# UNIVERSITY OF SOUTHAMPTON

FACULTY OF HUMANITIES

Department of Archaeology


# Lithics, Landscape and People: Life Beyond the Monuments in Prehistoric Guernsey

by


**Donovan William Hawley**


Thesis for the degree of Doctor of Philosophy

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# ABSTRACT

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Although prehistoric megalithic monuments dominate the landscape of Guernsey, these have yielded little information concerning the Mesolithic, Neolithic and Early Bronze Age communities who inhabited the island in a broader landscape and maritime context. For this thesis it was therefore considered timely to explore the alternative material culture resource of worked flint and stone archived in the Guernsey museum. Largely ignored in previous archaeological narratives on the island or considered as unreliable data, the argument made in this thesis is for lithics being an ideal resource that, when correctly interrogated, can inform us of past people's actions in the landscape.

In order to maximise the amount of obtainable data, the lithics were subjected to a wide ranging multi-method approach encompassing all stages of the *châine opératoire* from material acquisition to discard, along with a consideration of the landscape context from which the material was recovered. The methodology also incorporated the extensive corpus of lithic knowledge that has been built up on the adjacent French mainland, a resource largely passed over in previous Channel Island research.

By employing this approach, previously unknown patterns of human occupation and activity on the island, and the extent and temporality of maritime connectivity between Guernsey and mainland areas has been revealed. Further, a greater understanding of the lithic industry on the island has been achieved through the cross referencing of assemblages with those of the adjacent French mainland.

It is argued that this research has made an original contribution to the archaeological knowledge of Guernsey. Not only has the value of a comprehensive lithic research programme been proven, but the understanding of the prehistory of Guernsey has been enhanced and visibility of peoples' lives beyond the monuments has been gained.

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# DECLARATION OF AUTHORSHIP

I, Donovan Hawley, declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Title: Lithics, Landscape and People: Life Beyond the Monuments in Prehistoric Guernsey

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

Signed:

Date: April 2017

## Acknowledgements

I owe an immense debt of gratitude to the people and institutions on Guernsey for providing me with access to material that has allowed this thesis to be written. Particular thanks are due in this respect to Dr Philip de Jersey, Tanya Walls and Kit Hughes of the States of Guernsey Museum Department for their patience in providing answers to what must have seemed endless enquiries for lithics and site information. I am also indebted to Dave Lane, Hazel Hill and John Lihou whose enthusiasm for Guernsey's archaeology, and generosity in sharing their extensive knowledge helped and inspired me to carry out this project.

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Finally, without my family, and especially my wife Martine's support, understanding and constant provision of snacks and cups of tea this thesis would never have been written.

Any faults that remain are solely the responsibility of the author.

## Definitions and Abbreviations

| | |
|---|---|
| AMSL | Above Mean Sea Level |
| EBA | Early Bronze Age |
| GD | Guernsey Datum |
| KYA | Thousand Years Ago |
| LBK | Linearbandkeramik |
| LGM | Late Glacial Maximum |
| MHW | Mean High Water |
| MSL | Mean Sea Level |
| MWP | Melt Water Pulse |
| MYA | Million Years Ago |
| OSL | Optical Stimulated Luminescence |
| SMR | Sites and Monuments Record |
| SOM | Seine-Oise-Marne |
| VSG | Villeneuve-Saint-Germain |

# Chapter 1: Introduction

## 1.1 Background and Motivation

This thesis examines the nature of human society on the island of Guernsey during the Mesolithic, Neolithic and Early Bronze Age using lithic data as a proxy. The principal themes and scope of the study are presented in this chapter.

Past research into the prehistory of Guernsey, and indeed the rest of the Channel Islands follows a pattern that is familiar in many archaeological accounts, with predominance given to the highly visible megalithic funerary monuments over other forms of evidence. This emphasis is understandable as despite the destruction of many over the centuries, those monuments that do remain provide an imposing testament to the beliefs of the people that built them. In terms of archaeological research however, this has led to what Cooney (1997, 29) describes as “the privileging of ritual over domestic activity” with the more ephemeral traces of human activity in the wider landscape being thus far largely ignored. Therefore, it is considered timely to introduce a new avenue of research onto the island based on a lithic analysis programme that will, it is intended, answer the following question: how can we improve our understanding of human society and maritime connectivity during the late prehistory of Guernsey through the analysis of lithic data?

The following list summarises the objectives of this thesis:

1. Determine the extent to which lithic data reflects changes in land use during the study period
2. Compare the similarities and differences between Guernsey and northwest France in the use of lithic material
3. Determine the extent of evidence for human residence on the island as revealed through the lithic record

Hence, this thesis is motivated by the extent that the lithic data of Guernsey can inform us about human residence, activity and mobility patterns in the landscape. The knowledge gained will contribute to an understanding of the people who sourced the raw material, fashioned the tools, used and eventually discarded them. The study will also inevitably lead to a consideration of wider ranging issues related to strategies employed by island communities, such as maritime connectivity with mainland areas and participation in regional exchange networks.

## 1.2 Problem Outline

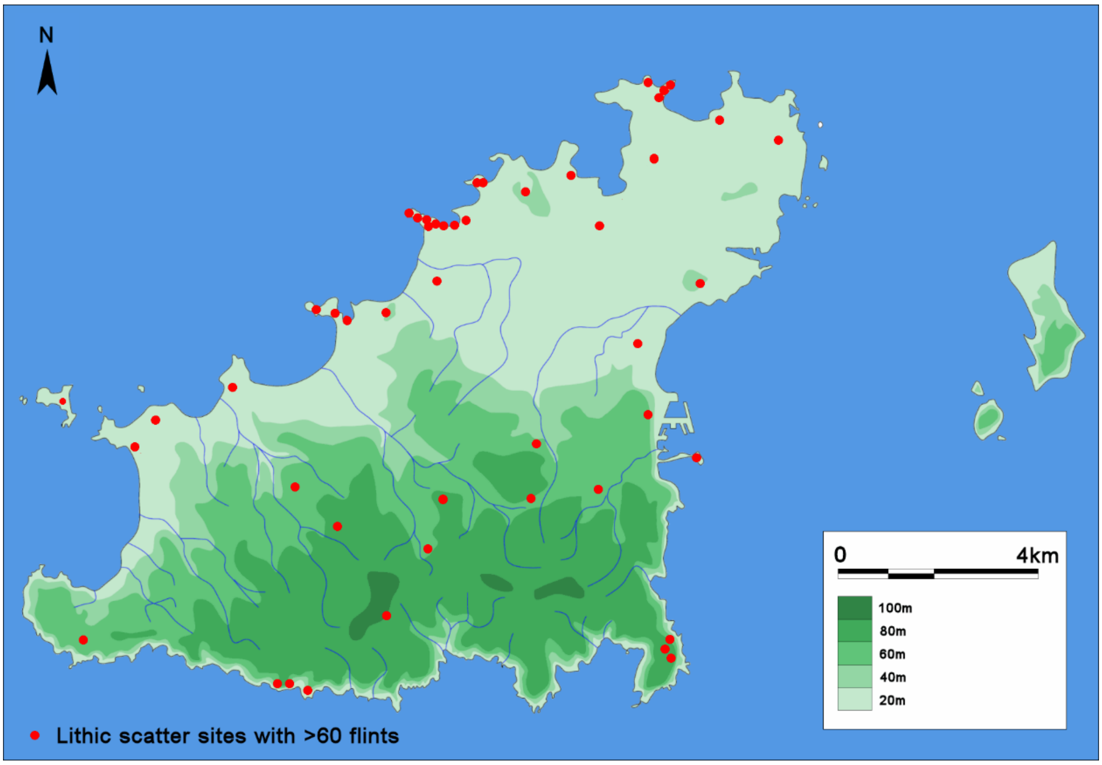



*Figure 1. Lithic scatter sites of over 60 pieces (Guernsey SMR).*

Concentrations of lithics comprising tools, cores, flakes and waste are found dispersed across the Guernsey landscape in ploughed fields, eroding from coastal headlands and revealed in excavations (Figure 1). The distribution of this material is particularly biased towards coastal areas, especially those of the north and west as this appears to be where prehistoric communities were collecting flint in the form of beach pebbles and working it into cores and tools (Figure 2), the traces of which are subsequently revealed where coastal erosion occurs (Keen 1976). Scatters of flint found further inland are typically the result of excavations or surface collections and may represent different aspects of human activity.

These concentrations and scatters of material culture mark the ebb and flow of communities in the landscape from the Mesolithic through to the Early Bronze Age, and possibly beyond into the Iron Age. However, lithics have proved somewhat resistant to interpretation in past research, often being relegated to appendices in site reports or simply viewed as 'bad data' (Snashall 2002, 18; Saville 2011, 4; Bond 2011, 85). Further, whether concentrations of lithics can actually be associated with a particular aspect of human activity is open to question (Thomas 1991, 18). Despite these reservations, the argument is made in this thesis for lithics being an ideal data source representing a durable legacy of past people's actions in the landscape. Further, with a paucity of skeletal remains as a result of the island's acidic soils, few traces of settlement and a poorly understood or ambiguous pottery record, lithics are in many cases the only strand of evidence that can act as a proxy for prehistoric society on Guernsey. The interpretation of this evidence is thus far lacking however, as although there is a rich lithic archive on the island deriving from collections, field-walking exercises and excavations since antiquarian times, little quantitative, qualitative or interpretive research has yet been carried out on this resource. It is clear therefore, that there exists a potential narrative of the human past in the archaeological record of Guernsey yet to be revealed.


*Figure 2. Flint implements in local beach pebble flint (left to right) scraper, transverse arrowhead and core (D Hawley).*

**Data Sources**

The data set for this thesis was primarily sourced from the Guernsey museum lithic archive which derives from three principal methods of recovery; excavations, field-walking, and collections of scatters eroding from exposed coastal headlands. With an archive of over 50,000 lithics only partially investigated, it was considered that the study of this resource was the most beneficial and productive way of adding to the archaeological knowledge of the island. The primary source of data for this thesis was excavated lithics as these are in many cases associated with stratified contexts, $^{14}$C results or datable pottery. This resource was seen as the most efficient means of applying a chronological sequence to a thus far largely undated material. In order to achieve a uniform coverage of the island however, a secondary source of field-walked assemblages was chosen, as surface scatters of ploughed out flint are likely to indicate zones of past human activity. Thirdly, collected material from eroding coastal areas was also included, as because of the proximity of these areas to sources of beach pebble flint it was considered that this resource represented an alternative type of practice to that found further inland. Finally, past excavation and lithic reports were consulted where these were considered of sufficient quality. A more comprehensive explanation of the data set used in this thesis is presented in Chapter 5.

**Landscape, lithics and People**

In order to fully answer the thesis research questions and objectives listed in section 1.1, it was considered necessary to establish a method of integrating the lithic data into their landscape context in a manner that allowed a meaningful interpretation of past human activity throughout the study period. A brief summary of this approach is discussed here as a prelude to a full description of the methodological framework in Chapter 5.

Material culture is considered to be a medium through which “people created meaning, crafted identities and developed understandings of the world” (Thomas 1991, 228); and, through which social relations and cultural traditions were “maintained and reworked” (Edmonds 1995, 18). Therefore, it would be reasonable to argue that aspects of past societies can be reconstructed through concentrations of this material that are found scattered in the landscape. This does not mean that these concentrations can be regarded as bounded entities or discrete sites, but that the associated landscape must also be considered. Consequently, as this thesis is essentially a site-based study that examines lithic evidence from selected find-spots, an approach that could potentially lead to ‘dots on maps’ archaeology; the intention is to mitigate this by contextualising the lithics in their landscape setting and to consider the links between ‘sites’ and people’s actions in the wider landscape.

A rigorous methodological framework is made all the more essential because of the sometimes conflicting nature of the region’s archaeological data when seeking out patterns of human activity. In northwest France for example, the debate surrounding the idea of prehistoric communities practicing either mobile or sedentary lifestyles was originally based on the polarised assumption that there were mobile bands of hunter-gatherers during Mesolithic, then with the arrival of the Neolithic people built houses and permanent settlements (Verron 2000, 75). However, more recent research on the Atlantic margins of northwest France indicates that here the scenario is likely to be more complicated than at first thought, with a Neolithic presence marked by funerary monuments and concentrations of artefacts rather than traces in the archaeological record that could be described as ‘houses’ (Pailler *et al.* 2008, 101; Scarre 2011, 53; Marchand 2014, 250). Whereas, during the Mesolithic a degree of attachment to place is evident (Marchand 2014, 329). These contradictory patterns of residence appear to be mirrored in the

Channel Islands, demonstrating that societies in the region may not necessarily have followed a period dependent sedentary or mobile lifestyle, but may have practiced a mix of both. Hence, ephemeral settlements that have left little or no archaeological trace may have featured in both the Mesolithic and Neolithic, and likewise, mobility may also have been a feature of both periods.

If the analysis of human activity patterns on the island is one goal of this thesis, these will also be investigated on a wider scale with a consideration of Guernsey's place in a regional context. An unknown factor in the study area is the temporality and extent of maritime contacts between communities on the island and those of mainland societies from the time Guernsey became separated from the continental mainland during the Early Mesolithic. Added to which, there is currently little or no idea of the extent of seafaring technologies and capabilities during this period. Therefore, an interrogation of Guernsey's lithic record is required in order to answer the questions concerning these gaps in current archaeological knowledge.

**Summary**

As this brief outline thus far infers, there are many questions relating to human activity on Guernsey that need to be addressed, and it can equally be argued that the potential of lithics to provide answers to these questions is evident. Nevertheless, although lithics can theoretically inform us about past societies and their activity in the landscape, it can equally be asserted that obtaining meaningful information from this data-set would be problematic without the establishment of a rigorous analytical framework. This point is addressed once relevant aspects of the island's environment and archaeological resource have been reviewed.

## 1.3 Study Region

The Channel Islands form an archipelago situated in the gulf of St Malo, a large bay created by the northward jutting Cotentin peninsula of Normandy and the westward extending arm of Brittany (Figure 3). Guernsey, the second largest of the five major islands with an area of approximately 68 km$^2$, is located 24 km northwest of the largest island Jersey, and occupies the most peripheral position in relation to France with the nearest mainland point at a distance of 44 km. The other principal islands included in this group are Herm and Sark, which lie to the east of Guernsey and finally Alderney, which is located to the north, off the tip of the Cotentin peninsula.

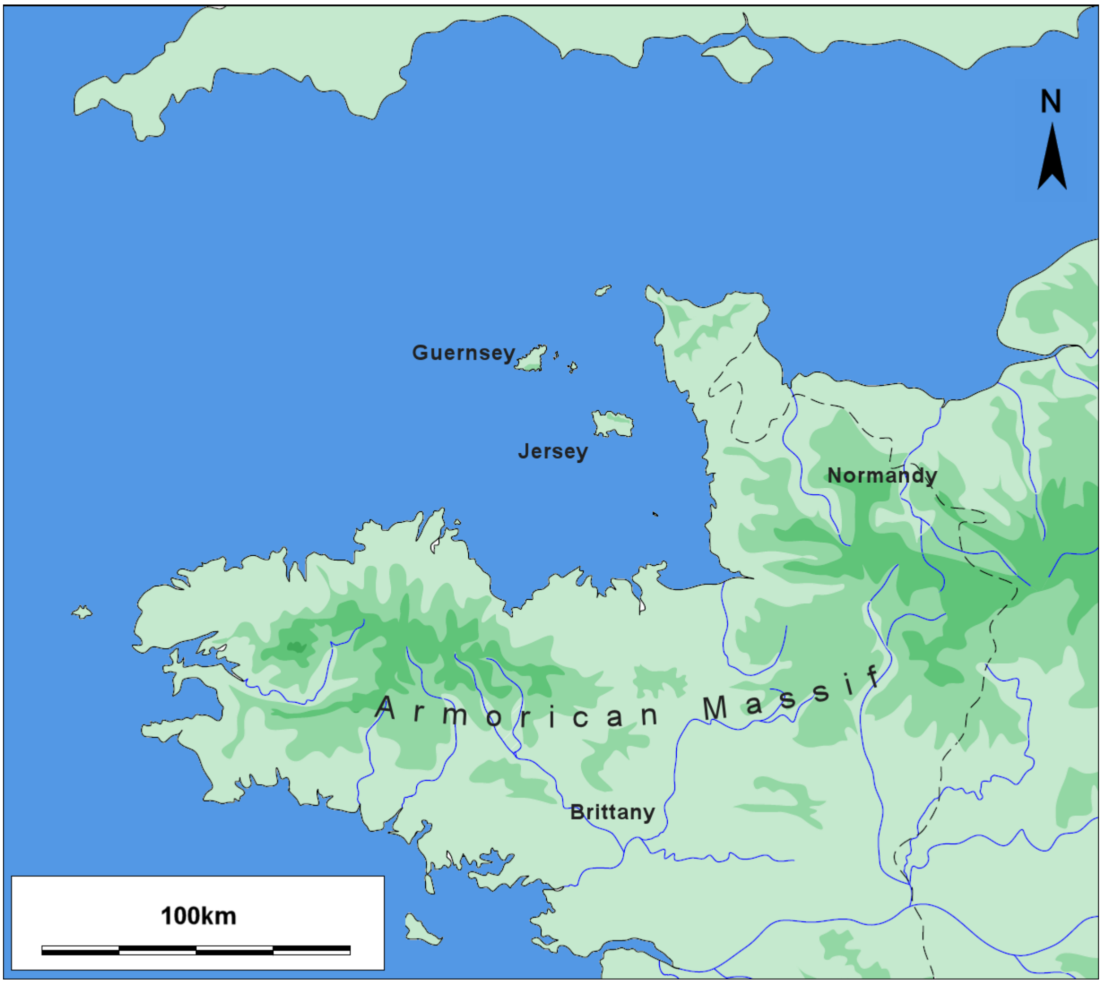



*Figure 3. Location of Guernsey in relation to the other Channel Islands and mainland areas (D Hawley).*

This location was chosen as the study area for a variety of reasons. The opportunity to study island archaeology is an attractive one as there are many pertinent questions to answer regarding cultural and technological relationships with mainland areas. Guernsey is an ideal case in point as it became separated from the continent by rising sea-levels during the Early Mesolithic period, yet remained in close enough proximity thenceforth to be influenced by contemporary mainland cultural developments, as attested by the architecture of the Neolithic funerary monuments. These topics are further explored in Chapter 2.

## 1.4 Study Scope

The term 'lithics' is used throughout this study to describe the material being analysed, as the focus of this thesis is primarily concerned with flint, chert and flaked stone where they are the worked product of human agency. Additionally, any stone used by people to work these materials such as anvils and hammers are included. Polished stone axes, which appear for the most part to be ceremonial objects and rarely found in dateable contexts are briefly reviewed only, as they have been thoroughly covered elsewhere by Kendrick (1928) and more recently by Patton (1991, 1993 & 1995). Nevertheless, the information they reveal about maritime connectivity is considered, as petrology demonstrates that many derive from off-island mainland areas.

Where other forms of supporting evidence are available; for example, funerary monuments, pottery and environmental data, these are incorporated.

## 1.5 Timescales

The chronological period covered by this thesis commences from the time Guernsey became separated from the mainland, conveniently dated to the Early Mesolithic period, through to the Early Bronze Age when flint use appears to diminish.

The separation of the Neolithic into three periods (early, middle and late) is current practice on the Armorican Massif with the middle period also subdivided into Ia, Ib & II in respect to perceived material cultural changes during this period (Marcigny *et al.* 2010, 143). This results in a fine grained chronological framework which may not necessarily be visible in lithic sequences. Nevertheless, to situate the archaeology of the island within a regional context these dates will be applied where possible and are listed in Table 1.

Less clear is the usage of the terms ‘Chalcolithic’ and ‘Beaker’ which are ignored by some and replaced by the ‘*Néolithique final*’ (2800-2500 BC) and ‘Early Bronze Age’ respectively (e.g. Verron 2000, 184). In this thesis, the period following the Late Neolithic is referred to generically as the Early Bronze Age, the term ‘Beaker’ is reserved for culturally specific items such as Beaker pottery and certain types of barbed and tanged arrowheads. These chronological terms are fluid however, and depend on the vagaries of $^{14}C$ dating and perceived changes in artefact sequences; as Patton (1995, 64) succinctly puts it, archaeological periods are “constructions which we impose on the data”.

Unless otherwise stated, actual Cal BC dates to 95% probability are employed to avoid confusion.

| **Period** | **Date** |
|---|---|
| Early Mesolithic | 9600 – 8000 BC |
| Middle Mesolithic | 8000 – 6500 BC |
| Late/Final Mesolithic | 6500 – 5000 BC |
| Early Neolithic (Villeneuve-Saint-Germain) | 5000 – 4700 BC |
| Middle Neolithic Ia (Cerny Ancien) | 4700 – 4600 BC |
| Middle Neolithic Ib (Pinacle-Fouaillages) | 4600 – 4300 BC |
| Middle Neolithic II | 4300 – 3500 BC |
| Late Neolithic | 3500 – 2500 BC |
| Beaker (Campaniforme) | 2500 – 2200 BC |
| Early Bronze Age | 2200 – 1900 BC |

*Table 1. Suggested Guernsey chronology based on mainland data from Normandy (Verron 2000; Marcigny et al. 2010).*

## 1.6 Thesis Structure

The thesis is divided into nine chapters. Chapter 2 situates Guernsey in a local and regional context; it examines the geology, sea-level changes, environmental sequence, archaeological record and current archaeological thinking. Additionally, the nature of islands themselves is discussed and how this subject must be considered when reviewing the archaeology. In Chapter 3, the history of archaeological development on Guernsey relating to lithics since antiquarian times is reviewed, past interpretations detailed and the current state of knowledge outlined. Working towards establishing a methodological framework, Chapter 4 examines the history of lithic interpretation and the current state of research. Chapter 5 addresses the methodological approaches that are employed in this thesis, how they have been developed and a definition of technical terms employed. The case studies, results and data collected during the study are detailed in Chapter 6, while Chapter 7 provides the resulting overview of Guernsey lithic technology and imported flint types. Chapter 8 presents a discussion of the interpretations that have been drawn from the research and how these add to our knowledge of human communities on the island. Finally, in Chapter 9 the thesis conclusions and suggestions for further research are presented.

# Chapter 2: Environment, Islands and Archaeology

This chapter provides an overview of four core aspects of the study area, without a knowledge of which the archaeology of Guernsey cannot be fully understood. Firstly, the emergence of Guernsey as an island is examined, the base geology and changes in sea-levels and coastline morphology from the Late Glacial Maximum (LGM) through to the Early Bronze Age. Secondly, the changing climate and environment on the island is investigated with the aim of establishing to what extent these factors may have influenced past human activity. Thirdly, the nature and context of island society is reviewed; islands and their communities have been the source of much archaeological debate since the 1970s-80s, especially concerning issues of connectivity and insularity in relation to neighbouring islands and mainland areas. Finally, in order to put the island's lithics into local and regional context the archaeological corpus of Guernsey is examined, covering aspects of material culture that provide complimentary, supporting, or conflicting information to the core of the study subject.

## 2.1 Geology, Topography, Environment and Sea

### Geology

The Channel Island archipelago is a partially submerged outcrop of the Armorican folded system dating from the early Palaeozoic era (500 mya), to which the Cotentin peninsula of Normandy and Brittany also belong. The name given to this geologically homogenous area is the Armorican Massif (Figure 3), a region that extends approximately 400 km east to west and a similar distance north to south (Roach *et al.* 1991, 1).

The triangular shaped land mass of Guernsey, (Figures 4 & 5) covers an area varying between 63.6 km$^2$ at high tide to 74 km$^2$ at low tide. The island can be conveniently divided into two halves: the southern part, known as the Southern Metamorphic Complex comprises the oldest rocks of the island composed principally of Precambrian gneisses dating to 2000 mya; while the north, known as the Northern Igneous Complex is largely composed of plutonic rock (*ibid.*). The rocks of the northern complex are comparatively younger than the southern, dating to between 550 and 700 mya. The eastern part of the Northern Igneous Complex consists of St. Peter Port gabbro, while the west and north comprise the Bordeaux Diorite group (*ibid.*).

As a result of the underlying igneous and metamorphic geology noted above, flint does not naturally occur on Guernsey. Where worked flint is found, the general small size of the worked pieces and rolled and pitted appearance of the remaining cortex indicates that communities were sourcing raw material in the form of pebble flint from local beaches, or raised beaches of former elevated sea-levels. Guernsey's beach pebble flint is found in a variety of colours and textures although predominantly comprising a light grey to olive material with white inclusions known as North Cotentin flint, named after the Cotentin peninsula of Normandy where this type of flint is also commonly found (Audouard 2009, 33). The origin of this flint is uncertain; Cretaceous chalk deposits that lie under the sea off the northwest coast of Guernsey are a possible source. However, Keen (1976) postulates that given the wide variety of flint found in beach pebble form and their location, the source is more likely to derive from Quaternary fluvial gravels deposited on the sea bed to the north of the island.

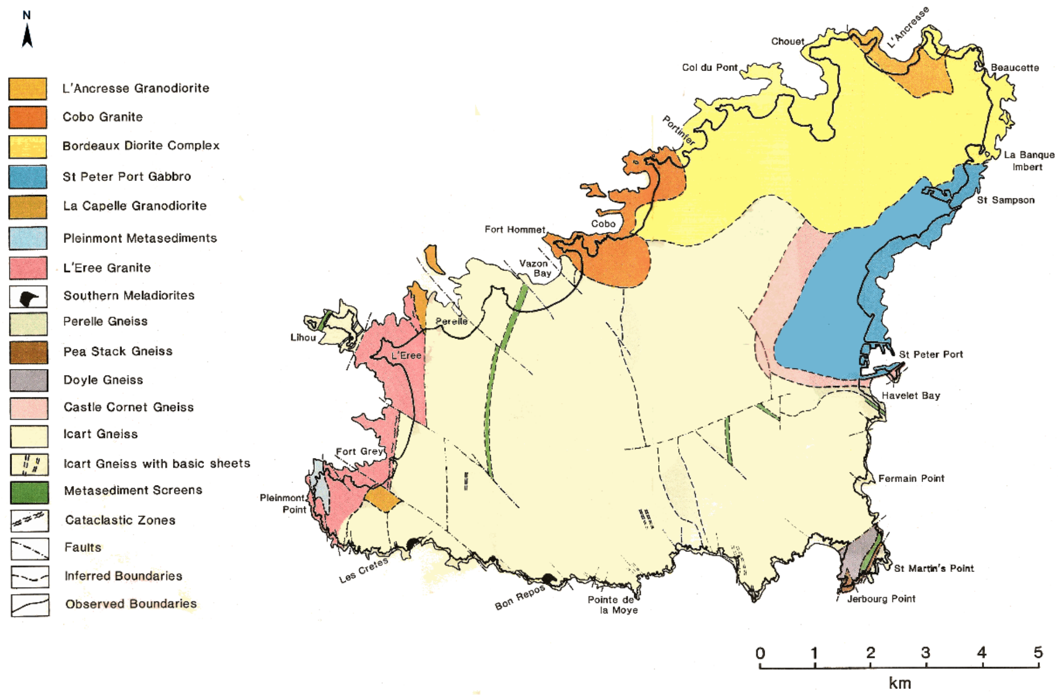



*Figure 4. The Geology of Guernsey (Adapted from Roach et al. 1991).*

**Topography**

The topography of Guernsey more or less mirrors the geological pattern and varies considerably from north to south. The Southern Metamorphic Complex forms a relatively flat plateau, a result of having been planed off as a wave cut platform during the Tertiary era (64–25 mya) (Jee 1982, 16). This is the highest part of the island reaching a maximum of 107 m above GD (Guernsey Datum) in elevation. The plateau is surrounded on the eastern and southern sides by precipitous cliffs and drained by several deep valleys running down to the sea, while the northwest edge is also drained by valleys, with these cutting down to the northwest facing coast (Figure 5).

In contrast to the southern part of the island, the northern and western coastal areas are lower lying, undulating but typically below 20 m GD. The morphology of the lower lying parts has been considerably modified since the start of the Holocene period by sea-level changes, the action of mobile dunes and the ingress of wind-blown sand; these events are addressed in the following sections.

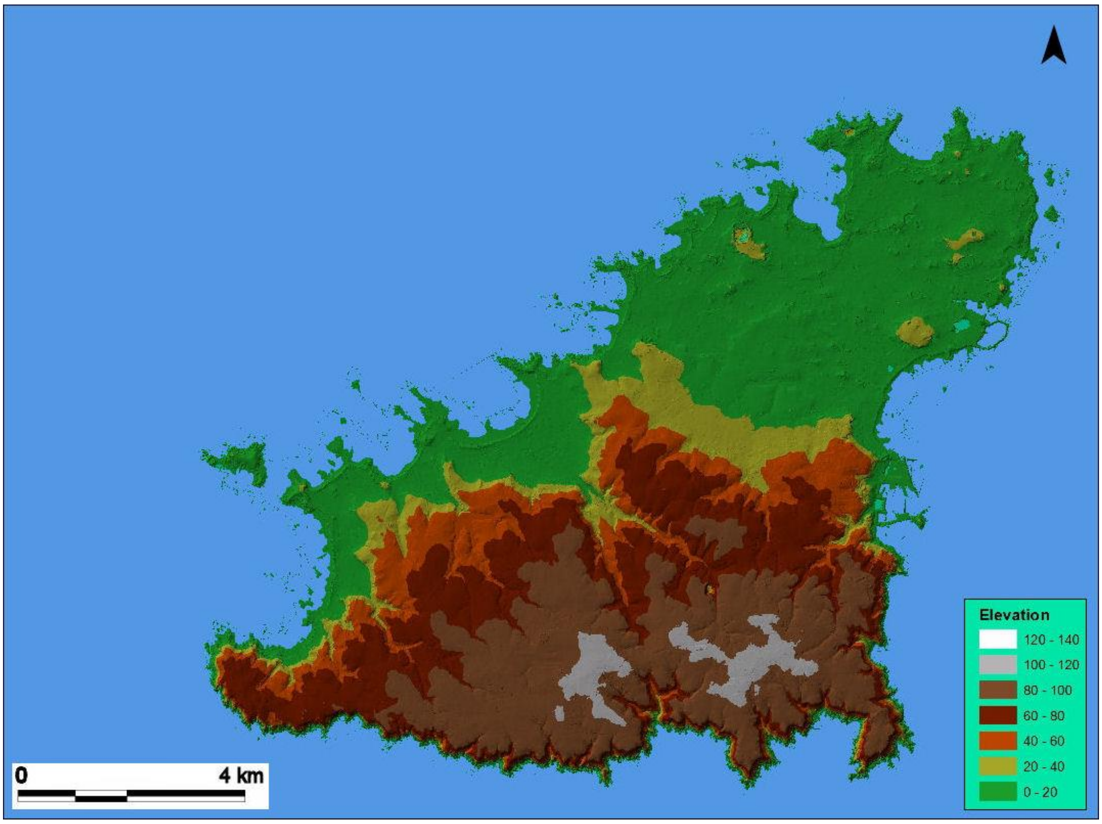



*Figure 5. The topography of Guernsey at mean sea-level (Digimap Guernsey 2016).*

**Late Pleistocene (2.6 million to 11,700 years ago)**

During the Late Devensian (28,000-22,000 years ago), northwest France and the Channel Islands were located in a region of periglacial tundra; it was during this period that the area was coated in a fine silt grade aeolian deposit known as loess (Antoine *et al*. 2003, 309). On Guernsey, loess deposits reach up to 5 m depth in the southeast of the island, and decrease in thickness towards the north and west where much of the sedimentary deposits are a result of solifluction downslope from their original accumulation on the higher southern plateau (Campbell 2000, 10). The significance of fertile free draining loess deposits to early agriculturalists is evident through the concentration of Linearbandkeramik (LBK) settlements on these soils across northwest Europe (Rowley-Conwy 2011, 439).

**Holocene (11,700 years ago to the present day)**

The Holocene deposits of Guernsey comprise: alluvium, peat, wind-blown sand and marine deposits of silt and sand (Keen 1981, 1). Around the lower lying west coast of the island, alluvium deposits are concentrated on valley floors and in former lagoonal areas behind coastal dunes and shingle banks. The alluvium is typically present as sandy silts, formed from reworked loess that was soliflucted and deposited during the Younger Dryas (Jones *et al.* 2004, 51). The former lagoons are also closely associated with the development of peats, which overlie the silts and vary in thickness from 0.4 m to 2.6 m, extending out in some cases onto the foreshores of west facing bays such as Vazon and Cobo (Figure 4). The presence of peat in these foreshore areas indicates loss of land as a result of sea-level rise and the mobility of coastal dunes. Chronological evidence for the creation of these peat layers is limited, but an Early Neolithic date is suggested by pollen samples (Campbell 2000, 180).

Wind-blown sand deposits of up to 2 m in depth occur around much of the west and north coast of Guernsey, reaching as far as 0.7 km inland (Keen 1981, 10). On Herm, (which due to the proximity to Guernsey should be regarded as a reliable proxy) optically stimulated luminescence (OSL) dating of sands and palaeosol horizons reveal that major phases of aeolian activity leading to dune formation occurred during the prehistoric era at 4000, 3000 and 2300 BP respectively (Bailiff *et al.* 2014, 902). A subsequent and extensive phase of sand accumulation blanketed the low-lying northern part of the island from the 13$^{th}$ century through to the 17$^{th}$ century AD (*ibid.*). The impact of these intrusive sands on human populations would have been fundamental with the loss of agricultural land and possible abandonment of settlements (*ibid*, 981). For the purposes of this thesis however, only the earliest event may be relevant as it falls during the Early to Mid-Bronze Age period. Nevertheless, a positive outcome of these past aeolian events for the archaeologist is the preservation of underlying archaeology as it becomes buried under the sand, the Les Fouaillages long mound on L'Ancresse Common being an example.

**Vegetation**

Post-glacial warming in northwest Europe led to substantial changes in flora and fauna (Ghesquière 2011, 17). Changes at a local level on Guernsey are currently not well established as there has been little modern palaeoenvironmental research, with

Campbell's thesis *Paleoenvironments of Guernsey and Alderney, Channel Islands* essentially focused on a limited number of specific locations on the two islands (Campbell 2000). Nevertheless, events on a regional level can be outlined from research in Normandy (Ghesquière 2011 & 2012) and Jersey (Jones *et al*. 2004). This research suggests that during the Younger Dryas (*c*.10,900 BC–9600 BC) Arctic-alpine conditions with a predominantly treeless landscape predominated (*ibid*., 49), which subsequently gave way to a wooded environment dominated by birch and pine during the Preboreal (*c*.9600 BC–8000 BC) (Ghesquière 2012, 48), with later, an increase in hazel alongside oak during the Boreal period (*c*.8000 BC–6500 BC) (*ibid*.). The development of a landscape dominated by woodland encouraged fauna such as deer, roe deer, wild boar and aurochs, all of which would have provided an ideal hunting resource for human communities (*ibid*.). Campbell's palynological work on Guernsey demonstrates evidence of woodland clearance by burning and animal grazing during the Early Neolithic (Campbell 2000, 306). Subsequently, from the Mid to Late Neolithic, a spread of alder carr *c*.4000 BC, is interpreted as a decline in exploitation of lower lying areas, and settlement and farming moving from the coastal plain to the higher inland regions (*ibid*., 335).

**Sea-level Change**

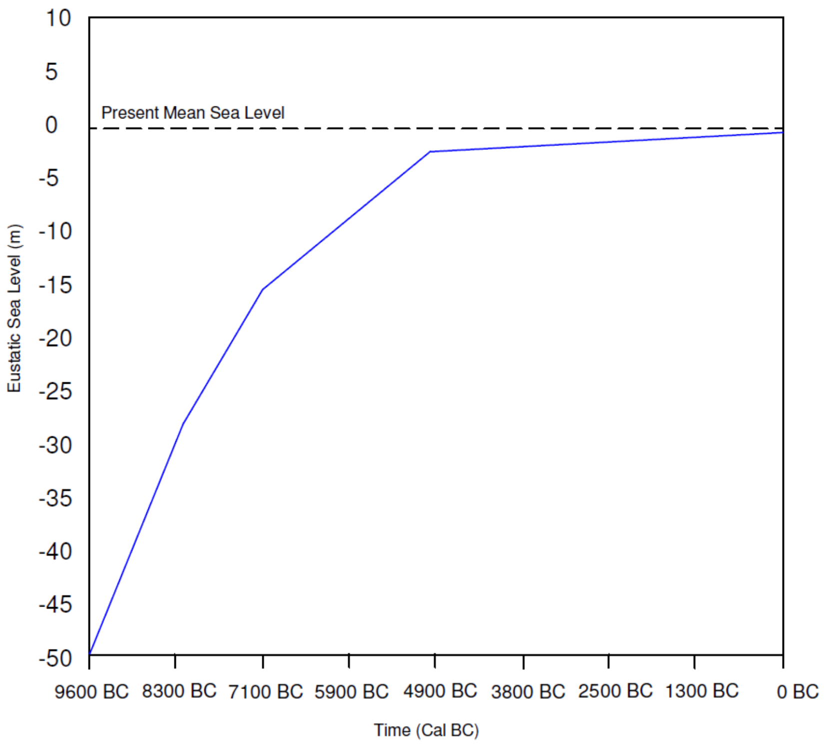



*Figure 6. Eustatic sea-level rise on Guernsey (Adapted from Sebire & Renouf 2010).*

Elevated sea-levels during past interglacials resulted in the formation of a series of raised beaches on Guernsey, visible at various locations around the island at 30 m, 18 m and 8 m above GD (Keen 1982, 9). These features appear to correlate with Marine Isotope Stages 11 (395 kya), 7e (230 kya) and 5e (125 kya) respectively (Renouf & James, 2011, 75). Of relevance to human populations in prehistory is the presence of flint pebbles embedded in these deposits that could have provided an alternative supply to shoreline beach pebbles.

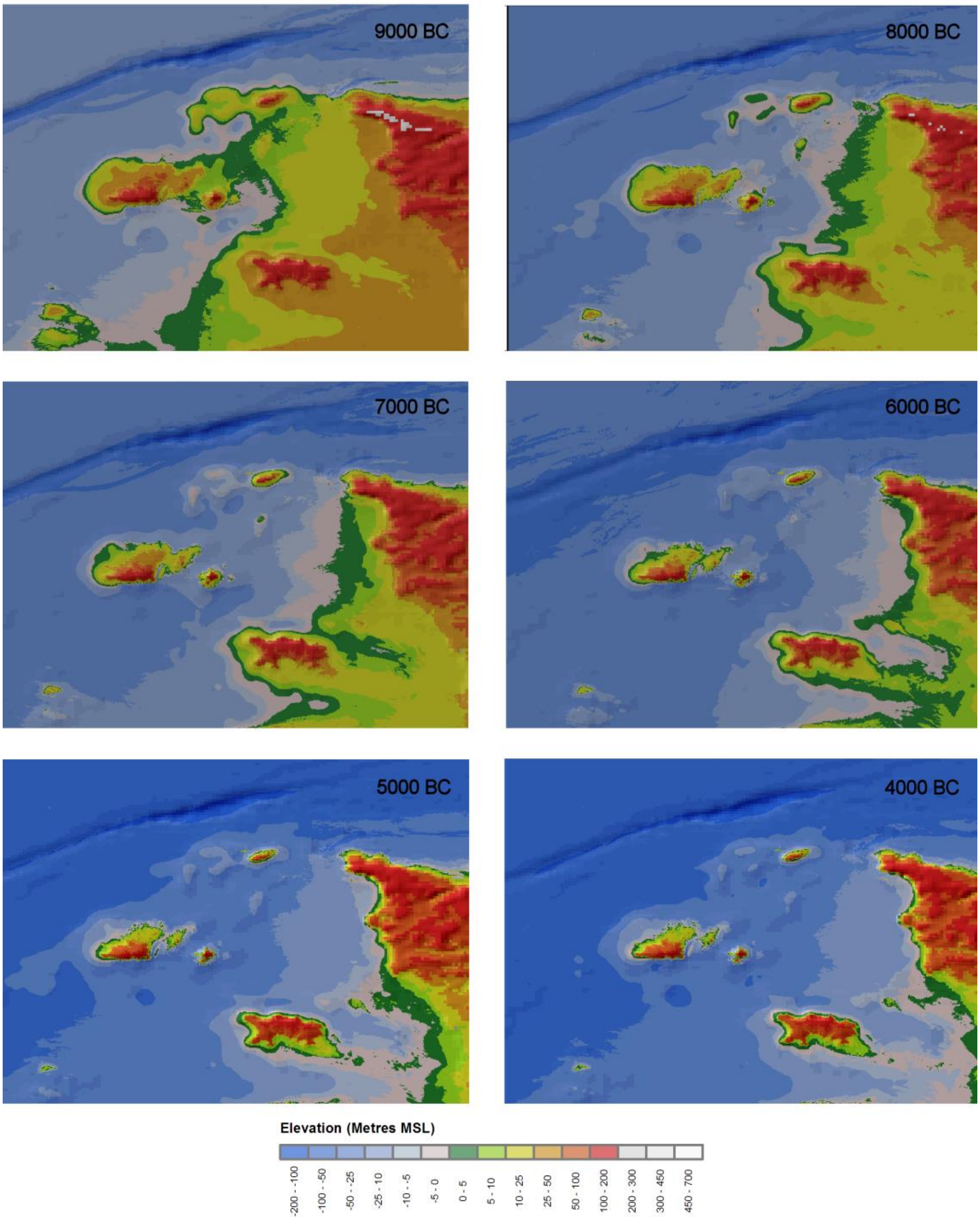



*Figure 7. Palaeogeographic models of the Channel Islands from 9000 BC to 4000 BC. All images depict mean sea-level (Sturt et al. 2013).*

The chronology of Holocene sea-level changes on Guernsey was unclear until 2010 when Jersey Geologist, Renouf (Sebire & Renouf 2010) combined his own analysis with a synthesis of recent palaeogeographic research on the French North Atlantic coast by Lambeck (1997). The results of Renouf's work, shown in Figure 6, are included and referred to in this thesis as they represent a more localised view of the study area than the model (Figure 7) published by Sturt *et al.* (2013), that derives from a larger geographical dataset covering Britain, Ireland and the North West French coast. A further model has also recently been published for the Channel Island area by Conneller *et al.* (2016). These inundation models all broadly agree however, and reveal that during the last glacial maximum and late glacial *c.*30,000-12,000 years ago, Guernsey together with the other Channel Islands, Jersey, Alderney, Herm and Sark formed part of the adjacent continental mainland. Subsequently, towards the end of the last glaciation period the climate warmed, seawater locked up as ice melted and was released into the oceans causing a eustatic sea-level rise, ultimately resulting in the formation and separation of the Channel Islands (Figures 6 & 7). On a local level, Guernsey became separated from the Normandy's Cotentin peninsula during the Early Mesolithic period at *c.*9,000 BC, although this would initially only have been at mean high water (MHW), with complete separation occurring some centuries later. The sea-level continued to rise cutting off Sark from Guernsey by *c.*8000 BC and Herm in the sixth millennium. Finally, Jersey became an island with separation from the Cotentin between 5000 and 4500 BC.

However, there are flaws in using palaeogeographic models, although they may be broadly representative of past sea-level changes they do not account for the erosion of sea-bed soft sediments, uncertainties regarding past tidal ranges and the shallowness of the waters around both Guernsey and Jersey. Furthermore, there are no confirmed or accurate sea-level index points (SLIPs) for the Channel Islands and the Normanno-Breton Gulf (Sebire & Renouf 2010, 375; Sturt *et al.* 2013, 3969).

The archaeological evidence on Guernsey for sea-levels being lower during the prehistoric era is indicated by the double cist on the high tide line on Rousse Headland (De Guerin 1916, 328; Hawley & Waite 2016, 766), and the remnants of a tidal zone megalithic structure identified by Hawley and Waite, also on Rousse Headland (Hawley & Waite 2016). Additionally, a fragment of serpentine ring, probably dating to the Early Neolithic was found below the current high tide line in the Vazon Bay peats (Kendrick 1928, 55). In Jersey, similar evidence was found in St Helier where a cist was revealed buried to a depth of 4.5 m in clay and peat deposits that had been subsequently been inundated by the sea (Hibbs 1986, 214).

Corresponding evidence for sea-level change on the Brittany coast is unequivocal, where amongst many other similar examples there are passage graves in the tidal zone at Ezer and Roc'h-Avel, Finistère (Giot & Morzadec 1992), a gallery grave at Kernic situated on a beach just below the high tide line, and the stone circle at Er Lannic which becomes partially submerged at high tide (Giot 1990). However, as Renouf points out, obtaining a fine grained indication of sea-level rise from *c*.5000 BC is problematic due to a flattening off of the graph during this period (Sebire & Renouf 2010, 374).

Recent research has revealed that relatively rapid jumps in sea-level from melt-water pulses (MWPs) caused by the collapse of melting ice sheets occurred between 12,600 and 11,500 BC, with a rise of 16-24 m, *c*.10,900-9700 BC (28 m) and a smaller jump of 1-3 m at *c*.6200 BC (Bell & Warren 2013, 35). The latter two of these events are relevant to the chronology of the study area as the event centred on 10,000 BC would have occurred at around the time that Guernsey was becoming separated from the mainland, and the subsequent *c*.6200 BC rise would have been contemporary with the climatic downturn discussed below. Despite uncertainties surrounding the extent of these sea-level rises on Guernsey, it can be argued that at certain times the degree of change may have been perceptible to human communities at a generational level, with recent estimations of land loss reaching as much as twenty percent over five hundred year periods during the Middle Mesolithic period (Sturt *et al.* 2013, 3973). The effect of these changes on the human populations of the island and their responses is difficult to ascertain, but there would been an impact on food resource levels with a constantly diminishing area of land and shore over time. The ultimate result of the sea-level rise was to separate the north of the island into two parts by a shallow tidal channel, La Braye du Valle at Grand Havre Bay. The date of this separation is uncertain but recent research suggests the Early Bronze Age, although complete separation occurred at high tides only (Jelly 2011, 37). Despite a degree of uncertainty in the dating, these events highlight the dynamic and mobile nature of the island's coastline.

**Climate**

Over the duration of the period under review a net warming of the climate occurred, the fact that this was not a smooth curve is evident from short term climatic events of increased storminess and cooling events throughout the period covered by this study. During the later Mesolithic a short period cold event occurred which is reflected in the isotopic signal in Greenland ice cores, as well as pollen and lake sediment sequences (Marchand 2014, 120; Walker *et al.* 2012, 652). The onset of this cold spell is dated at *c*.6200 BC and lasted for around 150 years; the drop in temperature is estimated to have been 1 to 2°C on average with an increase in westerly winds and precipitation (*ibid.*). A further event occurred in *c*.2200 BC (Walker *et al.* 2012, 654) again suggesting a period of cooling over several centuries associated with an increase in the strength of north Atlantic westerlies and increased precipitation, this concurs with palaeoenvironmental evidence from Herm which may account for the wind-blown sand event dated to this time (Bailiff *et al.* 2014).

**Summary**

A consideration of the events discussed above is essential as islands are especially vulnerable to factors such as changing sea-levels as a result of a high shoreline to land area ratios. Conclusions therefore, should not be drawn about the nature of prehistoric societies without considering their responses to these changes. The idea that the physical environment has a determining effect on human society has been largely shunned by the archaeological community in the post processual era where the preferred view is that societal change was driven by human agency (Coombes & Barber 2005, 303). However, recent improvements in the dating of various environmental and climatic events have enabled archaeologists to draw links between these and concurrent changes in the archaeological record that indicate impacts on human societies (*ibid.*). Although climatic, sea-level and environmental changes should not be considered as always having a negative effect and people may have perceived change as a constituent of their environment, there are environmental challenges that island societies would have been more susceptible to than their mainland equivalents such as land loss, sand blows and the fragility of fauna and flora. Human responses to these occurrences may be detectable in the archaeological record and are therefore, relevant to the research in this thesis. Hence, it is intended to cross reference the lithic record of Guernsey with the known and dateable climatic events discussed in the previous sections.

## 2.2 Islands and the Sea

The study of island societies arguably elicits a wider ranging discussion of inter-community mobility and contact than any other type of geographical entity; therefore, any study of Guernsey would not be complete without a consideration of these issues. Further, discussions surrounding the nature of island societies tend to follow the paradigm shifts in archaeological theory itself with debates oscillating between an unquestioning acceptance of sea voyages as a given, and a view supporting sporadic contacts and voyages as exceptional events (Van de Noort 2015, 28). Kendrick, who was instrumental in providing an early archaeological synthesis of the Bailiwick of Guernsey, articulated the contradictory nature of island archaeology by pointing out that the comparative isolation of an island can result in a "retardation in cultural progress", or even "a sheer backwardness". On the other hand, he also suggested that the relative security of an island can lead to "accelerated cultural development", arguing that island cultures should not just be regarded as "reflections of their mainland counterparts" (Kendrick 1928, 3). In some respects, Kendrick was reflecting what Rainbird has more recently described as the "heritage of western literature" that portrays islands as metaphors for isolation and insularity (Rainbird 1999, 217).

An isolationist view of islands persisted through the advent of processual archaeology with the concise, but frequently quoted paper by Evans (1973), viewing islands and the societies that inhabit them as isolated laboratories suitable for the study of cultural progress. Although this approach may now be viewed as somewhat anachronistic, especially when put into the context of the study region where an awareness of the scale and complexity of maritime connections is evident, this paper still remains a landmark in island studies.

A fertile area for island studies is the Mediterranean, where Cherry (1981), Broodbank (2000) and Rainbird (1999) have all made contributions to a corpus of island knowledge that can equally be applied to islands elsewhere. Cherry employed biogeographic models to correlate island size and relative accessibility with the colonisation process (Cherry 1981, 14). Cherry's biogeographic approach, like that of Evans arguably results in a rigid and deterministic view of islands as isolated places, a fact not missed by Rainbird who critiqued biogeography and proposed that the archaeologist look to "alternative ways of understanding", and to develop a more balanced interpretation of island societies (Rainbird 1999, 216). Continuing the Mediterranean theme, Broodbank in his work; *An island archaeology of the early Cycladles,* argued that any circumscribed area can count as an island, not necessarily one surrounded by sea; thus extending the island metaphor to dry land (Broodbank 2000, 16-18). He went on to suggest however, that the element surrounding the island is the important factor, as is what people are able to do with it. He concluded by stating: "it is inadvisable to interpret the Cyclades without paying enough attention to the fact that they are islands" (*ibid.*, 43). It is evident from these works that although Guernsey is a discrete and bounded geographical area, thus convenient for material culture studies, the wider concept of an island's relationship with the sea and mainland areas, in effect what Broodbank (2000, 21) calls the "islandscape" must be considered.

Of relevance to the study of islands and this thesis is the assumption that there may be a direct correlation between changes in material culture and the degree of maritime contact (Jacobi 1976, 80). This is disputed by Warren however, who argues that commonalities across societies in materials, typology and style were more a case of communities 'choosing' to demonstrate their connections and where these commonalities do not exist, either in whole or in part does not necessarily mean lack of contact (Warren 2015, 54). If we are to accept this view, then we face a dilemma in interpreting Guernsey's material record as evidence for either insularity or connectivity. This is not necessarily an archaeological impasse however, for as Sturt & Garrow (2015, 169) suggest, it is indicative of the blurred nature of the data. They go on to argue that the concept of insularity and connectivity as mutually exclusive states is overwrought and the "multiple processes and shifting nature" of maritime connections should be taken into account (*ibid.*). It is apparent that the archaeology of islands is one of fluidity and that studies such as this thesis should be receptive to the many nuances of maritime connectivity that are played out through time.

**Sea-faring**

Although many island studies are wide ranging and multi-disciplinary, it can equally be argued that the most fundamental issue, the actual mechanism by which sea voyages were achieved remains under-researched leaving the debate surrounding maritime connectivity still open (Van de Noort 2015, 28). For example, the diffusionist approach of Childe (1957) conceived of the spread of 'civilisation' flowing across land and sea with little regard as to how the sea voyages were actually achieved (Cherry & Leppard 2014, 11).

In the study area, Guernsey, Herm and Sark are all visible from the north-west coast of Jersey (Figure 8) and in ideal weather conditions from the Cotentin peninsula. The islands would therefore have been a constant visual presence attracting the curiosity of land based and sea-faring peoples in the area.

*Figure 8. From right to left, Sark, Herm, Jethou and Guernsey viewed from the north-west of Jersey (www.panoramio.com).*

An in-depth analysis of prehistoric sea going vessels is beyond the remit of this thesis but it is pertinent to list the principal types and to consider the difficulties that may have been faced by people voyaging in the study area. Van de Noort (2015, 32) proposes three broadly defined categories of vessel: log boats; hide covered boats and sewn plank boats, all considered capable of sea voyages. These three types are likely to have been paddled during the period under review as no material evidence of sails have yet been found (*ibid.*, 36). Log boats are the most common survivors in the archaeological record and date from at least the 8th millennium in Europe (Sturt & Van de Noort 2013, 69). Sewn plank boats have been recovered in the archaeological record with the earliest dating from the Early Bronze Age, although the level of technology used in their construction implies a long period of evolution (*ibid.*, 71). Hide covered frame boats are thought likely to have existed in the Neolithic, but the nature of their construction means that they do not survive in the archaeological record (*ibid.*). It is worthwhile noting here that Rowly-Conwy in his paper *Westward Ho!* envisaged Early Neolithic LBK communities exploiting river channels in hide boats on their migration across northwest Europe (Rowly-Conwy 2011, 439). This raises the possibility that as Early Neolithic communities spread to the Atlantic façade, they may already have possessed the technology to make sea voyages despite not having a seafaring tradition.

Any discussion of sea voyages in the study area during prehistory is complicated by evolving sea-levels as tidal ranges and currents are likely to have changed over time (Patton 1995, 18). Nevertheless, levels had stabilised during the earlier half of the Neolithic (Figure 6), therefore it is reasonable to assume that maritime conditions are likely to have been similar to the present. The difficulty of a sea crossing to Guernsey would have been compounded by strong tidal flows that run alternately from north to south, and from south to north parallel with the Cotentin coast (*ibid.*), meaning any voyage would had to have been made within a single tide, unlikely to have been achievable in a paddled craft. Alternatively, the journey could have been achieved by island hopping from the mainland to Jersey (which only itself became an island towards the end of the Mesolithic), and from there to Sark, then on to Herm or Guernsey.  Far from increasing isolation of the islands as Patton claims (*ibid.*), the act of passing from one island to another would arguably have promoted connectivity between the islands and mainland societies.

The paper by Anderson-Whymark *et al.* (2015) discussing the affinities between Late Mesolithic microliths from the Isles of Scilly and those from Belgium has highlighted the extent of seafaring capabilities of communities at that time. Nevertheless, maritime voyages should not be trivialised, as Van de Noort asserts, the sea would have been a dangerous place and traversing it was probably the reserve of specialised people (Van de Noort 2015, 39).

**Summary**

From this brief review of islands and the sea it can be demonstrated that a study of material culture from this context comes with substantial baggage of complexity that would perhaps remain peripheral in a consideration of mainland areas. The terms insularity, isolation and connectivity have perhaps become something of an overwrought mantra in island studies, to the extent that the finer points of human response to an island environment are overlooked. Therefore, rather than the polarised view of islands being in either a connected or isolated state, a more diverse view should be taken encompassing the range of possibilities that fall in between. The lack of physical remains of sea going vessels on Guernsey and the adjacent French mainland may appear to have created an impasse, but it is one that allows material culture to be concentrated on as the medium through which the ebb and flow of maritime contacts can be discerned.

## 2.3 An Archaeological Overview

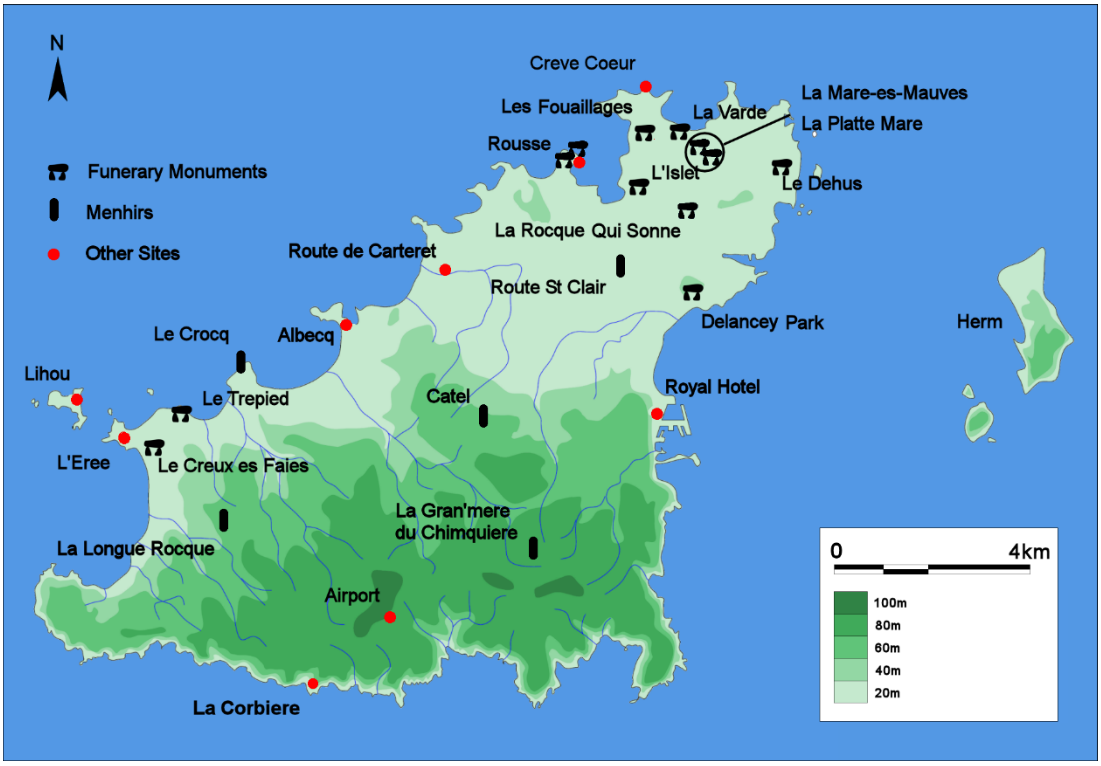



*Figure 9. Funerary monuments, menhirs and other sites mentioned in the text (D Hawley).*

This section presents an overview of the archaeology of the study area as it stands at the time of writing. The aim is to situate the island's worked flint into its archaeological context with other forms of material culture found on Guernsey and in the immediate region. Flint is reviewed only briefly here to avoid repetition, as it is examined in greater detail in the forthcoming chapters. The overview is presented in chronological sequence starting from the Mesolithic period.

**Mesolithic (9600 BC-5000 BC)**

*Overview*

The archaeological narrative relating to this period on the adjacent French mainland is principally focused on cultural groups, lithic tool typology and possible habitation sites with some researchers discussing the 'carrying capacity' of landscapes, and the 'seasonal rounds' and 'base camps' of hunting groups (e.g. Ghesquière 2012, 496; Marchand 2014, 266). For the Channel Islands, a review by Patton published in 1993 takes a rather deterministic approach of hunter-gatherers responding to changes in environment and sea-levels with little consideration of how communities may have exercised choice to adapt to these events. He concluded with the admission that this period in the Channel Islands "is still poorly understood" (Patton 1993, 16). In contrast, a more recent and comprehensive study of the Mesolithic period by Conneller *et al.* (2016) on the Channel Islands has greatly increased the understanding of this period and takes a more optimistic and 'peopled' approach with a consideration of the ways in which communities would have responded to changes in their environment. The paper argues that sea-level rise at this time would have "created opportunities for maritime travel and access to a greater quantity of marine resources" (*ibid.*, 41). Given the climatic, sea-level and environmental evidence reviewed earlier in this chapter however, it is not clear that these perceived 'benefits' would have extended into the later Mesolithic period when human activity on the island appears to diminish.

*Radiocarbon Dates*

Two Mesolithic sites on Guernsey have been $^{14}C$ dated, both to the middle period; the Les Fouaillages long mound where charred hazelnut shells were found in association with fragments of Mesolithic worked flint, and similarly, charred hazelnut shells obtained from a hearth at the Mesolithic flint scatter site on Lihou.

| Site | From (Cal BC) | To (Cal BC) | Lab Code | Ref |
|---|---|---|---|---|
| Les Fouaillages | 8295 | 7830 | SUERC-23721-5 | Ghesquière 2012 |
| Lihou | 7483 | 7299 | OxA-14198 | Sebire & Renouf 2010 |

*Table 2. Mesolithic $^{14}C$ dates from Guernsey.*

*Lithics*

Material culture surviving from the Upper Palaeolithic/Mesolithic period on the island essentially comprises lithic finds only, principally flint but with some stone hammers and bevel ended tools. The first indications of human activity come from the east coast of the island at the Royal Hotel site in St Peter Port, excavated in 1999-2000 (Sebire 2012, 228). Three Blanchere points were found here dating to the Upper Palaeolithic, a period when Guernsey may still have been connected to the adjacent French mainland (Guyodo & Hamon 2005, 390). The lithic record for the Early Mesolithic period on the adjacent continental mainland is characterised by obliquely truncated points and isosceles triangles (Ghesquière 2012, 31). However, there is little evidence of these or any other traces of human activity on the island at this time.

In Normandy, the Middle Mesolithic is defined by points with retouched base, scalene triangles and backed bladelets, while in the west of Brittany the first half of the Mesolithic is characterised by the Bertheaume industry (*ibid.*). In northwest France this period is further divided into two sub-phases with the second stage marked by the appearance of large asymmetric points commencing *c.*7500 BC (*ibid.*). Whereas previously, Mesolithic evidence from the Channel Islands was described as “extremely sparse” (Patton 1993, 9), a significant number of sites are now known as a result of a synthesis carried out by Conneller *et al.* (2016). The most prominent of these sites is on the now tidal island of Lihou (Figure 9), off Guernsey’s west coast where some 15,000 pieces of worked flint were excavated (*ibid.*). Quantities of lithics from this period have also been found in several other coastal locations around the island (*ibid.*). Following the relative abundance of Middle Mesolithic finds, the apparent lack of lithics of Late Mesolithic style (symmetric and asymmetric inversely retouched trapezes and/or triangles) on Guernsey is pertinent and suggests a decreased level of human activity.

*Settlement*

Although mobility is likely to have been a feature of Mesolithic communities there is some evidence on Guernsey of people returning repeatedly to locales. Excavation at Lihou revealed a high density of lithic deposition that may represent residential activity or phases of reoccupation (Conneller *et al.* 2016, 33). Flint scatters also mark zones of activity elsewhere on Guernsey, it is through these that the preference of Middle Mesolithic communities for coastal locations on the island is apparent, for example: La Corbière, Crève Coeur and Les Fouaillages, along with single flint finds at many other coastal sites (Conneller *et al.* 2016). It would be reasonable to suggest that other sites on lower lying land have been lost to rising sea-levels.

**The Transition**

*Overview*

The Mesolithic/Neolithic transition on the Armorican Massif, especially in Brittany, has provoked much discussion over the years with debates over whether the 'Neolithic Package' was adopted by indigenous Mesolithic communities, or was introduced by the migration of Neolithic farmers into the area (Marchand 2000, 401; Scarre 2011, 41). Similarly, it can be argued that discussions surrounding the Mesolithic/Neolithic transition in the Channel Islands are a microcosm of the wider debate on the French mainland, and to a certain extent Britain; was the transition on the islands a result of the movement of people, things, ideas, or a combination of these? Guernsey had long since been totally cut off from the mainland, hence, the introduction of domestic plants and animals would have involved sea-faring (Patton 1995, 21).

On the French mainland, discussions are very much focused on the idea of incoming Villeneuve-Saint-Germain (VSG) groups practicing a farming economy replacing indigenous Mesolithic communities (in French archaeological literature at least, but see Scarre below) with minimal consideration being taken of the interactions that may have taken place between them (e.g. Pailler *et al.* 2008; Marcigny *et al.* 2010). This 'migrationist' mode of thinking is also articulated by Marchand (2007, 234) who talks of the "the arrival of human groups" towards the Atlantic, and although he highlights "interactions" between Mesolithic and Neolithic communities, this is essentially limited to a discussion of convergences in the technology and typology of arrowheads.

In respect to the Channel Islands, both Kinnes, (1982, 27) and Patton (1995, 21) speak of Neolithic 'colonisation' as a result of perceived material culture affinities with the mainland. Bukach, on the other hand, argues for a phase of "cooperative interaction" between Mesolithic communities and incoming Neolithic groups, based on both Mesolithic flint tools and Early Neolithic pottery being found at L'Erée and Les Fouaillages (Bukach 2004). This association may equally be the result of post depositional mixing however, and the later reworking of the mound at Les Fouaillages. Garrow and Sturt pursue a similar but subtler line of reasoning to Bukach arguing that what we see on the Channel Islands during this period "is the emergence of change as a result of contact between (and perhaps fusion of) indigenous and external communities" (Garrow & Sturt 2016).

Arguably, these multi-faceted interpretations are a result of applying broad brush concepts from wider regional narratives onto a very localised and unique study area. Further, the evidence for Early Neolithic 'farming' on Guernsey is scant. This crucial phase in the island's prehistory is addressed in more detail and reinterpreted in Chapter 8.

**Neolithic (5000 BC-2500 BC)**

*Overview*

Compared with the relatively ephemeral traces of the Mesolithic, the Neolithic period marks a proliferation of material culture in many different forms across the study area. This period has recently been the subject of a comprehensive synthesis by Marcigny *et al.* (2010) in a paper spanning the earliest Neolithic through to the Middle Neolithic II. Flint, stone axes, pottery and settlement evidence are covered by this paper although little or no mention is made of the more symbolic aspects of material culture from this period; this is largely a functional appraisal. In Brittany however, the Neolithic has benefitted from an overview by Scarre (2002, 2007 & 2011) who considered the ritual and symbolic behaviour of communities and how interaction between Mesolithic communities and the advent of farming groups may have led to the beginnings of monumentality on the peninsula. With an increasing prominence of megalithic funerary monuments towards the Middle Neolithic there is an understandable transfer of focus by many researchers to the morphological development and chronological sequences of these structures, arguably to the detriment of their symbolic role (e.g. Boujot & Cassen 1993). However, this issue has more recently been addressed to a large extent by Cassen (2000) who concentrated in particular on the symbolism of carvings found in funerary monuments and standing stones, and Scarre (2011) who has provided insight into the landscape settings of Brittany's funerary monuments. Essentially, the emphasis for this period in the study area is on monumentality, ritual and the axe trade, to the exclusion of the flint industry, despite the fact that this aspect of material culture is likely to preserve essential information relating to the relationship between people and things.

*Radiocarbon dates*

A range of $^{14}C$ dates have been obtained from a variety of sources indicating a precocious Early Neolithic presence on the island comparable to that of Normandy

(Marcigny *et al.* 2010, 124). A date from L'Ouzière, Jersey, associated with Early Neolithic pottery is included suggesting communities active on both islands at an early stage.

| Site | From (Cal BC) | To (Cal BC) | Lab Code | Ref |
|---|---|---|---|---|
| Royal Hotel | 5370 | 5200 | OxA-12996 | Sebire & Renouf 2010 |
| Les Fouaillages | 4940 | 4720 | SUERC-23729 | Pioffet 2010 |
| L'Erée | 4981 | 4787 | OxA-28670 | Sturt pers. comm. |
| Airport | 5060 | 4935 | Beta-399625 | De Jersey pers. comm. |
| L'Ouzière | 5050 | 4848 | OxA-28949 | Patton & Finlaison 2001 |

*Table 3. Early Neolithic $^{14}C$ dates from Guernsey and Jersey.*

A range of further dates resulting from a synthesis by Sturt (2015, pers. comm.) are available for the Middle Neolithic (Table 4). These give an indication of the temporality of activity at monuments (Le Déhus and Les Fouaillages) and a possible settlement site at L'Erée (Garrow & Sturt in prep.).

| Site | From (Cal BC) | To (Cal BC) | Lab Code | Ref |
|---|---|---|---|---|
| Le Déhus | 4231 | 3982 | OxA-12542 | Sturt pers. comm. |
| Le Déhus | 4226 | 3962 | OxA-21199 | Sturt pers. comm. |
| Le Déhus | 4226 | 3957 | OxA-12540 | Sturt pers. comm. |
| Le Déhus | 4223 | 3946 | OxA-12541 | Sturt pers. comm. |
| Les Fouaillages | 4519 | 4343 | BM-1892 | Sturt pers. comm. |
| Les Fouaillages | 4463 | 4243 | BM-1893 | Sturt pers. comm. |
| Les Fouaillages | 4441 | 3781 | BM-1894 | Sturt pers. comm. |
| Les Fouaillages | 3986 | 3766 | BM-1896 | Sturt pers. comm. |
| L'Erée | 4326 | 4053 | OxA-28669 | Sturt pers. comm. |
| L'Erée | 4315 | 4050 | OxA-28668 | Sturt pers. comm. |
| L'Erée | 4229 | 3986 | OxA-28900 | Sturt pers. comm. |
| L'Erée | 4229 | 3982 | OxA-28901 | Sturt pers. comm. |

*Table 4. Middle Neolithic $^{14}C$ dates.*

### *Lithics*

The Early Neolithic period on Guernsey is notable in the lithic record through the import of flint blades from Normandy. Although these are only found in small quantities, with less than 40 fragments found on the island, the presence of this material provides unequivocal proof of mainland contact during this period. The use of local flint is more difficult to discern which could reflect either a sparse population at this time or the use of technology and techniques that merge with later periods.

In northwest France, flint-working technology changes substantially between the Early Neolithic and the Middle Neolithic periods with blades being replaced by flakes using hard hammer techniques and less core preparation (Audouard 2009, 63; Cassen *et al.* 1999, 246). The technology on the Channel Islands appears to follow this pattern to some degree with the widespread use of flakes and a preponderance of scrapers and transverse arrowheads (Audouard 2009, 66), although the source for this information is based on lithic assemblage from the Les Fouaillages site only. Also notable, in contrast to the Early Neolithic is an absence of imported flint with an exclusive reliance on local beach pebble material for tool-making.

During the Middle Neolithic period onwards, flint-working technology seems to reach a stasis on Guernsey, with few discernible changes in raw material procurement or tool making technology apart from the appearance of barbed and tanged arrowheads replacing the transverse type towards the end of the Neolithic (*ibid.*). Guyodo also points out that much of the lithic data from this period is based on small amounts of tools and debris from funerary monuments, little is known of lithics in their broader landscape context on the island (Guyodo & Hamon 2005, 407).

*Stone and Flint Axes*

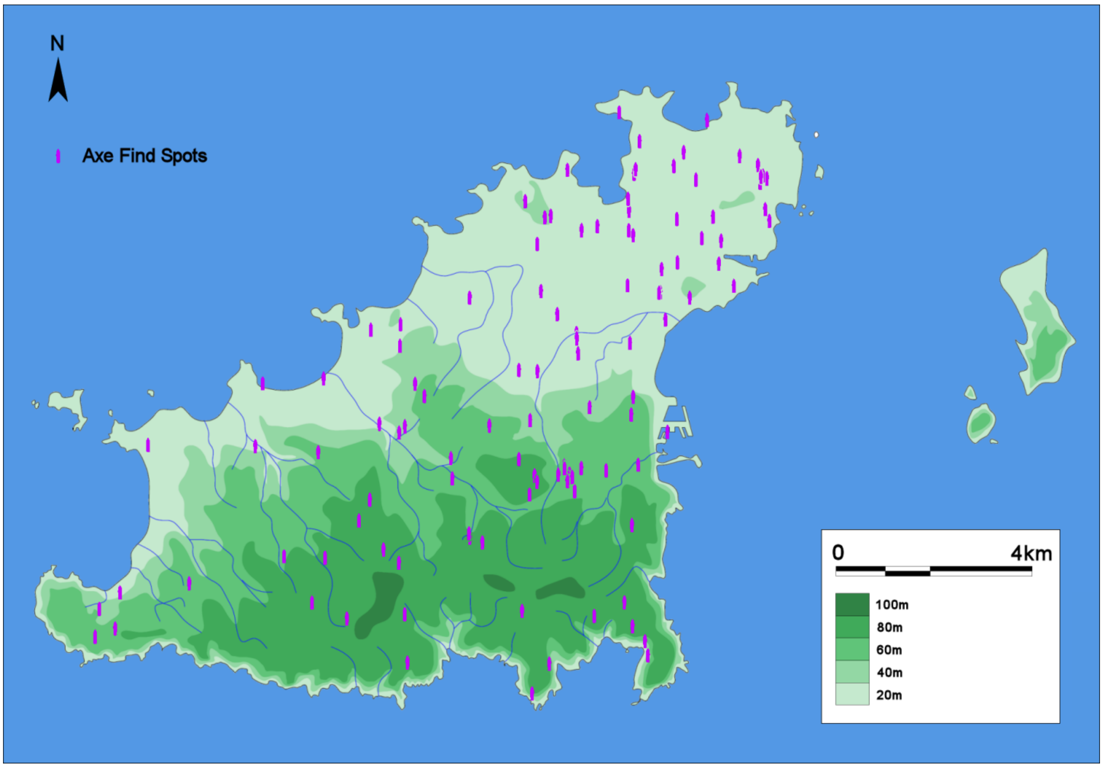



*Figure 10. Axe find locations (Guernsey SMR).*

Potent symbols of the Neolithic, the fine workmanship invested in many polished stone axes, far beyond functional requirements, implies that these objects may have been considered as high value prestige items that figured in maritime exchange networks. Petrological analysis infers that some 'exotic' sources of material were valued above local sources suggesting that these objects may provide clues to exchange networks between the islands and the mainland (Patton 1991, 34). The sources include type 'P' dolerite from Le Pinacle on Jersey, type 'A' dolerite, jadeite and fibrolite from Brittany, and flint, probably from mines in Normandy (*ibid*., 38).

Extensive studies concerning the distribution of axes on the Channel Islands has been carried out by Patton (1991; 1993 and 1995) complementing the information originally compiled by Kendrick (1928). Patton noted a drop off in the percentage of mainland imported axes compared with those made from local material, with the highest percentage of imported axes on Jersey, a lower percentage on Guernsey and the lowest on Sark. This distribution, Patton suggests, is indicative of a trade network from the mainland via Jersey, with perhaps Jersey controlling the distribution to Guernsey, and Guernsey providing Sark (Patton 1991, 40). However, a failing in this argument is that Sark lies between Jersey and Guernsey and therefore may have acted as a stopover. The smaller proportion of imported axes on Sark may simply represent a smaller population being unable, or demonstrating less desire to be involved in exchange networks. Patton also notes that there is a problem establishing the chronology of stone axes as very few have been found in secure archaeological contexts on the islands (Patton 1991, 34). This issue has been partly redressed by recent research in Brittany, although this still indicates a wide chronological spread with the establishment of axe distribution networks by the late 5$^{th}$ millennium continuing until the Early Bronze Age (Pailler 2007, 223).

Notable in the information obtained from the Guernsey SMR is the relatively even distribution of axes across the island irrespective of topography (Figure 10), in contrast to other forms of material culture (Figures 1, 11 & 13). This distribution may be significant, suggesting that far from simply being symbolic items, axes may also have fulfilled a more functional role with woodland clearance taking place on the higher southern plateau island during these periods.

