THE HISTORICAL ARCHAEOLOGY OF SETTLEMENT AT PITCAIRN ISLAND 1790 – 1856

by

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Abstract

This thesis examines the historical and archaeological evidence of the mutineer settlement at Pitcairn Island from the time of the arrival of HMAV *Bounty* in 1790 to the removal of the entire population to Norfolk Island in 1856. The mutiny aboard the *Bounty* has been the focus of intense interest since news of the event first reached England in 1790 and a rich literature has substantially documented the subsequent voyage of HMS *Pandora* to capture those mutineers who chose to remain at Tahiti and William Bligh's second (successful) breadfruit mission. By contrast, our knowledge of the community founded by Fletcher Christian at Pitcairn Island has remained enigmatic and obscured by evangelical and Eurocentric interpretations of the survival and development of the settlement. In this respect, the study distances itself from the continuing controversy surrounding the characters of Bligh and Christian and examines the arrival of the *Bounty* and subsequent development of the community by the descendants of the mutineers as a particularly well defined example of cultural adaptation in an environment where many of the controlling parameters are visible. In the microcosm of the mutineer settlement we see an example of European culture confronting an unexplored environment which can be applied generally to a range of frontier situations where institutional authority, cultural identity and environment interact at the extreme range of lines of communication and supply.

The settlement at Pitcairn Island was established by a small, culturally divided group of settlers on one of the most remote islands in the Pacific, and for the first 18 years of its existence it remained totally separated from outside contact. The successful establishment of a settlement in such circumstances is remarkable and this thesis focuses on the process of colonisation at Pitcairn and how contact with European commercial enterprise in the Pacific impacted on the Pitcairn community.

Finally the study compares the process of colonisation at Pitcairn with theoretical models to illustrate the strengths and weaknesses of particular models.

ACKNOWLEDGEMENTS

The seeds of this thesis were sewn quite unexpectedly when I first visited Pitcairn Island in 1987 and was shown artefacts from the *Bounty* kept in a sack behind the kitchen door by Charlotte Christian. While Charlotte is now dead, I wish to acknowledge the influence that simple episode had in shaping the course of my subsequent career. In the course of researching and writing this dissertation I have inevitably been encouraged and assisted by many people, however special acknowledgement should be made to Dr Peter Veth and Dr Martin Gibbs (School of Anthropology and Archaeology, James Cook University) for their unflagging enthusiasm, support and advice during all stages of the study. For their assistance in field work at Pitcairn Island I wish to thank Dr David Roe (also of the School of Anthropology and Archaeology, James Cook University), Jon Carpenter (Department of Materials Conservation, Western Australian Museum), Mike Nash (Parks and Wildlife Service, Tasmania) and Dr Peter Sullivan (Australian Antarctic Division). The advice of Mr Leon Salt (Commissioner for the Pitcairn Islands) was invaluable during planning of field work at Pitcairn Island and negotiations with the British Government and the Pitcairn Island Council to allow the work to proceed. The study was made possible by grants from the Australian Institute for Maritime Archaeology, the Australian Research Council, a Departmental scholarship and Doctoral Merit Awards from James Cook University and financial support from RDF Television and the Queensland Museum. Thanks are also due to Andrew Viduka in the Conservation section of the Museum of Tropical Queensland for conserving artefacts recovered from the *Bounty*.

Finally I wish to thank the people of Pitcairn Island for allowing me to follow the study and for their ever-generous assistance in fieldwork and for answering my many questions with great tolerance and humour. In the end this study could not have been achieved without the encouragement and involvement of my wife and children and I dedicate this work to them as small repayment for their love.

For Sally, Toby and Zoe – finally!

