 2000:8–11):

a. The *Early Period* of investigation stretching from the second half of the 19th century to the beginning of the 20th century. It is is characterized by means of the collecting and rudimentary description of artefacts.

b. The *Intermediate Period* represents the initial stratigraphic excavations, classificatory-historical studies and local chronologies. This period is more or less absent in French Guiana but well represented in Venezuela and the Antilles.

c. The *Recent Period* spans between the 1960s and the 1990s. A continuation of chronological studies in addition to the development of stressing the reconstruction of past life-ways, environmental relations and socio-cultural development characterise this period. Although ethnology has played an important role throughout these stages, ethnohistorical studies and anthropology are intensified.[49]

Today, we may add compliance archaeology as stage (d) in French Guiana (Vacher et al. 1998; Jérémie 1997, 2002a, 2007). The same applies to the State of Amapá and Pará (Brazil) that have recently witnessed the development of large scale excavations and the introduction of compliance archaeology, as mentioned before.

3.2 Between the Orinoco and Amazon Rivers

Many European voyagers and naturalists have wandered through Guianas during the 19th century, acquiring a large number of ethnographic and archaeological objects. The majority hereof can now be found in the collections of various European museums to which Museu Paraense Emílio Goeldi in Belém (Brazil) is an important exception. At the turn of the 20th century many Europeans had begun to obtain archaeological and ethnographic information in order to understand the prehistory of the Amerindian population, for example Emílio Goeldi, Henri Coudreau and Curt Nimuendajú in the Territory of Amapá; Jules Crevaux,

49 General overviews of the history of archaeological research in the Guianas and northern Amazonia have been provided by Geijskes (1961a), Barreto (1992), M. Mazière and G. Mazière (1997), Neves (1998), Boomert (2000), Gassón (2002), Migeon (2006, 2010), Rostain (1994a, 2007) and Versteeg (1998).

François Geay and his wife in French Guiana; Christiaan Hering, Claudius de Goeje and Hermann ten Kate in Suriname; William Brett, Everard Im Thurn and Walter Roth in British Guiana; Adolfo Mercano in Venezuela.[50]

From the 1930s on, archaeological research in the Guianas is highly influenced by North American scholars attached mainly to the Yale University and the Smithsonian Institute. The latter institute funded investigations carried out by Clifford Evans and Betty Meggers on the Lower Amazon (1957) and in former British Guyana (1960). The Yale University funded Irving B. Rouse's and his partner José M. Cruxent's (Central University of Caracas) research dealing with the archaeology of the Lower Orinoco River (1958/1959, 1963).[51] Both schools of North American archaeologists applied dissimilar methodologies and techniques when studying their materials or conducting fieldwork primarily based on multiple small-scale stratigraphic excavations of several square meters. It may be evident that, in those days, any infrastructure was completely absent and that field techniques were mainly adapted to transportation:

> *Arch[a]eology in the tropical forest of South America presents, in addition to the usual problems, many difficulties that are not encountered in the more arid or more accessible parts of the New World. Manuals of field procedure and precision methods of excavation technique frequently cannot be followed, and the field situation must be met with an understanding of what is pertinent and what is unprofitable in order to gain the maximum of information in the shortest possible time. Otherwise, one could easily spend a full year in the field and have very little to show for it. This we learned, however, only by experience* (Meggers and Evans 1957:6).

The artefact classifications which North American scholars adopted were based on ceramic material and, to a lesser extent, on lithic material, representing the only artefact readily available in the Neotropics (New World Tropics) due to a better resistance with regard to weathering. Despite the dissimilar methods, both schools aimed at creating ceramic seriations/typologies in order to reconstruct cultural chronologies per region. However, in John Gillin's view, archaeological research was considered random and not systematic at all, as he states in the *Handbook of South American Indians* (HSAI, Vol. 3):

> *The archeology of the Guianas has not been systematically investigated by planned field surveys and coordinated excavations. Our present knowledge is derived from reports of chance finds by ethnologists and travellers, plus a few exploratory excavations. Perhaps because of the relative paucity of European settlements and travel in the interior, the bulk of the finds have been made around the*

---

50 According to Henri and Paule Reichlen (1943), Jules Crevaux (1883:144, 211) mentioned drawings of the rock engravings of Bigiston for the first time when travelling up the Maroni River in 1877. In 1882, these petroglyphs were drawn by Constantin Hering (Versteeg 2003:43). Charles Fredrick Hartt (1871:139–147) published rock art drawings reproduced by Senhor Penna, member of the Pinto de Gaya expedition in 1728, as encountered at the Montagne d'Argent (M. Mazière 1996:28). However, Edithe Pereira actually discovered this as a researcher for the Museu Paraense Emílio Goeldi. Published in 1992 it was rectified in the erratum of the *Bilan Scientifique Régional de Guyane* 1997 (2000:42). For further information on early French naturalist explorers in French Guiana and the French Lesser Antilles, see also the papers presented by Lucile Allorge, Bruno Bordenave and Michel Hoff (2001) as well as the article by Jean Lescure (2001) in: *L'exploration naturaliste des Antilles et de la Guyane*, edited by Jean-Loup d'Hondt and Jacqueline Lorenz, respectively.

51 For further reading on the influences of the "American School" and on the influence of the French School on Brazilian archaeology, see Cristiana Barreto (1998).

> *geographical margins of the area. In the absence of a comprehensive picture of the actual archeological resources of the interior, statements regarding prehistoric distributions of culture and population for the Guianas as a whole must remain highly tentative. Furthermore, chronological determinations are almost entirely lacking. Typological divergence of artefacts from types used by historic tribes implies prehistoric status, of course; but, although typological cross-dating to dated sites outside the Guianas seems to offer an approach to a more refined prehistoric chronology, it has not been accomplished successfully, nor as yet hardly attempted* (Gillin 1948:819).

Although radiometric dating was on the brink of being discovered after W.W. II, Betty J. Meggers and Clifford Evans applied relative dating through superposition in combination with a detailed pottery description in order to fulfil their scientific aspirations (Evans 1950). They had adopted the type-variety method, also known as "Fords quantitative method", regarding pottery studies as numerous North American researchers had done in other regions (e.g. Mesoamerica). This method was developed in the southwest of the U. S. A. by James Ford and Alfred Kidder who were highly influenced by the works of Leslie White on human evolution and diffusion (Ford 1962; Kidder 1962; Evans 1955:33–39). Ripley P. Bullen introduced this method to the Antilles during the early 1960s (Bullen 1962, 1965; Haag 1965).

The ideas on evolution and diffusion formed the theoretical basis for the cultural and geographical division Julian Steward had created regarding South America. He stated in the HSAI that 'Marginal Tribes' inhabited the Tropical Lowland of South America (Steward 1948:883–888, 1949:762). Although complex societies had been recorded in eastern Bolivia by Alfred Métraux and Paul Kirchhoff (1948) –published in the same HSAI volume–, Steward refused to accept these facts. According to the latter, the Tropical Forest Cultures (TFC) formed a devolution from the Circum-Caribbean tribes which had devolved from the Andean culture. This theory was later discarded by Irving Rouse (1953:196), but Meggers and Evans choose Steward's side.[52] They opined, by means of the mere observation of present Amerindian life that chiefdom-type society had to devolve towards tribes because of a tropical forest environment that limited these populations to witness a socio-political and technological evolution (Meggers 1954:807–812; 1971:144–146; Meggers et al. 1988:291). According to Meggers, following her description of lowland ecology, two types of groups inhabited Lowland Amazonia: (a) the Marginal Tribes, i.e. nomadic bands wandering in the useless swamps and savannahs looking for food, and (b) a second group inhabiting the forest with its economic or agricultural potential. This enabled a higher sedentary population and would allow pottery, basketry and weaving to develop. A family organisation with a chief and a shaman as leading authorities represents this TFC (Meggers 1954:803).

In 1970, Donald Lathrap proposed another vision as published in *The Upper Amazon*. In it he stated that the Amazonian floodplain was actually at the origin of ceramics and agriculture. His cardiac-model indicated that Central Amazonia had been occupied continuously and densely since the Middle Holocene, contradicting Betty Megger's views in every possible manner (Lathrap 1970;

52 Curt Nimuendajú mentions interconnected and large archaeological dark earth sites on the Lower Tapajós River during expeditions in the 1920s along the Lower and Middle Amazon River (Nimuendajú 1949, 2001).

Myers 1973; Lathrap and Oliver 1987). Although Lathrap's vision was original and later proved to be correct at least with regard to the earliest ceramics, his theory was based on stylistic and/or aesthetic ceramic evidence in which complex societies create more elaborate ceramics. Anna Roosevelt (1980) later discarded this opinion. However, both Meggers and Lathrap did not approve of two cultural hearths in northern South America as is now suggested with regard to the Lower Amazon and northern Colombia (see Neves 2008).

Furthermore, Lathrap (1970) ascribed prehistoric linguistic movements to ceramic complexes in which the Barrancoid ceramic series represent the Maipuran speakers that dispersed from the Middle Amazon throughout the first millennium BC. Another linguistic movement Lathrap proposes concerns the late prehistoric Cariban expansion (from AD 500 on). It is correlated to the Arauquínoid ceramic series and is finally encountered by the first Europeans. According to Lathrap, the latter expansion is also linked to the utilization of raised fields to enable food production (Lathrap 1970:127, 160–165). Rouse later rejects the linguistic affiliation of ceramic complexes because similar ceramics can be produced by dissimilar linguistic groups (Rouse 1986:110; Bowser 2002).

The TFC and cardiac-model confronted Meggers and Lathrap who soon launched themselves into a short-lived scientific debate on the Mabaruma Phase in former British Guyana.[53] Evans and Meggers (1960, 1964) defined the latter ceramic phase according to variations in temper modes whereas Lathrap (1964, 1966) studied the same material from a style-morphological point of view. His results, combined with the regional (absolute) chronology presented by Rouse and Cruxent, suggest that (a) the Mabaruma Phase is related to the Barrancas styled ceramics of the Lower Orinoco and (b) it is to be dated *c.*500 BC instead of AD 500 as Evans and Meggers propose by means of relative dating.

On the other hand, Irving Rouse, having discarded Steward's Circum-Caribbean theory, adopted a cultural-historic approach when studying pre-Columbian cultures in which culture areas –as defined by Gordon Childe– were of eminent importance. Rouse developed a systematic line of research focussing primarily on the modal classification of pottery in order to establish a chronology that, at that time, was considered an important innovation with regard to American archaeology (Willey and Sabloff 1974). In the Caribbean, Rouse carried out small scale stratigraphic excavations in arbitrary levels. In eastern Venezuela he conducted research in collaboration with José Cruxent. This resulted in the construction of a chronological framework for the entire Caribbean region, including the northwestern Guianas (Rouse 1939, 1952, 1992; Rouse and Cruxent 1963; Rouse and Alegria 1990; Rouse and Morse 1999).

After this wave of archaeological research, often carried out along the banks of the most important rivers of northern South America, local archaeologists continued their work during the late 1960s and throughout the 1970s, focussing on the regional chrono-cultural framework. Here we must mention Alberta Zucchi, Mario Sanoja Obediente, Iraida Vargas, Erika Wagner with regard to Venezuela and Eurico Miller, Peter and Klaus Hilbert together with the PRONAPA Project regarding Brazil. During this period, new goals were aimed at in attempt to move

53 This discussion was finally abandoned when Conceição Gentil Corrêa and Mario Simões (1971) discovered the Mina ceramics at Salgado (Pará) during the late 1960s. The radiometric dates from the latter excavations have also allowed us to redefine the Alaka Phase ceramics in British Guyana as a formative ceramic complex (Williams 2003).

away from the merely adjusting the cultural chronology carried out by North American scholars. One now searched for other characteristics of cultures (e.g. subsistence modes and paleo-environment) by means of ethno-archaeology or by employing field techniques, thus establishing a second wave of North American research (Wing and Brown 1979; Roosevelt 1980, 1991; Roe 1982, Pearsall 1989; Piperno 1989; Siegel 1989, 1992; Oliver 1989).

Midden material which had formerly served to define cultural complexes in the majority of the cases now became subjected to a more ecological adaptive objective that aimed at reconstructing subsistence strategies. Anna Roosevelt, for instance, illustrated that pre-Columbian cultures of the Middle Orinoco and of the mouth of the Amazon River (Marajó Island) had once been populated by complex societies such as chiefdoms (Roosevelt 1980, 1991). Roosevelt picked up the scientific debate against Betty Meggers' "environmental determinism" which Lathrap had left untouched, but also fought their political dominance on Amazonian archaeology in general (Roosevelt 1991:105–125).

The latter research as well as the early historic testimonies of large and complex societies in the floodplains and high river banks stimulated the birth of the *Central Amazonian Project* (CAP) during the 1990s. Amazonian archaeological research became more focused on understanding the social-political organisation of Amerindian societies inhabiting the Lower Amazonian river banks (Barreto 1998; Heckenberger et al. 1999, 2001; Neves 1999, 2008; Heckenberger and Neves 2009). Certain pre-Columbian sites in this area featured very impressive black earth soils, or *terra preta* and *terra mulata*, suggesting an intensive human occupation (Sombroek et al. 2002). These *Amazonian Dark Earths* (ADE) are thought to be the result of an accumulation of all sorts of material that prehistoric Amerindians had discarded which then transformed the natural soil into an anthropogenic soil. Momentarily, the *terra preta* sites are dated between 500 BC and AD 1500. Moreover, they are associated with the Incised Rim and Polychrome Tradition of the Middle and Lower Amazon River, respectively (Heckenberger et al. 2003; Machado 2005; Moraes 2006; Rebellato 2007; Neves 2008; Lima 2008, 2010; Arroyo-Kalin 2008, 2010; Gomes 2008, 2011; Balée 2010; Eriksen 2011; Denevan 2014).

However, the most important conclusion of the last two decades is probably the awareness of the enormous impact of pre-Columbian populations on their environment once thought to be *nihil* (Neves and Petersen 2006). Amerindians have transformed large parts of tropical forest in Amazonia since the beginning of the Holocene through their mobility and consistent presence in certain areas: the existing biodiversity would not have been present without human intervention. Today it is evident that Steward's TFC model which Viveiros de Castro (1996:180) dubbed the 'Standard Model,' is obsolete. Indeed the pre-Columbian society is now considered more complex than c.100 or 50 years ago.

3.3 French Guiana and Suriname

Betty Meggers' and Clifford Evans' work in former British Guyana and Amapá must have inspired Dirk Geijskes, Director of the *Stichting Surinaams Museum* (SSM, founded in 1947), to conduct archaeological research on the Hertenrits site in October 1957. As an entomologist, he had come across archaeological material during road constructions in the vicinity of Paramaribo and the Maroni River. Peter

Goethals (1953), a student of Cornelius Osgood at Yale University, had studied these artefacts which have never been published. Fortunately his manuscript is still available albeit difficult to find (Fig. 3.1).[54] Geijskes continued to excavate archaeological sites (e.g. Commetawanekreek, Onverdacht, Kwatta-Tingiholo, Moengo-Boesmanhill and Wonotobo Falls) but eventually left Suriname in 1965.