*Polished Stone Rings*

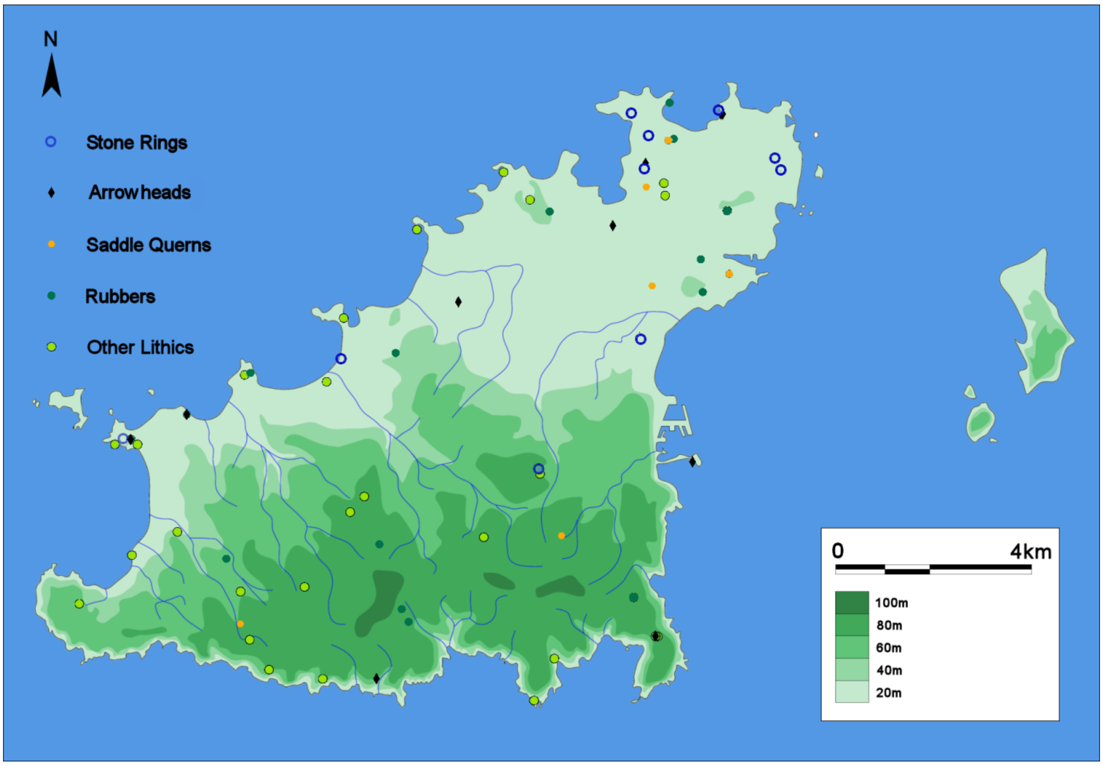



*Figure 11. Distribution of stone rings and various other artefacts of flint and stone (Guernsey SMR).*

A further class of imported lithic artefact found in the Channel Islands are polished stone rings (Figure 12), typically manufactured from schist, although some found on Jersey may be jadeite (Patton 1995, 33). These artefacts derive from two sources, each being dimensionally distinct with the greater number deriving from the Paris Basin dating from the Early Neolithic VSG phase, and the reminder from Brittany belonging to the same period. Kendrick (1928, 55) lists several rings from Guernsey, a partial Brittany variant found 3 m deep below tide level in peat deposits in Vazon Bay and a complete Paris Basin type (Figure 12) found at Le Trépied Field to the west of St Peter Port (Figure 11). Fragments of the Paris Basin variant of ring were also recovered from the early phase of Les Fouaillages and more recently a similar fragment was recovered from the L'Erée excavation (Sturt & Garrow 2011), reinforcing the evidence of early phases of activity at these two sites and connectivity with the mainland areas of Normandy and Brittany.

Smaller stone rings, distinct from the Early Neolithic types described above, and probably made from serpentine have been recovered from passage graves in both Guernsey and Jersey (Kendrick 1928, 55). These could have been worn as pendants (*ibid.*) and their inclusion in these monuments suggests a Middle Neolithic date or later.


*Figure 12. Polished stone ring, probably schist from MGU361 (Guernsey SMR).*

*Pottery*

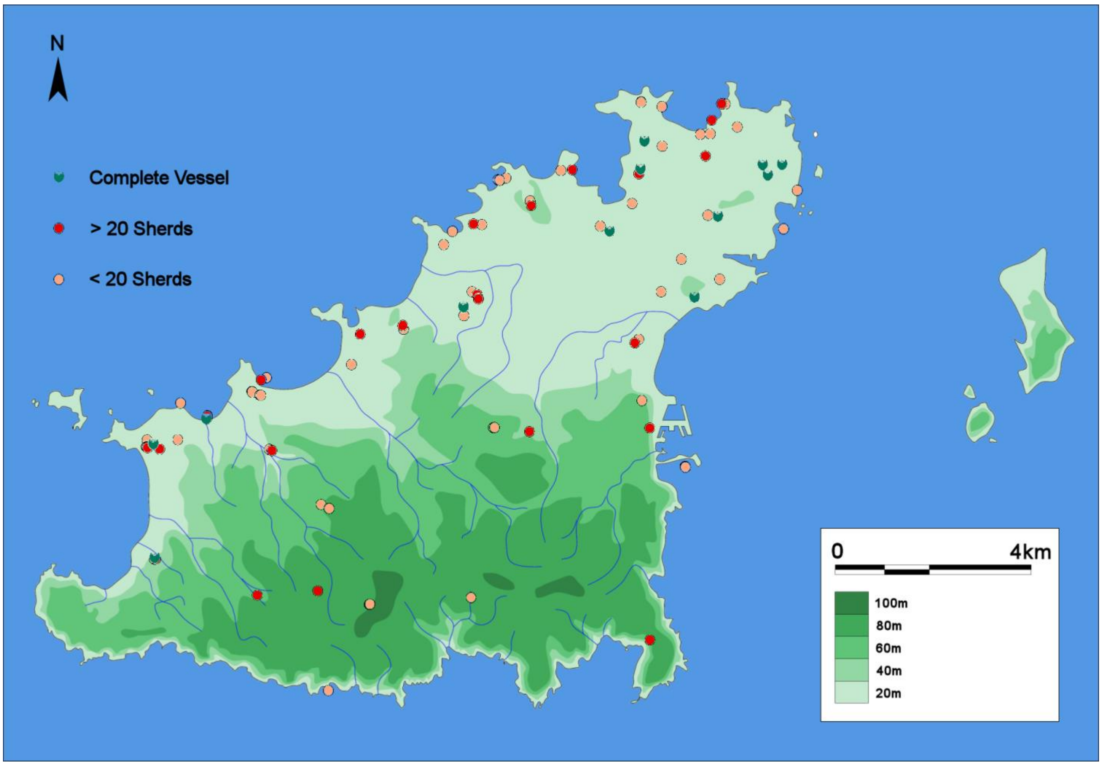



*Figure 13. Neolithic and Bronze Age pottery distribution. Complete vessels are typically associated with funerary monuments (Guernsey SMR).*

With the publication of Constantin's research thesis on regional pottery sequences in 1985, the Early Neolithic period in the Channel Islands and northwest France became typologically and chronologically anchored to the pottery type-sites of

Villeneuve-Saint-Germain and Cerny groups that emanate from the Paris Basin Late Bandkeramik culture (Constantin 1985). This has resulted in the ceramic sequences of this period undergoing several revisions. For example, pottery associated with the early phase of Les Fouaillages, was considered by Kinnes (1982) to belong to a late phase of the Bandkeramik sequence. Constantin (1985, 307) revised this to represent a local derivative of the Cerny complex which he termed 'Cerny J' ('Jersey' after similar material from Le Pinacle) but did point out that a sherd from Les Fouaillages should be attributed to the VSG group. Subsequently, Patton (1993, 41) proposed a Cerny style with Brittany derived Castillac influences, which he termed 'Pinacle/Fouaillages'. However, more recently Pioffet (2010, 20) attributed this assemblage to the final phase of the VSG. The situation, it can be argued, is one of fine nuances and fluid interpretation, although it is apparent that the Channel Islands are located at the convergence of two Neolithic spheres of influence resulting in a mix of styles as well as a degree of island identity being asserted.

Apart from Les Fouaillages, some of the earliest pottery found thus far on the Channel Islands derives from L'Ouzière on Jersey and the Royal Hotel site on Guernsey, both of which have been attributed to the Early Neolithic VSG final phase (*ibid.*). This dating is contemporary with similar assemblages from Le Haut Mée in Brittany and Lery, Normandy, placing them in the 1st quarter of the 5th millennium BC (*ibid.*). Also associated with an early phase of the Neolithic are some fragments of pottery recovered at L'Erée, which provides a clear indication of a long sequence of occupation at the site potentially spanning the earliest part of the Middle Neolithic through to the Early Bronze Age (Garrow & Sturt in prep.).

The change in ceramic typology is quite distinctive during the Middle Neolithic II period with Cerny and Pinacle/Fouaillages styles being replaced by the Chaséen (Verron 2000, 112). Channel Island passage graves are typically associated with the hemispherical Chaséen style pots as they are in Normandy (Patton 1995, 47). The Late Neolithic period marks a further change in pottery style to the Seine-Oise-Marne (SOM) complex, undecorated flat-based wares also known as 'flower pot', this pottery is often found associated with gallery graves (Joussaume 1988, 135; Patton 1995, 64; Verron 2000, 152). Pottery also associated with the terminal phase of this period is the Beaker style, typically found in gallery graves and also as secondary depositions in Guernsey passage graves (Driscoll 2010, 69). During this period, in contrast to the Early and Middle Neolithic there is no detectable link to Brittany pottery styles, perhaps inferring a hiatus in maritime connectivity with this region (Patton 1995, 64).

Although pottery styles on the Channel Islands appear to largely follow trends evident on the Armorican Massif, thin section petrographic analysis of Guernsey's Late Neolithic Delancey Park monument pottery (Nash 2012) and similar analysis of prehistoric material from several other sites on the island by Bukach (2002) confirms that inclusions in the ceramics are of local provenance. This implies that where pottery is concerned, similarities in material culture were the result of the transfer of ideas rather than materials.

Recent research by Pioffet (2010) has greatly increased the knowledge of Guernsey's pottery sequence and put it into context with continental assemblages, although the principal thrust of this enquiry was at the Les Fouaillages long mound covering the Early and Middle periods of the Neolithic only. Thus, there is still the need for an island-wide survey of pottery sequences extending into the Bronze Age. Despite these shortcomings, the existing corpus of knowledge will be exploited where possible as an aid to the establishment of lithic sequences for this thesis.

*Menhirs and Statue-Menhirs*

*Figure 14. The Câtel statue-menhir (D Hawley).*

The standing stones of the Channel Islands remain something of an enigma as their dating remains problematic (Patton 1995, 72). The extant menhirs are equally distributed between Guernsey and Jersey with seven on each island (Figure 9). Two of these, both on Guernsey, are decorated anthropomorphic figures known as statue-menhirs, La Gran'mere du Chimiquière located at the entrance of St. Martin's

Church and the Câtel menhir which stands within the graveyard of Castel Church (Figure 14). Neither of these is considered to be in their original location so it is unlikely any archaeological investigation would teach us more about their chronology or purpose. La Gran'mere du Chimiquière has been extensively reworked at a later date and in all probability was a 'shouldered' statue-menhir similar in morphology to the menhir at Castel Church, with breasts and what may be a necklace carved in *haute relief* (*ibid.*). Stylistically these carvings are similar to those found in Brittany, both on statue menhirs such as Kermené and engraved on the uprights of the *allées couvertes* of Tressé and Prajou-Menhir, this would suggest a Late Neolithic date (Giot *et al.* 1979, 308; Scarre 2011, 236). It must be pointed out however, that the tradition of anthropomorphic menhirs goes back to the Early Neolithic with an example being found at the long house site of Le Haut Mée, eastern Brittany (Cassen *et al.* 1998, 50). Interestingly, a putative anthropomorphic menhir example was also found on Guernsey as a component of the Les Fouaillages monument. It was described by Kinnes (1983) as a "shouldered marker slab".

In addition to the statue-menhirs described above should be added the engraved figure incorporated as a capstone of Le Déhus passage grave, as this may also once have been a standing stone before being incorporated into the monument (Kinnes & Hibbs 1989; Cassen *et al.* 2015). Similar incorporations have been found in Brittany passage graves, for example, a menhir that was broken into three sections was recycled and incorporated into La Table des Marchands, Gavrinis and Er Grah passage graves (Scarre 2011, 86). However, although similar in architectural practice, the anthropomorphic engraving at Le Déhus is very different in style from the symbolic imagery carved on the menhirs of Brittany and thus remains an enigma, although it does hint at influences from that part of the continent.

Menhirs, similar to the funerary monuments of the Channel Islands are likely to be only a small representative of the original number, meaning that drawing any conclusions from their distribution is unlikely to reveal their original purpose. Theories do abound however, ranging from phallic symbols to markers in the landscape and processional ways (Giot 1979, 408). Some chronological evidence is available, from the Little Menhir and the Broken Menhir on Jersey, which have been dated to the Late Neolithic/Early Bronze Age on the basis of stratigraphic evidence following an excavation by Rybot in 1934 (Patton 1995, 73).

*Funerary Architecture*

Early dates for the arrival of communities practising a Neolithic economy on Guernsey (Table 3), are complemented by $^{14}$C results from residues on pottery deriving from the Les Fouaillages long mound which give a date of 4940-4720 Cal BC (SUERC-23729) (Pioffet 2010, 6). This makes Les Fouaillages (Figure 15), the earliest manifestation of a funerary monument found thus far on Guernsey and indeed of the entire Channel Islands with the construction morphology also unique for the area, being compared to the Manio series of long mounds in Brittany (Kinnes 1982, 27). The monument was utilised and reworked from the Early Neolithic through to the Early Bronze Age (*ibid.*) and the secure cross dating of associated lithic and pottery assemblage with $^{14}$C dates has provided a useful chronological sequence with which to compare other collections on the island.

*Figure 15. The Les Fouaillages long mound, L'Ancresse Common, Vale, Guernsey (D Hawley).*

Following the Early Neolithic, the appearance of passage graves on the Channel Islands marks the archaeologically highly visual Middle Neolithic period (Figure 16). These monuments typically have a narrow entrance terminating in a broader chamber and are covered by an earthen mound (Kinnes & Grant 1983, 15). The concentration of this type of monument on the Channel Islands is matched in southern Brittany, but less so on the adjacent Cotentin peninsula of Normandy, suggesting perhaps, stronger cultural contacts with the former during this time (Patton 1995, 88). Despite architectural affinities with Brittany there are insular details in the Channel Island monuments such as lateral chambers which are rare outside of the Channel Islands, these features can be found at La Hougue Bie, Faldouet and Grantez on Jersey; and La Varde and Le Déhus on Guernsey (*ibid.*, 41).

Absolute dating of passage graves on both the Channel Islands and the Armorican Massif has proved problematic as the vast majority of these monuments were excavated prior to the appearance of sophisticated dating techniques. Furthermore, $^{14}C$ dates that have been obtained more recently have suffered from sampling problems and large error margins (Cassen 1993, 199; Schulting *et al.* 2010). This problem has been redressed somewhat on Guernsey with AMS and stable isotope dating on human remains from the Le Déhus passage grave, which has led to a greater understanding of the chronological relationship between monuments on the Channel Islands and those on the mainland *(*Schulting *et al.* 2010). Using selected human bones that were considered from their location in the chambers to be amongst the earliest burial deposits in the tombs, dates were obtained confirming the Middle Neolithic II construction of the monument (Table 4). These dates are broadly contemporary with La Hougue Bie on Jersey and, suggests Schulting, perhaps only slightly later than the earliest passage graves in Normandy (*ibid.*). The passage graves on both Guernsey and Jersey appear to have been appropriated and reused during the later Neolithic and Early Bronze Age. For example, on Guernsey, Le Déhus, Le Creux ès Faies, La Varde and Le Trépied (Figure 16) all contain later material such as barbed and tanged arrowheads and Beaker pottery alongside earlier artefacts (Patton 1995, 68).

*Figure 16. Le Trépied passage grave, St Saviours, Guernsey (D Hawley & L Waite).*

Regarding the distribution and landscape setting of the island's monuments, a paper by Patton noted that passage graves on Guernsey display a coastal distribution as they largely do on the Armorican Massif, this contrasts with Jersey where the distribution is further inland (Patton 1997). Patton subsequently notes that the later gallery graves are mainly coastal in distribution on both islands. Patton then used these changes in distribution to reflect changes in the social structure of island societies through the Middle to Late Neolithic. This approach may be erroneous however, as it is likely that a large proportion of monuments have been destroyed (Hibbs 1986, 208), especially those once located in the now heavily cultivated centre of the islands resulting in a bias of survival towards the poorer less exploited soils such as L'Ancresse Common on Guernsey. Hence, it can be argued that the remaining monuments alone cannot give a reasonable indication of the original distribution, or which part of the landscape communities were exploiting at any given time.

*Settlement*

The physical visibility of the upstanding Neolithic funerary monuments is in striking contrast to the invisibility of any form of house or structure on the island. On the French mainland, settlements become notable during the Early Neolithic with LBK communities practicing farming and living in communities comprising massive long houses (Verron 2000, 92). However, archaeological traces of settlements diminish towards the western margins of the Armorican Massif with a trend towards sites marked by scatters of artefacts, hearths and ovens rather than domestic architecture (Scarre 2011, 52). This blurred aspect of settlement is especially pertinent when considering the Mesolithic/Neolithic transition in Brittany, where a certain attachment to place is evident during the Mesolithic. For example, in the coastal area of the Morbihan in Brittany at Téviec, Hoëdic and Beg-an-Dorchenn extensive shell middens were used as cemeteries, and occupation evidence in the form of lithic scatters and paved areas with central hearths is evident (Marchand 2014, 329).

Guernsey thus far appears to conform to the same pattern as the adjacent mainland, with a lack of evidence for domestic architecture but with concentrations of artefacts marking out possible areas of human activity in the landscape. Nevertheless, some tantalising glimpses of Neolithic residence on the island have occurred, although these do nothing to suggest as yet that there were any substantial domestic structures of any sort. Hints of possible post holes were revealed at the Royal Hotel site (Sebire 2012, 196), while hearths have recently been excavated at the Airport site and L'Erée, both suggesting some form of residence, albeit fleeting. Apart from these glimpses however, it is the concentrations of lithics scattered across the island that remain the principal witnesses to patterns of human occupation in the landscape.

**Early Bronze Age**

*Overview*

Arguably, the Early Bronze Age is one of the most archaeologically visible periods through portable material culture such as pottery and arrowheads, yet, one that we know the least about on Guernsey. In fact, it would be reasonable to suggest that there has been no fundamental advance in the knowledge of this period since Patton's synthesis was published in 1995 (Patton 1995, 96).

The Late Neolithic/Early Bronze Age marks a move away from multiple burials in funerary monuments and the start of the circulation of 'prestige' flint objects. This change in societal focus led Patton to suggest the collapse of a Neolithic 'tribal' formation in the Channel Islands and its replacement by local elites vying for access to mainland exchange networks (Patton 1995, 96). The presence of 'elites' in Brittany during this period is also discussed by Nicolas (2011) in relation to the control of networks circulating prestige goods such as finely worked Armorican arrowheads. A degree of stress also becomes evident in society at this time; there is evidence of a change in settlement patterns in Normandy, Brittany and Jersey with the appearance of palisaded or walled enclosures and a movement to more defensible situations on promontories and elevated positions (Ghesquière & Guyodo 2008, 116). It is argued in this thesis that a similar pattern occurs in Guernsey.

*Radiocarbon Dates*

No $^{14}$C dates are available for this period.

*Lithics*

During the Late Neolithic/Early Bronze Age, as with the preceding Neolithic period, lithics deriving from funerary contexts are more visible than those from 'non-site' sources. This period is typified by 'fancy' forms, such as barbed and tanged arrowheads and Grand Pressigny 'dagger' blades, a phenomenon perhaps initiated by competition with the appearance of metal. Beyond these highly visible forms of lithic working however, the more functional nature of the industry on the island is thus far poorly understood.

*Pottery*

A type of pottery unique in decoration although not in form is the Jersey Bowl (Figure 17). This style was first acknowledged by Hawkes (1937, 78) and was at first thought to be specific to Jersey. However, since that time finds of this type of vessel have also become common on Guernsey, if not more so than Jersey with the largest assemblage recovered thus far from the excavation at La Hougue Catelain (Hill 1990, 827; Salanova 2000, 67). Although similar in form to Beaker vessels and from the same chronological period, Jersey Bowls are specific to Jersey, Guernsey and Herm, and appear to represent a strictly insular development of the Beaker form. Intriguingly, whereas Beaker vessels are largely associated with funerary monuments on the Channel Islands, Jersey Bowls appear equally in both burial and non-burial contexts (Hawkes 1937, 76).

The most recent dating evidence for the Beaker period based on Bayesian analysis of a range of $^{14}$C results gives a range of 2570–2050 BC for central and north-western Europe (Manning *et al.* 2014), although this period is extended to *c.*1600 BC for the Normandy region (Noël 2008, 590). Chronologically therefore, and assuming a parallel development of Jersey Bowl and Beaker styles, this form of pottery belongs to the cusp of the Late Neolithic/Early Bronze Age.

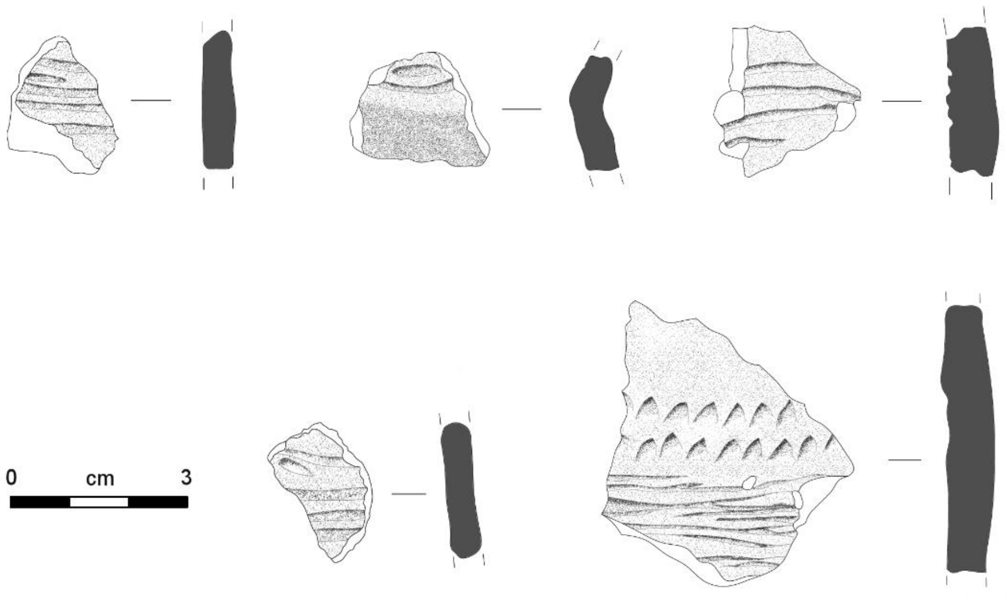



*Figure 17. Fragments of Jersey Bowl from the Rousse Tower (RT15) excavation (D Hawley).*

*Funerary Architecture*

Diverse types of funerary monuments become manifest on the Channel Islands during the Late Neolithic period and into the Early Bronze Age: gallery graves (*allées couvertes*) cists, and cists-in-circles. Gallery graves are few in number on the islands with the sole surviving possibility on Guernsey being the Delancey Park monument (Nash 2012), and Ville-ès-Nouaux and Le Couperon on Jersey (Patton 1995, 84). These monuments typically comprise two parallel rows of uprights supporting capstones (Joussaume 1988, 132). Cists and cists-in-circles comprise circular mounds surrounded by a wall of slabs or boulders with a small central slab built chamber or cist, these structures are especially associated with Guernsey and Herm (Kinnes & Grant 1983, 18). A typical example of this type of monument is L'Islet in St Sampson, Guernsey excavated in 1912 by La Société Guernesiaise. This structure consists of a 'D' shaped enclosure of stone settings with a central cist and adjoining cists to the north and south (*ibid.*, 46). An additional cist-in-circle possibility on Guernsey is a structure located on the shore at Rousse Headland now partially submerged at high tide which consists of a 10 m stone circle with remnants of a southwest facing entrance (Hawley & Waite 2016, 766).

*Settlement*

Similar to the preceding Neolithic period, the lack of evidence for any long term settlement patterns in the form of structures is equally apparent. Nevertheless, the large amounts of material culture such as pottery and lithics that have been uncovered on coastal promontories and peninsulas such as Jerbourg, L'Erée, La Hougue Catelain and Rousse Headland imply that the move to defendable locations noted on the adjacent French mainland may also have occurred on Guernsey.

## 2.4 Conclusion

This chapter has introduced the study area and placed it into a broader regional and maritime context. It is evident that changes in climate and environment during the early and middle Holocene period would have had an impact on the communities of Guernsey and people's response to those changes must be considered when reviewing the archaeological record. Likewise, the problems and potential pitfalls inherent in island studies have also been examined and have demonstrated that the archaeology of the islands, like island communities themselves, cannot be studied in isolation but must be situated and analysed in a regional context.

The review of Guernsey's archaeological record highlights the diversity and richness of material culture on the island. Yet, at the same time it is clear that conflicting interpretations and significant gaps remain in this corpus of knowledge, thus clouding the picture of communities who inhabited the study area, where they lived, and the extent of their connectivity with mainland areas. As discussed in Chapter 1 however, argued further here and in the succeeding chapters, the lithic record of Guernsey has the potential to resolve these conflicts and fill the gaps in current archaeological knowledge; this will, it is intended, lead to a more informed view of past peoples of the island.

The issues and questions raised in this chapter are returned to in establishing a methodological framework for this study in Chapter 5, and in the presentation and discussion of results in the concluding chapters. The following chapter considers how scholarly enquiry past and present has resulted in the current corpus of lithic knowledge on Guernsey.

# Chapter 3: Lithic Research on Guernsey, Past and Present

An understanding of past archaeological interpretations is necessary in any study of the present, as the views we hold today are largely shaped by the efforts of previous generations of archaeologists; these past views also serve to remind us of the contingency of archaeological knowledge. This is certainly the case for the Channel Islands where the sterile, empty and reconstructed funerary monuments are essentially constructs of well-meaning archaeological endeavour during the 19th and 20th centuries.

Since the late 1990s however, larger scale rescue excavations ahead of development have taken place on the island, with greater care being taken in the recovery and recording of artefacts. This approach has also resulted in the discovery and curation of large quantities of lithics that have the potential to add to the archaeological knowledge of Guernsey. This archaeological corpus both past and present is reviewed here with the emphasis being on artefacts of flint and stone, and the extent to which these have contributed or otherwise to the current state of knowledge.

## 3.1 Antiquarians, Archaeologists and Guernsey

The earliest archaeological research and excavation carried out on Guernsey in what could be termed a systematic manner was by the Lukis family in the 1840s (Patton 1995, 7). Frederick Corbin Lukis (1788–1871), born in St Peter Port, Guernsey, became an active antiquarian on the Channel Islands, principally on Guernsey, Herm, Sark and Alderney (*ibid.*). Moreover, the preservation and survival of many of the artefacts found in the islands' monuments is a result of Lukis and his family collecting, recording and curating them. A comprehensive record of these excavations was also kept by Lukis and is contained in a seven volume unpublished work *Collectanea Antiqua* archived in the Guernsey Museum (Sebire 2005).

Although three of the *Collectanea Antiqua* volumes, I, II & VI, contain illustrations of stone implements, these predominantly feature polished stone axes with only one page in volume II showing flint tools (Figure 18), consisting of arrowheads from various megalithic sites on the island (Lukis 1853, Vol. II, 107). There is also a section in Vol. VI (137–9) that has some discussion of a flint axe production site on Alderney, and a further chapter on "stone instruments" on pages 356-67 (*ibid.*). However, this chapter concentrates on tools such as quern stones and pounders, and again, there is little mention of flint tools apart from noting that "chippings or flakes of flints, arrow-points and indented flints are found on the island, as they are in

Britain and France" (*ibid.*). Despite the lack of detail concerning flint-working, it would be reasonable to state that the Lukis family provided the foundation for subsequent archaeological research on the island. Indeed, much of the work in the following century was little more than a synthesis of their endeavours. It is from the Lukis archive that Kendrick extracted most of his information concerning the megalithic remains in Guernsey, published in his work, *The Archaeology of the Channel Islands Vol.1, the Bailiwick of Guernsey* (Kendrick 1928).


*Figure 18. Watercolour of Guernsey arrowheads from the Lukis archive (Guernsey SMR).*

Little subsequent interest was taken in the flint tools of the island until La Société Guernesiaise was formed in 1882 (Sebire 2005, 29). The Société carried out its first major excavation under the direction of De Guérin with a team of volunteers at the 'D' shaped cist-in-circle site of L'Islet in the northwest of the island (Figure 9). An account of the excavation was published in the Société transactions with a photo of a selection of the "flint implements found", and a brief paragraph noting that most of the flints found in the cists and surrounding soil were discarded flakes apart from a "few scrapers, saws, points and burins" (Curtis 1912, 411). However, no discussion or comparison with other island or mainland sites was made, and the report concentrated mainly on the pottery finds.

With the publication in 1929 of Childe's *Dawn of the European Civilisation,* a chronological and cultural framework of European prehistory was established (Trigger 1989, 171). Against this background, a major development in the archaeological knowledge of the Channel Islands also occurred with the publication in 1928 of Kendrick's *The Archaeology of the Channel Islands Vol.1, the Bailiwick of Guernsey*. Kendrick, who was working on behalf of the Department of British and Medieval Antiquities at the British Museum, presented a comprehensive synthesis of the archaeology on Guernsey. The original intention was that Kendrick would publish two volumes, the first covering the Bailiwick of Guernsey and the second, the island of Jersey, but only the Guernsey volume was published by Kendrick, the work on Jersey being handed over to Hawkes who published in 1937. In line with contemporary thinking of the period, Kendrick took a cultural-historical view of the spread of megalithic architecture, associating it with the movement of peoples. However, for the first time in the history of archaeological research in Guernsey, there is a comprehensive review of lithics recovered on the island with descriptions of flint tools and possible sources of raw material. This work also provides a useful synthesis of the finds from monuments excavated during the previous century, with the source information being taken principally from the Lukis archive.

Kendrick devoted a whole chapter to flint and stone tools noting that there is no *in situ* flint to be found in the Channel Islands, and that the raw material was derived from locally obtained beach pebbles. This lack of good quality raw material, Kendrick reasoned, resulted in implements of small dimensions and "not of a very high level of workmanship" (Kendrick 1928 37). Importantly, there is recognition of artefacts not associated with monuments with a review of non-site lithic scatters around the island which Kendrick describes as "chipping floors"; La Corbinèrie, Mont Durant, Crève Coeur and Lihou are given as examples. He noted that the "pygmy" flints from La Corbinèrie and Crève Coeur were likely to be Mesolithic in date, this was almost certainly the first reference to artefacts of this period on the island (*ibid.,* 39). Kendrick also recognised the existence of imported flint blades from Grand Pressigny in France, illustrating several found in Guernsey, although there is no discussion in his work of the trade and exchange networks that would have been involved in their circulation. Despite Kendrick's consideration of surface finds and some line drawings of tools, the photographs in the volume feature the more 'fancy' arrowhead examples (Figure 19). Although again, there is no discussion by Kendrick of the influences involved in their morphology or manufacture.

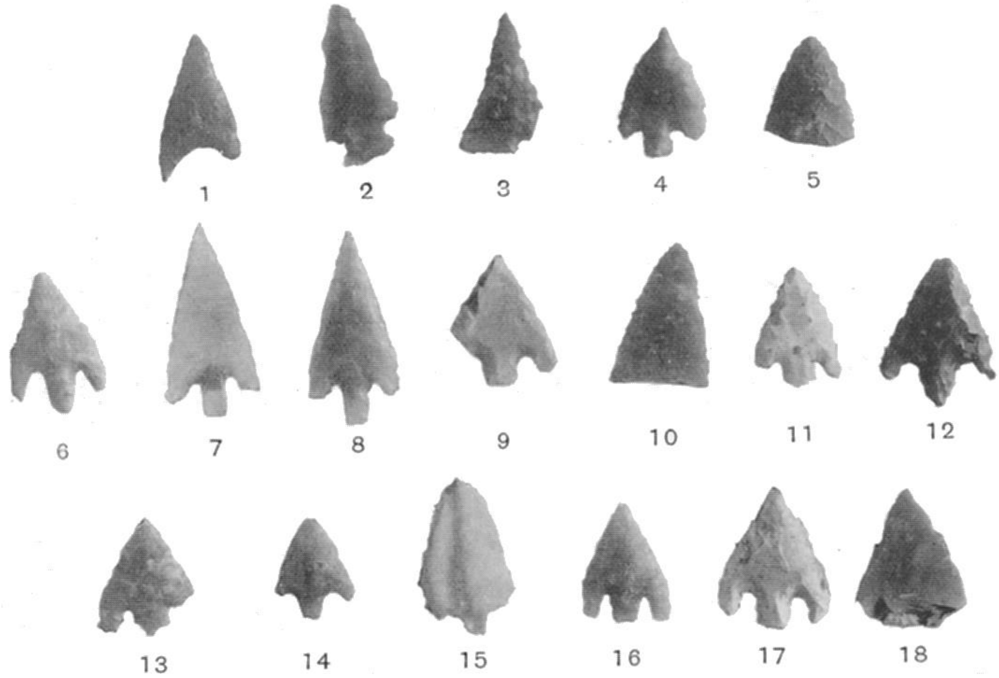



*Figure 19. Plate in Kendrick showing arrowheads, many of which are the same as depicted by Lukis in figure 18. All shown here are of later Neolithic/Early Bronze Age date (Kendrick 1928, Plate VI).*

There was a hiatus in major excavations and archaeological research on Guernsey between the re-excavation of Le Déhus passage grave by Collum in 1932, and the excavation at Les Fouaillages by Kinnes in the late 1970s. This was perhaps largely due to the thoroughness of Lukis' work in the 19th century, following which, most visible prehistoric monuments were fully excavated (Patton 1995, 7). Meanwhile, during this hiatus, scientific techniques in Europe and North America were advancing with the development of $^{14}C$ dating, the outcome of which was the realisation that megaliths did not have their origins in the near east, but actually along the Atlantic seaboard of Europe and Britain (Joussaume 1988, 85). This revolution in chronological development was 'accompanied by advancements in archaeological thinking where the culture-historical approach was called into question and eventually supplanted by alternative paradigms such as 'Processual Archaeology' which sought to explain the underlying systems and processes which led to change in societies (Johnson 1999, 21).

Against this background of change in archaeological thinking, the discovery in 1976 of the Les Fouaillages monument on L'Ancresse Common to the north of Guernsey proved timely. Kinnes commenced excavation of the site in 1979, revealing a trapezoidal long mound, a type found in north-west France but thus far unique on the Channel Islands (Kinnes 1983, 18). Les Fouaillages provides an interesting view of cross cultural affinities on Guernsey during the Early Neolithic period with the morphology of the monument being similar to the Manio series of long mounds in Brittany and the pottery having broad affinities with assemblages from Jersey at Le Pinacle and Mont Orgueil (Kinnes 1982, 27). The monument was sporadically reworked and reused throughout the Neolithic until the Early Bronze Age before final closure, thus providing a unique stratified record of lithics through to that period. Kinnes (*ibid.*) postulated that the mound was "used and constructed by groups of direct Bandkeramik ancestry", a statement reflecting the movement of people rather than a transmission of ideas.

Although summarised in the form of a chapter in the book: *Les Fouaillages and the Megalithic Monuments of Guernsey* (Kinnes & Grant, 1983), and discussed in papers, *Les Fouaillages and megalithic origins* (1982) and *This is the Place Where Time Meets Space* (1998) the final full report is yet to be published. Nevertheless, the lithic and pottery sections have been comprehensively written up by Audouard (2009) and Pioffet (2010) respectively. These reports marked the first time that French archaeologists (in this case French MA students under the guidance of French experts) had a detailed input into the archaeology of the island.

Also in 1976, the first Channel Island document devoted to flint: *The flint-working sites of the Bailiwick of Guernsey,* was written up by Keen (1976). Although never published the paper is accessible from the Guernsey archaeology department. The paper discusses the origins of flint beach pebbles noting that they are most prevalent on the north facing coasts of the Channel Islands with "Alderney the richest in flint of all the islands" (*ibid.*). Keen reasoned that as the flint pebbles are of varying colours, offshore Quaternary gravels were the most likely source as many types of flint would have been incorporated into these. He also remarked that in contrast to prolific coastal flint scatter sites, the interior of the island has less than one percent of the material found. Keen concluded that the coast would have been the location for "working sites" (*ibid.*, 2). It must be noted however that this paper was written before the large scale rescue excavations that have revealed large concentrations of worked flint and stone in the interior of the island.

At around the same time as the ongoing work at Les Fouaillages, Burns, who at the time was the Archaeology Officer for the Guernsey Museum, carried out an excavation on the promontory earthwork at Jerbourg located on the southeast corner of the island. This work took place from 1978 to 1981, revealing a multi-period site dating from the Late Neolithic through to the medieval period, accompanied by a considerable number of artefacts. The excavation was written up in a monograph *Excavations at Jerbourg, Guernsey* (Burns 1988). In the report, Burns bemoans "the lack of properly excavated material from which to draw parallels" citing this as a major constraint in interpretation for the modern researcher on the islands (*ibid*., 59).

The Jerbourg monograph contains a comprehensive illustrated lithics chapter by Knight (*ibid*., 23–36). In contrast to Keen's report on the flint of the island which is more from a geological perspective, Knight took more of a lithics specialist view discussing knapping techniques and provided a flow chart of lithic production from the pebble stage to the finished tool. There is also a section on metric analysis and relative percentages of cortex remaining on the flakes and tools. Although there are tables of dimensions and lists of lithic artefact types with illustrations there is no discussion of the assemblage to put it into context with other Guernsey collections, or the industries of Channel Islands and the French mainland. The exception is a short section by the French lithics expert Briard discussing the two Armorican style arrowheads found. This does provide a welcome, if limited French perspective of Guernsey lithics for the first time.

During 1981, fieldwork in the area of La Hogue Catelain (Banque à Barque), Vale, revealed significant pottery and flint scatters (Hill 1990, 827). As the area was being eroded by walkers and weather a decision was taken to excavate the site. A large amount of pottery was collected during the dig, predominantly featuring sherds of Jersey Bowl, thought to be Early Bronze in date (*c*.2500 BC). A large lithic collection was also amassed amounting to 1095 pieces. The lithic report is minimal however, with no interpretation of the assemblage or consideration of possible dating. Yet again, comparisons with continental assemblages were not made, thus opportunities for situating this site in a regional context were missed.

The closing decades of the 20$^{th}$ century witnessed a flurry of publications on the archaeology of Guernsey and the other Channel Islands, e.g. Johnston, (1981), as well as many papers published by Kinnes (1982; 1983; 1986 & 1998) and Patton (1988; 1991; 1993 & 1997). A work of great significance to the archaeological knowledge of the Channel Islands is Patton's monograph of 1995 entitled *Neolithic Communities of the Channel Islands*; this is a comprehensive synthesis of the Neolithic period in the Channel Islands based on his Ph.D. thesis. Drawing on ethnographic and social theory, particularly Structural Marxist approaches, Patton aimed to produce a model for socio-cultural change on the islands and the changing relationships with the Armorican mainland based on the archaeological evidence available. Patton's thrust from a societal point of view was one of changing social relations driven by the collapse of power structures through the "resolution of social contradictions", essentially the elite or elder control of exchange networks (Patton 1995, 108).

As part of his lithic research, Patton carried out metric and cluster analysis of the flint assemblages and classification of tool types from all the Channel Islands. In a consideration of the raw material and dating, Patton noted that the small size and poor quality of the island's beach pebble flint "limits potential chronological variation between assemblages". By this he was suggesting that the knapping strategies deployed by people to cope with the raw material available resulted in assemblages that displayed similar technological and typological characteristics through time. He also argued that recovery bias of excavations carried out in the early part of the 19th century limits any metric analysis of assemblages, restricting dating to 'type fossils' such as barbed and tanged arrowheads (1995, 119). The problems with studying surface collections of flint, Patton reasoned, are much greater as a result of collection bias and poor recording of exact find spots. Having discussed these potential pitfalls, Patton used a combination of metric length/breadth analysis of flakes and cluster analysis between sites in an attempt to tease some relative dating evidence from selected assemblages. The results are mixed although Patton claimed that the differences were enough to give a coarse grained resolution of the Mesolithic, Early Neolithic, Neolithic, Chalcolithic and Early Bronze Age periods (*ibid., 126*) However, there were (as Patton himself notes) numerous anomalies in the data due to chronological mixing of assemblages. It would be reasonable to argue that this type of analysis would only function if the assemblages were chronologically discrete and the result of unbiased collection, criteria which would apply to very few Channel Island assemblages. More workable perhaps, is Patton's assertion that lithic assemblages may be categorised according to "functional variation", that is, task specific areas such as knapping sites with a high proportion of debris and cores, and 'domestic' sites where a greater proportion of tools may be found (*ibid.*). This is arguably a somewhat simplistic view which will be critiqued in the following chapter.

Despite his thorough analysis of Channel Island archaeology including lithic assemblages, Patton missed the opportunity to compare the flint-working with that of the adjacent continental mainland, despite the apparent similarities in raw material and technology on the Armorican Massif, thus leaving the island's lithic record in a void. Further, a conflict arises in Patton's model for socio-cultural change which is largely based on the concept of insular developments of island elites whereas much of the material evidence presented, such as the long distance and *longue durée* axe exchange networks suggest a great deal of connectivity with mainland communities. Although this is a seminal piece of work for the Channel Islands, there is arguably scope for a more contemporary and peopled approach.

## 3.2 Research and Rescue

The island's archaeology unit is part of Guernsey Museum, itself part of the Department of Education, Sport and Culture. The vast majority of the unit's work is driven by development applications in archaeologically sensitive areas. This has led to an increase in the number of rescue excavations driven by building development over the last few decades, for example: Route De Carteret (1998); The Royal Hotel, (1999-2001); King's Road (2005-6) and the Airport (2009–12). There are occasional locally-driven research excavations, but in general these are limited because of a lack of funds (De Jersey 2017 pers. comm). Most research excavation is therefore driven by outside academic organisations. This more recent archaeological activity is briefly summarised in the following paragraphs.

Coastal erosion has also resulted in rescue/research excavations at Lihou over seasons 2001-3 (Conneller *et al.* 2016) and L'Erée (Camp Varouf) conducted in 1998 (Cunliffe *et al.* 2001) and again by the Universities of Southampton and Reading over the 2008-11 seasons (Garrow & Sturt in prep.). Additionally, a research driven excavation was carried out at Delancey Park by Clifton Antiquarian Club during the 2011 and 2012 seasons (Nash 2012) and at several sites on Rousse Headland during 2014-15 (Hawley & Waite 2016; Hawley & Waite in prep.). These recent excavations have provided large quantities of systematically excavated lithics, a significant proportion of which has been analysed as part of this study.

The multi-phase site of the former Royal Hotel in St Peter Port, excavated over a two-year period from 1999 to 2001, is especially interesting as it has produced an early $^{14}$C date of 5370–5200 Cal BC (OxA-12996), (Sebire & Renouf 2010, 368). Associated with this date were four fragments of imported Cinglais flint, and pottery comparable with the Villenueve-Saint-Germain (VSG) group of the Paris Basin; this is certainly amongst the oldest pottery found thus far on the islands and pre-dates the Cerny derived Le Pinacle/Fouaillages group (Pioffet 2010, 24). Also found at the site were Mesolithic flint tools and in later phases, a pottery sequence through to a Bronze Age date, indicating the longevity and continuity of occupation here. The full Royal Hotel excavation report appears in the 2011 *Report and Transactions of the Société Guernesiaise* (Sebire 2012), although the lithic assemblage is re-examined in Chapter 6.

Early $^{14}C$ dates of 4981 – 4787 Cal BC (OxA-28670) were also obtained from L'Erée, placing the first phase of possible occupation at this multi-period site to the Early Neolithic (Garrow & Sturt in prep.). This site was first investigated by Cunliffe and De Jersey in 1998 (Cunliffe & De Jersey 2001) following the discovery of flint and pottery sherds exposed in an eroding section of shoreline. The lithic collection from this excavation was analysed by Brooks from the Oxford Institute of Archaeology and published in the *Transactions of the Société Guernesiaise* (*ibid*., 884). Brooks carried out a thorough metric analysis of the 296 lithics from the excavation and also commented on the earlier surface collection of 337 lithics. Brooks stated that apart from some blades found in a lower layer, and "scrapers of Early Bronze Age type" the remainder of the assemblage was essentially homogenous and difficult to date, which he attributed to the restrictions of the available raw material (*ibid*, 888). The report also stated that L'Erée was probably a 'domestic' site based on the "limited tool range" without fully explaining what the term 'domestic' means. While this was a very thorough investigation of the assemblage with a clear methodology there was no comparison made with other island lithic collections or any mention of relationships with the adjacent French mainland. Furthermore, the analysis was made from a British perspective, for example, attributing small scrapers to "Beaker activity" when there is no hard evidence on the French mainland that indicates scraper size is linked to chronology.

The L'Erée lithic assemblage from the University of Southampton 2008-11 seasons was analysed by lithics specialist Pirie with additional input from Hawley (Garrow & Sturt in prep.). Pirie's input into Guernsey lithics is a fruitful one as she has previous experience of coastal lithic technology from Cnoc Coig on the Inner Hebrides island of Oronsay (Pirie *et al*. 2006). Pirie identified the conservative nature of Guernsey lithic working at L'Erée and remarked on its similarity to the assemblage from Les Fouaillages, the other site used for comparison. The distribution of Early Neolithic artefacts through all levels was noted and Pirie suggested that the deposits are probably "stratigraphically mixed" (Garrow & Sturt in prep.). Evident in this collection however, are small quantities of imported Cinglais and Grand Pressigny flint. These items, useful as chronological indicators, demonstrate that people in the area were either directly or indirectly participating in French Mainland exchange networks that were in existence during both the early and later parts of the Neolithic period.

The activity of amateur collectors such as Hazel Hill, David Lane and many others on Guernsey has proved invaluable and cannot be ignored. The former has collected extensively from eroding areas of headland along the west and north coasts of the island making careful note of the location of find-spots. It is largely through Hill's work that a rescue excavation by the author on a lithic scatter at Crève Coeur took place (Chapter 6). Lane has also been very active on the island not only collecting lithics and noting potential find-spots on eroding coastal areas but also in the interpretation of lithic collections that are found on the island.

A location that has a long history of lithic collection is the Mesolithic site on the tidal island of Lihou. The presence of material of a probable Mesolithic date at this site was first noted by Kendrick (1928, 39) in his survey of the archaeology of the Channel Islands. Material continued to be collected from the eroding headland right up to 1999, when the decision was taken to excavate. The dig was undertaken between 2001 and 2003 by Schadla-Hall and comprised a trench, measuring 4 x 2 m close to the area of erosion and an additional four test pits immediately to the north (Conneller *et al.* 2016, 20). Lihou provides the bulk of information for this period on the island. Nearly 15,000 pieces of worked flint were recovered from the excavation and an associated $^{14}$C date of 7483–7299 Cal BC (Table 2) was obtained from burnt hazelnuts associated with a burnt area in the trench (*ibid.*). The importance of this site is that it represents a seemingly undisturbed and chronologically unmixed deposit dating from the Middle Mesolithic, and as such provides an ideal reference site for the rest of the island. The data from the site indicated that a variety of flint knapping tasks were taking place using locally sourced flint pebbles that would have been acquired from the beach some 1-2 km in distance.

The paper containing the Lihou report is part of a timely review of the Mesolithic of the Channel Islands (*ibid.*), the first since Patton's in 1993. The paper discusses the limited traces of Palaeolithic and Early Mesolithic occupation on Guernsey, but suggests that the changes in topography and resources of the area were exploited by Middle Mesolithic peoples. The report also stresses Middle Mesolithic communities' preference for coastal locations on the island with further sites from this period noted at La Corbière, Crève Coeur, Les Fouaillages, Port Soif and Hommet Benest along with single finds at many other sites (*ibid.* 28). Note is made of the apparent lack of lithics from the Late Mesolithic period, which may suggest either isolation (culturally chosen or environmentally enforced) or the abandonment of the island. This issue will be discussed further in Chapter 8.

## 3.3 Guernsey and French Lithic Research

Over the last decade a fruitful working relationship has been established between archaeologists working on the island and lithic and pottery specialists from the French mainland, most notably, Ghesquière from INRAP (Institute National de

Reserches Archaeologiques Preventatives), Guyodo (Université de Rennes), Marchand (Université de Rennes) and Pioffet (University of Durham). This input has led to advances in the knowledge of material culture from the Channel Islands, especially in flint and pottery, for example the reports written by Audouard (2009) and Pioffet (2010) for the Les Fouaillages excavation assemblage. Any review of Guernsey archaeology must therefore take account of French views and interpretations and include a review of French literature, much of which has not been published in English. This section does not delve into the history of French lithic research, this will be reviewed and critiqued as necessary in the following chapter. Here, the more recent work relating to the Channel Islands is reviewed.

Given Guernsey's proximity to the French mainland, and the geological similarities that result in beach pebble flint also being the principal source for toolmaking during the prehistoric era, the work of French archaeologists involved in lithic research is a vital resource. Despite this, and as has been noted in this chapter, many reports on Guernsey lithics have not referred to the French corpus of data for analogues and comparable sites, for example, Brooks in the original L'Erée lithic report (Cunliffe *et al*. 2001, 884) and Hill's report on La Hougue Catelain (Hill, 1990, 827). Perhaps the language barrier was greater than that of the relatively short sea crossing.

Arguably, French lithic specialists did not have a significant input into research on Guernsey until the publication of the paper: *Processus de néolithisation des îles Anglo-normandes à travers l'exemple de Guernesey* (Guyodo & Hamon 2005). In this piece of research Guyodo carried out an appraisal of lithic assemblages from funerary deposits, excavations and surface collections of the island. This paper provided a much needed French mainland perspective and went some way to anchoring the chronology and technology of the Guernsey lithic sequence to that of neighbouring Normandy and Brittany. The paper noted a degree of flint importation from Normandy during the Early Neolithic which diminished into the Middle Neolithic, although imported polished axes indicated that exchange networks were still functioning. Of interest to lithic studies on Guernsey is Guyodo's assertion that local flint sources may have become depleted through the Neolithic period driving people to obtain material from further afield, for example Normandy (*ibid*.). Given the low levels of imported Cinglais flint however, this seems unlikely and the high quality material was arguably intended for status or prestige purposes. Equally, the large quantities of waste found amongst the island's lithic assemblages with unutilised flakes and partially tested pebbles present throughout the periods under study infer that obtaining sufficient raw material from local beaches was never an issue for Guernsey's prehistoric communities.

In a paper co-authored by Guyodo and Marchand (2005) the use of bipolar percussion is reviewed (where a stone anvil is used during knapping). The authors argued that the use of this technique was not entirely consistent in its use on coastal sites and concluded that the reasons for this may not necessarily have been simply deterministic (pebble size and quality) but may have reflected an individualisation of cultural traits and practices towards the end of the Neolithic (*ibid.*). The relevance of the paper to this thesis is not only that there are similarities in raw material employed on the French coast and Guernsey, but the fact that the survey of sites included one from the island, Camp Varouf (L'Erée). The study claimed that approximately 25% of the reduction process utilised bipolar percussion (see Chapter 7) which is within the spread of results obtained from the sites featured in this thesis and also falls with the large range of 21–72% noted in Pirie's report for the same site when later excavated by the University of Southampton (Garrow & Sturt in prep.).

The first major piece of work on Guernsey carried out by a French lithic specialist was the analysis by MA student Audouard (2009) of the lithic assemblage from the Les Fouaillages long mound. A significant quantity of lithics was recovered from this site, amounting to 13,425 pieces (Audouard 2009). This material benefited from a systematic analysis and comparison with French coastal assemblages putting Guernsey lithics for the first time firmly into a mainland context typologically, technologically and chronologically. The report revealed a long succession of human activity in the immediate area of the monument dating from the Middle Mesolithic. The main periods of activity however, took place from the construction of the first stages of the monument in Early Neolithic marked by blade technology and imported Cinglais flint through to the Early Bronze Age when eight finely worked barbed and tanged arrowheads were deposited before the monument was finally sealed.

By employing comparisons with mainland sites, pottery and $^{14}$C dating, the major part of the Les Fouaillages assemblage was attributed by Audouard to the Middle Neolithic (*Néolithique moyen*) (*ibid.*, 66). Although this work was comprehensive and benefited from the input of French experts it did not extend much beyond a review of the technology, typology and resulting chronology of the assemblage, there was little or no consideration of the people associated with the lithics or the monument. It marked a major step however, in situating lithic assemblages on the island into a regional context.

Two additional and relevant French papers for an archaeological overview of the region are: *Les industries lithiques taillées des IVe et IIIe millénaires avant J.C. dans le quart nord-ouest de la France* (Ghesquière & Guyodo 2008) and *Entre Néolithique Ancien et Néolithique Moyen En Normandie et les Iles Anglo-Normandes: Parcours Chronologique* (Marcigny *et al.* 2010). Each report deals with lithics in substantial detail and includes data from a range of both rescue and research sites. The first paper was written specifically from a lithics point of view and consists of a techno-typological analysis of many large assemblages drawn from the Armorican Massif and its sedimentary margins. The report examined the 'internal coherence' of the *chaîne opératoire* from the acquisition of raw material through to the finished product dating from the Middle Neolithic II period to the start of the Bronze Age (Ghesquière & Guyodo 2008, 113). The use of circulated material such as Cinglais flint and the changing relative proportions of various types of retouched pieces through time provides a useful benchmark with which to compare Guernsey assemblages. Unfortunately, the Channel Islands were not considered in this report apart from a brief mention of a perforated stone found at Le Déhus passage grave, this does seem to be a missed opportunity as both authors are familiar with Guernsey lithics.

The second paper encompassed the evolution of lithics, pottery and domestic architecture over a period from the Final Mesolithic through to the Middle Neolithic I in both Normandy and the Channel Islands. The paper was based on recent data from Normandy, most of which derived from rescue excavations; references to Guernsey however, are limited to the Les Fouaillages excavation. Nevertheless, relevant themes were explored in the paper, the Early Neolithic exchange networks of polished schist rings and Cinglais flint, both of which were widely distributed throughout the Armorican Massif including the Channel Islands. These imported items, as well as giving indications of connectivity with the French mainland are valuable chronological markers for the Early Neolithic period.

A recent addition to the corpus of French reports on Guernsey lithics is the contribution of Guyodo to the Royal Hotel lithic assemblage (Sebire 2012, 228). The report is essentially an appraisal of the technological and typological aspects of the assemblage noting the multi-period nature of the site and the presence of Cinglais flint demonstrating maritime connectivity with the adjacent continental mainland. Although comprehensive in the technological and typological analysis of the artefacts themselves, humans are not implicated and the report has an implicit culture-historical feel to it with tool types being linked to cultures, for example "…Beaker elements", or "…in the tradition of Villeneuve-Saint-Germain". These statements are arguably symptomatic of the approach favoured by the French archaeological community; a more involved discussion of the French application of theory to lithic research will be reviewed in the following chapter.

## 3.4 Lithic Research Jersey, Alderney, Herm and Sark

It is interesting to note that Jersey has not attracted as much attention from French lithic specialists as Guernsey, the reasons for this however, would be speculative so the current state of knowledge is referred to here.

**Jersey**

The lithic record of the island is essentially dominated by three sites, La Cotte de St. Brelade, Le Pinacle (also known as The Pinnacle) (Godfray & Burdo 1949) and the St. Ouen's Bay research programme (Patton & Finlaison 2001). The first site dates from the Lower and Middle Palaeolithic periods so does not concern the date range of this thesis. Le Pinacle, excavated by Godfray & Burdo (1949) for six seasons during 1930-36 contains lithic material dating from the Early Neolithic through to the Bronze Age. The exclusive use of local beach pebble flint is noted until the Late Neolithic/Early Bronze Age where Grand Pressigny blades and barbed and tanged arrowheads are present. Essentially, the flint industry appears similar to that of Guernsey although the absence of imported Cinglais flint during the Early Neolithic is worthy of note, it may simply be a case of this type of flint not being recognized.

The work at La Moye I and wider ranging research in the St Ouen's Bay area resulted in a volume *Patterns in a Prehistoric Landscape* by Patton and Finlaison (2001). This work details the environmental sequence in the area, which is very similar to Guernsey's west and north facing coasts with wind-blown sand events covering and preserving prehistoric archaeology. The research report covers excavations at several sites in the area, mainly dating from the later Neolithic and the Early Bronze Age. The lithic report sections are comprehensive and well illustrated demonstrating that beach pebble material and lithic working on Jersey appears very similar to that of Guernsey. There is also an experimental section by Knight, a flint knapping specialist from the Australian National University who knapped fifteen Jersey beach pebbles considered to be similar to those recovered from the La Moye I site to produce a control assemblage. All the knapped material was retained and counted, and was found to average 57 fragments per core. The material was then separated into flakes and debris with the proportions being 25.1% flakes and 74.9% debris. The flakes were further separated in Stage I, II & III representing the various stages of removal from the core (Patton & Finlaison 2001, 26). The potential pitfalls with this type of experiment are that it cannot be guaranteed that the morphology and composition of the pebbles was identical to those in prehistory. Furthermore, the working method used is not defined in the report, whether the pebbles were knapped using an anvil (bipolar percussion) or direct percussion was employed.

Although there are broad similarities between lithic materials and technology to those on Guernsey, the current state of lithic knowledge on Jersey is relatively scant apart from the Mesolithic and there are clearly opportunities for further research on the island.

**Alderney**

According to Keen, of all the Channel Islands, the supplies of flint are superior on Alderney (Keen 1976, 1). An important factor on Alderney is the presence of Late Mesolithic flint-working which appears to be virtually absent on the other islands (Conneller *et al.* 2016, 28). As the island is likely to have been too small to support a viable hunter-gatherer population at this time it is possible that Alderney was the target of episodic visits during this period, perhaps for the superior supplies of flint available here although this is purely conjectural. Excavation reports have mentioned lithic finds, for example the work at Les Pourciaux and Tourgis dolmens where flint tools and hammerstones were discussed (Johnston 1973, 301; Johnston 1974, 464). Patton includes some Alderney assemblages in his flint analysis but does not give any conclusion (Patton 1995, 119). Otherwise, very little research has been carried out on the lithic resource of this island.

**Herm and Sark**

Several lots of field-walked assemblages from Sark have been examined by the author, in addition to around 1800 flints from excavations in several locations on the island by Cunliffe. The flint-working is similar to that of Guernsey relying on local beach pebble material. Only one Mesolithic piece was recorded amongst these assemblages and only one piece of imported material, an Early Neolithic blade from Normandy. Herm has been the subject of a three-year project by Durham University and a full report is forthcoming.

## 3.5 Conclusion

It is clear from this overview that there exists a considerable corpus of data compiled from previous research into the lithics of Guernsey. However, a few notable exceptions aside (e.g. Conneller *et al.* 2016), the majority of published lithic reports relating to the island thus far have been set out in a technical report format based on individual assemblages only, there has been little effort to integrate sites together in order to obtain a wider view of the nature of human communities on the island. Equally, little has been done to integrate people and landscape into the archaeological narratives together with the lithic evidence, and many opportunities missed to draw upon the wealth of data compiled by French researchers relating to lithics with similarities in raw material and technology.

Thus, the overall impression gained from this review of previous research tends towards a rather insular and deterministic view of a static population exploiting poor quality locally obtained material, supplemented by small amounts of imported flint. However, it is argued that these gaps in knowledge can be rectified by the approach taken in this thesis; the use of a range of sites across the island being integrated into one overarching review will, it is intended, provide a more complete picture of Guernsey's prehistoric communities. Together with this, the corpus of French lithic research will be referred to extensively in the following chapters for comparisons in practices and raw material use which will allow the island to take its place in a regional context.

In the following chapter past and current trends in lithic research are reviewed as a prelude to the establishment of a full methodological framework in Chapter 5.

# Chapter 4: History of Lithic Research Methodologies

Lithic research as a discipline has a long history stretching back to antiquarian times with any discussion surrounding the subject tending to follow the paradigm shifts in archaeological theory itself. In this chapter, the changes in various lithic analytical techniques over time are reviewed with the aim of establishing how current research frameworks have been developed. A review of theoretical approaches to lithics in French archaeological practice is also included, as publications and expert knowledge from that part of the continent has been extensively used in the acquisition of data for this thesis. Further, it is important to consider and link both British and French lithic research approaches together in order to achieve a harmonised basis for the construction of a working methodology for this thesis.

## 4.1 Early Approaches

With the first recorded writings concerning polished stone axes and flint arrowheads appearing in the 17th century, it is apparent that curiosity concerning finds of stone tools has a long history. A mystical or magic significance was evidently attached to these objects as they were variously described as ‘thunderbolts’, ‘fairy arrows’ and ‘elfshot’ (Daniel 1981, 35). However, the discovery of the Americas and the realisation that Native Americans were still manufacturing and using similar stone tools prompted the question of whether ancient peoples in the Old World could also have once made and used such objects (*ibid.*).

Over the succeeding centuries the existence of stone tool using peoples in the past became accepted, and by the early 19th century the classification of prehistoric material culture including lithic tool types was ongoing. One of the most influential people in this field was the Danish collector of coins and antiques, C. J. Thomsen who commenced cataloguing artefacts from the Museum of Northern Antiquities in Copenhagen in 1816. Thomsen was among the first to systematically sort and classify artefacts based on their material properties, stone, bronze and iron; from this he worked out an approximate relative chronological sequence for Danish Prehistory, subsequently referred to as the three-age system (Trigger 1989, 76).

As the discovery of archaeological sites increased during the 19th century it became apparent that the age of stone comprised two differing techniques of working: chipped stone tools and polished stone tools; as a result, lithics were further classified into two periods in 1865 by Lubbock, who first introduced the terms ‘Palaeolithic’ and ‘Neolithic’ into archaeology (Daniel 1981, 62). By 1867 this chrono-cultural ordering was further refined by the French palaeontologist and geologist

Mortillet, who introduced four 'type-site' epochs, the Acheulean, Mousterian, Solutrean and Magdalenian into the Palaeolithic (Chazan 1995, 459). As well as correlating sites with geological, meteorological and faunal data, Mortillet also based his chronological divisions on the diverse "industrial products", or perceived variations in stone tool industries. The outcome of the application of palaeontological relative dating concepts to French Palaeolithic research was the concept of *fossil directeurs,* type fossils or diagnostic artefact types emulating the fossil record that could be used to delineate archaeological cultural categories or groupings (Sackett 1981, 89). This association of artefact typology with chronology effectively led to the origins of the culture-history approach (Chazan 1995, 461).

These developments in French Palaeolithic research were also influential in Britain. For example, Evans, became influenced by the work of the French Palaeontologists and travelled to France to witness the finding of Palaeolithic hand-axes in the gravels of the Somme (Anderson-Whymark 2009, 46). Evans went on to construct complex stone tool typologies and drew up a taxonomic type-by-type review of British stone artefacts in his illustrated work: *The Ancient Stone Implements, Weapons, and Ornaments of Great Britain* (Saville 2011, 1).

## 4.2 Culture History

Taxonomic approaches to lithic analysis fitted comfortably with the 'culture historical' models that pervaded British archaeology in the first half of the 20th century, with particular attention paid to certain tool types that were interpreted as being cultural markers (*ibid.*, 2). Material culture during this period was considered as being specific to the group that produced it and the movement of things became intimately tied to the movement of peoples. It is apparent how this migration-based thinking is particularly suited to the interpretation of lithics, especially specific tool types such as arrowheads, which became a means of identifying the people or cultures that produced them (Trigger 1989, 149). For example, in Childe's *The Dawn of the European Civilisation,* a chronological and cultural framework for European prehistory was established where Childe referred to 'cultural groups' stating "We find certain types of remains – pots, implements, ornaments, burial rites, house forms – constantly recurring together" (Childe 1929, vi).

Some thirty years later, the role of material culture in the definition of cultures was still evident in Piggott's work; *The Neolithic Cultures of the British Isles* (1954) where, similar to Childe's approach, recurring groups or forms of artefacts were seen as cultural markers to be used in the construction of a prehistory. For example, Piggott states; "The stone industry of the Windmill Hill culture is definitely intrusive in its character" (Piggott 1954, 80). Here, Piggott was discussing the advent of the Neolithic in Britain in terms that left little room for doubt that the 'culture' as defined by artefactual assemblages was the result of colonisation rather than adoption, adaptation, or transformation of ideas by indigenous Mesolithic communities. There are problems evident with this approach however, establishing simple links between artefact type and cultural group is not always as straightforward as the sweeping narratives of Childe and Piggott would imply. As Anderson-Whymark and Garrow argue, the potential complexity of the archaeological record should be considered even if it does appear "messy" (Anderson-Whymark & Garrow 2015, 75). This more inclusive stance is echoed by Parker-Pearson *et al.* (2016, 634) for a later period in prehistory who state that "migration and emulation" were the significant processes behind the Bell Beaker phenomenon in Britain, rather than migration alone.

Despite the reservations voiced in the previous paragraph, the practice of breaking down material culture into specific forms to define chronological sequences and cultures is a method that persists into current research methodologies (Hurcombe 2007, 93), although there are additional considerations such spheres of cultural influence rather than migration alone that should be taken into account. As such, equating specific types or forms of artefact with cultural groups is a practice that is still very much at the heart of lithic and other material culture studies and is arguably invaluable where there is little alternative archaeological evidence available.

## 4.3 Processualism

The 1960s saw the adoption of the 'New Archaeology' paradigm, which also came to be called 'Processualism' because of the emphasis on processes at play behind societies; and changes in cultural systems were viewed as adaptive responses to variations in the natural environment, or to competing cultural systems (Trigger 1989, 296). Hence, the processual approach, rather than being descriptive was very much based on the use of scientific procedures where testable hypotheses were employed and results were published in the form of generalised statements (Hurcombe 2007, 96).

The impact of processualism on lithic analysis can be broadly grouped into two interconnected areas: artefact quantification, and the overarching role and function of material culture in society. These are reviewed in the following two sections.

**Quantifying and qualifying aspects of lithics and assemblages**

The way artefacts were thought about changed from a qualitative to a more quantitative based approach, with the introduction of techniques extending beyond broad typological based research to an interest in assemblage analysis, raw material quantification and metric analysis. In other words, the material was made to work harder and in a more scientific manner (Saville 2011, 2). This statistical based approach involved establishing parameters such as size and length/breadth ratios of flakes and tools, essentially the aspect ratio, then comparing the results with assemblages from different locations (*ibid.*). This trend also to led to an increased emphasis on lithic deposition, site formation processes and sampling strategies (Bayer 2011, 102).

A more inclusive lithic methodology that included the analysis of cores and waste as well as retouched pieces was employed by Clarke *et al.* (1960) at Hurst Fen, and Smith at Windmill Hill (Smith 1965, 86). The analysis undertaken at Hurst Fen demonstrated that Early Neolithic scrapers were larger than their Early Bronze Age equivalents leading to the realisation that implement size and proportions were parameters that could be used as chronological indicators, a technique that was later extended to include unretouched flakes (Ford 1987; Pitts & Jacobi 1979). This form of research, which came to be known as metric analysis demonstrated that a trend towards broader flakes occurred through time with a corresponding decrease in blade manufacture (Ford 1987, 69). Of relevance to Guernsey lithics is that a similar progression is also apparent on the adjacent French mainland (Audouard 2009, 63; Cassen *et al.* 1999, 246).

Building on the work of previous researchers to encompass lithic scatters a further development of the metric analysis method was proposed by Shennan (1985, 62), who advocated using a “whole assemblage” approach. Shennan argued that simple length/breadth measurements are unreliable in surface scatters and chronologically mixed assemblages, and proposed analysing the complete collection rather than relying solely on retouched tools that can be considered as chronologically diagnostic but typically constitute a small proportion of a given assemblage. The whole assemblage approach involves metric analysis of flakes, blades, cores and retouched tools; this is allied with more subjective technological elements such as quality of knapping, preparation of striking platforms and expediency in working. The advantage with this method is that it can also be employed in the absence of recognisable tools and just applied to flakes themselves (*ibid.*).

A wider ranging approach was proposed by Schofield (1991, 117) who suggested a regional rather than a site based methodology, where the relationship between artefact density and the nature or composition of the artefact scatter are examined. In this case Schofield argued that an 'industrial' site will contain a greater density of primary waste; in contrast, on a 'domestic' site, cortex free tertiary waste, worked out cores and tools would predominate. Using this methodology Schofield proposed that certain patterns of human behaviour will become apparent, leaving characteristic signatures in the landscape, as detailed in Table 5.

| **Expected assemblage characteristics for domestic and industrial areas** | | | | |
|---|---|---|---|---|
| | *Density* | *Primary Waste* | *Tools* | *Cores* |
| Settlement | Low | Low | High | High |
| Industrial | High | High | Low | Low |

*Table 5: From Schofield (1991, 117).*

The functional site characterisation suggested by Schofield was initially taken up by Pollard (1998, 69-70) in the interpretation of the lithic assemblages from Bourne and Hinxton in Cambridgeshire, where, according to the character and composition of the assemblage, the terms 'industrial' and 'domestic' were applied. However, Pollard subsequently questioned this approach and called for an interpretive methodology where lithics are "implicated in the lives of people" rather than seeking to "generalise and impose explanation from the outset" (*ibid.*). Despite Pollard's statement, the categorisation of sites is in some specific cases unavoidable as becomes evident in the site analysis sections of Chapter 6 of this thesis. Although the terms 'industrial' and 'domestic' are avoided here where possible, as they are essentially modern concepts imposed onto the past, the composition of lithic assemblages indicates variability in the nature of human activity across the island suggesting that activities do vary through space and time thus revealing task specific zones.

The idea of metric analysis has been, and arguably still is taken to a logical extent on both sides of the channel with researchers in both Britain and France producing 'x' 'y' scatter diagrams to chart the length/width profile of both flakes and cores, and tools such as arrowheads; for example, flakes and blades at the French site of Tatihou, Normandy (Marcigny & Ghesquière 2004, 120), and Late Neolithic Levallois-like flakes and cores in Britain (Bjarke Ballin 2011, 47). While this technique may provide a worthwhile visual representation of lithic profiles, a direct link between a scatter graph and site chronology must be treated with caution. As a generalisation, a chronological trend from blade to flake technology may be evident in the lithic record, but this should not be treated as a straightforward linear progression over time. On a local level the trend may be subject to the nature of the raw material available, beach pebble flint for example, as well as individuality, skill and local tradition. Palimpsests from depositions that have accumulated over time can also confuse the issue. For example, the existence of a blade industry in the early Bronze Age lithic assemblage at Tatihou, Normandy may have been the result earlier elements of flint-working, or a local pocket of working bucking the trend, the excavation report remained open on the issue (Marcigny & Ghesquière 2004, 118).

It is pertinent to note that Marchand (1999, 37) in his Ph.D. thesis examining the Mesolithic/Neolithic transition in the west of France questioned the validity of the metric analysis approach, stating that the data obtained does not necessarily reveal the character of the assemblage and argued that the time taken up by a full analysis may limit the number of collections that can be studied. Instead, Marchand employed a limited amount of metrical analysis combined with technological studies of striking platforms, type of percussion, the regularity of flake scars and the morphology of retouched pieces such as arrowheads which have known chronometric changes through time. Marchand's observation was found to be relevant as a large quantity of lithics was reviewed for this thesis which required a pragmatic approach to data collection; this issue is returned to in the following methodology chapter

Although metric analyses, typological and technological studies undoubtedly have their merits for the analysis of both lithic scatters and excavated assemblages, they do not necessarily contextualise the lithics into their landscape setting and arguably disconnect them from the people who sourced the raw material, manufactured, used and discarded the tools. Lithic assemblages therefore, cannot be treated in isolation from the people who produced them, which is where contemporary analogues in the form of hunter-gather groups can inform the researcher.

**Ethnography, Anthropology and the Archaeological Record**

Alongside the development in quantitative approaches, the overarching role and function of artefacts within society evolved and technology became to be seen as a means of exploiting resources by human groups. An example of this thinking was the Binford-Bordes debate over Mousterian lithic assemblages, where Binford contested that the variations in tool-sets at different sites were a product of adaptive needs and varying kinds of activity performed at a given locale, not associated with social or ethnic identities as claimed by Bordes (Bentley *et al.* 2009, 4).

Ethnographic analogy also became a major factor in Processual approaches with researchers such as Binford contributing to the understanding of deposition practices. Binford was primarily concerned with the relationship between the observed archaeological record and activities creating that record (Hurcombe 2007, 96). To achieve this, he carried out extensive studies of hunter-gather groups such as the Nunamiut in Alaska charting their mobility, activity and deposition patterns in the landscape and concluded that lithic discard frequently happens away from habitation areas (Binford 1983, 110). This could therefore suggest that a high-density scatter of lithics marks a location that is *not* an occupation or settlement site but served some other purpose. Although some of Binford's approaches have been criticised (e.g. Johnson 1999, 60) along with Processual approaches as a whole, there is little doubt that works such as *In Pursuit of the Past* (Binford 1983) have had a major influence on researchers today as a source of ethnographic information, and is still frequently drawn on by French lithic researchers (e.g. Ghesquière, 2012, 496; Marchand 2014, 405).

Schiffer, who also employed examples of ethnographic analogy provided a comprehensive review of deposition practices by separating discard into 'primary and secondary refuse' (Schiffer 1987, 58). Primary discard represents lithics "discarded at their locations of use" while those discarded elsewhere represent "secondary refuse", the second category can effectively be adjacent to the place of use or taken away to be dumped at a distance. While ethnographic evidence suggests that the removal of debris to secondary locations is a common factor in settlements, this can also take place at differing distances from the point of use (*ibid.*, 59). Discard is not necessarily a functional act however, structured deposition is also a factor to be considered; the placing of objects into the ground has been interpreted as a "symbolically significant form of action" during certain periods of the Neolithic in Britain (Thomas 1991, 224). This behaviour has not yet been recorded for lithics on Guernsey outside funerary contexts, but will nevertheless be considered.

In contrast, Torrence cited the lack of interest shown in indigenous technology by ethnographers, and in *Time, Energy and Stone Tools,* approached stone-tool use from a cultural ecology and evolutionary theory point of view (Torrence 1989, 1). Here, Torrence argues for technology being a behavioural strategy developed to cope with "the social and physical environment" and as "a solution to managing risk" (*ibid.*, 57-8). There is therefore, an element similar to the work of Binford, of treating variations between lithic assemblages as the product of the ecological setting or people's adaptation to it, rather than variations in tool-sets indicating different cultural groupings (Bentley *et al.* 2009, 4). Although focussing on the utilitarian aspects of stone tools, Torrence also introduced the role of technology in social reproduction and symbolic systems thus going beyond a purely functional view of lithic use (Torrence 1989, 2).

Further aspects to consider are post depositional transforms, both natural and cultural such as trampling, colluviation and ploughing, as is the concept of 'time averaging' where the rate of material deposition is greater than the longer term geomorphic process of sediment deposition (Lucas 2012, 107). These processes result in palimpsests, which, as will be apparent in the following chapter, is very relevant to Guernsey assemblages. It is clear therefore, that some thought must be put into how and why scatters became to be where they were deposited, and the formation process that subsequently altered them.

## 4.4 Post Processualism

Although data collection and lithic analysis techniques were refined during the Processual phase it can equally be argued that little was made of the symbolic meanings that past peoples may have attached to artefacts (Hurcombe 2007, 97). During the 1980s there was a reaction against the rigorous analytical approach that characterised the Processual movement and a greater consideration came to be taken of artefacts in their wider context and the relationship between people, material culture and landscape (Ingold 1993; Tilley 1994). This thinking succeeded in moving understanding beyond the earlier functionalist approach of a more deterministic 'off-' and 'non-site' approaches (e.g. Foley 1981; Schofield 1991) that characterised earlier lithic scatter studies. Despite this paradigm shift however, post processual philosophy did not percolate through to lithic research immediately and developments in the techniques of metrical analysis and site analysis persisted.

#### The Chaîne Opératoire

This term was first employed by Leroi-Gourhan (1943), and as such, the concept, which was developed in French Palaeolithic archaeology effectively pre-dates post-processual approaches. Nevertheless, it was through the works of French Magdalenian lithic researchers such as Leroi-Gourhan that the *chaîne opératoire* concept, especially the technologically focussed approach marked a decisive departure from the 'type fossil' method and subsequently became a major and worldwide influence on post-processual lithic analysis techniques (Bar Yosef & Van Peer 2009, 104).