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DECLARATION

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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ABBREVIATIONS

ADM	Admiralty
BL	British Library
DL	Dixson Library, Sydney.
ML	Mitchell Library, Sydney.
Mss	Manuscript
NAA	National Archives of Australia, Canberra
NIM	Norfolk Island Museum
NLA	National Library of Australia, Canberra.
NMM	National Maritime Museum, Greenwich.
PMB	Pacific Manuscripts Bureau, Canberra.
PRO	Public Record Office, Kew
PRONI	Public Record Office of Northern Ireland.
QM	Queensland Museum
WAM	Western Australian Museum
WAMM	Western Australian Maritime Museum

CHAPTER ONE

INTRODUCTION

Pitcairn is a small volcanic island rising abruptly out of the deep waters of the eastern South Pacific Ocean at latitude 25° 04′ south, longitude 130° 06′ west. The nearest inhabited centres are Easter Island 1,770 km to the east, and the Gambier Islands 480 km to the north west. The island is cliff-bound and open to full ocean swell, limiting access to the island to small boats capable of negotiating the surf. There is no safe anchorage and little flat land, indeed the island lacks almost every convenience conducive to settlement. In January 1790 a small British naval vessel arrived at Pitcairn carrying 28 people aboard. While individuals in this group represent a variety of geographic regions, rank and skills, the group can be broadly described as consisting of nine Europeans and 19 Polynesians (15 males and 13 females).

The ship was His Majesty's Armed Vessel *Bounty* and until a successful mutiny in April 1789, the vessel had been employed in an ambitious expedition to collect breadfruit in Tahiti for transport to British plantations in the West Indies. Since the mutiny, the mutineers had suffered a number of reversals culminating in a split between those who wished to settle at Tahiti, and those who, along with Fletcher Christian, chose to remain with the ship and search for a place secluded from the eyes of the world. Pitcairn Island served this purpose particularly well. The geographic isolation of Pitcairn and isolating features of its physical environment provided natural obstacles to detection. This isolation was further secured by an error in the charted location of the island.

Within days of arriving at the uninhabited island, the mutineers and their Polynesian companions had moved ashore and destroyed the ship. Years later one of the Polynesian women described these events to the missionary Henry Nott at Tahiti:

> Christian got the vessel under a rocky point and came to anchor. The mutineers began to discharge the ship, by means of the boat and a raft made out of the hatches. The property from the ship was landed principally on the raft, by means of a rope fastened to the rocks. When all they wanted was brought on shore, they began to consider what they should do with the vessel. Christian wished to save her for awhile. The others

> insisted on destroying her, and one of them went off and set fire to her in the fore part. Shortly after two others went on board and set fire to her in different places. During the night all were in tears at seeing her in flames. Some regretted exceedingly they had not confined Captain Bligh and returned to their native country, instead of acting as they had done. The next morning they began to build some temporary houses.
>
> (Jenny 1829:59)

Whatever regret may have been felt, the destruction of the vessel removed all chance of leaving the island, and the isolation which protected the mutineers now became a principal factor shaping the development of the small community. That isolation remained complete until 1808 when an American sealing vessel, the *Topaz* under Captain Mayhew Folger, chanced upon the island. Folger was surprised to find that the natives spoke English but had apparently never seen a ship before. Listening to the men who paddled out to the ship, Folger realised he had solved the mystery surrounding the fate of Fletcher Christian and the *Bounty* mutineers. Only one mutineer, John Adams, remained alive, along with several Polynesian women from the original group, and a large number of children.

In 2004 the descendants of this group continue to live on Pitcairn. The survival of the mutineer and descendant settlement for two centuries must be considered an unlikely success in the face of considerable obstacles. All accounts of the mutiny aboard the *Bounty* describe an event which was barely meditated and essentially initiated on the spur of the moment. The only attempt to form a settlement prior to arrival at Pitcairn was abandoned within four months (Tubuai), and the Polynesians who came to Pitcairn aboard *Bounty* were largely there by chance. None of the steps leading to the settlement at Pitcairn indicate any particular plan beyond locating a suitable place, and within ten years of arrival, all but two of the male population had died violently. And yet the settlement did survive.

