

# 1. Introduction

In the last decade, functional analysis has shifted from an almost sole concentration on flint towards a method applied to virtually all artefact categories in order to reconstruct technological systems (Van Gijn *in press*). The present study was carried out in the light of that shift, concentrating on the role of shell tools in the Caribbean. Although shell implements have received much attention in Caribbean archaeology, the number of studies that deal with the actual function of tools is limited. Moreover, most researchers arrive at functional interpretations on the basis of analogies and from morphological characteristics of the tool that they can see with the naked eye (Antczak 1998; Brokke 1999; Jansen 1999; Jones O'Day and Keegan 2001; Rostain and Dacal Moure 1997; Serrand 1995, 1997, 2002; Van der Steen 1992; Taverne and Versteeg 1992). Some researchers in the Caribbean use low magnifications to interpret the wear traces (Cartwright *et al.* 1991; Lundberg 1985). In some cases this is done in the light of an ongoing debate whether it is possible to distinguish between food-debris (or shell waste) and expedient tools (Armstrong 1979; Dacal Moure and Croes 2004; Jones O'Day and Keegan 2001; Keegan 1981; Versteeg and Rostain 1997). High power functional analysis may elucidate the manner of manufacturing as well as the variety of functions of these tools and may shed light on the role of shell in the technological system. The experience with shell material in functional analysis is however modest and requires methodological studies.

The primary objective of this study was to examine the role of shell artefacts in the technological system of the sites studied. In Caribbean archaeology shell is an important raw material for tools, probably due to the scarcity of flint and suitable stone in the area. Both flint and stone had to be obtained from different islands, but were still imported in considerable quantities. The focus of the study was therefore on the technological and functional analysis of the shell artefacts. In addition, samples of the flint and hard stone tools were studied. To reach an overview of the complete available toolkit, the research on coral and secondarily used pottery sherds carried out by others were also incorporated in the interpretation of the results. Archaeological, ethnographic and ethnohistorical data were studied to obtain an indication of domestic tasks carried out in the Caribbean in the pre-Columbian period.

The study is focused on two archaeological sites: Anse à la Gourde and Morel, both situated on Guadeloupe, FWI (Fig. 1.1). These sites were excavated on a large scale over several years and resulted in an enormous amount of information. Both are situated along the coast of Grande-Terre and have a comparable habitat. Morel is the oldest site, dated to the Early Ceramic period, the Huecan Saladoid and Cedrosan Saladoid phases. Anse à la Gourde was inhabited in the late Cedrosan Saladoid and occupied again during the Late Ceramic period, specifically during the Mamoran Troumassoid. The knowledge on subsistence activities and domestic crafts is limited to the results of the faunal analysis and the morphological characteristics of the artefact assemblage. Functional analysis of the complete toolkit makes it possible to study functional and technological interrelationships between various artefact categories. Indirect evidence for craft and subsistence activities involving perishable materials can be obtained as well. This integral approach was the main component of the Aspasia-project in which the present research was incorporated (see preface). Such an approach makes it possible to gain more insight into the technological systems of past societies and the social implications of these systems (Bleed 2001; Lemonnier 1993; Schiffer 2001).