When the museum at Fort Zeelandia was inaugurated in 1972, the SSM appointed Arie Boomert to study the archaeological material Dirk Geijskes and his collaborator Frans Bubberman had obtained during the 1950s and 1960s. Boomert also conducted archaeological fieldwork at Wontobo Falls and Amadoekoekasi Kreek. In 1975, he was succeeded by Aad Versteeg whose small scale archaeological operations in the western part of the Holocene plains took place at sites known as Buckleburg-1, Wageningen-1, Peruvia, and Prins Bernhardpolder. Versteeg also excavated in the interior of Suriname, notably at Kauri Kreek where he uncovered ancient, unknown ceramics. The same can be said of the ring-ditched hill site of Pondo Kreek, a type-site shared with French-Guiana (Versteeg 1981; Petitjean Roget 1991; Mestre 1997). His interdisciplinary and processual research was finalized in his 1985 PhD dissertation (University of Leiden) entitled: *The Prehistory of the Young Coastal Plain of West Suriname.*

Versteeg, who continued to work in the Netherlands Antilles, returned two decades later – after the civil war– to Suriname in order to participate in Stéphen Rostain's research program (Rostain and Versteeg 2003). He further recorded rock engravings discovered at the *Werehpai* rock shelter located to the east of the mixed Trio village of Kwamalasamutu in the southern part of Suriname. Meanwhile, Boomert continued his studies concerning ceramic material stored in the Museum of Paramaribo despite the fact he was first working on Trinidad and Tobago and later in the Netherlands. Boomert presented important scientific papers on the Hertenrits site (1980), the Koriabo complex (1986), and the Barbakoeba material of eastern coastal Suriname (1993). All are considered standard works on the archaeology of the Guianas to the present-day.

The North American impetus is hardly detectable in French Guiana as it was in Suriname.[55] Indeed, classic North American styled archaeology or even *New Archaeology* was hardly incorporated in French Guiana or France at all, as was the case for example in northern Brazil, Venezuela or Guyana. The Swiss Henri Reichlen and his wife Paule Reichlen-Barret published a first reconnaissance of pre-Columbian French Guiana in 1943. They had listed all the petroglyphs they had encountered in existing literature and had also described the stone tools kept at the *Musée de l'Homme* in Paris. However, Emile Abonnenc (1952) published the first inventory dealing with 120 archaeological sites and localities in French Guiana, by now a French Department. His inventory consisted mainly of stone-polishing sites positioned near rapids, locations where stone axes or petroglyphs had been

54 Peter Goethals studied the archaeological material exhumed by Dirk C. Geijskes since 1949. Goethals eventually delivered this study as a Bachelors thesis and then set off for the Pacific. At present three copies of his manuscript are known to exist, one of which Goethals sent from Hawaii to Boomert during the early 1970s. It had belonged to Clifford Evans. Meggers and Evans (1957:164–165) referred to this document. It dealt with similarities between vessel shapes of open carinated bowls with wide, flaring rim lobes of the Aristé Painted type as well as carinated bowls of the Serra Painted type.

55 It is noteworthy that the North American army was present in French Guiana during W.W. II. It built the International Airport of Rochambeau in March 1942, replacing the airport named Le Galion. We see similar developments regarding Trinidad and Suriname where the International Zanderij airport replaced Zorg en Hoop near Paramaribo.

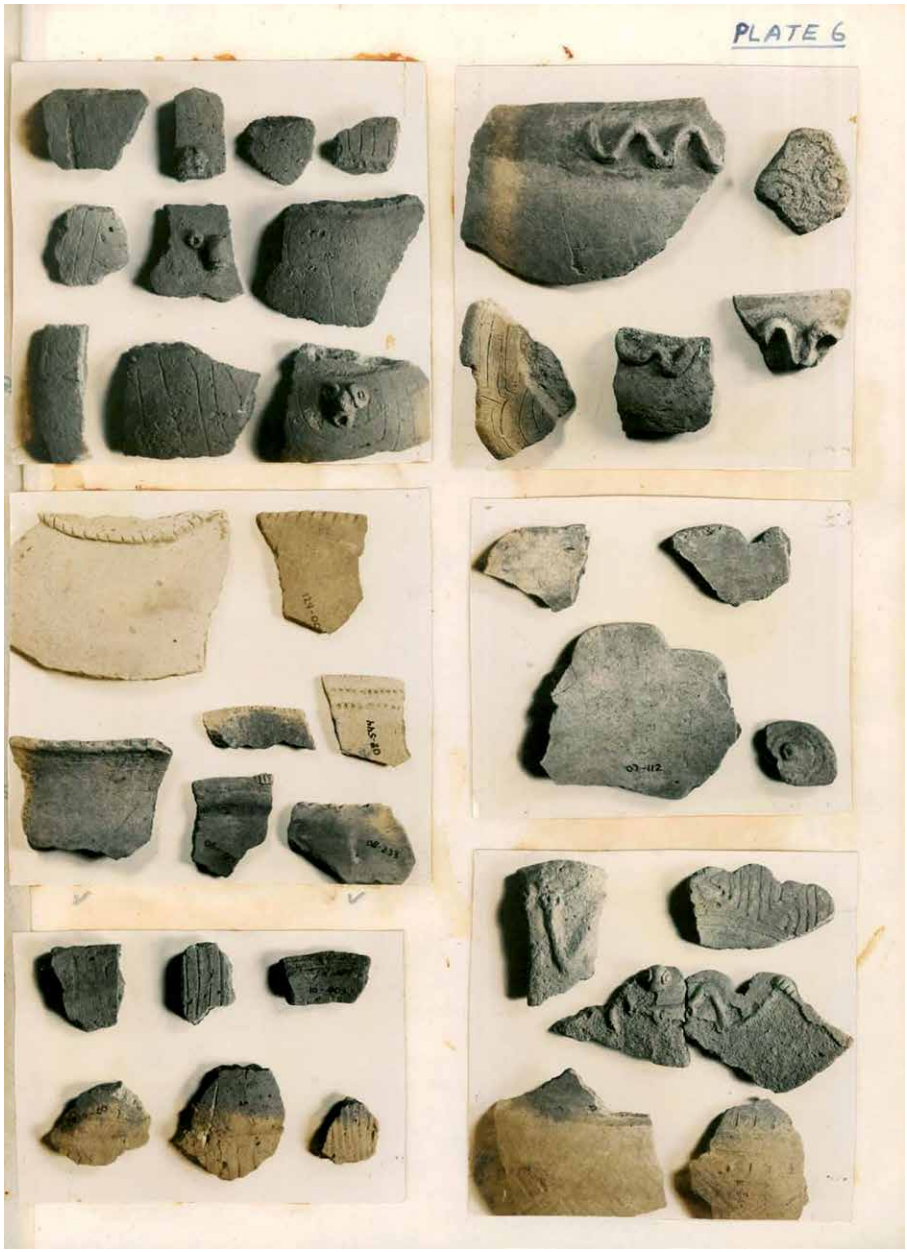


Figure 3.1. Examples of the material described by Peter Goethals (1953, Plate 6).

found. About 20 years later, the first structured archaeological excavations were carried out by avocational archaeologists such as Michel Boyé, Gérard Lefèbre, Jean-François Turenne, Denis Groene, Hugues Petitjean Roget and Dominique Roy (Lefèbre 1973; Turenne 1974; Petitjean Roget and Roy 1976; Groene 1976). The agronomist Jean-François Turenne synthesized the result of their work and published it in Chapter 17 of the *Atlas des Départements Français d'outre-Mer* on Archaeology and Amerindian History. It was co-written with the anthropologist Pierre Grenand (Turenne and P. Grenand 1979).

The increasing number of archaeological activities during the 1970s contributed to the creation of various archaeological associations of which the *Association Guyanaise d'Archéologie et d'Ethnographie* (AGAE, founded in 1979) eventually appropriates the majority of the fieldwork, consisting predominantly of pedestrian

surveys and surface collecting. The *Centre National de Recherche Scientifique* (CNRS) recruits two *Volontaire à l'Aide Technique* (VAT), or volunteers, in order to structure archaeological research in French Guiana (1984-1987). Alain Cornette was the first to occupy this post and was succeeded by Stéphen Rostain. Both conducted multiple small scale operations along the littoral between the Oyapock and Maroni Rivers. In 1987, the Ministry of Education and the ORSTOM (founded in 1947, now named IRD) eventually recruited Rostain in order to conduct programmed archaeological research in French Guiana which is included in his 1994 PhD dissertation (University of Paris I Panthéon-Sorbonne) entitled: *L'occupation amérindienne ancienne du littoral de Guyane* (Rostain 1994a).[56]

The objective of this thesis was to comprehend the pre-Columbian occupation of the littoral. It was supported by four projects: (a) a technological study of the lithic material, (b) the Oyapock Project, (c) the Approuague Projects focussing on site analysis of each region and (d) the Savannah Project focussing on the analysis of the raised fields (Rostain 2007:44). In his dissertation he proposed a type-variety analysis of the ceramics found during his fieldwork as well as in various public and private pottery collections. Drawing upon Versteeg's and Boomert's earlier work, he inserted the Late Ceramic Age of central French Guiana into the Arauquínoid interaction sphere as proposed with regard to western Suriname.[57] Rostain further suggested that this Arauquínoid population met and mingled with the Aristé culture from eastern French Guiana and northern Amapá at the Island of Cayenne (Rostain 1994a).

Meanwhile, in 1991, the construction of a hydraulic dam (Fr., *barrage*) was launched at Petit-Saut, a minor rapid on the Lower Sinnamary River.[58] Large scale archaeological research was planned in the area that was to be inundated. This salvage operation was conducted by members of the *Association des fouilles archéologiques nationales* (AFAN, founded in 1973) and represented the first state-funded archaeological research project in French Guiana. Better known as the project of the *Barrage de Petit-Saut* (BPS), it yielded not only a considerable number of radiocarbon datings, a richly illustrated ceramic register, a systematic site analysis and feature research, but also soil and lithic analysis (Vacher et al. 1998). Yet, one of its most important results was actually the sheer abundance of pre-Columbian sites within the supposed "virgin" forest as well as the huge volume of archaeological material in a well-documented context. Eventually, the AFAN archaeologists met with considerable difficulties when ascribing "their"

---

56 A condensed version of Rostain's thesis is published in the *Journal de la Société des Américanistes* and entitled: *Archéologie du littoral de Guyane. Une région charnière entre les influences culturelles de l'Orénoque et de l'Amazone* (Rostain 1994b). His dissertation, including several minor changes, was published in 1995 by the ORSTOM on microfilm in *Travaux et Documents Microfiches* (TDM) No. 129.

57 In July 1989, Rostain completed the salvage excavation at Thémire (Rostain 1989) and attended the 19th International Congress of Caribbean Archaeology organized by Jay Haviser and Edwin Ayubi on Curaçao. Here he met Aad Versteeg and requested the latter to present a paper at the International Meeting of *Evolution des littoraux de Guyane et de la zone caraïbe méridionale pendant le quaternaire* organized by Marie-Thérèse Prost (ORSTOM) organized in Cayenne in November 1990. On this occasion they discussed all the ceramic material from the French Guiana littoral and compared it with the other Guianas (Aad Versteeg, personal communication 2012). This resulted in the first reference of Surinamese (Barbakoeba) ceramic complexes for the western littoral between Cayenne Island and the Sinnamary River, as published in the proceedings of the latter meeting (Rostain 1992:486).

58 The *Electricité de France* (EDF), *Conseil Régional* and the Ministry of Culture funded this construction.

ceramics to the regional cultural framework as proposed by Rostain only several years earlier.

After this enormous project had come to a conclusion, the AFAN continued to conduct archaeological operations in French Guiana in collaboration with the Ministry of Culture or *Direction des Affaires Culturelles* (DAC).[59] For instance, the excavations at Mont Grand-Matoury (Grouard et al. 1997) and the pedestrian survey of the RN 2 between Régina and Saint-Georges de l'Oyapock (Jérémie 1998). In February 2002 the AFAN changed its associative status into a public one. It was now renamed *Institut national de recherches archéologiques préventives* (INRAP).[60]

Since 2002, the law obliges construction companies, the State, local communities or private persons in France to see to it that their construction permits and project perimeters are checked by state archaeologists and engineers attached to the *Service d'archéologie* (SA), a body of the regional DAC. The SA is the only legal entity allowed to impose archaeological interventions. In reality, this implies that compliance archaeology is primarily conducted in communities expanding and developing at socio-economical levels; thus mainly in the vicinity of urban centres, such as the Municipalities (e.g. Cayenne, Rémire-Montjoly, Kourou, Macouria, Matoury and Saint-Laurent du Maroni). Less populated areas presumably have far less development projects and therefore compliance archaeology is hardly present in these regions. However, the INRAP does now and again intervene in remote areas with regard to often large-scale projects, such as mining permits (Camp Caïman and Yaou), new roads into the interior (the national highway to Apatou), sand quarries (EVA) or hydraulic plants on the upper drainages of rivers (Saut-Maman Valentin, Mana River). In this way, the INRAP is often concerned with areas that are unknown from an archaeological point of view.

This issue, which members of the BPS had already suggested, was again confirmed by means of numerous INRAP operations: prehistoric settlements are omnipresent in French Guiana, including every type of landscape. At least one prehistoric site per square km is found in the Neotropical forest. Examples of pre-Columbian settlement patterns can be illustrated by means of: (a) results of archaeological surveys in the mining permit of IAMGOLD (formerly owned by ASARCO and CAMBIOR) on the southern flank of the Kaw Mountain ridge (Briand 2002; van den Bel 2007), (b) the mining permit of Yaou near Maripasoula (Mestre et al. 2013), (c) the agricultural project of Wayabo near Kourou (Briand 2011) and (d) Project Couac at MC 87 and MC 88 to the east of Régina (van den Bel et al. 2012b).

A large number of data was also gathered by the INRAP in the course of numerous extensive excavations or surveys based on compliance archaeology. For example, the LCA site of Katoury on Cayenne Island covered *c.*1.5 ha and yielded over 1000 anthropogenic features, i.e. post holes, pits, water pits, gullies, midden areas, as well as *c.*80,000 potsherds (Mestre 2003; Mestre et al. 2005, 2007). Although Katoury is situated in the close vicinity of the Thémire type-site, it again appeared difficult to compare these two data sets as both sites had been excavated and studied dissimilarly (see Table 3.1 for the general site data).

---

59 The Ministry of Culture serving the Lesser Antilles and Guyane was only seated in Martinique (FWI) prior to 1992.

60 For the history of salvage and public (compliance) archaeology in France, the birth of the AFAN and of the INRAP, see Jean-Paul Demoule and Christan Landes (eds.) *La Fabrique de l'Archéologie en France*, Éditions La Découverte (2009).

Apart from data that appear difficult to attribute to the existing framework, we must also evoke the discovery of new or unknown material by means of compliancy archaeology, notably at sites located outside the trodden paths of the coastal zone, such as the Late Archaic sites of Plateau des Mines (PDM) and Eva 2 (Mestre 2004; Delpech 2005; van den Bel et al. 2006). Interestingly, both Archaic sites were positioned on the summit of a flat hill belonging to the White Sand Formation. The occupation layer was found at a depth of 1 m below the surface, rendering it rather difficult to detect during a pedestrian survey. The PDM sites yielded AMS and TL dates as early as 7000 BP, presenting archaeologists in French Guiana with a previously undiscovered era (Mestre and Delpech 2008).