Leroi-Gourhan (1943) described the *chaîne opératoire* as a sequence of technological actions involved in the manufacture of a given artefact; from the procurement of the raw material, preparation, modification, use and ultimately discard. Although often presented as simplified and generalised linear technical schemas, it was stressed by Dobres that prehistoric agents were not blindly following "preordained rules" during the *chaîne opératoire* but that skill, talent and *savoir-faire* play a large part in the process (Dobres 2000, 174). This is not necessarily the thinking of current French researchers such as Marchand however, who referred to the sequence of technological actions as '*technologie culturelle'* suggesting a specific cultural influence and/or restraint behind the actions of the agent (Marchand 1999, 34). This reflects the differing approaches of French and British lithic experts, an issue that is investigated further at the end of this chapter.

**Experimental Approaches**

Experimental, replicative and actualistic studies of stone tool manufacture and use have a long history in lithic research and therefore can be considered to transcend the changing theoretical paradigms within archaeological research. For example, early efforts to understand the manufacture of stone tools by experimental knapping was undertaken by Evans in the mid-19$^{th}$ century (Anderson-Whymark 2009). Similarly, early efforts were made in the same period to establish tool function by ethnographic comparisons (Stemp *et al.* 2015, 2).

Experimental flint knapping and refitting have come to form an integral part of *chaîne opératoire* studies as a means of understanding and replicating past technological sequences of action (Conneller 2008, 164; Marchand 1999, 34; Donnart *et al.* 2009). An issue with the experimental approach is that the flint-knapping skills of today might not necessarily replicate those of a skilled prehistoric flint-knapper, and does not consider cultural influences acting upon the agent. The experimental knapping and refitting approach is also very much focused on the technological aspects of the lithics themselves without extending to consider the wider technical networks that people create in the associated landscape (Conneller 2008, 165). Nevertheless, this approach is still relevant in lithic research as it gives the researcher an insight into the processes behind the whole lithic production process. For example, the work of French experimentalists Donnart *et al.* on understanding the *chaîne opératoire* of bipolar knapping in northwest France where beach pebbles similar to those in Guernsey were utilised (Donnart *et al.* 2009).

A further aspect of experimental research with an enduring history of development is microwear (use-wear) analysis for identifying tool-use (Newcomer *et al.* 1986; Plisson *et al.* 2002; Stemp *et al.* 2015). Microwear analysis is grounded in the understanding that the study of wear, gloss and damage patterns on stone tools is the most productive method of establishing the original use and function of artefacts (Stemp *et al.* 2015, 1). Actualistic studies, where replica tools are utilised in tasks such as meat butchery then subjected to microscopic analysis to establish use-wear patterns have proved fruitful in the interpretation of Prehistoric tool use (*ibid.*, 3).

**Lithics and landscape**

The most notable changes in the development of lithic research became evident during the 1990s where a more reflexive consideration of the relationship between stone tools, landscape and people was developed. The term 'landscape' has been employed in many different guises in archaeological research ranging from the empirical field work based methods as practiced by Aston (1992) to more experiential, 'peopled' and phenomenological approaches by Ingold (1993) and Tilley (1994). These latter two researchers in particular have influenced the more recent approaches taken by archaeologists investigating lithics; for example, Edmonds (1997), Hind (2004), McFadyen (2006) and Conneller (2008 & 2010).

The introduction of phenomenology to archaeology, especially through the work of Tilley (1994) has arguably resulted in a significant shift in the direction of landscape studies away from the more functional approaches of the past. Of relevance to lithic research in Tilley's work is the relationship between material culture, landscape and people and how these things reference, it is claimed, specific natural features (Tilley 1994, 207). Although Tilley's work has proved influential in archaeology, it has nevertheless been critiqued for an excess of subjectivity (Fleming 2006, 273). More particularly, in relation to lithic scatters, McFadyen (2006, 125) noted that Tilley reduced Mesolithic sites to find-spots marking landscape features, which only later in the Early Neolithic became culturally embedded with the construction of monuments. There is therefore, an issue with Tilley's differing approaches to the Mesolithic and Neolithic, making it difficult to combine his work into one homogenous research direction resulting in a division in approaches between the "natural" Mesolithic and "cultural" Neolithic (*ibid.*). This has implications for this thesis which spans the Mesolithic and Neolithic periods and is further addressed in the following chapter.

**Taskscapes**

An alternative method of incorporating concentrations and scatters of lithics into their landscape setting and resolving the tensions between differing research traditions of the periods is to employ Ingold's concept of 'taskscapes' (Ingold 1993).

Ingold defined a 'task' as "any practical task, carried out by an agent, as part of his or her normal business of life" (1993, 195). By considering concentrations of lithics as evidence for tasks, the landscape is seen as constituting an "array of related activities" between tasks and people where there is no separation between domains of social and technical activity (*ibid.*). In this thinking, rather than treating concentrations of lithics as generated in response to deterministic factors or landscape features, it is episodes of human activity creating the landscape: the landscape is a "congealed form of taskscape" (*ibid.* 1993). Similarly, Edmonds in the paper *Taskscape, technology and tradition* incorporated the idea of taskscapes into the study of lithics stating that without adopting this approach archaeological sites can seem "abstracted from their broader material context" and it is only by considering peoples' movement in the landscape though the interrelated assemblage of tasks that we can better comprehend the connections between people and place (Edmonds 1997, 99). Edmonds also introduced the aspect of 'temporality' from Ingold's work by proposing that lithic scatters would have defined places in the landscape and "influenced the orientation of subsequent activities", perhaps even providing continuity of place through the Mesolithic to the Neolithic (Edmonds 1995, 1999).

Specific criticism of the taskscape concept has been made by Conneller (2010, 189) who warned that it can produce an archaeology of "sameness". She went on to argue that a consideration of the political, social and ideological implications of tasks is also required, as these may have differed through the Mesolithic and into Neolithic. This highlights a possible issue with the use of taskcapes, as despite inviting the reader into Bruegel the Elder's painting *The Harvesters* to understand landscape and temporality, Ingold was arguably implicitly referring to a mobile hunter-gatherer world-view in *The Temporality of Landscape* (Ingold 1993). Further, the concept of taskscapes has subsequently been largely employed in a Mesolithic context (Edmonds 1997; McFadyen 2006). The challenge here is to create a narrative that is relevant to both the Mesolithic and the Neolithic periods, looking for similarities as well as differences. This was achieved by Edmonds to a certain degree in *Taskscape, technology and tradition* although he does move from the mobility of the Mesolithic to a focus on the static architecture of the Neolithic thus emphasising the difference between the two periods (Edmonds 1997, 107). Further, in his report on lithic complexes in the Cambridgeshire Fenlands, Edmonds principally addressed the transitional period of the Early Neolithic when there may still have been an aspect of mobility amongst communities practicing a farming economy (Edmonds *et al.* 1999). This issue of bridging the Mesolithic and Neolithic periods is of relevance to this thesis and will be addressed further in Chapter 5.

**People and Things**

An alternative way of looking at artefacts (not specifically lithics) and the relationship between people and things is that of object biographies. This is an approach which considers the lifespan of a given object from manufacture through to discard. This idea builds on, but goes beyond the idea of the *chaîne opératoire* and stems from a case study by Kopytoff (1986) who argued that in contemporary Western thought there is a polarisation between the concept of people as individuals and objects as commoditised things (*ibid,* 64). Kopytoff suggested that as every person can have many biographies, so objects may similarly have many meanings attached that change through time and ownership (*ibid.*, 68). The idea was further developed by Gosden & Marshall (1999) who argued that an object's meaning may be transformed throughout its life history, and may have the ability to accumulate histories and gain significance as a result of connections with people and events (*ibid.*, 170). Although the concept of object biographies is not routinely employed in lithic analysis, the approach is implicit in the thinking of Edmonds who considered the "transformation of significance" of objects pointing out that the significance of an object is not necessarily dependent upon the object itself, but is instead related to the context or system in which it is situated (Edmonds 1995, 17). The relevance of the concept to this thesis is in the circulation networks of high quality flint and stone that occurred in the study area, and meanings that these objects would have accrued on their journey to Guernsey.

**Summary**

Although the approaches discussed here are relevant to this study they are very much rooted in theoretical thinking. Arguably there is a schism between the process of gathering artefacts, categorising them and constructing an archaeological narrative based on the available data. This point is made by Fleming in a critique of what he described as the "hyper-interpretive" writing present in post-processual archaeology as opposed to the more empirically based processual approach (Fleming 2006, 272). Far from being an outright criticism of post-processual archaeology however, Fleming was essentially calling for archaeologists to "retain their critical faculties" and to keep their muddy boots "very firmly on the ground" (*ibid.*). A sympathetic consideration of this issue was taken by Chadwick (2004, 5) who reasoned that empirical fieldwork and data collection are of "vital importance", but that the human experience of landscapes should also be described. While this is a reasoned view by Chadwick, there are undoubtedly limits in being able to penetrate the prehistoric mind. However, considering Guernsey's dynamic island environment as discussed in Chapter 2, the interplay between people, landscape and environment through time must be taken into account, as well as how communities may have reacted to changes in their world.

## 4.5 The French Approach

As French lithic expertise is extensively drawn on for this thesis it is pertinent here to remark on the differing theoretical approaches to lithic analysis of what may be termed as Anglo-Saxon (or English speaking) archaeologists and our French counterparts. A hint of this divergence in theoretical approaches can be seen in Rozoy's paper, *Typologie et Chronologie* where he stated; "*Toute détermination culturelle (et chronologique) s'appuie essentiellement sur les formes et caractères matériels des objets. C'est ce qu'oublie un peu vite la mode actuelle de décrier la typologie, que certains anglophones présentent comme une virtuosité méthodologique stérile*". Essentially, "The cultural and chronological categorisation of artefacts is primarily based on their typological and material characteristics. This fact appears to be conveniently forgotten with the current fashion for criticising the typological approach that certain 'anglophones' present as sterile methodological virtuosity" (Rozoy 1991, 207). Here, he was presumably referring to 'anglophone' criticism of continental archaeologists relying too heavily on typological methods, and perhaps also to the wider issue of linking types of object to specific peoples or cultures. During the 1960s and 1970s, Binford famously engaged the French archaeologist Bordes in a debate over the interpretation of Mousterian assemblages of stone tools. Bordes argued that variations between assemblages represented distinct and coexisting Neanderthal cultures that had continuity over time. Binford on the other hand, contested that the variation was a product of adaptive needs and differences in the kinds of activity performed at a given site, not associated with social or ethnic identities (Bentley *et al.* 2009, 4).

It is clear from reading the published versions of French lithic Ph.D. theses by Marchand (1999) and Pailler (2007) and the unabridged thesis by Ghesquière (2012) that these works, like that of Bordes, are very focussed on the technical aspects of the *chaîne opératoire,* with studies of artefact typology and manufacturing technology stemming from expertise developed in the analysis of the Early and Middle Palaeolithic stone industries. Recognisable working practices and artefacts that can be readily classified into typological pigeon-holes are then linked to specific cultures. Further, there is little consideration of acculturation or the transition and transformation of ideas, or of the relationships between people, landscape and artefacts. Nevertheless, this is not strictly a critique of French lithic specialist methodology, rather recognition that there is a different approach in the sphere of stone tool studies which must be considered when referencing the relevant literature.

The approach taken by French researchers was remarked upon by Scarre in his paper *Archaeological Theory in France and Britain* published in Antiquity (Scarre 1999, 155-161) where he noted the rejection of processual and post-processualist paradigms in French archaeology and points out the much less prominent part played by theory in French archaeology in general (*ibid.*, 155). This rejection by a nation that produced for example: Foucault, Levi-Strauss and Derrida may seem surprising but in contrast to the 'Anglo-American' traditions, the French have followed a more technical trajectory with, as Audouze argued, an emphasis on the "understanding of inter-assemblage variability" and the evaluation of "technical differences between synchronic and diachronic cultures" (Audouze 1999, 174). A full discussion of this subject is beyond the remit of this thesis and the reader is referred to Scarre's paper for further reading. However, consideration will be taken of French approaches and they will be critiqued when felt necessary.

## 4.6 Summary

The development of lithic analysis techniques have been reviewed in this chapter, with a particular emphasis on how it is possible to elucidate the nature of past human activity from this particular aspect of material culture. The principal question to be resolved in order to establish a working methodology for this thesis is which specific techniques should be taken forward and applied to Guernsey assemblages. Based on the review conducted in this chapter of past and current research methodologies, there are several approaches which are relevant to the aims and objectives of this study. A summary overview of these is provided here:

**Typology**

The enduring value of typological approaches to lithic analysis is attested by the fact that it arguably remains one of the principal research methods in this field. However, instead of being used for purely dating purposes or to define cultures as was the case during the culture-historical period, it is the intention in this thesis that the technique will play a more integrated role in the assessment of the character and chronology of an assemblage. The technique will also help to define which spheres of influence were at play on the island and establishing the degree of connectivity with continental mainland areas through time. This approach also links in with lithic research techniques on the French mainland and thus goes some way to achieving harmonization in methodologies between the two archaeological communities.

**Metric Analysis**

Although the typology of lithic artefacts such as arrowheads plays an important role in assemblage analysis there are cases when few or no retouched tools are present. In this event the metric analysis of flakes and blades as discussed in Section 4.3 becomes the principal method of determining the character and chronological makeup of an assemblage. Nevertheless, there is the possibility that variations in flake dimensions and aspect ratios may be raw material driven in a location where the only available source of flint is in the form of beach pebbles, as is the case on Guernsey. However, the existence of a Mesolithic bladelet industry on the island (Conneller *et al.* 2016) and a flake based tool-set from the Middle Neolithic onwards on the adjacent continental mainland where similar raw material was utilised (Ghesquière & Guyodo 2008) suggests that the use of this analytical technique on Guernsey is valid.

**Landscape, People and Things**

It is apparent from the discussions in Section 4.4 that lithics cannot be fully assessed, understood, and conclusions drawn about the people who made and used them without a consideration of the connections linking lithics, people and place. People transported lithics around the island as well as on potentially dangerous sea crossings from continental mainland areas; the relationship was thus reflexive as lithics were also engendering mobility in people. This leads naturally into the relationship between people and things and the concept that artefacts cannot necessarily be viewed as inanimate and utilitarian objects but have shifting meanings that are dependent on context.

**French Approaches**

Note has also been made in this chapter of differences in the French approach to lithic analysis. This is relevant as French archaeological literature relating to the study area is extensively reviewed for this thesis with the aim of augmenting and complementing the understanding of Guernsey's material culture. Further, the analytical techniques used by lithics experts on the adjacent mainland display strengths and similarities as well as differences to those used in Britain. The linking of types to cultures and chronological sequences may appear anachronistic to the

British view but it has successfully driven the understanding of the Mesolithic, the transition and the Neolithic forwards on the French mainland, even if it is in a less peopled way than we would expect on this side of the Channel. It is the intention to incorporate some of these techniques and ideas into the analysis of Guernsey assemblages.

**Further Analytical Techniques**

Alongside these principle types of lithic analysis are additional techniques such as raw material source, use-wear, reduction sequence and technology analyses, these will be introduced and developed further in the next chapter.

## 4.7 Conclusion

From this overview of past and present lithic analysis methodologies it has been demonstrated that some analytical approaches for lithics such as typological techniques have remained similar for over a century, and others such as metric analysis since the 1960s. However, it is not the techniques themselves but the manner in which we draw conclusions from their data that have changed over time, as well as how we contextualise those conclusions. In order to extract the maximum information from Guernsey's lithics, an integrated artefact analysis and landscape approach will be developed in the following chapter, exploring what the archaeological record of the island may be telling us about the way in which landscape, people and material interact.

# Chapter 5: Methodology

Previous chapters have made clear that the relationships between lithic assemblages, people and landscape on Guernsey have yet to be fully explored and the need to discern residence, activity and mobility patterns highlighted. Chapter 4 reviewed and critiqued the development and evolution of various methods of extracting data from concentrations of lithics in the landscape and suitable methods of analysis were identified. In this chapter, the methodology employed in the interpretation of the island's lithic assemblages is discussed and defined.

## 5.1 Thesis objectives

The three thesis objectives first set out in Chapter 1 are reiterated and further developed here:

1. *Determine the extent to which lithic data reflects changes in land-use during the study period*

   Did Mesolithic people exploit the interior of the island as well as the coast?

   Is it possible to map the movement of populations on the island over time?

   Did the advent of a Neolithic economy on the island change the focus of landscape exploitation rapidly or was this process drawn out?

   Are certain tasks landscape location specific?

This objective required an analysis of the location and composition of assemblages looking for evidence of both diachronic and synchronic changes.

2. *Compare the similarities and differences between Guernsey and northwest France in the use of lithic material*

   Can the lithic industry of the island be related to neighbouring mainland areas through both technology and typology, or is there visibility of an insular tradition?

The chronology of changes in the typology and technology of flint and stone tools is relatively well understood for the period under study on the adjacent French mainland. Parallel developments (or otherwise) on Guernsey may indicate variations in levels of maritime connectivity, or a desire to assert independence.

3. *Determine the extent of evidence for human residence on the island as revealed through the lithic record*

   In the absence thus far of definitive traces of structures on the island that could be interpreted as houses, the question is to what extent can residence be detected through concentrations of lithics?

This required a consideration of the character of the assemblage by searching for elements such as scrapers with use-wear and quantities of burnt flint that may indicate tasks carried out in a fixed location over a period of time. Alternative sources of evidence recovered such as the presence of post holes, hearths and pottery were also considered.

Note: Although involving a degree of subjectivity; residence is used to describe short term events such as a scatter of lithics, and where evidence for longer term occupation is suggested, for example the presence of post holes and pottery, the term settlement is used.

## 5.2 Trial Study and Initial Approaches

In preparation for the analysis and data collection stages an exploratory trial was carried out on Guernsey lithic assemblages from the Chateau des Marais excavation comprising 299 pieces of flint (Barton 1980), followed by the Royal Hotel site collection with a much larger assemblage of 2465 pieces (Sebire 2012). Both of these assemblages had previously been written up, hence the aim of the exercise in this case was to test the methodology to establish if the results obtained matched those in the reports. It soon became apparent however, as reported by Bayer (2011, 123) in his lithics focused thesis, that the idealistic approach of an all-encompassing detailed metrical and technological analysis of many thousands of lithics would be a substantial undertaking and unrealistic given time and resource restraints. As the intention of this thesis was to provide a broader view of human activity across all aspects of the Guernsey landscape a 'smarter' and more targeted methodology was required to answer the relevant questions. In this respect the methodology employed by Marchand (1999, 38) in concentrating on known chronometric changes in tool types, imported materials and complementary data from other artefactual sources was employed. The metric analysis technique was therefore simplified into classes of squat flake, flake, long flake blade and bladelet rather than recording each piece to the nearest millimetre (Appendix A). Using this methodology, it was possible to collect an amount of data that was appropriate to the scope of this thesis. As noted by Edmonds in his study of the lithic complexes in the Cambridgeshire Fenlands, the detection of sites of a certain period may be a matter of critical focus rather than statistical parameters (Edmonds *et al.* 1999, 71).

## 5.3 Data Sources

As initially outlined in Chapter 1, the lithic data for this thesis was principally derived from excavations, and to a lesser extent surface collected material that resides in the island museum archive. The reviewed material totalled approximately 17,400 lithics; the majority of these, some 11,500, had not been previously analysed and the remaining amount analysed but not comprehensively written up. In addition, data in the form of existing lithic reports, either published or unpublished was referred to. Finally, supporting and comparative evidence was referenced from French mainland lithic reports, especially those relating to regions with similar beach pebble flint to that found on Guernsey.

**Site choices**

The choices of which sites and assemblages to analyse was to a large extent dictated by the availability of lithics in the museum archive and the necessity to examine material that had come from more recent and securely recorded contexts. Coupled with this approach, the intention was as far as possible to obtain a spread of data across the island by taking in both coastal and inland, low level and higher plateau sites (the definition of 'coastal' for the purposes of this thesis is a site that was within 1 km of the coast at the time the lithics were deposited).

The nature of the archived collections is such that the majority of lithics derive from sites that are on, or close to the coast even allowing for changes in sea-level since the Neolithic period (see Chapter 2). The excavated Airport site redresses the balance to a significant degree as this is the largest 'inland' assemblage thus far. Several field-walked sites from the interior of the island were also included to provide uniform coverage for this area. One of the sites reviewed, Delancey Park, is the only recently excavated assemblage associated with a megalithic monument, considered to be a Late Neolithic structure (Nash 2012). Of the remaining assemblages, the Airport and Route de Carteret sites were essentially rescue excavations ahead of development and Albecq and Rousse Tower were research excavations.

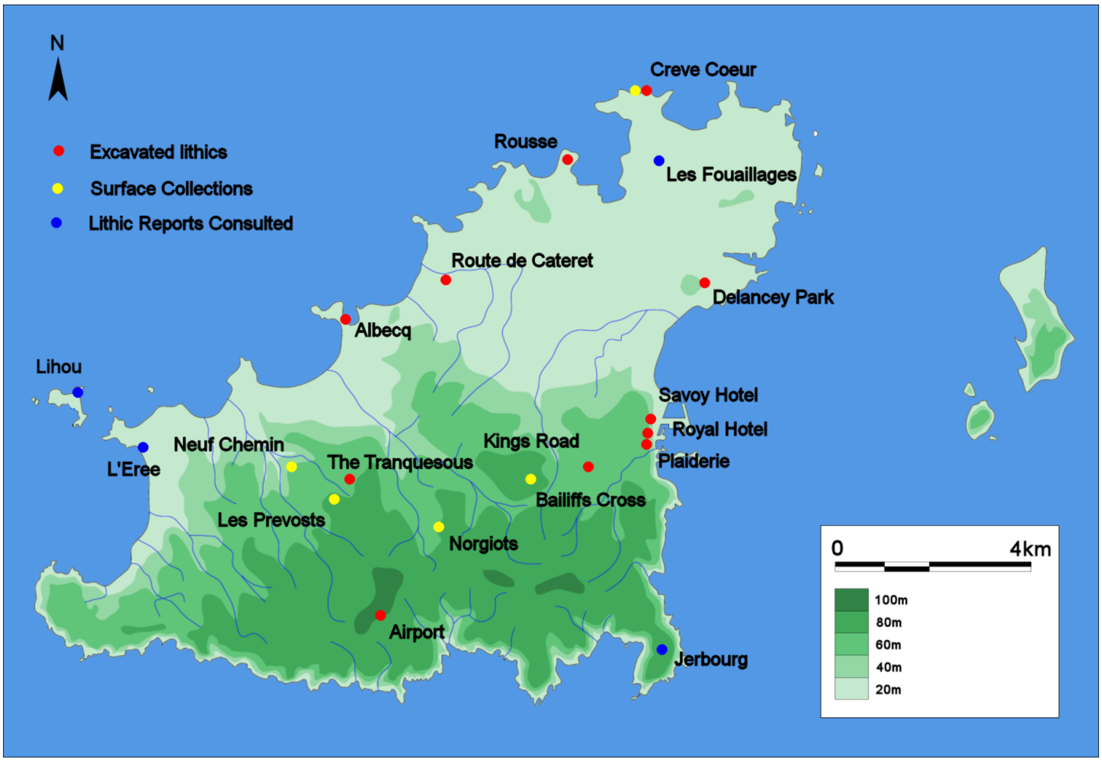



*Figure 20. Site type and location (D Hawley).*

| Site | Location* | Lithic Quantity | Collection Type |
|---|---|---|---|
| Airport | Inland | 3274 | Excavation |
| Royal Hotel | Coastal | 2465 | Excavation |
| Albecq | Coastal | 1956 | Excavation |
| Route de Carteret | Inland | 1856 | Excavation |
| La Plaiderie | Coastal | 888 | Excavation |
| Rousse Tower | Coastal | 810 | Excavation |
| Savoy | Coastal | 434 | Excavation |
| Tranquesous | Inland | 297 | Excavation |
| King's Road | Inland | 275 | Excavation |
| Delancey | Inland | 227 | Excavation |
| Crève Coeur | Coastal | 3697 | Collection/Excavation |
| Norgiots | Inland | 513 | Collection |
| Bailiffs Cross | Inland | 499 | Collection |
| Les Prevosts | Inland | 129 | Collection |
| Neuf Chemin | Inland | 75 | Collection |

*Table 6. Details of the reviewed assemblages.*

*Coastal defined as within 1km of coast during estimated period of human activity.

The various data source types are reviewed and discussed in greater detail here:

**List of Data Sources**

| | |
|---|---|
| *Excavated contexts* | The lithic evaluation process commenced with an examination of assemblages from excavated contexts (see Table 6). The reasoning behind this is that lithics from undisturbed contexts may be dateable, either in relation to $^{14}C$ dating, association with recognised and dateable styles of pottery, or alternatively, relative dating from stratigraphy. |
| *Surface collections* | A significant proportion of the lithic archive on Guernsey derives from scatters that have been gathered by amateur collectors over the past century. However, in many cases, apart from details of the approximate location filed in the SMR there is very little accompanying data on collection strategies or specific concentrations of lithics (Walls 2011, pers. comm.). Nevertheless, once these limitations have been assessed, the analysis of museum collections can prove fruitful, especially when grouped into broad functional tool group categories (Gardiner 1987; Snashall 2002). |
| *Previously Reviewed Assemblages* | Five major sites on the island have previously had their lithic assemblages analysed: Jerbourg (Burns 1988); Les Fouaillages (Audouard 2009); L'Erée (Garrow & Sturt in prep.); The Royal Hotel (Sebire 2012); and Lihou (Conneller *et al.* 2016). The data from these reports was reviewed and incorporated into this thesis. The Royal Hotel lithics were reanalysed however, as it was felt that the report was not comprehensive enough for this thesis. Additionally, a sample was taken from the Lihou assemblage for metric analysis in order to establish a benchmark for Mesolithic assemblages. |

## 5.4 Data Gathering

The lithics are boxed by site and held in the Guernsey Museum archive. The data gathering stage was carried by laying out each site in turn by context (or by feature and layer for the pre 2005 collections), then ordering the pieces out into groups of retouched tools, cores, flakes and blades and debris according to the categories listed in the following section. All retouched pieces and cores were then weighed, measured with a digital calliper and closer examination carried out with a x 10 magnifying glass when required. Flakes were measured for further categorisation by aspect ratio as described in Section 5.5. Note was also made of the proportions of burnt flint and non-flint material such as quartz.

All retouched pieces and cores were photographed in three views from which the most representative or relevant pieces were selected for drawing (Appendix B).

## 5.5 Data analysis

In order to fully characterise the lithic assemblages, a rigorous classification scheme of the technological and typological aspects of the data was employed. Tools, cores, flakes and blades had the following parameters recorded and stored in an Excel database for each site. The criteria and definitions for lithic metrical analysis employed by Andrevsky (1998) were adopted where relevant. For a definition of terms please refer to Appendix A.

**Data Analysis Parameters**

*Artefact type* — Tool, core, flake, blade or debris. The typological aspects of some retouched artefacts are known to act as chronological indicators, such as the presence of backed blades, burins, barb and tang arrowheads and core types. Thus, this category fulfilled two purposes: to identify chronologically distinctive artefacts that can be used to date assemblages and to identify the range of artefacts present which hint at the activities taking place at a given locale.

*Raw material* — Locally obtained or imported. Imported materials are especially relevant to dating, indicators of maritime contacts and the presence of prestige goods.

*Weight* — The total weight of the assemblage was recorded as well as the weight of all individual items classified as tools or cores. This metric is especially relevant for cores as their weight may indicate either an expedient or parsimonious method of working.

*Aspect ratio* — For the purposes of this thesis the flakes were divided up into squat flakes (length/width ratio <1:1), flakes (≥1:1 <1.5:1). long flakes (≥1.5:1 <2:1) and blades (≥2:1). A bladelet has the same aspect ratio as blades but with a width less than 12mm (Butler 2005, 35). The category of true blades was restricted to those pieces with parallel sides and ridges on the dorsal face, this typically applies to imported blades which require superior flint to that found on the island.

*Platform preparation* — Recorded using the following criteria: absence, faceting, trimming, cortex or the use of abrasion. The practice of trimming and abrasion in order to carefully prepare platforms is characteristic of Mesolithic and earlier Neolithic flint-working.

*Cortex* — A metric used to identify the stages of knapping activities that people were employing. Flakes were divided into four sub-groups according to the quantity of remaining cortex on the dorsal surface; starter flakes with 100% cortex covering the dorsal face, primary flakes with cortex present across >50% of the dorsal surface, secondary flakes with <50% cortex

| | |
|---|---|
| | covering the dorsal surface, and tertiary flakes with no remaining cortex. |
| *Bulb type* | An indication of the method by which force is applied to the core (Zetterlund 1990, 65). Four types were recorded: diffuse, pronounced, flat and indeterminate. Both diffuse and flat bulbs generally indicate the use of soft percussion, either direct or indirect. Pronounced bulbs are usually associated with the use of a hard stone hammer. To economise time only non-pronounced bulbs were listed, otherwise the assumption of hard hammer use is made. |
| *Percussion method* | Direct or bipolar percussion. Overall trends demonstrate an increase in the use of this method through the Neolithic period in the region, although it does tend to be site specific (Guyodo & Marchand 2005). |
| *Flake termination* | Cortex, broken, feathered, stepped, hinged or plunging. This metric is in part reliant upon the skill of the knapper and is also indicative of the quality of the raw materials. |
| *Colour* | Only recorded for non-local or for unusual coloured flint. This metric typically identifies imported flint. |
| *Patination* | Observation of Guernsey assemblages suggests that no Neolithic material is patinated yet Mesolithic sometimes is. Therefore, although not necessarily a reliable metric patination will be taken as indicating Mesolithic flint. |

**Further considerations**

The parameters listed above are essentially objective metrics that can be manipulated in a data form. The following categories are more subjective and linked to a consideration of an object's biography, which like the *chaîne opératoire* covers all the stages from acquisition to discard.

**Parameters Defining Object Histories**

| | |
|---|---|
| *Material Acquisition* | Especially relevant to imported material in respect to the social meaning that may have been attached to what may have been regarded as exotic or prestige items. |
| *Movement* | A consideration of the transport of raw materials from the source to places where the flint was processed. In some cases, this may have been close to or at the source; in others, raw material would have been transported further, perhaps to locales of residence. |
| *Exchange* | With the arrival of imported flint on the island, it would be reasonable to ask what exchange networks were being used and what was given in exchange? When applied to areas such as the Channel Islands exchange networks can be used as a means to explain cultural trends and developments, or lack of them. |
| *Transformation* | Flint or similar material when worked is effectively undergoing a transformation which may change its significance. For example, an imported blade may undergo a transformation of significance from a routine object close to the original source into a valued object after a potentially perilous sea voyage to the island. |
| *Use-wear* | Certain retouched pieces and flakes display possible traces of use-wear, indicated by gloss or micro-splintering. Some objects show no signs of use, for example, the finely worked arrowheads found on the island typically do not display any edge damage that would come from use and impact. These artefacts may have been made and owned, not for functional purposes but curated as objects of status to display the skill of the owner, or wealth and prestige if it was an item imported from overseas. |
| *Repair and re-use* | Recycling of imported materials into formal tools may indicate that the status value of the objects had declined or been forgotten. |
| *Discard* | This category is inextricably linked to the context of lithics recovered. In certain cases, discard may have been a structured event. |

## 5.6 Data Presentation

The analysis of many thousands of lithics created an enormous amount of data. In order to translate this into a form that renders trends and changes visually recognisable, tables and graphs were created for each assemblage analysed. The example shown in Table 7 presents the data in the following sequence: cores; flakes and blades; retouched pieces and debris. Also displayed in the table are data such as: summary of the whole assemblage, knapping data, quantities of burnt flakes that may indicate activity close to a hearth area, indication of imported material and degree of patination. These tables are grouped together by site with the artefact drawings in Appendix B.

| Kings Road Assemblage Chart | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Tested pebble | | | | 2 | 13.4 | |
| Unipolar | 6 | 0 | 0 | 6 | 40 | |
| Multipolar | 6 | 0 | 0 | 6 | 40 | **5.5** |
| Discoidal | 1 | 0 | 0 | 1 | 6.6 | |
| **Total** | | | | **15** | 100 | |
| Core Preparation | | | | **0** | | **0** |
| **Flakes** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | 5 | | | 5 | 5 | |
| Squat flake | 7 | 5 | 2 | 14 | 14 | |
| Flake | 11 | 30 | 18 | 59 | 59 | |
| Long flake | 4 | 7 | 7 | 18 | 18 | |
| Blade | 0 | 0 | 0 | 0 | 0 | **36.4** |
| Bladelet | 0 | 2 | 2 | 4 | 4 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 27 | 44 | 29 | **100** | 100 | |
| **%** | **27** | **44** | **29** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 5 | 6 | 3 | 14 | 54 | |
| Notched | 0 | 4 | 1 | 5 | 19.2 | |
| Utilised | 0 | 2 | 1 | 3 | 11.5 | |
| Piece Esquillee | 0 | 2 | 0 | 2 | 7.7 | **9.4** |
| Retouched flake | 0 | 1 | 0 | 1 | 3.8 | |
| Retouched blade | 0 | 0 | 1 | 1 | 3.8 | |
| **Total** | | | | **26** | 100 | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 15 | 5.5 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 100 | 36.4 |
| Retouched Pieces | 26 | 9.4 |
| Debris | 134 | 48.7 |
| **Total** | **275** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Platform Prep | 5 | 5 |
| Imported | 0 | 0 |
| Patinated | 2 | 0.7 |
| Burnt | 23 | 8 |
| **Cores** | **No** | **%** |
| Anvil Knapping | 5 | 38.5 |

*Table 7. King's Road assemblage chart example.*

From these tables graphs were also produced in the form of bar graphs and pie charts to provide visual comparisons of data for intra and inter-site analysis, for example, relative quantities of retouched tools in the King's Road assemblage (Figure 21).

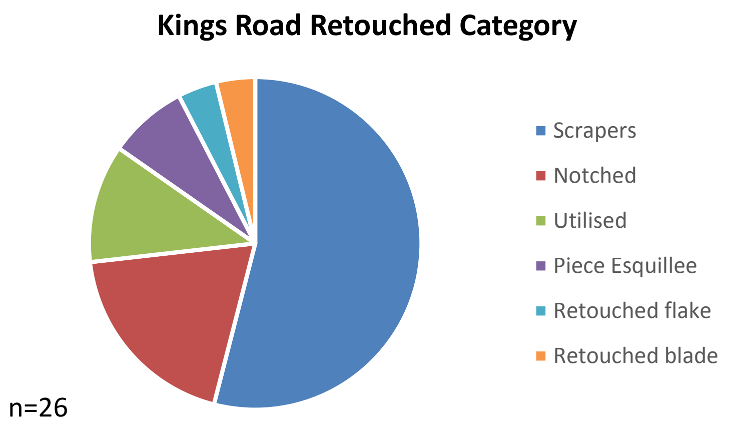



*Figure 21. Retouched flint category graph from the King's Road assemblage.*

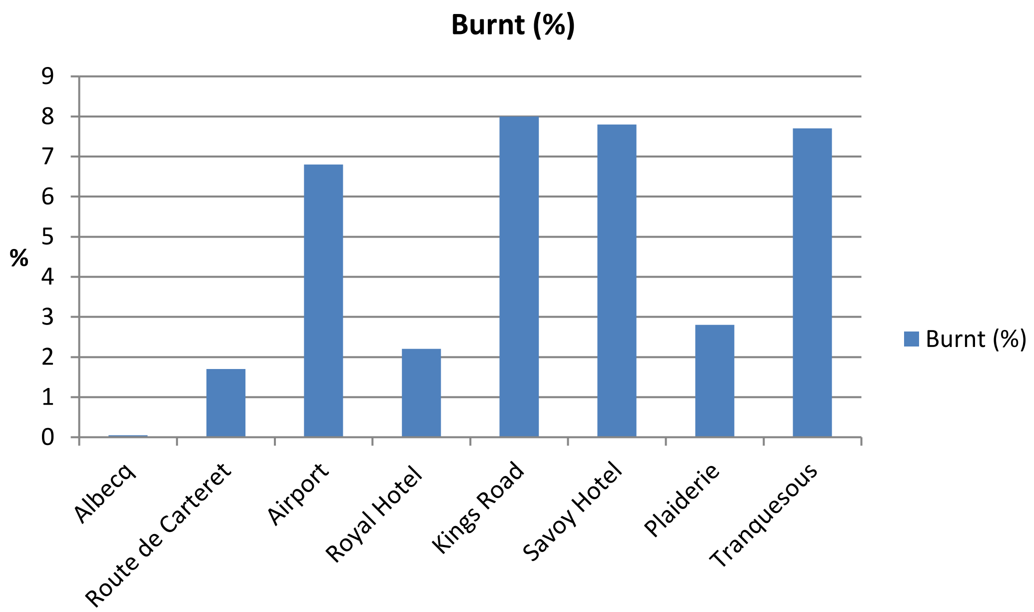



*Figure 22. Inter-site chart of burnt flint. Here, relative quantities of burnt flint are displayed as a percentage of the total assemblage. The more significant amounts may indicate flint-working activity close to hearths perhaps implying some form of residence.*

## 5.7 Data Interpretation

### Chronology

Arguably, the key to understanding the nature of human activity on Guernsey for the purposes of this thesis was to establish a robust dating scheme that could then be applied to the data obtained. One of the main issues with this approach is the lack of a secure dating evidence for the lithic assemblages on the island. Hence, the works of French lithic specialists on the Armorican Massif and on Guernsey were extensively consulted in order to establish a secure chronological framework with which to compare Guernsey assemblages. For example, the $^{14}C$ dating of sites, and the presence of imported material that is securely dated on the adjacent continental mainland. This, allied with evidence from complimentary artefacts such as pottery and the architecture of associated monuments provided a more or less secure chronological anchor for comparison purposes.

The proposed elements in the dating of assemblages are listed in Table 8:

| **Period** | **Techniques and Materials** | **Retouched Forms** |
|---|---|---|
| *Early Mesolithic* | Local beach pebble flint only<br>Hard and soft hammer use<br>Platform preparation<br>Direct percussion | Obliquely truncated points<br>Isosceles triangles |
| *Middle Mesolithic* | Local beach pebble flint only<br>Hard and soft hammer use<br>Platform preparation<br>Direct percussion | Points with retouched base<br>Scalene triangles<br>Backed bladelets<br>Bertheaume group |
| *Later Mesolithic (Separated into mésolithique récent et final in Normandy)* | Local beach pebble flint only<br>Hard and soft hammer use<br>Platform preparation<br>Direct percussion | Symmetric and asymmetric inversely retouched trapezes and/or triangles although these forms appear correspondingly later further into the western extremities of the continental mainland |
| *Early Neolithic* | Imported Cinglais blades<br>Local beach pebble flint<br>Hard and soft hammer use<br>Platform preparation<br>Direct percussion | Transverse arrowheads<br>Burins |
| *Middle Neolithic* | Local beach pebble flint only<br>Hard hammer<br>Flakes replace blade technology<br>Bipolar percussion in evidence | Scrapers dominant<br>Transverse arrowheads |

| | | |
|---|---|---|
| *Late Neolithic* | Grand Pressigny imported flint<br>Local beach pebble flint<br>Hard hammer<br>Flake based industry<br>Bipolar percussion predominant | Scrapers dominant<br>Transverse arrowheads and early barbed and tanged forms |
| *Early Bronze Age* | Grand Pressigny imported flint<br>Local beach pebble flint<br>Hard hammer for local working<br>Flake based industry<br>Bipolar percussion predominant | Barbed and tanged and hollow base arrowheads<br>Scrapers dominant |

*Table 8. Dating of Guernsey sites from current data based on typology and technology.*

For a representation of site chronology, summary tables are presented in Chapter 6 showing inferred lithic contribution by period as major presence/minor presence/possible presence as per the Airport site example shown below:

**Airport: Inferred Lithic Contribution by period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 9. Airport assemblage chronology summary table.*

In the following table (Table 10) the rationale behind the various aspects of the data obtained during the analysis stage is presented with respect to the numbered research questions stated at the start of this thesis, and further developed at the beginning of this chapter in Section 5.1.

| Data Category | Information Type | Relevance to Thesis Research Objectives |
|---|---|---|
| Raw material type | Either locally obtained or imported | 1. Chronology of land use<br>2. Mainland connectivity |
| Reduction sequence | Percussion type and platform preparation | 1. Chronology of land use<br>2. Mainland connectivity |
| Typological | Chronologically distinct tool types | 1. Chronology and nature of land use<br>2. Mainland connectivity |
| Technological | Reduction techniques and working methods | 1. Chronology and nature of land use<br>2. Mainland connectivity |
| Metrical analysis | Flake and blade proportions | 1. Chronology of land use<br>2. Mainland connectivity |
| Quantitative | Relative proportions of retouched pieces, cores and debris | 1. Chronology and nature of land use<br>3. Residence and settlement |
| Qualitative | High quality worked pieces, core and platform preparation, and tool proportions | 1. Chronology and nature of land use<br>2. Mainland connectivity |
| Condition | Burnt flint, used tools | 3. Residence and settlement |
| Location | Distribution of lithics in the island landscape | 1. Chronology and nature of land use<br>3. Residence and settlement |

*Table 10. Lithic parameters and their relevance to the thesis research objectives.*

## 5.8 Establishing a Narrative from the Data: Taskscapes and Object Histories

With the data collated, the approach then taken was the reconciliation of results obtained from the artefacts themselves with a consideration of the associated island landscape and seascape. To achieve this, the thesis drew in particular on the works of Edmonds (1995 & 1997), Conneller (2008 & 2010) and McFadyen (2006) with their exploration and use of the concept of taskscapes. This approach arguably does not wholly encompass the artefactual aspect of the thesis however, therefore object biographies, the relationship between people and things was also considered (Gosden & Marshall 1999; Kopytoff 1986). These two concepts combined took the research focus beyond the raw lithic data itself to address the nature of Guernsey communities through both space and time.

**Taskscapes**

The concept of taskscapes was initially discussed in Chapter 4, where it was explored and critiqued as an approach that has been used as a means to situate lithics within their landscape context as well as to better define the connections between people and place. The application of taskscapes for the purposes of this thesis involved thinking of the study area as a network of linked tasks, places and people rather than treating scatters and concentrations of lithics as being generated in response to purely deterministic factors or landscape features. This approach, it is argued, provided the 'missing link' between individual sites on the island, the 'dots on the map', and situated them in their wider landscape context. For example, the coastal site of Crève Coeur yielded significant quantities of debris from the knapping of flint pebbles that would have been collected from the nearby beach, with the core reduction techniques suggesting a late Neolithic/Early Bronze date for the working (see Chapter 7 for a discussion of this). A sondage excavation revealed a pocket of this debris trapped at the base of an outcrop of rock, presumably upon which the flint knapper would have been sitting when carrying out his or her task. The difficulty in refitting the knapping debris suggested that people had returned to the same spot many times to knap flint and removed a proportion of the material each time. The large proportion of primary material and lack of cores and tools found here implied that the partially worked pebbles were subsequently taken to inland places of residence or settlement for further working, for example: King's Road or Delancey Park both of which date to the same period. The lithic scatters marking these inland locales contained fewer primary flakes and more worked-out cores thus linking them back to the coastal collection and knapping sites such as Crève Coeur.

Many of these inland assemblages also contain high proportions of scrapers with evidence of possible use-wear, which tells of people working hides that may have come from cattle reared and grazed on pastures in the upper regions of the island. The distribution of stone axes and environmental evidence in this part of the island suggests woodland clearance occurring at this time.

Although this vignette example is brief and simplistic, it does highlight that rather than portraying site 'A' at the coast and site 'B' inland as separate entities, the concept of taskscapes draws the networks of tasks together into the narrative. It also encourages the writer to consider people moving around the island and how events elsewhere, such as woodland clearance, are all part of an associated network of linked tasks, thus bringing dynamism and people back to the account. The aspect of temporality is intimately bound up with taskscapes, whether this is in respect to short term flint knapping activities or longer term seasonal cycles of activity with people returning to remembered or persistent places. Nevertheless, as pointed out by Conneller (2010, 185), the concept is not without its problems when considering time spans of millennia. There is an issue of atemporality during the Mesolithic period in Britain where the archaeological narrative driven by taskscapes has a tendency to smooth out people's lives into a series of generic tasks such as flint-working, and hunting and gathering. There is also the issue of 'uncritical thinking' where sites that are not necessarily temporally linked are included into a "single atemporal, unchanging seasonal round" (*ibid.*).

Note was taken of these observations and care was taken to consider events that took place and impacted on the Mesolithic, Neolithic and Early Bronze Age landscapes of Guernsey. Fine grained events may be difficult to discern in the lithic record, but as discussed earlier in Chapter 2, environmental and climatic forces were continuously at play on the island at this time, for example, changing sea-levels, diminishing land areas and cooling events. The consideration of all these factors as evidence, and how communities chose to deal with them adds dynamism to the narrative; the environment was constantly changing and the 'unchanging' seasonal round was undoubtedly constantly in flux. Similarly, the linking of sites throughout the study period will only be considered if there is a sufficient and reasonable degree of evidence suggesting that they are contemporaneous.

The issue with the applicability of taskscapes to the reconstruction of the past also spills over into Neolithic and Early Bronze Age periods, as it is apparent that many of the narratives employing this approach are principally directed towards the hunter-gatherer moving through the landscape and not necessarily settled communities practicing a farming economy e.g. Edmonds (1997), McFadyen (2006) and Conneller (2008 & 2010). Neolithic communities on Guernsey would still have retained a degree of mobility however; the sourcing and transportation of flint from the coast to inland locales to be further processed may have followed a similar pattern to earlier periods. Additionally, different modes of mobility related to livestock also become evident during this period, transhumance for example (Edmonds 1997, 105). A further consideration is that taskscapes and people's movement around the island may have become more structured or even restricted by the building of funerary monuments and land tenure. This argument will be further developed in the final chapters.

If the taskscape approach can be used as a means to people the landscape, it is equally the case that this thesis is essentially rooted in the study of artefacts and despite arguing for technical practices being embedded in sociality, Ingold (1993) arguably glosses over individual objects themselves and how they may have been embedded in the social lives of people. It is to this end that a consideration of the changing value of 'things' is also linked in to this study.

**Object Biographies**

As discussed in the previous chapter, objects themselves can also be considered to have lives. In other words, objects or artefacts do not necessarily have a fixed ritual or exchange value and they should not be regarded as inanimate, but as they are entangled with the lives of people they can inform us of changes that have taken place in the social world around them (Gosden & Marshall 1999, 170). This is made all the more relevant for certain lithics as the networks of movement involving them extend far beyond the island and onto the continental mainland.

Although this approach may not have huge relevance to the greater mass of lithics sourced locally on Guernsey, whose biographies may be difficult to untangle, short lived or unreadable, it is these locally produced and widely available artefacts that have the potential to tell us about people's connection to place and their movement around the island. On the other hand, items that were imported on a lengthy and potentially dangerous sea voyage from mainland areas may have accumulated new and powerful meanings on the way, and may have been accorded the most respect (Chadwick 2004, 205). The concept of object biographies therefore, gives an insight into the life of an object and the shifting meanings and values that may have been attached to it. It can also be argued, that the relationship between person and object would have been reflexive, that the value of the object would have been intimately bound to the social standing of the person or community to which it belonged.

The intention of employing both taskcapes and object biographies is to move the narrative beyond the raw data and to populate the landscape, not only with the lives of people, but also with the lives of things. The analysis of many thousands of lithics created a mass of numerical data that was then processed and presented in the form of charts and graphs to render the information more accessible. Although this data could then have been used to prove a point such as ‘x’ tools present in ‘y’ period etc., this would not necessarily portray a narrative of human life on the island and the connection between people and things.

Finally, although the term narrative is typically taken to describe a work of fiction it can, as Jones argued, also be considered as a device for “opening up and providing entry into an argument” (Jones 2002, 69). Facts can be constructed in multiple ways, and thus can be situated in varying narrative frameworks (*ibid*.). This does not mean that ‘hyper-interpretive’ writing as critiqued in the previous chapter was employed in this thesis; rather a considered presentation of facts in a narrative form was employed when considered appropriate.

## 5.9 Conclusion

This chapter has introduced and discussed choices of suitable research methodologies that were employed in this thesis. The ‘whole assemblage’ approach was used on a pragmatic level, allied with a range of objective and subjective data parameters to provide a measured interpretive consideration of the part that people played in the process of lithic acquisition, working and discard. The data, once compiled was processed using charts and tables to allow a visual indication of the chronology and composition of the lithic assemblages. On the micro scale, individual pieces, and on the macro scale whole assemblages were therefore able to be dated based on a database of knowledge built up from a combination of local and adjacent French mainland lithic research (e.g. Audouard 2009; Ghesquière & Guyodo 2008; Joussaume 1981; Marcigny *et al.* 2010; Patton 1985). Wider landscape considerations were also incorporated using taskscape and object biography concepts to provide a dynamic ‘peopled’ view of the island. However, fine grained dating results were not anticipated from lithics alone; supporting chronological information where available was used to supplement the lithic data, for example $^{14}C$ dating, environmental evidence and pottery sequences.

The following chapter provides a review of all the assemblages analysed for this thesis. These are presented as excavation report summaries, the conclusions of which are then carried forward to a full assessment of Guernsey lithics in Chapter 7.

# Chapter 6: Site Analysis and Results

In this chapter, summarised analysis results from the reviewed assemblages are presented on a site by site basis in order of assemblage size. A range of locations from around the island as well as lithic data resulting from a variety of collection methods were selected following the parameters discussed in Chapter 5. Additionally, a sample of 200 lithics was taken from the Mesolithic Lihou assemblage, although this site has only recently been written up (Conneller *et al.* 2016), the metric analysis data was required for comparison purposes.

The principle questions explored here are to what extent lithic assemblages from various landscape contexts (coastal, inland, upland plateau) differ in composition, character and temporality of deposition. The aim is to detect any such variations evident that provide clues to human activities and mobility in the landscape. This chapter should be read in conjunction with Chapter 7, where the raw material acquisition, *chaîne opératoire,* typological and technological aspects of the reviewed assemblages are discussed in greater detail. All assemblage composition tables and artefact drawings are to be found in Appendix B.

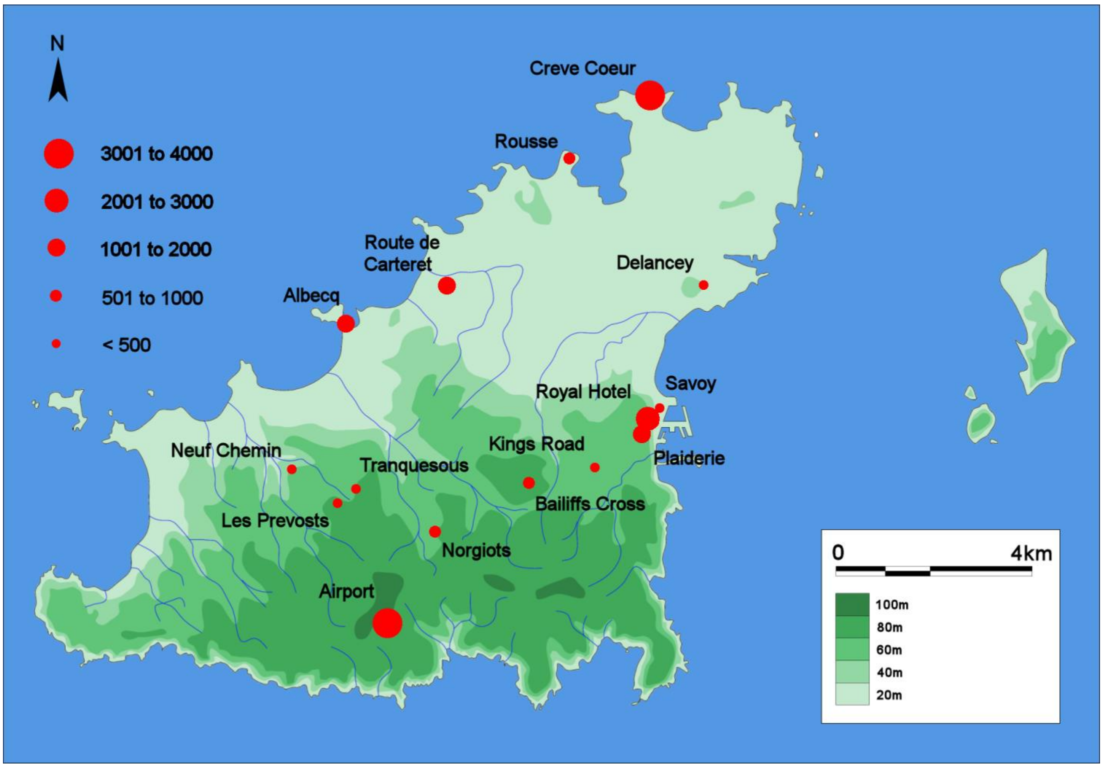



*Figure 23. Location and size of assemblages reviewed in this chapter (D Hawley).*

## 6.1 The Airport (MGU5318)

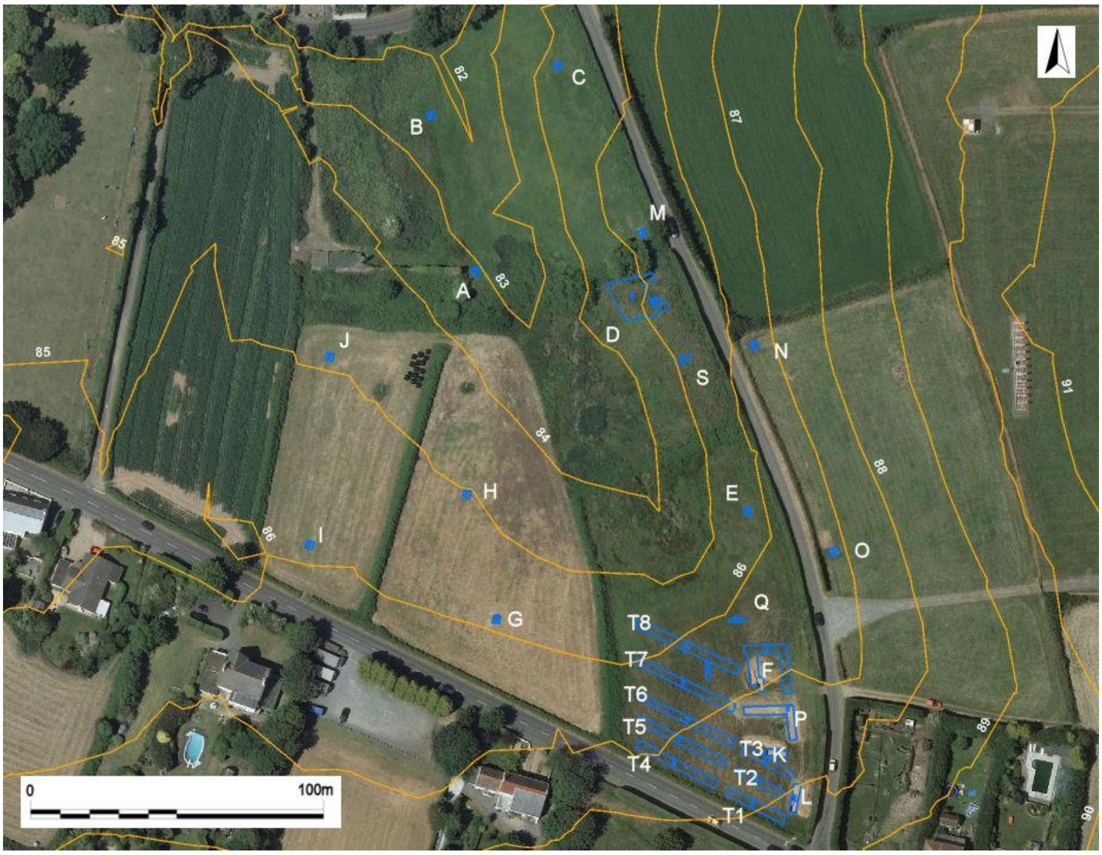



*Figure 24. Aerial view of the Airport site showing the trench locations (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 141 | 4.3 |
| Core Preparation | 5 | 0.2 |
| Flakes and Blades | 1169 | 35.7 |
| Retouched Pieces | 146 | 4.4 |
| Debris | 1813 | 55.4 |
| **Total** | **3274** | 100 |

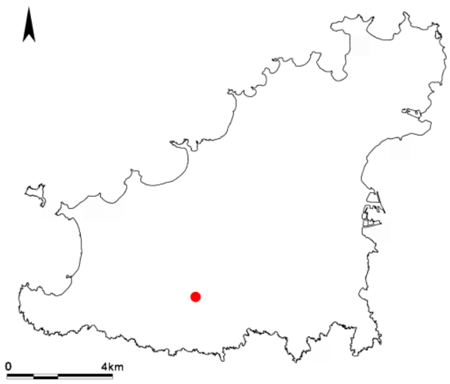



*Figure 25. Summary chart and location.*

**Location**

The Airport site is situated to the south of the island, immediately to the west of the current airport runway. The site is at approximately 85 m AMSL and close to the highest part of the island (Figures 24 & 25). The excavation consisted of a series of trenches and test pits totalling *c.*700 m² located at the head of a shallow valley running down to the northwest (Figure 24).

**Excavation History**

The site was excavated by the States of Guernsey Archaeology Department between 2009 and 2012 ahead of work to extend the western end of the runway safety areas. No known previous excavation had taken place in the area. The main excavation activity with trenches F, K, L, P, Q, R and T 1-7 (T8 was not excavated) took place at the south-east corner of the field, bordered to the south by the main road past the airport, Route de Plaisance, and to the east by the now closed La Mare Road. There was a further Trench (D) to the north and twelve test pits located in the immediate area to the north and west (Figure 24).

**Site Formation and Geomorphology**

Previously cultivated land comprising *c.*25 cm of topsoil with modern finds plus some redeposited material brought up from lower layers by cultivation. This was underlain by cultivated subsoil - an orangey/brown loess which merges into a natural subsoil. The vast majority of finds derive from this cultivated subsoil context and the lithic analysis results confirm post depositional disturbance. Natural geology was typically no more than 0.75 m deep across the site (De Jersey 2013, pers. comm.).

**Assemblage Detail**

The recovered lithic assemblage comprises approximately 3350 pieces of worked flint and stone of which 3274 were fully measured and catalogued, unstratified material was observed but not recorded.

The rolled and battered cortex remaining on the worked flint in the assemblage demonstrates that the raw material derives almost exclusively from pebbles sourced from local beaches. There are however, two examples of flint imported from the continental mainland, a fragment of Cinglais flint blade dating to the Early Neolithic, and a fragment of Grand Pressigny flint fashioned into a scraper dating to the later Neolithic/Early Bronze Age transition (see Chapter 7 for further details on imported material). Additional non-flint worked lithic material includes a small number of quartz flakes, a fragment of a dolerite ring and some smoothed dolerite pebbles.

Retouched pieces comprise 4.4% of the assemblage with 146 recovered, within the average spread for all reviewed sites. Of these, 48.7% are scrapers, half of which are manufactured from the initial removals from pebbles, demonstrated by the large area of cortex on the dorsal face (Appendix B1, Figure 86 Nos. 3; 4 & 7). Scrapers are difficult to date by typology alone, but typically dominate tool-sets during the Middle and Late Neolithic (Ghesquière & Guyodo 2008, 116). There are a further 14 scrapers manufactured on tertiary flakes, two of which are blade scrapers (Appendix B1, Figure 86; Nos. 5 & 6), these may derive from the Early Neolithic period (Ghesquière & Marcigny 1998, 62; Guyodo *et al.* 2001, 648). Notable here is the quantity of notched flakes, which at a total of 15% of all retouched pieces may indicate woodworking and plant processing activities taking place in the area (Plisson *et al.* 2002, 801). Also relatively common at 6.8% are flakes showing gloss or micro-splintering from possible use-wear. Microdenticulates, tools that are considered a chronological indicator of the Late Neolithic (Bocquet 1980, 76), make up 5.5% of the retouched pieces overall (Appendix B1, Figure 85; Nos. 12, 13 & 14).

The Mesolithic is represented by abruptly retouched bladelets, a microburin and obliquely truncated bladelets (Appendix B1, Figures 87 & 88), these have affinities with the Middle Mesolithic series of the Cotentin, Normandy (Ghesquière pers. comm.). Four truncated flakes were also recovered (Appendix B1, Figure 87; Nos. 5-8), these are more problematic to date as similarly worked flakes also appear in the Early Neolithic (Marchand pers. comm.). Three bladelet cores (Appendix B1, Figure 90; Nos. 7, 8 & 10) could also date to this period.

Although an inland site, the ratio of cores to knapping debris compares favourably with Guernsey coastal sites such as the Royal Hotel (Section 6.2), and Albecq (Section 6.3). The lower percentage of starter and primary flakes however, and the lower average weight of the cores at 22.4 g, around a third less than those from the Albecq coastal site suggests that people were choosing to bring partially worked pebbles here for further reduction and tool-making. The significant proportion of scrapers and notched flakes amongst the tool-set indicates hide working and perhaps woodworking activities taking place.

**Chronology**

The earliest finds comprising microliths, retouched bladelets and cores date to the Middle Mesolithic. Although low in proportion (6% of all retouched pieces), the quantity is significant when compared with other reviewed assemblages across the island. The working found here demonstrates that trends in lithic typology were following those on the adjacent Cotentin peninsula, despite Guernsey having become separated from the French mainland during the Early Mesolithic as discussed in Chapter 2. Although Mesolithic sites in the Channel Islands tend to be in dominant locations close to and overlooking the sea, the Airport site in this case is an exception to this rule suggesting that previous interpretations may be a function of the limited number of sites surveyed. The site location, at the head of a valley running down to the west coast may therefore have been situated on a routeway connecting two separate resource zones of the island: coast and upland plateau.

A chronologically diagnostic find from the Early Neolithic period on the continental mainland is the fragment of imported Cinglais flint from Normandy found in Trench D. Additionally, a hearth in Trench D has been $^{14}C$ dated to Cal 5060-4935 BC (Beta-399625). This is an interesting juxtaposition of artefact and date falling on the cusp of the Mesolithic/Neolithic transition and implies either Late Mesolithic people partaking in exchange networks, or Early Neolithic people were exploiting the area soon after arriving on the island. This scenario is discussed further in Chapter 8.

The most intense period of activity on the sites however, occurs during the Middle to Late Neolithic, as reflected by the scraper based assemblage and the reduction process displaying moderate amounts of bipolar percussion. This chronology is confirmed by the interim pottery analysis with the earliest sherds dated to 4500 BC, a Middle Neolithic 1b date, but the majority dated to the Middle Neolithic II (4300–3500 BC) (Pioffet 2011). Hints of activity continuing into the Early Bronze Age are evident with the Grand Pressigny flint.

**Airport: Inferred Lithic Contribution by period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 11. Airport assemblage chronology summary table.*

**Summary**

The Airport assemblage comprises a palimpsest of lithic artefacts ranging in date from the Middle Mesolithic through to the Early Bronze Age with many examples of chronologically diagnostic finds from different periods being found in the same contexts. In this respect there is a similarity to many of the other assemblages reviewed for this thesis. Despite the mixed nature of the assemblage, there is a tenuous chronological trend evident across the site with Middle to Later Neolithic lithics dominating in Trench D and earlier finds being more prominent (albeit not exclusively) in the Trench F and T complex.

Overall, the lithic assemblage profile, together with the presence of hearths, pottery and traces of possible postholes makes it reasonable to state that people were settled here over a significant period of time throughout the Middle Neolithic (Table 11). Connectivity with both continental mainland areas of Normandy and Brittany from the Mesolithic era through to the Early Bronze Age is hinted at by similarities in lithic typology and technology, and the presence of two imported pieces of what may have been regarded on the island as high status flint.

## 6.2 Royal Hotel (MGU2765)

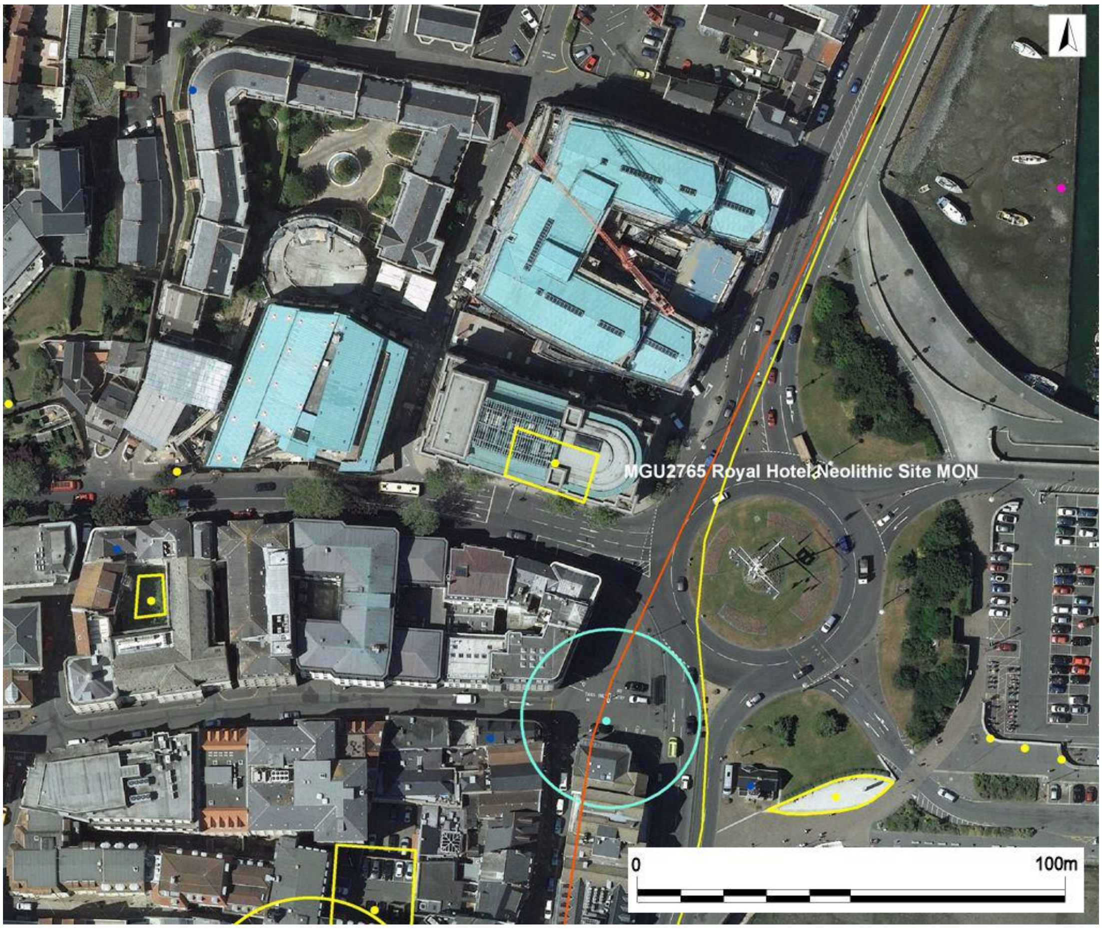



*Figure 26. Aerial view of the Royal Hotel site (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 70 | 2.8 |
| Core Preparation | 11 | 0.5 |
| Flakes and Blades | 688 | 27.9 |
| Retouched Pieces | 104 | 4.2 |
| Debris | 1592 | 64.6 |
| **Total** | **2465** | 100 |

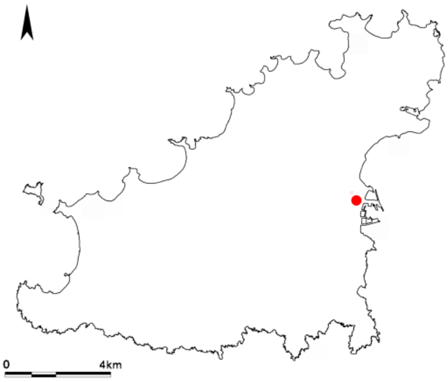



*Figure 27. Summary chart and location.*

### Location

The Royal Hotel site is located at the base of a slope close to the current seafront on the east side of the island in St Peter Port (Figure 26). Throughout the Early and Middle Mesolithic period the area between the site and Herm would have been dry land and only became separated during 6th millennium. By the Early Neolithic the coastline would have been close to the current location.

**Excavation History**

The archaeological excavations took place ahead of development in 1999 and 2001. Four trenches in total were opened extending to *c*.100 $m^2$ in area. Trench 3 was eventually incorporated into Trench 4 which provided the majority of the finds. Although a full excavation report for the site appeared in the 2011 *Report and Transactions of La Société Guernesiaise* (Sebire 2012), the lithics were re-evaluated for the purposes of this thesis.

**Site Formation and Geomorphology**

The site being in an urban location had been heavily disturbed and was also subject to  slope-wash from higher parts of the immediate area. Six archaeological context layers were noted in the excavation report, all comprising loess deposits. The first four layers containing modern and prehistoric artefacts were described as ‘very disturbed’ (Sebire 2012, 195). The final two (5 & 6), were less disturbed and contained prehistoric pottery and flint (*ibid*.).

**Assemblage Detail**

A total of 2465 lithics from the site were fully measured and catalogued. The raw material consists primarily of local flint beach pebbles although there are four fragments of imported Cinglais flint blade present that would have been imported from Normandy. Non-flint worked lithic material includes a small number of quartz flakes.

The 104 retouched pieces recovered form 4.2% of the assemblage, a proportion on par with many of the surveyed sites in this thesis. There is a wide spread of tool types, although as with most assemblages on the island scrapers dominate making up 73% of the category. Most of the scrapers display signs of micro splintering around the worked edges possibly suggesting use-wear and people active in the immediate area. Splintered pieces are frequent at 11%, with the remainder of the retouched category comprising piercers, notches and three retouched flakes, tools that may have been used for a variety of material processing tasks (Plisson *et al.* 2002, 801) .

**Chronology**

The earliest artefacts recovered from the site are the three Blanchere points dating to the Upper Palaeolithic, a period when Guernsey would still have been connected to the adjacent French mainland (Guyodo & Hamon 2005, 390). These early elements are perhaps the most informative, potentially indicating some of the earliest phases of human activity on the island. Indicators of Mesolithic communities active in the area include the above average quantities of blades, bladelets, blade cores and some patinated flint.

The Early Neolithic period is also evident with the presence of four fragments of Cinglais flint, which may be debris from the manufacture of tools from a complete blade. No finished tools from Cinglais flint were recovered here, although a piercer was found at the nearby Savoy site (Section 6.7).

There is one transverse arrowhead present in the assemblage indicating Neolithic activity although this type is difficult to date precisely as they were used throughout the middle to late phase. The majority of the remaining assemblage is dominated by scrapers, which, along with splintered pieces and flake production from bipolar percussion indicates later Neolithic people active here and suggests a variety of tasks taking place at the site including the manufacture and use of tools. The lower than average proportions of starter flakes and cores but high proportion of tested pebbles may infer some zonal partition of activities, but given the amount of disturbance and the multi-period nature of the site this remains conjectural.

**Royal Hotel: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | ■ | | |
| Early Neolithic | | ■ | | |
| Middle Neolithic | | | ■ | |
| Late Neolithic | | | | ■ |
| Early Bronze Age | | | ■ | |

*Table 12. Royal Hotel assemblage chronology summary table.*

**Summary**

Similar to many of the lithic assemblages analysed for this thesis, the Royal Hotel site is a palimpsest with elements dating from the Upper Palaeolithic through to the Early Bronze Age (Table 12). It is difficult to recognise any ordered chronological progression through the contexts however, and the existence of Upper Palaeolithic and Mesolithic artefacts in some of the upper layers suggest that the site has been subject to post depositional disturbance by natural and/or human activities. Despite this there are some diagnostic tools that allow dating phases to be established with the main phase of occupation situated during the middle to late Neolithic.

## 6.3 Albecq (MGU224)

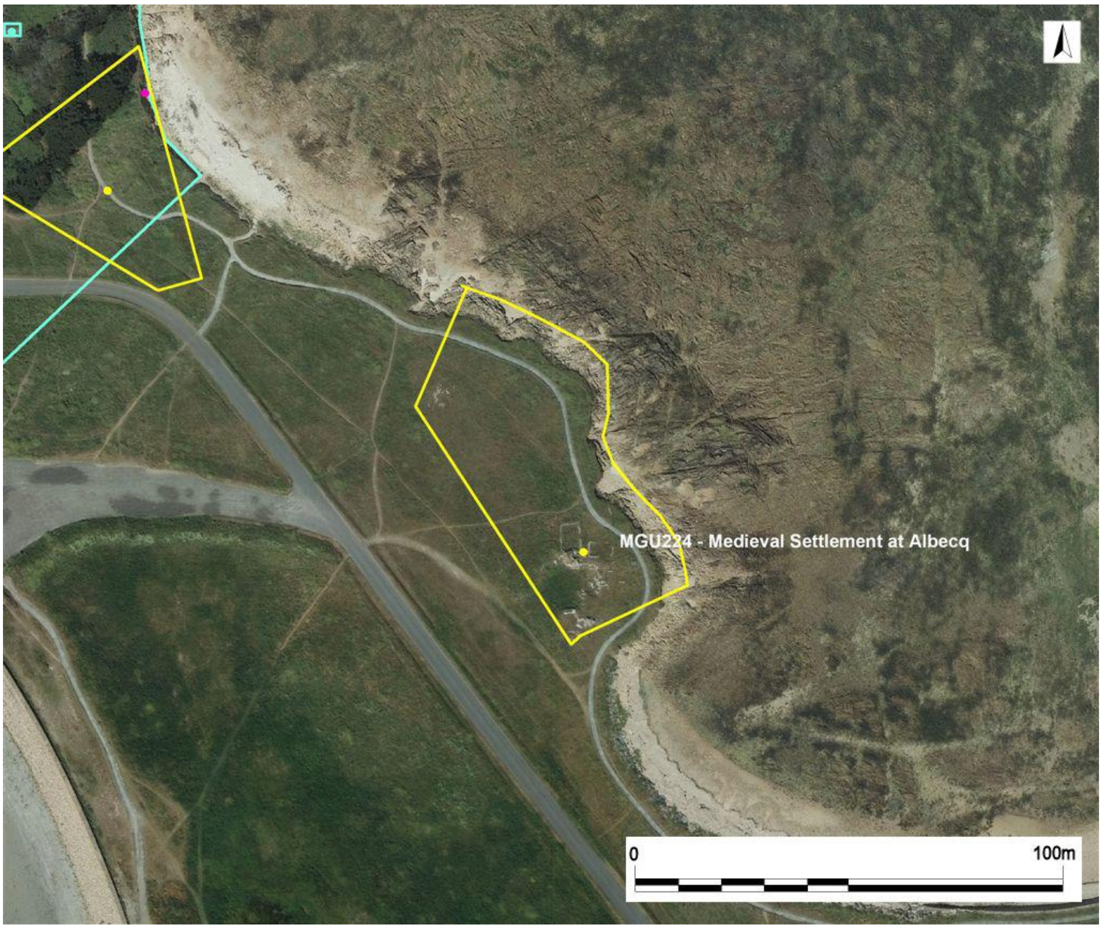



*Figure 28. Aerial view of the Albecq site (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 84 | 4.3 |
| Core Preparation | 1 | 0.1 |
| Flakes and Blades | 472 | 24.1 |
| Retouched Pieces | 18 | 0.9 |
| Debris | 1381 | 70.6 |
| **Total** | **1955** | 100 |

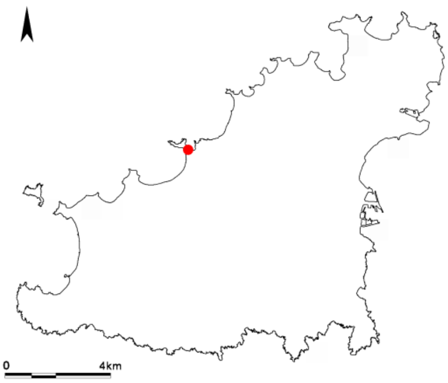



*Figure 29. Summary chart and site location.*

**Location**

Albecq is situated on the west coast of Guernsey, on a narrow promontory known as Hommet Headland (Figure 28).