This thesis examines the process of colonisation at Pitcairn Island from its inception in 1790 to the removal of the population to Norfolk Island in 1856, in order to understand how the settlement succeeded. A number of archaeological expeditions have visited Pitcairn - (Routledge 1915; Lavachery 1935; Heyerdahl 1956; Gathercole 1964; Sinoto 1983; Weisler 1993) or in some cases studied artefacts from the island (Emory 1928;

Green 1959), but with the exception of Gathercole, all have exclusively investigated prehistoric sites. In this context, the Gathercole expedition produced a map indicating Pitcairn place-names which provides some clues to land use in the historic period and is discussed later in relation to the division of land during the study period. One effect of the considerable interest surrounding the mutiny on the *Bounty* is reflected in the large number of accounts describing Pitcairn. This material includes drawings, charts, photographs, letters, diaries, logbooks and published texts, and exhibits great variations both in the quality of the evidence and focus of the information provided. Several authors (Belcher 1870; Brodie 1851; Christian 1999; Murray 1853; Nicolson 1997) have attempted to draw on this material to produce an authoritative account of the community on Pitcairn. Maude (1968:1) highlights the problem with much of this material when he states; "...the main chroniclers were either primarily concerned with the Bligh versus Christian controversy or in painting an edifying picture of moral regeneration ". Despite this interest in the Pitcairn settlement, there has been no attempt to understand how the colonisation event took place, how the settlement survived, or even the material basis of life on early Pitcairn.

This thesis adopts an historical archaeological approach and explores the process of colonisation by combining documentary evidence with the results of archaeological fieldwork conducted at Pitcairn from October 1998 to February 1999. Evidence is drawn from a range of sources and includes reported accounts of visitors to Pitcairn, Admiralty records, whaling ship logs, letters, images, maps, oral history, archaeological fieldwork and museum collections. The fieldwork also incorporated underwater investigation of the *Bounty*. An original research aim was to consider what material evidence existed for the recycling of *Bounty* artefacts. In the event, difficulties working in the surf of Bounty Bay precluded effective sampling of the site and investigation was limited to analysis of material from terrestrial sites, museum collections, and the documentary record relating to *Bounty* artefacts.

RESEARCH AIMS

1. The first research objective was to identify European and Polynesian cultural influences on the Pitcairn settlement and to consider how these changed during the study period. The colonisation of uninhabited Pitcairn Island by a mixed

cultural group is unique in Pacific history and the aim was to understand how these influences operated and contributed to the life of the settlement.

2. The second research objective was to examine the mechanisms by which the Pitcairn community came into contact with the outside world and the material reflection of this interaction. One aspect of this was to examine how material from the *Bounty* was utilised by the Pitcairn Islanders.

3. The third research objective was to identify the factors which led to the successful establishment of a settlement by a small and culturally divided group in an extremely isolated location. The literature of pre-historic Pacific and Australian colonial settlement suggests successful settlement in such isolation is anomalous and analysis of the Pitcairn Island settlement provides an opportunity of re-examining the importance of this element in settlement models.

4. The fourth research objective was to consider the settlement at Pitcairn Island in relation to theoretical models of colonisation.

Thesis structure

In considering the research aims the dissertation is structured in the following manner.

Chapter Two examines the historical background of European exploration of the Pacific preceding the colonisation of Pitcairn Island, the geographic location of the island, and reviews the historiography of the Pitcairn settlement. The chapter establishes the chronology of the settlement and discusses how colonisation has been conceptualised by archaeologists, with particular reference to the Swiss Family Robinson model of colonisation (Birmingham and Jeans 1983). This chapter locates the dissertation within a theoretical context and identifies themes which are later used when interpreting evidence in Chapter Five.

Chapter Three describes the methodology employed during archaeological fieldwork at Pitcairn Island. This chapter identifies the study area, the location of sites and discusses the limitations to fieldwork on Pitcairn Island.

Chapter Four identifies, describes and analyses artefacts recovered from the Adamstown sites, and considers formation processes potentially effecting the archaeological record.

Chapter Five examines the historical context of the Pitcairn settlement and uses this information to interpret the archaeological evidence described in Chapter Four.

Chapter Six interprets the historical archaeological evidence in relation to the first three research aims.

Chapter Seven considers the colonisation of Pitcairn Island in relation to theoretical models of colonisation and discusses the conclusions of the thesis.