Having left French Guiana in 1992, Rostain continued to work in Ecuador and on the Netherlands Antilles (together with Aad Versteeg) to eventually return to French Guiana in 2003. Initially cooperating again with Versteeg, he started a research program, or *Action Collective de Recherches* (ACR), entitled: *Préhistoire du littoral occidental de Guyane* (2002-2005). Funded by the CNRS and the INRAP and in collaboration with the SA, the University of Paris I and X, the University of Leiden and the SSM, it aimed at enhancing the knowledge of the pre-Columbian peopling of the French Guiana littoral to the west of Cayenne (Rostain and Versteeg 2003:161).[61]

After 2005, this project was continued as the more ambitious *Earthmovers Project*. It now focussed on the diachronic and cultural line of research within the Guianas. In it, the Arauquínoid Tradition was materialized by means of the Barbakoeba complex in western French Guiana and eastern Suriname.[62] The project's objectives were: (a) to reclassify the ceramic collections in order to establish one regional definition, (b) to obtain a cartography of the pre-Columbian habitat and the raised field complexes, (c) to then model the occupation, (d) to define pre-Columbian culture and complex societies and (e) to reconstruct the cultural evolution from the pre-Columbian era to the present-day. This project resulted in numerous field reports inspiring several PhD students. In 2009, Claude Coutet completed her PhD dissertation entitled: *Archéologie du Littoral de Guyane française*. Delphine Renard's thesis dealt with the functioning of contemporary ecostystems (Renard 2010). However, the most significant publication of this joint project discussed the origins of the raised fields at Iracoubo and Kourou (McKey et al. 2010; Iriarte et al. 2012; Rostain 2013).

In 2008, the INRAP embarked upon a following multidisciplinary project named *Project Couac*. It was carried out in collaboration with the ECOFOG in Kourou and the *Institut National de Recherches Agronomiques* (INRA) in order to study 'the impact of ancient Amerindian occupation on forest diversity and its soils.' Three important issues were raised: (a) To which degree did mankind occupy the actual tropical forest? (b) Did ancient behaviour significantly modify soil fertility? and (c) Can actual diversity of species be explained by its old usage? (Jérémie and Dambrine 2009, 2010). Firstly, the role of the INRAP was to search for archaeological evidence in botanically and geologically "referenced" forest

61 A monograph of this project was never finalised. However preliminary results were published in the BAR International Series 1273, entitled *Late Ceramic Age Societies in the Eastern Caribbean* (Rostain and Versteeg 2004). They were presented at the University of Leiden (2002) and at the Twenty-First IACA Conference (Trinidad, 2005).

62 For more information on this subject, visit: http://www.mae.u-paris10.fr/archam/Earthmovers-Guyane.html.

plots in which precise vegetation inventories had been established in order to check for (possible) spatial relationships between vegetation diversity and ancient occupations. Secondly, the INRAP participants would point out important archaeological sites with strongly modified soil structures which were to be investigated with regard to their physical, chemical and microbiological properties as well as for the vegetation diversity in reference to adjacent undisturbed areas. It is evident that the results of the CAP at the Middle Amazon River (Neves and Petersen 2006) had inspired the above-mentioned archaeo-ecological projects bringing about clearly proposed innovative views on pre-Columbian societies which needed to be tested elsewhere in Greater Amazonia.

3.4 The Prehistoric Ages

3.4.1 The Lithic Age

Sites dating back to the arrival and occupation of the first prehistoric Amerindians in the Guianas have not been found in French Guiana (yet) but can most certainly be encountered some day. The vestiges attributed to Paleo-Indians have been discovered in other parts of the Guianas albeit almost exclusively in the highland savannahs of the interior (Dillehay 2008:30, Fig. 2.1). Sites such as Canaima in Guyana, the Upper Caroni sites, and Tupukén in Venezuela, but also those located in the Sipaliwini Savannah of southern Suriname and bordering northern Brazil have yielded radiocarbon dates between 14,000 and 9,000 BP (Cruxent 1972; Barse 1995; Sanoja and Vargas-Arenas 2006).[63]

Very little reliable data are available. However, the Paleo-Indian population is believed to have consisted of small bands hunting certain megafauna during the Late Pleistocene period. The known sites are considered to be either temporary campsites or persistent workshops where tools were manufactured (Dillehay 2008). Other site types have not been discovered (yet). Evidently, South American Paleo-Indians have adapted to a different environment than the North American Amerindians (Kipnis 1998:582). Bifacial triangular projectile points ranging from between 7 to 10 cm in length are characteristic lithic markers from this era. Hereto we can add certain types of bifaces and hammer stones (Boomert 1980, 2000).

3.4.2 The Archaic Age

Towards 9000 BP, at the beginning of the Holocene, an overall shift is observed in the lithic toolkit of these populations. This suggests a change in their behaviour and marks the transition into the (Early) Archaic Age as to the Americas in a more general sense (Philips and Willey 1953; Willey 1971). For various reasons, the megafauna had disappeared and hunting was focused on a wider variety of small game detected

63 Earlier dates, going back to *c.*40,000 years ago, have been found all across the Americas. The subsequent debate on earlier migrations (pre-Clovis) into the Americas lies beyond the scope of this introduction. A recent update is provided by Walter Neves and Luis Piló (2008) regarding the South American point of view.

by means of a larger range of lithic points. In addition, the toolkit has been extended with grinding and retouched flaked tools.[64] Again, little archaeological data are available with regard to the Early Archaic Age in the Guianas.

However, Early Archaic sites in Columbian Amazonia, i.e. Peña Roja (Gnecco and Mora 1997; Mora 2001), evidenced the presence of notched axes, indicating tree felling and possibly hoeing for limited soil tillage or digging for roots (Oliver 2001). Phytolith analysis in Panama of contemporaneous sites have revealed the presence of domesticated arrowroot (*Calathea* cf. *allouia*), bottle gourd (*Lagenaria* sp.), and calabash (*Cucurbita* sp.; Piperno and Blake 1999). Arrowroot detected at Las Vegas (Ecuador) is dated between 10,000 and 9000 BP (Piperno and Pearsall 1998:186–187). As to North America, processing tuberous roots and vegetables during the Meso-Indian era is associated with various types of earth ovens or cooking pits (Dering 1999; Thoms 2003, 2009).

In the Guianas, (Late) Archaic sites have been found along the old coastline and can be attributed to the 'North West South-American Littoral Tradition' (Willey 1971:361). Several key-sites, i.e. Banwari Trace and St. Johns in southwestern Trinidad, El Conchero in northeastern Venezuela, Alaka Phase sites in northwestern Guyana, are mainly identified by means of the presence of shell middens and represent this Archaic tradition (Harris 1973, 1975; Boomert 2000; Cruxent and Rouse 1958/1959, 1961; Evans and Meggers 1960; Williams 1985; Reid 2011). The toolkit of these sites has been affiliated to the Ortoiroid series, as it is based on a crude percussion-flaked lithic technology (Cruxent 1971; Rouse 1992).

The lithic tools of the Alaka sites, roughly dated between 6000 and 2000 BC, consist of simple percussion implements produced primarily from andesite, quartz and fine-grained schist. If dating from the earlier phase, they also include percussion-made choppers, hammer stones and picks from water worn cobbles. The latter part of the phase evidenced ground stone tools (e.g. celts, mortars, *manos*, pestles, grinding and rubbing stones). Small tools (e.g. quartz scrapers), were produced from percussion-made flakes (Evans and Meggers 1960:38–53). The Hosororo Creek site, the most recent phase of Alaka, also yielded an "incipient" or Formative type of pottery, dated *c.*1800 BC. It may represent a cultural link with the Brazilian Mina ceramics (Williams 1992, 1997, 2003; Roosevelt 1995).

Along the banks of the Lower Amazon River and the northeastern Atlantic coast of Pará (Brazil), Archaic sites were excavated towards the end of the 1960s (Côrrea and Simões 1971). They have also been identified by means of the presence of conical shell mound, or *sambaquís* (Br.), that vary in size but can measure 80 x 30 x 1.5 m. Test pitting aimed at excavating *sambaquis* not only yielding good quantities of bone and lithic artefacts, but also early ceramics (Simões 1981:14;

64 The current vision on the Meso-Indian way of life is highly influenced by modern anthropology, ethnography and ethnoarchaeology as researchers among present-day foragers or hunter gatherers report (Politis 1996, 2001; Rival 1998). Although no foraging groups conform exactly to any culture type, foraging peoples can be described by means of common features, including: (a) family and band social organization, (b) a high degree of individualism with relative egalitarianism, (c) same age-members, (d) a tendency toward weak expression of gender hierarchy, (e) a high degree of nomadism with a seasonal concentration and dispersion pattern, (f) a common-property regime and (g) little to no raising of domesticated plants and animals (Lee and Daly 1999:3–5). Certain contemporary forager groups were once farmers and have lost agricultural knowledge due to the cultural upheaval following European colonization. However, various case studies have posed alternate explanations (e.g. symbiosis with agriculturists, cultural allopatry, political choice and precolonial foraging) (Cormier 2006).

Roosevelt 1995:117).[65] The excavations in the Mina region inspired Mario Simões to create the so-called Mina Tradition as to this specific coastal environment (Simões 1981; Gaspar and Imazio 2000). Sites such as Ponta das Pedras, Porta da Mina and Sambaqui de Urua, dating from between 3100 and 2100 BC, represent these Late Archaic and Early Ceramic sites.[66] Their lithic assemblage consists of polished stone axes, flaked and polished pounders, abraders, scrapers and pitted anvils. The Mina sites reflect the exploitation of the mangroves and estuaries. They represent a population with a broad spectrum diet whose subsistence was based on shellfish gathering, hunting, and the collecting of (wild) vegetable foods. Human burials and erratic human bones are also often found in these shell mounds, but if these bands were already (semi)sedentary is unknown. It is thought that the forebearers of the early Mina ceramics were probably located on Archaic sites on the Lower Amazon (e.g. the cave sites of Pedra Pintada and Monte Alegre) and the fresh-water shell mound, or *sernambís* (Br.), site of Taperinha. To the present-day they yield the earliest radiometric dates (*c.*5700-4300 BC) as to ceramics in South America (Roosevelt et al. 1991; Roosevelt 1995:123–124).

The Banwari Trace site, dating back to between 6000 and 4000 BC, revealed artefacts made of bone and stone. The latter tools consisted mainly of crude percussion-flaked choppers, grinding stones, oval *manos*, edge grinders, conical pestles, pitted anvils (Harris 1973).[67] Percussion flaking by applying a bipolar technique produced a large variety of small, irregular chips as well as cores made of quartz, flint and chert. Very few flakes were intentionally reworked by means of secondary retouche. They do however include flake scrapers, cutters, burins, and blades which presumably served multiple purposes (Boomert 2000:60–61). Large quantities of broken and crumbling (soft sand) stones were found at the Banwari site which were most likely utilised as heating or cooking stones. Large fish, shells and shellfish, game meat and edible tubers may have been cooked or roasted in hearths, albeit that these combustion features were not found at these sites (Boomert 2000:64; Peter O'Harris, personal communication, 2007).

The Late Archaic lithic artefacts of the El Conchero complex in northeastern Venezuela, dating back to between 5000 and 3000 BC, are also characterised by means of the crude and often small percussion-flaked chips and cores made of quartzite, chalcedony and quartz (Cruxent 1972:39–40). The shell middens of this complex yielded an Ortoiroid lithic industry, resembling that of Banwari Trace and Alaka. Grinding stone artefacts presumably served to process (plant) foods and were common to the final period of this complex, as pestles, side grinders, *manos*, polishers, mortars, and small stone vessels indicate (Boomert 2000:73). The Manicuaran Ortoiroid subseries probably evolved from Late El Conchero. It is characterised by means of shell tools, a lithic industry of tiny quartz flakes and ground stone tools such as grinding stones, pitted stones and *manos* (Cruxent and Rouse 1958/1959). The origins of the Littoral Tradition or Ortoiroid series are

---

65 *Sambaquis* is a Tupi term: *tamba* means shellfish and *ki* refers to a stack of shellfish (Prous 1992:204).

66 IEPA members obtained an early radiocarbon date (6140 ± 40 BP, BETA-2557794) in Central Amapá (Saldanha and Cabral 2011b). Klaus Hilbert discovered preceramic material in the State of Amapá at the Igarapé do lago Larangal on the left bank of the Lower Amazon River (K. Hilbert 1990:169). He found another site with lithic tools at Serra do Carajás, yielding radiocarbon dates going back to between 8140 ± 130 BP and 2900 ± 90 BP (K. Hilbert 1991:150). The nearby Larangal do Jari II site excavated by the IEPA also featured stone hearths perhaps of preceramic or ECA origin (Saldanha and Cabral 2011a).

67 Also note the 'cobble choppers' as identified by Ranere (1980:26–28).

unclear. They probably originate either from the Ancient Flake Tradition situated in the interior of the Guiana Highlands or from eastern Brazil (Boomert 2000:69).

William Barse came across three Archaic sites near Puerto Ayacucho on the Upper Orinoco. They were located in stratified alluvial terraces and relict channels, namely Culebra, Provincial and Pozo Azul of which the latter site yielded the earliest dates, *c.*9000 years old (Barse 1989, 1990, 1995). Barse defined an Archaic sequence, named Atures I and II. The latter phase has been attributed to the Late Archaic period, dated *c.*7010 ± 190 BP distinguished by the presence of projectile points. Quartz flaking is an indicator of adaptation to the drier savannahs during the Middle Holocene (Barse 1990:1380). Charcoal filled hearth pits and fire-cracked rocks were found at these sites, too. Unfortunately spatial patterns could not be detected due to the small size of the test pits.

The latter upland sites in Venezuela and the coastal sites in French Guiana did not reveal shell middens. This can be related to the type of site, the absence of shell in certain coastal areas or to the heavy leaching in Neotropical soils. Although its absence limits any direct cultural affiliation to the above-mentioned marine orientated littoral sites, the upland sites in Venezuela and the coastal French Guiana sites share a very similar lithic industry with all other sites. This industry produced mainly large quantities of small quartz flakes. The absence of the latter marker may well be related to the applied field methods where lithic (small) waste material was not collected and/or considered of little informative value.

In this manner the absence of rock clusters, omnipresent at the French Guiana sites, can also be associated with the choice of field techniques and research issues regarding these Archaic sites. Archaeological research as to this period was highly focussed on the eye catching shell middens in order to not only collect identifiable artefacts but also to reconstruct the ancient diet. In French Guiana, however, (ancient) shell middens are absent, at least at the moment. Their excavations, when applying various techniques, yielded multiple rock-filled pits and grinding stones hitherto unknown to this period in (northern) South America (van den Bel 2010c).

3.4.3 The Ceramic Age

The differences between Archaic and Ceramic Age are still under debate. The transition between these eras however certainly requires more research in order to understand the origins and socio-economical characteristics of this cultural change. Indeed, the majority of archaeological data concerning the Ceramic Age has been obtained by means of ceramics. Only recently has the microscopic analysis of ceramic artefacts contributed to a wider understanding of pre-Columbian subsistence economies (McKey et al. 2010; Arroyo-Kalin 2010, 2012; Pagán Jiménez 2012, 2013; Iriarte et al. 2012).