**Excavation History**

The site was excavated from November 1994 by Burns and subsequently by Sebire in 1995, and concluded with the backfilling of the site in November 1995. Albecq is essentially a medieval site comprising the remains of three stone buildings set around a courtyard. It is thought that one building was a dwelling and the other two were of agricultural or industrial use. A small hoard of coins was found, dating to 1404-19. Traces of further buildings, enclosures and field systems extend out onto Hommet Headland (*ibid.*). In several areas of the site however, there are significant traces of prehistoric activity, particularly the layers concentrated in the lee of the natural outcrop forming the back wall of Building 1. The majority (88%) of the lithics derive from 3 contexts: Level 3, Level 3 NF1, and Level 3 Building 1. The excavation report reasonably suggests that this area may have been a focus for flint knapping activities (*ibid.*); the proximity of the beach with a ready supply of raw material would tend to support this idea.

**Site Formation and Geomorphology**

The underlying geology is Cobo granite although some areas, principally along the cliff edge, are situated on glacial head material and windblown silt (loess). The whole area was blanketed in windblown sands, probably during the late medieval period (De Jersey & Sebire in prep.). Although there is little detail on the nature of the archaeological contexts, the excavation records indicate that prehistoric material was mixed in with modern artefacts suggesting post depositional disturbance or movement.

**Assemblage Detail**

A total of 1955 lithics were recovered from the site and all were fully measured and catalogued. The use of beach pebble flint is exclusive at the site with no examples of imported material such as Cinglais or Grand Pressigny. This may be surprising given the size of the assemblage but it may also be indicating the role of the site.

Eighteen retouched pieces comprise 0.9% of the total assemblage, this is a significantly lower proportion than other investigated sites on the island which typically total around 4-5%, and may be suggestive of the reduction strategies employed here. 11 of the retouched pieces are scrapers, ten of which are manufactured from the initial removals from pebbles, demonstrated by the large area of cortex on the dorsal face, the remaining scraper is manufactured on a tertiary flake (Appendix B3, Figure 92; No. 2). The remainder of the category comprises six splintered pieces *(pieces esquillées)*, and a microdenticulate (Appendix B3, Figure 91, No. 6). There are no tools or flakes with traces of use-wear present that would indicate any use of the flint tools in the immediate area.

**Chronology**

The character of the Albecq assemblage is very different to the more 'inland' Guernsey sites analysed as it contains a high proportion of fully cortical starter flakes that infer the primary stages of knapping, large amounts of debris and a very low proportion of retouched pieces that could be interpreted as tools. This makes dating rather difficult because of the lack of chronologically diagnostic pieces recovered. Nevertheless, the relative proportions of retouched pieces, predominantly consisting of scrapers and splintered pieces along with the mirodenticulate, and the lack evidence for any finer blade or bladelet manufacture points towards a Mid to Late Neolithic date for the bulk of the lithic material (Table 13).

There is some evidence for zonal activities at the site involving the different stages of knapping, which, together with the restricted character of the assemblage probably indicates that the area was frequented over a period of centuries rather than millennia. Similarly, low levels of retouched pieces and burnt flint (from hearths) would argue for Albecq being a short-term working site rather than one of long-term residence during the Neolithic.

**Albecq: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 13. Albecq assemblage chronology summary table.*

## Summary

Based on the character of the assemblage it seems reasonable to argue that people were exploiting what may have been a ready supply of beach pebble flint on the nearby beaches during the latter part of the Neolithic. Pebbles were then tested and cores prepared before transporting the partially worked material to settlements elsewhere on the island. An example of a destination for this movement of material would be the Airport site in the centre of the southern part of the island, where there is a much lower level of starter flakes and a greater proportion of finished tools.

## 6.4 Route de Carteret (MGU518)


*Figure 30. Route de Carteret site location (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 104 | 5.6 |
| Core Preparation | 3 | 0.1 |
| Flakes and Blades | 457 | 24.6 |
| Retouched Pieces | 51 | 2.8 |
| Debris | 1241 | 66.9 |
| **Total** | **1856** | 100 |

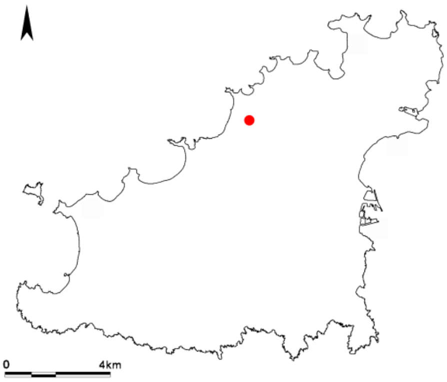



*Figure 31. Summary chart and site location.*

### Location

The Route de Carteret site is situated at the foot of a shallow northeast facing slope approximately 800 m inland from the present west coast of Guernsey (Figures 30 & 31).

### Excavation History

Archaeological excavations at the site took place ahead of development in 1998 and 2000. In 2000, a 2x3 m trench was taken down in steps to a depth of 2 m revealing horizons consisting of disturbed topsoil and subsoil associated with cultivation, followed by apparently undisturbed layers containing prehistoric pottery, flints and a shallow cut feature (Walls 2000). Although the full excavation report is pending a short summary has been compiled by Tanya Walls of the States Archaeology Department (*ibid.*).

Approximately half of the lithic assemblage was originally examined as part of an MA thesis by Andrew Lane in 2001 which is available from the Guernsey SMR. However, because of differences in data collection methodology and the lack of full coverage this report has made an independent assessment of the complete assemblage.

**Site Formation and Geomorphology**

The excavation revealed a modern disturbed topsoil underlain by archaeological horizons containing pottery and flint, and a further layer 0.25 cm below containing flint. There is little detail in the original excavation report as to the exact nature of the archaeological layers but the mixing of modern and prehistoric artefacts suggests colluviation and/or post depositional disturbance. Below the archaeological layers were loessic deposits that had been washed down slope overlying Interglacial (Ipswichian) beach sand with sub-rounded boulders (Walkington *et al.* 2001).

A full appraisal of the excavation area topography and geology appears in a paper published in the *Geoscience in Southwest England* journal (*ibid.*). Also see discussion of iron-panning in the following section.

**Assemblage detail**

A total of 1856 pieces of flint and worked stone were recovered from the 1998 and 2000 excavations. A striking feature of this assemblage is the large proportion (>50%) of orange to brown coloured flint, this is in contrast to the typical local beach (and raised beach) pebble flint colour which is predominantly olive/grey. Exceptions to this local flint colour in Guernsey assemblages are generally considered to denote imported material such as Grand Pressigny (orange/yellow) or Cinglais (brown). However, these imports are comparatively rare on the island and of superior quality to the majority of material found on this site. It would also be difficult to argue a case for the flint colour being a result of human choice alone given that the deposition of the assemblage appears to have taken place over several millennia, and that there are only small amounts of flint of this colour in other Guernsey assemblages.

Given that the rolled and pitted nature of the remaining cortex on the flint indicates that people at this site were exploiting pebbles sourced locally from the island's beaches, it would be reasonable to seek a post-depositional explanation for the colouring. A paper by Gibbard published in the *Scientific Study of Flint and Chert* (1986) sets out some of the reasons for the range of colours found in flint and notes that an orange-brown colour is generally attributed to staining by iron oxide. This staining process is caused by minerals dissolved in ground water migrating through sediments and leaching into the flint (Gibbard 1986, 141-9). The excavation records include mention of iron panning, which together with specific and as yet un-established site context conditions may explain the resulting flint assemblage colour. It must be emphasised however, that the mechanism and timescales involved in this process are not fully understood in an archaeological context.

Although difficult to discern because of the flint colour, no obvious examples of imported material such as Cinglais or Grand Pressigny were observed, although given the quality evident in the workmanship and the material of the hollow based and leaf shaped arrowheads discussed below, it would be reasonable to suggest that they are not made from local material. Additional non-flint worked lithic material includes a small number of quartz flakes.

Sixty retouched pieces comprise 3.3% of the assemblage, this is a somewhat lower proportion than other investigated sites on the island which typically total around 4-5%, although more than the nearby coastal site of Albecq which contains a mere 0.9%. This category has a wide spread of tool types and as with most of the reviewed assemblages, scrapers are the most numerous at 38.8% of the category, although this is less than is typical for the island. Equally, 28% of the scrapers are manufactured on tertiary flakes, some of which display more care than usual in manufacture. This quantity of tertiary tools may represent evidence of Mesolithic or Early Neolithic industry, as on the French mainland the trend was towards making scrapers and borers with remaining cortex on the dorsal face during the later Neolithic (Guyodo & Marchand 2005, 548). Most of the scrapers display signs of possible use-wear around the worked edges suggesting use in the immediate area. Miscellaneous retouched flakes and blades are the second most represented group at around 20%. Many of these are ad-hoc scraper/notched combinations and difficult to categorise in any particular tool class. Notched pieces make up a significant 16.7% of the tool category, this may indicate specific activities such as woodworking taking place in the area (Plisson *et al*. 2002, 801).

Two small abruptly retouched flakes were recovered which probably date to the Mesolithic (Appendix B4, Figure 96). The stratigraphical position of these pieces infers post-depositional colluviation or some other disturbance causing a movement of material, especially as the site lies at the base of an incline, thus suggesting possible Mesolithic activity higher up the slope. The microliths are similar to examples found on the Cotentin (Ghesquière *et al.* 2003, 656) dated to the middle Mesolithic. Additionally, there is a significant amount of small blades and bladelets throughout the assemblage that may belong to the Mesolithic or Early Neolithic, although these are not dominant in any particular context.

Especially notable in this assemblage are the two finely worked arrowheads; one leaf shaped dating to the Neolithic, and the other an asymmetric hollow-based example from Early Bronze Age (Appendix B4, Figure 94; Nos.1 & 2).

The hollow-based arrowhead is asymmetric in form, having one of the barbs wider than the other and is invasively retouched bifacially over the entire surface. The leading edges are serrated and the trailing edges are slightly re-entrant. There is a similar example shown in Kendrick's *Archaeology of the Channel Islands* (1928, Plate VI) although the pictured version has barbs ending in a point. Arrowheads with a more similar form to the Route de Carteret example are found in western France, for example, at the Early Bronze Age site of Pâtures à Saumeray (Georges & Hamon 2004, 12) and Côtes du Nord, Brittany (Briard 1976, 43). Whether the arrowhead was made on the island or imported is not possible to establish unequivocally, but given that it is unique in morphology it is more likely to be the latter. Ghesquière considers this Route de Carteret example to belong to the Early Bronze Age (2300 BC–1600 BC) (Ghesquière 2012 pers. comm.).

The leaf arrowhead (Small Find 16) recovered from context 119B has been produced by bifacial invasive pressure flaking and this particular example is thus far unique in Guernsey. The leaf form is rarely found on the adjacent French mainland but does appear in the Michelsburg culture which covered an area equating to present day western and central Europe from *c.*4300–3700 BC (Manolakakis & Garamond 2011, 349). Although rarely found fully invasively retouched in this context, there are nevertheless some that bear a strong resemblance to this example, and to those of the British mainland (Hamard 1989, 122). This raises the likely and interesting possibility of this being an import, demonstrating long distance connectivity with either the British or continental mainland during the Neolithic period. The fine quality dark brown flint is almost certainly imported, which together with the arrowhead type being thus far unique in Guernsey, would make it highly probable that it was imported as a finished item.

The presence of these two high quality arrowheads at the Route de Carteret site is almost certainly coincidental as by typology they date from different periods, and were found in different contexts. It does however, indicate a degree of continuity of residence in the immediate area.

**Chronology**

The Route de Carteret assemblage is a palimpsest with elements of Mesolithic activity, and Neolithic extending through to the Early Bronze Age. It is difficult to recognise any ordered chronological progression through the contexts however, indeed, the existence of Mesolithic artefacts in the upper context layers suggest that the site has been subject to post depositional disturbance by natural and/or human activities.

**Route de Carteret: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 14. Route de Carteret assemblage chronology summary table.*

**Summary**

Establishing whether people were settled here during the prehistoric period is a question that remains open. However, the quantity of cores, and tools, especially notched pieces and scrapers is suggestive of a sedentary community in the area. This was probably over an extended period, with episodic visits during the Middle Mesolithic, an ephemeral presence in the Early Neolithic and the main bulk of activity in the later Neolithic and Early Bronze Age (Table 14). There may have been a hiatus or reduction in human activity here during the Middle to Late Neolithic although this may also be symptomatic of the difficulty in discerning this period through lithic deposition alone.

## 6.5 La Plaiderie (MGU2216)

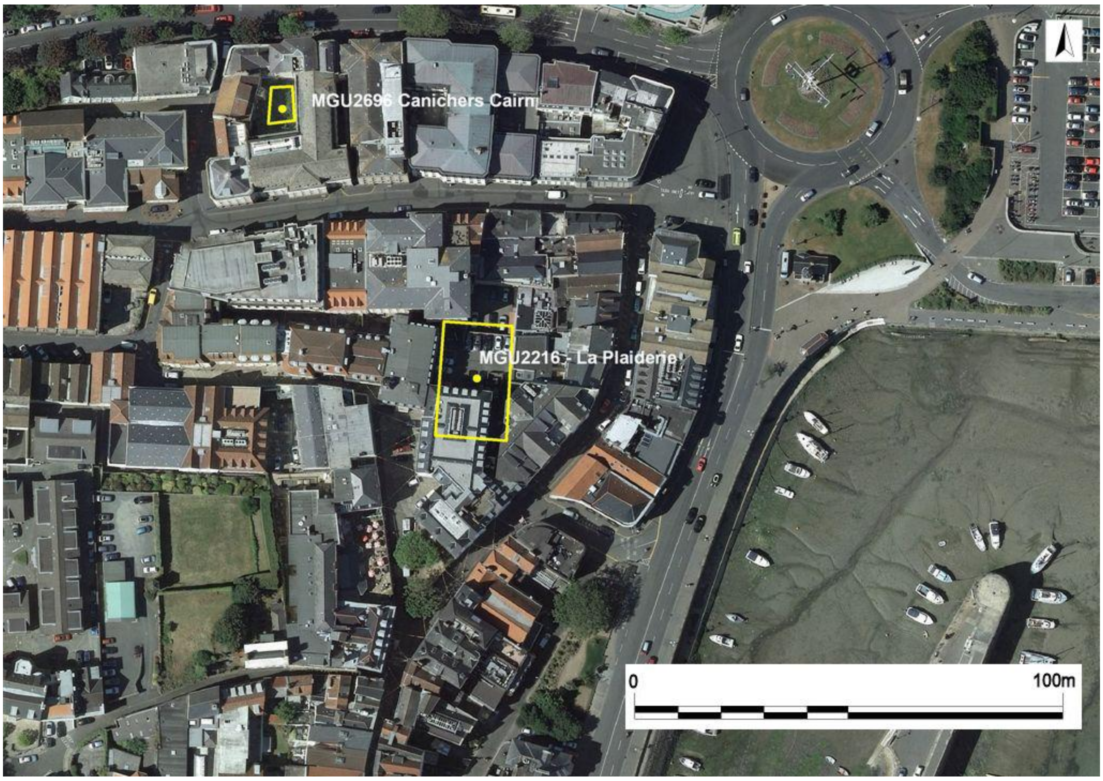



*Figure 32. Aerial view of La Plaiderie site (Guernsey SMR).*

| **Content** | **Quantity** | **%** |
|---|---|---|
| Cores | 42 | 4.7 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 195 | 22 |
| Retouched Pieces | 40 | 4.5 |
| Debris | 611 | 68.8 |
| **Total** | **888** | 100 |

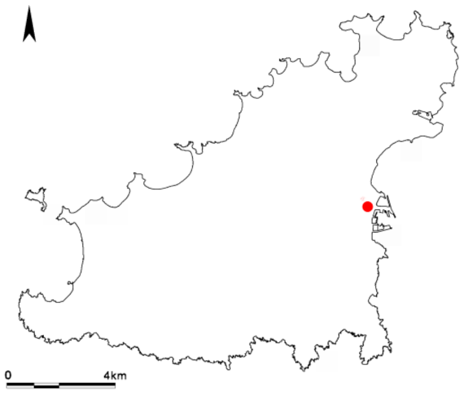



*Figure 33. Summary chart and site location.*

### Location

La Plaiderie House, St Peter Port (Figures 32 & 33).

### Excavation History

In November 1983, the rear garden of La Plaiderie House was excavated in advance of a major redevelopment of the site (Figure 32). The work continued intermittently until October 1985 and was centred on two trenches, T1 and T2 with a total area of 296 m$^2$. The excavation provided the first real evidence of a significant Roman era presence on Guernsey. Other sites of prehistoric archaeological significance in the proximity are The Royal Hotel, The Savoy Hotel and The Canichers.

**Site Formation and Geomorphology**

According to the report being compiled the original excavation records are not sufficient to allow for the construction of a detailed site matrix, and details relating flint finds suggest they were 'residual in later contexts' (Sebire *et al.* 2014).

**Assemblage Detail**

The assemblage comprises 888 lithics. The raw material consists predominantly of olive grey local flint, although some brown and black flint is also present; no imported material was noted.

Forty retouched pieces were excavated forming 4.5% of the assemblage. Scrapers dominate making up 50% of the category, one of these, finely worked on a tertiary (cortex free) flake may be Early Neolithic in date (Appendix B5, Figure 99; No. 5). Splintered pieces and utilised flakes make up 15% each of the category, the remainder comprising three retouched flakes, a notched flake, a microdenticulate and a piercer. Dating evidence is provided by two transverse arrowheads which are typical of the Mid to Late Neolithic (Appendix B5, Figure 99; Nos. 10 & 11). The assemblage also includes some large and crudely flaked pebbles; these could indicate Bronze Age or even later flint-working as it is likely that such large pebbles of reasonable quality flint would have been recycled into tools rather than discarded in earlier periods of more intense flint use. The largest piece of flint recovered (0.77kg) has had several flakes removed from either side and has been labelled on the finds bag as an axe blank. This suggestion is certainly possible, but again it is unlikely that such a large piece of flint would have been discarded during the Neolithic period; its actual purpose is indeterminate. The second piece and two other similar large pieces of flint were probably used as hammer stones as indicated by the battered surfaces (Appendix B5, Figure 100).

**La Plaiderie: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | ■ | | | |
| Middle Neolithic | | | ■ | |
| Late Neolithic | | | ■ | |
| Early Bronze Age | | | | ■ |

*Table 15. La Plaiderie assemblage chronology summary table.*

**Summary**

The assemblage from La Plaiderie is undoubtedly the result of a long period of flint-working in the area with the scraper on a cortex free flake possibly dating from the Early Neolithic and two tranchet arrowheads from the Mid to Late Neolithic. The remainder of the assemblage is more problematic to date with non-diagnostic tools such as scrapers, splintered pieces and ad-hoc retouched tools but appears to largely post-date the arrowheads. The use of large and subsequently discarded flint pebbles as hammers and expedient core use may suggest significant Early Bronze Age or later activity.

In character the flint assemblage from La Plaiderie bears some resemblance to the nearby Royal Hotel and Savoy sites, which also included Early Neolithic elements as well as Later Neolithic and Early Bronze Age. This suggests a long period of prehistoric human activity in the area which is now covered by St Peter Port.

## 6.6 Rousse Tower (MGU2767)


*Figure 34. Aerial view of the Rousse Tower site (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 37 | 4.6 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 216 | 26.7 |
| Retouched Pieces | 12 | 1.4 |
| Debris | 545 | 67.3 |
| **Total** | **810** | 100 |

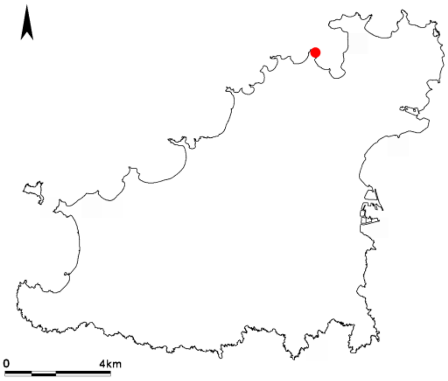



*Figure 35. Summary chart and site location.*

### Location

Rousse Tower is situated on a headland on the west coast of Guernsey (Figures 34 & 35).

**Excavation History**

In June 2015, a ten day excavation was conducted by members of the Clifton Antiquarian Club under the direction of Donovan Hawley, Laurie Waite and site supervisor Kit Hughes of the Guernsey States Museum. The project design focused on locating the original 1993 trench excavated by Burns, re-excavating it and recording all the evidence. This report covers the lithics from both the 1993 and 2015 excavations, these are considered together as they derive from the same contexts.

**Site Formation and Geomorphology**

Pockets of loess deposits were found excavation area where they were overlain by a dark prehistoric soil layer and *c*. 1.5 m of wind-blown sand. It was considered that the prehistoric contexts were largely undisturbed by post depositional events (Hawley & Waite in press).

**Assemblage Detail**

The total lithic assemblage resulting from the excavations comprises 810 pieces of predominantly olive grey flint. The rolled and pitted appearance of cortex on the flint suggests that people frequenting the site were utilising what would have been a ready source of local beach pebbles. There is no evidence of any imported material from either of the Rousse Tower excavations apart from two post-medieval gunflints, one of which is likely to be Brandon flint from Britain (De Lotbinière 1984).

Twelve retouched pieces were recovered consisting of five scrapers, two utilised flakes, two splintered pieces, one notched piece, one retouched flake and a transverse arrowhead. The arrowhead is manufactured from a mesial flake fragment abruptly retouched on either side; it is dateable to the Mid to Late Neolithic but derives from the upper layers of the tower defensive bank (*Turf stack*) so is probably residual. None of the scrapers seem to have been used heavily before discard although the notched piece does display some use-wear. The percentage of retouched pieces at 1.4% is significantly lower than other investigated sites on the island apart from the coastal sites of Albecq and the Crève Coeur complex. This may be suggestive of the purpose of the site which, based on the character of the assemblage, was the preparation of cores before taking them for further working elsewhere on the island.

Several pieces of non-flint material were recovered during the 2015 excavation including a broken fragment of finely polished dolerite axe (Appendix B6, Figure

103); this piece does not form part of the same axe recovered during the 1993 excavation as both pieces are tip fragments. The source of the dolerite is uncertain, Le Pinacle on Jersey is one possibility although dolerite outcrops also exist on Guernsey (Renouf 2015, pers. comm.). The dolerite axe fragments raise interesting questions; were they broken during use in the immediate vicinity, or is there a possibility that they were deliberately broken? There is no tradition of broken axes being found in funerary contexts on the island, but there are occurrences in Brittany so accidental breakage should not be assumed. Chronologically, stone axes were produced throughout the Neolithic and into the Early Bronze Age (Patton 1991, 38) and therefore can be fitted into the same period as the pottery and lithics. Additional items recovered include a pebble that had been smoothed on one side and is abraded on one end from use as both a rubber and hammerstone, and a large flattened pebble with a smooth, slightly polished surface may be a quernstone although its exact use is uncertain (Appendix B6, Figure 103; No. 3).

**Rousse Tower: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 16. Rousse Tower assemblage chronology summary table.*

**Summary**

The character of the Rousse Tower lithic assemblage is different to most other major Guernsey sites analysed as it contains a high proportion of fully cortical starter flakes that indicate the primary stages of knapping, large amounts of debris and a very low number of retouched pieces that could be interpreted as tools. However, there are striking resemblances with the Albecq site (Section 6.3), which shares a similar coastal location to Rousse, close to a ready supply of flint beach pebbles. Based on the character of the lithic assemblage it seems reasonable therefore, to argue that people were exploiting the supply of beach pebble flint and preparing cores before transporting the partially worked material to settlements elsewhere on the island. The paucity of chronologically diagnostic tools in the assemblage makes dating rather difficult. Nevertheless, the lack of a blade industry and the presence of Late Neolithic pottery associated with the lithics indicates a Late Neolithic to Early

Bronze Age date for the bulk of the lithic material, beyond this it is not possible to be more specific (Table 16). Similarly, the lack of burnt flint (from hearths) would argue for Rousse Tower being a short-term working site rather than one of any long-term residence during use.

The stone artefacts are contradictory however, hinting at activities other than flint knapping with a possible quernstone and several smoothed pebbles indicating longer term tasks taking place here.

## 6.7 The Savoy Hotel (MGU3164)

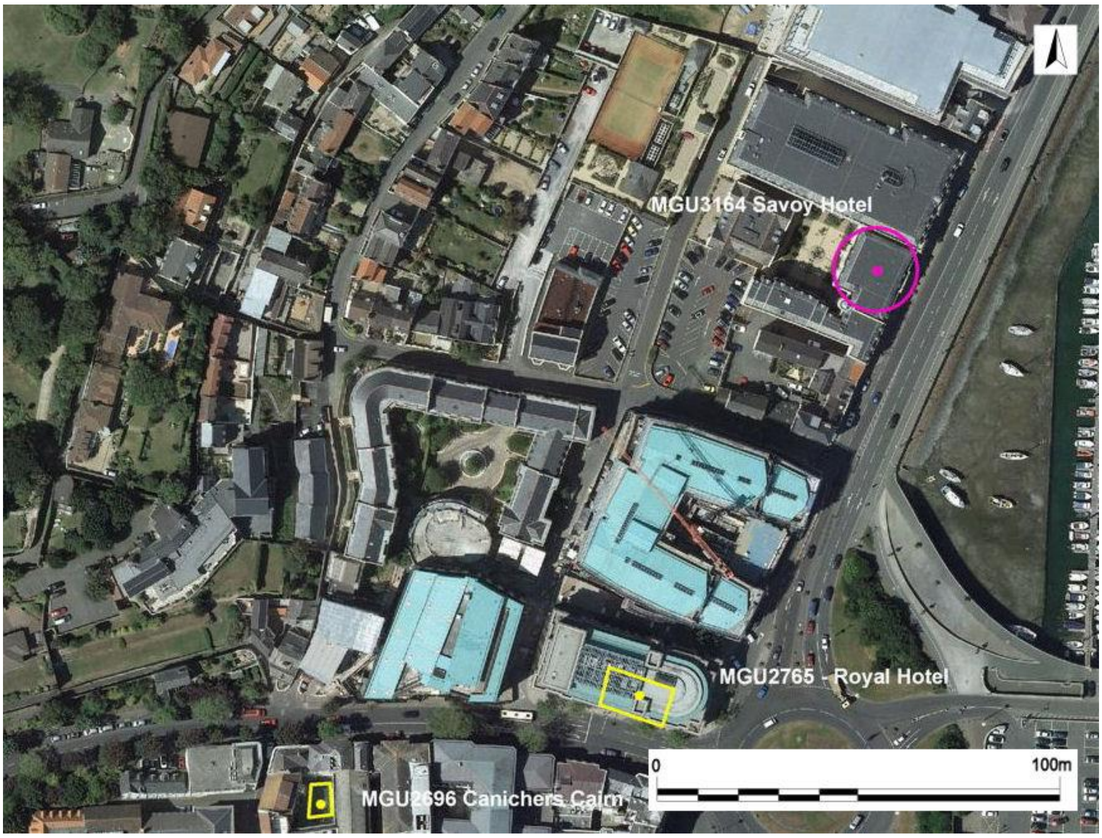



*Figure 36. Aerial view of the Savoy Hotel site (Guernsey SMR 2012).*

| Content | Quantity | % |
|---|---|---|
| Cores | 15 | 3.4 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 133 | 30.6 |
| Retouched Pieces | 23 | 5.3 |
| Debris | 263 | 60.7 |
| **Total** | **434** | 100 |

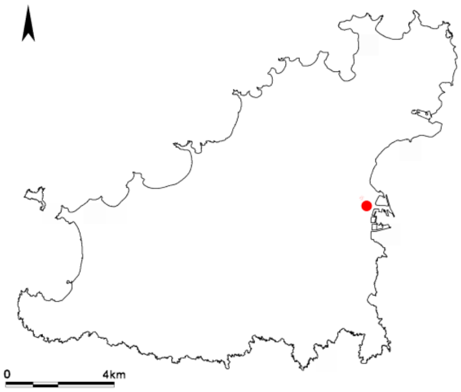



*Figure 37. Summary chart and site location.*

**Location**

The Savoy Hotel site is situated between Bosq Lane and Well Road in St Peter Port and extends back as far as The Canichers encompassing an area of about 0.7 Hectares (Figure 36).

**Excavation History**

The excavation took place in 2002 during redevelopment of the site. The whole area was found to have a considerable depth of sediments formed by hill wash consisting of orange, sandy grit overlying grey clay; these geological deposits were found to be at least 4 m deep where test holes were dug. Four trenches (T1-T4) were opened between the foundations and surveillance with recording was carried out elsewhere on the site as construction work progressed (Guernsey SMR).

**Site Formation and Geomorphology**

The whole area had a considerable depth of sediments formed by hill wash consisting of an orange, sandy grit overlying grey clay; these geological deposits were at least 4 m deep where test pits were dug. The archaeological layers were all within overlying loess sediments. Most of the prehistoric finds were concentrated in layer (064) an orange brown silt (Walls 2002).

**Assemblage detail**

The assemblage comprises 434 lithics, all of which were fully measured and catalogued. Due to the relatively small quantity of lithics and close proximity of the trenches the assemblage is assessed as one group.

The nature of the flint indicates that people frequenting this site were almost exclusively exploiting flint pebbles sourced from the island's beaches. There is however, one fragment of Cinglais flint from Normandy which would have been imported during the Early Neolithic period. The assemblage also includes a significant quantity (7.8%) of burnt flint fragments.

Twenty-four retouched pieces were recovered comprising 5.5% of the total assemblage (Appendix B7, Figure 105). In contrast with most assemblages on the island, notched flakes instead of scrapers dominate making up 33.4% of the category. There are three important chronological markers in the assemblage, a Mesolithic point with two abruptly retouched sides (*lamelle à deux bords abattus*), possibly belonging to the Middle Mesolithic with Brittany Bertheaume group influences (Blanchet, *et. al.* 2006, Ghesquière 2011, 412), a tranchet axe, very similar to the series found at Condé-Sur-Ifs in Normandy dating to Middle Neolithic I (4700-4300 BC) (Ghesquière and Marcigny 1998, 66), and the fragment of Cinglais flint deriving from the Early Neolithic fashioned into a piercer (Appendix B7, Figure 105; No. 16).

The lithics indicate a long period of human activity in the area dating from the Middle Mesolithic through to the Later Neolithic period. It is pertinent to compare lithics from this site with those from the nearby Royal Hotel excavation (Section 6.2). Similarities between the two sites are evident in the presence of Mesolithic material, although in this case, the Savoy Hotel assemblage has only a single piece, which like those from the Royal Hotel site may be residual as a result of colluviation from higher up the slope. The fragment of Cinglais flint that has been reworked into a piercer indicates contacts and a movement of materials from Normandy during the Early Neolithic. Additional evidence of Early to Middle Neolithic activity is indicated by the tranchet axe, very close in morphology to those found in Normandy although likely to have been made from local flint. In other aspects, the assemblage profile is very different to that of the Royal Hotel, with a much greater emphasis on a squat flake industry, fewer tertiary flakes and scrapers being less evident.

**Savoy Hotel: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 17. Savoy Hotel assemblage chronology summary table.*

**Summary**

Apart from chronologically diagnostic pieces such as the Cinglais flint, the remainder of the assemblage is harder to date reflecting the *longue durée* of the island's flint industry. Nevertheless, the difference in lithic profile compared with the Royal Hotel site suggests that there is a comparatively more significant Late Neolithic and later component in the assemblage (Table 17). Likewise, the tasks carried out were different here with less scraper based activities and a greater emphasis on the use of notched pieces, which may have been employed for woodworking such as stripping bark from small branches. The numerous burnt pieces of flint may derive from hearths, a likely indication of a settlement in the area.

## 6.8 The Tranquesous (MGU254)

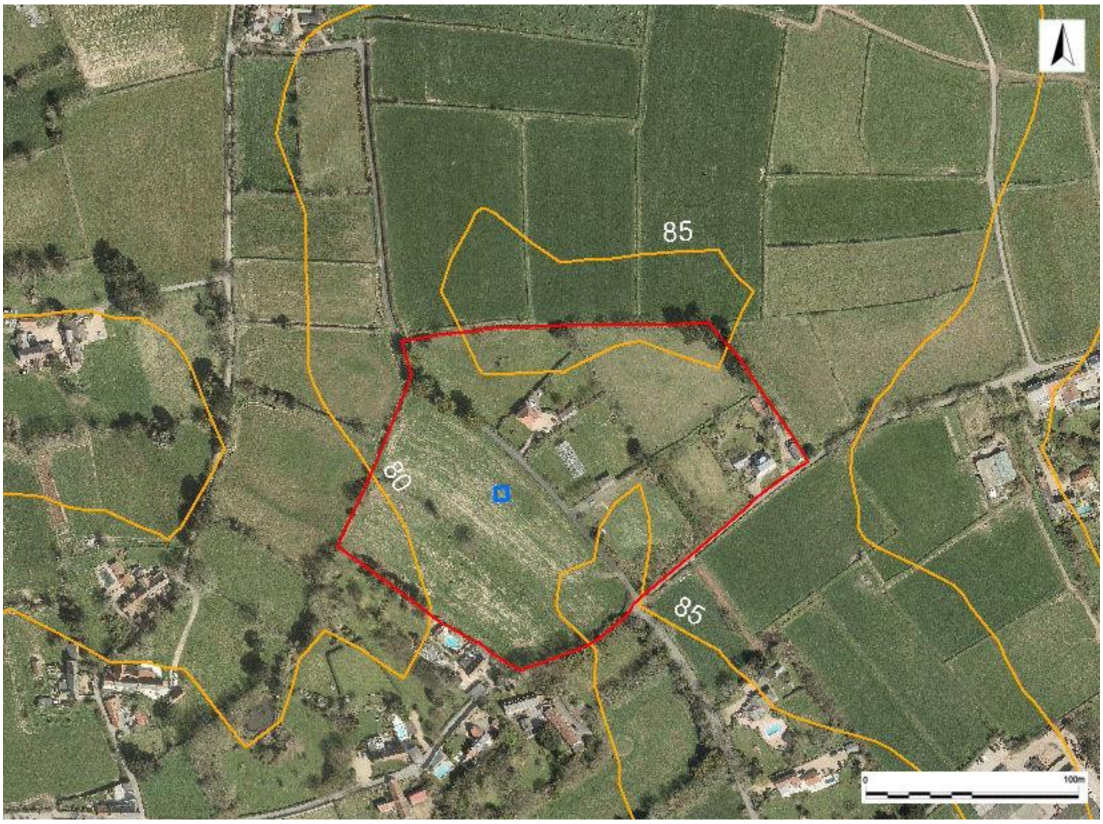



*Figure 38. Aerial view of The Tranquesous site with trench marked in blue (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 12 | 3.7 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 74 | 24.9 |
| Retouched Pieces | 16 | 5.4 |
| Debris | 196 | 66 |
| **Total** | **298** | 100 |

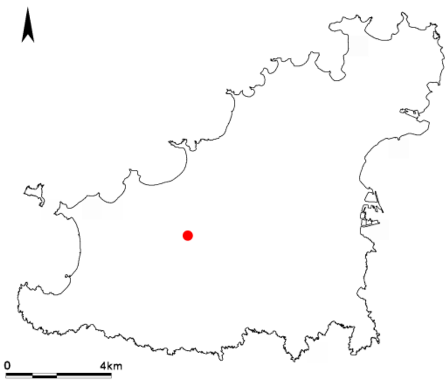



*Figure 39. Summary chart and site location.*

### Location

The Tranquesous site is situated towards the centre of the island at an elevation of 85 m (Figures 38 & 39).

**Excavation History**

Cropmarks noted in aerial photographs taken during the dry summer of 1976 led to an excavation which revealed evidence of an extensive Iron Age settlement consisting of circular hut sites, a trackway, ditches, gullies pits and post holes. In August 2014, following the identification of further cropmarks an 8 x 8 m trench was dug in an area where two smaller ditches appeared to converge on a main enclosure ditch.

**Site Formation and Geomorphology**

Disturbed by modern ploughing and ditch digging activity in the Iron Age leading to mixed contexts. Otherwise the excavation report does not describe the contexts in any detail (Burns 1997).

**Assemblage Detail**

The 2014 Tranquesous assemblage comprises 298 lithics. All contexts were fully measured and catalogued. Additionally, the flint from the original 1976 excavation (345 lithics) is also briefly reviewed and re-evaluated. The raw material is exclusively beach pebble flint likely to have been sourced from the northwest facing coast. There is no evidence of any imported flint material. The 1976 excavation was comprehensively written up in the 1977 *Transactions of the Société Guernesiaise* (Burns 1977), although the flint report is relatively brief and has been reassessed here and some pieces redrawn (Appendix B8, Figures 107 & 108).

In quantity and character, the 1976 and 2014 assemblages are very similar with respect to the types and proportions of tools. The main difference is that apart from 46 lithics deriving from what is described as an 'unstratified' context the majority of the 1976 flint was found in association with Iron Age pottery. This association led the excavator, Burns to make the reasonable suggestion that the worked flint also dated from this period. However, similar to the flint from the 2014 excavation, there are no particular characteristics that would suggest anything other than a Late Neolithic/Bronze Age industry.

Likewise, the finding of worked flint in cultural layers dated by pottery to the Iron Age site during the 2014 dig raises the interesting prospect of flint-working and use during this era, despite the pervading view in the archaeological community that the use of flint tools had ceased by the end of the Bronze Age (Saville 1981; Humphrey & Young 1999; Prost 2002). Further evidence for the flint assemblage being the result of Iron Age use stems from the apparent absence of associated pre-Iron Age pottery, although it has to be emphasized that a proportion of the prehistoric pottery assemblage is not diagnostic and therefore difficult to pin down to a particular prehistoric period (De Jersey & Walls pers. comm. 2015).

The 1976 excavation produced a numerical ratio of prehistoric pottery sherds to flint of around 3:1 as opposed to approximately 1:1 from the 2014 dig, indicative perhaps of the earlier material being associated with occupation layers. As with the 2014 excavation, the toolset largely consists of scrapers (50%), predominantly end scrapers but including one nose scraper; the remainder of the pieces consist of a microdenticulate, retouched flakes, piercers and notched pieces (Appendix B8, Figure 106). The cores, similar to those from the 2014 excavation are biased towards single platform types. One patinated bladelet core was recovered (Appendix B8, Figure 109; No. 4) which may derive from the Mesolithic or Early Neolithic period.

**The Tranquesous: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 18. The Tranquesous assemblage chronology summary table.*

**Summary**

Finding a worked flint assemblage at The Tranquesous, essentially an Iron Age site raises the interesting prospect of people exploiting flint tools during this later period. Proof for this however, is difficult to establish. From a typological and technological point of view it is difficult to make a secure case for the worked flint from either the 1976 or 2014 Tranquesous excavations being a result of Iron Age working, as the assemblages do not display any characteristics that would differentiate them from a Late Neolithic or Bronze Age industry (Table 18). It is therefore, quite possible that the material derives from earlier occupation in the area, and was subsequently disturbed, spread and mixed by later human activities. Nevertheless, the possibility still exists that given the *longue durée* of flint-working on the island where technology and techniques were maintained over generations without any perceptible change, that people were still exploiting flint during the Iron Age. This must however, remain pure conjecture until further evidence such as a securely stratified site becomes available.

## 6.9 King's Road (MGU528)

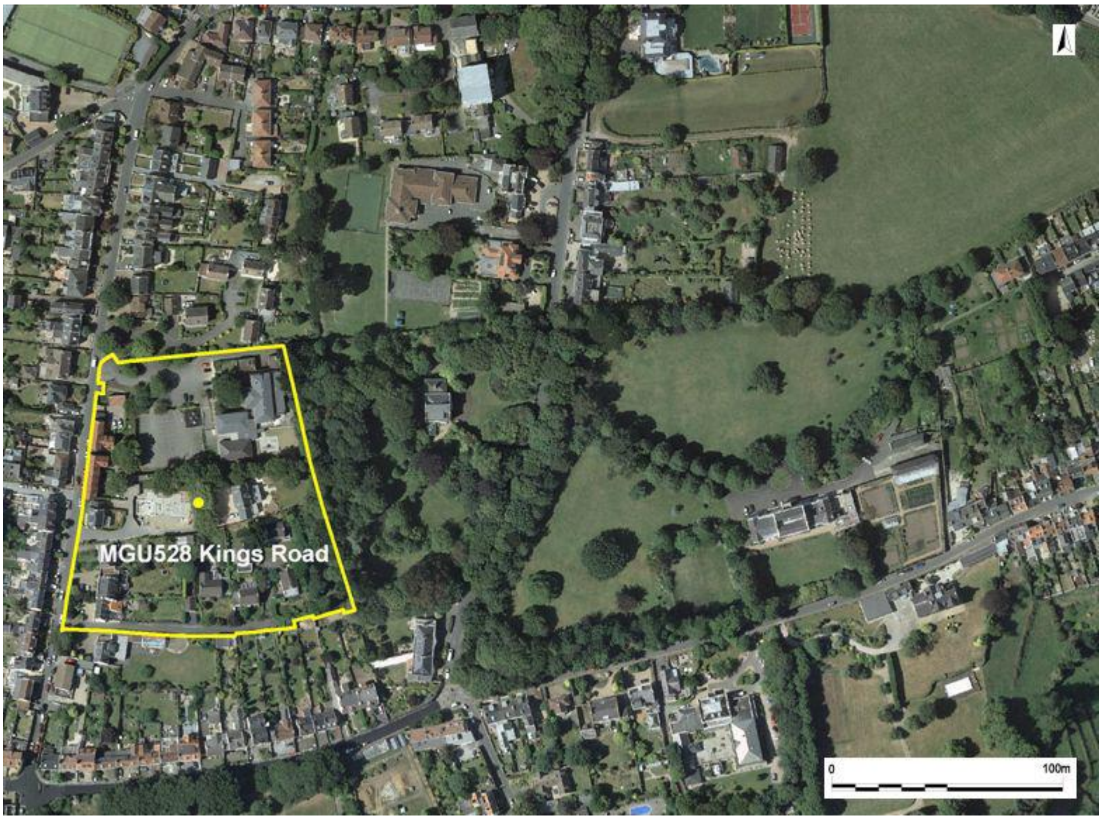



*Figure 40. Aerial view of the King's Road site (Guernsey SMR 2012).*

| Content | Quantity | % |
|---|---|---|
| Cores | 15 | 5.5 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 100 | 36.4 |
| Retouched Pieces | 26 | 9.4 |
| Debris | 134 | 48.7 |
| **Total** | **275** | 100 |

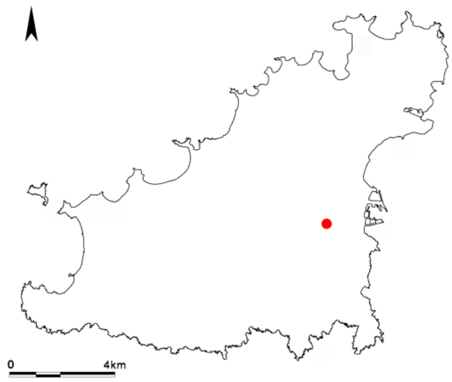



*Figure 41. Summary chart and site location.*

### Location

The King's Road site is situated on the eastern side of the island on the outskirts of St Peter Port, approximately 1.5 km from the coast at 75 m AMSL (Figure 40 & 41).

**Excavation History**

The presence of Iron Age activity at this location was first revealed in 1980 during the course of building work on a new school boarding house. Three further seasons of excavation (1981-3) identified substantial evidence for an Iron Age settlement and four graves, including one warrior burial of the late Iron Age (Guernsey SMR). A brief report by Kinnes on the lithics from these excavations can be found in the monograph *Guernsey: An Island Community of the Atlantic Iron Age* (Cunliffe & Sebire 1996). This report reviews the lithics recovered from excavations which took place over the 2005 and 2006 seasons.

**Site Formation and Geomorphology**

King's Road is located in an area that has undergone significant urban development over the last three centuries. Much of the excavated area had been previously disturbed by building work and ditch digging resulting in the mixing of Iron Age and Bronze Age artefacts (Burns *et al*. 1996).

**Assemblage Detail**

The assemblage comprises 275 lithics, all of which were fully measured and catalogued. Due to the close proximity of the trenches and relatively small number of lithics in each context the assemblage is assessed here as one group.

The raw material is primarily an olive grey flint sourced from the island's beaches. There is no evidence of any imported flint such as Cinglais or Grand Pressigny from the prehistoric period although there are two post-medieval gunflints which may be from a non-local flint source. Non-flint worked lithic material comprises one quartz flake. The assemblage also includes a relatively large quantity (8%) of burnt flint fragments implying that hearths may have been constructed in the immediate area.

The 26 retouched pieces comprise 9.4% of the assemblage, this is a significantly higher proportion than other investigated sites on the island, which typically total around 4-5%. There is a limited spread of tool types however, and as with most assemblages on the island scrapers largely dominate making up 54% of the category. Most of the scrapers display signs of possible use-wear suggesting they were being used in the immediate area rather than this simply being a place of manufacture, the presence of three utilised flakes would tend to support this. Notched pieces (Appendix B9, Figure 111), comprise a significant 18% of the tool category; perhaps indicating activities such as woodworking taking place in the area.

The mean weight of the cores at 22.7 grams is comparable to the Airport (22.4 g) and Royal Hotel site (22 g), and nearly a third less than cores from the flint rich coastal site of Albecq. This, along with the low quantity of primary and starter flakes suggests that people were bringing tested and/or partially worked flint beach pebbles here for further working. It also indicates a more parsimonious approach to knapping, possibly as a result of the 4-5 km distance to the probable flint sources on the northwest coast.

**King's Road: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 19. King's Road assemblage chronology summary table.*

**Summary**

A lack of diagnostic pieces makes this site difficult to date but the technology employed is consistent with the Late Neolithic or Early Bronze Age period (Table 19). Additionally, the large proportion of scrapers and notched pieces in the assemblage would tend to confirm this. The relatively large proportion of retouched pieces and low levels of debris along with burnt flint indicates people residing in the immediate area, although the association with Iron Age and later material suggests disturbed contexts. The typology of finds from the 1980-3 excavations which included barbed and tanged arrowheads (*ibid.*) concurs with this dating.

## 6.10 Delancey Park Gallery Grave (MGU135)


*Figure 42. Aerial view of the Delancey Park site (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 15 | 6.6 |
| Core Preparation | 1 | 0.4 |
| Flakes and Blades | 73 | 32.2 |
| Retouched Pieces | 8 | 3.5 |
| Debris | 130 | 57.3 |
| **Total** | **227** | 100 |

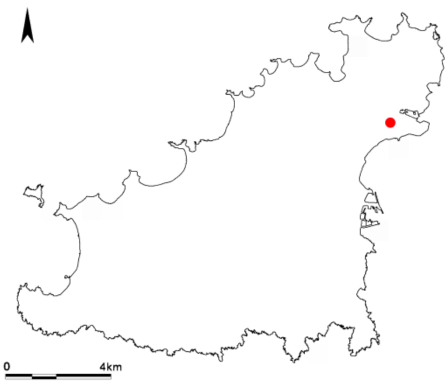



*Figure 43. Summary chart and site location.*

### Location

The Delancey Park site is situated at the north-east of Guernsey, on a northeast facing slope, approximately 28 m above mean sea-level and 350 m from the present shoreline (Figures 42 & 43). Immediately to the south of the site the land rises to some 32 m forming a short east-west ridge that is now a landscaped plateau forming part of the Delancey public park complex.

**Excavation History**

This site contains what appears to be the remains of a gallery grave, a type of burial monument that is considered to date to the Late Neolithic (Patton 1995; Nash 2012). This monument is thus far the only gallery grave known in Guernsey; in Jersey there are two, Le Couperon and Ville-ès-Nouaux. The concentration of lithic and pottery finds indicate that the site is significant archaeologically, but both the 2010 and 2011 excavations failed to reveal conclusive dating material or obtain $^{14}C$ results for the construction date of the monument itself.

The Delancey Park assemblage was recovered in three distinct phases: 1919 when the site was originally discovered and excavated, the 1932 Collum excavation, and the 2010-11 excavations by the Clifton Antiquarian Club. Additionally, some unstratified surface finds were collected during site maintenance. Unfortunately, little information relating to context or location is available for the pre 2010-11 assemblages. For the purposes of this report the flint assemblage from the 1919 (6 pieces), 1932 (10 pieces) and the 2010-11 Clifton Antiquarian Club excavations (220 pieces) are analysed as one collection. Additionally, there are several pieces of worked or used stone from the most recent excavations that are assessed.

**Site Formation and Geomorphology**

Previous archaeological interventions had removed topsoils leaving a relatively clean loess layer some 0.5m thick over a degrading granite bedrock. Most of the prehistoric finds were recovered from around the periphery of the monument although the mix of modern and prehistoric artefacts indicates post depositional disturbance (Nash 2012).

**Assemblage Detail**

Lithic working is predominantly based on flake production from local beach pebble flint. The one exception to the local material is a fragment of Cinglais blade from Normandy (Appendix B10, Figure 113; No. 4).

Eight retouched pieces were recovered comprising 3.4% of the total assemblage. Of these, seven are scrapers, all manufactured from the initial removals from pebbles, with a large area of cortex on the dorsal face. Scrapers of this nature are symptomatic of the raw material available locally and similar examples are commonly found elsewhere on the island, as well as on the adjacent French coastal zone where beach pebble is also utilised (Chancerel *et al.* 1996, 245; Guyodo *et al.* 2001, 661). These tools are difficult to situate chronologically as they typically appear throughout the Neolithic (*ibid.*). A fragment of patinated blade and a core rejuvenation flake with bladelet scars on the dorsal face (Appendix B10, Figure 113; No. 5) were also recovered during the 2010-11 excavations, both of which hint at Mesolithic activity in the area.

A fragment of polished dolerite ring (Appendix B10, Figure 115) found in trench 1 during the 2011 season is similar in size and workmanship to others found in the Channel Islands (Kendrick 1928, 54; Hawkes 1937, 59) and in Brittany (Pailler 2007, 224; Cassen *et al.* 2000, 550). The purpose of these objects is not clear, but the amount of work invested in grinding and polishing them has led researchers to assume that their purpose was ceremonial, such as mace heads (*ibid.*). The example found at Delancey Park, and made from material available on the island is only partially ground through and appears to have broken at a critical stage of manufacture. Complete examples have been found in Brittany that have a parallel-sided hole ground right through which could then have been used for hafting. These objects have not yet been placed in any precise chronological sequence although some found in passage graves in Brittany suggest that they were being made during the Middle Neolithic II period, which typically dates from 4300 BC to 3500 BC on the adjacent French mainland (Marcigny *et al.* 2010).

**Delancey Park: Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 20. Delancey Park assemblage chronology summary table.*

**Summary**

The composition and character of the Delancey Park lithic assemblage demonstrates that people were frequenting, and possibly residing in this location since the Mesolithic (Table 20). The Early Neolithic imported blade, possibly dating from the time the first Neolithic settlers arriving on the island raises interesting questions about Guernsey's cultural contacts with the adjacent French mainland. However, overall, the character of the majority of the flint assemblage is in keeping with what would be expected for the Mid to Late Neolithic periods on Guernsey; flake based, little care shown in platform preparation and scrapers predominant in the tool-set.

This dating is backed up by the micro-denticulate tool and pottery found in association with the assemblage, which is also predominantly of Mid to Late Neolithic date including a diagnostic sherd of Jersey Bowl and a fragment of SOM (Seine-Oise-Marne) pot base. The association of any of the later artefacts with the gallery grave is difficult to ascertain as none of these items were found within the chamber of the monument itself, although this is probably a result of disturbance from past excavations. It is clear however, that there is a long history of human activity on the site.

## 6.11 Crève Coeur (MGU various)


*Figure 44. Location for the Crève Coeur lithic assemblage with the collection points in pink and the excavation in red (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 55 | 1.5 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 295 | 8 |
| Retouched Pieces | 9 | 0.2 |
| Debris | 3341 | 90.3 |
| **Total** | **3700** | 100 |

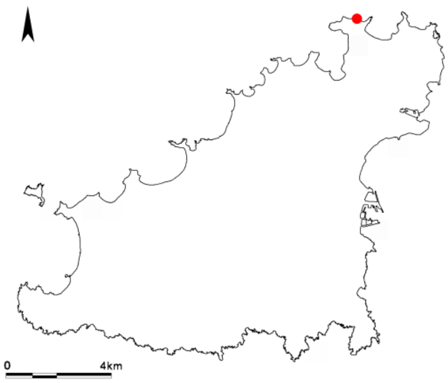



*Figure 45. Summary chart (collection and excavation) and site location.*

### Location

The Crève Coeur assemblage comprises flint from a collection of sites at the northwest tip of the island.

### Excavation History

It was originally mentioned in Kendrick (1928) as a 'chipping site' and was assumed to be a Mesolithic site by Patton (1993). Subsequent analysis by Conneller *et al.*

(2016) noted large amounts of bipolar percussion in the assemblage along with two microliths (a basally modified piece and a narrow backed bladelet) suggesting a collection of mixed date.

The site has been the target of flint collection from eroding areas by Hazel Hill who, over the last decade has amassed an assemblage of over three thousand lithics from around the headland.

A small sondage excavation was also carried out here by the author, Hazel Hill and Dave Lane in 2015, this is described below.

### Site Formation and Geomorphology

Collected flints derive from various unrecorded contexts on the eroding headland. The excavated flints were found in a dark sandy undisturbed context.

### Excavation (MGU3575)

| Content | Quantity | % |
|---|---|---|
| Cores | 4 | 0.7 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 45 | 8 |
| Retouched Pieces | 4 | 0.2 |
| Debris | 508 | 91.1 |
| **Total** | **561** | 100 |

*Figure 46. Excavation total chart.*

### Assemblage Detail

The dig was targeted at a flint scatter discovered by Hill where numerous small fragments of flint were noted eroding out of a bank on to the surface of the path. Once the soil was removed from the area where the scatter of flints was found, many larger fragments of closely packed flint including flakes and some worked out cores, as well as many smaller fragments were recovered. The flint fragments appeared to be angled up in many cases suggesting that they had originally fallen onto the sloping bedrock during the knapping process and had not been disturbed since.

The recovered flint consisted exclusively of local beach pebble material including some unknapped pebbles. The technology employed was largely bipolar percussion which goes against the initial impression that it may have been a Mesolithic scatter. Like the surface collected material from the area, the assemblage yielded very few cores or retouched pieces. There was however, a large proportion of debris. Refitting was attempted but not successful, presumably because the deposition was the result of several phases of knapping with a proportion of the material removed following each knapping event.

Although the absence of any retouched pieces that would act as chronological indicators makes dating difficult the level of bipolar percussion would indicate a later, perhaps Late Neolithic or Early Bronze Age date. Similar to the collected assemblage, the indication is that this was a site for the preparation of cores and tools blanks rather than serving any long term residence function.

**Surface Collection (MGU 566, 3551, 3575-7, 4159, 4170)**

| Content | Quantity | % |
|---|---|---|
| Cores | 51 | 1.6 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 250 | 7.9 |
| Retouched Pieces | 5 | 0.1 |
| Debris | 2833 | 90.4 |
| **Total** | **3139** | 100 |

*Figure 47. Collection totals chart.*

Although collected from several locations the assemblage is treated as one because of the close proximity of the find spots.

The collection comprises 3139 flints. The raw material is exclusively derived from flint beach pebbles, probably sourced from the adjacent beach. Bipolar percussion is dominant in the assemblage with large proportions of split and tested pebbles; the tested pebbles make up nearly half of the cores at 47.1%, chopper cores total 31.4%

The flakes and blades category makes up 7.9% of the collection and is dominated by starter and primary flakes (43.6%). Although this group consists primarily of flakes (57.6%) there are a relatively large number of bladelets that comprise 13.6% of the category. The proportion of retouched pieces recovered was minimal at 0.2%, this consisted of three scrapers, two splintered pieces, one piercer and an obliquely truncated flake (Appendix B11, Figure 116).

**Crève Coeur: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 21. Crève Coeur assemblage chronology summary table.*

**Summary**

Although the large proportion of debris (>90%) may have been skewed by the collection of tiny fragments of flint which would normally have been overlooked during an excavation, the lack of retouched pieces, large proportion of primary material and numerous tested pebbles suggests that this area was essentially a knapping site for material that would have been obtained on the nearby beach. The nature of the reduction technology which appears to consist predominantly of bipolar percussion suggests that this site was for the most part, frequented during the Late Neolithic/Early Bronze Age period, or perhaps even further into the Bronze Age. However, there are hints of Mesolithic working present including an obliquely truncated flake which may date to this period (Appendix B11, Figure 116; No.1).

## 6.12 Ruette Norgiots (MGU2117)


*Figure 48. Ruette des Norgiots (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 17 | 3.3 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 117 | 22.8 |
| Retouched Pieces | 33 | 6.4 |
| Debris | 346 | 67.5 |
| **Total** | **513** | 100 |

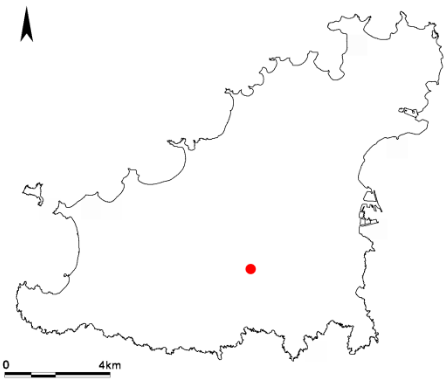



*Figure 49. Summary chart and site location.*

### Location

Ruette Norgiots is sited on the eastern side of the head of a valley leading down to the northwest of the island.

**Excavation History**

The collection is the result of an un-gridded field walking exercise where 513 flints were recovered, the collection date or rationale is not known. The collection methodology appears to have been unbiased with the proportions of all categories within the average spread of material recovered during the reviewed excavations.

**Site Formation and Geomorphology**

No details available

**Assemblage Detail**

Local flint beach pebbles are the dominant source material. Non flint material comprises six fragments of quartz. One of the flakes and one of the cores are on reworked patinated flint which may have been scavenged from previous, possibly Mesolithic discard in the area.

Retouched tools make up 6.4% of the assemblage with 31 scrapers forming an overwhelming majority, the remainder being two splintered pieces. A double ended scraper is worthy of note and although it has no apparent chronological significance it may be indicative of a parsimonious approach to flint use.

**Ruette Norgiots: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 22. Ruette Norgiots assemblage chronology summary table.*

**Summary**

With ample evidence for bipolar percussion at the site and scrapers dominating the tool-set it would be reasonable to argue a later Neolithic or Early Bronze Age date for human activity in the area although as with many sites on the island there is a hint of Mesolithic people active here (Table 22).

## 6.13 Bailiff's Cross (MGU2226)


*Figure. 50. Aerial view of the Bailiff's Cross site (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 20 | 4 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 153 | 30.6 |
| Retouched Pieces | 15 | 3 |
| Debris | 311 | 62.4 |
| **Total** | **499** | 100 |

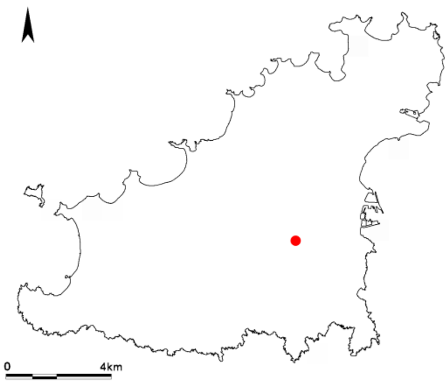



*Figure 51. Summary chart and site location.*

### Location

The site is located on the western side of a shallow valley leading down to the north of the island (Figure 50).

**Excavation History**

The assemblage is the result of an un-gridded field-walking exercise by the Société Guernesiaise in a field near the Bailiff's Cross in 1999. A large amount of mainly post-medieval material was collected. There was also some medieval and Roman sherds and tile (Guernsey SMR).

**Site Formation and History**

No details available.

**Assemblage Detail**

The assemblage consists of 499 flints and appears to be the result of an unbiased collection strategy with ratios of debris, cores, tools and flakes and blades within the average range found in the reviewed excavated assemblages.

The flint was exclusively obtained from the local beaches with the exception of one mesial fragment of a tertiary Cinglais blade imported from the Caen Plain in Normandy (Appendix B12, Figure 117; No. 6). This piece has been worked into a burin with a single longitudinal strike down one edge, similar to examples recovered during the Les Fouaillages excavation (Audouard 2009).

The assemblage has a low number of tools in a scraper dominated collection (73%) produced principally on primary and secondary flakes. Two of the scrapers however, are manufactured on tertiary flakes, one of which was patinated suggesting an early, perhaps Mesolithic date. The remainder of the retouched category consists of two notched flakes, the burin on the Cinglais blade and a large denticulate (Appendix B12, Figure 117; No. 5).

**Bailiff's Cross: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 23. Bailiff's Cross assemblage chronology summary table.*

**Summary**

The low incidence of bipolar percussion, the presence of a Cinglais blade and several patinated pieces suggests that elements of the assemblage belong to the Early Neolithic and earlier. On the other hand, the proportion of flakes and squat flakes, lack of core platform preparation and limited tool set range also indicates later frequentation of the site (Table 23). The large proportion of burnt flint (9%) suggests that there may have been hearths in the area indicating some form of residence or longer term settlement.

## 6.14 Les Prevosts (MGU1943)

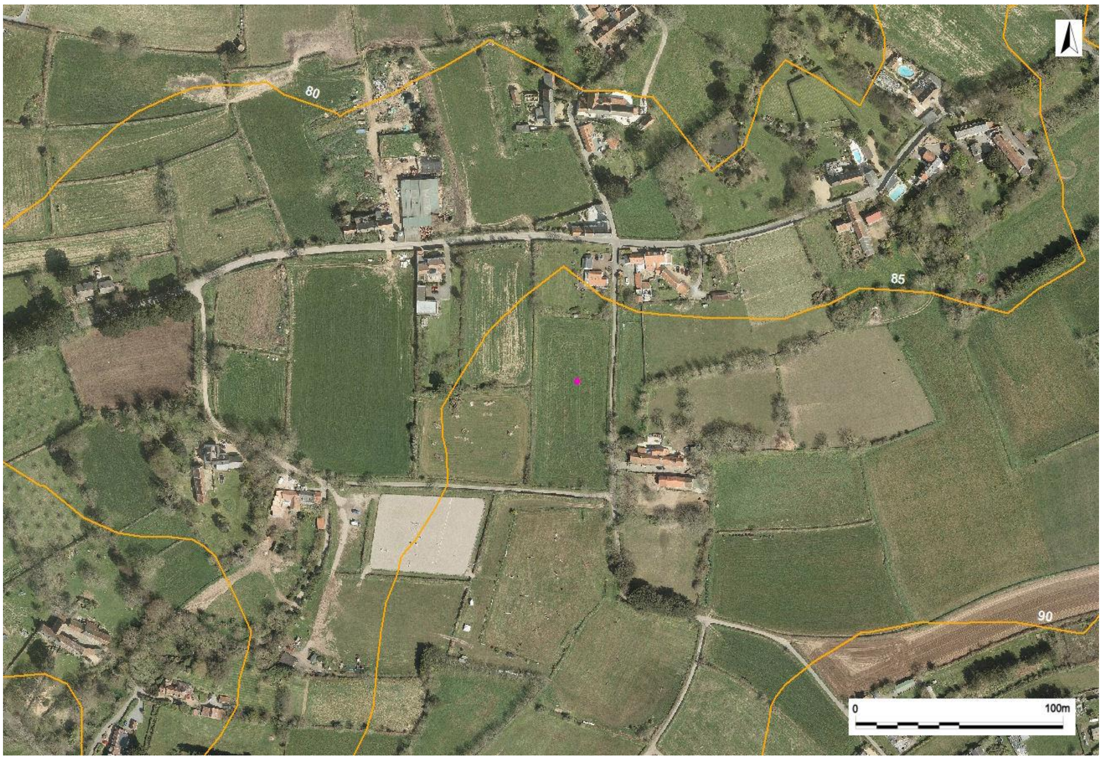



*Figure 52. Aerial view of Les Prevosts (Guernsey SMR).*

| Content | Quantity | % |
|---|---|---|
| Cores | 1 | 0.7 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 75 | 58.2 |
| Retouched Pieces | 10 | 7.7 |
| Debris | 43 | 33.4 |
| **Total** | **129** | 100 |

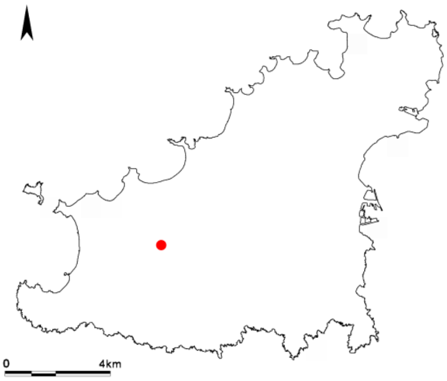



*Figure 53. Summary chart and site location.*

### Location

Les Prevosts is located on a northwest facing slope near the centre of the island (Figure 52 & 53).

**Excavation History**

The surface collection was carried out as part of the Société Guernesiaise field-walking programme in 1979. A total of 127 pieces of flint and some medieval pottery were found including one Roman pot sherd.

**Site Formation and Geomorphology**

No details available.

**Assemblage Detail**

On the evidence of the summary table (Figure 53) the collection appears to be biased with a high proportion of flakes and a correspondingly low proportion of debris at 33.5% meaning some debris may have been missed or discarded. Alternatively, people resident here in prehistory may have removed the debris for disposal elsewhere, although given that this site appears to be a palimpsest the former explanation is the more likely.

The flint was sourced exclusively from local beach pebbles although non-flint material such as quartz could have been discarded or ignored.

The number of retouched pieces is low at ten, with scrapers the most numerous at eight followed by a retouched flake and a notched flake. There is one partially patinated long flake with bladelet scars on the dorsal face which may date to the Mesolithic. Starter flakes are absent and the proportion of primary flakes is low inferring that pre-prepared cores were being brought to the area. One blade is present which, along with five of the long flakes have evidence of platform abrasion suggesting some care taken during knapping.

**Summary**

The presence of two patinated pieces and flakes with platform preparation which may date to the Mesolithic alongside what is arguably later Neolithic or Bronze Age working would suggest periodic use of the area throughout the study period (Table 24).

**Les Prevosts: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 24. Les Prevosts assemblage chronology summary table.*

## 6.15 Neuf Chemin (MGU1773)


*Figure 54. The Neuf Chemin site (Guernsey SMR)*

| Content | Quantity | % |
|---|---|---|
| Cores | 1 | 1.3 |
| Core Preparation | 0 | 0 |
| Flakes and Blades | 52 | 69.4 |
| Retouched Pieces | 12 | 16 |
| Debris | 10 | 13.3 |
| **Total** | **75** | 100 |

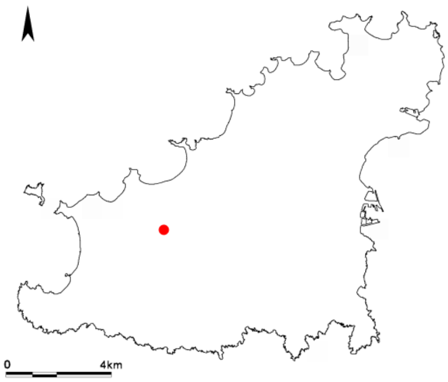



*Figure 55. Summary chart and site location.*

### Location

The Neuf Chemin site is located on a promontory overlooking a valley that leads down to the west coast. The three intersecting valleys now form the island's main reservoir complex.

### Excavation History

A small field-walked collection comprising 75 flints was collected as part of the Société Guernesiaise field-walking programme in 1980, there is no other information about the site.

### Site Formation and Geomorphology

No details available.

### Assemblage Detail

On the evidence of the summary chart the collection appears to be biased with a high proportion of flakes (69.4%) and a very low proportion of debris at 13.5% implying that some debris may have been missed or discarded.

The raw material collected derives exclusively from local beach pebble although non-flint material such as quartz could have been discarded or ignored. Apart from signs of bipolar percussion on the one chopper core there is little further evidence for this technology. The core appears to have been started as a single platform but then reversed and worked from the distal end to produce a chopper core.

The assemblage is flake based with no blades or bladelets. The majority of the flakes (87%) have either primary or secondary amounts of cortex. Four flakes have been produced on already patinated material suggesting scavenging and re-use of existing Mesolithic material found in the area. In the retouched category there are 12 tools forming 16% of the assemblage. Seven of the tools are scrapers with the remainder being three retouched flakes, one splintered piece and one piercer. One of the scrapers is patinated again inferring Mesolithic deposition.

**Neuf Chemin: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 25. Neuf Chemin assemblage chronology summary table.*

**Summary**

The scraper dominated assemblage and the use of bipolar percussion would infer a Neolithic date, but the presence of patinated flint, which typically only appears in Mesolithic contexts on the island, suggests people active here during that period (Table 25). The fact that the patinated pieces were reworked, probably in the Neolithic period is interesting as coastal flint sources would have been less than 3km in distance.

## 6.16 Lihou (GU582)


*Figure 56. The Lihou site (Guernsey SMR)*

| Content | Quantity | % |
|---|---|---|
| Cores | 8 | 4.5 |
| Core Preparation | 3 | 1.5 |
| Flakes and Blades | 93 | 46.5 |
| Retouched Pieces | 10 | 5 |
| Debris | 86 | 42.5 |
| **Total** | **200** | 100 |

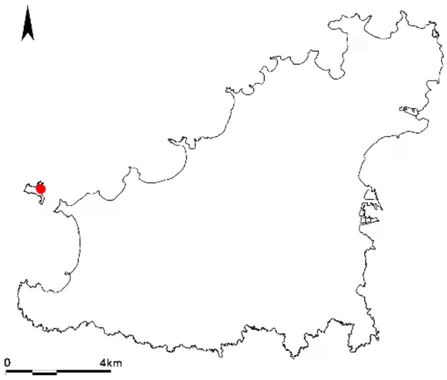



*Figure 57. Summary chart and site location.*

### Location

The site is located on what is now a tidal island overlooking the west coast of the island. This would have formally been a low lying land area with the coast several kilometres away.

**Excavation History**

This site has been published by Conneller *et al.* (2016) and the reader is referred to this for further information. However, a proportion of the assemblage was sampled for purposes of this thesis with the rationale that as an undisturbed Middle Mesolithic type site for the island it was necessary to obtain metric data to use as a benchmark with which to compare the other reviewed sites.

**Site Formation and Geomorphology**

Refer to Conneller *et al.* (2016).

**Assemblage Detail**

Due to time constraints it was not possible to sample from the full three seasons of excavation, therefore a random sample of 200 pieces was taken from the 2003 season assemblage of 420 flints. In this case it should be emphasised that the sample may not wholly reflect the profile of the total assemblage.

The raw material comprises exclusively local beach pebble flint. Around 25% of the material is already, or undergoing patination. The sampled assemblage contained a high proportion bladelets totaling 20% of the flakes and blades category, the majority of these (90%) are tertiary. Ten retouched pieces were recorded in the sampled assemblage, eight bladelets and two retouched flakes.

**Lihou: Inferred Lithic Contribution by Period**

| | Possible | Minor | Moderate | Major |
|---|---|---|---|---|
| Mesolithic | | | | |
| Early Neolithic | | | | |
| Middle Neolithic | | | | |
| Late Neolithic | | | | |
| Early Bronze Age | | | | |

*Table 26. Lihou assemblage chronology summary table.*

**Summary**

As can be seen from Table 26, the analysis technique for charting lithic assemblage chronology does display some error for a discrete Mesolithic site as there are elements used in the metric such as a high proportion of flakes (40%) and platform preparation that spills over into later categories. Nevertheless, the difference between this site and those that are palimpsests is notable when compared with the other assemblages reviewed here.

## 6.17 Site Designation and Dating

In this section the various types of human activity evident and dating evidence generated by the lithic data are summarised prior to the more detailed discussion of results from the lithic analysis in the following chapter.

### Material Acquisition

There is strong evidence of knapping sites being present around the west and north facing coasts of the island, displaying a relatively low proportion of artefacts in the retouched category, and large quantities of debris. These assemblages have a very different character to those further inland where greater proportions of tools, especially scrapers are common. Coastal sites such as these give us glimpses of human mobility on the island as it is argued in the following chapter that the resultant cores and flakes produced at these sites were transported to sites inland for further processing.

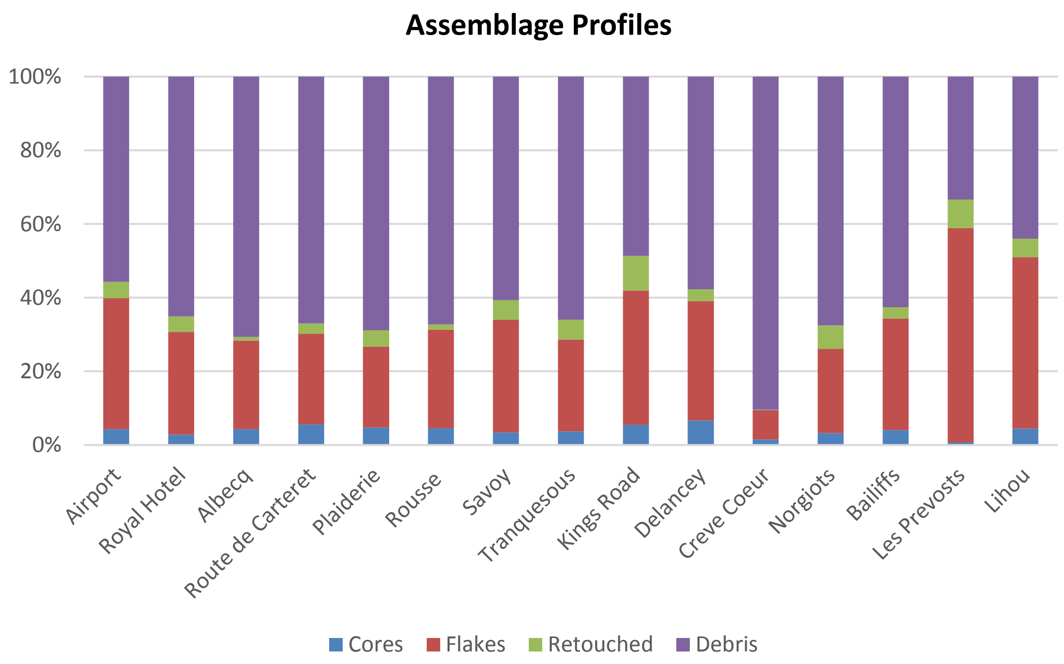



*Figure 58. Assemblage profiles of the reviewed sites.*

However, as can be seen in Figure 58, apart from the Crève Coeur, Rousse and Albecq sites, arguably zones that were exploited for obtaining and working beach pebbles, the reviewed assemblages display a degree of homogeneity across the island that may be a result of human communities creating mixed assemblages through time. This has the effect of ‘smoothing’ out the data making the inland sites difficult to allocate to any particular task or specific role. Alternatively, it is quite possible, as discussed and critiqued in Chapter 4 that allocating labels such as ‘industrial’ and 'domestic' based on relative quantities of cores and tools are too restrictive and such concepts may not have existed in prehistory.

**Site chronology**

Despite the reviewed sites comprising palimpsests of material as a result of prolonged periods of deposition, there is significant variation in chronological patterning of the assemblages. The appearance of Mesolithic and Early Neolithic material is fragmented implying that sites during this period were not evenly distributed over the landscape. The expansion of communities during the Middle and Late Neolithic is apparent from the large amount of lithic working deposited more or less evenly across the island during these periods. A brief account of the chronological conclusions obtained from the sites reviewed in this chapter is presented here, prior to being further developed in Chapter 8.

**Mesolithic**

Mesolithic activity appears as background data in many of the sites with evidence of bladelets and/or core and striking platform preparation and degrees of patination. Sites such as the Airport and to a lesser degree the Royal Hotel and Route de Carteret also have recognisable worked microliths, but in small numbers only. There are therefore, hints of Mesolithic communities active in all landscape types on the island, although there has thus far only been the Lihou site which comprises material uniquely from this period.