Note on Imperial Units of Measurement

In describing nineteenth century artefacts that were commonly categorised according to their imperial measurements, imperial units are used followed by the modern metric equivalent. The following table lists the imperial units used in this thesis along with the relevant metric equivalent.

Imperial units	**Symbol**	**Metric Equivalent**
Linear Measure:		
1 inch	in	25.4 millimetres
1 foot	ft	0.3048 metre
1 yard	yd	0.9144 metre
Weight Measure:		
1 ounce	oz	28.35 grams
1 pound	lb	0.4536 kilogram
1 quarter	qr	12.70 kilograms
1 hundredweight	cwt	50.80 kilograms

Table 1.1 Imperial units of measurement

CHAPTER TWO

THE CONTEXT OF COLONISATION AT PITCAIRN ISLAND

The information in this chapter locates the study historically, geographically and theoretically and is divided into five sections. The first section provides the historical context of European entry into the Pacific and places the *Bounty* voyage in historical perspective. The second section describes the location of the Pitcairn Islands and the details of the settlers. This section also outlines the nature of cultural contact in the Pacific and illustrates how the experience of the *Bounty* sailors differs markedly from that experienced by beachcombers in the Pacific. The third section reviews the historiography of the Pitcairn settlement and identifies the focus of previous scholars. The fourth section discusses factors raised in the literature of prehistoric colonisation of the Pacific, and the Swiss Family Robinson model of colonisation and its application to the Pitcairn study. This is followed by a chronological outline of the main historical events relating to the Pitcairn settlement.

EUROPEAN ENTRY INTO THE PACIFIC

Located on the far side of the globe from Europe and only accessible by extremely long voyages via Africa and the Indian Ocean or dangerous southern passages at the extremes of South America, the Pacific Ocean and attempts to explore it, represented a supreme challenge to Western technology and scientific knowledge that was only achieved gradually over the course of several centuries.

The potential of amassing huge profits from the trade in spices was an early inducement for Spanish attempts to find a western passage to the Moluccas or 'Spice Islands'. Effectively denied access to these islands via the Indian Ocean as a result of the 1494 Treaty of Tordesillas, Balboa's sighting of the Pacific Ocean in 1513 marks the beginning of a concentrated Spanish push into the Pacific. Voyages by Magellan (1519-1522) and Loaysa (1525-27) pioneered passages through the Strait of Magellan into the Pacific and led to discoveries in Guam and the Phillipines – notably Manila Harbour that was to become the strategic centre for Spanish enterprise in Asia after

1571 and the starting point of the annual voyage of the Manila galleon until 1815 (Fischer 2002:84).

The heavy loss of men and ships during these protracted voyages from Europe underlined the benefit of starting from centres in the New World and all subsequent Spanish voyages followed this pattern – initially from Mexico (Saavedra 1527) and later from Peru (Mendana 1567 and 1595; Queiros 1605). Once established in the Philippines however, Spanish Pacific interests were concentrated on maintaining a narrow Acapulco - Manila – Canton route with extremely limited impact on oceanic islands (McNeill 1999:73).

Further west, Portuguese control of the Spice Islands had been formalised by the Treaty of Zaragoza (1529) and although never sufficiently powerful to control a monopoly of the spice trade, Portuguese control of Mozambique, Goa, Ormuz and Malacca resulted in lucrative profits from the Indian Ocean Trade throughout the sixteenth century. The establishment of the Dutch East India Company in 1602 heralded a new level of organisation and competition to Portuguese trading interests in Asia and by 1619 the VOC had established its eastern headquarters at Batavia.

The Dutch East India Company was, above all else, a commercial enterprise that found little reason to explore into the Pacific. Indeed the discovery of Van Diemen's Land, New Zealand, Tonga and Fiji during Abel Tasman's voyage of 1642 tended to reinforce a belief that the Pacific islands contained little to compare with the commercial opportunities offered in Asia. Eighty years later, nothing had changed and Roggerveen's crossing of the Pacific Ocean and discovery of Rapanui, Bora Bora, Maupiti and Samoa was greeted with a singular lack of enthusiasm – emphasised by the confiscation of his ships for undertaking the voyage without the sanction of the Dutch East India Company (Fischer 2002:87). English East India Company interests were similarly focused on the Indian Ocean and its trading stations at Bombay, Madras and Calcutta.