The Late Ceramic Age is presumably the best known period with regard to the Guianas. It is mainly encountered within the inhabited littoral when compared to the lesser known interior. The Early Ceramic Age has been divided in two phases: (a) an early phase (ECA-A) and (b) a late phase (ECA-B). I have created this distinction after the excavation at Chemin Saint-Louis in order to discern the earliest incipient ceramics (Eva 2, CSL, Alaka, Mina) and the much younger Cedrosan Saladoid/Barrancoid series found in the western Guianas. The reason for this is that few data are available concerning the presumed intermediate period.

Furthermore, this distinction emphasizes the emergence of larger sites, such as ring-ditched sites (Fr., *montagnes couronnées*) as well as dark earth sites in French Guiana of which evidence has been recorded dating from the end of the first millennium BC. Interestingly, the above-mentioned time gap or lack of data between these two ECA phases is, in additon to French Guiana, also hypothesized with regard to Suriname, Guyana, the Lower Orinoco and the Lower Amazon Rivers (van den Bel et al. 2011; Versteeg 2003; Williams 2003; Roosevelt 1997; Neves 2008:363; Oliver 2001, 2008; Whitehead et al. 2010; Carling et al. 2013).

3.4.3.1 The Early Ceramic Age

Sedentary societies and the presence of horticulture, polished tools and pottery characterize the ECA. This is considered the result of a particular "Neolithisation process" (P. Grenand and F. Grenand 1997; Lavallée 2005) which had started during the Archaic Age and intensified during the drier Middle Holocene Period (6000-4000 BP) or Late Archaic/Early Ceramic Age. This so-called Holocene Drought in Amazonia was also recognized in French Guiana by Marie Ledru (2001) and Christophe Tardy (1998). It may well have urged the Amerindian population to manage plants and roots differently or to cultivate them. Horticulture evidenced significant changes in society. Certain groups developed extensive agriculture and (semi-)intensive strategies in order to produce food (Denevan 2001; Oliver 2008). The ECA population developed an important, wide variety of domesticated and (semi-)domesticated plants, root crops, particularly manioc and arboriculture whereas other pre-Columbian systems relied predominantly on maize (Harris 2006; Perry 2004, 2005; Perry et al. 2006; Roosevelt 1980).

However, it may be evident that domestication and agricultural development in tropical regions differ drastically from the classic Neolithic context, i.e. European cereal-based agriculture. Moreover, in parts of Amazonia, it also includes wetland management and fish farming (Erickson 2000; Schaan 2004; Eriksen 2011:221). It is believed that numerous non- or semi-domesticated plants were actively tended or cultivated in Amazonia. For example, the peach palm (*Bactris gasipaes*), até or buritĺ palm (*Mauritia flexuosa*), manicole or açai (*Euterpe oleracea*) were subject to intense management (Clement 2006; Fleury et al. 2014).[68] These fruits as well as numerous tubers were processed by means of polished tools, direct fire-cooking and/or hot-rock cooking by a population still unfamiliar with the innovation of pottery.

The Early Ceramic Age, Phase A

The changing agricultural developments during the ECA demanded innovative ways of food processing. This favoured the usage of ceramic bowls and griddles. At present, the earliest dates as to ceramics in French Guiana have been established at the sites of Eva 2 and Chemin Saint-Louis. They have been attributed to the latter half of the third millennium BC. Starch grain analysis has indicated the presence of maize and arrowroot at both sites (cf. Chapters 4 and 5).

---

68 At present, the faunal exploitation in the Guianas consists of birds (ducks, parrots, macaws) and an occasional monkey or agouti pet. On European demand, sea turtles, and sea cows were hunted excessively during colonial times (Hulsman 2009:226). This must surely have played an important role in the pre-Columbian manners of food procurement.

If all the early ceramic sites in northern South America represent unique cultural hearths or belong to one and the same Early Ceramic Age (Phase A) Horizon is difficult to say at present; however, it does seem unlikely as the quality of the ceramics is quite different. The early ceramics of Taperinha, Mina, Eva 2 and Alaka are rather crude in comparison with the earliest ceramics found on the Orinoco River and in northern Columbia (Roosevelt 1980; Rouse and Cruxent 1963; Reichel Dolmatoff 1965; Oyuela-Caycedo 1995).[69] The latter ceramics were already of a fairly good quality and even featured sophisticated decoration when compared to the ceramics found along the Atlantic coast of the Guianas or the Lower Amazon. The earliest ceramics excavated at La Gruta and Ronquin have been attributed to the Saladoid subseries of the Middle Orinoco River. They exhibit white-on-red painting, zoomorphic adornos and incisions on the vessel rims (Cruxent and Rouse 1958/1959).

Another ECA site, Kauri Kreek (2400-1600 BC), is situated at a distance of *c.*10 km from Apoera on the Courantyne River (western Suriname). It revealed 'a distinctive kind of ceramics' hitherto unseen in the western Guianas (Versteeg 1978).[70] It was opined that this unknown application of geometric motifs with clay strips, or "fretwork," was related to the Early Saladoid ceramics of La Gruta or Ronquin (Versteeg 1978:18–26). The reason for this is that Rouse compared this material to the inferior levels of the Ronquin site and confirming the possible link (Versteeg 2003:83). La Gruta ceramics dated back to *c.*2100 BC and those found at the Ronquin site date from between 1600 and 1100 BC (Roosevelt 1980:195). However, it is opined that the early Orinocan sites require further excavation (Barse 2009; Oliver 2014).

More recently, the anthropologist Neil L. Whitehead (1956-2012) located more ECA sites in eastern Guyana (Whitehead et al. 2010). In collaboration with George Simon, he conducted archaeological research on the (anthropogenic?) hills of the Wironi, the Nassau and Canje savannahs of the Lower Berbice River in eastern Guyana. At the site of Dubulay Hill his team found more Kauri Kreek fretwork-decorated ceramics. The radiocarbon dates taken from the lower layers of their test pit, at *c.*2 m below the surface, yielded a date of *c.*3000 BC (Whitehead et al. 2010:96). It is highly probable that these mounds are also multi-component sites. Further micro-morphological research is certainly required here.

The Early Ceramic Age, Phase B

The first dates after Kauri Kreek occur during the final centuries BC in Suriname and Guyana (in French Guiana, too, as we shall see). They are related to the Cedrosan Saladoid sites of Wonotobo Falls and Kurupukari Falls (Boomert 1977, 1983; Williams 2003:305). Both are dark earth sites and feature multiple occupations. The latter site is situated on the left bank of the Upper Essequibo River and the former on the right bank of the Courantyne River. The only radiocarbon dates available yielded 2080 ± 70 BP as to Kurupukari and 1900 ± 40 BP as to Wontobo Falls. The deepest arbitrary layers of both sites contained

69 Betty J. Meggers (2011:149–150) believes there is a link between Valdivia, San Jacinto, and a possible later phase of Taperinha. She also states that the Caribbean coast of Columbia is probably the best option regarding the heated Early Ceramic debate.

70 This dark earth site is probably a multi-component site as Aad Versteeg evokes in a note. In fact, the results of the radiocarbon dates do not correspond necessarily with the type of ceramics depicted in the article. See note 143.

Saladoid ceramics decorated with geometric white-on-red painting, fine zone-incised-crosshatched incisions (some painted), biomorphic modelled applications and D-shaped handles. The upper layers yielded pottery including Barrancoid traits suggesting a continuous cultural influence from the Lower Orinoco River.[71] These more recent Barrancoid influences are also observed on the Guyana coast where it is affiliated with the Late Mabaruma and Early Abary Phases (Evans and Meggers 1960).

In coastal Suriname, Early Mabaruma pottery is also found in the deepest levels of the Buckleburg-1 site (1845 ± 45 BP and 1735 ± 35 BP), an artificial mound located in the coastal swamps of Nickerie (Versteeg 1985:668–685). We do not come across this type of sites east of Paramaribo although a similar swamp landscape occurs in this part of Suriname and in western French Guiana. Man-made hills may have existed to the west of Nickerie in the Berbice and Canje savannahs (Boomert 1978a; Whitehead et al. 2010). However, they have been identified with certainty at the confluence of the Middle Orinoco and Apure Rivers, i.e. Hato Arauquín and in the Llanos of Venezuela (Cruxent and Rouse 1958/1959). The Buckleburg mounds are the most easterly located Barrancoid sites of the Atlantic Guianas and as yet have not been found in French Guiana. The same applies to the Cedrosan Saladoid-styled ceramics (Versteeg 2008). In fact, these ECA sites represent the eastern cultural border of the Caribbean region as defined by Rouse (1992:83–84).

The Maroni River reveals ECA sites dating back to *c.*2000 BP, as materialised by the lower river terrace site of Chemin Saint-Louis and the ring-ditched hilltop site of Yaou near Maripasoula (van den Bel et al. 2008, 2011; Mestre et al. 2013). White-on-red painting as well as ZIC have been found at these sites. However, the general vessel morphology differs from the Cedrosan Saladoid repertoire. Other Cedrosan characteristics (e.g. zoomorphic modelling, outward thickened lips and D-shaped handles) are absent from the above-mentioned Maroni sites (see Rouse 1992:77–85; Boomert 1983, 2000:128–145; Boomert et al. 2013:69–80). Nevertheless, it is probable that the Maroni basin is associated with the cultural interaction sphere of the Saladoid/Barrancoid occupation in the western Guianas.

Furthermore, the Maroni sites evidenced a link between anthropogenic landscape management and consistent human occupation. Chemin Saint-Louis revealed an important dark earth layer as well as a long occupation that thrived between *c.*300 BC and AD 400. Yaou featured an impressive four ha large, man-made ring-ditch probably occupied for at least 500 years (Mestre et al. 2013).[72]

Other ECA sites situated in the western coastal zone of French Guiana have been uncovered recently by applying compliance archaeology. The slightly younger Olga site (1795 ± 25 BP, KIA-26024) has been found in the coastal savannah near the former hamlet of Malmanoury (van den Bel 2004). This dark earth site is located on the summit of a Precambrian outcrop at 30 m above MSL,

71 Boomert (2000:231) re-examined the Wonotobo Falls material to then conclude that all the ceramic material is Saladoid, thereby discarding his previous conclusion that Late Wonotobo ceramics are Barrancoid.

72 In Amapá, Suriname and French Guiana, ring-ditched sites are usually situated on mountaintops in the immediate hinterland of large creeks (Versteeg 1981; Wack 1989; Petitjean Roget 1991). Mickael Mestre (1997) dedicated his Master thesis to this type of sites of which the ring-ditched site of Yaou is as yet perhaps the most impressive site to be discovered. BRGM members reported this site to Hugues Petitjean Roget in 1986 (Petitjean Roget 1991:247). It was reinvestigated by Hélène and Guy Mazière (1993:23).

juxtaposing the Pleistocene savannah (van den Bel 2004). Another dark earth site in this coastal zone providing us with similar ECA dates (2035 ± 35 BP, POZ-30852) is Site 9 at Wayabo, to the west of Kourou, located at the first Precambrian hillocks bordering the savannah (Briand 2010:56).

East of Cayenne Island, the ECA is represented by means of the Early Aristé phase. It is associated with the decorated rim-type *Ouanary encoché* and roughly dated to the second half of the first millennium AD (Rostain 1994a:434–437). These rim decorations consisting of series of fingernails applied to the interior of the rim were been found at the ditched sites of Favard, Pointe Maripa and Blondin (Briand in G. Mazière 1996; Mestre 1997, 2013) as well as at numerous sites on Cayenne Island (cf. Chapters 8 and 9).

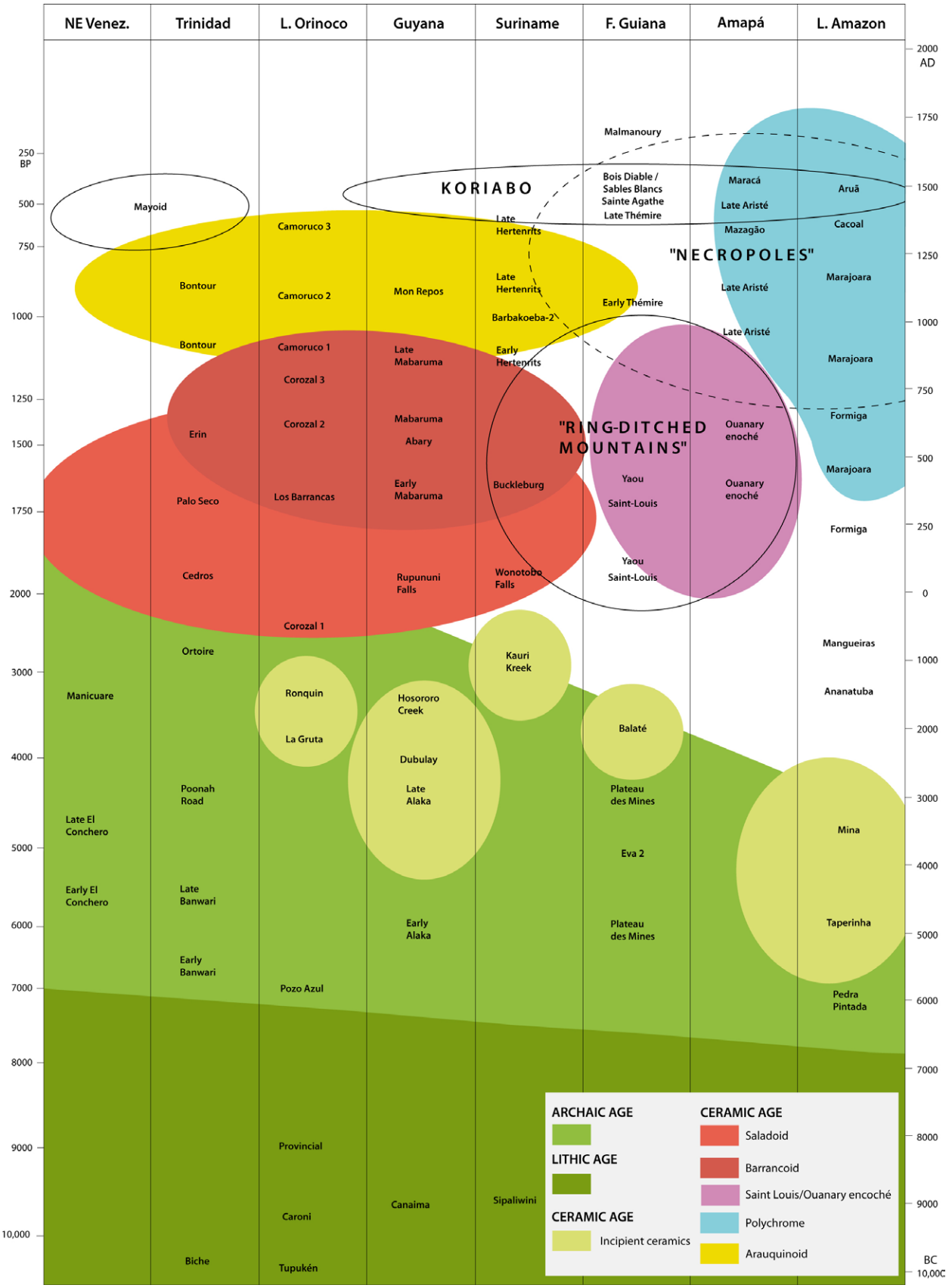
Along the Amazon River, ECA sites have been excavated at: (a) the Lower Trombetas River, Pocó Phase (Guapindaia 2008; P. Hilbert and K. Hilbert 1980), (b) the confluence of the Solimões and Rio Negro Rivers near Manaus, Açutuba Phase (Lima et al. 2006; Neves et al. 2014) and (c) Santarém, Terra Preta site (Gomes 2008:198-200). They are also represented by means of large dark earth layers located on the higher parts, or bluffs, of the interfluvial area. Pocó is dated between 200 BC and AD 400 (Guapindaia 2008:184) whereas Açutuba dates back to 300 BC-AD 360 (Lima et al. 2006:46). Both sites yielded vessels decorated with polychrome painting, modelling and flaring rims. They have been attributed to the Saladoid or Barrancoid series, pre-dating the Marajoará ceramics of the Amazonian Polychrome Tradition, and are roughly dated between AD 400 and 1300 (Roosevelt 1991; Schaan 2004).[73]

One is probably drawn to compare the ceramic complexes/cultures of Guianas with the Lower and Middle Amazonian ones. However, I would like to stress here that the Amazonian drainage as well as its pre-Columbian occupation is probably of a much larger scale. On the one hand, Amazonian (multi-component) sites are represented by means of multiple hectares consisting of dark earths yielding a large number of artefacts. These sites surpass the important sites of French Guiana in grandeur. On the other hand, despite dissimilarities with regard to site dimensions and intensification, apparently modest dark earth sites such as Chemin Saint-Louis, may nevertheless evoke significant occupations on a regional scale bearing a certain degree of regional complex socio-political organisation as witnessed for instance on the island on Marajó Island (Roosevelt 1991:113–114).