**Early Neolithic**

Early Neolithic activity is evidenced by the presence of Cinglais flint, but less so in local flint which arguably blends in with both earlier and later working. Pottery and polished stone rings also provide complementary evidence from this period and tend to back up the flint distribution pattern evidence which indicates a community very much focussed on the coast and lower lying parts of the island, although there is also some evidence of activity in the upland plateau.

**Middle Neolithic**

This is a difficult period to discern from a flint-working perspective as there are no diagnostic pieces that can be used as chronological markers. The balance of evidence relies on the scraper dominated assemblages, a rise in the use of bipolar percussion and a flake based industry. It would appear from this that the distribution of human activity is more evenly distributed over the island at this time.

**Later Neolithic**

Again, not such an easy period to separate out from the background palimpsests but increasing amounts of bipolar percussion and less care being taking in core preparation suggests that the activity patterns remained similar to those of the Middle Neolithic.

**Early Bronze Age**

Diagnostic types such as barbed and tanged arrowheads and imported Grand Pressigny come to the fore as diagnostic indicators for this period. There does appear to be a change in landscape focus during this time with the appearance of promontory locations such as Jerbourg and Rousse as well as hints that the upland area was being less utilised than earlier periods. There are hints of flint use extending through the Bronze Age and into the Iron Age indicating that flint-working technology and techniques were maintained over many generations without any perceptible change in typology and technology.

The following Table (27) displays the suggested dates and roles of the reviewed sites based on the data obtained from lithic assemblages. As a general rule, although involving a degree of subjectivity; residence is used to describe short term events such as a concentration of lithics, and where evidence for longer term occupation is suggested, for example the presence of post holes and pottery, the term settlement is used.

| Site | Chronology | Site Designation |
|---|---|---|
| *Airport* | Multi-period but predominantly Middle Neolithic | Episodic use during Mesolithic. Residence and settlement during later periods |
| *Royal Hotel* | Multi-period but predominantly later Neolithic | Residence then settlement during later periods. Some flint acquisition |
| *Route de Carteret* | Multi-period | Episodic use during Mesolithic. Residence during later periods |
| *Albecq* | Predominantly later Neolithic | Beach pebble acquisition |
| *The Plaiderie* | Neolithic-Early Bronze Age | Residence, some beach pebble acquisition |
| *Rousse Tower* | Later Neolithic-Early Bronze Age | Beach pebble acquisition, some residence |
| *Savoy Hotel* | Multi-period | Residence and settlement. Some possible beach pebble acquisition |
| *Tranquesous* | Later Neolithic-Bronze or Iron Age | Settlement |
| *Kings Road* | Later Neolithic-Bronze or Iron Age | Settlement |
| *Delancey Park* | Multi-period but predominantly later Neolithic | Late Neolithic funerary monument, some residence prior to this |
| *Crève Coeur* | Predominantly later Neolithic-Early Bronze Age | Beach pebble acquisition |
| *Bailiff's Cross* | Some Early Neolithic but predominantly Middle Neolithic to Early Bronze Age | Residence and Settlement |
| *Ruette Norgiots* | Predominantly later Neolithic-Early Bronze Age | Residence and Settlement |
| *Les Prevosts* | Some Mesolithic but predominantly later Neolithic-Early Bronze Age | Residence and Settlement |
| *Neuf Chemin* | Some Mesolithic but predominantly later Neolithic-Early Bronze Age | Residence and Settlement |

*Table 27. Suggested site chronology and role.*

## 6.18 Conclusion

This chapter has demonstrated that by applying appropriate quantitative and qualitative methodologies to the lithic data it is possible to extract significant amounts of information despite many of the sites being palimpsests. The review has established that variations in the nature of human activities exist across the island, with coastal flint acquisition and working sites identified and the linking of these with sites further inland. Maritime connectivity networks with continental mainland areas are also apparent in the data through quantities of imported flint found at several sites. Chronologically, the review has revealed a background of Mesolithic activity across the island including a significant presence away from the coast at the Airport site on the southern plateau, and several new sites containing evidence of Early Neolithic communities are also apparent. A possible Middle Neolithic focus of activity has been revealed which may be contemporary with the island's passage graves. Further Later Neolithic and Early Bronze Age sites around the island have been highlighted, all of which add to the narrative of an island community.

The following chapter synthesises the lithic data presented here in order to establish the specifics of the technology, techniques and typology evident on the island. The aim is to fully understand the *chaîne opératoire* of the reduction process and also to enable comparisons with continental mainland lithic assemblages to be drawn, thus revealing the full extent of maritime connectivity through the periods under review.

# Chapter 7: Results Synthesis and Inter-Site trends

In this chapter the *chaîne opératoire* of beach pebble working on Guernsey is analysed based on the site results summarised in the previous chapter. This chapter commences with a review of the raw material acquisition stage, then progresses through flint-working, usage and discard; the role played by post depositional factors is also included. The data obtained are compared with the corpus of lithic knowledge from the adjacent continental mainland, as well as previous work carried out on Guernsey. The aim of this and the previous chapter is to draw together the various strands of lithic evidence in order to establish patterns of human activity through space and time.

## 7.1 Raw Material Acquisition

As noted in Chapter 1 and evident through the site reports in Chapter 6, the principal source of raw material for the manufacture of flint tools in late prehistory were beach pebbles sourced from the west and north coasts of the island. This assertion is based on the rolled and pitted cortex evident on the flint collected from archaeological sites, observations of concentrations of worked lithics along this coastline and the current distribution of flint pebbles.

**Local Beach Pebble Flint**

It has been suggested by Guyodo and Hamon that the combination of constant collection and rising sea levels during the Neolithic may have led to shortages of suitable flint (Guyodo & Hamon 2005, 404). However, the relatively large quantities of waste flakes and tested but not fully exploited cores in the reviewed assemblages indicate otherwise, implying that there existed a constant mechanism of replenishment by sea currents and tidal action. Despite the apparent adequate supply of raw material, the lack of any significant blade industry in the analysed assemblages suggests that the current limited size and variable quality of the beach pebbles found on the coast was replicated during the prehistoric era. Likewise, the breaking open of a selection of flint beach pebbles as part of the research for this thesis revealed that the predominant flint colour once the cortex is removed is an olive grey, with smaller amounts of material tending towards black, or orange. Therefore, as far as it is possible to be certain, and despite changes in sea-levels, the availability, location and character of contemporary beach pebble flint appears to have diverged very little from the period under study.

Despite the lack of a blade industry on the island the bladelets recovered from the Mesolithic site at Lihou (Figure 72) demonstrate that local flint was of sufficient quality to permit the manufacture of finely worked pieces when required. The expediency and lack of quality frequently noted in later assemblages may simply have been the result of people exercising technical choices. This is discussed further in Section 7.5.

The three sites noted as flint acquisition areas in the previous chapter (Albecq, Rousse Headland and Crève Coeur) were dated on account of the typology and technology evident in the flint-working as Late Neolithic to Early Bronze Age. It is probable given the sea-level data discussed in Chapter 2 (Figure 7) that these sites would have been in a similar coastal location to the current day. Earlier sites on the other hand, are likely to have been lost as a result of coastal erosion. The only site evident that is earlier is the Mesolithic site of Lihou. Although this appears to have been a site for working flint pebbles, it was some way from the acquisition point on the coast at the time of use (2 km) and at a sufficient height above sea-level to have survived.

The apparent ready availability of flint appears to have reduced the need for any other substitute lithic material apart from small quantities of high quality imported flint, which is discussed in the following section. Small amounts of quartz chippings and tested quartz pebbles are present in many assemblages but as this material in worn beach pebble form resembles white chalky cortex of flint, it is quite likely that this selection was unintentional and the quartz was subsequently discarded during the reduction sequence.

Pebbles of igneous rock that would have served as hammer-stones and anvils are all present in sufficient quantities on the island; the only possible need would have been for softer stone for soft-hammer use. A sandstone pebble (G*rès Armoricain*) which was probably used as a soft hammer was recovered from Delancey Park; how a pebble of sedimentary rock would have been transported to the island is unclear, human agency is possible although sea action and currents are also probable explanations. There is also the possibility that bone or antler was used for some of the finer flint-working tasks such as the invasive pressure flaking on arrowheads, but these materials do not survive in the acidic soil conditions on Guernsey.

**Summary**

Although maligned in many reports and accounts of Guernsey lithic working (e.g. Kendrick 1928; Patton 1995; Conneller *et al.* 2016), the raw material available on the island's beaches served communities well for long periods during the Mesolithic, Neolithic and Early Bronze Age without any need for supplementary supplies of flint from further afield. These locally produced artefacts were the main component of material culture on the island, the use of which would have engendered mobility and gathering of people at coastal locations to collect and work flint pebbles through all periods covered by this thesis. This practice would also have served to exchange news, reinforce social ties and forge new ones.

## 7.2 Imported Flint


*Figure 59. The Channel Islands and the Armorican Massif (west of dashed line) showing the two sources of flint distribution during the Neolithic period and other places mentioned in the text (D Hawley).*

Although the site results in Chapter 6 indicate that the overwhelming proportion of worked flint on the island was sourced locally, there were also occasions during the Neolithic when superior quality flint, Cinglais and Grand Pressigny was transported from the French mainland to Guernsey (Figure 59). This material provides valuable indications of dating, maritime connectivity and the movement of material with more involved life histories thus raising interesting questions about the role of imported materials in the island community.

**Cinglais Flint**

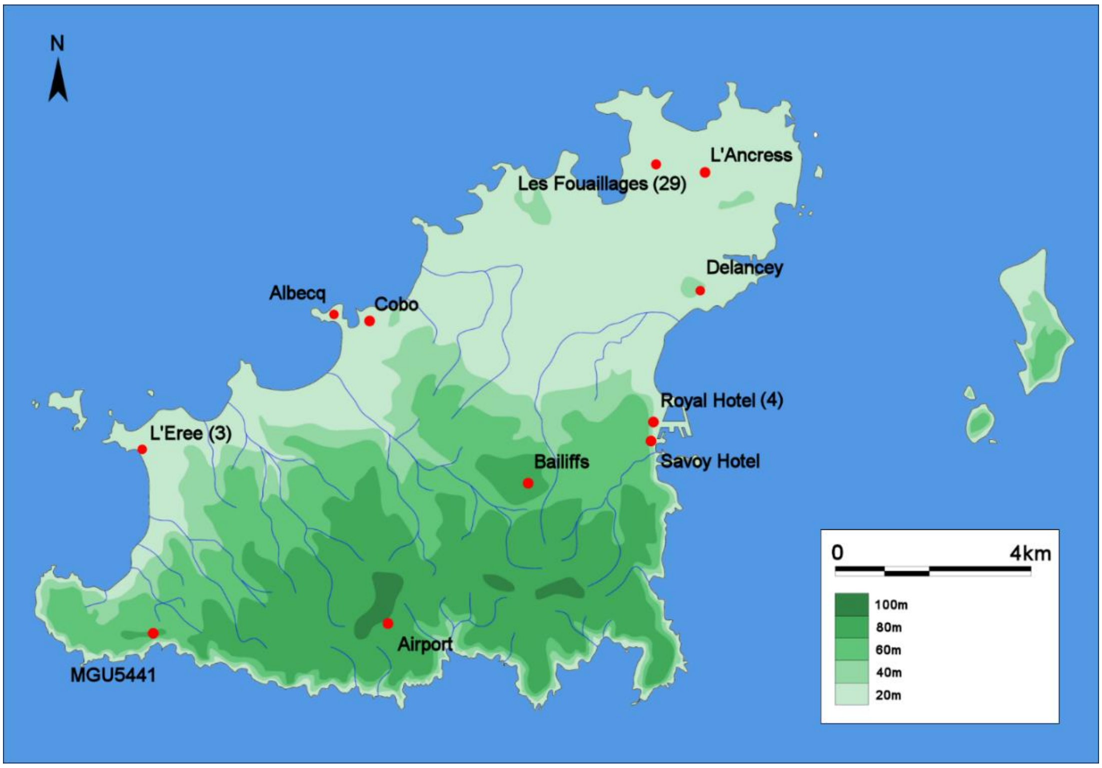



*Figure 60. Early Neolithic Cinglais flint find locations (All location quantities = 1 unless brackets indicate otherwise), (D Hawley).*

Cinglais flint (*silex Cinglais*) is a fine-grained homogeneous flint ranging from light brown to grey in colour (Artur *et al.* 2008, 57). The source of this material appears to have been flint mines in the Caen Plain, Normandy, some 160 km from Guernsey (Charraud 2009; Desloges *et al.* 2011). The term 'Cinglais', although in common use, is not strictly geographically correct as apart from the type site at Moutiers-en-Cinglais, several other mines have been found nearby, including the recently excavated Espins and Soumont-Saint-Quentin (*ibid.*). The excavations demonstrated that *in-situ* flint-working took place, directed at the manufacture of regular parallel-sided blades struck from conical cores using indirect percussion (Desloges *et al.* 2011, 14). No evidence of any subsequent re-working of these blades into tools was found at the mines however, which suggests that the finished blades were transported elsewhere for this process (Charraud 2009, 8).

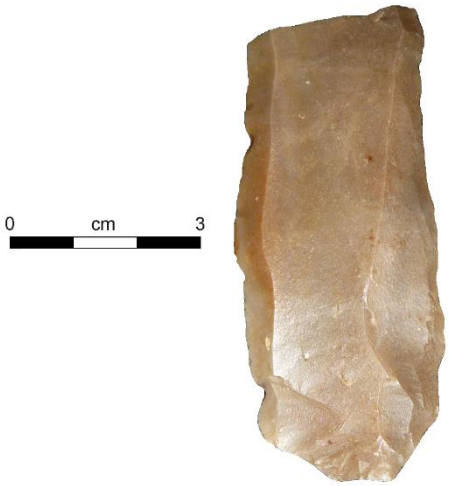



*Figure 61. Proximal fragment of a Cinglais blade found at Delancey Park, Guernsey (D Hawley).*

Visibility of Cinglais flint exchange networks emerges on the Armorican Massif and its sedimentary margins at the start of the earliest Neolithic, which is currently dated to the end of the 6th millennium BC (Marcigny *et al.* 2010, 127). In France, the preference for the use of this type of flint is considered to be tied to specific cultures, the *Rubané Final de Bassin Parisien* (RFBP) and the succeeding *Villeneuve-Saint-Germain* (VSG) groups who required the fine quality long blades that were used as blanks for the production of tools such as burins, scrapers and points (Marchand *et al.* 2006, 520; Marcigny *et al.* 2010, 127; Desloges *et al.* 2011, 14). As groups practising a farming economy moved further west into areas with no naturally occurring flint, such as Brittany, material was exported from the mining areas in the Plaine de Caen as a matter of preference. For example, finds at the Early Neolithic settlement site of Le Haut Mée in eastern Brittany (Figure 59), demonstrate that people were importing Cinglais flint from over 100 km away rather than exploiting the inferior beach pebbles from 25 km in distance (Cassen *et al.* 1998, 60). Similarly, in western Brittany, Cinglais blades have been found at the VSG site of Dillien, a distance of 230 km (Marchand *et al.* 2006, 530), and as far as the island of Belle-Ile-en-Mer at 280 km (Audouard & Large 2012, 12). Arguably, the most notable export was to Guernsey, involving a potentially difficult and hazardous sea crossing. The presence of Cinglais flint on the island has been taken to indicate an Early Neolithic VSG presence by Guyodo & Hamon (2005, 393) who remark that the lithic evidence for human activity during the Early Neolithic is more prevalent on Guernsey than Jersey; an interesting scenario considering that at this time Jersey may have still been accessible on foot from the Cotentin Peninsula at low tide. However, it can also be argued that Cinglais flint has simply not yet been recognised on Jersey.

Analyses of lithic assemblages containing Cinglais flint on the Armorican Massif confirms that whole blades were being circulated rather than cores or nodules because of the lack of associated debris (Cassen *et al.* 1998, 60; Ghesquière *et al.* 1999, 539). Likewise, the lack of cores and waste on Guernsey implies a similar import strategy. However, the quantity of imported Cinglais flint on Guernsey is very limited with small quantities, often single pieces distributed seemingly randomly around the island. Thus far, multiple finds have occurred at only three locations, three pieces at L'Erée, four pieces at the Royal Hotel site and 29 pieces at Les Fouaillages (Audouard 2009, 33); the large quantity recovered from the latter site is probably a function of the scale of the recovered lithic assemblage which amounted to *c.*14,000 pieces. The distribution pattern of this flint has implications for the elucidation of Early Neolithic settlement patterns, a topic which will be addressed in Chapter 8.

The relatively small quantity of Cinglais flint (*c.*0.1%) on Guernsey can be compared with the *c.*50% of the total worked flint at Le Haut Mée site in Brittany (Cassen *et al.* 1998, 58). Cinglais blades may therefore have been considered high status items on the island because of their rarity, or conversely, the Early Neolithic population of the island was sparse. As hoards of Cinglais blades have been found in Brittany (Pailler 2007, 59), the question remains whether people considered them to be prestige items traded to fulfil social and cultural expectations similar to that of the polished axe trade, rather than being exclusively used for functional tool-making purposes. An alternative possibility is that a pragmatic view was taken on Guernsey and that local materials were exploited with the view that the more 'exotic' material was too hard to obtain. This appears to have been the scenario in Finisterre, Brittany where the quantity of imported flint is limited and mixed in with local beach pebble flint-working and stone ring manufacturing sites (Pailler *et al.* 2008, 98; Scarre 2011, 52). To separate this manifestation of the Early Neolithic from the more archaeologically visible VSG settlement evidence further east in Brittany, it has been labelled *Néolithique ancient de Bretagne occidental* (Early Neolithic of Western Brittany). A similar label could be applied to Guernsey. As blade production declined during the Middle Neolithic I period and was replaced by flake technology, the long distance circulation of Cinglais flint was abandoned in favour of the exploitation of local sources (Ghesquière *et al.* 1998, 62).

**Grand Pressigny**

Grand Pressigny is a distinctive red to orange coloured flint, generally containing small inclusions having the appearance of white flecks; its quality is considered to be excellent for knapping (Giot *et al.* 1986, 22). The source of this flint, local to the town of Grand Pressigny, in the department of Indre et Loire (Figure 59), was a centre of blade production during the 4th and particularly the 3rd millennium BC. This area is most noted for the production knife or 'dagger' blades that were exported all over France, as well as to Holland and Switzerland (Plisson *et al.* 2002, 793). Research by Ihuel (2004, 112) suggests that the major period of distribution was between *c.*2800 BC and 2400 BC when the distinctive 'dagger' blades were in circulation, these total around 68% of all Grand Pressigny material found, the reminder being un-retouched blades and retouched tools (*ibid.*). Production of Grand Pressigny tailed off by *c.*2400 BC, when copper and bronze technology was introduced to this part of Europe.

No mining was required for the extraction of this flint; the raw material, in tabular and nodular form was exposed by quaternary erosion and appears to have been readily accessible to Neolithic communities in the region (Giot *et al.* 1986, 22). The cores from which the blades were knapped are commonly found as surface finds in the region of manufacture and are known as '*livres de beurre*' (pounds of butter) because of their resemblance in colour and form to slabs of butter (Martin 1906, 46).

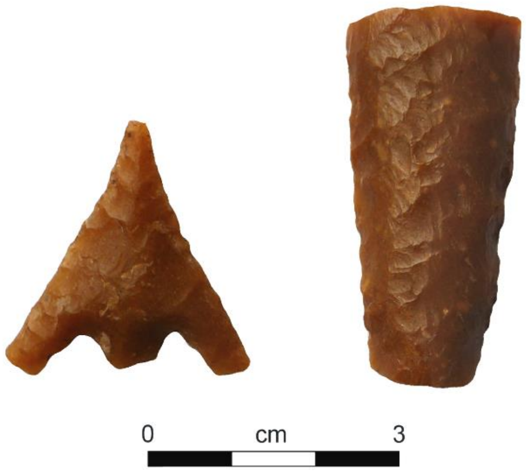



*Figure 62. (left) Grand Pressigny arrowhead, and right; tang fragment of a 'dagger' blade. Both finds from the University of Southampton excavation at L'Erée (photo D Hawley).*

Similar to Cinglais flint, only blades, fragments of blades and tools are found on sites away from the source area and conversely, cores are typically found close to the extraction source suggesting that distribution networks involved finished blades (Ihuel 2004, 53). The size of some of the blades, reaching a length of over 200 mm is a testament to the skill of the knappers; this is perhaps, the final manifestation of prehistoric specialist flint knapping skills, as copper and bronze working technologies were already appearing to the south and east of France (Plisson *et al.*

2002, 793). Complete blades are rarely found however, perhaps because of their fragility. The vast majority of *Pressignien* flint found comes in the form of tools such as burins, sickles, scrapers and arrowheads (Figure 62), recycled from the original blades (*ibid.*, 810). On the occasions that blades are found complete, some micro-wear has been found but not enough to suggest intense use, implying that these items may have been invested with symbolic significance and only used occasionally (*ibid.*). It is pertinent to note that complete blades are typically found as funerary deposits, the broken fragments that were recycled into various tools that are for the most part found in non-funerary contexts. This gives an indication of the life cycle of these objects emphasising the probability of whole blades being regarded as prestige items, and a subsequent decline in the importance of the material leading to the recycling into common tools (Ihuel 2004, 63).

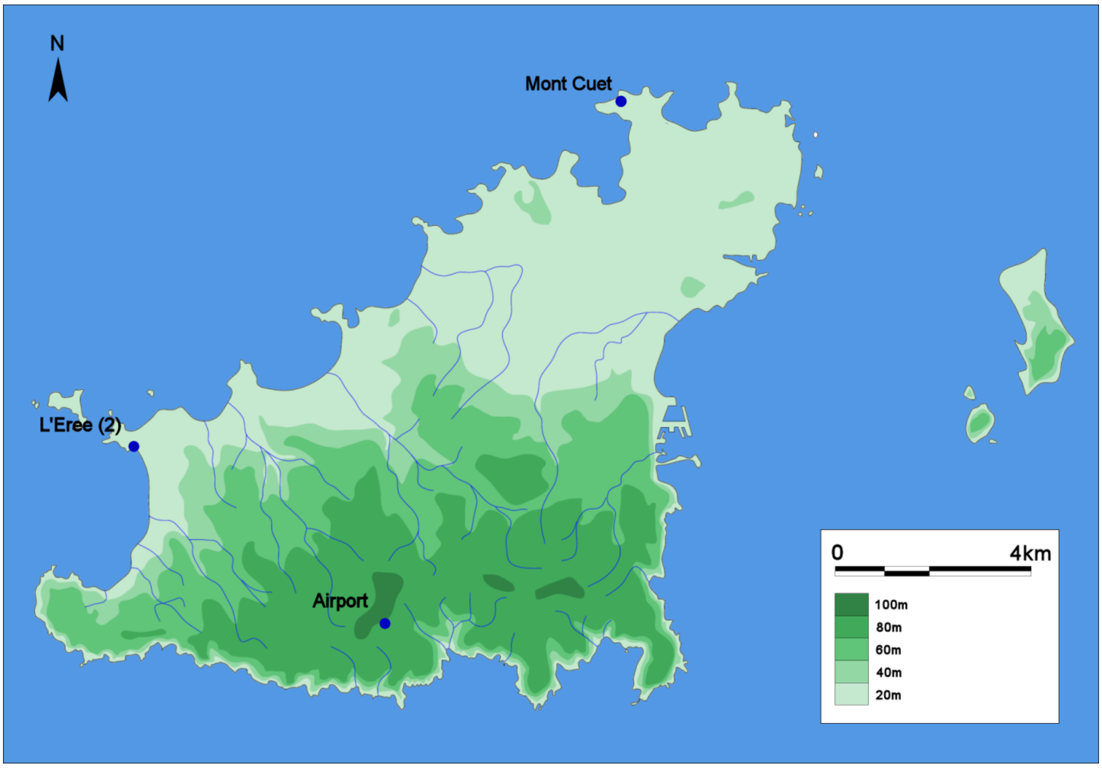



*Figure 63. Grand Pressigny flint find locations (All location quantities = 1 unless brackets indicate otherwise) (D Hawley).*

The presence of Grand Pressigny flint artefacts in both Guernsey and Jersey, was originally noted by Kendrick (1928, 93) and Hawkes (1937, 62). In more recent excavations further fragments have been found in Guernsey at the University of Southampton dig at L'Erée (Garrow & Sturt, 2008-2011), and at the States of Guernsey airport excavation (2009–2011). Both these finds are very similar, sub triangular to half rounded in section with invasive pressure flaking on the dorsal face, these are likely to have formed the distal 'tang' section of a blade (Figure 62). The example from the airport site has been retouched to form a double-ended convex and concave scraper (Appendix B1, Figure 86; No. 10). Additionally, a barbed and tang arrowhead from L'Erée is almost certainly made from Grand Pressigny flint (Figure 62).

The distance involved in this movement of material from its original source is 380 km, although the route taken is not apparent in the archaeological record. In Ihuel's (2004, 67) mapping of Grand Pressigny distribution in the Armorican Massif, the vast majority is found in the south of the area suggesting a southern route for its arrival in Guernsey.

An interesting occurrence in Guernsey are the pieces of 'mock' Grand Pressigny which have the same form and method of invasive retouch but are of a much paler flint. One piece reported by Kendrick (1928, 39) was found at La Varde passage grave and a further two from Northfield and Le Crocq are reported by Patton (1995, 90). Patton speculates that as these imitation items are not found on Jersey whereas superior quantities of Grand Pressigny are, they may have been manufactured there from broken flint axes and passed on to Guernsey in the guise of exotic items.

**Summary**

Although comprising merely 0.1% of island assemblages, Cinglais and Grand Pressigny flint assume an importance out of proportion to their quantity as indicators of maritime connectivity and the links that existed between regions and communities. Their presence enables relatively accurate dating of human activity at given locations, this is especially relevant in the case of Cinglais flint which also signifies the arrival of farming communities on the island. The quantity of Grand Pressigny flint found on the island is relatively insignificant with the 'fancy' arrowhead from L'Erée the most significant (Figure 62), an object that would have arguably been reserved for display purposes rather than practical use. In this respect the dual role of imported lithics "as instruments and as signifiers of cultural meaning" is apparent (Yentsch & Beaudry 2001, 215). On the other hand, the fragment of Grand Pressigny blade recovered from the Airport site reworked into a scraper suggests a reduction in significance and the acquisition of a more mundane role, thus hinting at changes in the life cycle of these items.

The fitting of these relatively minor quantities of imported flint into exchange networks is difficult as there are clearly, missing elements in the equation. The most fundamental is what was exchanged in return from the island. Little consideration has been given in previous regional studies to objects going the 'other way', although Scarre does hint at the possibility of Cinglais flint exchange networks with stone rings from Finisterre during the Early Neolithic in Brittany (Scarre 2011, 50). It is conceivable that the low quantities of imported material on Guernsey may be symptomatic of there being little in the way of resources to exchange in return, or that those items would have been in less durable materials that have not survived in the archaeological record. An alternative view is that 'exotic' items arriving on the island could have fulfilled the role of gifts used to generate social links or obligations rather than being purely and exchange of commodities (Gosden & Marshall 1999, 173). It is also possible to speculate that the Cinglais flint thus far recovered on the island was brought over by the early settlers as a start-up tool-set rather than being part of subsequent exchange networks. Unfortunately, the archaeological record in this case is just too vague to resolve and the impression gained during this thesis is that although being linked into exchange networks that were active throughout the period under review, the role played by the island was perhaps a peripheral one.

## 7.3 Reduction Strategies

A comparison of flint-working techniques on Guernsey with those on the Armorican Massif indicates that a similar size and quality of raw material in the form of beach pebble flint was used during prehistory (Joussaume 1981; Tinevez, 1992; Marcigny & Ghesquière 2003). French lithic experts have also been involved in the analysis of Channel Island lithic assemblages as reviewed in Chapter 4. Hence, this has allowed research into reduction techniques carried out on the French mainland to be directly compared with, and applied to Guernsey assemblages.

The working of locally obtained beach pebble flint results in significant amounts of debris from knapping thus providing an insight into the sourcing, movement and reduction practices employed on the island (Patton 1988, 557; Donnart *et al.* 2009, 525). Two principle reduction techniques are evident in the analysed assemblages; direct percussion onto a hand-held core (Figure 64; a, b & c), and the bipolar percussion or split technology technique (*la percussion bipolaire sur enclume*) where the hard stone hammer is directed onto a core supported on a stone surface or anvil (Figure 64; d, e & f). Both methods were also employed on the Armorican Massif where similar beach pebbles were utilised; knowledge gained from the analysis of French sites and literature is used here to complement the observations of reduction techniques and the *châine opératoire* on Guernsey.

Essentially, the aim of both direct and bipolar percussion techniques were the same, to produce suitable flakes and/or blades that could then be retouched into the required tools. Alternative methods to produce flakes such as indirect percussion do not seem to have been used as part of the reduction process on the island, probably because of the nature of the raw material available, although pressure flaking may have been used as part of the finishing process, for example; the finely worked Late Neolithic and Early Bronze Age arrowheads (Section 6.6).

The two principle beach pebble reduction techniques are analysed separately in the following sections with the direct percussion method first.

**Direct Percussion**

Hammer stones recovered from knapping sites, together with prominent bulbs of percussion and signs of crushing on flake platform areas indicates that a hard stone hammer, typically a beach pebble of igneous rock was the most commonly used method of splitting flint beach pebbles. The first step in the reduction process was removal of a major part of an ovoid pebble, typically the crown (Figure 64; a). This first removal, irrespective of the method used to produce it is referred to in French as the *entame* or starter flake as it has 100% cortex on the dorsal face and no striking platform, as such, it provides a useful metric in locating areas where people were initiating knapping of beach pebbles. This reduction method led to the creation of striking platforms on both the split pieces; the larger part was then typically used as a core for further removal of flakes or blades while the pebble crown is commonly found retouched as a scraper in island assemblages (Figure 64, b). Alternatively, if the pebble was angular in form, a natural striking ridge or platform may have been available, in which case a fully cortical flake could be removed immediately with an oblique strike (Figure 64, c). Further removals may then be initiated on the same plane, or by exploiting the negative scars as a strike platform for flake removal in the opposing direction; a core worked out in the latter fashion is termed ‘chopping-tool’ on the adjacent French mainland (Marcigny & Ghesquière 2004, 116).

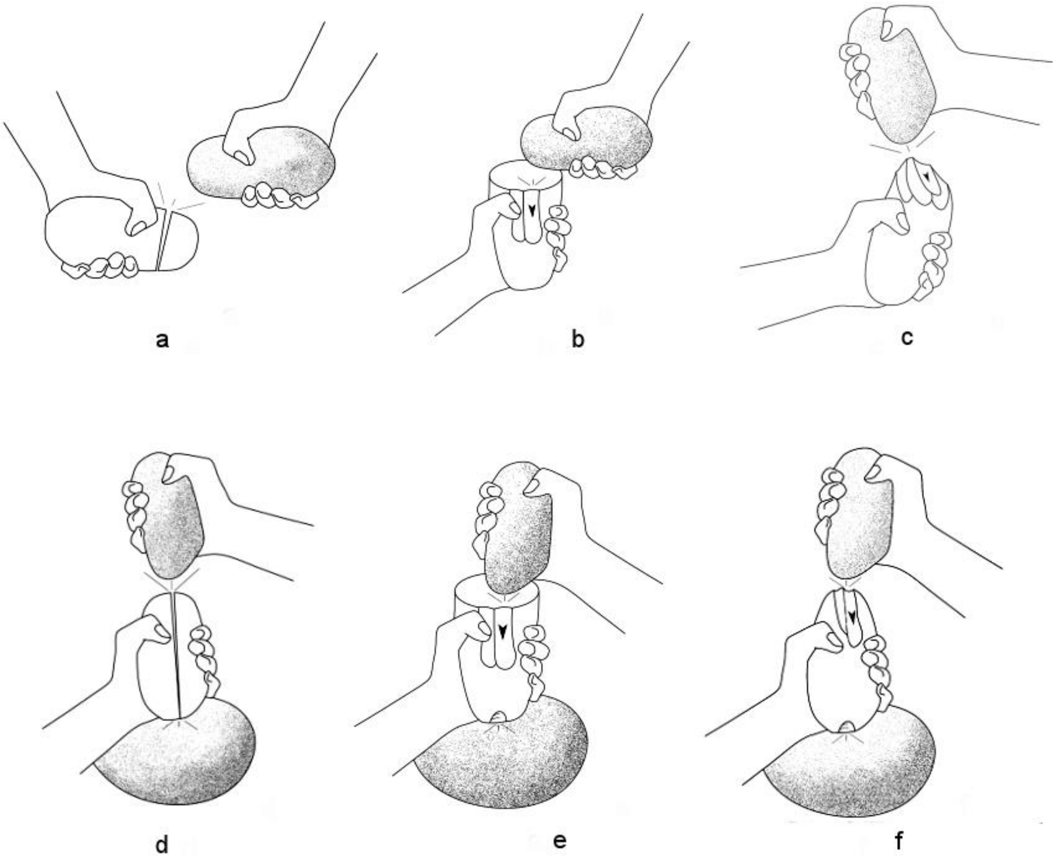



*Figure 64. Suggested reduction techniques: a & b, direct percussion with hard hammer; c, flakes stuck using a natural existing platform on the pebble; d – f, methods of bipolar-on-anvil working (D Hawley).*

**Bipolar Percussion**

This technique uses an anvil stone or flat rock surface on which the pebble to be split was posed; it was then struck with a hard hammer. An ovoid pebble could either be struck through the longitudinal axis, (Figure 64, d) or positioned on the anvil with the long axis perpendicular to the striking direction. This reduction technique then followed a similar trajectory to the direct percussion method with the choice of producing a platform with the removal of the pebble crown. The resultant cortical piece could be either elongated or circular in form, the former suiting the production of piercers and the latter, scrapers (Donnart *et al.* 2009, 518). If the pebble had suitable geometry, knapping was initiated directly from a cortical surface via a ridge or corner without the removal of the crown. Alternatively, the pebble was smashed into fragments, some of which may have been suitable for immediate use or further working (Figure 66).

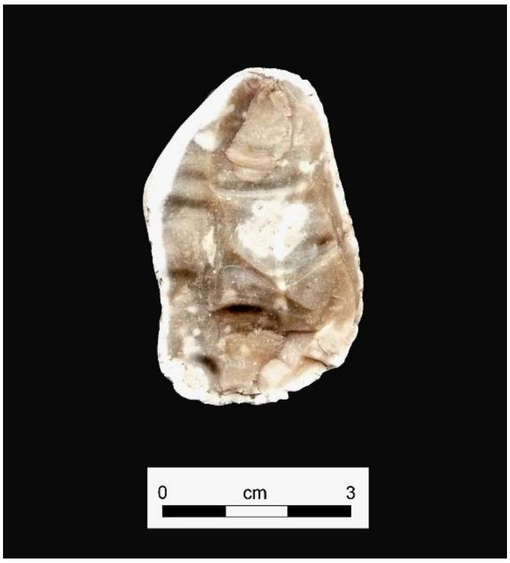



*Figure 65. Bipolar percussion flake from Crève Coeur displaying opposed bulbs of percussion (D Hawley).*

The use of bipolar percussion is visible through the large quantities of debris produced and the anvil impact traces on the distal end of the cores. The resultant flakes and debris may also display double ended impact traces (Figure 65), with crushed platforms on the proximal end of flakes and ripples on the ventral face resulting from the intensity of the strike (Guyodo & Marchand 2005, 541). It has been demonstrated through experimental archaeology that the pieces known in French terminology as '*quartiers*', quarters or segments as in segments of an orange derive from this method of working (Donnart *et al.* 2009, 524). In some cases, the pebble is split entirely into these segments which would have left little in the way of suitable pieces for further retouching (Figure 66). Nevertheless, segments are common in Guernsey assemblages and in some cases are retouched to form simple backed blades.

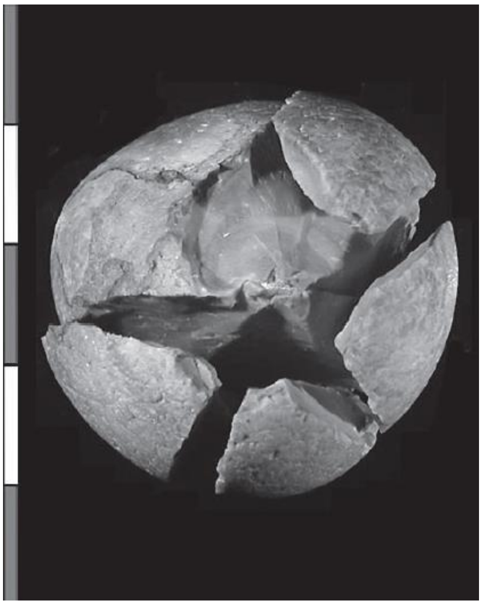


*Figure 66. Pebble shattered into segments during bipolar percussion (Donnart et al. 2009).*

Equally however, experimental knapping has also demonstrated that many flakes and much of the debris produced using bipolar percussion display none of the previous signs making it difficult to define with any great certainty the exact proportions in respect to direct percussion utilised at a given site (Guyodo & Marchand 2005, 541). Additionally, it is quite possible that a mix of techniques was employed in the reduction process with pebbles being split on an anvil before being worked further with direct percussion or conversely, cores may have been anvil knapped when they became too reduced in size to hold in the hand. The bipolar percussion technique can therefore proceed in several ways: directed towards the production of cores, which may then be further worked either as a continuation of the anvil technique, by using direct percussion to produce flakes once a platform is created; or simply to split pebbles to provide a large amount of debris from which some suitable pieces can be chosen for further rework.

The balance of use between bipolar percussion and direct percussion varies between sites and over time. On the Armorican Massif littoral zone direct percussion was more prevalent during the Mesolithic, amounting to around 90% of flint-working (*ibid.*, 539). Bipolar percussion becomes increasingly visible in the archaeological record through the Middle Neolithic to the Bronze Age, reaching up to 100% of the assemblages on some sites (*ibid.*). A review by Guyodo of the lithics found in the passage graves of Le Déhus and La Varde in Guernsey suggests that both techniques were in use in roughly equal amounts on the island which accords with a Middle Neolithic date for these monuments (Guyodo & Hamon, 2005, 399-402).

The incidence of bipolar percussion on Guernsey appears to follow a chronological trajectory similar to patterns occurring on the adjacent French mainland (Figure 67). The Middle Mesolithic assemblage from Lihou follows the trend suggested by Guyodo & Marchand (2005) with little or no trace of bipolar percussion, direct percussion employing both soft and hard-hammer being the dominant method used for reduction (Conneller *et al.* 2016). Data from the Early Neolithic is difficult to discern, probably as the small amounts of local flint-working from that period are mixed in with larger proportions of later material. During later periods there is a trend evident, albeit somewhat inconsistent, towards a greater use of bipolar percussion, for example at the Late Neolithic/Early Bronze Age Tranquesous and King's Road sites. Crève Coeur has the second highest incidence of bipolar percussion of all the reviewed sites and little else to provide a date for human activity here. The fact that it appears to essentially be a raw material acquisition site means that the data may be somewhat skewed by the most suitable material being transported elsewhere for further working.

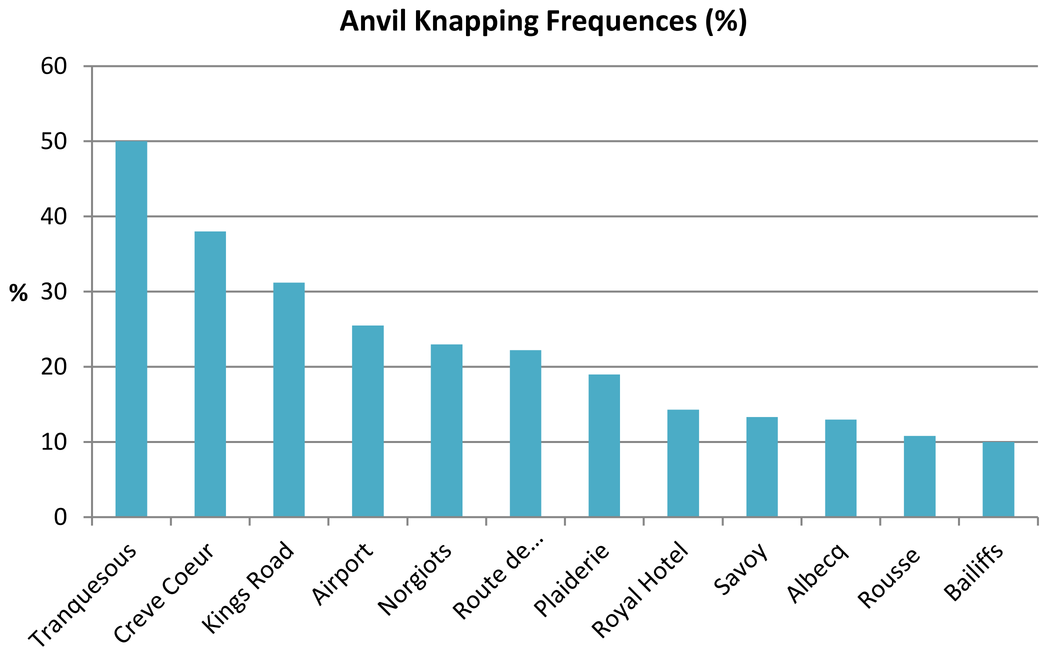



*Figure 67. Indications of bipolar percussion on cores from the reviewed sites.*

At Rousse Tower, where the lithics were associated with Jersey Bowl, the Channel Island equivalent of the Beaker, the incidence of bipolar percussion is much lower. Likewise, at the Albecq site, the lithic profile indicates a Later Neolithic date, but the incidence of bipolar percussion is also relatively low perhaps indicating human choice in reduction techniques or a fine grained visibility of variations in lithic working over time. Therefore, although the use of bipolar percussion can provide a coarse grained approach to dating, it should only be used in conjunction with other forms of evidence.

**Experimental Beach Pebble Reduction**

As part of the process of understanding the *chaîne opératoire* of working coastal flint, a beach pebble from Guernsey was given to prehistoric technology expert Jon Lord to knap. His preferred technique in this case was to employ direct percussion with a hard hammer as it allowed more control over the knapping process than using an anvil (Lord 2011 pers. comm.) Without prompting, Lord followed the sequence shown in Figure 64; 1a to 1b, to produce a single-platform core. He then made a scraper from the initial removal of the large cortical pebble crown followed by flakes and some blades knapped from the platform created by the initial removal. While this experimentation was limited in scope, it does demonstrate that the production of blades from pebble flint is possible, thus suggesting that the production of flakes may have been a matter of human choice rather than being simply raw material driven. This experiment also compliments the experimental knapping work carried out by Knight outlined in Chapter 4, with the quantity of flakes and debris deriving from Lord's core reduction being similar to Knight's findings (Patton & Finlaison 2001, 26).

**Summary**

The reasons for people choosing one or the other of these knapping strategies are not clear; the possibility has been mooted that the bipolar percussion technique may have been a problem solving strategy by inhabitants of coastal areas to cope with the declining quality and size of the available raw material resulting from rising sea levels and over-exploitation (Joussaume 1981, 464; Tinevez 1992, 87). On the other hand, Guyodo & Marchand (2005, 546) argue that the use of this technique is not entirely consistent in its use on Armorican Massif coastal sites in the later Neolithic and conclude that the reasons for this may not necessarily have been simply deterministic, but may have reflected an individualization of cultural traits and practices towards the end of this period. The variation apparent in knapping techniques in the reviewed assemblages would suggest that the second hypothesis is closer to the truth on Guernsey, although there is still an overall trend evident towards an increasing use of bipolar percussion through time, and should therefore be considered as useful dating metric.

## 7.4 Cores

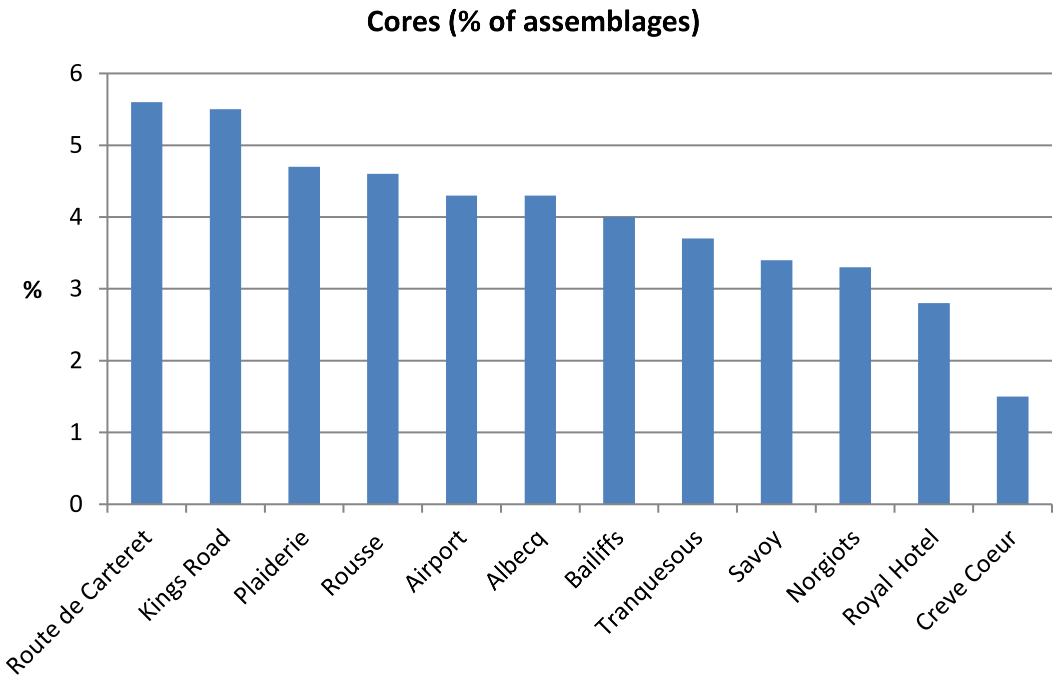



*Figure 68. Proportions of cores in assemblages.*

Cores as a proportion of the reviewed assemblages vary significantly (Figure 68). The low relative quantity at the Crève Coeur site can be explained by the cores being initially prepared at the site before being removed for further working elsewhere inland. There may also have been zonal activities at sites, although without large open-area excavations this would be difficult to confirm. In other cases, the variation may be a result of the statistics of small numbers (<30 cores) with some of the smaller sites, but even the sites with greater quantities (>100) such as the Airport, Royal Hotel, Route de Carteret and Albecq sites display variation. Core types also display a significant variation by site (Figure 69), which may be relevant to the chronology and tasks undertaken.

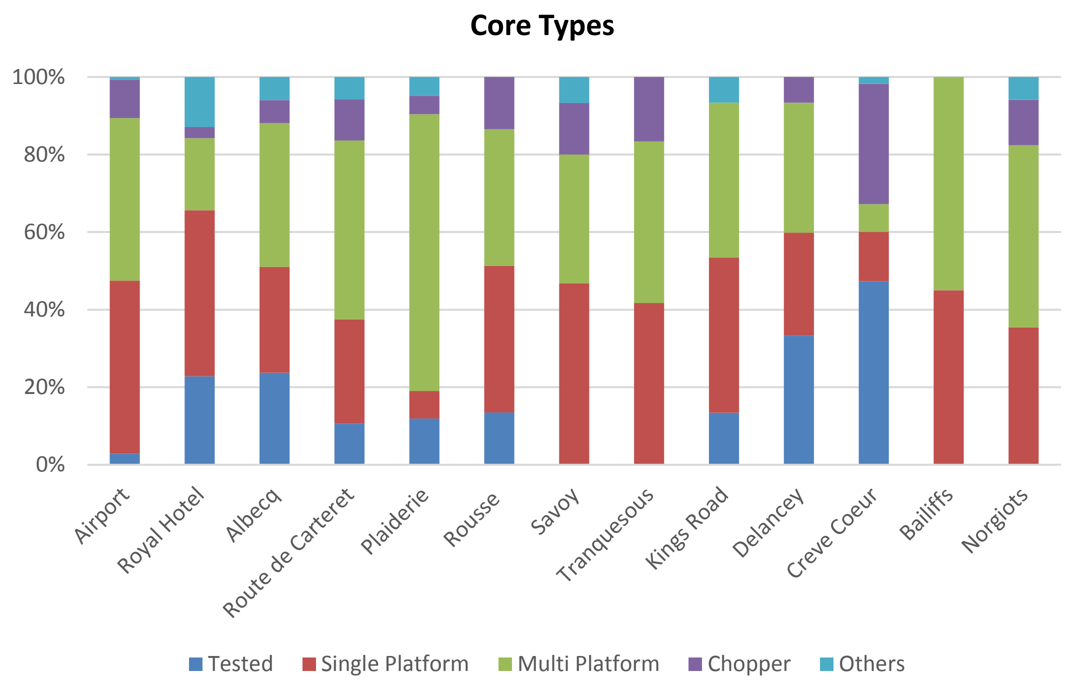



*Figure 69. Core type distribution in the reviewed assemblages.*

**Single-Platform Cores**

Also known as uni-polar or uni-directional cores, these average 34% of core types across the reviewed assemblages. Ovoid flint beach pebbles offer an ideal base shape for single-platform cores with the removal of the pebble crown providing a striking platform. The subsequent flake removal in the majority of cases is initiated from the negative depression of the bulb of percussion left by the previous removal of the crown, this provides an ideal angle (<90 degrees) for knapping (Figure 70; 5). Flake removal then proceeds, rotating around the front of the core typically leaving an area of cortex at the rear. In some cases, when the principal platform is exhausted the core is rotated at right angles and the edges of the previous negative flake scars are used as striking platforms to remove some more small flakes (Figure 70, 1), this technique was also practiced on the adjacent French coast (Marcigny *et al.* 2004 117). Marchand (1999, 179) suggests that these extra removals can be attributed to core maintenance; however, as they appear to be amongst the last actions to take place on the core it is argued here that they are simply opportunistic flake removals where suitable striking platforms are available.

When the single-platform reduction method is employed, the resultant flakes display a cortex free striking platform, although some crushing may be evident due to hard hammer impact. Varying amounts of cortex may be present on the dorsal face of the flakes dependant on the knapping stages and as the knapper advances further into the core the less cortex will appear until the flakes are cortex free (tertiary). As a result of the large surface area to volume ratio of the small pebbles on Guernsey, a large proportion of the resultant flakes retain some cortex, especially on the distal end of the flake.

There is little evidence of any core maintenance activities in assemblages on Guernsey with core tablets and crested flakes rare or absent. Additionally, core platform edge abrasion is rarely employed, seemingly being limited to occasions when blade or bladelet production is the aim, as is the case at the Mesolithic site of Lihou (Conneller *et al.* 2016, 23). The lack of core maintenance and rejuvenation activity can perhaps be explained by the adequate supplies of raw material at relatively close distance from any point on the island.

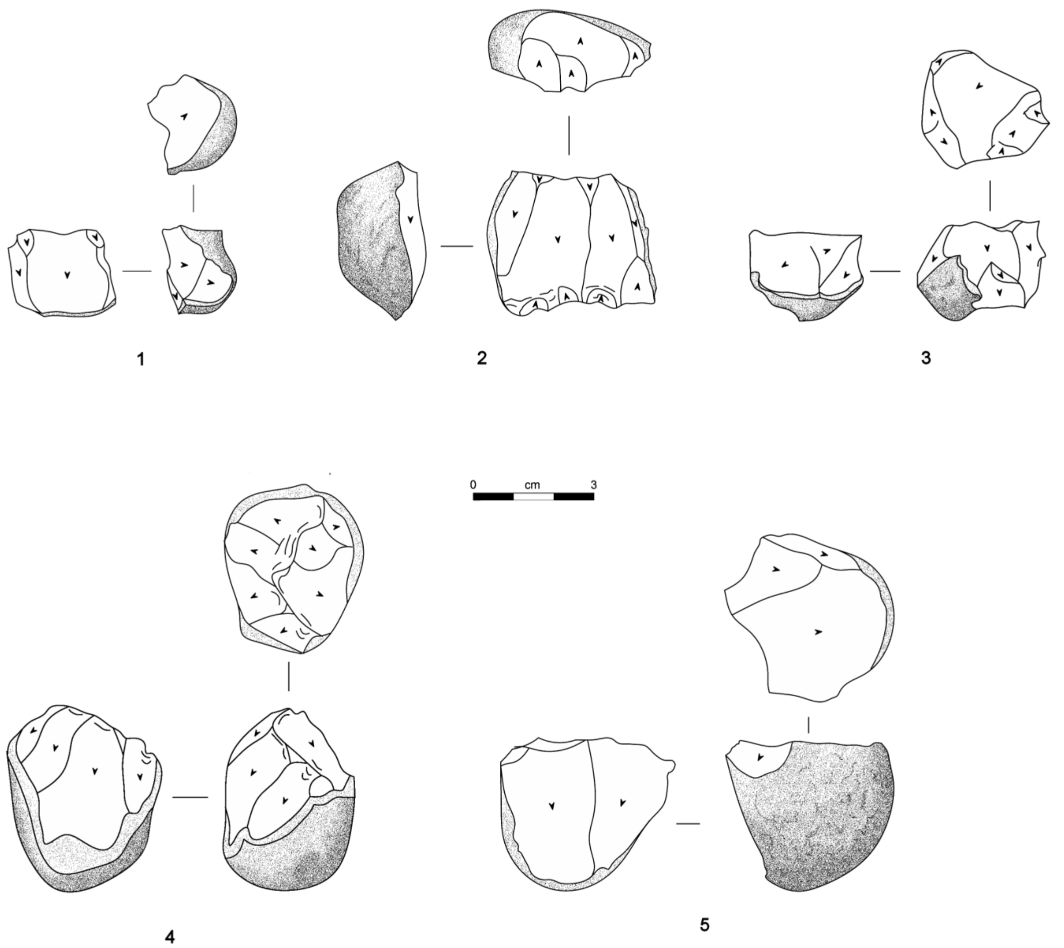



*Figure 70. Core type examples: 1, Single-platform with lateral removals; 2, single-platform with impact damage at base from anvil knapping; 3, multi-platform; 4, chopper core; 5, single-platform (D Hawley).*

**Chopping-Tool Cores**

Essentially a dual-platform, or bipolar form of core reduction (Andrefsky 1998, 154), these average 10% of all cores on Guernsey. This core form is recognised in French coastal technology where the English term 'chopping tool' is also typically used (Guyodo & Marchand 2005, 540). The description derives from the appearance of the utilised core which can resemble a small hand-axe and may even have been used as such (Figure 70, 4). This method relies on natural ridges or protrusions on the pebble acting as striking points from which to initiate knapping, the reduction then proceeds, flaking in alternate directions from a crest using the negative bulbs of previous removals as striking platforms. If the geometry of the pebble is suitable the same process is repeated at the opposing end. This may present the easiest method of pebble reduction as no prior striking platform preparation is required.

**Multi-Platform Cores**

Also known as multi-polar or multi-directional cores, these are the most common type averaging 39% of all cores found. These are generally globular in form in the worked out state (Figure 70; 3). Multi-platform cores represent an arguably more freeform approach to knapping pebbles by constantly changing the orientation of the striking platforms, therefore making the reduction sequence much harder to untangle. It is possible that this technique is simply a continuation of the sequence employed on single-platform and chopper-tool cores with the negatives of flake scars from previous removals being utilised for striking platforms until fully worked out and then continuing from further negative flake scars. This process can continue until the remaining piece has no further suitable platforms that are 90 degrees or less, thus rendering it unsuitable for striking, leading to multiple step fractures and abandonment of the core.

**Tested Pebbles**

Defined in this thesis as cores that are rejected or abandoned after ≤3 flake removals, these items can make up to 20% of the cores in Guernsey assemblages and in the extreme case, 47% at Crève Coeur, but the typical average is 12% across all assemblages. The abandonment of the partially worked core may be due to flaws or inclusions in the raw material, or multiple step fractures, but often there is no obvious reason for rejection and abandonment. Marcigny *et al.* (2004, 114) suggest the abandonment of partially worked cores may simply mean that the knapper has obtained sufficient flakes, although this does not explain why they are also found on inland sites where it would be reasonable to suggest that available raw material would be more heavily exploited.

**Other Core Types**

Alternative methods of core reduction are minimal on the island and arguably represent variations of the previous listings. Discoidal cores are likely to result from knapping towards the centre from around the edge of a flat pebble. Bipolar cores, so named because there are two striking platforms are rare in Guernsey assemblages. Notable exceptions are an anvil knapped opposed platform core found at Les Fouaillages (Audouard 2009) and eleven opposed platform cores with platforms at varying degrees to each other found at Lihou (Conneller *et al.* 2016). This infers that these types of cores may have been more common during the Mesolithic and Early Neolithic. A further method of working noted at Lihou, that according to Conneller (*ibid.*) appears to be a feature of the Northern French Mesolithic is the establishment of cores on large thick flakes using the distal part of the ventral surface of the flake as a platform. However, this technique also features in the Early Bronze Age assemblage from Tatihou Island in Normandy (Marcigny *et al.* 2004 115), albeit on anvil knapped flakes inferring that this is more likely to be an opportunistic method of obtaining flakes rather than being tied to one specific chronological period.

Concentrations of flint debris typically contain chips and chunks of flint displaying negative flake scars that may have been used as cores or may simply be waste from core rejuvenation or bipolar percussion. Because of the subjectivity inherent in the classification these are recorded as debris (Section 6.8).

**Summary**

As demonstrated in Figure 69, the pattern of core types appears to be mixed across the reviewed sites. All core types featured in this review appear to have been used throughout the study period although there do seem to be subtle changes in the relative frequencies found at any given period. The single-platform core is more common at the Middle Mesolithic Lihou site; as arguably this form offers the best possibility of control to obtain blades and bladelets. In contrast, the chopper core appears to be more common on sites with a later component such as Crève Coeur, Rousse, Albecq, Royal Hotel and Delancey Park indicating a less controlled approach to knapping. A further trend that appears is the correlation between sites close to the coast and a large proportion of tested pebbles; in contrast, the Airport site further inland has fewer of these, confirming that people were bringing partially worked cores inland rather than unworked pebbles.

## 7.5 Flakes and Blades

Knapping debris aside, flakes form the majority of worked material in the assemblages indicating that the main purpose behind the reduction sequence was to produce flakes, blades and bladelets from which suitable pieces could then be selected and modified into different types of tools, or even for use in an unmodified state (Figure 71).

**Flakes**

These dominate assemblages comprising up to 85% of flake and blade production on Guernsey (Figure 71). It could be argued that the production of flakes and squat flakes rather than blades was raw material driven. However, the fine bladelet industry evident at the Lihou site, where cores indicate the use of flint similar in quality and size as later Neolithic working demonstrates that it is possible to produce finely worked pieces from beach pebble material (Figure 72). Indeed, Petréquin (1993, 65) makes the point when assessing technical choices in the Jura, France, that time saving in “technical domains” led people to simplify tool making processes. This is particularly evident in the later Neolithic when formal or ‘domestic’ flint-working was simplified, perhaps to gain more time in other areas such as the fashioning of sophisticated arrowheads (*ibid.*). This evidence contradicts claims that the quality of the raw material on the island directly restricts the way flint can be worked (e.g. Patton 1995, 119), although initial pebble size does admittedly prevent the production of larger blades. This suggests that raw material limitations are not the whole story but that technical choices were also at play on Guernsey.

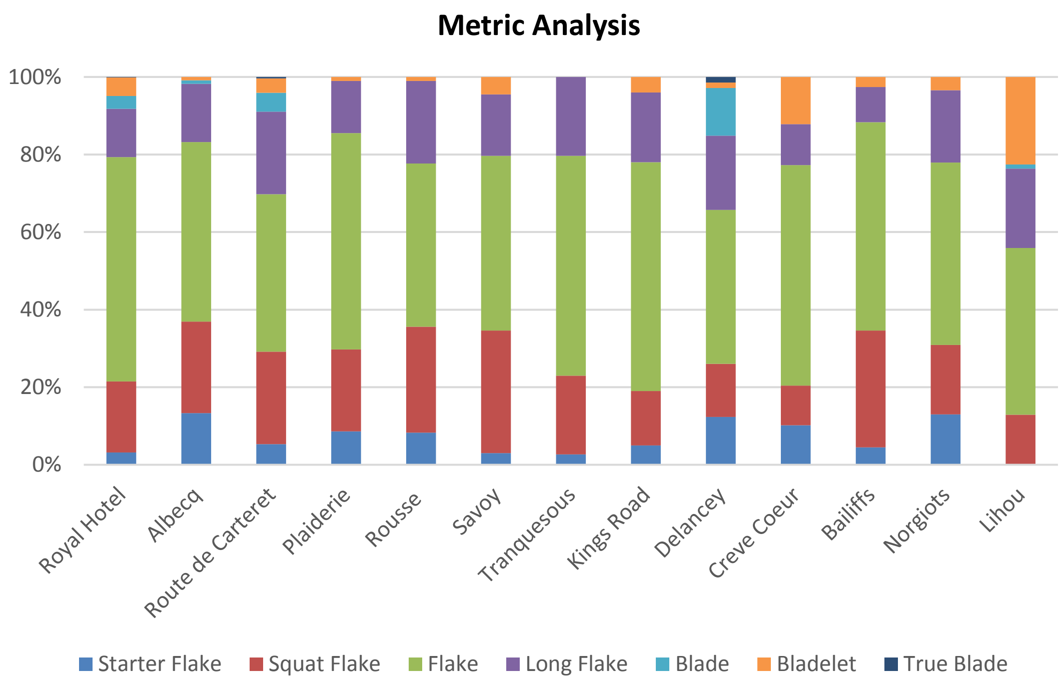



*Figure 71. Reviewed sites presented in alphabetical order demonstrating the low variability in the metric analysis results excepting the high proportion of bladelets in the sampled assemblage from Lihou. (See Appendix A for metrical categorisations).*

**Blades and Bladelets**

Late Mesolithic blades of 'Montbani' style, those with regular parallel sides and arrises manufactured in local material are not found on the island; this is likely to be a result of the lack of a lithic industry from this period (Conneller *et al.* 2016, 40). On the other hand, blades and bladelets in the 'Coincy' style, irregular in form with sinuous sides and arrises are present in the Route de Carteret, Airport and Lihou assemblages (Figure 72).

Although the presence of blades does not necessarily date a site, the combination of blade and bladelet manufacture together with evidence of platform preparation, for example, abrasion visible on the proximal dorsal face of the piece is informative. There is reasonable correlation evident between the two parameters with the exception being Crève Coeur (Figure 73); here there are a large quantity of bladelets struck with no evidence of prior platform preparation. In this case it is possible that the bladelets are simply a by-product of the core reduction strategy and were not considered suitable for retouch or for removal from the site. This would agree with the overall character of the assemblage that features a large proportion of bipolar percussion which, based on evidence from sites on the adjacent French mainland (e.g. Guyodo & Hamon, 2005, 545), suggest a later Neolithic to Early Bronze Age date for the majority of working at this site.


*Figure 72. Obliquely truncated bladelet from Lihou (GU582) (D Hawley).*

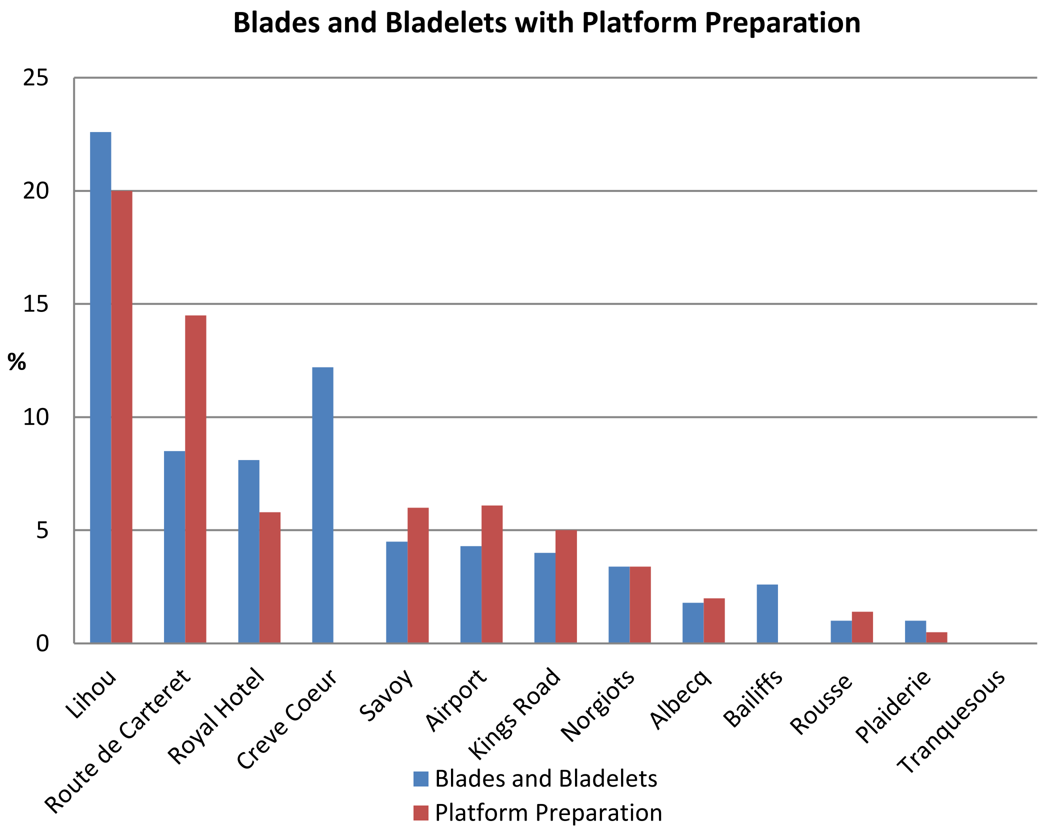



*Figure 73. Blades and bladelets combined with evidence of striking platform preparation.*

**Cortex**

Primary and secondary flakes (varying degrees of cortex present on the dorsal face) are dominant in all the reviewed assemblages with lesser amounts of tertiary flakes (Figure 74). The coastal sites of Crève Coeur, Rousse and Albecq that people may have frequented for a material collection and core preparation role have the lowest amounts of tertiary material, this could imply that tertiary material was collected and taken to other sites for further working. In contrast, the highest proportions of tertiary flakes and blades are present at the Lihou, Route de Carteret and Royal Hotel sites. People would have chosen the more homogenous flint cores with the cortex removed for fine bladelet production at Lihou; the higher tertiary quota at the other sites may also indicate significant Mesolithic working.

Beyond the Mesolithic working evident on Guernsey, the flake industry is dominant and becomes near to being exclusive from the Middle Neolithic period onwards. In these later periods blades and bladelets, as demonstrated at Crève Coeur may simply be a by-product of the dominant flake industry.

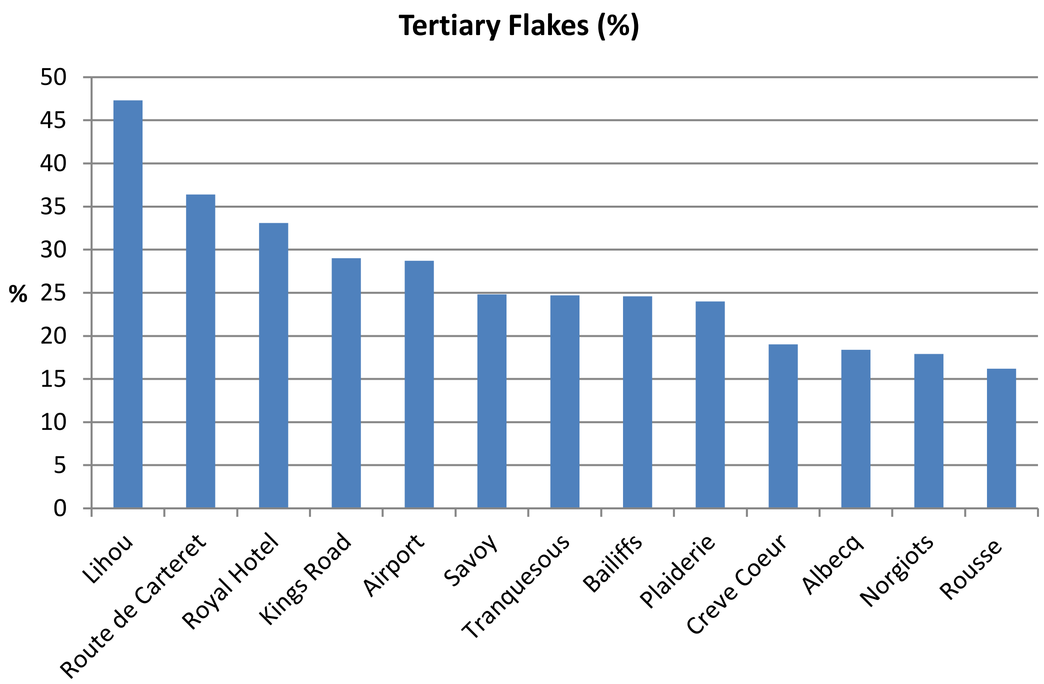



*Figure 74. Tertiary flakes (cortex free) as a percentage of all flakes across the reviewed sites.*

**Summary**

While metric analysis of flakes appears to be a useful methodology on chronologically discrete sites it has been found in the reviewed assemblages that the results are subtler, perhaps because of the significant amount of mixing of materials from different periods. The dating evidence can be discerned at the extremities of the metric analysis chart with the blades and bladelets category (Figure 71); when combined with the platform preparation metric however (Figure 73), the results give a more secure indication of whether earlier Mesolithic working is present. The likelihood is that the resultant flake/blade profile through time is largely a matter of communities exercising technical choices rather than being simply raw material driven, with the later flake based industry being a reflection of labour saving strategies. This metric is nevertheless appropriate for dating, especially when combined with further complementary techniques described in this chapter.

## 7.6 Retouched and Utilised Pieces (Tools)


*Figure 75. Proportions of retouched tools (as a percentage of the whole assemblage) present in the reviewed assemblages.*

The quantity of retouched pieces in the reviewed assemblages varies significantly amounting to between 0.1 % and 9.4% of the total quantity (Figure 75). This relatively low proportion overall may be symptomatic of the increasing employment of bipolar percussion techniques during later periods resulting in large quantities of debris. The expediency noted in knapping extends to tools with many ad-hoc retouched flakes and minimal investment evident in the preparation of formal pieces such as scrapers and notched pieces. This reflects the dominance of post Mesolithic lithic working in proportional terms on the island with expediency probably being a matter of technical choice as discussed in the previous section.

The assemblages with the lowest proportions of tools are the coastal sites of Crève Coeur, Albecq and Rousse. The role of these sites as material collection and processing sites rather than places of residence was proposed in the previous chapter; the chart (Figure 75) would tend to support this assertion.

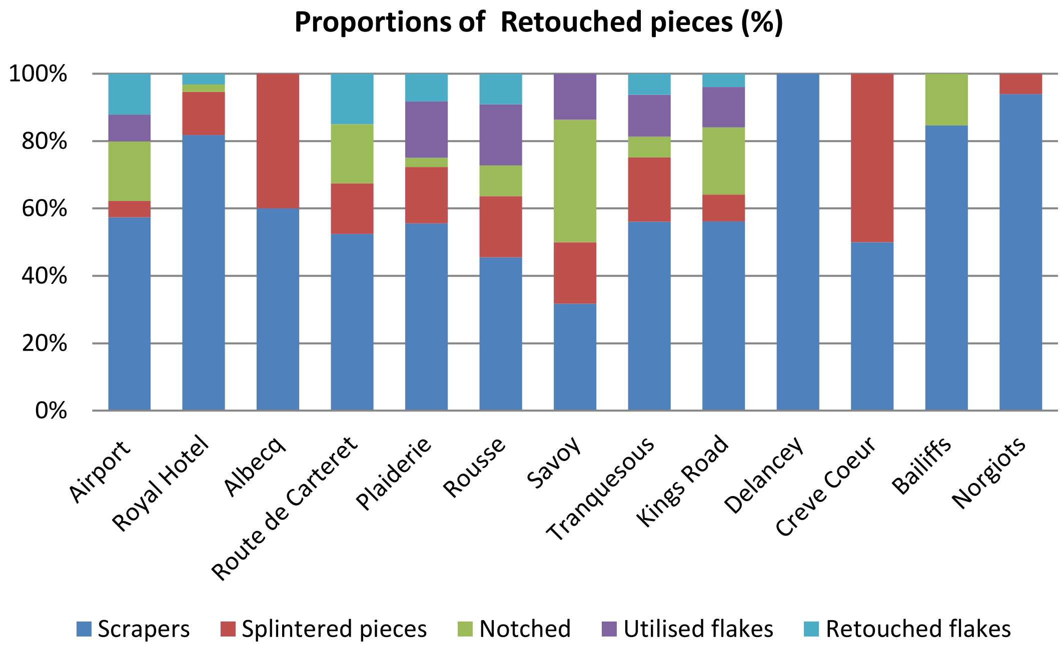



*Figure 76. Comparative proportions of the five most common retouched pieces in the reviewed assemblages.*

As demonstrated in Figure 76, the most common type of retouched piece in Guernsey assemblages is the scraper, generally comprising 50% or more of the tool-set. The scraper is notable for being dominant from the Middle Neolithic onwards on the adjacent French mainland (Ghesquière & Guyodo 2008, 124). Likewise, the splintered piece, considered to be a result of bipolar percussion is also common from this period and its presence suggests later Neolithic/Early Bronze Age working (Guyodo & Marchand 2005). Notched, utilised and retouched flakes are the remaining most common retouched pieces (*ibid.*). Arrowheads of any type are only present in very small proportions on Guernsey when compared with French sites; this will be discussed in the following section and Chapter 8.

The various types of tools in the retouched piece category are reviewed here in order of frequency in assemblages, their role in determining the nature of human activity on the island is also discussed.

**Scrapers**

The process of manufacturing scrapers from pebble crowns described in Section 7.3 seems to have been almost exclusive, leading to scrapers that for the most part appear similar right through the period under study. These are by far the most ubiquitous retouched item on Guernsey averaging 55.7% of all retouched pieces and are common in assemblages from the Mesolithic through to the Bronze Age and perhaps later. As Schiffer (1987, 53) points out however, an elevated proportion of a given item in assemblages does not necessarily reflect the number in use at any one time, rather that the use-life of that artefact may have been limited and it was discarded after a relatively short period.

Scrapers on the island typically feature a predominantly cortical dorsal face with the working edge generally at the distal end of the piece; hence at the opposite end to the original struck face, this may have been to avoid the damage caused by the removal strike. The working edge is, in the majority of cases abruptly retouched and often displays signs of possible use-wear. The extent of retouch around the perimeter of the piece varies greatly, from one side to three sides on sub-rectilinear pieces or 90 degrees to 180-200 degrees on sub-circular pieces. Scrapers manufactured on tertiary flakes are rare but present in some assemblages. For example, a scraper manufactured on a tertiary blade was recovered from the Airport site which may indicate an element of earlier working (Appendix B1, Figure 86; No. 6). However, as a rule this type of tool is generally unsuitable for dating by typology alone, although their overall ratio as part of a given tool-set may be relevant as on the adjacent French mainland they are more strongly represented during the Middle and Late Neolithic (Marcigny *et al.* 2004, 137; Ghesquière & Guyodo 2008, 116). The proportions of scrapers in the reviewed assemblages, making up over 50% of the retouched category in ten of the reviewed sites thus serves as a potential chronological marker to aid the relative dating of sites. However, with a few exceptions the proportions are relatively consistent across the sites; the reasons for this can probably be attributed to the mixing of material from different phases of human activity.