Britain may have continued to show little interest in the Pacific had it not been for its growing suspicion of French trade with Spanish settlements on the Pacific coast of South America. In an atmosphere of naval rivalry following the Seven Years' War (1756-63), Captain John Byron was sent to secure the Falkland Islands in 1765 and

instructed to then search for both the north-west passage and a possible great southern continent somewhere in the Pacific. Although Byron was unsuccessful in these goals, the voyage marks the beginning of concentrated British and French exploration of the Pacific. Just two years after Byron, Samuel Wallis (HMS *Dolphin*) discovered Tahiti and claimed the island for George III. It was also during this voyage that Philip Carteret (HMS *Swallow*) sighted and named Pitcairn's Island.

Over the following decade Cook's three voyages of exploration (1768-79) substantially charted the main island groups of the Pacific, New Zealand and the east coast of Australia, and mapped the North American west coast as far as the Bering Strait. The voyage of the *Bounty* to Tahiti (1787-1789) falls within the context of this initial period of Pacific exploration and contact with Polynesian culture.

THE PITCAIRN ISLANDS: LOCATION AND SETTLEMENT

Pitcairn is a high volcanic island rising to 347 metres, and was first reported by Carteret in 1767 (in Hawkesworth 1773:561):

> ...it appeared like a great rock rising out of the sea: it was not more than five miles in circumference, and seemed to be uninhabited; it was, however, covered with trees, and we saw a small stream of fresh water running down one side of it. I would have landed upon it, but the surf, which at this season broke upon it with great violence, rendered it impossible.

Cook passed to the east of Pitcairn in 1769, and to the west in 1773, without sighting land on either occasion. It is worth noting that Pitcairn is shown at latitude 25° 04′ south, longitude 133° 30′ west, on a chart published in Hawkesworth (1773). Although this longitude places Pitcairn 320 kilometres too far west, the latitude is accurate to within 4 kilometres. The *Bounty* carried Hawkesworth's *Voyages* and Christian is known to have consulted these (Beechey 1968:80).

Today, Pitcairn is the oldest surviving British territory in the Pacific, and is the only inhabited island in a geopolitical group of four widely dispersed islands termed the Pitcairn Islands. These comprise Pitcairn, Henderson, Ducie, and Oeno. The other islands in the group were unknown in 1790, Ducie being discovered in 1791, Henderson in 1819, and Oeno in 1824.