Although we find large earthworks, such as ring-ditched mountains, in French Guiana that reveal the first evidence concerning possible social stratification, other types of (visible) earthworks as well as elaborate ceramics and large necropoles are still absent as to the ECA. At the moment, primary burials (although burial pits often do not contain human bones) excavated at these ECA sites do not feature any important differentiation. Scant information on valuable trade goods with regard to this period indicate, when compared with the Antilles, a non-restricted availability of the latter and exclude any hereditary stratification (Curet 1992; Siegel 1999). Notwithstanding this view, Boomert (2000:394) argues for the existence of a Big-Men society during the Cedrosan Saladoid occupation on the Lesser Antilles. Senior leaders with regional power, based on the wide distribution

Figure 3.2 (opposite page). An updated cultural chronology of the coastal Guianas and the mouth of the Amazon, adapted by the present author from: Boomert (2000:54, 218), Roosevelt (1997:185), Rostain (2008:280–281), Rouse et al. (1984:82–83) and Schaan (2004:80).

73 Other early ceramic phases at Marajó Island (e.g. the Anatuba and Mangueiras phase) predate the Marajóara period of which the first dates back to the beginning of the first millennium BC (Schaan 2004:113).


NE Venez.
Trinidad
L. Orinoco
Guyana
Suriname
F. Guiana
Amapá
L. Amazon
250 BP
500
750
1000
1250
1500
1750
2000
3000
4000
5000
6000
7000
8000
9000
10,000
2000 AD
1750
1500
1250
1000
750
500
250
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
BC 10,000
Mayoid
KORIABO
Malmanoury
Bois Diable / Sables Blancs Sainte Agathe Late Thémire
Maracá
Late Aristé
Mazagão
Aruã
Cacoal
"NECROPOLES"
Late Hertenrits
Late Hertenrits
Barbakoeba-2
Early Hertenrits
Early Thémire
Late Aristé
Late Aristé
Marajoara
Marajoara
Formiga
Bontour
Bontour
Camoruco 3
Camoruco 2
Camoruco 1
Mon Repos
Late Mabaruma
Corozal 3
Corozal 2
Mabaruma
Abary
Early Mabaruma
Erin
Palo Seco
Cedros
Los Barrancas
Corozal 1
"RING-DITCHED MOUNTAINS"
Buckleburg
Wonotobo Falls
Yaou
Saint-Louis
Yaou
Saint-Louis
Ouanary enoché
Ouanary enoché
Marajoara
Formiga
Mangueiras
Ananatuba
Manicuare
Late El Conchero
Early El Conchero
Ortoire
Poonah Road
Late Banwari
Early Banwari
Ronquin
La Gruta
Hosororo Creek
Dubulay
Late Alaka
Early Alaka
Kauri Kreek
Balaté
Plateau des Mines
Eva 2
Plateau des Mines
Mina
Taperinha
Pedra Pintada
Pozo Azul
Provincial
Caroni
Tupukén
Canaima
Sipaliwini
Biche
ARCHAIC AGE
LITHIC AGE
CERAMIC AGE
Incipient ceramics
CERAMIC AGE
Saladoid
Barrancoid
Saint Louis/Ouanary encoché
Polychrome
Arauquinoid

of semi-precious stones (suggesting frequent present-giving activities), would have held such meetings between rivalling, regional Big-Men groups.[74]

Other researchers in the Caribbean area (Hoogland 1996; Siegel 1989, 2011) have adopted the term "complex tribe" in order to denote societies with communal activities and status variation, but without a centralized authority, hereby following John Hoopes (1988:2). Eventually, however, these scholars all stress the communal character of the ECA society, thereby separating it from the autonomous villages into tribal societies (Carneiro 1998). It is thought that this type of communal society may also imply village leaders with significant regional power, revealing possible regional (supra-)hierarchy. In due course, all these models represent a socio-cultural typology with a descriptive character (Siegel 1996b:328), but do not explain the historical circumstances and socio-political processes leading to to the emergence and organization of various types of society.

3.4.3.2 The Late Ceramic Age

The majority of the dated sites can be attributed to the LCA and are mainly found on the coastal plains of the Guianas. This is probably due to the greater accessibility of this stretch of land by means of modern infrastructure and the development of archaeological research, albeit the progradation of the Holocene littoral may also account for the attribution to the LCA (cf. Section 8.8). This biased spatial distribution is clearly visible in the archaeological site maps of Amapá, French Guiana and Suriname (Cabral and Saldanha 2010:53; Gassies 2004:21; Versteeg 2003). The supposed cultural decline with regard to the Guiana littoral (Rostain 2008b:279) and Amazonia (Neves and Petersen 2006:302) at *c*.AD 1300 may even illustrate a lack of research. Moreover, it indicates the supposed abandonment of complex societies well before the arrival of the Europeans (Schaan 2004). Nonetheless, this final prehistoric age is generally viewed as the highest evolutionary level of cultural development in the Guianas (Boomert 1980, 2004; Versteeg 1985, 2003, 2008; Rostain 2008b). This vision is presumably also biased due to the absence of sufficient earlier archaeological sites. It is quite likely that the latter sites may also have reached a similar level of socio-political complexity as is the case with the better known LCA sites along the littoral. In fact, they may have given birth to this hypothesised cultural climax after AD 900.

The classification of the LCA societies caused considerable debate in Greater Amazonia. It was discussed if these societies were stratified, hierarchical chiefdoms or egalitarian, hetero-archical societies or both? (Drennan 1995; Heckenberger et al. 1999; Roosevelt 1987, 1993, 1999). Chiefdoms are ranked societies, characterized by means of hierarchical variation in size, lay-out, and density of residential structures, the appearance of monumental architecture, a high degree of craft specialization and differentiation in mortuary customs (Carneiro 1981, 1998; Redmond and Spencer 1994). According to Elman Service (1962:134), these chiefdoms are also redistributional societies with a permanent central agency of coordination which is guaranteed by means of a surplus production.[75] The population and the access to natural resources, however, certainly had an impact

74 It must be observed that the term Big-Men may also refer to a Big-Women society: a long standing tradition in Amazonia! For further information on this Melanesian concept see: *Big-Men and Great-Men: Personifications of Power in Melanesia* (Godelier and Strathern 1991).

75 Among scholars there is certainly some dissatisfaction with Service's ideas, notably by Laura Crumley (1995, 1999) and Anna Roosevelt (1999:127).

on the emergence of polities but the processes of consolidation and evolution of social complexity remain unclear. Control and command of production is thought to be related to ideological factors. The "paths of power" or the ability to gain and maintain control over ideology and economy (Earle 1997) emphasize the emergence of chiefs who excert manipulation of religious ideology in community-based rituals (Siegel 1999). Thus, political dominance mainly depends on elite-centered strategies in which households and exclusive mortuary practices have developed during the LCA in the Greater Antilles. However, various researchers also propose a decrease in kinship emphasis and the beginning of a corporation or instituted status and rank (Curet 1992; Curet and Oliver 1998). This implies that village leaders and shamans held a very important status utilizing symbollically charged objects and places in order to control their power (Oliver 2009).

At present, the possible existence of LCA chiefdoms in the coastal Guianas (Rostain 2008a:231) is argumented by the mere statement that 'the intensification of agriculture using the raised field technique progressively resulted in population growth, social complexity, intersocietal interaction, crafts specialization and long-distance trade' brought about the emergence of chiefdoms (Rostain 2010:348). The view that the origins of chiefdoms in the Guianas, by means of the introduction of supposedly superior agricultural earthworks, resulted in a larger population guided by means of a centralised power is oversimplified and in need of verification. The academic and evolutive aspects of this framework lack an (ethnographic) indigenous point of view, or ontologies, of polities, cosmology, warfare, and leadership.[76] This framework is rather founded on shamanism and has largely been promoted by anthropologists during the last decades in: (a) southern Brazil, notably among the Tupi (Clastres 1974; Menguet 1993; Santos-Granero 1993, 2009b; Fausto 2000, 2001; Viveiros de Castro 2002; Sztutman 2005), (b) western Amazonia (Taylor 1985; Descola 1988) and (c) the Guianas (P. Grenand 1982), Joanna Overing (1983, 1986), Simone Dreyfus (1983-4, 1992), Peter Rivière (1984), Dominique Tilkin Gallois (1986), Neil Whitehead (1988, 1994, 1998), and Jean Chapuis (1993). However, regarding political power, Michael Heckenberger (2005) and Renzo Duin (2009) took a stand against "Society against the State" in favour of complexity and social politics in Lowland South America and the Guianas respectively.

The LCA of French Guiana is represented by the following ceramic complexes: (a) Aristé, (b) Koriabo, (c) Barbakoeba, and (d) Thémire. They are attributed to two supra-regional traditions and ceramic series in northeastern South-America: (a) the Polychrome and Incised-and-Punctate Tradition from the Middle and Lower Amazon River and (b) the Arauquínoid series from eastern Venezuela (Rostain 1994b:11; Rostain 2013). Concerning the Guianas, similarities between the Incised-and-Punctate Tradition and Arauquínoid series have been suggested by Boomert (1980), Versteeg (1985), Zucchi (1985b), Tarble (1985), and Rostain and Versteeg (2004). In general, the origins of the ceramic complexes of French Guiana, as well as those in Suriname and Guyana, have been attributed to the ceramic complexes of the Orinoco Basin. To a lesser extent this also applies to the Amazon River, eventually colliding on Cayenne Island (Rostain 2012). The regional complexes of the coastal Guianas are presented here.

76 On Amerindian leadership in the Guianas, see Brightman (2007).

The Arauquínoid series

The majority of the ceramics dated to the LCA has been affiliated to the Arauquínoid ceramic series. They are found mainly along the littoral of Suriname and western French Guiana. According to Arie Boomert (1976:138; 1977:511; 1978:47; 1980:69), the dispersion of the Incised-and-Punctate Tradition of northern Lowland South America coincided with the distribution of the Arauquínoid ceramic series in this area. The Arauquínoid ceramic series of the Lower Orinoco is part of a larger chrono-cultural framework. It was preceded by the Saladoid and Barrancoid ceramic series, as Cruxent and Rouse (1958/1959) and later Roosevelt (1980, 1997), have defined as to Venezuela. This tripartite framework also served as a model for the pre-Columbian societies of Suriname (Boomert 1977, 1980; Rouse 1983; Rouse et al. 1984; Versteeg 1985, 2003).

The Arauquínoid ceramic series play an important role in the understanding of successive prehistoric migrations from the Middle and Lower Orinoco watershed into the Caribbean region and the western Guianas. During the 1970s, ascribing prehistoric Suriname to this rather recent chronology, replaced the existing obsolete ideas on pre-Columbian "Arawak" and "Carib" societies in Suriname, as advocated by Geijskes (1963) (Arie Boomert, personal communication 2011). In the course of the following decades, Versteeg (1985) and Boomert (1986, 1993) further utilised this model which Rostain eventually adopted as to French Guiana (1994a-b).

As Boomert states (1978:48), the expansion of the Arauquínoid influences or a possible migration of Arauquínoid populations towards the western Guianas revealed inconsistencies, such as: (a) the earlier inception dates of the sites (before AD 1000), (b) the absence of excision and (c) the total lack of *cauixí* as a ceramic temper. All are characteristic of the Arauquínoid ceramics. It is thought that the Arauquínoid population left the Middle Orinoco River in *c*.AD 650 –halfway Rouse and Cruxent's Period III (1963:30)– to move down towards its mouth and intermingle with and replace other groups. Then, in *c*.AD 700, this mixed population set off for Trinidad and the western Guianas. Here they once again replaced and mixed with the scant Barrancoid groups in order to form a new *Arauquínoid Guiana Group* (Rostain 2008b:286–287), reflecting the above-mentioned migration concept. It is generally referred to as the first "wave" which was to be followed by a second influx in *c*.AD 1000 (Rostain and Versteeg 2004:234–235).

Initially, Cruxent and Rouse have defined the Arauquínoid ceramic series with regard to the Orinoco River. Having attributed this series to Period IV (AD 1000-1500), they also suggest it was probably initiated during the second half of their Period III (AD 300-1150), i.e. in *c*.AD 650, and located in the San Fernando area of the Venezuelan Llanos and the confluence of the Apure with the Orinoco Rivers (1963:9).[77] In the course of Cruxent and Rouse's excavations, only a single absolute date was obtained for one of the four Arauquínoid ceramic subseries named *Guarguapo* (1963:155). The other subseries/styles are referred to as *Arauquín*, *Matraquero* and *Camoruco*. Their cultural affiliation is primarily based upon relative stratigraphy:

77 In their publication Cruxent and Rouse refer to archaeological material Vincenzo Petrullo (1939) acquired at the Arauquín Ranch (Venezuelan Spanish: Hato Arauquín).

> *The Camoruco and Guarguapo excavations are discussed in connection with the Saladoid and Barrancoid series respectively, since they have yielded primarily material of those series* […]. *Here, we need only repeat that refuse of Camoruco style […] overlay a much thicker deposit of Ronquin style refuse at the site of the latter name, while Guarguapo pottery overlay that of the Los Barrancas style at the sites of Saladero and Guarguapo. Since Ronquin and Los Barrancos both date from Period III, we are able to place Camoruco and Guarguapo in Period IV* […]. *Guarguapo is extended into Period V because of the presence of European trade sherds and a radiocarbon date of AD 1640* […].
>
> *The Arauquín and Matraquero styles are likewise placed in Period IV, but only because their stylistic resemblances to Camoruco and Ronquin and also Valencia, the Periord IV style of Valencia basin* […]. *Arauquín also has lugs like those of the Los Barrancas style, which leads us to extend the Arauquin style back into the second half of Period III, making it the earliest of the Arauquínoid styles* […]. *Presumably, it is the source of the few Arauquínoid sherds that have been found associated with the Ronquin and Los Barrancas styles, and with the Cotua style up the river* […]. (Rouse and Cruxent 1963:90–91)

Orinocan Arauquínoid pottery is easy to distinguish by means of the pounded sponge spicules or *cauixí* temper (Zucchi 1985b). Characteristic vessel shapes are globular, collared jars or bottles with human faces (with coffee bean eyes and round eyebrows) in appliqué work on the collars as well as bowls with outwardly sloping and bevelled rims with incised designs. Decoration varies per style, but consists basically of parallel lines inclined in alternate directions. They are bordered at the top and bottom with horizontal lines (Fr., *cartouche*). The spaces between the incisions are excised in the Arauquín style and filled with punctations in the Matraquero and Camoruco styles. Guarguapo designs are the most simple and most crude ones. All styles have often punctated appliqué ridges on the wall which are often punctated. Painting is almost non existent. The nature of the Arauquín site is unknown, whereas Matraquero and Camoruco are situated on man-made mounds. Rouse and Cruxent (1963:92) hypothesised that, since Arauquín was presumed to be the earliest site, this series diffused down the Orinoco River as the increasing simplicity of the ceramic styles also moved downriver, i.e. the Bontour complex of Trinidad.