**Splintered Pieces**

These make up 16.6% of the retouched category and are considered to be one of the principal by-products associated with bipolar percussion according to the French lithic specialists Guyodo & Marchand (2005, 540). Splintered pieces are thin (typically <5 mm) sub rectangular pieces known in French terminology as *pièces esquillées (ibid.).* These artefacts are heavily splintered along at least two of the opposed edges, sometimes on all four (Appendix B1, Figure 85; 8 & 9). Experimental archaeology indicates that the mechanism by which they are produced is to continuously strike a core on an anvil then rotate 90 degrees at a time (Donnart *et al.* 2009, 524). These pieces may have been manufactured as wedges intended for splitting wood and bone, or simply be worked out anvil knapped cores. This subject is still under discussion in French publications (Guyodo & Marchand 2005; Le Brun-Ricalens 2006; Donnart *et al.* 2009).

Splintered pieces are most prominent in the Crève Coeur and Albecq collections, which infers that there may be a link between knapping and the proportion of these pieces. The fact that this class of retouched piece is the second most common in Guernsey assemblages and is considered to be representative of the Late Neolithic and Early Bronze Age does provide some dating clues as well as the probable nature of the tasks carried at these sites. Nevertheless, this item remains an enigmatic component of lithic tool-sets.

**Notched Flakes and Piercers**

Notched pieces in Guernsey assemblages are generally manufactured on primary or secondary flakes and constitute an average of 9.6% of retouched pieces found on the island. The notch is generally no more than 10 mm edge to edge and typically pecked or nibbled from the ventral face. Clactonian strikes, e.g. a single strike to create a notch are rare, as they are in French assemblages (Guyodo *et al.* 2001, 656) and when present have been attributed to post depositional events such as plough damage for the purposes of this thesis. It is not clear what tasks were carried out with notched tools but experimental studies suggests the working vegetal material or wood (Plisson *et al.* 2002, 801).

Piercers comprise <1% of the retouched category. Like notched pieces on the island, these are also generally manufactured on cortical flakes with retouch applied by working from the ventral face to produce a 'muzzle' with a rounded end. These tools are typically small, rarely exceeding 3 cm length in Guernsey assemblages and do not appear to significantly change in form through the period under review and are not therefore, are suitable for dating purposes.

**Retouched and Utilised Flakes**

Numerous ad-hoc tools are present (10%) in the reviewed assemblages comprising flakes and blades with either dorsal or ventral retouch. Also present are utilised pieces displaying edge wear in the form of splintering or gloss. Care has been exercised when categorising these as post-depositional damage can display similar features. When retouch is visible then the criteria is to consider only if unidirectional.

**Tranchet Axes**

Additional evidence of Early to Middle Neolithic activity is indicated by the tranchet axe, very close in morphology to those found in Normandy although likely to have been made from local flint. The few of these tools found on the island (only one in the reviewed assemblages) may be symptomatic of the flint supply with the local pebbles typically being too small.

**Arrowheads**

The site results in Chapter 6 highlighted the fact that arrowheads are relatively rare in Guernsey during the Neolithic compared with the continental mainland. For example, at both the Brittany site of Lillemer and the Normandy Cotentin site of Treize Vents arrowheads comprise around 10% of the tool count (Chancerel *et al.* 1996; Guyodo *et al.* 2001), whereas on Guernsey they typically comprise <1%. The reasons for this paucity are not immediately evident but arguably, may indicate a lack of non-domesticated fauna for hunting on what may have been a relatively densely populated island, or less inter-community conflict. This point is addressed more fully in Chapter 8. Nevertheless, the arrowheads that are present on Guernsey, especially those utilised as votive deposits are informative beyond their minor numerical presence.

On the adjacent French mainland, arrowheads change in form from the composite technology of the Middle Mesolithic, with the Later Mesolithic featuring a trapeze industry and triangles with inverse invasive retouch on regular blades (Ghesquière 2012, 31). There is continuity of trapeze types continuing through into the later Neolithic with hollow base asymmetric during the Early Neolithic and transverse during the Middle and Late Neolithic (Ghesquière & Guyodo 2008, 116; Marcigny *et al.* 2010, 154). Although some of the microliths recorded in Chapter 6 may have been a component of composite tools including arrowheads none can be definitely identified as such. Further, no later Mesolithic trapeze forms have yet been recovered on Guernsey (Conneller *et al.* 2016, 40).

The transverse form was the most common recorded type for this study numbering six of the nine definite arrowheads identified. These chisel like items (Figure 2) are typically manufactured on mesial sections of flakes with the exterior edge as the cutting part and abruptly retouched either side. They appear to have been functional items as there seems to have been minimal investment in their manufacture. Such small numbers in the reviewed assemblages does little to permit the confident dating of sites, or define tasks carried out at particular locales.

Also dating from the Middle Neolithic are the two roughed out arrowhead blanks recovered from Les Fouaillages. These are manufactured from what is likely to be imported flint and can be attributed stylistically to the Michelsburg *ancien* group which was established in a region that now comprises northern France, Belgium and Germany at *c*.4300-3700 BC (Hamard 1989, 122; Manolakakis & Garmond 2011, 350). Likewise, the leaf-shaped arrowhead recovered from the Route de Carteret site (Figure 79), could derive from the Middle Neolithic Michelsburg sphere of influence, but, according to Anderson-Whymark would also be perfectly acceptable in a British Early Neolithic assemblage, "although it is not a particularly well shaped example" (Anderson-Whymark 2015 pers. comm.). If British, it would provide a rare example of an artefact (and people) travelling in an opposite direction to that generally proposed for the Neolithic period. Unfortunately, the origins of this piece cannot be established beyond reasonable doubt.

On the adjacent French mainland, the barbed and tanged form becomes dominant during the later Neolithic where the early versions are referred to as *naissants*, with less developed ailerons and partially invasive retouch (Guyodo 2008, 120). It is also at this time that the appropriation of passage graves takes place, both on the Channel Islands and the adjacent mainland (Patton 1995). It is pertinent to note that *naissant* types appear on Guernsey placed as secondary deposits in the Neolithic passage graves of Le Trépied (Figure 77), Le Creux ès Faies and presumably as a primary deposit in the Late Neolithic cist-in-circle, La Platte Mare (Kendrick 1928). Although having a superficial resemblance to the Armorican ogival types, these local island variants demonstrate a degree of morphological heterogeneity (Figure 19). Nevertheless, many have square tangs which are associated with the Beaker period (2500-2200 BC) and collective burials in Brittany (Nicolas 2011, 115). Similar examples have also been recovered from non-funerary contexts such as King's Road (Cunliffe & Sebire 1996), La Hougue Catelain (Hill 1990), Jerbourg (Burns 1988) and Route de Carteret. Many of these display impact damage suggesting functional use, perhaps even evidence of conflict.


*Figure 77. Two barbed and tanged arrowheads found in the Le Trépied passage grave (D. Hawley).*

During the Early Bronze Age period a dichotomy in flint-working becomes evident with finely worked pieces such as the 'fancy' arrowheads (Figures 62 & 78) contrasting with a more expedient use of local material. It is reasonable to argue that the amount of time and skill people invested in making these finely made arrowheads goes far beyond what would be necessary to make a functional object, especially one that stood a good chance of being damaged or lost when in use. Further, the lack of any impact damage on these items would make it likely that they were carefully curated after manufacture and not fired. In Brittany, research by Nicolas has revealed a finer grained view of the chronological development of the Armorican form with cruder, more diverse types appearing towards the end of the Neolithic, which then develop into the more standardised form into the Early Bronze Age (Nicolas 2011, 97). These latter forms appear to have had considerable time and effort invested in their manufacture. This evidence provides a likely chronological progression for barbed and tanged arrowhead types on Guernsey. Further, using this data it is possible to refine the dating for the secondary use for some of the island's funerary monuments.

The case for mainland manufacture of the 'fancy' forms is supported by the finds in Early Bronze Age tombs in Brittany of bronze points that would arguably have been the only tool capable of pressure flaking the narrow clearance between the tang and aileron on arrowheads of the type shown in Figure 78 (*ibid.,* 110). No tools of this type have yet been found on the island. It should also be noted that in Brittany, the fully developed Armorican type arrowheads are typically found as deposits in Early Bronze Age tumulus mounds that were used for individual burials (*ibid.*, 94). It would be reasonable to suggest a similar progression on Guernsey and there is a possibility that the more developed examples found on the island such as at

Jerbourg may, in some cases be all that remain of previously ploughed-out and destroyed tumuli.

Well-developed ‘Armorican’ ogival forms of the Early Bronze Age have been recovered from Jerbourg (Burns 1988), and Les Fouaillages (Figure 78). At the latter site, the eight barbed and tanged arrowheads were deposited, according to Kinnes as a “final act of devotion” before the final closure of the monument (Kinnes & Grant 1983, 34). Although the origins of the raw material for the manufacture of these is uncertain, four appear to be made from a yellow flint deriving from the sedimentary margins of Brittany, not Grand Pressigny as Kinnes suggests (Audouard 2009, 54). As well as being made from imported flint, these eight examples were also very likely to have been made off the island (*ibid.*). The value that these objects held for the community that deposited them are a testament to the importance of the monument and the individuals buried within. The quality of the flint was far superior to anything obtainable locally and the quality of manufacture is also outstanding. Unfortunately, it is not clear whether this votive offering was intended for an individual, the closure of the monument, or both.

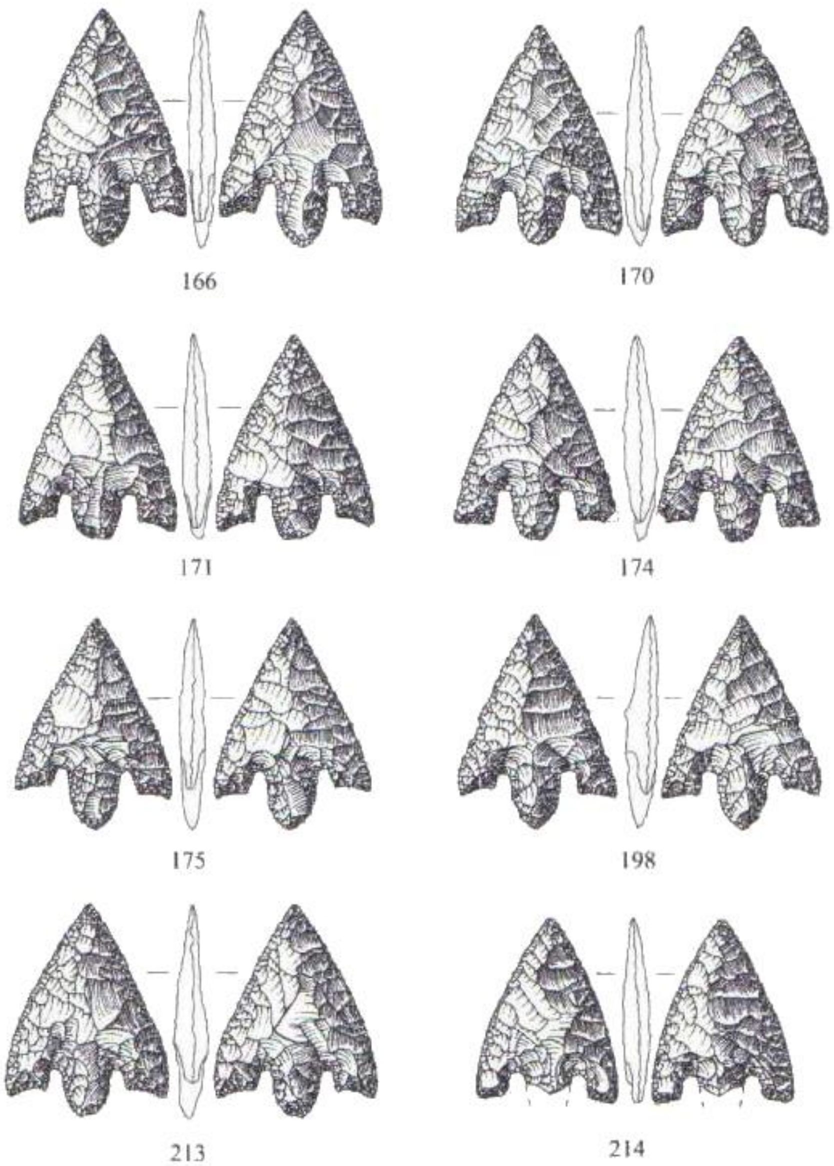



*Figure 78. Eight barbed and tanged arrowheads of the Armorican ogival type recovered from the Les Fouaillages long mound (Audouard 2009).*

Further types of arrowhead found on Guernsey that do not conform to the Armorican ogival form include the example found at L'Erée during the excavation by the University of Southampton (Figure 62). This a finely worked barbed and tanged arrowhead with slightly re-entrant sides made from Grand Pressigny that must count amongst one of the finest yet found on the island. It is invasively pressure flaked on both sides, which would have required a high degree of skill to manufacture. It is impossible to establish unequivocally whether it was made on the island or on the mainland without finding associated debris, however, as it is made from imported material and is thus far unique on Guernsey the balance of probability suggests that it was imported already made. Arrowheads of this morphology, albeit with square tangs are considered to originate from the

Campaniforme (Beaker) period dated to between 2500 BC and 2200 BC (Verron 2000, 190). Further non-Armorican examples are the hollow based arrowhead from the Route de Carteret site (Figure 79), that also dates to the Beaker/Early Bronze Age; although less common than the tanged variants, similar types are found in Brittany and northwest France (Nicolas 2011, 105).

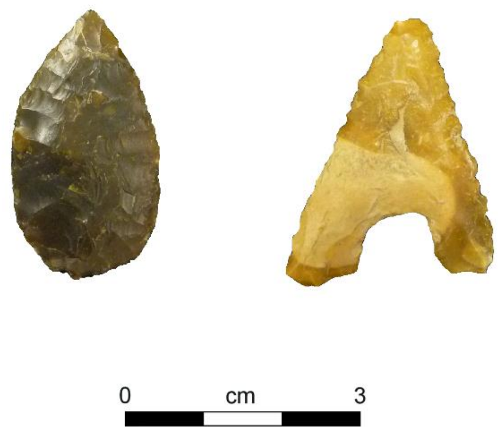



*Figure 79. The Route de Carteret Arrowheads (D. Hawley).*

**Mesolithic and Microliths**

Numerically sparse amongst the reviewed assemblages, microliths are nevertheless important in representing the activity and temporality of Mesolithic communities on the island. Although Lihou is by far the most prolific site on Guernsey, the background of patinated flint across the island hints at people from this period active in all parts of the landscape. A brief overview of this period is given here although see Conneller *et al.* (2016) for a full discussion of regional Mesolithic flint-working technology.

A bipartite separation of the Mesolithic is favoured by Marchand (2014, 50) for Brittany. Western Brittany is particularly suited to this binary division with the first phase dominated by the Bertheaume industry, and the second featuring trapezes starting at around 6500-6300 BC (Ghesquière 2012, 31). However, a division of the Mesolithic into three main periods; Early, Middle and Late is more accepted (Valdeyron 2008, 194), albeit with the ultimate phase further subdivided into recent/final in Normandy (Ghesquière 2012, 31).

The Early Mesolithic (*Mésolithique ancien*) corresponds overall to the Preboreal phase (*c.*9600-8000 BC). It is characterised in Lower Normandy and the Paris Basin by obliquely truncated points and isosceles triangles. The Middle Mesolithic (*mésolithique moyen*) in Normandy corresponds to the Boreal stage (*c.*8000-6500 BC), and also includes the start of the Atlantic phase (*ibid.*). In Normandy, the lithic record is defined by points with retouched base, scalene triangles and narrow backed bladelets. The later Mesolithic (*c*.6500-5000 BC), is also divided into two phases in Normandy, (*Mésolithique récent et final*), the first defined by asymmetric trapezes and scalene triangles, the second by triangles with inverse invasive retouch (*ibid.*).

For the most part the Mesolithic industry on Guernsey is almost exclusively based on the middle period, and demonstrates strong links to the Cotentin Peninsula (Conneller *et al.* 2016, 40; Ghesquière pers. comm.). However, links to the western extremities of Brittany through the Bertheaume industry are also notable at Lihou (*ibid.*), Les Fouaillages (Ghesquière 2012, 412), with the Savoy site being a further possibility (Section 6.7). The Bertheaume group is dominated by narrow bladelets, frequently with two retouched sides, together with scalene triangles and very obliquely truncated points (*ibid.*, 103). Miniaturisation is one of the principal characteristics of this industry (*ibid.*, 104), which would tend to limit recovery in field-walking exercises and excavations, meaning that the proportion of this material may currently be underestimated on the island. The fact that this industry is not found in the adjacent areas of Normandy (*ibid.*, 214) but is present on Guernsey raises interesting questions about spheres of influence and maritime connectivity in the region and hints at a high level of sea-faring expertise.

**Summary**

The typology of chronologically distinct retouched pieces has been traditionally used to date assemblages, a practice that continues into current methodologies. For example, the presence of imported arrowheads on the island reinforces the links and parallel regional developments in lithic working that were taking place in the region. Furthermore, research in Brittany has done much to date locally made variants on Guernsey, thus providing a finer grained view of the appropriation of some of the island's passage graves. However, the palimpsests of lithics present on the island have reduced the efficacy of typological methods, although at the same time equally demonstrating the continuity and longevity of many of the sites reviewed. Nevertheless, research on the continental mainland also indicates that proportions of tools of a given type such as scrapers in an assemblage can also be used to establish chronologies, this complementary metric has concurred with other forms of dating evidence when applied to the reviewed sites for this thesis.

An additional factor that becomes apparent through the study of retouched pieces, especially arrowheads is the symbolic aspect that may have been fulfilled by these objects. Although locally produced items inform us of the movement of people and things around the island, the rarer imported artefacts indicate the far reaching links that existed between communities across maritime networks and the possible creation of social identities. The juxtaposition of artefact and burial in tombs such as Les Fouaillages, Le Trépied and La Platte Mare lends additional meaning to the transformation of stone objects as well as hinting at a harmonization of practice across the wider region. It is pertinent to note that the object biographies of the arrowheads recovered from Les Fouaillages continue to be reworked as items on display in the archaeological section of Guernsey museum.

The evidence from the Mesolithic period recovered during this study complements the work carried out by Conneller *et al.* (2016) and Ghesquière (2011, 2012). The maritime connectivity and spheres of influence evident through the recovered material serve to inform us of the dynamic and mobile communities that inhabited the region, as well as adding to the understanding of the patterns of activity and mobility on Guernsey.

## 7.7 Hearths and Burnt Flint

Hearths have been revealed at the Airport and L'Erée sites, both were similar being covered over with cobbles, presumably to extinguish them after use (Garrow & Sturt in prep.). The hearth at the Airport site was $^{14}C$ dated to 5060-4935 Cal BC (Beta-399625); this is significant as it could mark the earliest evidence of Early Neolithic residence on the island. Further, a fragment of Cinglais flint was found in the same trench although not the same context as the hearth (see Chapter 6, section 6.1). The radiocarbon dates from the hearths at L'Erée are later suggesting activity during the last few centuries of the $5^{th}$ millennium.

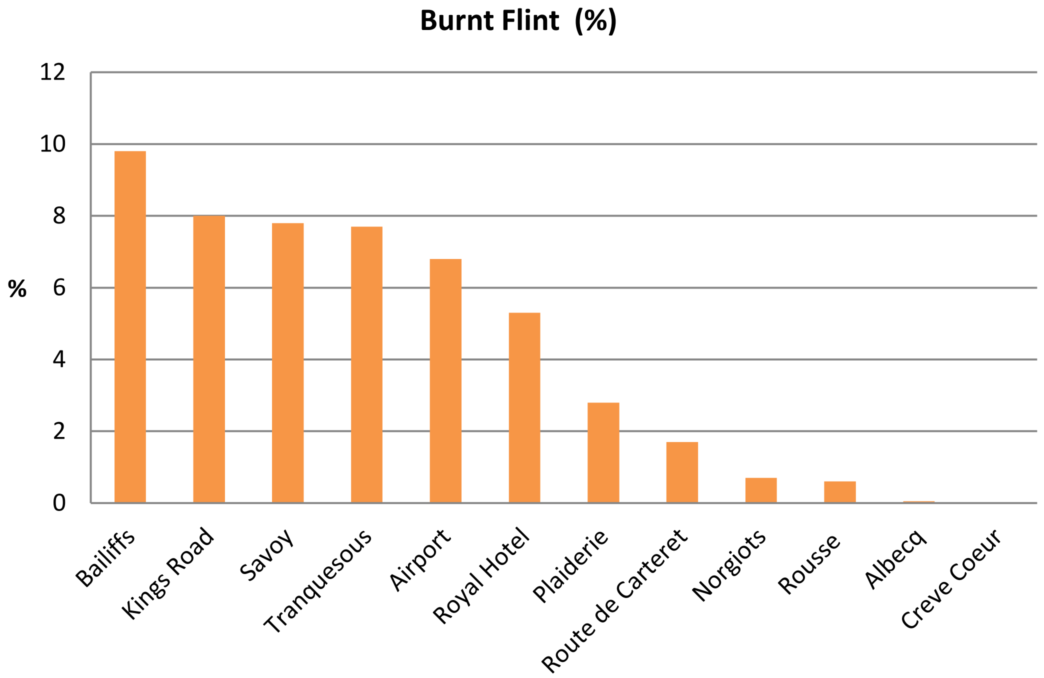



*Figure 80. Proportions of burnt flint in the reviewed assemblages (percentages are of the total assemblage).*

The presence of burnt flint debris in assemblages (Figure 80), gives a possible indication of hearths in the vicinity thus indicating locales of human residence. It is possible that flint was heat treated as part of a process to alter its flaking properties, however, no finished pieces with traces of heat treatment were noted in the reviewed assemblages, therefore it is assumed that the burning results from the recovered flint being associated with hearths, either deliberately or by chance. As only a small proportion of the flint reviewed for this thesis was from surface collections it would be reasonable to suggest that the burning occurred around the time of deposition and not from post depositional activities such as wheat stubble burning.

**Summary**

A correlation is apparent between sites that were acting as flint collection locales, Rousse, Albecq and Crève Coeur and the relatively low proportions of burnt material. In contrast, sites further inland have burnt flint levels of between 6%-8%, indicating possible places of residence or settlement with hearths. This would tend to suggest that the coastal sites would have been frequented on a shorter term basis, and not used for longer term residence.

## 7.8 Debris

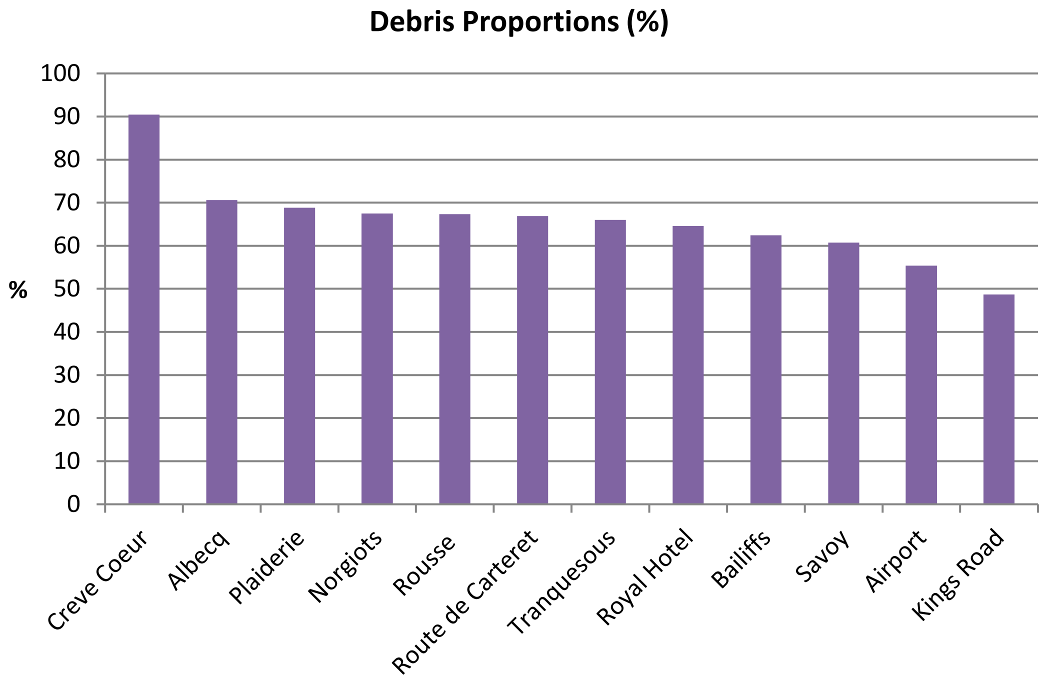



*Figure 81. Proportions of debris present in the reviewed assemblages.*

The site results in Chapter 6 demonstrated that proportions of debris in assemblages are very consistent at around 65-70%. It is also notable that the field-walked sites of Bailiff's Cross and Ruette des Norgiots have similar proportions of debris to excavated sites suggesting that the collection was unbiased with flint debris being collected as well as recognisable tools. The average figure for proportions of debris found during this study compares favorably with the experimental knapping experiments carried out by Knight (see Chapter 3) which averaged out at 74.9% (Patton 1988, 543-566).

Cases where debris was removed from the site and deposited elsewhere does not appear to have occurred in the reviewed assemblages but it is highly likely that smoothing of the data has occurred over long periods of deposition and shifting settlements leading to some lack of clarity in the figures. The only site to significantly exceed the average figure for debris is Crève Coeur where 90% of the material is recorded as such. Although the role thus far established for Crève Coeur is as a knapping site for pebbles collected from the nearby beach, this elevated figure may also reflect collection bias as the collector was very meticulous in picking up every small piece of flint. The high levels here also provide dating evidence, as although there is a minor degree of mixing evident with some Mesolithic working, the vast majority of the worked flint in this particular zone is from the later Neolithic/Early Bronze Age judging by the high proportion of bipolar percussion

(38%). There is a similar scenario at the Albecq site although somewhat moderated, possibly by some residential activity. The lower than average amounts of debris at the Airport and King's Road sites may be symptomatic of people bringing partially knapped cores from the coast, or alternatively could indicate removal of debris from areas of residence or longer term tasks. Nevertheless, at the field-walked sites of Bailiff's Cross and Ruette de Norgiots, also inland sites, around average quantities of debris were recorded; therefore, this parameter may give variable results away from the coast.

**Summary**

The proportions of debris seem to be linked to activities based at given sites with larger relative quantities at coastal knapping sites and less being recovered at inland sites, although the percentages vary. In no case has evidence been found of structured deposition on the island as practiced in Britain (Thomas 2013, 251). Excavation reports consulted from the adjacent areas of the continental mainland also suggest that structured deposition there is rare, or if present, the practice occurs in a manner not yet understood.

## 7.9 Post Depositional Effects

Evident from the data presented in this, and the previous chapter is the chronological mixing present in just about all the excavated sites. While this may be expected in surface collections, it has become clear through the analysis of the excavated assemblages that the relationship between context and chronology was not always as secure as would have been desired. The reasons for this are several and are probably centered on post depositional events.

Four of the sites featured in the previous chapter, the Royal Hotel, the Plaiderie, the Savoy Hotel and Route de Carteret are all in areas lying downslope; evidence from the excavation stratigraphy at these sites indicated periods of colluviation leading to Mesolithic and Early Neolithic artefacts overlying later material. Moreover, the Royal Hotel site, along with the Plaiderie and the Savoy Hotel sites are in the urban area of St Peter Port, where cycles of building and demolition have been taking place for many centuries. The King's Road site has suffered not only from modern disturbance but as a site that was occupied during the Iron Age, it has undergone several millennia of mixing. This is also likely to be the case for the Tranquesous site, although it is a rural area with no modern development it is likely to have undergone a significant amount of disturbance during the Iron Age period with round-house and ditch digging (Burns 1977). Archaeological activities of the more recent past have also confused the issue; at Delancey Park, the site of a putative gallery grave (Nash 2012), prehistoric artefacts were mixed with post medieval material, presumably due to disturbance from excavations carried out in the 1930s (*ibid*.).

As revealed at the Rousse Tower dig (Hawley & Waite in press.), Scarre's work on Herm (Bailiff *et al*. 2014), and work at St Ouens Bay in Jersey (Patton & Finlaison 2001), cycles of land erosion and deposition have occurred in the region, this is especially notable in coastal areas of the islands. These events are generally tied to climatic events, and also to human activity such as cultivation. The Rousse Tower dig on Guernsey's west coast revealed that the archaeological record of several millennia had been compressed by erosion events into a narrow physical band of some 20 cm, which was in turn buried commencing in the 13$^{th}$ century by a 1 m deep wind-blown sand event that lasted less than two centuries in duration. This event resulted in the mixed blessing of both the disturbance of prehistoric archaeology and its preservation. Although this site may be an extreme example due to its coastal location, the profile of the inland sites is also one of compression and chronological mixing. Albecq, which is in a similar coastal setting, may have undergone a similar process with windblown sand covering and protecting the site at the end of the medieval period.

One of the few sites yet discovered on Guernsey that appears to have survived undisturbed is the Lihou site (GU582) (Conneller *et al*. 2016). This Mesolithic site appears to be chronologically unmixed with what may have been several seasonal bands of flint deposition visible in the cross section. It appears that people returned to this site when the lithics would still have been visible from previous visits, an action that was repeated multiple times resulting in a dense concentration of lithics. The preservation of this site is arguably a result of the low level of human activity in the area since the deposition event.

**Summary**

It is evident that as a result of post depositional effects, obtaining neat stratigraphical data from excavations on the island has proved difficult to achieve. This has placed the emphasis for dating on a range of alternative and complementary data such as typology, technology, and raw material evidence such as imported flint, in a similar manner to the assessment of surface collections.

## 7.10 Conclusion

In this chapter, the *chaîne opératoire* of beach pebble flint-working on Guernsey has been analysed from the material acquisition stage through to discard, including the role played by post depositional factors. Additionally, imported material and the manner in which it was brought to the island has been put into context along with a consideration of the symbolic role that may have been fulfilled by these objects. From this study it has been established that chronologically, technologically and typologically there are many similarities that can be drawn with lithic working on adjacent continental mainland areas. This has permitted the temporality behind the ebb and flow of human communities on the island and their connectivity with continental mainland areas to be revealed.

Difficulties have been encountered however, such as the multi-period nature of the sites, and recurring forms such as scrapers, which despite being the most common retouched type in assemblages, adds little to the establishment of chronologies. Allied with this is the lack of stratigraphical information from older excavations and uncertainty with pottery sequences. Nevertheless, the problems with palimpsests and recurring forms have been largely mitigated by the multiple methodologies employed in this thesis, as have the stratigraphical shortcomings. The pottery sequences will, it is hoped, be improved over time as more research is carried out.

The aim of this chapter was to complement and expand on results presented in Chapter 6 and to draw together the various strands of lithic evidence in order to establish patterns of human activity through time. With the island's lithic industry now better understood, the results from this analysis are taken forward and used to construct an interpretive narrative of the study period in Chapter 8.

# Chapter 8: Lithics, Landscape and People

In this chapter, the strands of evidence obtained from the analysis of lithic assemblages and subsequent syntheses are drawn together and situated as a chronologically based narrative within the broader context of human activity in Guernsey's landscape setting. Although the principal chronological emphasis is based upon the results achieved from the lithic analysis, additional information is drawn in from other proxy sources such as pottery and environmental evidence in order to achieve as complete a picture of the island's prehistoric communities as possible.

## 8.1 The Mesolithic

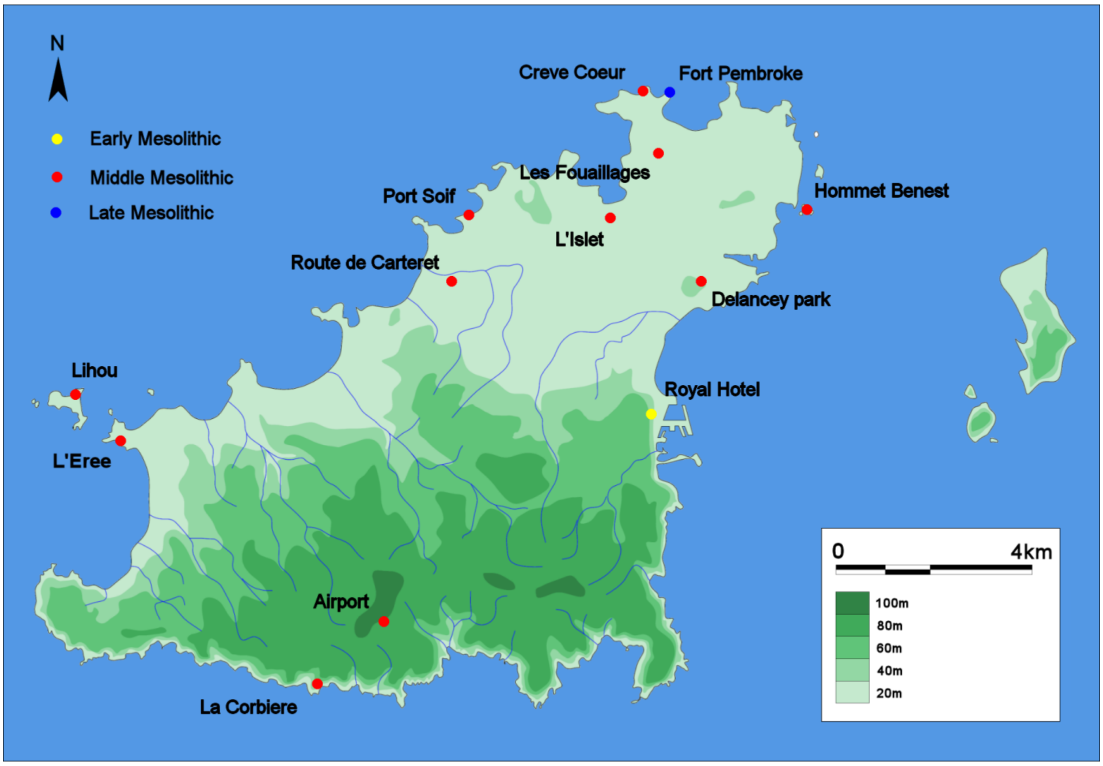



*Figure 82. Distribution of Mesolithic find-spots (D Hawley).*

### Early Mesolithic (9600-8000 BC)

Known as the *mésolithique ancien* in Normandy, the Early Mesolithic period corresponds approximately to the Preboreal climatic stage. At this time, the region would initially have been colonised by birch and pine (Jones *et al.* 1990, 106; Ghesquière 2011, 16). Sea-level data indicates that at start of the Mesolithic, the sea was some 35-52 m below that of today (depending on the model used), but rising rapidly with Guernsey in the process of becoming separated from the continental mainland (Figure 7). The eventual separation of Guernsey from the continent at mean sea-level would have occurred *c.*9000 BC, resulting in a 'Greater Guernsey' encompassing what are now the islands of Herm and initially Sark. This land mass would have had a combined area of some 400 km$^2$, five times greater than that of Guernsey in the later Neolithic which may have provided enough resources and large fauna to support a hunter-gatherer population. Moreover, assuming that sea-faring was established at this time, maritime connectivity with the French mainland would still have been relatively simple given the close proximity of the Cotentin Peninsula via Jersey, which remained connected with the continental mainland until between *c.*5000 and 4500 BC.

The earliest post-glacial evidence for people active in the Guernsey area comes from a small deposition of Upper Palaeolithic worked flint found in an inter-tidal context between the islands of Crevichon and Jethou, off the southwest of Herm (Sebire & Renouf 2010, 379). In addition, three Blanchere points found during the Royal Hotel excavation are thought to date to the Upper Palaeolithic (Conneller 2016, 36). As these are thus far the only finds dating to this earlier period, they are more likely to result from groups making episodic visits to the area rather than representing any prolonged periods of activity.

Discerning patterns of land-use for this early phase is difficult as a result of this paucity of evidence for human activity in the area. The lithic evidence from the Royal Hotel site in what is now St Peter Port probably originated from further upslope as there has since been significant colluviation in the area. At the time of deposition there would have been a fresh water source nearby (*ibid.*) and views across a shallow valley to what is now Herm beyond. The relatively elevated site protected from prevailing winds may have been used for observing the movement of potential prey in the valley below.

It is possible that much of the archaeological evidence for this period from the lower lying coastal areas around Guernsey has been lost to rising sea-levels; nevertheless, the lack of indication for human activity from this time in the parts of the island that remain above sea level is striking. Given that there are traces of people active in the area during the later Upper Palaeolithic, it would be reasonable to expect some continuity into the Early Mesolithic. However, Early Mesolithic sites are also relatively rare on the Cotentin peninsula which may indicate that on a broader regional context population levels were still comparatively low during this period (Ghesquière 2003, 669). Alternatively, a relatively elevated level of mobility could also have resulted in the sparse lithic record.

**Middle Mesolithic (8000-6500 BC)**

The Middle Mesolithic (*mésolithique moyen*) in Normandy corresponds to the Boreal stage, and also includes the start of the Atlantic phase, marked by a warming climate (Ghesquière 2012, 31). Oak and hazel would have dominated drier wooded areas and the diminishing area of Greater Guernsey would have become separated from Sark by rising sea-levels at around 8000 BC (Figure 7).

On the cusp of the start of the Middle Mesolithic period is a series of $^{14}$C results in the 8295-7830 Cal BC range (SUERC-23721-5) from the Les Fouaillages long-mound monument on L'Ancresse Common (Ghesquière 2012, 411). These dates were obtained from charred hazelnut shells found within the mound fill that contained mainly Neolithic artefacts but also some Mesolithic worked flint. The material was clearly out of its original context and presumably derived from soil and turves collected from the surrounding area for the mound construction during the Early Neolithic. Although the Mesolithic finds were limited to five pieces, there are according to Ghesquière stylistic affinities to the Bertheaume group from Brittany, as well as to industries in the North Cotentin (*ibid.*). It is not possible to extract much in the way of conclusive evidence from such a small deposit, although the association of artefact and food resource does hint at a possible period of residence in the immediate area. On a regional scale the assemblage indicates communities on the island falling within spheres of influence from both the Brittany and Cotentin peninsulas.

A further $^{14}$C dated lithic assemblage is from Lihou Island off the west coast of Guernsey. The site is in a location sheltered from prevailing winds in the lee of a hill overlooking what would have at the time been a low lying and perhaps marshy area on the west coast of Guernsey. Carbonised hazelnut shells were found together with an arrangement of stones that was likely to be the remnants of a hearth, a sample from this produced a Middle Mesolithic $^{14}$C date of 7497–7192 Cal BC (OxA-15198) (Conneller *et al.* 2016, 21). Lihou appears to have served as a preparation area for a wide variety of flint tools manufactured from pebbles that were collected from the coast which then would have been located up to several kilometres in distance to the west. The high density of lithic deposition at this locale may represent residential activity or phases of reoccupation (Conneller *et al.* 2016, 33). This provides an insight to the temporality of human activity here as people, perhaps over many generations would have returned to a place marked by lithic debris.

The assemblage itself consists of cores, scrapers, denticulates, notches and piercers, miscellaneous retouched pieces as well as microliths for composite tools, all of which suggest people undertaking a variety of tasks. The scrapers, multi-purpose tools possibly used for working hides (Baillet 2015, 27) may suggest the continued presence of fauna on the island. An alternative consideration is that seal hunting activities were taking place, as bones of these have been recovered from Mesolithic middens in Brittany (Marchand 2014, 386). Given the preference of these marine animals for rocky coastal areas they may well have been present off the shores of Guernsey, although we have no organic evidence such as bone to prove this due to the nature of the acidic soils.

The variety of quality evident in the flint-working at Lihou provides an insight into the people once working here. Although Conneller *et al.* (2016, 21) describe the technology as “expedient” and notes the “lack of attention to preparation” and the “poor quality” of the raw material, the nature of the working is equally likely to reflect the fact that differing skill levels would have existed across the community. Amongst the people coming here would be youngsters learning, experts providing the knowledge and varying needs across the repertoire of the tool set dictating the standard of working. Furthermore, the quality of the raw material is arguably relative and despite problems inherent in the use of beach pebble flint, the presence of a finely worked bladelet industry (Figure 72), and retouched geometric shapes demonstrates the level of skill and care invested.

Lihou is thus far unique on Guernsey in being a site that appears to have undergone minimal post-depositional disturbance although further lithics dated to this period are evident in reviewed assemblages, most notably from the Airport, Delancey Park, the Savoy Hotel and Route de Carteret. Finds from these sites were mixed in with later material in proportions of less than a few percent however, suggesting that further chronologically discrete sites such as Lihou may have subsequently been lost to the rising sea or are yet to be discovered.

From a landscape perspective, the most prolific Mesolithic lithic scatters on Normandy’s Cotentin peninsula are typically found on higher vantage points overlooking the sea or valleys, examples being Auderville, Jobourg and Flamanville (Ghesquière 2011, 21). In contrast, riverside and valley sites appear to have been more seasonal in nature and typically yield fewer lithics (Ghesquière 2012, 39). This pattern is repeated on Guernsey to the extent that the island’s geography permits; La Corbière, a vantage point overlooking the sea on the south coast is very similar to Auderville on the North Cotentin (Conneller *et al.* 2016), while Lihou, overlooking a coastal plain with sea to the west is at a much lower altitude. However, communities at this time appear also to have been exploiting resources further inland on the higher southern plateau as demonstrated by cores, a platform rejuvenation tablet, bladelets and microliths present in the Airport assemblage. In addition to these finds, there is a persistent background of patinated debris present across the interior of the island hinting at an ephemeral but persistent presence here.

This inland evidence hints at a different aspect of human activities to that near the coast and highlights the interconnecting networks linking locales across the island; the Airport site is at the head of a valley leading down to the northwest that may have served as a routeway between the upland plateau and the coast. The cores that were carried to the Airport site for producing the bladelets and microliths found there suggest something more persistent than a brief visit. Communities were exploiting the different resources of a wooded landscape that may have still supported a limited population of herbivores at this time, as well as plant based resources and the seasonal collection of hazelnuts. The Route de Carteret site occupies an intermediate landscape location in a sheltered location on a northeast facing slope but on a lower lying part of the island; this may have provided an ideal place for working beach pebbles and sheltering from prevailing winds. In contrast, Les Fouaillages is situated in an exposed area to the north of the island and retains few clues as to why people would have passed here; it may well have been located on or close to routeways leading to the flint rich north coast.

Arguably, the standard models of a Mesolithic 'seasonal round' as proposed (and ethnographically observed) by Binford (1983, 109) do not apply to Guernsey, even within the extended land area during the 8$^{th}$ millennium the furthest traverse could have been achieved within a day. Therefore, a high degree of mobility on a relatively small land mass may be an unlikely scenario. Further, communities relying on coastal and maritime resources typically practice a more sedentary lifestyle (Costa 2004, 214; Marchand 2014, 352). Whether these communities were permanently based on Guernsey at this time or were staging episodic visits from the continental mainland is difficult to establish. The presence of processed hazelnuts at both Lihou and at Les Fouaillages, may infer that people were over-wintering on the island, as these ripen in the autumn and the sea crossing may only have been possible in calmer conditions during the summer, this however, is speculative. It is more likely that the Middle Mesolithic period was one of change and transition resulting in the ebb and flow of human communities over time.

Nevertheless, a certain degree of maritime connectivity is evident throughout this period, as despite the increasing distance required for a sea crossing the lithic technology and techniques employed on Guernsey appear to be similar to those practiced in coastal areas of the adjacent continental mainland. This is understandable given that even towards the latter part of this period Jersey would still have been attached to the Cotentin, therefore providing a less onerous traverse than that of later periods. In the case of influences from Brittany as demonstrated by the Bertheaume points at Lihou, Savoy Hotel and Les Fouaillages which would have required a 70 km sea voyage, it may be more reasonable to consider spheres of influence and interconnected communities over large areas. Despite this evidence of connectivity, the lack of visibility of any imported flint does suggest people exclusively exploiting locally available lithic materials.

With relentlessly rising sea-levels throughout the Mesolithic, the land area available to island communities diminished over time. Pressure on the local fauna would have increased which may ultimately have led to extinction thus requiring the island's population to rely more on coastal and maritime resources, although it is hard to discern precise details of these past faunal communities on the island due to the acidic nature of the soils. Equally, although evidence of people exploiting coastal resources is visible in the form of the shell middens at Le Crocq on Richmond Headland and Lihou Island, the lack of dated examples needs to be resolved as these are prominent indicators of Mesolithic communities on many coastal areas of the northwest European mainland such as Brittany and Denmark (Marchand 2014, 30).

**Later Mesolithic (6500-5000 BC)**

Towards the end of the Mesolithic with sea-levels around 10 m below current MSL, Guernsey was becoming recognisable as the island we see today with Herm on the point of separation. Oak and hazel would still have been dominant on the island but with a rise of alder fen likely (Jones *et al.* 1990, 106; Ghesquière 2011, 16).

No unequivocal lithic evidence of this period was found in the examination of the selected Guernsey sites for this thesis. Furthermore, an assessment of the Mesolithic assemblages of the island carried out by Conneller *et al.* (2016, 40) found only one possible piece from Fort Pembroke. Whether the diminishing resource base over time caused the island's Mesolithic community to choose an increasingly mobile lifestyle based on episodic visits from the mainland is difficult to establish. It could be argued that a move from a degree of sedentism, to seasonal and then episodic visits was the case as the island became less viable, a mode of life that resulted in a decreasing amount of lithic deposition.

Based on the lithic evidence of the island therefore, it seems reasonable to argue that human frequentation of the island declined significantly from Middle Mesolithic onwards. The following scenarios can be posited for the paucity of lithic evidence during this period:

1. *Later Mesolithic sites have been lost to rising sea-levels*
2. *The island became isolated from the mainland leading to a conservative flint industry*
3. *The island maintained contacts with the mainland but the inhabitants chose not to adopt mainland changes in the flint and stone industries*
4. *People ceased to inhabit the island or visit in any significant numbers due to a lack of resources*

1) The possibility of Late Mesolithic sites being lost to rising sea-levels is possible, especially given that the shrinking land mass, a climatic downturn and diminution of resources may have led to populations placing more reliance on coastal resources. However, it would be difficult to argue a case for all sites being lost as the more precipitous parts of the coast would not have been affected and people venturing into the interior of the island to forage for plants and construction materials would have left traces in the lithic record much as they did during the Middle Mesolithic.

2) The scenario where the lithic record of the Middle Mesolithic on the island is a result of the population becoming isolated from mainland communities and maintaining a conservative lithic industry that diverges from later Mesolithic developments on the mainland is possible. This would infer that sea faring capabilities were lost however, or the traverse became too difficult due to rising sea-levels. Both scenarios seem unlikely given that evidence for Atlantic sea faring during this period is well supported (Tolan-Smith 2008, 151; Anderson-Whymark *et al*. 2015). Further, there would still have been a land bridge from Jersey to the Cotentin peninsula towards the end of the Mesolithic resulting in the continental mainland being relatively close.

3) Sturt and Garrow propose that, "the absence of material evidence for connectivity should not be taken as evidence for absence" (2015, 168). In other words, communities could have been aware of, but chose not to participate in material changes taking place elsewhere. For example, Warren argues that during the later Mesolithic the British flint industry diverges from the continental mainland as the trapeze industry does not make an appearance, this does not rule out contact between communities but could simply have been cultural choice not to adopt trapezes and the culture they represented (Warren 2015, 54). This scenario is possible on Guernsey but would equally mean that this 'choice' was maintained over a period of at least a millennium which, given the dynamism evident in Mesolithic societies seems unlikely.

4) Argued for here, is the hypothesis there was an abandonment of the island as a result of a loss of resources, both as a result of the shrinking land mass and the reduction in coastal environments and intertidal habitats. Referring to the Holocene flooding of the North Sea lowlands, Leary argues that small islands would have been particularly vulnerable to sea-level rise given the high ratio of shoreline to land area (Leary 2009, 232). It is suggested here therefore, that the diminished land area and shoreline simply could not provide sufficient resources to support a viable permanent hunter gatherer population, or at least one that was dense or permanent enough to leave traces in the archaeological record.

A similar proposal was made by Conneller *et al.* (2016, 39) who suggested that large herbivores on Guernsey may have been hunted out as land area diminished, population pressure increased and habitats were lost. The lack of fauna would equally have meant a lack of hides for shelter, clothing and possibly for hide covered boats, as well as the many other probable uses for this material that are not apparent in the archaeological record. This gradual erosion of habitat and resources may have led to a loss of faith in the island being suitable for occupation (*ibid.,* 40).

Population density estimations for hunter-gatherer societies are perhaps an area where archaeologists now fear to tread, being typically highly variable in the conclusions they reach and dependent on the climatic zone, mobility and resource availability (Yesner 1980, 727; Marchand 2014, 402). Estimates for densities of Mesolithic populations have been proposed by Rozoy for northern France, at 0.1 people per km$^2$ (Marchand 2014, 403) and a lower figure of 0.01 people per km$^2$ for Britain by Preston (2013, 41). In a review of coastal hunter gatherer populations Yesner (1980, 731), gives population estimates as a function of coastal length rather than area; he quotes maximum densities of 64.7 inhabitants per 100 kilometers of coast, albeit for more northerly habitats with rich maritime environments. As an area of 100 km$^2$ would have been similar to the land area at mean sea level for Guernsey towards the end of the Mesolithic, and the coastal length of 100 km twice the island's shoreline length, it is reasonable to argue that the probable population density of the island would have been an order of magnitude below the maintainable limit of 200-500 people (Warren 2015, 45). This does not discount the possibility that Guernsey may have been the subject of episodic visits throughout the later Mesolithic period, but given the lack of lithic evidence for this it must be assumed that such visits were rare. It is also pertinent to note that Jersey, still connected to the Cotentin at this time also has little trace of Late Mesolithic activity (Conneller *et al.* 2016, 40), suggesting a localised population reduction and a shift of focus to Brittany which appears to florish towards the Final Mesolithic (*ibid.*).

**Mesolithic Summary**

The picture of Guernsey's Mesolithic is one of dynamic communities responding to changing climate and environment through time. From a sparse presence during the early part of the Mesolithic, the expansion of population towards the Middle Mesolithic as attested by the lithic record is notable. Rising sea-levels may be partially responsible for this phenomenon with earlier coastal evidence being lost, but there is little doubt that by the early to mid-Boreal period there was a significant human presence on Guernsey with all parts of the island being exploited.

The Middle Mesolithic lithic evidence enables the movement of communities and land-use to be reconstructed with tasks linking the coastal sites that were exploited for hunting and fishing activities and raw material procurement, with flint-working sites in more sheltered locations that were revisited on a repeated basis such as Lihou and Route de Carteret. Furthermore, prior to this study the distribution of lithic evidence suggested that Mesolithic communities were predominantly active in areas of Guernsey relatively close to, or with good views of the coast (Patton 1993, 15). However, the research carried out for this thesis reveals that all landscape zones on the island were exploited and demonstrates more extensive and wide ranging patterns and networks of human activity than previously thought.

Although the lithic technology and typology employed on the island hints at maritime connections with mainland areas as far away as Brittany, and gives little indication of insularity, there is no indication of imported materials or curated objects that would have accumulated meaning through travel and exchange with mainland communities. It is of course, quite possible that these objects existed but were made of organic materials such as wood, leather and plant material that do not survive in the archaeological record.

From the relative richness of finds of the Middle Mesolithic, the lithic record equally suggests a population decline during the later Mesolithic with what appears to be an abandonment of Guernsey as it diminished in size and resources. This is a process that may have been accelerated by a climatic downturn towards the end of the sixth millennium. Although this proposal may appear deterministic, it does nevertheless indicate mobile communities exercising choice.

## 8.2 The Mesolithic/Neolithic transition

It is worthwhile to compare the transition to a Neolithic economy on Guernsey with that of Britain. Arguments for migration or 'colonisation' from the continent have long been considered (Childe 1929; Case 1969 & Sheridan 2010, 89). On the other hand, there is equally the argument for the indigenous Mesolithic population of Britain having knowledge of, and adopting a farming economy (Thomas 2013). More recently a more nuanced approach is evident with combination of both factors considered (e.g. Anderson-Whymark *et al.* 2015, 75).

Against this background, if, as argued in the previous section the island was effectively depopulated towards the end of the Mesolithic, then the scenario of people practicing a Neolithic lifestyle arriving on an empty island must be considered. How this mechanism would have taken place is not entirely visible in the archaeological record and therefore subject to conjecture. Kinnes suggested that the existence of Mesolithic fishing networks would have provided a ready knowledge of sea-faring and perhaps, knowledge of the island which may have been exploited by Neolithic settlers, although Kinnes does refer to the event as “colonization” (Kinnes 1982, 27). An alternative and more diffuse view has been proposed by Garrow and Sturt (2016), and also by Bukach (2004) who envisaged the possibility of an existing Mesolithic population of the island adopting Neolithic material culture through phases of economic and cultural cooperation rather than taking a binary view of the Mesolithic and Neolithic as separate entities. In support of this view, Garrow and Sturt (2016) argue that “there are also tantalising glimpses of human activity during the Late Mesolithic from other proxy sources”. Here, they are referring to Campbell’s pollen evidence from sequences at Vazon Bay which suggest anthropogenic disturbance of woodland during the Late Mesolithic (Campbell 2000, 171). Campbell also interprets alterations of woodland composition and high charcoal inputs as indicative of Late Mesolithic/Early Neolithic landscape clearance (Campbell 2000, 304-7).

There are problems with these interpretations of the evidence however; since the publication of Campbell’s research in 2000, the appearance of what can be interpreted as a Neolithic economy in Guernsey has now been pushed back from *c.*4800 BC to at least *c.*5000 BC or even a few centuries earlier. Hence, disturbance and activity visible in the environmental record that was originally attributed to the Late Mesolithic now falls within the Early Neolithic period. A further issue with the phase of cooperation view is that Early Neolithic artefacts such as Cinglais flint and stone rings scattered around the island are not obviously associated with any Late Mesolithic flint-work; whereas such mixing evident in Brittany is attributed to Mesolithic and Neolithic populations merging (Gouletquer *et al.* 1996, 29).

This struggle to explain the transitional period on a local level arguably indicates that current models are too simplistic and generalised, hence, other explanations should be sought for the establishment of a farming economy on the island.

Although the proposal by Bukach (2004) that there was a period of cooperation on Guernsey between the Mesolithic population and incoming farming groups was critiqued in Chapter 5, it is quite likely, that as Kinnes suggested, exchanges and cooperation of sea-faring knowledge did take place between communities, not on the island but on the mainland itself (Kinnes 1982, 27). Further, it is argued here, as has been suggested by Anderson-Whymark *et al.* (2015, 75) that the difference between 'hunter/gatherer' and 'farmer' may be more blurred than has been previously considered. It is therefore proposed that the knowledge of sea-faring and off-shore islands percolated through societies living on the mainland coastal areas and was transmitted to those at the western extremities of a people who were practicing a farming economy.

Essentially, the important issue here is not to attach a label to *who* 'colonised' the island but that a community of people practicing a certain mode of lifestyle and economy *enabled* the island to be repopulated.

## 8.3 The Neolithic

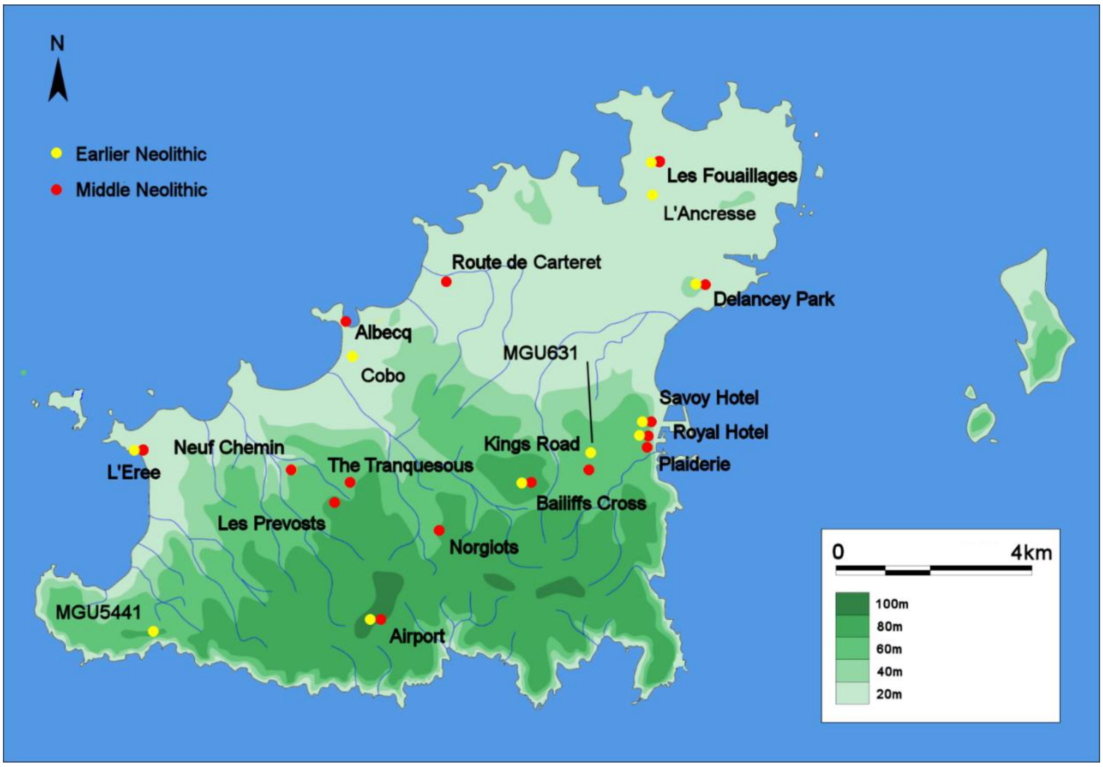



*Figure 83. Lithic assemblages displaying evidence of activity through the earlier and middle periods of the Neolithic (D Hawley).*

**Early Neolithic 5000-4700 BC**

The earliest activity on Guernsey arguably associated with the Neolithic period is indicated by a series of late 6$^{th}$/early 5$^{th}$ millennium $^{14}$C dates obtained from four sites (Table 3). Contemporary with these is a date associated with organic residues on Early Neolithic pottery recovered from L'Ouzière, Jersey, demonstrating a similar chronology for Neolithic settlement on that island (Patton & Finlaison 2001, 20). Additionally, evidence for a more managed and agricultural environment being developed on the low lying parts of Guernsey at this time is demonstrated by data from Campbell's palynological work which suggests woodland clearance by burning and animal grazing along the west coast and L'Ancresse Common (Campbell 2000, 307-8). These early dates together with the anthropogenic alteration of the landscape highlight the precocious start to this period on Guernsey, lagging Normandy by only a century or so (Marcigny *et al*. 2010, 124).

However, as discussed in Chapter 2, the actual methods of maritime transport and how these communities traversed the sea to Guernsey is uncertain. Whether this event occurred as a mass of people, animals and seed arriving in a short space of time, or a process of gradual introduction with perhaps initial seasonal exploration and a dispatch of stock for summer grazing as envisaged by Case (1969, 180) for Britain is impossible to say; such fine grained visibility of the archaeological record is not yet possible. Nevertheless, by the time the first archaeological and environmental evidence of Early Neolithic people appears on the island, the rate of loss of low-lying coastal areas to the sea appears to have stabilised. The sea-level curves proposed by Renouf indicate that the relatively rapid rise evident during the Mesolithic decreased from the early 5$^{th}$ millennium onwards and thenceforth averages out to ≤1 m per millennium (Sebire & Renouf 2010, 374).

Much of the archaeological information for this period derives from Les Fouaillages on L'Ancresse Common (Figure 83), (Audouard 2009; Pioffet 2010). Artefacts found in association with the initial stages of mound construction comprise fragments of Cinglais flint and polished stone rings along with decorated pottery. The $^{14}$C results obtained during the 1979 excavation have a wide date range (Kinnes 1982), however, organic residues on a fragment of pottery have more recently been $^{14}$C dated to the VSG period in the first quarter of the fifth millennium (Pioffet, in press). As the mound contained soil and turf that was likely to have been collected from the surrounding area, the dates obtained could be related to an earlier human presence in the area rather than the construction of the monument itself (*ibid*.).

On the east side of the island, some form of residence may have occurred at the Royal Hotel site as evidence, albeit somewhat tenuous, of an irregular pattern of post holes was found associated with an early $^{14}C$ date (Table 3) (Sebire 2012, 245). Four fragments of Cinglais blades were also recovered here which concurs with Early Neolithic pottery from the site. On the west coast, a further site that demonstrates Early Neolithic activity is L'Erée, with an early $^{14}C$ date, fragments of Cinglais flint, a fragment of polished stone ring and early styles of pottery (Garrow & Sturt in prep.).

Apart from these sites, the quantities of imported lithic material reaching Guernsey appears to have been minimal and is marked by single fragments of Cinglais flint and polished stone rings seemingly randomly distributed around the island mixed in with flint-working in local materials that is more difficult to situate chronologically. It must be assumed from this pattern of evidence that local material would have been exploited to supplement long distance flint supply networks at this time. This certainly is the case at Les Fouaillages where burins, a typical Early Neolithic tool, were recovered manufactured from both Cinglais and local beach pebble flint (Audouard 2009, 83 & 88).

Evidence of land-use at this time is also evident in the environmental record which suggests clearance of alder/willow carr by burning, perhaps to prepare the area for animal grazing (Campbell 2000, 306). These actions are suggestive of a people with a farming economy actively controlling and altering the landscape in the lower lying areas of the island. In the interior, although the lithic distribution indicates that this part of the island was less frequented, communities were still exploiting this area much as their Mesolithic counterparts had done several millennia previously. This was probably for similar reasons with the acquisition of wood, plants, berries, nuts and perhaps a limited amount of game available. There may also have been a new aspect to this frequenting of the upland area; domesticated livestock may have been driven up to the southern plateau for grazing. These visits to the highest part of the island are marked by a hearth with an early $^{14}C$ date and fragments of Cinglais flint recovered at the Airport site and MGU5441 to the southwest (Figure 83).

Despite these indications of a human presence, the lack of any structural remains on Guernsey is notable, apart from some putative post holes found at the Royal Hotel site. It is therefore, difficult to argue a case for the existence of permanent settlements at this time. There has certainly been no trace found of any structures comparable with the long houses that mark this period on the sedimentary margins of the Armorican Massif. In this respect, patterns of human activity on the island can be likened to those at the western extremities of Brittany, where the earlier Neolithic is visible through small quantities of imported flint mixed in with local beach pebble material and only scant traces of habitation sites being found (Pailler *et al.*, 2008, 98; Scarre 2011, 52). This diluted form of settlement has been provisionally termed *Néolithique ancient de Bretagne* in order to distinguish it from the more typical VSG settlements patterns found further to the east (*ibid.*). Similar patterning on Guernsey, with an Early Neolithic presence marked by land clearance and a few flint tools could signify episodic occupation events linked with limited and shifting cereal cultivation, much as this period appears in the archaeological record in southern Britain (Edmonds *et al.* 1999, 72; Chadwick 2004, 200).

Whereas lithic exchange networks appear to be limited or absent during the Mesolithic, the Early Neolithic marks the initiation of movement, exchange and curation of flint and stone objects. A consideration of the life cycles of these items is worthwhile as some, such as Cinglais flint blades and polished schist rings were circulated over long distances. Both the flint and schist raw materials were mined and manufactured at the point of extraction on the continental mainland. These items would arguably have assumed a greater value on Guernsey through the knowledge of the land and sea travel involved (Van de Noort 2015, 39) and the lack of equivalent raw materials locally. In this respect, taskscapes and object biographies were not only localised but extended across the sea to encompass possible kin and ancestral groups on the continent, thus transforming people's perception of the objects themselves. The final stages in the life cycle of the Cinglais blades and polished stone rings are difficult to ascertain however. Rings found on the continent are sometimes associated with burials, in some cases worn on the deceased's arms as bracelets (Hoffman & Whittle 2008, 294). With bone not surviving in the island's acidic soils, rings found on Guernsey may be in some cases all that remains of a burial site. Cinglais flint blades on the other hand do not seem to have been accorded the same treatment. The life cycle of the blade found at Delancey Park suggests a functional role as it displayed edge gloss, presumably from being used on plant material. It was then subsequently broken, either deliberately or accidently and discarded.

Despite the relatively ephemeral archaeological footprint of this period, existing maritime networks with substantial sea-going craft and a tradition of sea-faring knowledge would have been required to import the people and livestock necessary for a farming economy on the island. That these networks were maintained beyond the initial stages of people arriving on the island is attested by a continuity of pottery styles, and the presence of imported Cinglais flint and polished stone rings that continued to be circulated throughout this period suggesting a shared cultural identity in the region. Nevertheless, the relatively low archaeological profile of this period in comparison with continental mainland sites does suggest a population in the formative stages.

**Middle Neolithic Ia & Ib 4700-4300 BC**

The Middle Neolithic I period is separated in Normandy into two phases by pottery sequences; Ia, *Cerny ancien* followed by Ib, represented by the Pinacle-Fouaillages style in the Channel Islands, Chambon in the east and Castellic in the south of Brittany (Marcigny *et al.* 2010, 144). These two phases are considered together for this study however, because of the relatively compressed time period of four centuries. In northwest Europe there is a fragmentation of cultures apparent at this time which may explain the appearance of these more localised pottery styles (*ibid.*).

The lithic record on Guernsey appears to be in stasis during this period, with few typological or technological markers that would permit the isolation of datable artefacts in the palimpsests comprising the island's lithic record. The decline in exchange networks of Cinglais flint and stone rings at this time suggests that people were acquiring new ways of displaying status, perhaps via the circulation of polished stone axes. The movement of these objects was by now established with exchange networks active on mainland France, and the Le Pinacle axe production site on Jersey functioning at this time (Patton 1991, 34). The axe trade could arguably provide some dating information, but as artefacts they are difficult to use as chronological tools being rarely found in datable contexts, they also continue in circulation for over two millennia with little change in morphology that would allow a secure chronological framework to be established (Patton 1991, 34).

Much of the dating information for this period derives from Les Fouaillages with the mound construction phases straddling the Early Neolithic/Middle Neolithic 1a periods (Audouard 2009, 10; Pioffet 2010, 158). Although the lithic assemblage from the monument is essentially a palimpsest, the incidence of bipolar percussion is extremely low (0.5%), and burins fabricated on local flint were recovered which implies that much of the assemblage derives from an early phase of the Neolithic period (Audouard 2009, 41). Pottery found in secure contexts within the earlier phases of the monument indicates people present at the site during both Cerny and Pinacle-Fouaillages periods (Pioffet in press) which accords with the lithic finds. The low lying location of the monument is seemingly unremarkable in comparison with the more prominent passage graves of the island. However, the environmental data indicate that the coastal plain had been a focus for human activity since the Early Neolithic with increasing clearance taking place, presumably for agricultural purposes (Campbell 2000, 335). The reasons behind the landscape setting of the monument becomes clearer when considering the redeposited Mesolithic and Early Neolithic finds embedded in the mound. These may have signalled to those building the monument and to other communities the *long durée* of occupation and cultivation in the area. People were staking a claim to their land, and at the same time acknowledging links to possible kin groups on the mainland with the objects incorporated within the monument playing a new role.

Further sites with evidence of communities active at this time are the Royal Hotel and L'Erée, although these are again more visible through the pottery record than through the lithic industry. How these diverse groups around the island were linked with Les Fouaillages, or whether they were even contemporary is difficult to say. There is some overlap in $^{14}C$ dates but these are too coarse grained to make any assertions. Nevertheless, given the present state of knowledge, the uniqueness in morphology of Les Fouaillages on Guernsey may suggest that the construction of this monument was marking or even creating a unified island community.

Similar to the preceding Early Neolithic period, the lithic evidence suggests a minimum of human activity inland with no diagnostic material from Middle Neolithic Ia or Ib yet being recovered from excavations or surface collections further than 2 km from the current coast. It is possible on the other hand that lithics from this period are present inland but just not recognized as a result of being mixed in with later material. Nevertheless, based on lithic and environmental evidence it can be posited that there was a continuity of coastal inhabitation from the Early Neolithic reinforcing the impression of an island people's enduring preference for coastal habitats but without any evidence thus far of permanent structures that would suggest fixed settlements. A relatively low density of population during this period may be a possible reason for the continuity of archaeological evidence, with no pressure on land use and the lower lying and flatter areas of land to the north of the island still proving sufficient for a shifting pattern of residence, cultivation and grazing.

From a mainland connectivity perspective, lithics and pottery recovered from the Royal Hotel and Les Fouaillages sites concur with the technological and typological developments on the adjacent French mainland, indicating continuing maritime contacts and exchange networks. Les Fouaillages itself suggests influences and cultural contacts with those communities who constructed the Manio series of long-mounds in Brittany (Patton 1995, 30), indicating the extent and temporality of regional spheres influence. Similar conclusions can be reached for the pottery from the monument dated to this period which demonstrates links with Chambon and Castillac styles, again suggesting wide reaching influences (Pioffet in press).

**Middle Neolithic II 4300-3500 BC**

This period marks the start of passage grave building on the Armorican Massif and the Channel Islands. The stasis in lithic technology continues however, with a lack of typologically specific or imported pieces that could act as fine grained chronological markers. This may be deceptive however, as the high background levels of scrapers and flakes in the reviewed assemblages are likely in large part to derive from this period.

In contrast to the earlier Neolithic with monumentality marked by the solitary Les Fouaillages long-mound, the density of funerary monuments that would have originally populated the Channel Islands at this time is striking, a phenomenon that appears to be a feature of many Atlantic islands at this time (Scarre & French 2013, 4). The $^{14}C$ dates obtained from human bone for the Le Déhus passage grave suggests a date of *c*.4100-3900 Cal BC for the burials (Schulting *et al*. 2010). This dating confirms that the construction of the monument follows the Armorican and Normandy chronology for tombs of this type dating to the end of the 5$^{th}$ and the start of the 4$^{th}$ millennium, although perhaps lagging the mainland by a century or so (*ibid*.). The monument is notable for the engraved capstone which may be a re-used menhir, a practice very much in the tradition of Armorican passage graves albeit in an insular style (Cassen *et al*. 2015).

Although Audouard (2009, 14) comments on a 'hiatus' in the use of Les Fouaillages during the Middle Neolithic period, there is some evidence of people still active here as demonstrated by the roughed out blanks of two arrowheads manufactured from what is likely to be imported flint. The morphology of these hint at long distance exchange networks in operation extending to the Michelsburg *ancien* group in the region that is now northern France and Belgium. Likewise, the leaf shaped arrowhead recovered from the Route de Carteret site may well also derive either from the Michelsburg sphere of influence, or even a British one. Either scenario implies that the long distance transmission of ideas, materials and people was occurring with the continent during this period, and interestingly, demonstrates the continued use of Les Fouaillages by communities despite the many passage graves now established on the island.

The lithic evidence indicates that in comparison with previous periods, there appears to have been at least a partial reorientation of society on Guernsey away from a coastal focus towards the exploitation of the whole island. The environmental record also supports this, suggesting a spread of alder carr *c*.4000 BC (Campbell 2000, 335). This could be interpreted as marking a decline in the exploitation of lower lying areas and communities migrating from the coastal plain to higher inland regions. The reasons for this reorientation are not entirely clear; population increase is one possibility, loss of soil fertility on the lower lying areas is another. The intense manuring noted by Schulting's analysis at Le Déhus may be symptomatic of this, with soil degradation possibly caused by the ingress of wind-blown sand (Schulting *et al.* 2010, 168). An analogy can be drawn here with Scarre's work on Herm where manuring was demonstrated on the Common, indicating that by the 4th millennium BC soil fertility may have been in decline as a result of a marginal and sandy environment (Scarre & French 2013, 16). A further consideration, as demonstrated by skeletal stable isotope evidence from Le Déhus is that there was less reliance on, or even avoidance of, maritime resources as the diet became more terrestrial and domestic livestock based (Schulting 2010).

Hence, it is possible to envisage the scenario of an increasing population combined with a loss of soil fertility and a more terrestrial focused diet, leading people to establish settlements on the higher inland parts of the island where loess deposits would have provided good conditions for cultivation and livestock. To access these soils however, woodland would have needed to be cleared; this process may be reflected in the distribution of axes across all landscape aspects of the island (Figure 10), especially the concentration evident on the southern plateau. This distribution indicates that as well as being considered as ceremonial items, polished stone axes may also have been used for more functional purposes such as felling trees. These clearance activities would have generated wood for fuel, dwelling construction and fences for livestock. Unfortunately, a programme of impact damage assessment on axes which would indicate use is a task that has yet to be carried out.

The Airport site offers possible clues to the nature of people's exploitation of the upland area during this period as the pottery is considered by Pioffet (2011) to largely date to *c*.4500-4000 BC, although with some earlier and later elements present. In the lithic assemblage, flakes are predominant indicating, like the pottery, a significant Middle Neolithic component. The finds include many scrapers and notched pieces that may have been used for processing hides and woodworking (Baillet 2015, 27). The existence here of significant amounts of lithics and pottery along with traces of post holes and hearths indicates that communities may have settled in the immediate area. In this case, this is the first Guernsey site that can be linked to people contemporary with the construction of the island's passage graves. Furthermore, there could also be tantalising evidence of passage graves once being in the area, as research on Guernsey place names carried out by De Guérin suggests that a cluster of megalithic structures possibly existed just to the southwest of the Airport site (De Guérin 1921).

People's requirement for flint in the interior of the island would have required a journey down to the flint rich west coast to preferred acquisition sites. Within the Airport assemblage, the low average weight of cores and reduced proportion of primary and starter flakes suggests that people were bringing partially worked pebbles back to the area for further reduction and working in a more parsimonious manner than is evident at coastal acquisition sites. Finds of patinated flint and cores that were discarded several millennia previously would also have signalled to the inhabitants of the area that there was already a long history of human activity here. The reworking of these as evidenced by fresh flake scars would have given people a connection to the past, although on a more pragmatic level this practice could simply be a case of scavenging.

Routeways linking the upland area to the flint sources on the west coast would have led people past the highly visible passage graves of Le Creux ès Faies and Le Trépied, or La Varde and Le Déhus to the north amongst the many others that originally existed. The possible total number of passage graves that were originally established and large amount of flint debris distributed across the island in all landscape contexts implies a relatively densely populated island at this time. As Edmonds notes, funerary monuments raise questions about kin group rivalry and competition for local dominance (Edmonds 1997, 107). Whether all were allowed access to these places or whether they were territorial markers for different communities is difficult to say, but the monuments would have served as constant reminders of the ancestral occupants and may have channelled peoples' movement around the landscape. Research by De Pomerai (1998) on the provenance of stone used in the island's passage graves indicated that all material was sourced locally, within a few hundred metres rather than further afield as is the case with La Hougue Bie on Jersey, where the material of construction was sourced from up to 6 km in distance (Patton 1995, 53). Patton attributes the grandeur of La Hougue Bie to dominance of groups in the eastern part of the island with other communities contributing to the construction as part of 'sacred affiliation' (*ibid.*, 62). On Guernsey, material used in the construction of passage graves implies these structures may have belonged to more localised groups thus inferring a less cohesive society.

The practice of depositing knapping debris in the island's passage graves is pertinent as this practice is also evident in funerary contexts in Normandy and Brittany (Guyodo 2005, 407). The debris typically does not contain any retouched pieces or imported material on Guernsey, whereas in Brittany there is frequently a duality of material with locally obtained flint and stone being found with imported equivalents (*ibid.*). Whether this practice was intended as a votive deposit or was more utilitarian in nature is difficult to say. Nevertheless, similarities in behaviour to that on the continent demonstrate cultural links with the adjacent mainland and may imply that there was more than a purely functional aspect to flint knapping, as well as local material being accorded some importance.

Tool types, typology and practices evident on the island demonstrate that Guernsey's connections with the adjacent islands and the French mainland were maintained throughout the Middle Neolithic. This is also attested by the morphology of the island's passage graves, which bear a strong resemblance to those in Jersey, Brittany and Normandy as well as being roughly contemporary in construction date and use. Long distance exchange networks were in operation as shown by the arrowhead blanks from Les Fouaillages and the leaf shaped example from the Route de Carteret site. The circulation of imported axes was ongoing and as well as ostensibly fulfilling a ceremonial purpose, they may also have played a more functional role in the woodland clearance that was ongoing during this period.