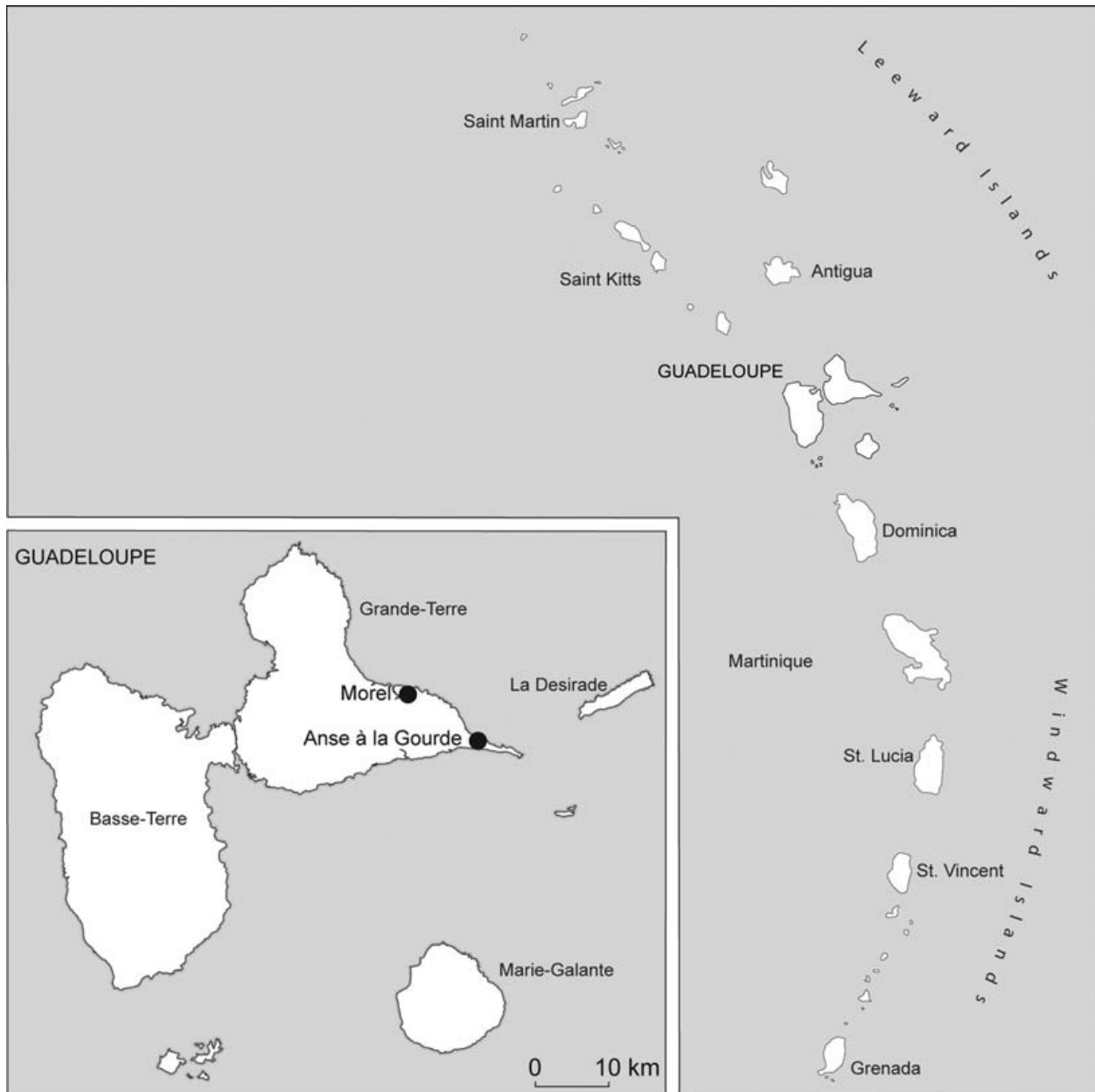


Fig. 1.1 Map of Lesser Antilles and Guadeloupe with studied sites

The Caribbean area is especially suitable for an archaeology of technology: the find assemblages are rich and varied and contain a range of artefact categories. They therefore are especially suited for an integrated approach using functional analysis. Furthermore, the area provides a variety of contextual data sources that enhance the possibility to interpret domestic household activities. Archaeological, palaeobotanical, ethnohistorical and ethnographic data provide an additional source of information for the replication of tasks and processes in order to set up experimental reference collections. Although almost no descendants of the former inhabitants are to be found on the islands, the cultural link with people still living on the mainland

of northern South-America is apparent. Many of their traditional crafts have survived and although they are sometimes adapted to modern times, many interesting customs can still be observed. In the older written sources in particular, detailed attention was paid to domestic crafts and activities and they proved to be an important source of information. In the ethnohistorical sources mention is occasionally made of manufacturing techniques or ways of hunting and fishing. Although these sources seldom mention tool-use, they give a fair idea of the situation right after the period of first contact. Based on these data, a reference collection was created of experimentally reproduced and used tools. Through the analysis of the complete toolkit available, it is possible to make inferences about the choices made by former inhabitants with respect to raw materials, artefact production, use and discard.

Besides the primary objective to examine the role of shell artefacts, the second goal of this research was to study the choice of raw materials for the production of artefacts, including both tools and ornamental implements. In this approach the study of technological and typological aspects of especially the shell ornaments was incorporated, as well as the evaluation of the diachronic changes in manufacturing processes of tools and ornaments. Furthermore, it was attempted to determine whether the use of imported flint and hard stone tools was based on the physical restrictions of the available raw material at the sites. The necessity of obtaining raw materials from other islands would shed light on relationships with these islands. The third goal was to identify the domestic tasks and craft activities that took place at the sites studied. Related to this objective is the evaluation of diachronic changes in activities as well as possible craft specialisation.

The description of the study is presented in the following framework. Chapter 2 focuses on the technical aspects of usewear analysis and the influence of taphonomical processes. It specifically concentrates on the study of traces on shell material and the related problems. In chapter 3 the experimental program is presented. It is organized around the information found in the contextual data on worked materials. Chapters 4 and 5 describe the artefacts and their usewear traces from Anse à la Gourde and Morel respectively, concentrating on shell, stone and flint. A short description of the coral and pottery tools is also presented. Finally, in the concluding chapter 6, the possibilities and limitations of functional analysis on shell tools are discussed as well as the functional and technological interrelationships between the various artefact categories.