The origins of the Arauquínoid series are said to be situated between the eastern Venezuelan Llanos and the confluence of the Rio Negro and Solimões Rivers (Boomert 1980). Meggers and Evans (1961) concluded that the Arauquínoid series spread in two directions from the Middle Orinoco: (a) downstream towards Trinidad and the Guianas (Late Mabaruma Phase) and (b) upriver (Nericagua Phase). It eventually dispersed further down into the Amazon Basin, joining the renowned Santarem and Konduri styles of the Lower Tapajȯs River (AD 1300-1600) which is related to the Amazonian Incised-and-Punctate Horizon (see Arroyo et al. 1999). Notably Sigvald Linné (1925:53) proposed a reverse diffusion of *cauixí* tempering into the Orinoco Basin from the Lower Amazon River. As mentioned, Donald Lathrap correlated the late prehistoric Cariban expansion to the Incised-and-Punctate Horizon and the Arauquínoid ceramic series, hereby integrating the raised field agricultural subsistence system (Lathrap 1970). According to Lathrap, this rapid expansion depended on the warfare of raiding parties who killed all the men and abducted the women. However, the arrival of the first Europeans altered this expansion. Again, according to Lathrap, the above-

mentioned ceramics featured a *cauixí* temper, a fine V shaped incisions creating rectilinear designs and continuous triangles together with a complex clay strip appliqués (Lathrap 1970:164–165).

During the mid-1970s, Anna Roosevelt conducted her PhD research at Parmana on the Middle Orinoco River. She provided the first evidence of maize cultivation in *c*.800 BC as well as more radiocarbon dates and ceramic data on the Camoruco subseries (AD 400-1500) which were now divided into three subseries (Roosevelt 1980:195). Several ceramic characteristics or Rousian modes of the Camoruco subseries (e.g. appliqué ridges with incision and punctation, maroon post-fired paint, sharp rectilinear incision, punctation on necked jars) linked the Camoruco phases to the widespread Arauquínoid ceramic series (ibid., p. 196). Additional excavations at Corozal in that same Parmana region redefined the Camoruco Tradition (AD 800-1550). Here maroon paint, rectilinear incisions, and modelled incised lugs are now attributed to the later Camoruco 2 and 3 Phases, to be dated between AD 1000-1300 and AD 1300-1550 respectively (Roosevelt 1997:94–95, 185). The later phases are related to the Incised-and-Punctate Horizon or "conquest chiefdoms" which, according to Lathrap (1970) and Meggers and Evans (1961), are generally attributed to the beginning of the second millennium AD.

To summarize, the ceramic complexes of the Corozal and Camoruco phases seem to have their distant stylistic origins in the Saladoid and Barrancoid series and have some functional and iconographic continuities with them, but their pottery has diverged significantly form the earlier traditions in certain aspects of technology, function, and decoration. Based on the nature and rate of changes in pottery, the Corozal tradition seems to represent an intrusion into the Parmana region and a major cultural-ecological transition. The Camoruco tradition could well have developed locally out of Corozal in Parmana, but the specific Arauquínoid ceramic complex that takes form in late Camoruco times indicates a sudden intensification of outside contacts as well as a rapid in place crystallisation of new economic, social, political, and religious forms. (Roosevelt 1997:165)

This final expansion of the Arauquínoid population is believed to be related to the cultivation of maize, taken from the Lower Orinoco into the Antilles and beyond. This has been confirmed by Venezuelan archaeologists who excavated the Agüerito site, dated between AD 1200-1400, i.e. Period 3 (Zucchi et al. 1984:179; Zucchi 1988). Thermoluminescent and radiocarbon results have convinced these archaeologists, as to the Orinoco River, to favour a short Ceramic Age chronology, i.e. the Saladoid–Barrancoid–Arauquínoid sequence, starting in the first millennium BC. On the other hand, Rouse and Roosevelt prefer a longer chronology commencing in the course of the third millennium BC.[78]

78 The discussion on a Short and Long Chronology has captured archaeologists working at the Orinoco River for a long time (Boomert 2000:110–112; Oliver 2014:103, fig. 4). Zucchi et al. (1984:176) stated they were content that 'the acceptance of Rouse's dates of 1760 BC-2140 BC for La Gruta would imply a complete stagnation of ceramic style for more than 1,500 years between the La Gruta and Ronquin Phases' They went on to remark that 'The dates obtained by the different authors corresponding to the 3rd and 4th millennium should not be rejected without a careful examination, especially those obtained from reliable contexts, such as hearths and living floors. We must not overlook the possibility of an early and extended ceramic horizon in the tropical lowlands of South America unrelated either to the Saladoid or Barrancoid traditions, exemplified by the pottery of Puerto Hormiga, Monsu in Colombia, and Mina in Brazil, and related to the beginnings of Tropical Forest agricultural practices' (ibid., p. 178). As pointed out before, we also see this hiatus in other parts of Amazonia, mainly due to insufficient research.

William Barse put the entire Middle Orinoco ceramic sequence to the test when AMS-dating five charcoal samples taken from carchoal encrusted sherds, excavated by George Howard in 1941 (Barse 2000). The results suggest that the Ronquin phase is posterior to Corozal, thereby replacing the inception date of the Ronquin component in the second half of the first millennium AD. Barse proposed a complete revision of the Middle Orinoco sequence which he published ten years later (Barse 2009:97). He suggested that the Arauquínoid series, having spread throughout the Orinoco drainage, should be dated after *c*.AD 1100 (Barse 2000:341).

In sum, the Arauquínoid migration into the western Guianas is dominated by the study of ceramic material, as this brief introduction clearly demonstrates. Further study is required in order to comprehend the cultural evolution of this large ceramic series and its origins. Its ceramic series is also associated with large earthworks and complex societies. However, this type of landscape management already existed during the preceding Barrancoid occupation (Versteeg 1985, 2008; Rostain 2008a, 2010b, 2013). Although the date of inception is as yet debated, the concept of migration and diffusion from the Orinoco River into the Caribbean and Guianas has solely been proposed in order to explain the presence of similar ceramics in these distant areas. The Cedrosan Saladoid and Barrancoid ceramics are probably the most obvious traits of this concept. The Arauquinoid expansion subsequently presents one more movement from the Lower Orinoco into the Lesser Antilles and Guianas. It starts during the second half of the first millennium to arrive at the coastal Guianas in *c*.AD 1000, reaching even further than the previous Saladoid/Barrancoid expansion. However, little room is left for local development or earlier migrations from the Lower Amazon River. This issue is often neglected because of the strong scholarly preference for the Orinocan sequence.

The Barbakoeba complex

Since the 1970s, the Holocene coastal sites of eastern Suriname have initially been associated with ridged field complexes and later with the Arauquínoid ceramic series (Boomert 1976, 1980, 1993; Versteeg 1985). The anthropogenic origins of these raised fields, either pre-Columbian and/or colonial, remained speculative until the end of the 1950s. In this decade, multiple aerial observations of the Nickerie District (western Suriname) indicated a spatial relationship between the raised fields and the prehistoric man-made hill site of Hertenrits (Boomert 1976).[79] According to Boomert, the presence of prehistoric sites on the sandy ridges in the Marowijne District, combined with the parallel orientated raised fields, provided sufficient proof of their cultural authenticity and their synchronicity, despite the absence of any radiocarbon dates:

> *Especially in Marowijne, vast raised field systems have been discovered which directly border and run parallel to the old coastal barriers. On the ritsen sometimes the old settlements associated with the raised fields could be localized. Better proof that artificially raised fields were constructed to be sure of well-drained floors for cultivation during the wet season, is hardly necessary! The complexes situated in Marowijne along the ritsen were most probably extended again and again in*

79 These aerial observations were followed up by Dirk Geijskes' archaeological excavations. This did boost the international interest in the archaeology of Suriname as is proven by the ascription of these Surinamese sites in numerous publications of the North American researchers by James Parsons, James Bowden, William Denevan and in Donald Lathrap's *The Upper Amazon* (1970:162, fig. 41).

prehistoric times. As a result sometimes at both sides of the rits, but mostly only at the southern one, a large complex more or less regularly shaped raised fields with ditches can be found. (Boomert 1976:136)

The pottery of the Marowijne District, then named "Barbakoeba styled ceramics," was not yet radiocarbon dated. In order to obtain these samples for the construction and usage of these raised fields, Dutch archaeologists chose the site of Hertenrits in order to study the hypothesized relationship between the raised field phenomenon and Barbakoeba ceramics. The Hertenrits site came with advantages: (a) its configuration was thought to possess clear evidence it was contemporaneous with the raised fields, (b) its anthropogenic origins and (c) it probably has a well-defined stratigraphy (van der Heide 1973).[80]

The tested areas of this mound did not yield the desired quantities of (decorated) ceramics as to the lower stratigraphic layers (Boomert 1976:138; Geijskes 1963:73). Nevertheless, according to Boomert, the decorated ceramics form the upper layers showed Arauquínoid and (Late) Mabaruma Phase characteristics whereas the youngest ceramics of Hertenrits were considered to be a local variation of the Arauquínoid series. This was confirmed by the presence of raised fields and habitation mounds associated with Orinocan Arauquínoid ceramic complexes in Venezuela. The results of the Hertenrits radiocarbon dates indicated that its occupation started in c.AD 650 and ceased in *c*.AD 900. However, the first date is problematic as Boomert pointed out: it is considered too early to have any cultural link with the Arauquínoid ceramic series of the Lower Orinoco River or with the Late Mabaruma Phase in Guyana (Rouse 1983:13; Boomert 1976:138).

At the beginning of the 1990s, Arie Boomert finally defined the ceramic complex of Barbakoeba, ascribing it to the Arauquínoid Tradition and forwarding a date between AD 650 and 1200 (Boomert 1993:205).[81] He also suggested that the Crique Jacques site in French Guiana, situated on the Pleistocene edge of the Holocene swamp land between the Lower Mana and Maroni Rivers, was also part of the Barbakoeba complex. Again, Rostain (1994a:439–441) complied with this view. Boomert's ceramic study is based on a total of 500 sherds, collected from the surface of seven sites and one test pit. The latter sites are located between the Wane Kreek and the confluent of the Cottica and Commewijne Rivers. The main diagnostic elements are: (a) pounded potsherd as a temper, (b) necked jars representing the most typical vessel shape of this complex (Boomert 1993:206) and (c) "unerased coils" or corrugated rims (ibid., p. 202). The latter mode not only represented a diagnostic decorative element with regard to Suriname, but also to coastal French Guiana according to Rostain et al. (2008:38). Fifteen years later, the Earthmovers Project also provided seven radiocarbon dates for the acclaimed Barbakoeba site of Sable Blanc Est. It indicated that the excavated part

80 H. Dost discovered the pre-Columbian artificial mound of Hertenrits in 1956 during a geological survey for agricultural purposes. It is situated close to Wageningen in the Nickerie District (western Suriname) and measures 2.5 m in height. The pre-Columbian habitat covers *c*.4 ha and consists of anthropogenic layers of clay extracted at the foot of the ridge as well as from its swampy surroundings, to eventually form a ring ditch. The first archaeological excavations were conducted under the auspices of the Suriname Museum in 1957 (Geijskes 1963:72).

81 Versteeg took the only existing radiocarbon date for the Barbakoeba complex from the Boekoe Creek-2 site. The charcoal was collected from a hand dug test pit at between 15 and 20 cm below the surface. The C^{14} measure yielded a date of 975 ± 50 BP (GrN-7936) to be calibrated to c.AD 1050. Another charcoal sample taken from the Koriabo site of Morico Creek yielded 455 ± 65 BP (GrN-2321). However, Boomert considered this date too young and therefore discarded it.

had been occupied roughly between 1000 and 800 BP, i.e. the first half of the second millenium AD (McKey et al. 2010, Table S1). Despite the existing dates, the chronology of Barbakoeba, as well as other Arauquínoid sites (e.g. the Late Hertenrits, Kwatta, Thémire complexes) is thought to evolve around between AD 1000 and 1400 (Versteeg and Bubberman 1992; Rostain 2008b:281).[82]

Concerning pre-Columbian landscape management, the Earthmovers Project also proposed that the extensive raised field complexes and other earthworks (e.g. canals, residential mounds, causeways), were introduced by an invading Arauquínoid population (McKey et al. 2010; Rostain 2010b). Furthermore, micro-botanical evidence revealed the cultivation of maize, manioc and sweet potato, esteemed to be sufficient for a dense population of between 50 and 100 individuals per square km. Their ruler was believed to be a regional central authority such as in a chiefdom (Rostain 2010a). If there were any similar (supra-) chiefdoms in French Guiana and Suriname, as proposed by Rostain (2008a:231, 2010) and Versteeg (2008:306), is as yet speculative, as not all the above-mentioned elements have been confirmed by any concrete archaeological data. The presence of prehistoric chiefdoms has been hyped during the last two decades obscuring the regional picture. We must remain objective as mentioned in the introduction of this section; it is Boomert (2000:382) who states: '… we can by no means compare the minimal chiefdoms and/or Big-Men collectivities of the Lower Orinoco (and Guianas) with the socio-political complexity of the chiefdom type societies known in the Greater Antilles and the Amazon Valley.'[83]

The Thémire complex

The sites of this complex are often found on the sandy ridges of the Holocene plains in central French Guiana, roughly situated between the Kourou River and Cayenne Island (Rostain 1994a, 2008b, 2013). The type-site of Thémire is located on a Pleistocene ridge in the northwestern part of Cayenne Island overlooking the Montabo bay (Rostain 1989, 1994a). All archaeological material related to this complex has been discovered during various pedestrian surveys, several test pits and one programmed excavation. Rostain synthesised the material and dubbed it the Thémire ceramic complex in his PhD dissertation (Rostain 1994a). Despite existing ceramic studies presented by Alain Cornette (1990, 1992) as to Cayenne Island, Rostain introduced three ceramic types for Cayenne: *Cayenne peint*, *Mahury incisé* and *Mechior Kwep* as well as one class called *Montabo rouge*. His typology is based on 7874 sherds, found at ten sites of which the type *Cayenne*

82 There are no radiocarbon dates with regard to the Late Hertenrits occupation at the site itself. This later occupation is cross-referenced by dated Late Hertenrits ceramic material found at the Prins Bernhard Polder man-made mound site.