**Late Neolithic 3500-2500 BC**

The lithic assemblages reviewed for this thesis are to a greater or lesser degree dominated by flake scrapers, this is especially notable in the field-walked assemblages from Bailiff's Cross and Ruette de Norgiots from the upper and more central parts of the island. This is significant as the overall ratio of scrapers as part of a given tool-set are more strongly represented during the Middle and Late Neolithic (Marcigny *et al.* 2004, 137; Ghesquière & Guyodo 2008, 116). Amongst the excavated collections, the Royal Hotel assemblage contains the largest proportion of scrapers which accords with the later Neolithic pottery record; scrapers were also the dominant tool at the Delancey Park gallery grave, which dates to this period. This evidence suggests that similar to the proceeding Middle Neolithic, people inhabited all parts of the island. However, although putative post holes were found at the Airport site, no definite traces of house plans have yet been found and as with the preceding periods, any definite traces of permanent settlements appear to be too ephemeral to have revealed themselves in the archaeological record other than in the form of scatters of lithics and pottery.

The later Neolithic coastal sites of Albecq and Rousse demonstrate the continuing sourcing of flint pebbles from beaches where they were partially worked into cores before being transported for further working inland. Although this phenomenon ostensibly presents an archaeology of 'sameness' in the narrative, it is probable that tasks such as these were repeated over millennia, although at different locations as sea-levels rose and coastal erosion occurred. Furthermore, although not evident in lithic assemblages, the role of this activity in the cementing of social relations can be posited; groups of people, perhaps children and young adults would have been sent to collect the raw material and partially work it before taking it back to settlements over the island. While this was taking place other groups would have been encountered and relationships formed.

Despite these continuities in practice, changes were occurring on the continental mainland during this time; as noted by Pétrequin, the actual perception of tool-making processes had changed towards the end of the Neolithic with a simplification of flint-working as a time saving device (Pétrequin 1993, 65). This change is also visible in other technical domains such as pottery and pot decorations (*ibid.*). Therefore, although it is probable that flint maintained its significance as a material that was vital for carrying out routine tasks, less time was invested in the manufacture of common tools, and more time devoted to producing sophisticated and what may have been symbolic items such as arrowheads.

The existence and indeed importance of the role of hunting during the later Neolithic in north-west France has been discussed by Roussot-Larroque (1985, 9) for the SOM period. Roussot-Larroque remarked on the large quantity of arrowheads and quivers found in tombs together with personal adornment fashioned from wild fauna teeth or bones implying that hunting could have played a symbolic as well as a food resource role. Outside of the funerary realm, wild animal bones found on settlement sites suggest that hunting fulfilled a food resource role (*ibid.*). Although it is highly unlikely that wild fauna was still present on Guernsey at this time, barbed and tanged arrowheads were nevertheless being placed in passage graves which were being appropriated and re-used towards the end of the Neolithic. This phenomenon will be discussed further in the following section (8.4).

The continuing maritime connections linking Guernsey with continental mainland areas are evident throughout this period. The possibility of expanding exchange networks may also have occurred with SOM style funerary monuments and pottery appearing on the island in addition to the trade in exotic materials; in this case Grand Pressigny blades and arrowheads also reach Guernsey, although not to the extent evident at Le Pinacle on Jersey. The nature of the Grand Pressigny blades found on the island thus far suggests that in some cases they were curated whole, and in others recycled into practical tools such as the scraper from the Airport site which was manufactured from the tang of a ‘dagger’ blade. This action could infer that the perceived value of the flint had decreased and it was viewed purely as a functional source of material. The similarities in the life cycle of this flint accords with sites on the adjacent French mainland and not only confirms the existence of exchange networks but that of changing attitudes to materials (Ihuel 2004, 108).

Despite the apparent desire of island communities to acquire imported materials and emulate mainland practices, the divergence in funerary monuments and the development of the cist-in-circle tradition on Guernsey, Herm and Jersey hint at an equal desire to assert individual identity. This divergence in practices is also perhaps a prelude to a fragmentation of society itself that becomes evident during the Early Bronze Age (Ghesquière & Guyodo 2008, 116).

**Neolithic Summary**

From seemingly modest beginnings at the start of the Neolithic period, the lithic evidence and extent of funerary monument construction suggests a large community developing on the island by the end of the fifth millennium. The Early Neolithic inhabitants appear to have concentrated their foci of activity around the coastal margins of the island, in much the same landscape situations as their Mesolithic forebears. Lithic scatter evidence for settlement is scant, perhaps indicating a shifting pattern of habitation and ephemeral structures. Exchange networks were active at this time however, with the circulation of Cinglais flint, polished stone rings and axes, although what was traded in return is not visible in the archaeological record.

As the population grew towards the Middle Neolithic, the lithic distribution patterns revealed by this research indicate that people began to settle the upper and more inland parts of the island, this movement may also be linked with a decline in soil fertility around the northern lower lying regions. The flint industry becomes increasingly difficult to discern around this time, perhaps indicating that it was regarded as a more functional aspect of society. Trends in typology and technology however, appear to follow those of the continental mainland suggesting continuing maritime links and the transfer of ideas.

Into the later Neolithic period, settlement patterns in the interior of the island persist although indications of structures that could be interpreted as permanent houses have yet to be discovered. The stasis in the lithic industry continues with only subtle changes in technology evident. However, towards the end of the Neolithic the importance of flint associated with weaponry appears to increase with the importation of Grand Pressigny blades and the appearance of barbed and tanged arrowheads both of which, as a result of the time and skill invested in manufacture may have been used for prestige and display purposes.

## 8.4 Beaker (Campaniforme) 2500-2200 BC, and Early Bronze Age 2200-1900 BC

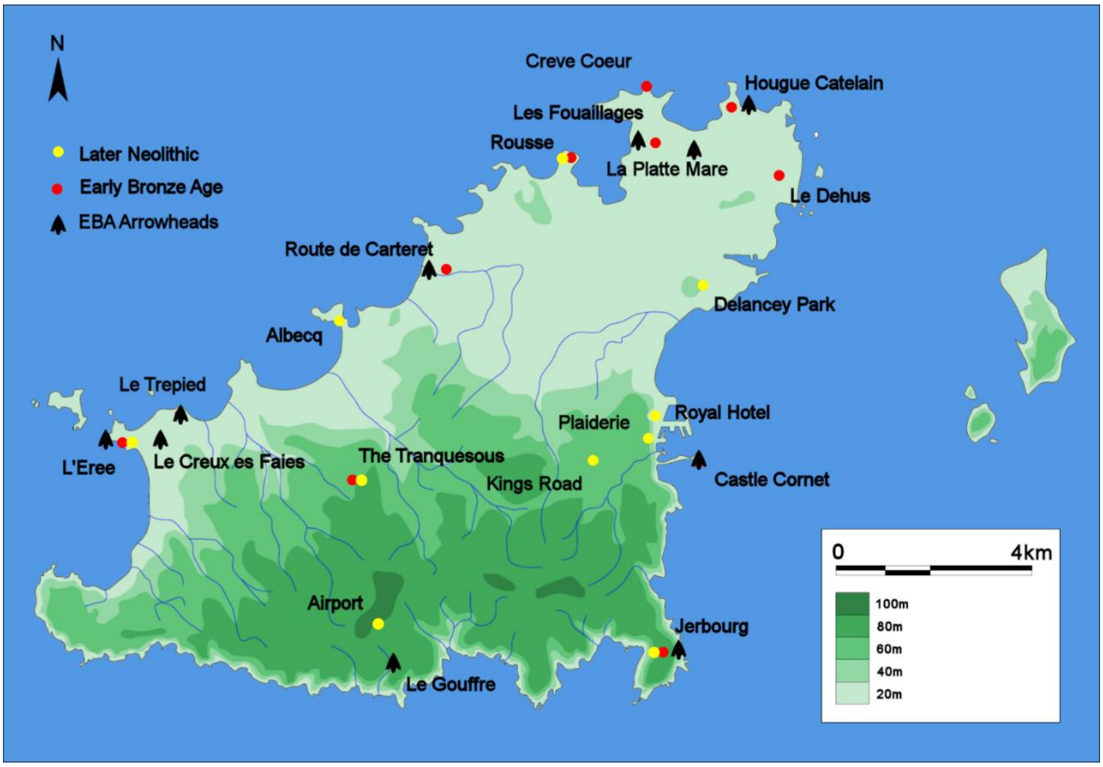



*Figure 84. Sites displaying evidence of activity through the later Neolithic and Early Bronze Age periods. Arrowhead symbols mark finds of barbed and tanged arrowheads (D Hawley).*

The Beaker (*Campaniforme*) period is named after a distinctive type of pottery vessel that is found across northwest Europe and Britain, often associated with barbed and tanged arrowheads and archer's wrist guards in funerary contexts (Nicolas 2011, 94). The chronological span of the Early Bronze Age is ill defined on Guernsey as a result of a lack of securely dated sites. Furthermore, in Brittany there is both a degree of conflation of these two periods, and their separation into two distinct cultural entities during the second half of the third millennium (*ibid.*, 114). Hence, in view of the vagueness of the archaeological record at this time both periods are considered together here, although consideration will be taken of finer grained chronological divisions when they become apparent. It must also be emphasised that many of the lithic chronological markers from this time ignore imposed archaeological time boundaries with Grand Pressigny flint in circulation throughout both the later Neolithic and Beaker periods, and the manufacture and use of barbed and tanged arrowheads continuing through into the Early Bronze Age (*ibid.*).

Development of the barbed and tanged form of arrowheads in Brittany, as discussed in Chapter 7, now gives a finer grained indication of the chronology and development of those found on the island. It is proposed here that the earliest variants were locally made *naissants* with less developed barbs that appear to belong to the latter part of the Neolithic period. These types were recovered from the Middle Neolithic passage graves of Le Trépied and Le Creux ès Faies, and the later Neolithic cist-in-circle, La Platte Mare, all associated with Beaker pottery. This would suggest that the practice of passage grave appropriation and reuse commenced at the end of the Neolithic period, and continued through into the Beaker period (2500-2200 BC).

In contrast, arrowheads of the fully developed Armorican ogival form associated with the closure of Les Fouaillages are likely to be of an Early Bronze Age date (Audouard 2009; Nicolas 2011, 114). The closure of Les Fouaillages was perhaps an act marking new burial practices coming to the island that arguably emphasised the individual rather than a collective of ancestors, as may have been the case with passage graves. However, individual Early Bronze Age rich burials in tumuli as found in Brittany have thus far not been revealed on Guernsey although their remnants may be marked by other finds of finely worked arrowheads such as the example from Jerbourg.

There is evidence of a change in settlement patterns in Normandy, Brittany and Jersey at this time with the appearance of palisaded or walled enclosures and a movement to more defensible situations on promontories and elevated positions (Ghesquière & Guyodo 2008, 116). Lithic evidence hints at a similar occurrence also taking place on Guernsey, with migration towards more defensible coastal sites evident on the island in several locations. The Late Neolithic/Early Bronze Age promontory enclosure at Jerbourg is a typical example (Burns 1988). A further possibility for a promontory settlement is Rousse Headland where quantities of Jersey Bowl pottery, fragments of a stone axe and a quern stone were recovered along with a later Neolithic flint working industry. At L'Erée, significant quantities of Beaker and Jersey Bowl were excavated associated with a ditched enclosure, although it is a multi-period site containing artefacts dating from the Mesolithic through to the Early Bronze Age. Further possible sites in defensive locations are Point de la Moye and La Corbière, both on the precipitous south coast, although considered to be Iron Age (Cunliffe 1996, 1), like Jerbourg they may have earlier antecedents.

The juxtaposition of settlement and tomb at coastal sites during this period is notable. According to artefactual evidence the promontory site at Rousse Headland is contemporary with a double cist and a possible cist-in-circle located less than 100 m away in what is now the tidal zone (Hawley & Waite 2016; Hawley & Waite in press). Likewise, the L'Erée site would have been occupied around the same period as the appropriation of the Le Creux ès Faies passage grave 70 m away on the headland where Beaker pottery and barbed and tanged arrowheads were found (Garrow & Sturt in prep.). Les Fouaillages, although not in an obviously defendable location is located on the northern tip of the island that may have been separated from the rest of the island at this time by the flooding of the Braye du Valle. Evidence of a nearby Bronze Age settlement was found during excavation (Audouard 2009, 16), that may be contemporary with the act of closure of the monument. These locales hint at close associations between zones of the living and those of the dead, and suggest that further pairings of settlement and monument may be found elsewhere on the island.

The movement of communities to coastal locations visible in the archaeological record is linked with what appears to be an increasing stratification and fragmentation of society during this period. Likewise, the dichotomy in flint-working skills suggests the appearance of skills specialists, which themselves indicate a possible stratification of society (Nicolas 2011, 122). Although skills specialists may have been present on Guernsey, the high quality arrowheads recovered thus far on the island appear to have been made on the continental mainland. In Britain, exchange networks of specialist goods and access to these items may have been under the control of local elites (Barrett 1994, 105), a similar scenario can be proposed for Guernsey. The 'fancy' arrowheads may therefore have played a dual purpose as indicators both of warfare and status with those recovered from Les Fouaillages and Jerbourg signifying connections with Brittany elites, groups capable of obtaining high quality flint and maintaining skill specialists (Nicolas 2011, 122). The arrowheads themselves may have played out multiple roles; as well as being symbolic of conflict and warfare they may actually have been symptomatic of these states, both on the island and in a broader regional basis. Possible hints of conflict are discernible which suggests more than ritual or symbolic warfare; at Jerbourg, locally made barbed and tanged arrowheads displaying signs of impact damage were recovered, as were further examples from the King's Road and Route de Carteret sites. Although this assertion is impossible to verify in the absence of skeletal evidence, the move to defensive locations and impact damage on arrowheads do infer a degree of social stress.

The possible implications for the mobility of people around the island landscape are conjectural, but it can be posited that the divergences in practices and social differentiation discussed above may have acted as a restraining effect on communities with increasing insecurity manifesting itself in territoriality. As taskscapes consider networks of activity and movement that extends into the landscape then the pastoral and idealistic nature of this approach evident in Ingold's account can be called into question when that movement is deliberately restricted. As Edmonds (1997, 107) points out, themes and concerns were played out over great distances. Hence, it can be argued that events on Guernsey were a microcosm of what was taking place on a much wider scale in the study area.

**Early Bronze Age Summary**

The lithic evidence during this phase marks a return to flint as objects of display and prestige with imported Grand Pressigny blades and finely worked barbed and tanged arrowheads clearly playing a visible role in life, as well as death. These are artefacts that are symbolic of conflict and thus inform us of the nature of society at that time. The morphology and material of manufacture of arrowheads has permitted a finer grained chronology of funerary monument use to be established with the appropriation of the island's passage graves occurring towards the end of the Neolithic and Beaker period, and the Les Fouaillages long-mound undergoing final closure during the Early Bronze Age. The social divergence and fragmentation reflected burial practices is also visible in the lithic distribution which demonstrates a trend of movement towards coastal areas and defensive enclosed settlements such as Jerbourg, with the likelihood that there are similar sites on headlands and promontories around the island yet to be discovered. Extant funerary monuments may provide clues to the location of some of these.

The implications that this trade in materials and ideas had for the society living on the island at this time is pertinent. It is evident that exchange networks were active with the transmission of materials and ideas between the mainland and the islands. Burial traditions differ to some extent with no trace of individual burials in mounds or tumuli as they are in Brittany for example (Nicolas 2011). However, the Armorican style arrowheads demonstrate a Brittany sphere of influence, with a high likelihood that those from L'Erée, Jerbourg and Les Fouaillages were imported. There is however, a hint of island communities choosing to assert individuality on Jersey, Herm and Guernsey with the insular Jersey Bowl type of pottery following Beaker forms, but with patterns of decoration that are not found on the mainland, thus suggesting a shared cultural identity amongst these islands.

## 8.5 Beyond the Bronze Age

Following on from the Early Bronze Age, the continued use of lithics, especially flint becomes increasingly hazy in the archaeological record. This may stem from a certain resistance in the archaeological community in general to consider that flint use may actually have continued unchanged for many centuries into the Iron Age (Humphrey & Young 1999). The association of a flint industry and Iron Age artefacts at several sites on Guernsey does not unequivocally prove this, but given that implements of metal may initially have been considered as high value items, the continued use of flint as a functional resource should be considered. It is argued in this thesis that this was indeed the case, although there is scope for further research into this subject.

## 8.6 Summary

The evidence obtained from the analysis of lithic assemblages in Chapter 6 and subsequent syntheses in Chapter 7 have been expanded and combined into narrative form in this chapter, which has resulted in more dynamic and peopled view of the island than previously achieved. The summarised outcomes of this narrative are presented in this section.

The picture of the Mesolithic is one of dynamic communities responding to changing climate and environment through time. From ephemeral indications of activity during the early part of the Mesolithic the expansion of population towards the Middle Mesolithic as attested by the lithic record is notable. All landscape zones on the island were eventually exploited and this thesis demonstrates more extensive and wide ranging patterns and networks of activity than previously recognised. From the relative richness of Middle Mesolithic finds, the lithic record equally suggests a population decline during the later Mesolithic with what appears to be an abandonment of Guernsey as it diminished in size and resources.

The visibility of an unpopulated island from the continental mainland would have acted as an attraction to a people who were involved in a different way of life, the early stages of a farming economy. Exchanges and cooperation of sea-faring knowledge would have taken place between inland and shore based communities that enabled the island to become repopulated. People arrived on the island with their domestic animals, seeds and new types of flint and stone tools that would have linked the island community to kin groups on the mainland. The Early Neolithic inhabitants appear to have concentrated their foci of activity around the coastal margins of the island, in much the same landscape situations as Mesolithic communities had done before them. From these modest beginnings the distribution of flint artefacts revealed by the research for this thesis indicates a large community had developed on the island by the end of the fifth millennium with people settling the upper and more inland parts of the island; this movement may also have been linked to a decline in soil fertility around the northern lower lying regions. The woodland clearance on the higher southern plateau would have been achieved with stone and flint axes, objects that required time and skill in manufacture. Some would have been imported from Jersey or the mainland, again reaffirming maritime links with communities elsewhere. Into the later Neolithic period, lithic data suggest the settlement pattern persists with people exploiting all parts of the island landscape although indication of actual structures that could be interpreted as permanent houses have yet to be discovered.

Towards the end of the Neolithic the importance of flint associated with weaponry appears to increase with the importation of Grand Pressigny 'dagger' blades and the appearance of barbed and tanged arrowheads both of which, as a result of the time and skill invested in manufacture may have been used for prestige and display purposes. Possible social stress at this time is also reflected in the lithic distribution which indicates communities migrating towards coastal areas and defensive enclosed settlements, some of which are associated with burial monuments. This may have been a time when the movement of people around the landscape became restricted; it may have been an island of territories and chiefs.

Hazier in archaeological visibility is the continuation in flint exploitation into the Bronze and Iron Ages. The lack of securely dated sites from this period, or rather, the mixed nature of the archaeological record on the island has thus far not permitted the identification of a definite industry from later periods. Nevertheless, it can be conjectured that as there were no natural sources of metal on the island, which would have resulted in potentially difficult to acquire imports; therefore, it is argued here that the use of flint and the duration of flint-working knowledge would have continued into this time.

## 8.7 Conclusion

The aim of this chapter was to draw together the lithic data synthesised in Chapters 6 and 7 in order to establish a chronologically based period-by-period narrative within the broader context of human activity on Guernsey. It has been demonstrated in this account that the lithic driven research carried out for this thesis has significantly enhanced the archaeological knowledge of the island, and the ebb and flow of Guernsey communities has been depicted through space and time based on a consistent strand of material culture evidence rather than previous fragmentary period specific or monument-centric accounts. Further, the lithic data have contributed to current understandings of the island's maritime connectivity with continental mainland areas and has thus highlighted the extent of sea-faring capability and activity in the region.

In the concluding chapter the objectives set out in Chapter 1 combined with the overall research results will be presented together with an appraisal of the methodologies employed in this thesis and suggestion for further work.

# Chapter 9: Conclusion

At the start of this thesis I argued that the character and composition of lithic assemblages on Guernsey had the potential to inform us about human residence, activity and mobility in the landscape. Following an appraisal of the extent and limitations of knowledge relating to Guernsey's lithic archive, a methodology was proposed that endeavoured to implicate people as well as combining the technological and typological aspects of lithic research. The reviewed data was then presented in three stages: site assemblage analysis, an understanding of the lithic record of those sites followed by an interpretive account of society on Guernsey. In this concluding chapter the methodology, results and need for further work in the study area is reviewed.

## 9.1 Methodology Evaluation

Drawing on a variety of approaches encompassing a rigorous lithic analysis programme covering as much as the island and as many landscape zones as possible, the use of a multi-method analytical approach coupled with an appreciation of the studied subject matter and the wider landscape, a narrative has been established for the Mesolithic, Neolithic and Early Bronze Age. However, during the data gathering and analysis stages, some problematical areas were encountered, ranging from establishing chronological sequences to issues relating to interpretation. The following section discusses these issues before considering the contribution made by this thesis to wider archaeological research on the island.

### Establishing Chronology

As discussed in Chapter 5, the key to understanding the nature of human activity on Guernsey was to establish a robust dating scheme that could then be applied to the island's lithic assemblages. The requirement for this objective was to establish whether trends in technology and typology on the island were comparable with those occurring on the adjacent continental mainland. The extensive referencing of French lithic research carried out on the Armorican Massif along with $^{14}C$ dating of Guernsey sites, and the presence of securely dated imported material suggested that this was indeed the case and provided a more or less reliable chronological anchor with which to date the island assemblages.

However, complications arose when it became apparent that the excavated collections were largely the result of chronological mixing due to long periods of concentrated occupation in a relativity limited area; this was compounded by post depositional transforms such as colluviation and human activity. Hence, the excavated assemblages had to be approached much in the same way as surface collections resulting in the burden of evidence being placed on the typological and material characteristics of individual pieces. Nevertheless, with the employment of the 'whole assemblage' analysis technique, taking account of the overall proportions of tools in the dataset together with a presentation of data in graphical form it has been possible to interpolate coarse grained chronological information. This approach, when allied with complementary information from environmental data and pottery sequences has permitted a reasonable degree of temporal resolution to be established for the reviewed sites.

**Taskscapes**

The concept of 'taskscapes' was employed to 'people' the landscape and to add dynamism to the narrative. It is reasonable to argue that this approach worked well for mobile Mesolithic communities, but the application of the concept to the ostensibly sedentary Neolithic societies was found to be more challenging and tended, as Conneller suggests (2010, 189), to lead to an archaeology of "sameness" as the narrative progressed through periods of millennia. Therefore, although taskscapes requires the researcher to consider the linking of tasks and movement of people in their landscape setting, it does arguably have a more limited benefit when addressing large temporal periods and the *longue durée* of technical practices. Nevertheless, it is felt that by applying the concept to this thesis, a dynamism and continuity have been added to the narrative portrayed in Chapter 8 which has moved the discussion beyond the static and largely unpeopled accounts previously available.

**Object Histories**

The object histories of artefacts presented a contrasting problem with that of taskcapes, although this may have been more symptomatic of the equally contrasting nature of Mesolithic and Neolithic societies on Guernsey. No trace of long distance trade or obviously curated objects has yet been found for the Mesolithic on the island. It may be the case that certain flint tools were used to display the maker's knapping prowess, and equally likely that portable and curated items were made of organic materials such as wood or bone that do not survive in the archaeological record.

For the Neolithic and Early Bronze Age on the other hand, there is a dramatic increase in flint and stone objects found on Guernsey that were traded over long distances via maritime networks, many of which appear to have played a role beyond that of the purely functional. The importance of some in a symbolic role is witnessed by the votive deposits of arrowheads in funerary monuments, whereas others were used and discarded suggesting that not all imported materials were simply regarded as exotic; context may have been more important. Unfortunately, the fuzziness of the archaeological record does not permit full visibility of the movement of objects, especially what was given or exchanged in return from the island. The concept did however, draw attention to the possible value of things beyond their purely functional attributes and hint at the temporality of maritime connectivity.

The exotic has to be compared with the local however. It would be reasonable to state that it is the lives of the cores, scrapers and waste obtained and fashioned from local beach pebbles that have enabled this thesis to be written and through this, the lives of past communities of the island illuminated. A salutary lesson for focusing on high profile objects to the exclusion of the more mundane.

## 9.2 The Thesis Research Objectives Evaluation

The central question of the thesis was stated in Chapter 1: How can we improve our understanding of human society and maritime connectivity during the late prehistory of Guernsey through the analysis of lithic data? This was then broken down into the three objectives that are reiterated here followed by an evaluation of the extent to which each of the objectives have been answered:

1. *Determine the extent to which lithic data reflects changes in land-use during the study period*

The criteria for resolving this first objective was the examination of the location and composition of lithic assemblages and looking for variations in the patterning of assemblages and changes through space and time. Initially, problems arose with the assemblages being palimpsests as discussed in the previous section. However, regarding the temporality of human activity across the island, it was possible to obtain a coarse grained overview and separate out the periods of frequentation to a reasonable resolution. This achieved the goal of tracing the ebb and flow of communities through the study period. The actual nature of human activity was visible through tool type and frequency as well as through the composition of assemblages, for example, the varying proportions of knapping debris correlating with coastal or inland sites.

Variations were also visible in the reviewed material which revealed evidence of Mesolithic people exploiting the interior of the island as well as the coast, then apparently abandoning the island altogether as a result of a diminishing land mass and a climatic downturn. With the arrival of a Neolithic economy on the island, the patterns of lithic deposition indicate that communities were initially frequenting much the same landscape as their Mesolithic forebears, principally the lower lying coastal areas with some incursions into southern upland plateau.

With lithic data indicating an increase in population coupled with a possible decline in soil fertility, communities were increasingly exploiting areas away from the coast by moving into upland areas. The data-set was harder to interpret through the middle and late parts of the Neolithic as a result of there not being any typologically distinctive or imported material. This was partially mitigated by data indicating changes in technology and increasing relative proportions of common tools such as scrapers being visible in the assemblage composition charts. This suggests that by the Middle Neolithic, communities inhabited the whole of the island landscape. There is a tantalising possibility that Middle Neolithic communities who were settled at the Airport site may have been associated with monument building activities nearby, but as these structures no longer exist it is not possible to be unequivocal about this.

Towards the end of the Neolithic and into the Early Bronze Age, typologically distinctive pieces such as imported Grand Pressigny and barbed and tanged arrowheads highlight a highly visual period for flint and stone objects in the island's archaeological record. The distribution of these suggests that communities were again returning to coastal habitats. Although the reasons for this change are not readily apparent there may have been a period of insecurity and social stress during this time leading to defensible settlements.

2. *Compare the similarities and differences between Guernsey and northwest France in the use of lithic material*

This objective relied on synthesising technological, typological and chronological data from the lithic record of the Armorican Massif, and comparing this with the reviewed Guernsey assemblages. This strand of analysis, allied with $^{14}C$ dates and the input of French mainland lithic experts such as Ghesquière (2012), Marchand (2014), Guyodo (2008) and Nicolas (2011) has clarified the island's lithic chronology from the Mesolithic, and through to the Early Bronze Age.

It can now be demonstrated that the phasing of the Mesolithic on Guernsey appears to be similar to that of the adjacent continental mainland, thus suggesting ongoing maritime connectivity despite an increasingly distant and potentially hazardous sea crossing. Indications of regional spheres of influence at play are also evident with the lithic industry reflecting connections with both Brittany and Normandy. With the arrival of a Neolithic economy on the island, stone tools and polished stone rings imported from what may have been considered as ancestral homelands provide evidence for maritime connectivity and a shared cultural identity. The lithic record is less distinct over the middle and later periods and the resulting dating evidence is more subtle, relying on changes in technology. Nevertheless, data from the Airport site with pottery dating the assemblage largely to the Middle Neolithic indicates that the lithic industry was undergoing similar developments to that in north-west France. In the later Neolithic and Early Bronze Age, the arrival of imported flint and distinctive arrowheads on the island, although rarely deriving from well dated contexts, indicates a coarse grained but parallel trajectory to lithic use on the adjacent continental mainland.

3. *Determine the extent of the evidence for human residence on the island as revealed through the lithic record*

This objective was made difficult by the absence thus far of any definitive evidence for structures on the island that could be interpreted as houses. Nevertheless, many of the assemblages, especially those from inland sites contain tools with traces of use-wear inferring at least a brief period of residence. Further, the presence of significant proportions of burnt flint in some of the assemblages (Chapter 7, Figure 70) confirms this. This implies that despite the lack of evidence for upstanding structures apart from random post holes, many inland sites could have acted as locales for sedentary patterns of behaviour during the Neolithic period. Ironically, one of the most intriguing glimpses of groups repeatedly returning to a particular place was evident at the Mesolithic site at Lihou where the archaeological record was so well preserved that probable seasonal activity could be discerned.

Thus, based on the evidence compiled during this study it appears likely that the mobility evident during the Mesolithic may also have been a feature of Early Neolithic communities on the island, with people practicing a shifting pattern of agriculture and grazing accompanied by ephemeral structures that are difficult to recognise in the archaeological record as 'houses'. The Les Fouaillages tomb may have provided a fixed point for communal focus during this period. Towards the Middle Neolithic, more permanent and longer term patterns of residence became established on the higher plateau with lithics, pottery, post holes and hearths evident at the Airport site, as well as by lithic scatters elsewhere in the interior zone of the island. Into the later Neolithic and Early Bronze Age, concentrations of lithics mark a reorientation of communities towards coastal settlement sites. The settlement/tomb associations noted at L'Erée, Rousse Headland and Les Fouaillages suggest little or no separation between the domains of the living and the dead on the island at this time, a scenario that may be repeated at the appropriated Neolithic tombs of Le Trépied, La Varde and Le Déhus, as well as Early Bronze Age monuments such as L'Islet; to prove this would require a targeted programme of excavation however.

## 9.3 Contributions to the Archaeological Knowledge of Guernsey

It is considered that significant contributions have been made to the archaeological knowledge of Guernsey during the research for this thesis, these are summarised here:

**Mesolithic**

1. *Increased knowledge of the ebb and flow of communities on the island*

The shifting nature of communities on the island has been highlighted through the available lithic evidence with no indication of human activity during the early Mesolithic period. The population florished significantly during the Middle Mesolithic before diminishing into the later Mesolithic.

2. *Mapping of land use through the Mesolithic*

Once thought to be coastal in nature, the lithic assemblages reviewed indicate that communities were exploiting all areas of the island during the Middle Mesolithic.

3. *Overview of maritime connectivity*

The character of the lithic industry on the island is similar to that of the continental mainland thus indicating more or less constant maritime connectivity. However, it is clear that at certain periods during the Mesolithic, visits to the island were seasonal and episodic only.

4. *Abandonment of the island at the end of the Mesolithic*

The island became depopulated during the later Mesolithic; probably as a result of diminishing surface area, coastal resources being lost to rising sea levels, climate change and over-hunting. It is possible that the island was the subject of sporadic visits during this period but significant artefactual evidence for this has not yet been found.

**The Mesolithic/Neolithic Transition**

5. *A period of cooperation on the nearby continental mainland and the arrival of the first farmers*

The suggestion is made here that a period of cooperation occurred between those practicing a farming economy and communities with knowledge of the sea and sea-faring, not on the island but on the adjacent continental mainland which led to Guernsey being re-populated.

**Neolithic**

6. *Mapping of land use throughout the Neolithic*

During the Early Neolithic a preference for coastal residence is proposed with exploitation of the interior limited to periodic use, perhaps for the grazing of livestock. This pattern was superseded in later phases by a distribution of communities over the whole island including the higher southern plateau.

7. *Identification of settlements that were possibly contemporary with the island's passage graves*

A possible Middle Neolithic focus of activity has been revealed at the Airport site. As such this is one of the first indications of communities that may have constructed or used the passage graves on the island. Although the site itself is not close to any form of extant megalithic monument local field names in the area suggest that these may once have existed.

8. *Chronology for the appropriation of passage graves*

A finer grained view of the dating of barbed and tanged arrowheads and comparisons with practices in Brittany has established a chronological framework for the appropriation of passage graves during the Late Neolithic and the final closing of Les Fouaillages during the Early Bronze Age.

**Early Bronze Age**

9. *Social stress evident*

Towards the end of the Neolithic and start of the Early Bronze Age there is a trend evident of communities moving towards coastal areas of the island, some of which were defended promontories. The reasons for this move may have been driven by some form of social stress.

*10. Association of tomb and settlement*

A pattern of coastal Early Bronze Age settlements established close to funerary monuments has emerged.

**Bronze Age and beyond**

*11. Possible duration of the flint industry extending into the Bronze and Iron Ages*

The evidence is ephemeral as the typology and technology of the working appears to be a direct continuation of an Early Bronze industry. Nevertheless, the signatures from the metric analysis of the Iron Age King's Road and Tranquesous assemblages and the association of flint artefacts with Iron Age pottery at both sites implies the *longue durée* of flint-working of the island.

**All Periods**

*12. Knapping sites*

The existence of knapping sites around the island has been confirmed by lithic proportions and other evidence such as a lack of burnt flint. These have also been dated as post-Neolithic with the suggestion that former sites have been lost to rising sea-levels.

*13. Long distance exchange*

The existence of long distance exchange networks has been revealed, extending out onto the continental mainland and perhaps even to Britain. Thus, far from being isolated, Guernsey was participating in the movement of people and things on a broad scale throughout the Neolithic and Early Bronze Age.

*14. Settlement sites*

With a lack of evidence for 'houses', concentrations of lithics including burnt flint and used tools along with pottery are currently the only indicators of settlement foci. A dynamic pattern of settlement throughout the study period has been proposed based on this data.

## 9.4 Suggestions for Further Work

Further lithic research may be a case of diminishing returns as far as lithics are concerned but this thesis has highlighted other areas of archaeological research that need to be addressed on the island.

1. A similar programme of research on the pottery of Guernsey would be beneficial. This has been partially addressed by Pioffet (2010), although her work is very much site based, principally Les Fouaillages and there is therefore, a need to extend this research across the whole of the island
2. Although the axe trade and distribution has been investigated by Patton this was largely an account of trade and ceremonial role. There is a need to carry out a survey of axe distribution on Guernsey and more importantly, use-wear analysis to establish to what extent these objects were actually used for functional purposes such as wood felling
3. The environmental record of Guernsey is very patchy with Campbell's work comprising sampling in a limited number of locations. Again, an island wide research programme would be beneficial targeting buried soil, wetland and submerged forest contexts
4. Although Conneller *et al.* (2016) have provided a comprehensive synthesis of the Mesolithic period on Guernsey based on existing sites, targeted research to discover new sites is required
5. The relationship of Guernsey with Jersey, Sark and Herm needs to be clarified for the period covered by this study. Although the Mesolithic of Jersey is relatively well understood (Conneller *et al.* 2016) the Neolithic record of the island has not arguably benefitted from large scale research and rescue excavations of the type that have taken place on Guernsey. Hence the comparisons regarding lithics are easier to make with the mainland than with Jersey itself. Furthermore, the lack of Cinglais flint on Jersey also needs to be resolved as there is an unequivocal Early Neolithic presence at L'Ouzière (Patton & Finlaison 2001)
6. The existence of a later Bronze Age and Iron Age flint industry needs to be further clarified. This may be problematic because of the lack of securely stratified sites but focused research in this area could be fruitful
7. Possible focal points for Late Neolithic/Early Bronze Age settlements have been identified following the patterns observed at Les Fouaillages and

L'Erée, these may occur in the proximity of Le Trépied, La Varde and Le Déhus. Targeted test pitting or excavation would be required

## 9.5 Life Beyond the Monuments

Having evaluated this thesis in relation to the initial research objectives and proposed new areas of research in the study area, this final section considers the wider implications of the results obtained.

The profile of the Mesolithic on the island has been enhanced by this study and recent work by Conneller *et al.* (2016). This period was not simply a succession of resource based seasonal rounds but one of dynamic communities responding to changing climate and environment through time. The research during this thesis has highlighted that all landscape zones on the island were being exploited and demonstrate more extensive and wide ranging patterns and networks of activity than previously thought. Not only landscapes, but seascapes were also part of what may have been an active and seamless link drawing Guernsey and the other Channel Islands into spheres of influence extending across all parts of the Armorican Massif.

The implication of climate change and changes in sea-levels, far from being a current global warming concern were instrumental in shaping the patterns of human activity on the island in prehistory. From the relative richness of the Middle Mesolithic a population decline occurred as the sea-level rose with communities subsequently choosing to seek more rewarding resource bases elsewhere on the continental mainland. The sea-ways were still active however and the sea-faring knowledge held by coastal peoples was shared with those practicing a new type of economy with their domestic animals, seeds and new types of flint and stone tools that enabled Guernsey to once again become a permanent base for human communities.

A clearer picture has also emerged of the Early Neolithic inhabitants who initially concentrated their foci of activity around the coastal margins of the island. Attachment to place was marked by early monument building as the Les Fouaillages long-mound was established. Ongoing maritime connections to mainland groups are demonstrated by imported stones rings and Cinglais flint incorporated into the monument along with the dead. From the coastal bias of the first farmers, communities of the Middle Neolithic are evident through scatters of lithics and pottery in the centre of the island with the many axes found suggesting woodland clearance and eventual settlement of the southern plateau.

As sea-levels stabilised into the latter part of the Neolithic flint acquisition and working areas become evident on the coast, places that would have been linked with settlements in the interior by a network of pathways. However, people's movement around the island may have been moderated as the fragmentation of society during the later Neolithic and Early Bronze Age becomes visible through lithic scatters that indicate a move to defensible coastal locations. Across the Armorican Massif and the Channel Islands, arrowheads hint at warfare with the finely worked examples marking the possible status and prestige of archery and those displaying impact damage suggesting possible conflict.

The lithic narrative spills over into the Bronze Age and possibly through into the Iron Age as the presence of a flint industry at settlements dated to this period underline the *longue durée* of materials and practices on Guernsey.

**Towards an Understanding of Martime Connectivity**

The lithic research carried out for this thesis expanded beyond the land boundaries of the island itself, and extended to include maritime connectivity with the adjacent mainland. Based on the character of the island's lithic industry it is no longer tenable to argue a case for any significant phases of maritime isolation for Guernsey during the periods under study. The evidence revealed demonstrates that maritime networks were active from the point that the island of Greater Guernsey came into being, and thenceforth through to the separation of this entity, and the formation of the current pattern of islands. Consequently, although there may well have been an expansion and contraction in populations on Guernsey, and even a depopulation during the Late Mesolithic, there is no indication in the lithic record of island communities undergoing periods of complete isolation. Indeed, the story told by the lithics indicates the contrary with technology and tool typology displaying no significant divergence from developments on the adjacent continental mainland throughout the study period. This thesis has therefore, contributed to, and put Guernsey into context with further strands of maritime evidence that have come to light in the wider region, demonstrating extensive Late Mesolithic and Neolithic sea-faring expertise (e.g. Garrow & Sturt, 2011; Anderson-Whymark *et al*. 2015).

## 9.6 Endnote

It was my intention that the work carried out for this thesis would establish a new benchmark for research into the Mesolithic, Neolithic and Early Bronze Age periods on Guernsey. The path to understanding the lithic data was not always straightforward, there were and are difficulties inherent in working with lithic assemblages on the island, such as their multi-period nature and the *longue durée* of technology and techniques over certain periods, which proved problematic to resolve into a finer grained chronological perspective. However, by integrating the lithic data with various strands of landscape, environmental and climatic information, a much needed synthesis for the archaeology of the island throughout the study period has been achieved. This has taken the archaeological knowledge of Guernsey beyond the previous monument-centric accounts and has situated the island firmly within a broader regional perspective.

I would argue that this thesis has made a significant contribution to the archaeology of Guernsey and the wider region, not only in the lithic domain, but beyond to illuminating the lives of an island community. It is my intention that this work will be taken forward and used together with complementary studies in other material culture domains and environmental research to further understand prehistoric Guernsey.

# Appendix A

Assemblages were divided into five categories as defined by Andrefsky (1998, 76):

- Flake or Blade: any piece with a recognisable ventral and dorsal surface but without evidence of secondary retouch.
- Retouched piece: any flake, blade or piece intentionally modified or retouched.
- Utilised Flake: any flake, blade or piece with gloss or chipping caused by use-wear.
- Cores: a nodule of flint, chert or other material from which flakes have been removed.
- Debris: pieces not comprising any of the above categories, consisting of chips and fragments discarded upon the end of the knapping exercise.

To identify the stages of knapping activities that people were employing at the site flakes are divided into three sub-groups; primary flakes with cortex present across >50% of the dorsal surface, secondary flakes with <50% cortex covering the dorsal surface, and tertiary flakes with no remaining cortex. The relative quantity of cortex remaining on the worked pieces indicates at which stage of the knapping process the flakes were removed, as the initial reduction of a flint pebble typically starts with the removal of a fully corticated flake to prepare a striking platform on the core (Andrefsky 1998, 103). Flakes subsequently removed as the core is reduced will have a decreasing amount of cortex present, ending in the removal of tertiary flakes, those pieces with zero cortex. This metric, it can be argued, is very relevant to Guernsey where small corticated beach pebbles are utilized allowing the reduction sequence to be followed.

For the purposes of this report the flakes are divided up into squat flakes (length/width ratio <1:1), flakes (≥1:1 <1.5:1). Long flakes (≥1.5:1 <2:1) and blades (≥2:1). A bladelet has the same aspect ratio as blades but with a width less than 12mm (Butler 2005, 35). The category of true blades is restricted to those pieces with parallel sides and ridges on the dorsal face, this typically applies to imported blades which require superior flint to that found on the island.

# Appendix B

## B.1 Airport

### B.1.1 Airport Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

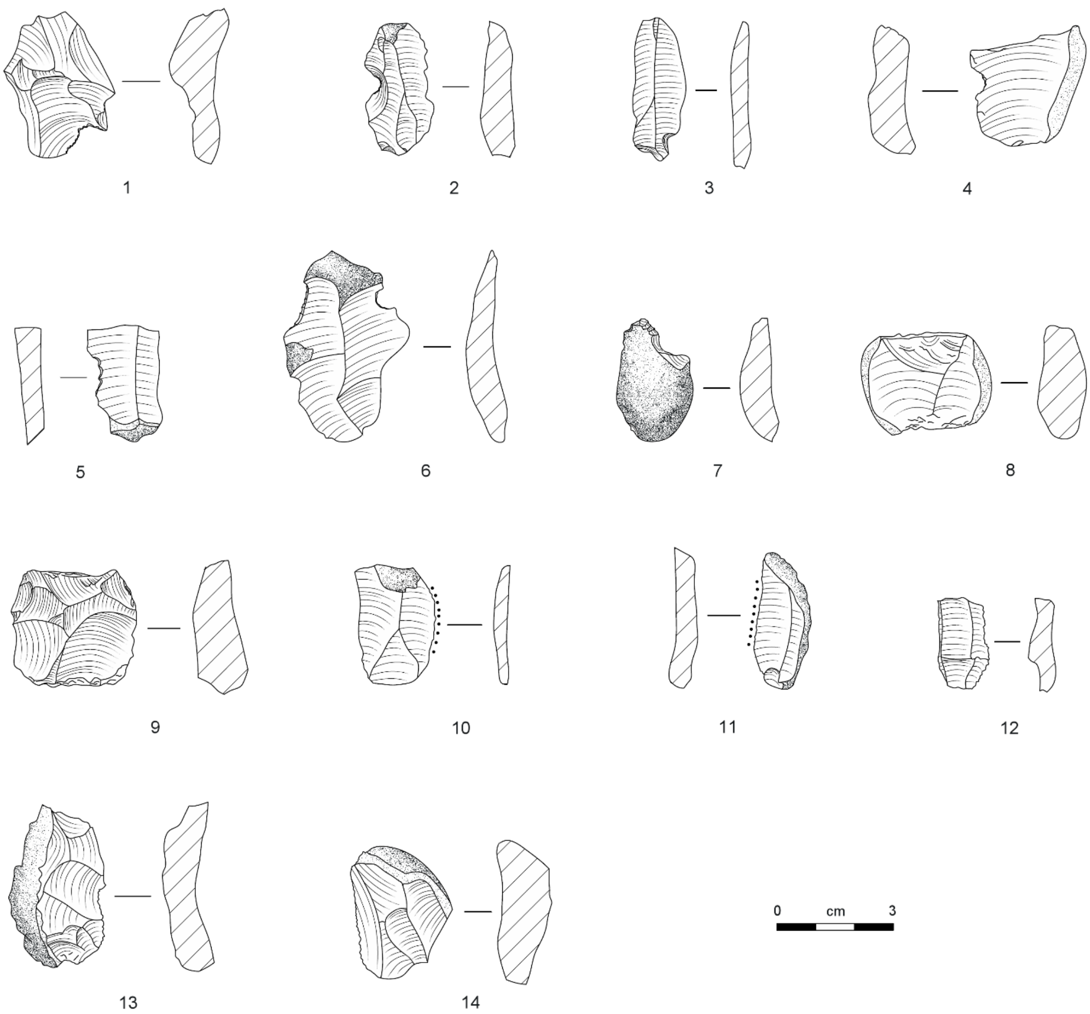



*Figure 85. 1-6, Notched pieces; 7, Piercer/Borer; 8 & 9, Splintered Pieces; 10 & 11, Utilised flakes; 12-14 Microdenticulates.*

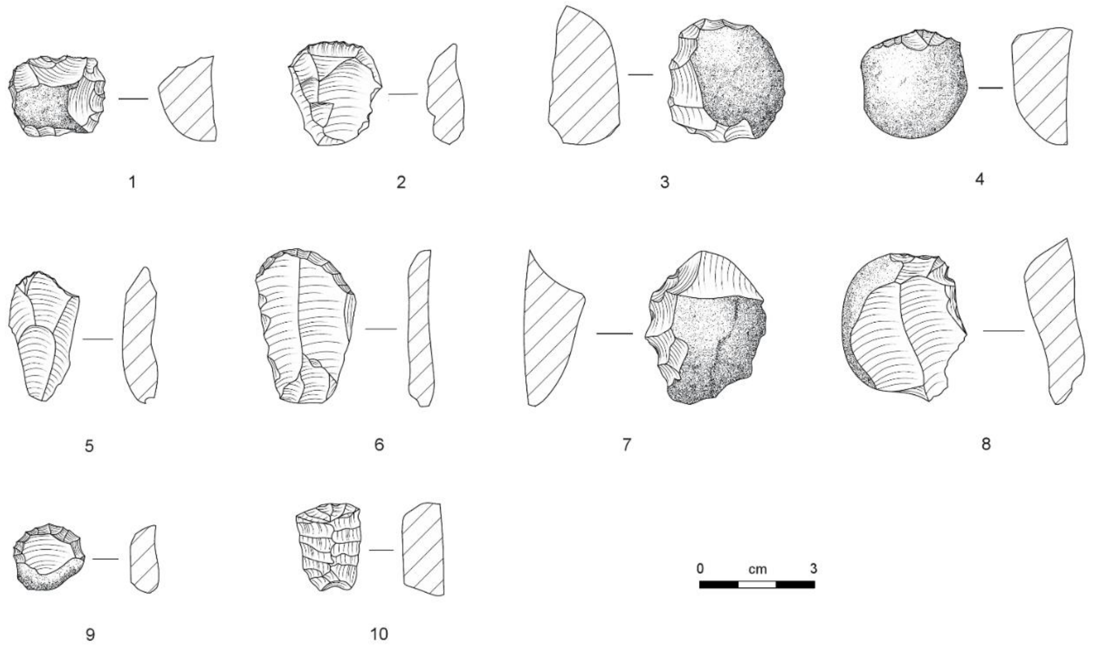



*Figure 86. 1–9 Scrapers; 10, Fragment of Grand Pressigny reworked into a double-ended scraper.*

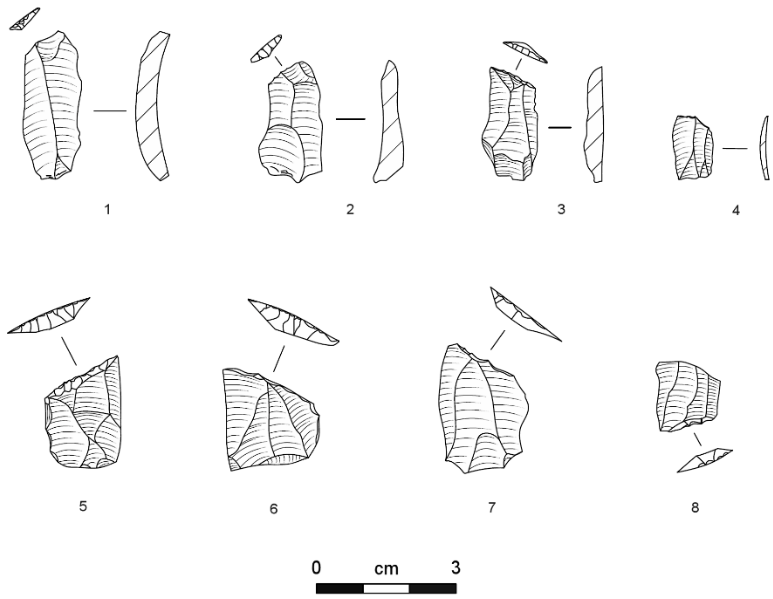



*Figure 87. 1-3, Truncated Bladelets; 4, Microburin; 5-7, Truncated Flakes; 8, Tranchet Arrowhead.*

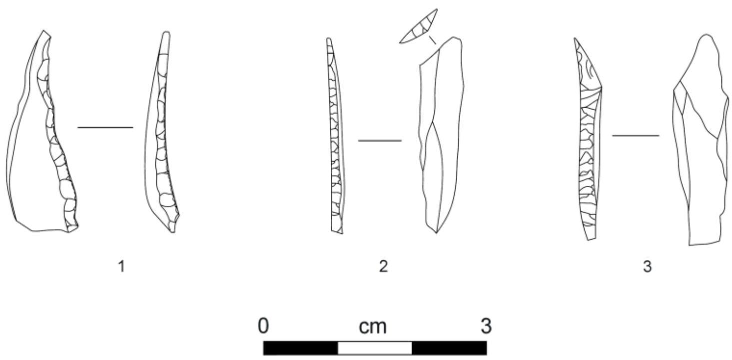



*Figure 88. 1-3, Microliths.*

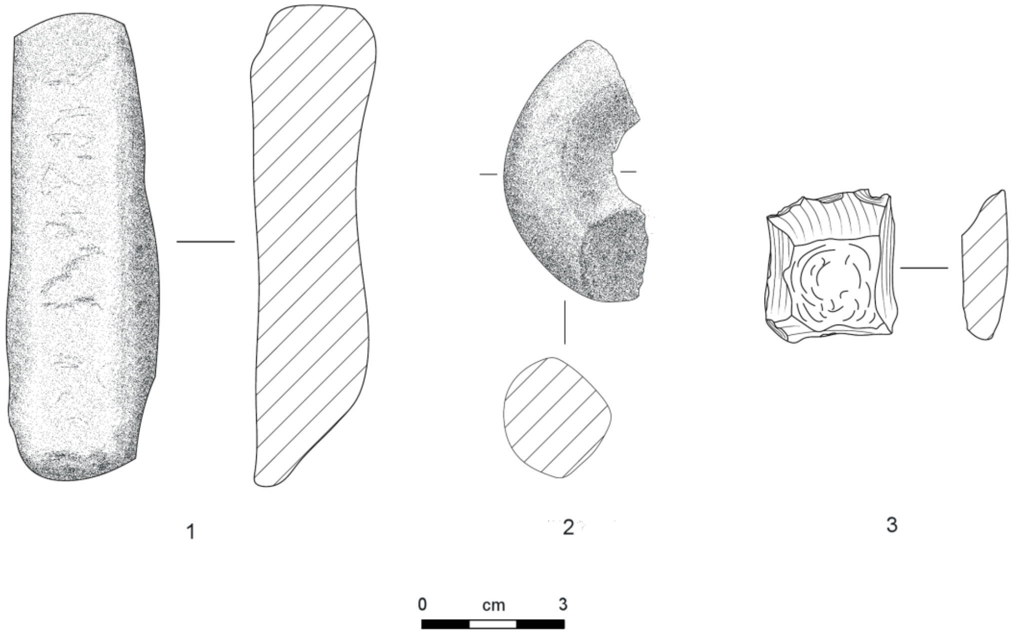
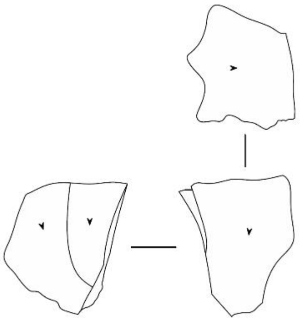
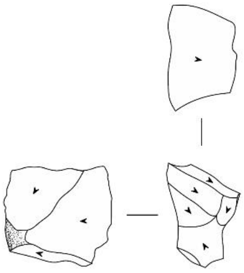
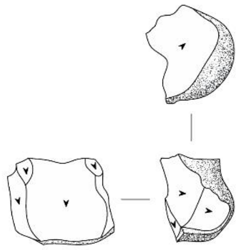


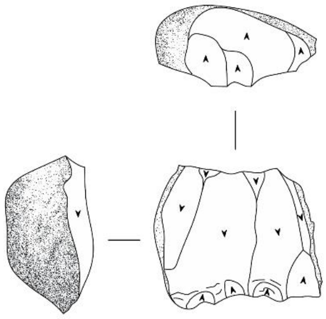

*Figure 89. 1, Elongated Pebble; 2, Fragment of Stone Ring; 3, Gunflint.*

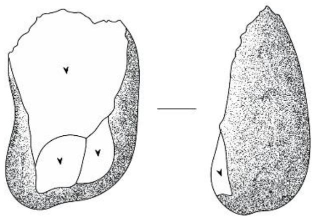
*Figure 90. (Following page) Cores: 1, Single-platform; 2, Multi-platform; 3, Single-platform with lateral removals; 4, Single-platform worked using Bipolar Percussion; 5, Partially worked Chopper Core; 6, Chopper Core; 7 & 8, Bladelet Cores; 9, Flake Core; 10, Bladelet Core; 11 & 12, Platform Tablets; 13, Crested Blade; (arrows indicate flake striking direction).*

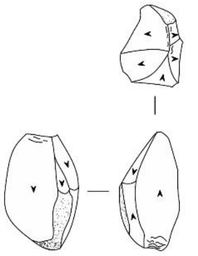

1

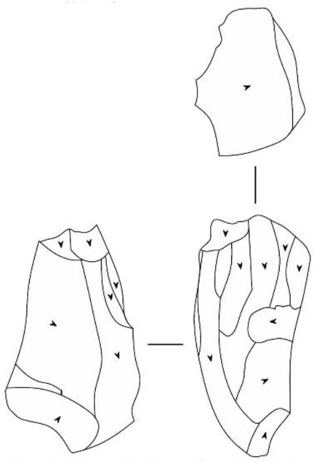

2

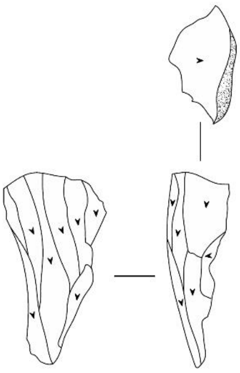

3

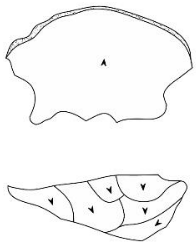

4

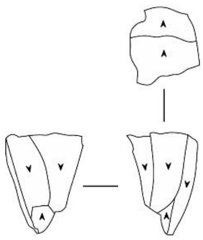

5

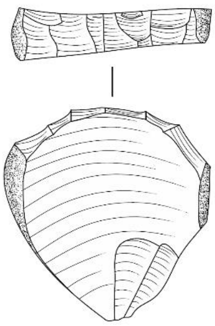

6

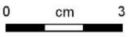

7

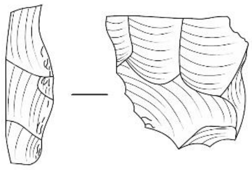

8


9


10


11





12


13

## B.1.2 Airport Assemblage Composition Table

| Airport | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | 3 | 0 | 0 | 4 | 2.8 | **4.3** |
| Single platform | 60 | 3 | 0 | 63 | 44.7 | |
| Multi platform | 59 | 0 | 0 | 59 | 41.9 | |
| Chopper | 14 | 0 | 0 | 14 | 9.9 | |
| Bipolar Opposed | 1 | 0 | 0 | 1 | 0.7 | |
| Bipolar Angular | 0 | 0 | 0 | 0 | 0 | |
| **Total** | | | | **141** | 100 | |
| Core Preparation | 5 | 0 | 0 | **5** | | **0.2** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | 25 | 0 | 0 | 25 | 2.9 | **35.7** |
| Squat flake | 38 | 73 | 51 | 162 | 18.9 | |
| Flake | 105 | 250 | 136 | 491 | 54.5 | |
| Long flake | 28 | 87 | 40 | 155 | 19.4 | |
| Blade | 0 | 8 | 9 | 17 | 1.9 | |
| Bladelet | 1 | 6 | 14 | 21 | 2.4 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| Scanned | | | | 298 | | |
| **Total** | 197 | 424 | 250 | **1169** | | |
| **%** | **21.8** | **49.5** | **28.7** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 24 | 33 | 14 | 71 | 48.7 | **4.4** |
| Notched | 3 | 14 | 5 | 22 | 15 | |
| Retouched flakes | 1 | 2 | 12 | 15 | 10.3 | |
| Utilised flakes | 2 | 6 | 2 | 10 | 6.8 | |
| Microdenticulates | 0 | 6 | 2 | 8 | 5.5 | |
| Truncated flakes | 0 | 0 | 6 | 6 | 4.1 | |
| Splintered pieces | 0 | 4 | 2 | 6 | 4.1 | |
| Piercers | 1 | 1 | 1 | 3 | 2 | |
| Backed blades | 0 | 0 | 3 | 3 | 2 | |
| Arrowheads | 0 | 0 | 1 | 1 | 0.9 | |
| Retouched blades | 0 | 0 | 1 | 1 | 0.6 | |
| **Total** | | | | **146** | | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 141 | 4.3 |
| Core preparation | 5 | 0.2 |
| Flakes and Blades | 1169 | 35.7 |
| Retouched Pieces | 146 | 4.4 |
| Debris | 1813 | 55.4 |
| **Total** | **3274** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Platform Prep | 52 | 6.1 |
| Imported | 1 | 0.1 |
| Patinated | 15 | 0.5 |
| Burnt | 174 | 5.3 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 36 | 26.2 |

*Table 28. Airport Assemblage.*

# B.2 Royal Hotel

## B.2.1 Royal Hotel Lithic Images

A full selection of drawings appears in the 2011 *Report and Transactions of La Société Guernesiaise* (Sebire 2012).

## B.2.2 Royal Hotel Assemblage Composition Table

| Royal Hotel | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | | | | 16 | 22.8 | |
| Single platform | 24 | 6 | 0 | 30 | 42.8 | |
| Multi platform | 13 | 0 | 0 | 13 | 18.6 | |
| Bipolar angular | 5 | 1 | 0 | 6 | 8.6 | **2.8** |
| Discoidal | 3 | 0 | 0 | 3 | 4.3 | |
| Chopper | 2 | 0 | 0 | 2 | 2.9 | |
| **Total** | | | | **70** | **100** | |
| Core Preparation | | | | 6 | | **0.8** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter | 21 | | | 21 | 3.2 | |
| Squat flake | 34 | 56 | 36 | 126 | 18.3 | |
| Flake | 125 | 159 | 114 | 398 | 57.8 | |
| Long flake | 20 | 31 | 35 | 86 | 12.5 | |
| Blade | 2 | 4 | 17 | 23 | 3.3 | **27.9** |
| Bladelet | 2 | 7 | 24 | 33 | 4.8 | |
| True blade | 0 | 0 | 1 | 1 | 0.1 | |
| **Total** | 204 | 257 | 227 | **688** | **100** | |
| **%** | **29.6** | **37.3** | **33.1** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scraper | 51 | 17 | 8 | 76 | 73.2 | |
| Splintered piece | 4 | 5 | 3 | 12 | 11.5 | |
| Piercers | 1 | 2 | 0 | 3 | 2.9 | |
| Backed blade | 0 | 2 | 1 | 3 | 2.9 | |
| Retouched flake | 0 | 1 | 2 | 3 | 2.9 | |
| Denticulate | 0 | 0 | 2 | 2 | 1.9 | **4.2** |
| Retouched blade | 0 | 0 | 2 | 2 | 1.9 | |
| Notched | 1 | 1 | 0 | 2 | 1.9 | |
| Trans A'head | 0 | 0 | 1 | 1 | 0.9 | |
| **Total** | | | | **104** | | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 688 | 27.9 |
| Core preparation | 104 | 4.2 |
| Flakes and Blades | 70 | 2.8 |
| Retouched Pieces | 11 | 0.5 |
| Debris | 1592 | 64.6 |
| **Total** | **2465** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Platform | 30 | 5.8 |
| Imported | 3 | 0.12 |
| Patinated | 6 | 0.25 |
| **Burnt** | 43 | 2.2 |
| **Cores** | **No** | **%** |
| Anvil knapped | 10 | 18.5 |

*Table 29. Royal Hotel Assemblage.*

# B.3 Albecq

## B.3.1 Albecq Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

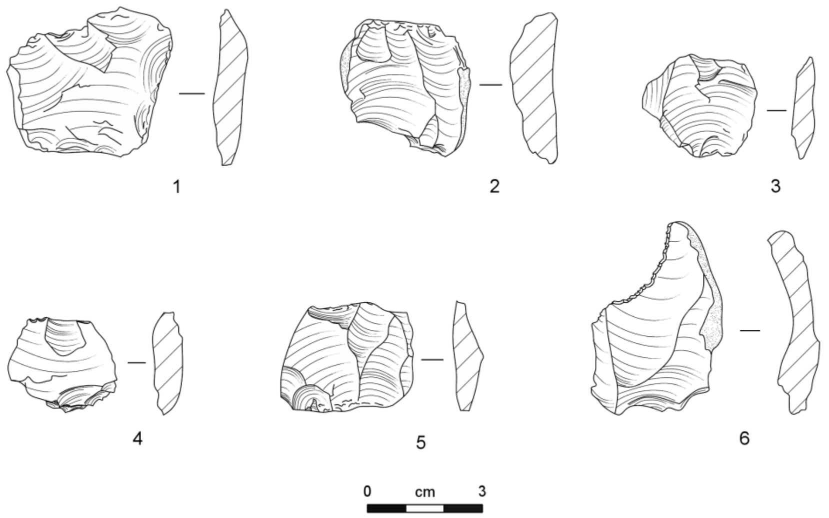



*Figure 91. 1-5, Splintered Pieces; 6, Microdenticulate.*

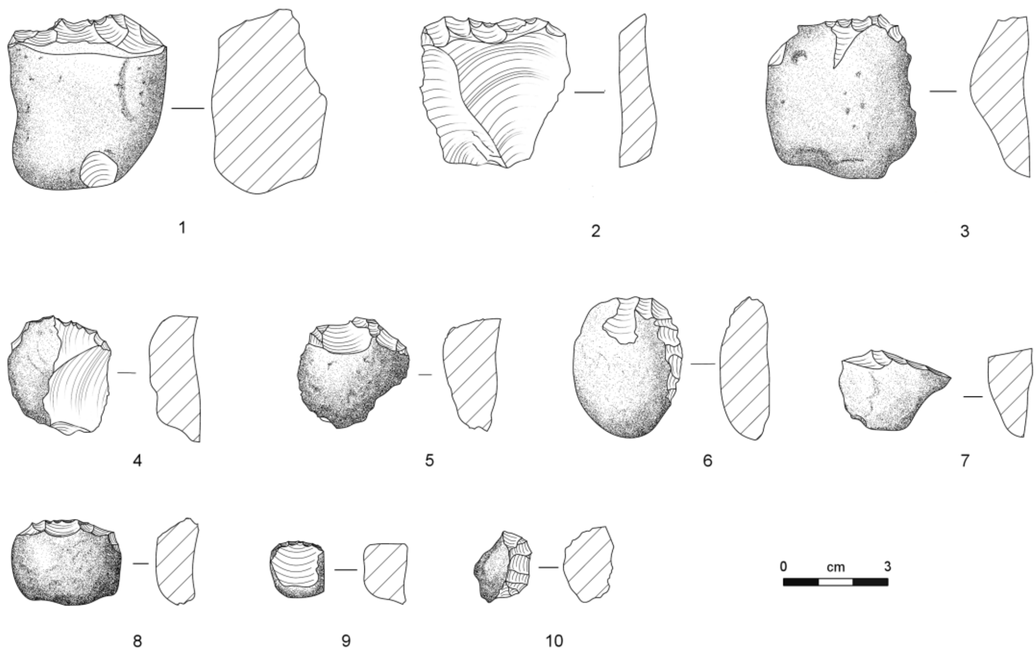



*Figure 92. 1–10 Scrapers.*


*Figure 93. Cores: 1, 2 & 3, Single-platform; 4, Single-platform bipolar knapped; 5, Multi-platform; 6 & 7, Chopper Cores; 8, Worked out single-platform core; (arrows indicate flake striking direction).*

## B.3.2 Albecq Assemblage Composition Table

| Albecq | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | 20 | 0 | 0 | 20 | 23.7 | |
| Single platform | 23 | 0 | 0 | 23 | 27.3 | |
| Multi platform | 34 | 0 | 0 | 34 | 37.1 | |
| Chopper | 5 | 0 | 0 | 5 | 5.9 | **4.3** |
| Bipolar Opposed | 2 | 0 | 0 | 2 | 2.4 | |
| Discoidal | 2 | 0 | 0 | 2 | 2.4 | |
| Bipolar Angular | 1 | 0 | 0 | 1 | 1.2 | |
| **Total** | | | | **84** | 100 | |
| Core Preparation | 1 | | | **1** | | **0.2** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter | 56 | | | 56 | 13.3 | |
| Squat flake | 28 | 48 | 23 | 99 | 23.6 | |
| Flake | 69 | 92 | 33 | 194 | 46.3 | |
| Long flake | 20 | 28 | 15 | 63 | 15 | **24.1** |
| Blade | 0 | 2 | 2 | 4 | 0.9 | |
| Bladelet | 0 | 0 | 4 | 4 | 0.9 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| <25 Bags | | | | 52 | | |
| **Total** | 173 | 170 | 77 | **472** | 100 | |
| **%** | **41.2** | **40.4** | **18.4** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 3 | 7 | 1 | 11 | 56.3 | |
| Splintered pieces | 1 | 3 | 2 | 6 | 37.5 | **0.9** |
| Microdenticulates | 0 | 1 | 0 | 1 | 6.2 | |
| **Total** | | | | **18** | **100** | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 84 | 4.3 |
| Core preparation | 1 | 0.1 |
| Flakes and Blades | 472 | 24.1 |
| Retouched Pieces | 18 | 0.9 |
| Debris | 1381 | 70.6 |
| **Total** | **1956** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Platform | 7 | 2 |
| Imported | 0 | 0 |
| Ptinated | 1 | 0.05 |
| Burnt | 1 | 0.05 |
| **Cores** | **No** | **%** |
| Anvil knapped | 9 | 14 |

*Table 30. Albecq Assemblage.*

# B.4 Route de Carteret

## B.4.1 Route de Carteret Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

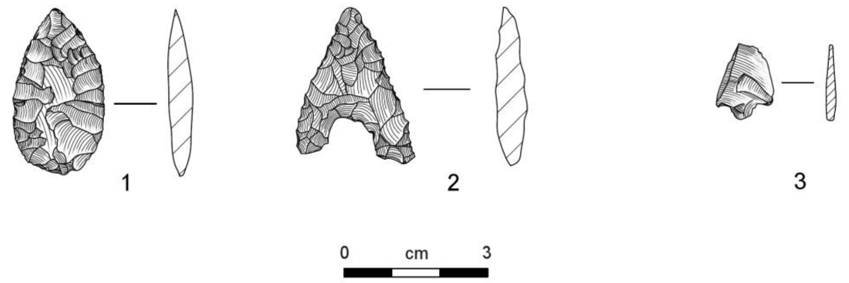



*Figure 94. 1, Leaf Arrowhead; 2, Hollow Base Arrowhead; 3 Probable Barbed and Tanged Arrowhead.*

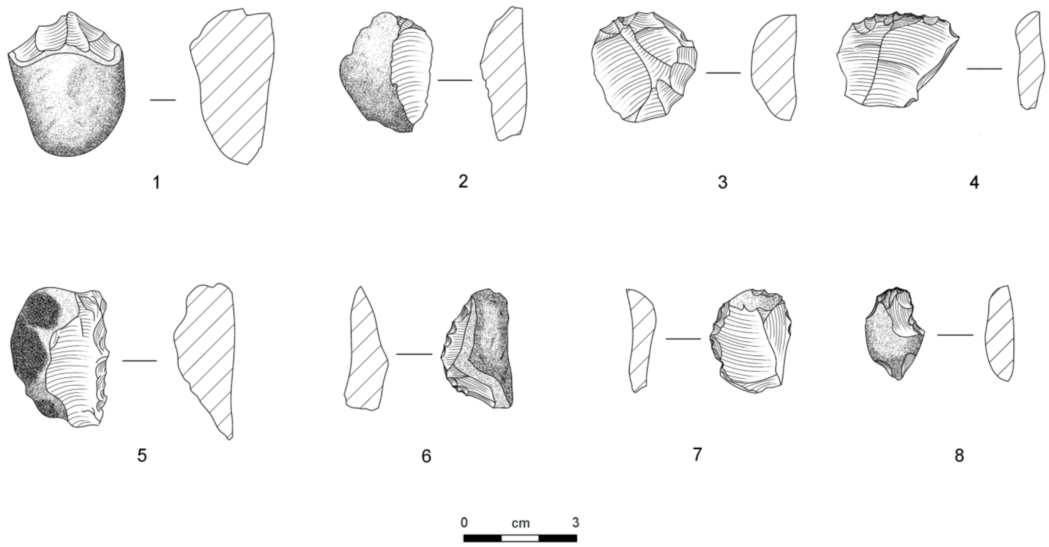



*Figure 95. 1, End Scraper, 2, End and Side Scraper, 3 & 4, End Scrapers; 5, 6 & 7, Side Scrapers; 8, Scraper/Notched Piece.*

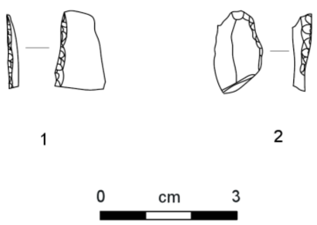



*Figure 96. 1 & 2, Microliths*

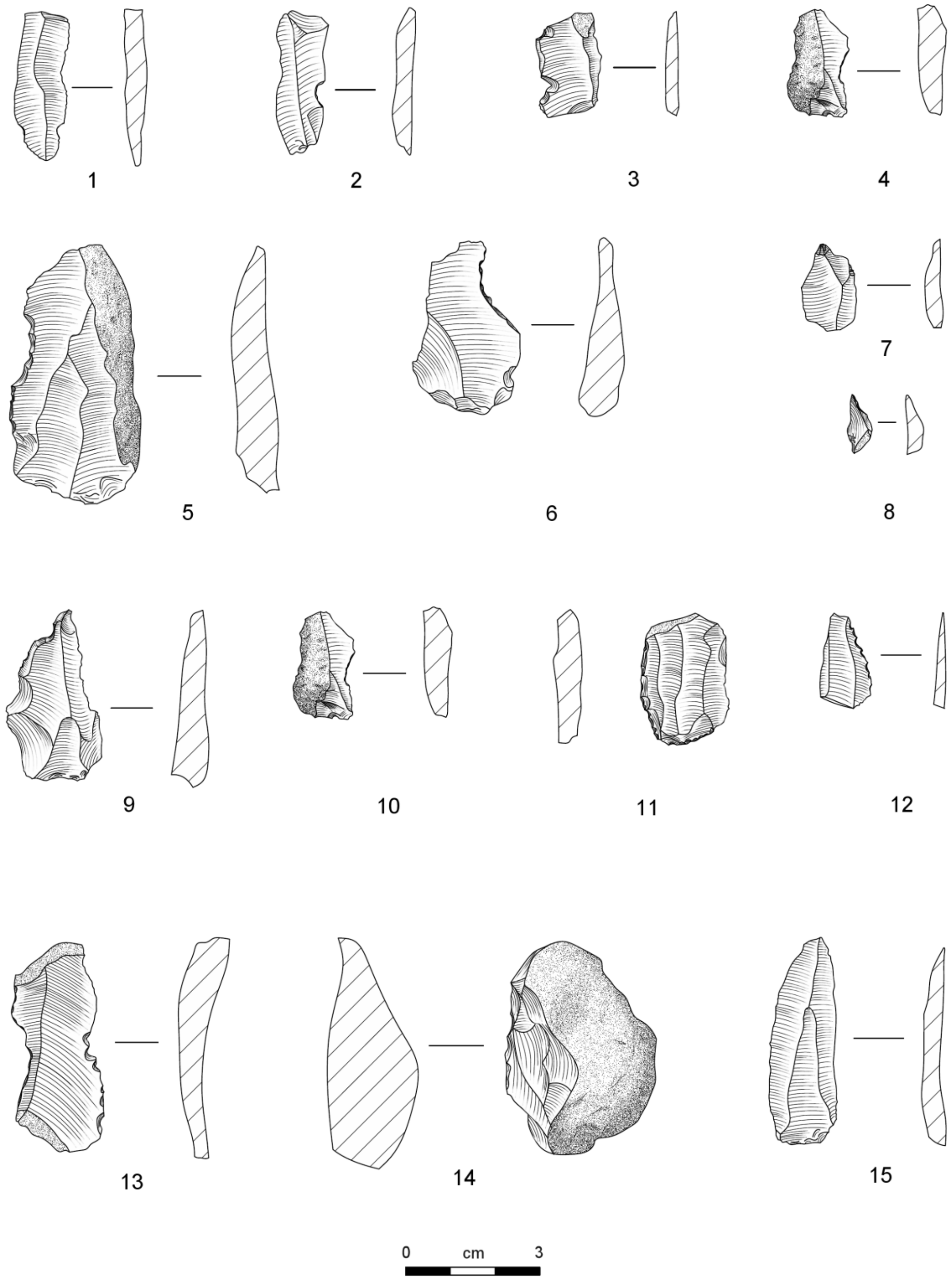



*Figure 97. 1-6, Notched Pieces; 7 & 8, Borers; 9 & 10, Retouched Flakes, 11, Retouched Piece/Scraper; 12, 13 & 14, Retouched Flakes; 15, Blade.*

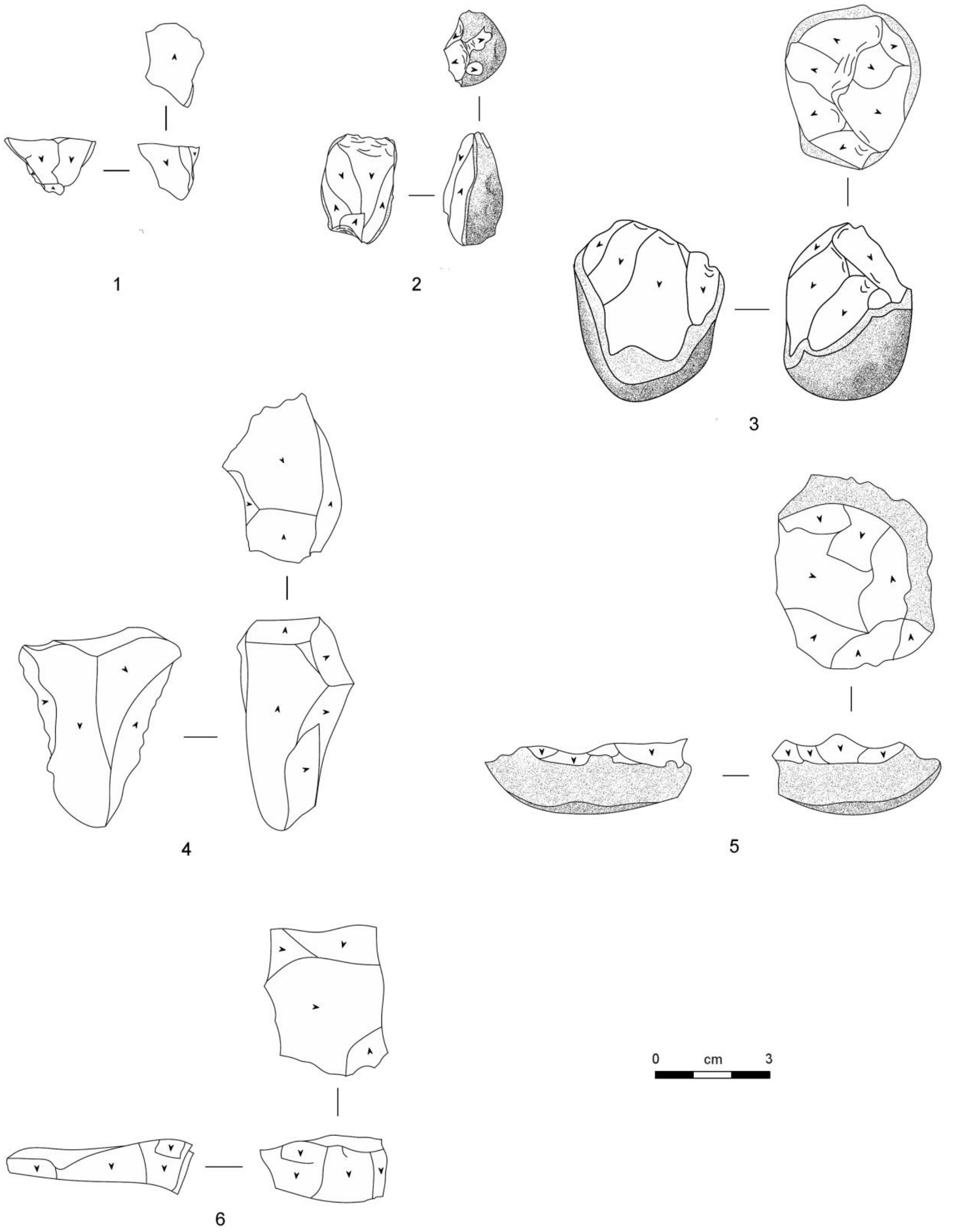



*Figure 98. Cores: 1, Unipolar; 2 & 3, Chopper (Percussion-on-Anvil); 4, Multipolar; 5, Unipolar on Flake; 6, Platform Tablet. (Arrows indicate flake striking direction).*

## B.4.2 Route de Carteret Assemblage Composition Table

| Route de Carteret | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | | | | 11 | 10.6 | |
| Multi platform | 47 | 0 | 1 | 48 | 46.1 | |
| Single platform | 28 | 0 | 0 | 28 | 26.9 | |
| Chopper/Cortex | 11 | 0 | 0 | 11 | 10.6 | **5.6** |
| Bipolar Opposed | 3 | 0 | 0 | 3 | 2.9 | |
| Discoidal | 3 | 0 | 0 | 3 | 2.9 | |
| **Total** | | | | **104** | 100 | |
| Core Preparation | | | | 3 | | **0.1** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter | 21 | | | 21 | 5.3 | |
| Squat flake | 27 | 35 | 32 | 94 | 23.8 | |
| Flake | 41 | 75 | 44 | 160 | 40.7 | |
| Long flake | 18 | 32 | 34 | 84 | 21.3 | |
| Blade | 0 | 5 | 14 | 19 | 4.8 | **25.1** |
| Bladelet | 0 | 3 | 12 | 15 | 3.7 | |
| True blade | 0 | 0 | 1 | 1 | 0.4 | |
| <25 bags | | | | 63 | | |
| **Total** | 107 | 150 | 137 | **457** | 100 | |
| **%** | **25.3** | **38.4** | **36.3** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scraper | 7 | 9 | 5 | 21 | 41.3 | |
| Notched | 0 | 3 | 4 | 7 | 13.8 | |
| Splintered Piece | 1 | 4 | 1 | 6 | 11.8 | |
| Retouched flake | 1 | 2 | 3 | 6 | 11.8 | |
| Denticulate | 1 | 1 | 0 | 2 | 3.9 | |
| B&T A'head | 0 | 0 | 2 | 2 | 3.9 | **3** |
| Backed blade | 0 | 0 | 2 | 2 | 3.9 | |
| Retouched blade | 0 | 1 | 1 | 2 | 3.9 | |
| Piercers | 0 | 0 | 1 | 1 | 1.9 | |
| Trans A'Head | 0 | 0 | 1 | 1 | 1.9 | |
| Leaf | 0 | 0 | 1 | 1 | 1.9 | |
| **Total** | | | | **51** | **100** | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 104 | 5.6 |
| Core preparation | 3 | 0.1 |
| Flakes and Blades | 457 | 24.6 |
| Retouched Pieces | 51 | 2.8 |
| Debris | 1241 | 66.9 |
| **Total** | **1856** | 100 |

| Misc | No | % Flakes |
|---|---|---|
| Platform | 38 | 14.5 |
| Imported | 0 | 0 |
| Patinated | 2 | 0.1 |
| Burnt | 19 | 1.7 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 16 | 17.2 |

*Table 31. Route de Carteret Assemblage.*

# B.5 La Plaiderie

## B.5.1 La Plaiderie Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

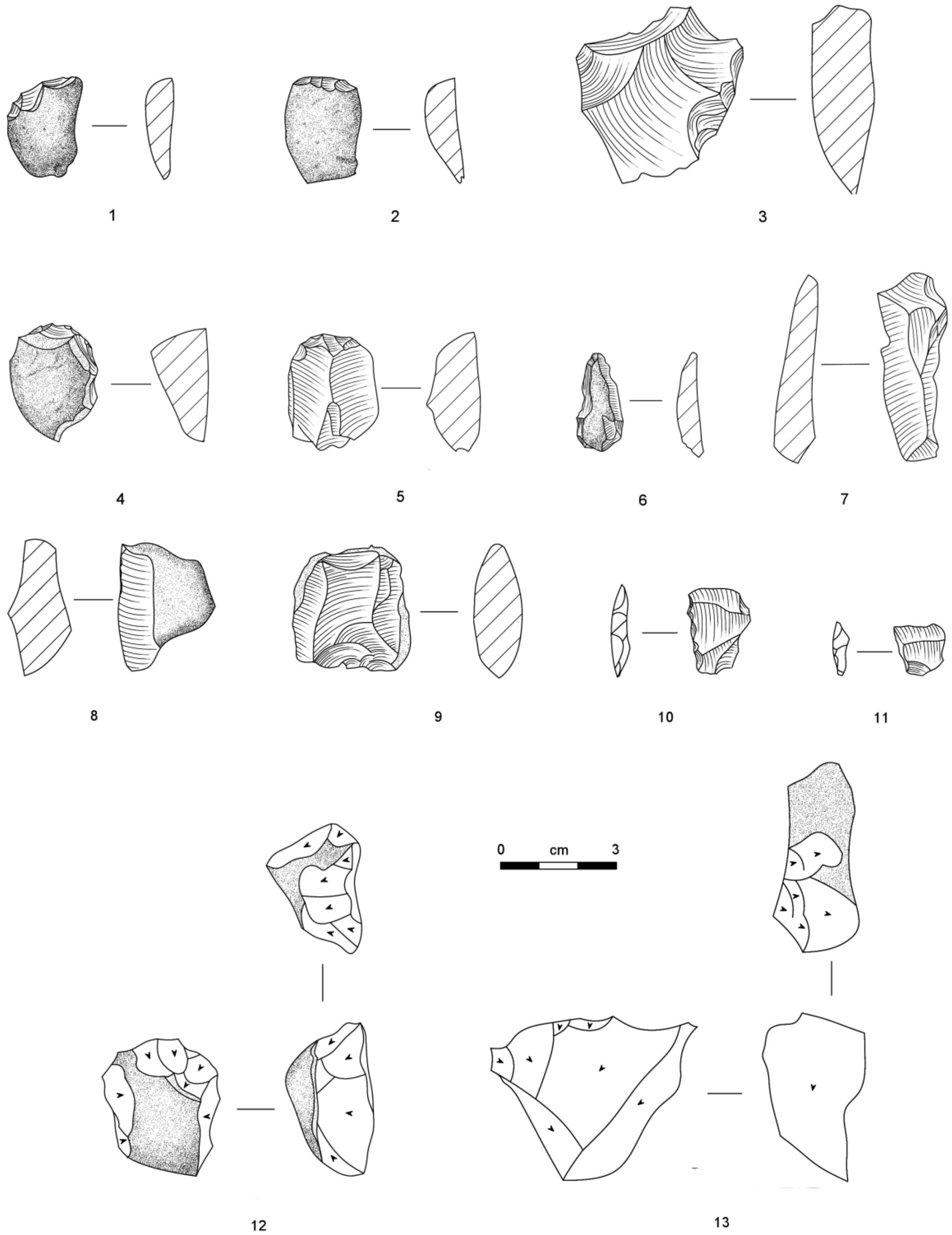
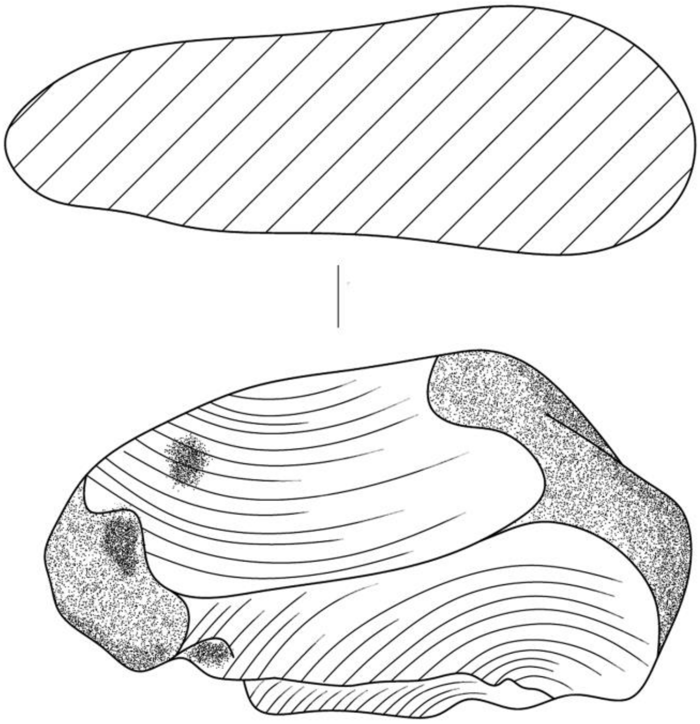
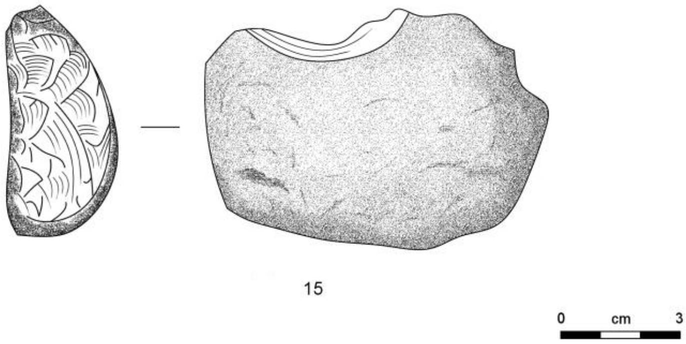



*Figure 99. 1 & 2, End Scrapers; 3, Nose Scraper; 4, End and Side Scraper; 5, End Scraper; 6, Piercer; 7, Notched Piece, 8, Retouched Flake; 9, Splintered Piece; 10 & 11, Transverse Arrowhead; 12,Single Platform Core; 13, Multi-platform Core (Arrows indicate flake striking direction).*



14




15

*Figure 100. 14, Large Worked Flint Pebble; 15, Hammerstone.*

## B.5.2 La Plaiderie Assemblage Composition Table

| La Plaiderie | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | 5 | | | 5 | 11.9 | |
| Multi platform | 31 | 0 | 0 | 31 | 73.8 | |
| Single platform | 3 | 0 | 0 | 3 | 7.1 | |
| Chopper/Cortex | 2 | 0 | 0 | 2 | 4.8 | |
| Discoidal | 1 | 0 | 0 | 1 | 2.4 | **4.7** |
| **Total** | | | | **42** | 100 | |
| Core Preparation | | | | 0 | | **0** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter | 9 | | | 9 | 8.6 | |
| Squat flake | 6 | 9 | 7 | 22 | 21.1 | |
| Flake | 13 | 33 | 12 | 58 | 55.8 | |
| Long flake | 5 | 3 | 6 | 14 | 13.5 | |
| Blade | 0 | 0 | 0 | 0 | 0 | **22** |
| Bladelet | 1 | 0 | 0 | 1 | 1 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| <25 Bags | | | | 91 | | |
| **Total** | 34 | 45 | 25 | **195** | | |
| **%** | **32.7** | **43.3** | **24** | 104 | **100** | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 14 | 4 | 2 | 20 | 50 | |
| Utilised | 0 | 2 | 4 | 6 | 15 | |
| Splintered piece | 0 | 6 | 0 | 6 | 15 | |
| Retouched flake | 0 | 2 | 1 | 3 | 7.4 | |
| Transverse | 0 | 0 | 2 | 2 | 5.1 | |
| Piercers | 0 | 1 | 0 | 1 | 2.5 | **4.5** |
| Microdenticulate | 0 | 0 | 1 | 1 | 2.5 | |
| Notched | 0 | 1 | 0 | 1 | 2.5 | |
| **Total** | | | | **40** | 100 | |

| **Summary** | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 42 | 4.7 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 195 | 22 |
| Retouched Pieces | 40 | 4.5 |
| Debris | 611 | 68.8 |
| **Total** | **888** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Burnt | 25 | 2.8 |
| Platform Prep | 1 | 0.5 |
| Imported | 0 | 0 |
| Patinated | 9 | 1 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 8 | 21.6 |

*Table 32. La Plaiderie Assemblage.*

# B.6 Rousse Tower

## B.6.1 Rousse Tower Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

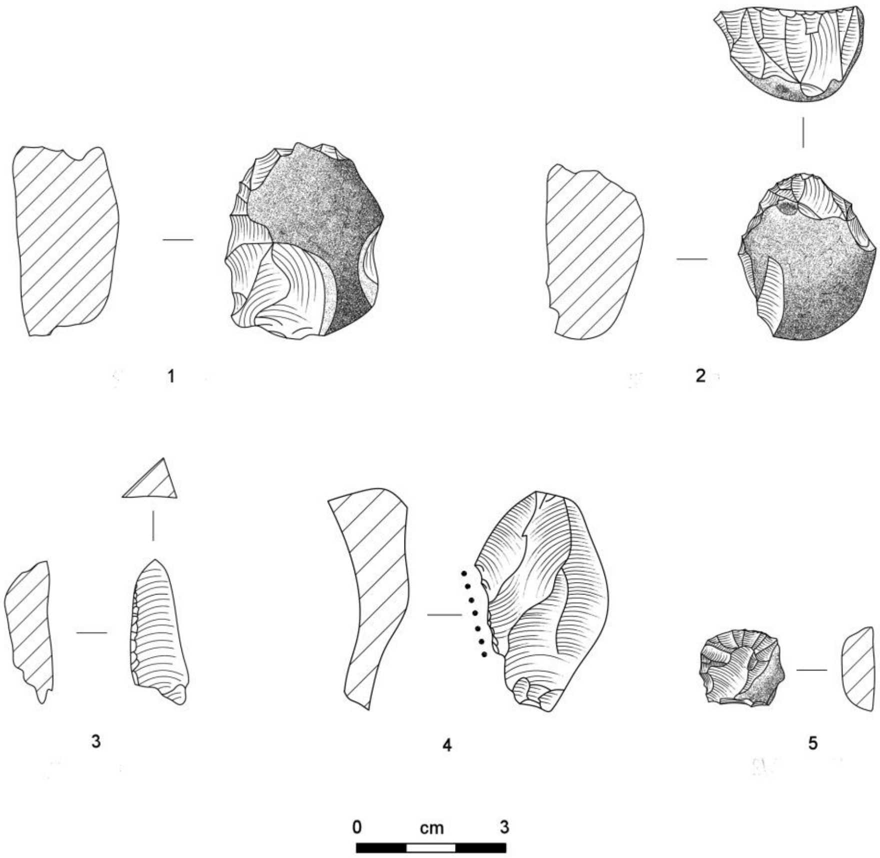



*Figure 101. Retouched flints: 1, 2, 3& 5 RT15; 4, 6 & 8 RT93.*

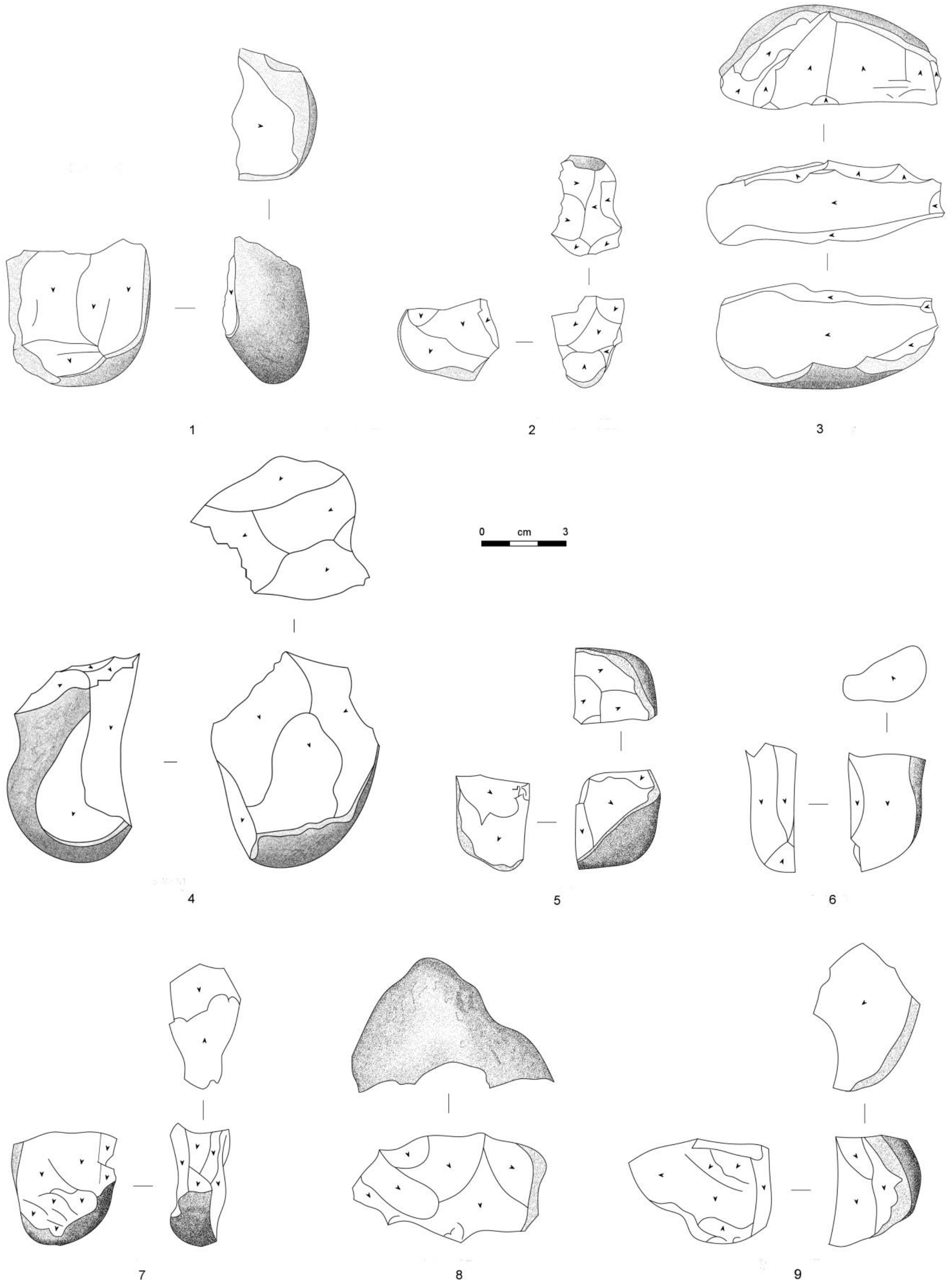



*Figure 102. Cores: 1-4 RT15; 5-9, RT93.*

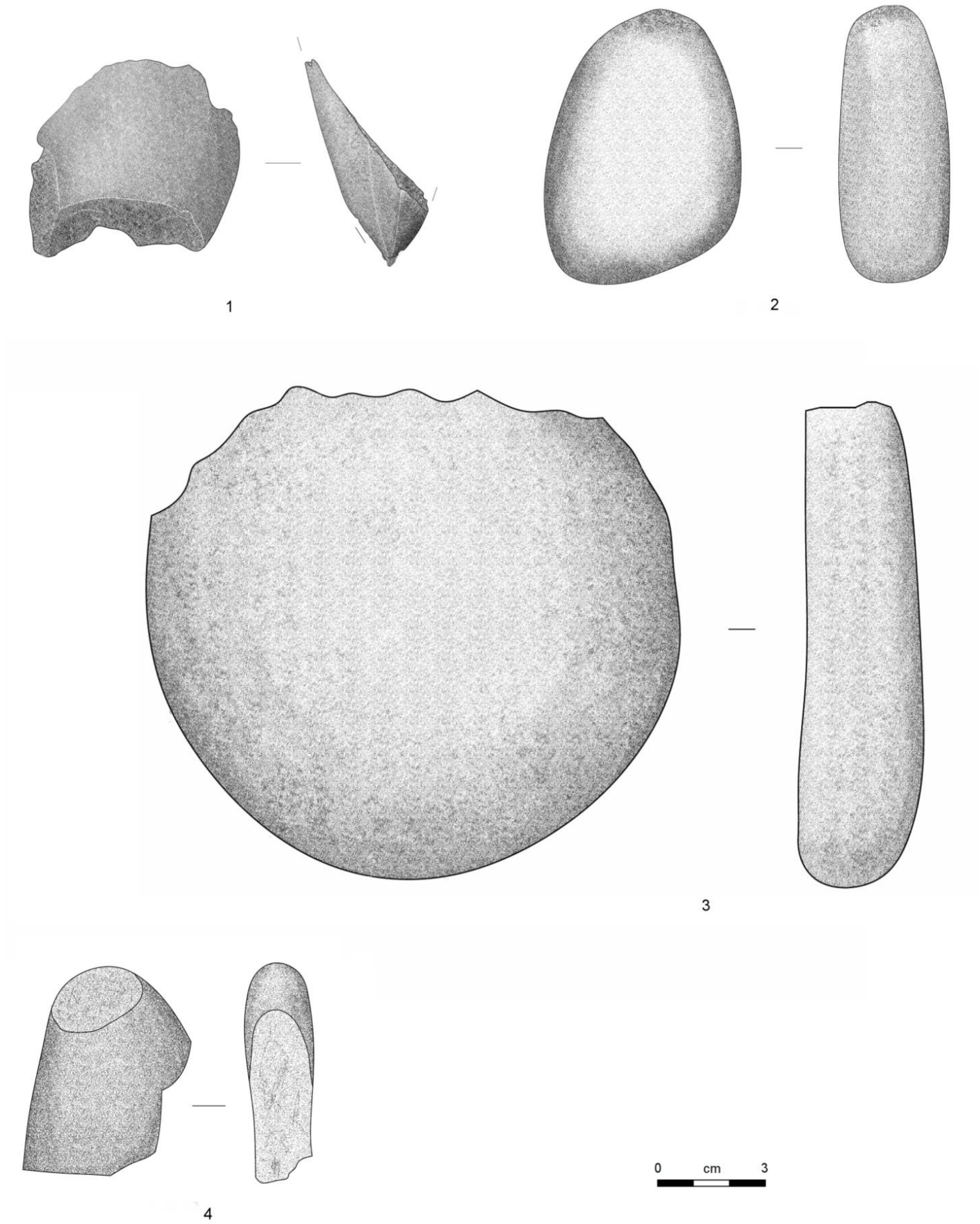



*Figure 103. Stone artefacts: 1-3, RT15; 4, RT93.*

## B.6.2 Rousse Tower Assemblage Composition Table

| Rousse Tower | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | | | | 5 | 13.5 | **4.6** |
| Single-platform | 14 | 0 | 0 | 14 | 37.8 | |
| Multi-platform | 13 | 0 | 0 | 13 | 35.2 | |
| Chopper/Cortex | 5 | 0 | 0 | 5 | 13.5 | |
| **Total** | | | | **37** | 100 | |
| Core Preparation | | | | 0 | | **0** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tiertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | 18 | | | 18 | 8.3 | **26.7** |
| Squat flake | 18 | 31 | 10 | 59 | 27.3 | |
| Flake | 29 | 45 | 17 | 91 | 42.1 | |
| Long flake | 16 | 22 | 8 | 46 | 21.3 | |
| Blade | 0 | 0 | 0 | 0 | 0 | |
| Bladelet | 0 | 2 | 0 | 2 | 1 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 81 | 100 | 35 | **216** | | |
| **%** | **37.5** | **46.3** | **16.2** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tiertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 3 | 2 | 0 | 5 | 41.7 | **1.4** |
| Utilised | 0 | 2 | 0 | 2 | 16.7 | |
| Splintered piece | 0 | 2 | 0 | 2 | 16.7 | |
| Retouched flake | 0 | 1 | 0 | 1 | 8.3 | |
| Tranchet Arrowhead | 0 | 0 | 1 | 1 | 8.3 | |
| Notched | 0 | 1 | 0 | 1 | 8.3 | |
| **Total** | | | | **12** | 100 | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 37 | 4.6 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 216 | 26.7 |
| Retouched Pieces | 12 | 1.4 |
| Debris | 545 | 67.3 |
| **Total** | **810** | 100 |

| Misc | No | % |
|---|---|---|
| Burnt | 5 | 0.6 |
| Platform Prep | 3 | 1.4 |
| Imported | 0 | 0 |
| Patinated | 3 | 0.3 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 4 | 12.5 |

*Table 33. Rousse Tower Assemblage.*

# B.7 Savoy Hotel

## B.7.1 Savoy Hotel Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.


*Figure 104. 1-3, Unipolar Cores; 4-6, Multipolar Cores; 7-9, Chopper Cores.*

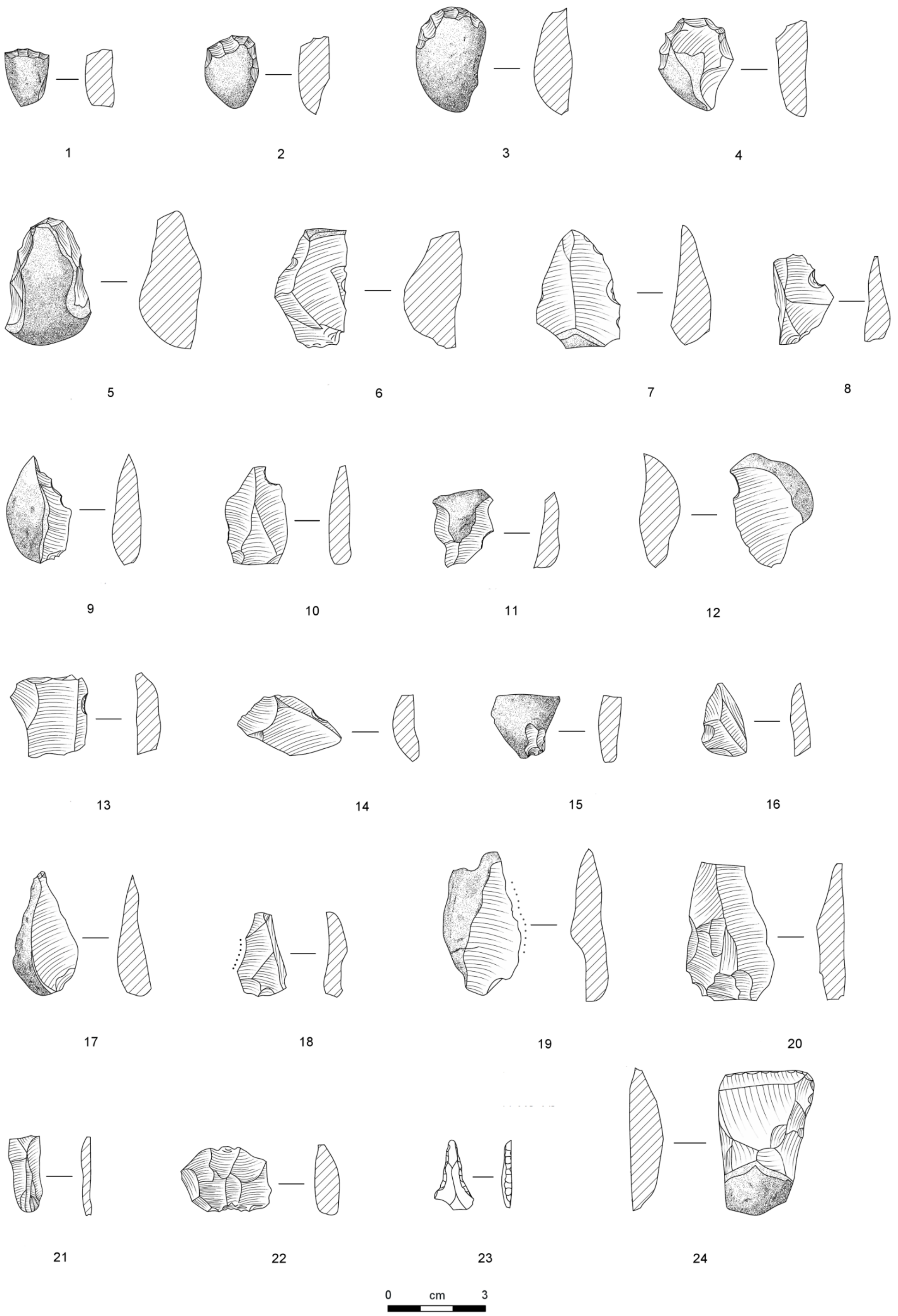



*Figure 105 (previous page). 1-6, Scrapers; 7-14, Notched Pieces; 15, Piercer/Scraper; 16, Piercer (Cinglais flint); 17, Piercer; 18 & 19, Utilised Pieces; 20, Blade Fragment (Small Find 6); 21, Bladelet; 22, Piece Esquillée; 23, Microlith; 24, Tranchet Axe.*

## B.7.2 Savoy Hotel Assemblage Composition Table

| Savoy Hotel | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | | | | 0 | 0 | |
| Single platform | 7 | 0 | 0 | 7 | 46.7 | |
| Multi platform | 5 | 0 | 0 | 5 | 33.3 | |
| Chopper/Cortex | 2 | 0 | 0 | 2 | 13.3 | **3.4** |
| Opposed | 1 | 0 | 0 | 1 | 6.7 | |
| **Total** | | | | **15** | 100 | |
| Core Preparation | | | | 0 | | **0** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter | 4 | | | 4 | 3 | |
| Squat flake | 7 | 23 | 12 | 42 | 31.6 | |
| Flake | 12 | 37 | 11 | 60 | 45.1 | |
| Long flake | 5 | 12 | 4 | 21 | 15.8 | |
| Blade | 0 | 0 | 0 | 0 | 0 | **30.6** |
| Bladelet | 0 | 0 | 6 | 6 | 4.5 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 28 | 72 | 33 | **133** | | |
| **%** | **21.1** | **54.1** | **24.8** | 100 | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Notched | 0 | 5 | 3 | 8 | 33.4 | |
| Scrapers | 5 | 2 | 0 | 7 | 29.1 | |
| Splintered piece | 0 | 3 | 1 | 4 | 16.8 | **5.5** |
| Utilised | 0 | 2 | 1 | 3 | 12.5 | |
| Tranchet axe | 0 | 2 | 0 | 1 | 4.1 | |
| Microlith | 0 | 0 | 1 | 1 | 4.1 | |
| **Total** | | | | **24** | 100 | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 15 | 3.4 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 133 | 30.6 |
| Retouched Pieces | 24 | 5.5 |
| Debris | 262 | 60.5 |
| **Total** | **434** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Burnt | 34 | 7.8 |
| Platform Prep | 8 | 6 |
| Imported | 1 | 0.2 |
| Patinated | 1 | 0.2 |
| **Cores** | **No** | **%** |
| Anvil knapped | 2 | 13.3 |

*Table 34. Savoy Hotel Assemblage.*

# B.8 The Tranquesous

## B.8.1 The Tranquesous Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

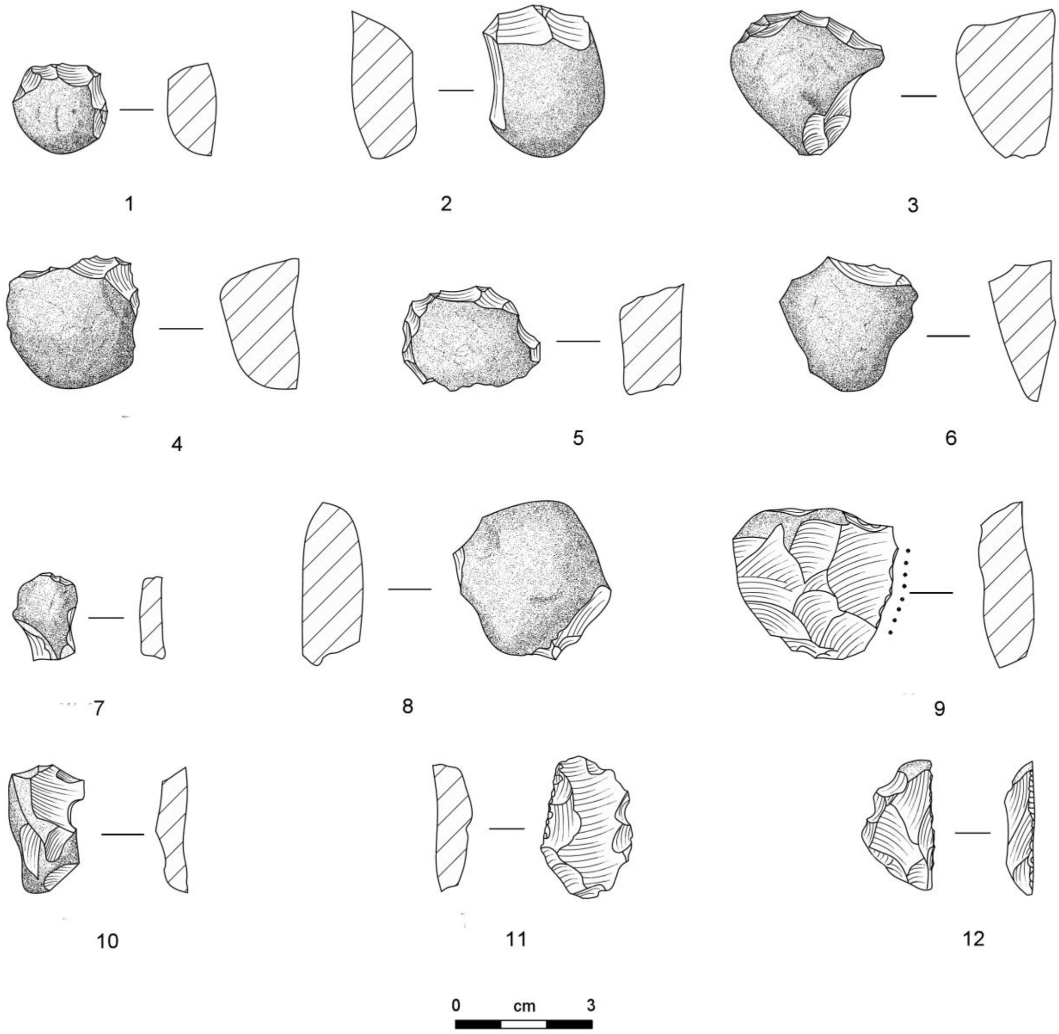



*Figure 106 (2014 finds). 1-8, Scrapers; 9, Utilised Flake; 10, Notched Flake; 11 & 12, Retouched Flakes.*

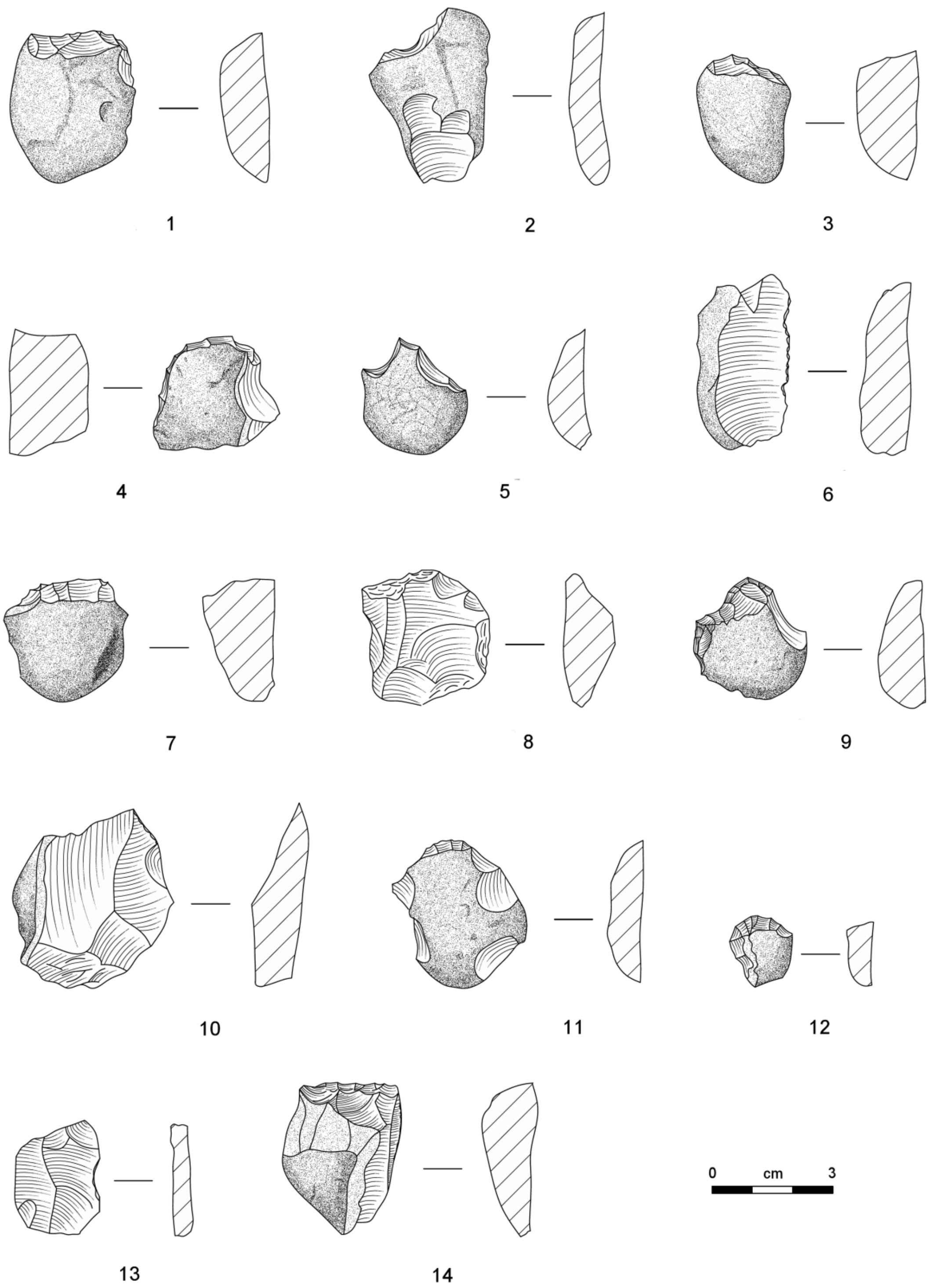



*Figure 107 (1993 finds). 1, 3, 4, 7, 8, 11 & 12, Scrapers; 2, Concave Scraper; 5 & 9, Nose Scrapers; 10, Retouched Flake; 13, Notched Flake, 14, Retouched Flake.*

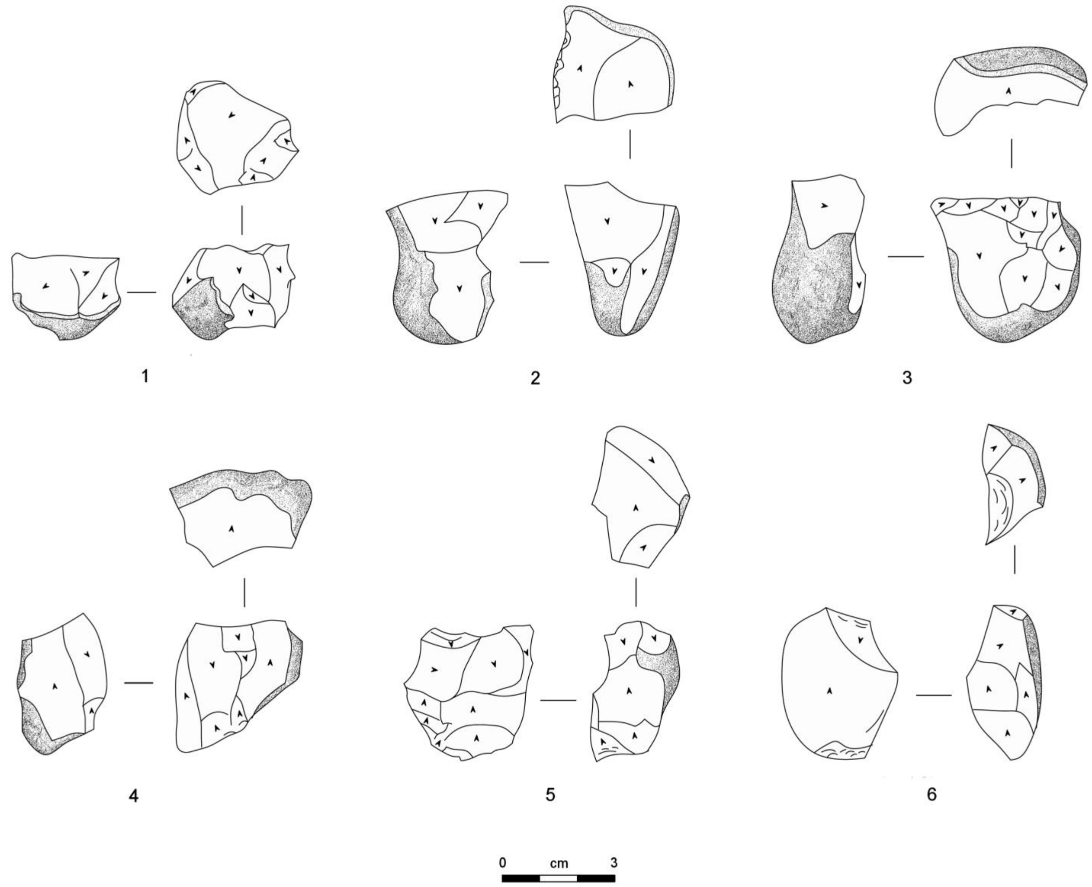



*Figure 108 (2014 finds). 1 4, 5 & 6, Multi-Platform Cores; 2, Single Platform Core/Scraper; 3, Single Platform Core.*

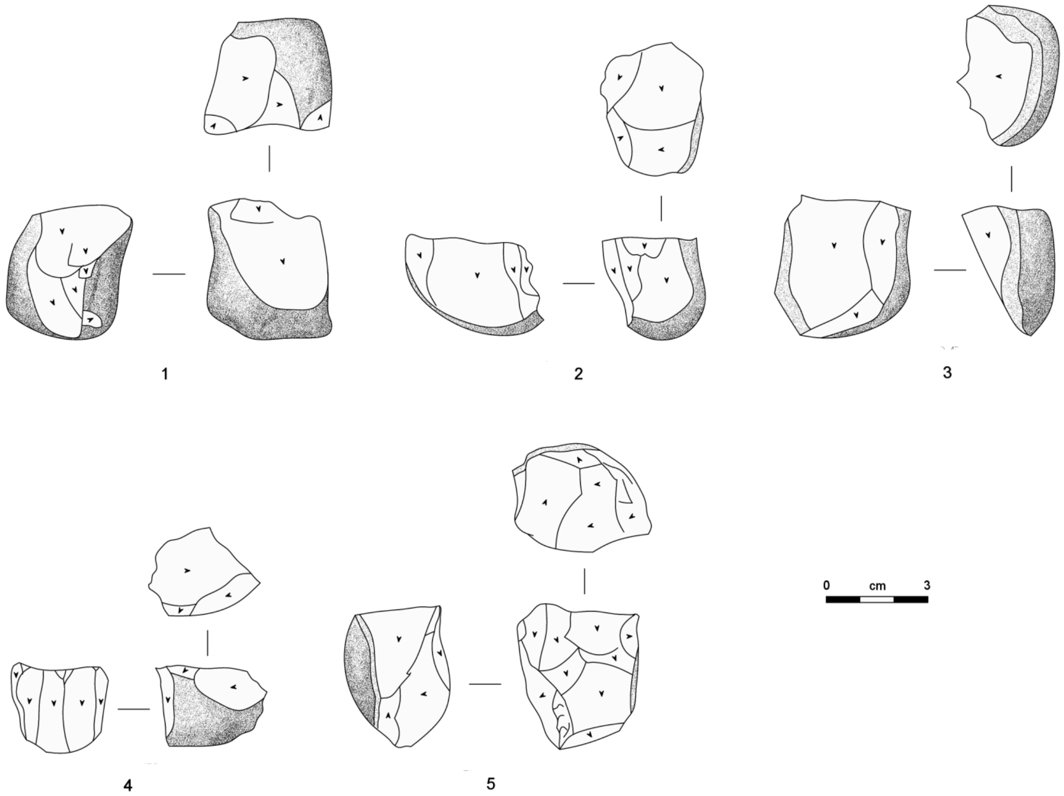



*Figure 109 (1993 finds). 1-3, Single Platform Cores; 4, Single Platform Bladelet Core; 5, Multi-Platform Core.*

## B.8.2 The Tranquesous Assemblage Composition Table (2014)

| The Tranquesous | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | 0 | | | 0 | 0 | |
| Multipolar | 5 | 0 | 0 | 5 | 41.7 | |
| Unipolar | 4 | 0 | 0 | 5 | 41.7 | **3.7** |
| Chopper/Cortex | 2 | 0 | 0 | 2 | 16.6 | |
| **Total** | | | | **12** | 100 | |
| Core Preparation | | | | 0 | | **0** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | 2 | | | 2 | 2.7 | |
| Squat flake | 1 | 11 | 3 | 15 | 20.3 | |
| Flake | 10 | 21 | 11 | 42 | 56.7 | |
| Long flake | 7 | 3 | 5 | 15 | 20.3 | |
| Blade | 0 | 0 | 0 | 0 | 0 | **24.9** |
| Bladelet | 0 | 0 | 0 | 0 | 0 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 20 | 35 | 19 | **74** | | |
| **%** | **27** | **47.3** | **25.7** | | 100 | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 8 | 1 | 0 | 9 | 56.1 | |
| Splintered Piece | 0 | 3 | 0 | 3 | 19 | |
| Utilised | 0 | 2 | 0 | 2 | 12.5 | **5.4** |
| Retouched flake | 0 | 1 | 0 | 1 | 6.2 | |
| Notched | 0 | 1 | 0 | 1 | 6.2 | |
| **Total** | | | | **16** | 100 | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 11 | 3.7 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 74 | 24.9 |
| Retouched Pieces | 16 | 5.4 |
| Debris | 196 | 66 |
| **Total** | **297** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Burnt | 23 | 7.7 |
| Platform Prep | 1 | 1.3 |
| Imported | 0 | 0 |
| Patinated | 3 | 0.3 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 36 | 26.2 |

*Table 35. Tranquesous Assemblage.*

# B.9 Kings Road

## B.9.1 Kings Road Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

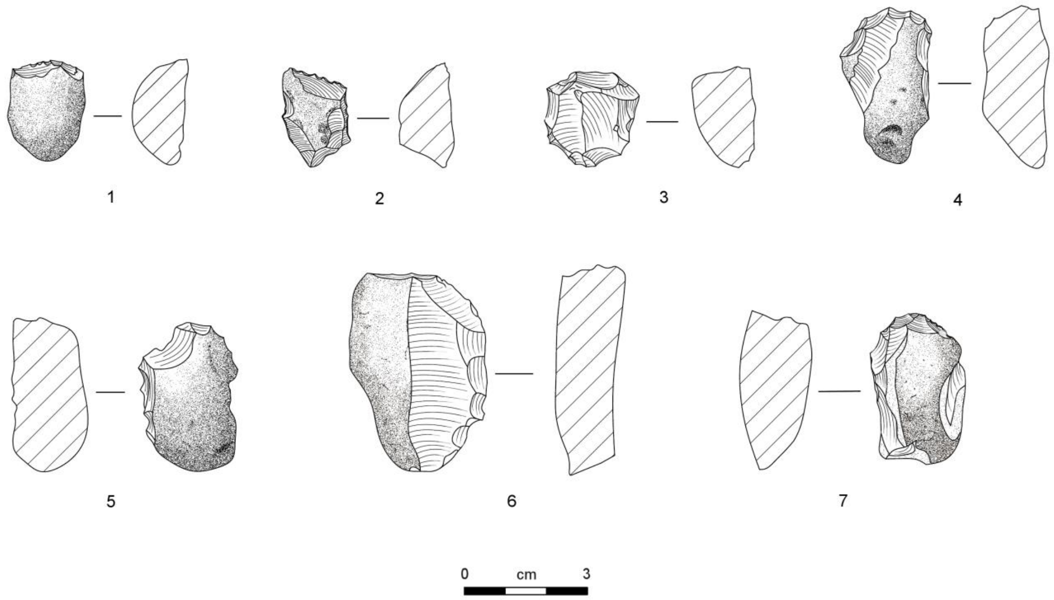



*Figure 110. 1-4, End Scrapers; 5-7, Side Scrapers.*

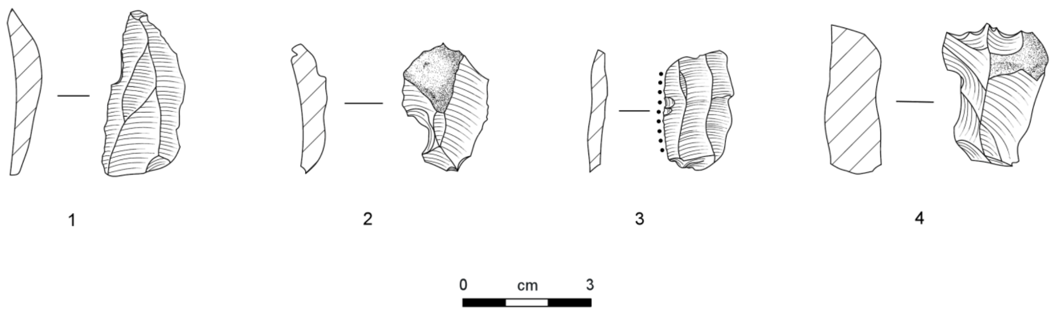



*Figure 111. 1, 2 & 4, Notched Pieces; 3, Utilised Flake.*

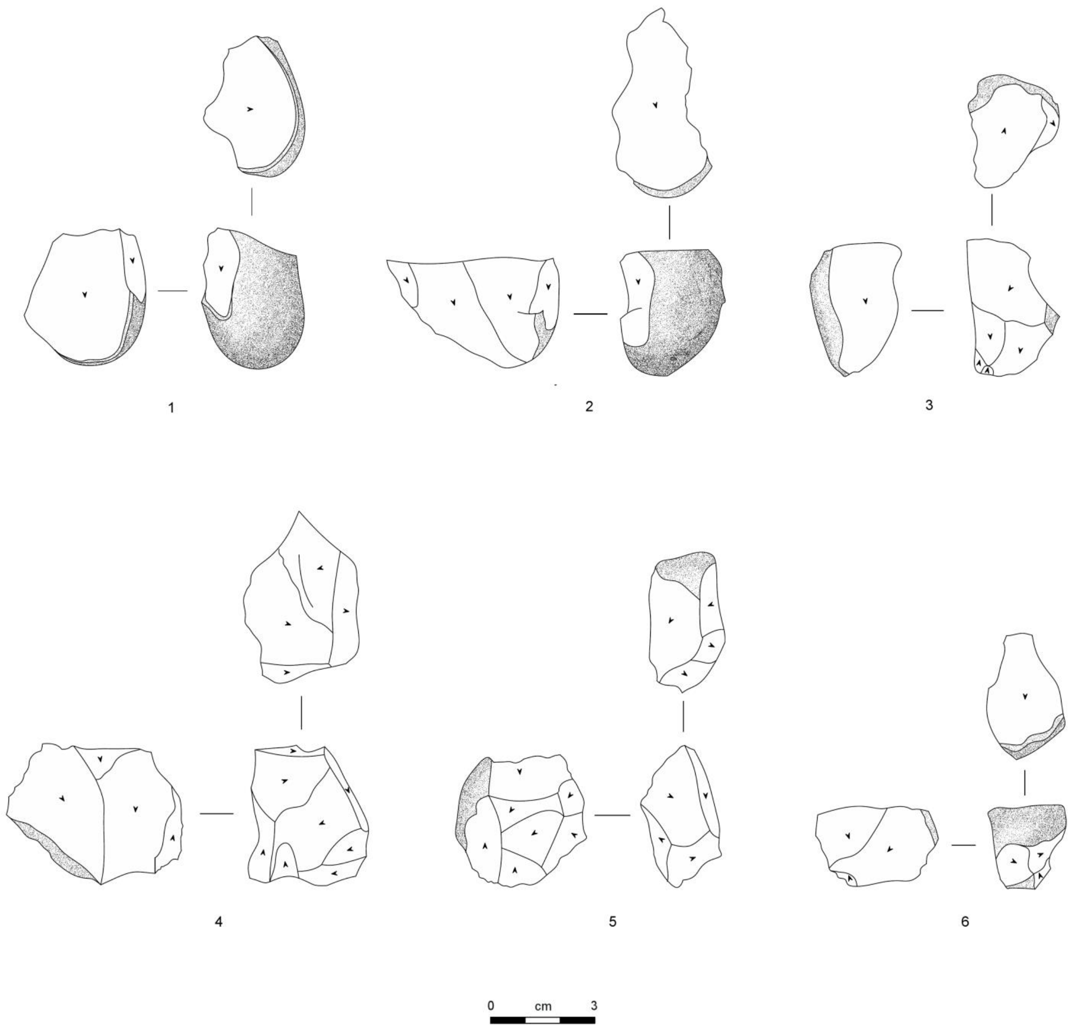



*Figure 112. Cores: 1 & 2, Single-Platform; 3, Single-Platform (Anvil Knapped); 4-6, Multi-Platform.*

## B.9.2 Kings Road Assemblage Composition Table

| Kings Road | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | | | | 2 | 13.4 | |
| Single platform | 6 | 0 | 0 | 6 | 40 | |
| Multi platform | 6 | 0 | 0 | 6 | 40 | **5.5** |
| Discoidal | 1 | 0 | 0 | 1 | 6.6 | |
| **Total** | | | | **15** | 100 | |
| Core Preparation | | | | | | |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | 5 | | | 5 | 5 | |
| Squat flake | 7 | 5 | 2 | 14 | 14 | |
| Flake | 11 | 30 | 18 | 59 | 59 | |
| Long flake | 4 | 7 | 7 | 18 | 18 | |
| Blade | 0 | 0 | 0 | 0 | 0 | **36.4** |
| Bladelet | 0 | 2 | 2 | 4 | 4 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 27 | 44 | 29 | **100** | 100 | |
| **%** | **27** | **44** | **29** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 5 | 6 | 3 | 14 | 54 | |
| Notched | 0 | 4 | 1 | 5 | 19.2 | |
| Utilised | 0 | 2 | 1 | 3 | 11.5 | |
| Splintered piece | 0 | 2 | 0 | 2 | 7.7 | **9.4** |
| Retouched flake | 0 | 1 | 0 | 1 | 3.8 | |
| Retouched blade | 0 | 0 | 1 | 1 | 3.8 | |
| **Total** | | | | **26** | 100 | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 15 | 5.5 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 100 | 36.4 |
| Retouched Pieces | 26 | 9.4 |
| Debris | 134 | 48.7 |
| **Total** | **275** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Platform Prep | 5 | 5 |
| Imported | 0 | 0 |
| Patinated | 2 | 0.7 |
| Burnt | 23 | 8 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 5 | 38.5 |

*Table 36. Kings Road Assemblage.*

# B.10 Delancey Park

## B.10.1 Delancey Park Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

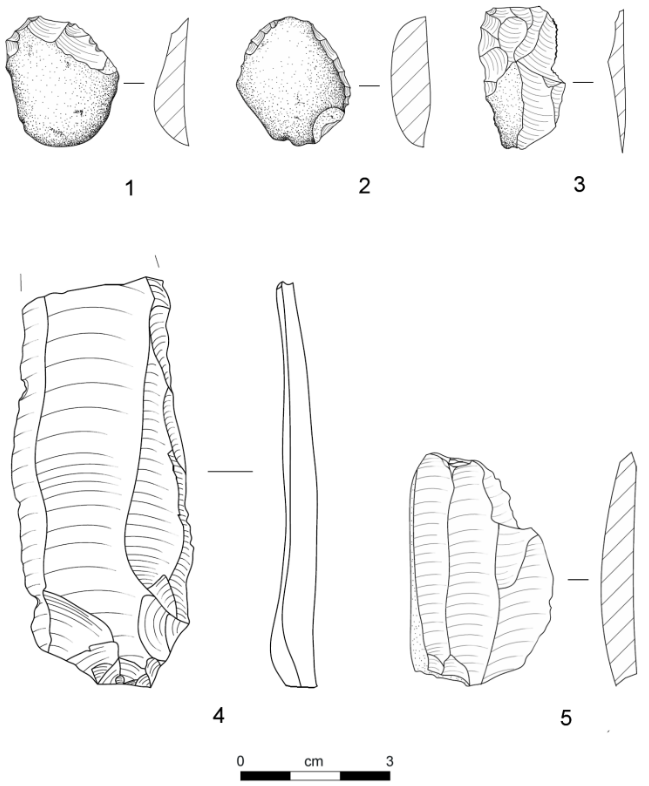



*Figure 113. 1 &2, Scrapers; 3, Microdenticulate; 4, Cinglais Blade; 5, flake with bladelet scars on dorsal face.*

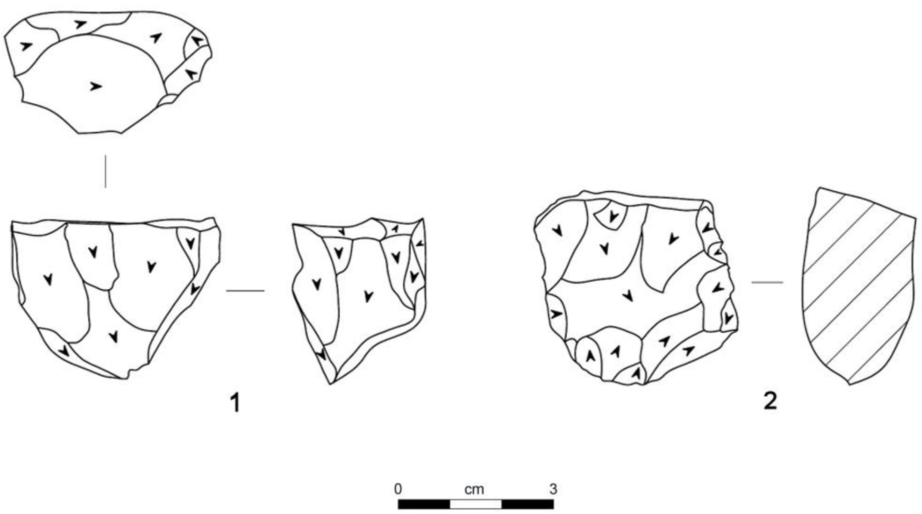


*Figure 114. Cores: 1, Single-Platform; 2, Multi-Platform.*

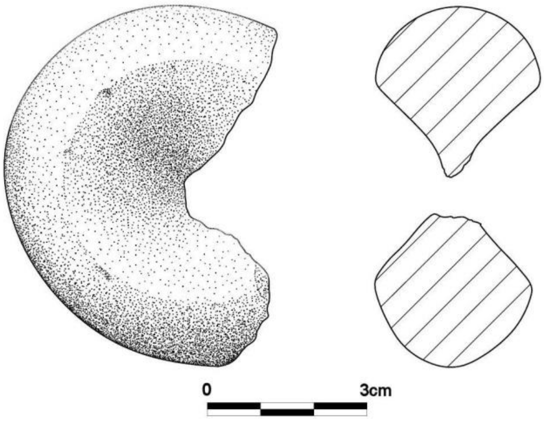



*Figure 115. Dolerite Stone Ring.*

## B.10.2 Delancey Park Assemblage Composition Table

| Delancey Park | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | 5 | 0 | 0 | 5 | 33.4 | |
| Multi-Platform | 5 | 0 | 0 | 5 | 33.4 | |
| Single-Platform | 4 | 0 | 0 | 4 | 26.6 | **6.6** |
| Chopper | 1 | 0 | 0 | 1 | 6.6 | |
| **Total** | 0 | 0 | 0 | **15** | 0 | |
| Core Preparation | | | | **1** | 100 | **0.4** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | 9 | 0 | 0 | 9 | 12.3 | |
| Squat flake | 3 | 4 | 3 | 10 | 13.7 | |
| Flake | 8 | 16 | 5 | 29 | 39.7 | |
| Long flake | 3 | 8 | 3 | 14 | 19.2 | |
| Blade | 3 | 5 | 1 | 9 | 12.3 | **32.2** |
| Bladelet | 0 | 0 | 1 | 1 | 1.4 | |
| True blade | 0 | 0 | 1 | 1 | 1.4 | |
| **Total** | 26 | 33 | 14 | **73** | 100 | |
| **%** | **35.6** | **45.2** | **19.2** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scraper | 6 | 1 | 0 | 7 | 87.5 | |
| Microdenticulate | 0 | 1 | 0 | 1 | 12.5 | **3.5** |
| **Total** | | | | **8** | | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 15 | 6.6 |
| Core preparation | 1 | 0.4 |
| Flakes and Blades | 73 | 32.2 |
| Retouched Pieces | 8 | 3.5 |
| Debris | 130 | 57.3 |
| **Total** | **227** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Platform | 2 | 2.7 |
| Imported | 1 | 1.3 |
| Burnt | 2 | 1.4 |
| Patinated | 2 | 0.5 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 1 | 6.6 |

*Table 37. Delancey park Assemblage.*

# B.11 Creve Coeur

## B.11.1 Creve Coeur Lithic Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

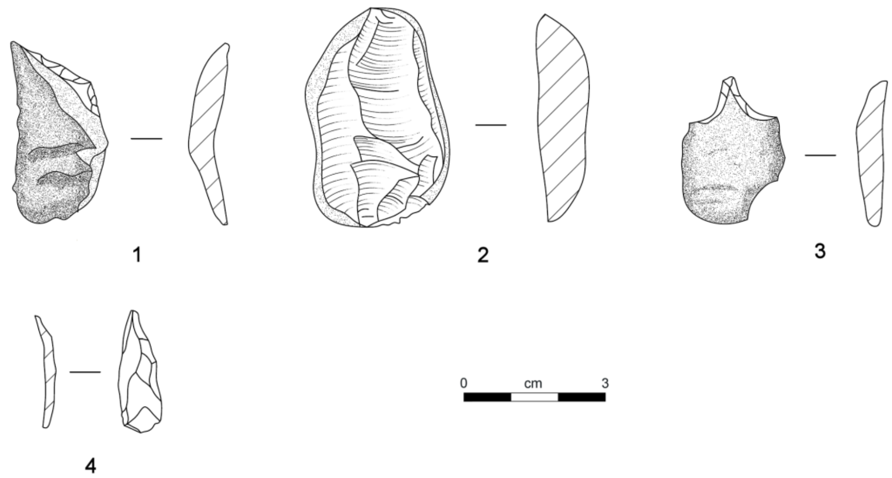



*Figure 116. 1, Obliquely Truncated Flake; 2, Anvil Knapped Flake; 3, Piercer; 4, Bladelet.*

## B.11.2 Creve Coeur Assemblage Composition Table

| Creve Coeur | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | | | | 26 | 47.3 | **1.5** |
| Chopper | 17 | 0 | 0 | 17 | 31 | |
| Single platform | 7 | 0 | 0 | 7 | 12.7 | |
| Multi platform | 4 | 0 | 0 | 4 | 7.2 | |
| Bipolar Angular | 1 | 0 | 0 | 1 | 1.8 | **0** |
| **Total** | | | | **55** | **100** | |
| Core Preparation | | | | 0 | | |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter | 30 | | | 30 | 10.2 | **8** |
| Squat flake | 3 | 22 | 5 | 30 | 10.2 | |
| Flake | 79 | 71 | 18 | 168 | 56.9 | |
| Long flake | 7 | 14 | 10 | 31 | 10.5 | |
| Blade | 0 | 0 | 0 | 0 | 0 | |
| Bladelet | 1 | 12 | 23 | 36 | 12.2 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 120 | 119 | 56 | **295** | **100** | |
| **%** | **40.7** | **40.3** | **19** | | | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scraper | 0 | 3 | 0 | 3 | 37.5 | **0.2** |
| Piercer | 1 | 0 | 0 | 1 | 12.5 | |
| Obliquely truncated | 1 | 0 | 0 | 1 | 12.5 | |
| Splintered pieces | 1 | 2 | 0 | 3 | 37.5 | |
| **Total** | | | | **8** | **100** | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 55 | 1.5 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 295 | 8 |
| Retouched Pieces | 6 | 0.1 |
| Debris | 3341 | 90.4 |
| **Total** | **3697** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Platform | 7 | 2.4 |
| Imported | 0 | 0 |
| Patinated | 1 | 0.03 |
| **Burnt** | 0 | 0 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 7 | 24 |

*Table 38. Creve Coeur Assemblage.*

# B.12 Ruette Norgiots, Bailiff's Cross, Les Prevosts and Neuf Chemin (Surface Collections)

## B.12.1 Images

Note: All lithics drawn with striking platform at the bottom apart from Cores drawn with striking platform (where existing) at the top. All drawings by D Hawley.

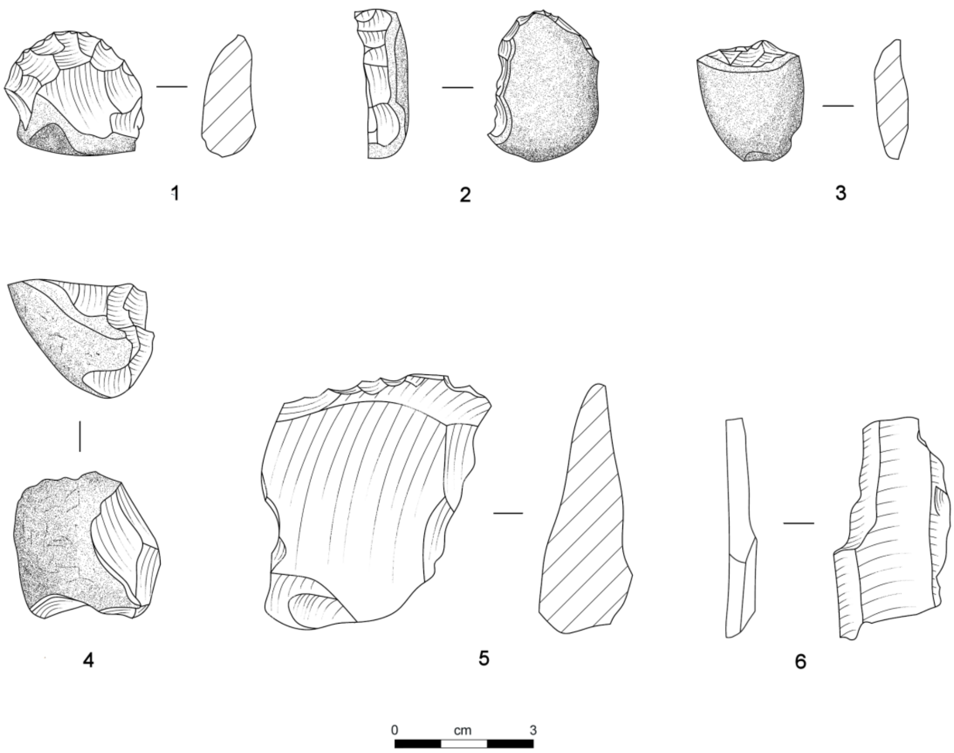



*Figure 117. 1, 2, 3 & 4 Scrapers; 5, Denticulate; 6, Burin. (Provenance: 1, Ruette Norgiots; 2, Les Prevosts; 3, Neuf Chemin; 4, 5, & 6, Bailiff's Cross.*

### B.12.2 Ruette Norgiots Assemblage Composition Table

| Ruette Norgiots | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | 0 | | | 0 | 0 | **3.3** |
| Multi platform | 8 | 0 | 0 | 8 | 47 | |
| Single platform | 6 | 0 | 0 | 6 | 35.4 | |
| Chopper | 2 | 0 | 0 | 2 | 11.7 | |
| Opposed | 1 | 0 | 0 | 1 | 5.9 | |
| **Total** | | | | **17** | 100 | |
| Core Preparation | | | | 0 | | **0** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | 15 | | | 15 | 13 | **22.8** |
| Squat flake | 7 | 12 | 2 | 21 | 17.9 | |
| Flake | 19 | 26 | 10 | 55 | 47 | |
| Long flake | 13 | 4 | 5 | 22 | 18.7 | |
| Blade | 0 | 0 | 0 | 0 | 0 | |
| Bladelet | 0 | 0 | 4 | 4 | 3.4 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 54 | 42 | 21 | **117** | | |
| **%** | **46.2** | **35.9** | **17.9** | | 100 | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 24 | 7 | 0 | 31 | 94 | **6.4** |
| Splintered piece | 0 | 2 | 0 | 2 | 6 | |
| **Total** | | | | **33** | | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 17 | 3.3 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 117 | 22.8 |
| Retouched Pieces | 33 | 6.4 |
| Debris | 346 | 67.5 |
| **Total** | **513** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Burnt | 4 | 0.7 |
| Platform Prep | 4 | 3.4 |
| Imported | 0 | 0 |
| Patinated | 4 | 0.8 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 4 | 23 |

*Table 39. Ruette Norgiots Assemblage.*

## B.12.3 Bailiff's Cross Assemblage Composition Table

| Bailliff's Cross | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | 0 | | | 0 | 0 | |
| Multi platform | 11 | 0 | 0 | 11 | 55 | |
| Single platform | 9 | 0 | 0 | 9 | 45 | 4 |
| Chopper | 0 | 0 | 0 | 0 | 0 | |
| **Total** | | | | **20** | 100 | |
| Core Preparation | | | | 0 | | **0** |
| **Flakes** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | 7 | | | 7 | 4.5 | |
| Squat flake | 13 | 20 | 13 | 46 | 30.1 | |
| Flake | 24 | 43 | 15 | 82 | 53.7 | |
| Long flake | 4 | 8 | 2 | 14 | 9.1 | |
| Blade | 0 | 0 | 0 | 0 | 0 | **30.6** |
| Bladelet | 0 | 1 | 3 | 4 | 2.6 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 48 | 72 | 33 | **153** | | |
| **%** | **31.4** | **47** | **21.6** | | 100 | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 6 | 3 | 2 | 11 | 73.3 | |
| Notched | 0 | 2 | 0 | 2 | 13.3 | |
| Burin | 0 | 0 | 1 | 1 | 6.7 | **3** |
| Denticulate | 0 | 1 | 0 | 1 | 6.7 | |
| **Total** | | | | **15** | 100 | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 20 | 4 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 153 | 30.6 |
| Retouched Pieces | 15 | 3 |
| Debris | 311 | 62.4 |
| **Total** | **499** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Burnt | 49 | 9.8 |
| Platform Prep | 0 | 0 |
| Imported | 1 | 0.2 |
| Patinated | 1 | 0.2 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 2 | 10 |

*Table 40. Bailiff's Cross Assemblage.*

## B.12.4 Les Prevosts Assemblage Composition Table

| Les Prevosts | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | | | | 0 | 0 | |
| Multi platform | 0 | 0 | 0 | 0 | 0 | |
| Single platform | 0 | 0 | 0 | 0 | 0 | **1** |
| Chopper | 1 | 0 | 0 | 1 | 100 | |
| Core Preparation | | | | 0 | | **0** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | | | | 0 | 0 | |
| Squat flake | 3 | 10 | 4 | 17 | 22.7 | |
| Flake | 9 | 24 | 7 | 40 | 53.3 | |
| Long flake | 3 | 11 | 3 | 17 | 22.7 | |
| Blade | 0 | 1 | 0 | 1 | 1.3 | **58.2** |
| Bladelet | 0 | 0 | 0 | 0 | 0 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 15 | 46 | 14 | **75** | | |
| **%** | **20** | **61.3** | **18.7** | | 100 | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 3 | 4 | 0 | 7 | 70 | |
| Retouched flake | 0 | 2 | 0 | 2 | 20 | |
| Notched | 0 | 1 | 0 | 1 | 10 | **7.7** |
| **Total** | | | | **10** | 100 | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 1 | 0.7 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 75 | 58.2 |
| Retouched Pieces | 10 | 7.7 |
| Debris | 43 | 33.4 |
| **Total** | **129** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Burnt | 0 | 0 |
| Platform Prep | 5 | 6.6 |
| Imported | 0 | 0 |
| Patinated | 3 | 2.3 |
| **Cores** | **No** | **%** |
| Anvil Knapping | 1 | 100 |

*Table 41. Les Prevosts Assemblage.*

## B.12.5 Neuf Chemin Assemblage Composition Table

| Neuf Chemin | | | | | | |
|---|---|---|---|---|---|---|
| **Cores** | **Flake** | **Blade** | **Mix** | **Total** | **% Group** | **% Total** |
| Tested pebble | 0 | 0 | 0 | 0 | 11.4 | |
| Multi platform | 0 | 0 | 0 | 0 | 38.6 | |
| Single platform | 0 | 0 | 0 | 0 | 27.3 | **1.3** |
| Chopper | 1 | 0 | 0 | 1 | 22.7 | |
| **Total** | | | | **1** | 100 | |
| Core Preparation | | | | | | **0** |
| **Flakes/Blades** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Starter flake | | | | 0 | 0 | |
| Squat flake | 4 | 11 | 0 | 15 | 28.8 | |
| Flake | 5 | 16 | 6 | 27 | 52 | |
| Long flake | 0 | 9 | 1 | 10 | 19.2 | |
| Blade | 0 | 0 | 0 | 0 | 0 | **69.4** |
| Bladelet | 0 | 0 | 0 | 0 | 0 | |
| True blade | 0 | 0 | 0 | 0 | 0 | |
| **Total** | 9 | 36 | 7 | **52** | | |
| **%** | **17.3** | **69.2** | **13.5** | 100 | 100 | |
| **Retouched Pieces** | **Primary** | **Secondary** | **Tertiary** | **Total** | **% Group** | **% Total** |
| Scrapers | 1 | 5 | 1 | 7 | 58.4 | |
| Retouched flake | 0 | 3 | 0 | 3 | 25 | |
| Piece Esquillee | 0 | 1 | 0 | 1 | 8.3 | |
| Piercers | 0 | 1 | 0 | 1 | 8.3 | **16** |
| **Total** | | | | **12** | 100 | |

| Summary | | |
|---|---|---|
| **Content** | **Quantity** | **%** |
| Cores | 1 | 1.3 |
| Core preparation | 0 | 0 |
| Flakes and Blades | 52 | 69.4 |
| Retouched Pieces | 12 | 16 |
| Debris | 10 | 13.3 |
| **Total** | **75** | 100 |

| **Misc** | **No** | **% Flakes** |
|---|---|---|
| Burnt | 0 | 0 |
| Platform Prep | 0 | 0 |
| Imported | 0 | 0 |
| Patinated | 6 | 8 |
| **Cores** | **No** | **%** |
| Anvil Knapped | 1 | 100 |

*Table 41. Neuf Chemin Assemblage.*

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