83 The present author agrees with Dieter Heinen and Alvaro García-Castro (2000:562–567) in that the visions of the Garden of Eden *vs*. the Counterfeit Paradise are not quite correct and that the concept of chiefdom has a wide range in Amazonia.

peint represents *c*.70% of the entire assemblage.[84] All these ceramic types have been attributed to the Arauquínoid series whereas *Cayenne peint* is also attributed to the Polychrome Tradition. Together they form the Thémire ceramic complex (Rostain 1994a:221, 408). Rostain further suggested that the polychrome influences were unilateral as Thémire diagnostic elements are lacking in Aristé sites (2008b:293).

This typo-chronology is based on only two accepted radiometric dates on shell for: (a) one for the excavation at Bois Diable (Kourou) of 510 ± 40 BP (OBDY-794) and (b) one for the site of Sainte-Agathe (Macouria) of 380 ± 35 BP (OBDY-796). This suggests a combined date of between *c*.AD 1400 and 1670 (Rostain 1994a:224). Instead of acknowledging the existing data and creating a local entity first, the results of the radiocarbon dates were partially ignored in order to obtain a desired cultural affiliation to the second Arauquínoid expansion into the Guianas. Thus, the results were considered too recent for an evident Arauquínoid affiliation. The Thémire culture is therefore probably interpreted as 'the ultimate manifestation of the Arauquinoid tradition both geographically and chronologically' (Rostain 2013:122). Ironically, recent excavations at Sainte-Agathe , situated on a Holocene ridge, indicate that the single result obtained by Yves Wack (1990b) does indeed correspond with this proto-contact period (Samuelian 2009).

Despite these radiometric results, it appeared more probable to Rostain and Versteeg (2003) that this complex would be culturally affiliated with the LCA coastal sites of Suriname (e.g. Hertenrits, Kwatta, Barbakoeba). Their hypothesis suggests an occupation span as to the Thémire complex ranging from between *c*.AD 900 and 1650. The Thémire complex was thereby incorporated into the existing cultural framework of the western Guianas (Rostain 1994a, 2008b, 2013; Versteeg and Rostain 2004). As to the Barbakoeba and Hertenrits ceramic complexes, the sites of the Thémire complex are often surrounded by ridged fields although no such fields have been found on Cayenne Island. In sum, the Thémire complex embodies the most eastern expansion of the Arauquínoid Tradition (Rostain 2008b:292).

Several years after Rostain's PhD dissertation, Matthieu Hildebrand rejected the diffusionist model of an Arauquínoid Tradition in the Guianas, as stated in his Bachelors and Masters thesis (Hildebrand 1999, 2000). In Hildebrand's view, the Arauquínoid presence is not based upon tangible evidence but solely upon the conviction of researchers such as Boomert, Versteeg and Rostain who applied the Orinocan chronology in the east. The two latter scholars primarily utilise decorative elements when characterizing Venezuelan influence which cannot be considered to be a diagnostic of a singular tradition. Hildebrand further

84 Rostain (1994b:10, note 2) simply ignored the ceramic typology proposed by Cornette (1990) for French Guiana during the 1985 IACA Congress held in San Juan de Porto Rico. Rostain however added to this statement that his classification was only preliminary and needed further adaptation in the future: 'Comme aucune typologie céramique n'avait été définie en Guyane, et comme il n'existe pas de méthodologie encore bien adaptée au matériel amazonien, nous avons adopté une classification préliminaire simplifiée; il sera nécessaire dans le futur de distinguer de nouveaux types et de subdiviser certains de ceux qui existent en plusieurs variétés.' The radiocarbon dates for Cayenne at Glycérias and Route Montabo have been discarded because they are considered much too young (Rostain 1994a:29–30, Table 3).

stresses that the type-variety classification Rostain applies is inappropriate when researching hand-made ceramics.[85]

When Hildebrand started working for the INRAP, he studied the ceramic material of the large scale excavations at *Lotissement Katoury*, situated not far from the Thémire type-site itself (Mestre et al. 2005, 2007). Rostain investigated the latter site in 1989 which was also partially excavated by Philippe Nowacki and Olivier Puaux in 1990 (Rostain 1994a:558–560). After studying more than 30,000 sherds Hildebrand boldly stated he had identified a new ceramic complex with radiocarbon dates ranging between the 10th and 13th century AD, hereby completely ignoring any previous research.[86] From that moment on, the Katoury-Thémire issue is in deadlock. Another ceramic study of the Katoury material, however, evidenced several shared characteristics, but Claude Coutet prefered the term Katoury Style because 'the distinct traits are in fact idiosyncratic features which may not have been emphasised sufficiently when the Thémire complex was created' (Coutet 2009:250).[87] At present, after numerous other compliance excavations, this so-called "Katoury" complex or "Cayenne Style" –by now retrieving the initial terminology of Cornette– has been recognized at numerous other sites on Cayenne Island and in its vicinity (e.g. Montjoly Bar, Cimetière paysager Poncel, Montabo-Sud, Lycée Professionnel de Rémire, Saint-Cyr, Soula, PK 11, Stoupan, Crique Anguille, Mombin) (cf. Chapters 8 and 9).

According to Rostain (2008b:288), the origins of Thémire are thought to be related to a population explosion that occurred in the coastal area between the Berbice River and Cayenne Island. He further suggested that this territory was at that time occupied by the Barbakoeba, Thémire, Kwatta and Late Hertenrits ceramic sites, all Arauquínoid cultures. These complexes, or cultures, possess their own territory and are specialised in certain trade items (Rostain 2006). The Hertenrits and Barbakoeba chiefdoms disappear gradually after AD 1250, but the Thémire complex continues to thrive until after the first contacts with Europeans.

The Aristé complex

To the east of Cayenne Island and notably the Lower Oyapock River as well as the northern part of the State of Amapá, we find habitation and funerary sites ascribed to the Aristé Phase, as defined by Betty Meggers and Clifford Evans (1957:103–167).[88] They studied the excavated ceramic and lithic material of fourteen sites in Amapá –seven habitation and seven funerary sites– located between the lower

85 Hildebrand drew his conclusions after comparing the excavated ceramic material of the Mont Grand-Matoury site (Grouard et al. 1997, 2003) with the BPS 230 site (Vacher et al.1998) which Jérôme Briand had already studied.

86 M. Hildebrand (in Mestre et al. 2005:63) states: 'Le mobilier découvert sur le site de Katoury est donc extrêment intéressant puisqu'il permet de circonscrire une nouvelle occupation amérindienne sur l'île de Cayenne, une hypothèse soutenue par l'existence d'un mobilier céramique dont les composants décoratives et morphologiques sont assurément diagnostiques d'un "archéo-complexe" singulier.' The conclusion of this report was thought to be preposterous and was rejected by the members of the National Archaeology Committee (CIRA).

87 A condensed version of Coutet's PhD dissertation is published in *Karapa* (Coutet 2014a).

88 Clifford Evans defended his PhD dissertation entitled: *The Archeology of the Territory of Amapá*, *Brazil (Brazilian Guyana)* in March 1950 at the Faculty of Political Science of the Columbian University. It is the first comprehensive study of the Guianas (Evans 1950). Betty Meggers completed her thesis entitled; *The Archeological Sequence on Marajó Island, Brazil*, 2 years later (see Meggers and Evans 1957:xxviii).

courses of the Oyapock and Araguarí Rivers. In addition, they also dealt with the material Emílio Goeldi had excavated in 1896 at Cunaní as well as with several other sites described by Henri Coudreau and Curt Nimuendajú.

The majority of the archaeological material was collected from the surface and in various test pits, totalling 2156 potsherds, 97 restorable vessels, four figurines, a few axes, some quartz debris and European ware. The acquired ceramic material as well as the vessels kept at the Museu Goeldi in Belém (N=118), was classified into seven types of which two are described as undecorated or plain. The most important elements distinguished with regard to this classification were: (a) the presence (*Aristé* and *Serra painted*, *Flexal scraped* and *Davi incised*), (b) the absence (*Serra* and *Aristé plain*) of decoration, (c) the colour and (d) the nature of the non-plastics (e.g. sand and crushed quartz) visible in the paste (*Aristé plain* and/or *Aristé painted* and *Flexal scraped*), quartz sand (*Davi incised*) and grog (*Serra plain* and *Serra painted*).

Aristé habitation sites are located on higher ground near a lake or creek (Br., *igarapé*) whereas rock shelters represent burial sites in which urns have been deposited directly on the ground. When Meggers and Evans carried out their research, absolute dating was already feasible. However, according to the latter, it appeared that the Aristé Phase had not been long present in the region before the first Europeans arrived. The beautiful polychrome painted anthropomorphic Aristé urns have been ascribed to the Polychrome Tradition of Lowland Amazonia (Meggers and Evans 1961; P. Hilbert 1968; Simões 1972). They have also been associated with the Marajoará urns of Marajó, which are considered to be the cradle of the Amazonian Polychrome Tradition and the carrier of complex societies (Roosevelt 1991; Schaan 2004, 2007; Barreto 2008).

In fact, Rostain obtained the first radiocarbon dates with regard to the Aristé complex from rock shelter sites at Montagne Bruyère, situated between the mouths of the Lower Oyapock and Ouanary Rivers in French Guiana. Two rock shelter sites (Carbet Mitan and Abri Marcel) date from AD 600 on (Rostain 1994a; 2008b:294–298).[89] Recent excavations at two Aristé funerary sites, including artificial shaft pits (Br., *poços*), are located near Calçoene (Amapá) and Pointe Morne (French Guiana) and yielded more dates, all ranging between AD 900 and 1400. These excavations also provided innovative insights on (Late) Aristé funerary practices and their aftermath (Mestre and Hildebrand 2011; Cabral and Saldanha 2009; Saldanha and Cabral 2010, 2011b; Carbral 2011).

The regional Aristé chronology of eastern French Guiana is represented by the following ceramic typo-chronology: (a) *Ouanary encoché*, (b) *Caripo kwep* and (c) *Enfer polychrome*. They are partially present in northern Amapá too (Rostain 1994a, 2011, 2012). The first type represents an Early Aristé phase (AD 700-1100) attributed to the Incised-and-Punctate Tradition of the Lower Amazon. The Enfer Polychrome represents the Late Aristé phase (AD 1100-1600). The Final Aristé phase (AD 1600-1700) is solely attributed to the Polychrome Tradition (Rostain 2011:14). Apart from dissimilarities regarding decoration modes, the Early and

89 Two charcoal samples from Carbet Mitan furnished two dates: 2070 ± 45 BP and 1650 ± 40 BP. They have been judged too early for the 2008b publication by Rostain. The Abri Marcel site featured five radiometric dates on shell from between 1470 ± 40 BP and 1170 ± 30 BP (Rostain 1994a:173). The charcoal sample GrN-20167 Hugues Petitjean Roget took from the Trou Delft site in 1992 was dated 160 ± 25 BP and is obviously too recent. Two other dates for Trou Delft have been published: 530 ± 60 BP and 6660 ± 80 BP. The latter is considered too early while the first may refer to a functional occupation (Petitjean Roget 1995a:384).

Late Aristé ceramic types also come with various secondary urn burial practices. One speculates that during its early period, burial practices are characterised by the deposition of de-fleshed bones. During the later period, the body of the deceased [or merely the bones?] has been cremated before being placed in the urn (Rostain 2008b:294).

In recent years, the Aristé complex has received more attention due to more excavations. Incoming data suggest that is highly possible that the Early Aristé complex comes with a singular ECA-B phase and, moreover, that is materialized by *Ouanary encoché* with dates from approximately the 4th century AD. In fact, it may represent a distinct complex and not be *per se* related to the Late Aristé phase (LCA) which is principally materialized by means of polychrome urns (cf. Section 9.8).

Finally, several Aristé funerary sites in the State of Amapá and a few in French Guiana have been associated with European artefacts, i.e. faïence, glass beads, iron nails. This is also the case with regard to the Arũa and Maracá urns of the Lower Amazon. However, we must take care when ascribing these urns to the contact period. Amerindians have re-used urns and urn sites throughout the colonial period, i.e. Nimuendajú (1926, 2004:43–44). This may well have been an Amerindian tradition inherited from pre-Columbian times (van den Bel 2009b).

The Koriabo complex

Another ceramic series ascribed to the LCA is the renowned Koriabo complex. Its decorated ceramics are easy to recognize and have been interpreted as a trade ware among the LCA pre-Columbian groups (Boomert 1993). These ceramics occur in almost the entire Guiana Shield and possibly beyond (Evans and Meggers 1960; Groene 1976; Boomert 1977, 1978, 1986, 1993, 2004; P. Hilbert 1982; Versteeg 1985, 2003; Rostain 1994a, 2008b, 2009; Hildebrand 2008; van den Bel 2010a; Cabral 2011; Mestre and Hildebrand 2011; Saldanha and Cabral 2009, 2011a, 2011b, 2012; Bastos and Kern 2011). In fact, Rostain (2009:47) refers to the Koriabo complex as 'a unique product of the Guianas', found as far as in the Lesser Antilles (Allaire 1984; Boomert 1986, 2011).[90]

Clifford Evans and Betty Meggers defined the Koriabo ceramic complex in the 1950s when excavating sites in the North-West District of former British Guiana, one of which was called Koriabo Point (Evans and Meggers 1960:124–154).[91] The ceramic register of the Koriabo Phase is based on the collection of archaeological material from four habitation sites, located on the banks of the Barima and Waini Rivers. Evans and Meggers carried out pedestrian surveys and excavating several test pits (13m² in total) in order to obtain their material. They collected 4,378 potsherds allowing them to establish the first characteristics of this complex.

The excavated material was classified by means of five ceramic types: three non-decorated or ordinary types, referred to as *Barima plain*, *Koriabo plain* and *Warapoco plain*, as well as two decorated ones: *Koriabo incised* and *Koriabo scraped*. Not only the presence or absence of any decoration, but also the colour and nature of the non-plastics visible in the paste served to distinguish the following types:

90 Gudmund Hatt acquired a beautiful polychrome notched flower bowl at the Salt River site of the Virgin Islands (Hardy 2008:204). It includes striking similarities with painted Koriabo flower bowls.

91 According to Cornelius Osgood (1946:32), the Venezuelan anthropologist Elias Torro had discovered the Koriabo type-site in 1905 when exploring the British Guiana and Venezuelan international boundary.

(a) with *caraipé*, or *kwepi* (*Barima plain*), (b) coarse sand (*Koriabo plain, incised, scraped*) and (c) coarse sand mixed with transparent quartz (*Warapoco plain*). Koriabo "trade" sherds were found only in the latest Mabaruma phase, therefore an ascription to the LCA ranging between AD 1200 and 1600 was proposed by Evans and Meggers as to Koriabo (1960:147–148). Furthermore, Boomert (1986:27–36) designated Koriabo ceramics found in Suriname decorated with elaborate polychrome painting (black and red on white slip) as funeral specimens. He dubbed them *Koriabo Painted* attributing Koriabo to the Amazonian Polychrome Tradition (ibid., p. 27; 2004:261).

The first Koriabo sherds in French-Guiana were discovered during the mid 1970s on the right bank of the Middle Maroni River at the Maroon hamlet of Kormontibo (Groene 1976). A pedestrian survey, ten test pits each measuring 50 x 50 cm, and one trench measuring 7 m x 50 cm, dug perpendicular to the streambed of the river, yielded 1894 selected sherds of which 114 were decorated and brought to Cayenne. After being studied, several slides depicting the discovered decorated ceramics were discussed with Frans Bubberman in Suriname who attributed them to the Koriabo complex. The French translation of his conclusion was published by Denis Groene:

> *Les ornementations apparentes sur plusieurs diapositives montrent clairement l'appartenance à la phase Koriabo qui est supposée s'être développée dans les Guyanes depuis la célèbre culture de Santarem dans la partie la plus basse de l'Amazone. Celle phase Koriabo a été découverte jusqu'au Nord-Ouest du Guyana, et est présente dans de nombreux sites archéologiques au Suriname. Cette phase à principalement les caractéristiques suivantes: Lignes incisées étroites en motifs géométriques sur les bords; Large usage de toutes sortes de figures appliquées, principalement zoomorphiques, allant du simple bouton à des têtes de singes et de grenouilles élaborées, en particulier ces dernières sont très fréquentes; Vases avec un goulot étroit dirigé vers le haut entre les flancs et le bord. À l'embouchure de la rivière Marowine, l'âge de ces poteries a été évalué à 500 ans environ.*
>
> *Cette phase Koriabo est supposée être, par plusieurs scientifiques, la preuve de l'invasion des Indiens Caraïbes, depuis la partie moyenne et la partie basse de l'Amazone, dans toutes les directions, y compris la route côtière, depuis l'embouchure de l'Amazone jusqu'à la Guyane (Voir "Upper Amazone" par D. W. Lathrap [The Upper Amazon] - Thames and Hudson, 1970). Le nom encore existant de Kormontibo, dans lequel le suffixe ibo, peut être reconnu, est en accord avec cette proposition.* (Groene 1976:163)[92]

92 'The visible decorations on various slides clearly show an affiliation to the Koriabo phase which is supposed to have developed out of the famous Santarem culture of the Lower Amazon River into the Guianas. This phase has been discovered in north-west Guyana and is found in many archaeological sites in Suriname. The Koriabo phase has the following main characteristics: rectilinear incised lines forming geometric motifs on the rims, abundant use of appliqué-modelling, mainly zoomorphic and ranging from simple nubbins to monkey heads and elaborate frog-shapes, of which the latter are particularly popular; vessels with a straight vertical neck between the rim and its sides. At the mouth of the Maroni River, this pottery is considered to be *c.*500 years old. Among certain scholars, the Koriabo phase supposedly represents the proof of a Carib invasion from the Middle and Lower Amazon River and radiating in many directions, including a coastal route, from the mouth of the Amazon towards French Guaiana the coast (by D. W. Lathrap - Thames and Hudson, 1970). The toponym of Kormontibo, featuring the suffix –ibo, is likely to be in favour of this proposition.'

In 1986, Boomert presented a publication in which Koriabo pottery from Suriname is analysed and compared with its Antillean off-shoot, the so-called Cayo complex from Saint Vincent. Boomert's morphological analysis in combination with the frequency of decoration modes put forward thirteen vessel shapes. He identified various regular shapes (Forms 1, 3, 4, 8, 9, and 10), two special shapes (Forms 2 and 12), and two diagnostic shapes (Forms 5 and 11). The latter shapes represent typical Koriabo shapes: (a) the so-called flower bowls with lobed rims and (b) necked jars (Evans and Meggers 1960:133, Fig. 53). These vessels reveal stylistic and morphological homogeneity, evoking a certain standardization which is identified or shared across the Guiana Shield and beyond. These highly recognizable vessel shapes often feature a repetitive combination of a specific decoration technique (Boomert 2004:254). In general, we can distinguish the following decorative characteristics as to Koriabo: painting/slipping, incision, scraping, impressions, notching, punctation, digit impressions, simple, and complex modelling. The non-plastics of the paste are divided into four temper modes: (a) quartz associated with (majority) of mica, (b) quartz elements with burnt vegetal matter, (c) fine sand, and, but more rare, and (d) pounded potsherds.

Rostain redefined Koriabo material found in French Guiana in his thesis, creating an entirely new type, dubbed *Chaton fantastique* (Rostain 1994a:199–212). It comes with three temper varieties, eight vessel shapes and various decoration techniques, i.e. incising, scraping, modelling. This register consists of ceramic material from several test pits at the Mapaou site on the Approuague River (N=551) as well as the PK 9.3 site (N=353), located on the upper Malmanoury Creek. However, the majority of the studied archaeological material consists of either fully or partially complete vessels, most of which have been found in rapids of the Approuague River (Migeon et al. 2010). It may be clear that this highly characteristic riverine context only provides us with a morphological variety of vessel shapes without any chronological context or any radiocarbon dates.

The majority of the Koriabo sites is thought to be found on the banks of the larger rivers and its affluents, in particular close to their junction, but they can also be located on the sandy ridges of the coastal plains (Boomert 2004:252). In French Guiana, Koriabo ceramics have also been associated with ditched sites (Fr., *eperon barré*), such as Angoulême on the Lower Mana River and Pointe Morne on the Lower Oyapock River (Kayamaré 1997; Hildebrand 2002a; Mestre 2006b; Mestre and Hildebrand 2011; Gassies and Dauphin 2013). It has nevertheless been attested that these sites have witnessed multiple occupations.

The origins and development of the Koriabo complex are still very difficult to grasp. This is due to its wide geographical distribution. Actual modelling is based on a relatively small database; therefore we must consider diffusionist conclusions with precaution. Boomert proposed a cultural affiliation with the Lower Amazonian Polychrome Tradition as it displays close affinities with the 'Ancestral Mazagão-Aristé' complex of Amapá (Boomert 1986, 2004:258). His stylistic approach regrouped the Late Aristé, Late Mazagão, and Koriabo styles to the Koriaban subseries which are yet again attributed to the Marajoaroid series of the Amazonian Polychrome Tradition (Boomert 2004:261). His chronology ranges from between AD 750 and AD 1500 (ibid., p. 256). Boomert further proposed that the Koriaban groups moved slowly from the interior of the Guiana Shield towards the littoral and that shortly before the moment of contact, this movement has resulted in an accumulation of Amerindian populations on the

littoral. Consequently, the (proto)historic ceramic productions of the Kali'na, Palikur, and Island Carib potters evolved out of Koriabo and have been attributed to 'an Aristan subseries, which is largely post-Columbian in age' (ibid., p. 260).

Versteeg (1980b:50) presents another hypothesis, following Evans and Meggers (1960), suggesting that all dates prior to AD 1200 must be rejected due of contamination. This hypothesis is supported by Rostain and Versteeg (2004) who both attribute Koriabo to the Early Historic Age too. In sum, its chronology remains unclear but when accumulating all radiocarbon dates as to the Koriabo sites, we observe that the highest number of dates is found between AD 1000 and 1500 as proposed by Boomert (1986:37, Fig. 15; 1993:221).

3.4.4 The Historic Age

As mentioned in the above section, various Aristé funerary urns contained European trade goods, thus marking the arrival of the Europeans in the Guianas. These burial sites are dated to the 17th century, based on blue glass beads, probably manufactured in Amsterdam, and the iron trinkets found in these urns (Nimuendajú 2004:19, Fig. 4).[93] Apart from these sites, we have little archaeological data on historic Amerindian villages in French Guiana, Suriname or Amapá. However, radiocarbon dates referring to this early period have been obtained as to numerous sites often linked to Koriabo style ceramics. Arie Boomert (1986) already pointed out this early historic aspect regarding Koriabo when defining the Cayo complex as to the Lesser Antilles as did Louis Allaire (1984) before him. In fact, Boomert demonstrated the striking stylistic similarities between Koriabo ceramics found in Suriname and the ceramics excavated by Bullen at Cayo, establishing in this manner a cultural link between the Antilles and the Guianas, as recorded by 17th century chroniclers who frequented the Island Caribs or *Callinago* (Boomert 1995:32–33).

Along the Middle Orinoco River, the local Amerindian pottery traditions tend to be somewhat conservative. According to Kay Scaramelli (2006:272), they incorporate very few innovative techniques, i.e. potter wheel, kilns, nor do they replicate much European ware; only superior utilitarian table ware is admitted into their households during the 17th century. In the course of the 18th century, the colonial Amerindian sequence shows the disappearance of Amerindian styles as well as the birth of new Criollo styles (ibid., p. 249–256).

As to the Guianas, the French anthropologist Collomb (2003:134) has already pointed out that all Amerindian pottery series described with regard to the early 20th century are quite similar, suggesting that various Amerindian groups shared pottery production techniques and/or cultural traits. If these similarities are the result of (forced) cultural harmonisation or ethnogenesis during the colonial period is still under debate, but the latter cultural processes represent important factors concerning cultural change, indigenous survival and resistance. The historic Amerindian occupation of Eva 2 provides further clues to these questions (cf. Chapter 11). They involve ethnicity and cultural identity, too, and are linked to important social as well as political issues among present-day Amerindian groups.

93 Scholars at the University of Bordeaux III have recently carried out a chemical analysis of the Trou Delft and Trou Reliquaire sites at Ouanary. The result suggests a German origin (Lower Rhine area) of the cobalt raw material (Ollagnier et al. 2011).

Site	Archaeology	Research	Type site	Region	Geomorphology	Geology	Year	m²	Features	Ceramics	Lithics	RC datings	Reference
Rorota	salvage	survey	habitation	coastal	sandy ridge	pleistocene	1975	1	0	1896	1	0	Petitjean Roget and Roy 1976
Criques Jacques	salvage	survey	habitation ?	coastal	hilltop	white sand	1985	15	unknown	150 kg	unknown	0	Cornette 1985b
Abri Marcel	programmed	excavation	rock shelter	coastal	hilltop	shield	1988	10	0	3875	245	5	Rostain 1994a
Carbet Mitan	programmed	excavation	rock shelter	coastal	hilltop	shield	1989	20	1	1484	2334	2	Rostain 1994a
Themire	programmed	excavation	habitation	coastal	sandy ridge	pleistocene	1989	5	0	2370	131	0	Rostain 1994a
Thémire	salvage	survey	habitation	coastal	sandy ridge	pleistocene	1990	87	1	2259	5	0	Rostain 1989, 1994a
La Sablière	salvage	survey	habitation	coastal	sandy ridge	holocene	1991	7	3	1306	137	2	Barone-Visigalli and Prost 1991
BPS 13	salvage	excavation	habitation	interior	riverbank	holocene	1991	1400	114	23,855	99	20	Vacher et al. 1998
BPS 16	salvage	excavation	habitation	interior	hilltop	shield	1991	1850	13	7238	37	2	Vacher et al. 1998
BPS 17	salvage	excavation	habitation	interior	hilltop	shield	1993	700	15	1368	9	3	Vacher et al. 1998
BPS 172	salvage	excavation	habitation	interior	hilltop	shield	1993	136	81	26,433	108	7	Vacher et al. 1998
BPS 223	salvage	excavation	habitation	interior	riverbank	holocene	1993	1850	290	10,304	105	28	Vacher et al. 1998
BPS 230	salvage	excavation	habitation	interior	hilltop	shield	1993	2200	420	63,631	1062	20	Vacher et al. 1998
La Sablière	programmed	excavation	habitation	coastal	sandy ridge	holocene	1993	204	0	200 kg	18	0	Thooris 1994a
Favard	programmed	excavation	eperon	coastal	hilltop	shield	1996	43	unknown	4295	unknown	1	G. Mazière 1996
Mont Grand Matoury	programmed	excavation	habitation	coastal	hilltop	shield	1996	400	220	44430	1620	12	Grouard et al. 1997
Katoury	compliance	excavation	habitation	coastal	sandy ridge	pleistocene	2003	15000	937	32,033	6473	4	Mestre et al. 2005
Eva 2	compliance	excavation	habitation	coastal	hilltop	white sand	2005	5100	470	6960	12,115	5	van den Bel et al. 2006
Crique Sparouine	compliance	excavation	habitation	riverine	hilltop	shield	2006	2002	428	3702	112	4	van den Bel 2007b
Saut Saillat	compliance	excavation	habitation	riverine	riverbank	holocene	2006	1500	62	7542	21	4	Hildebrand 2008
Plateau des mines	compliance	excavation	habitation	interior	hilltop	white sand	2006	579	32	0	17,564	8	Mestre and Delpech 2008
AM 41	compliance	survey	habitation	coastal	sandy ridge	pleistocene	2006	1200	122	663	2	1	van den Bel 2006
Sable Blanc Est	programmed	excavation	habitation	coastal	sandy ridge	pleistocene	2007	330	113	unknown	unknown	7	Rostain et al. 2008; McKey et al. 2010
Bois Diable	programmed	excavation	habitation	coastal	sandy ridge	holocene	2008	1120	81	unknown	unknown	1	Rostain et al. 2009; McKey et al. 2010
Yaou	compliance	survey	ring-ditched	interior	hilltop	shield	2007	1408	77	5500	181	7	Mestre et al. 2013
Chemin Saint-Louis	compliance	excavation	habitation	riverine	riverbank	terrace	2008	5108	32	33,351	4774	28	van den Bel et al. 2011
Pointe Balaté	compliance	excavation	habitation	interior	riverbank	holocene	2009	3271	157	6667	323	9	Briand 2015
PK 11	compliance	excavation	habitation	coastal	sandy ridge	pleistocene	2010	1250	58	4280	721	7	van den Bel et al. 2012
Cimetière paysager	compliance	excavation	habitation	coastal	hilltop	pleistocene	2010	5763	203	5979	211	15	van den Bel et al. 2013

Table 3.1. A short overview of technical data per site excavated in French Guiana.

3.5 Final remarks

In sum, the LCA of the Guianas is certainly the best known archaeological period and primarily based on the study of ceramics. In general, such studies represent small, often selected samples, which I have attempted to illustrate throughout this summary. All the early ceramic studies evidenced diagnostic elements regarding archaeological ceramic complexes, series or even cultures. However, the ceramic material was most often acquired during unsystematic pedestrian surveys, test pitting and by means of private collections with hardly any stratigraphic control or documentation (e.g. Saut Léssé Dédé near Grand Santi) (G. Mazière and Pascual-Gaborit 1994).

The ceramic collections safeguarded at the SA depot in Cayenne serving to define existing ceramic complexes rarely surpass 8,000 potsherds per site. For instance, the type-chronology of the four ceramic complexes found in French Guiana (Barbakoeba, Thémire, Aristé, Koriabo), as Rostain presents in his thesis, is based on a total of 23,206 potsherds and 296 complete vessels (Rostain 1994b:10) regarding a coastal area spanning *c.*400 km!

The ceramic studies carried out with regard to compliance archaeological excavations (Katoury, Chemin Saint-Louis) largely surpass the above-mentioned total (*c.*110,000 sherds). This not only demonstrates its validity and representativity on a local level, but also its reliability in combination with numerous radiocarbon dates taken from excavated features being a more reliable context. It may be evident that large scale excavations are needed in order to gain a better insight into the site function, site dimensions, possible multiple occupations, (recent) disturbances, etc., than surface collecting and several test pits alone (cf. Table 3.1). Indeed, continuous archaeological research and the introduction of compliance archaeology to French Guiana have boosted the archaeological record in this region. As in any field of research, the existing framework based on previous research must be adjusted in order to continue active research, in full realisation that this could not have been carried out without previous (pioneering) research.