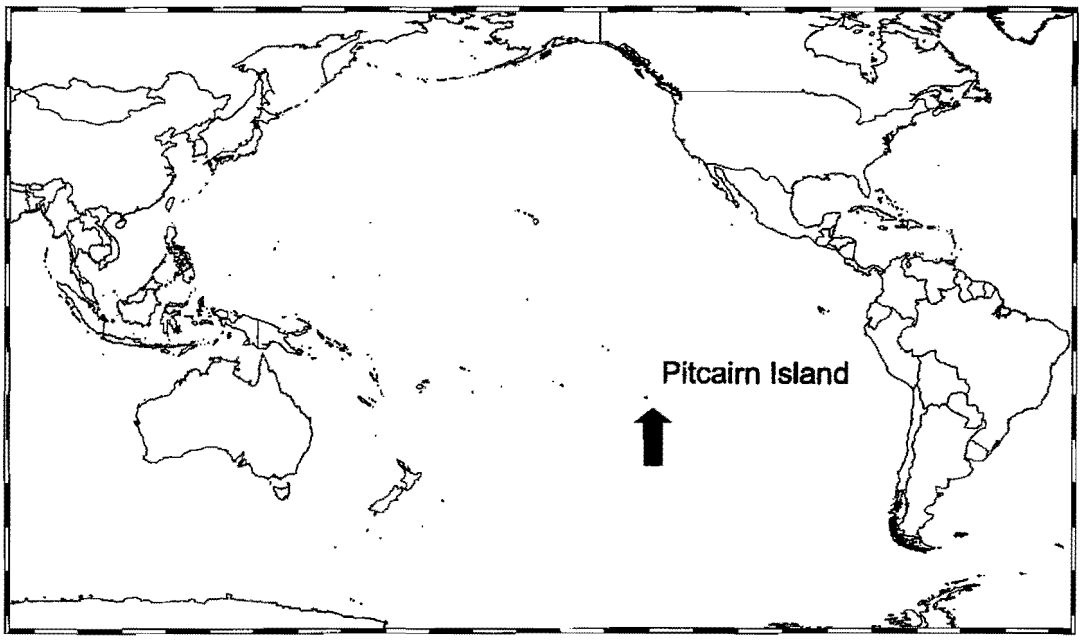

Figure 2.1 Location of Pitcairn Island

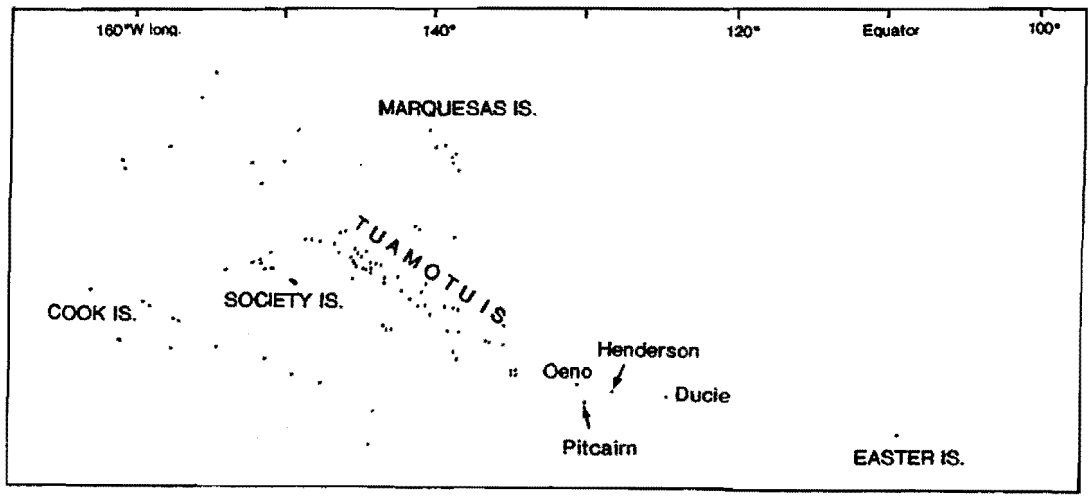

Figure 2.2 Location of Pitcairn Islands

The Pitcairn Islands lie between the Tropic of Capricorn and latitude 25° south and are located midway between New Zealand and the South American coast some 4,500 kilometres away. The islands are volcanic, oceanic individuals – extreme outliers of the Gambier islands, the nearest archipelago of French Polynesia. The total land mass of

the Pitcairn group is 43 square kilometres, and Pitcairn is just 4.5 square kilometres in area (Gothesson 1997).

Climate and weather

The average maximum monthly temperature ranges from 19°C in August to 24°C in February (Hydrographic Department1982). East to north-east winds predominate for much of the year particularly in the summer months from November to April, with a greater variety of wind directions experienced in the winter months. Calms are rare, representing 2 per cent of observations over a ten year period, while gales are noted at just 0.5 per cent for the same period (Spencer 1995:39). Hurricanes are very rare.

Terrain

Pitcairn island is the tip of a volcano rising 3,500 metres from the sea floor, and is formed by part of an eroded crater rim encircling a central area sloping to the relatively flat settlement area at Adamstown. The terrain is extremely steep and almost the entire coastline is cliff-bound, with Bounty Bay and Tedside the only relatively safe landings.

Figure 2.3 View of Pitcairn Island (northern side)

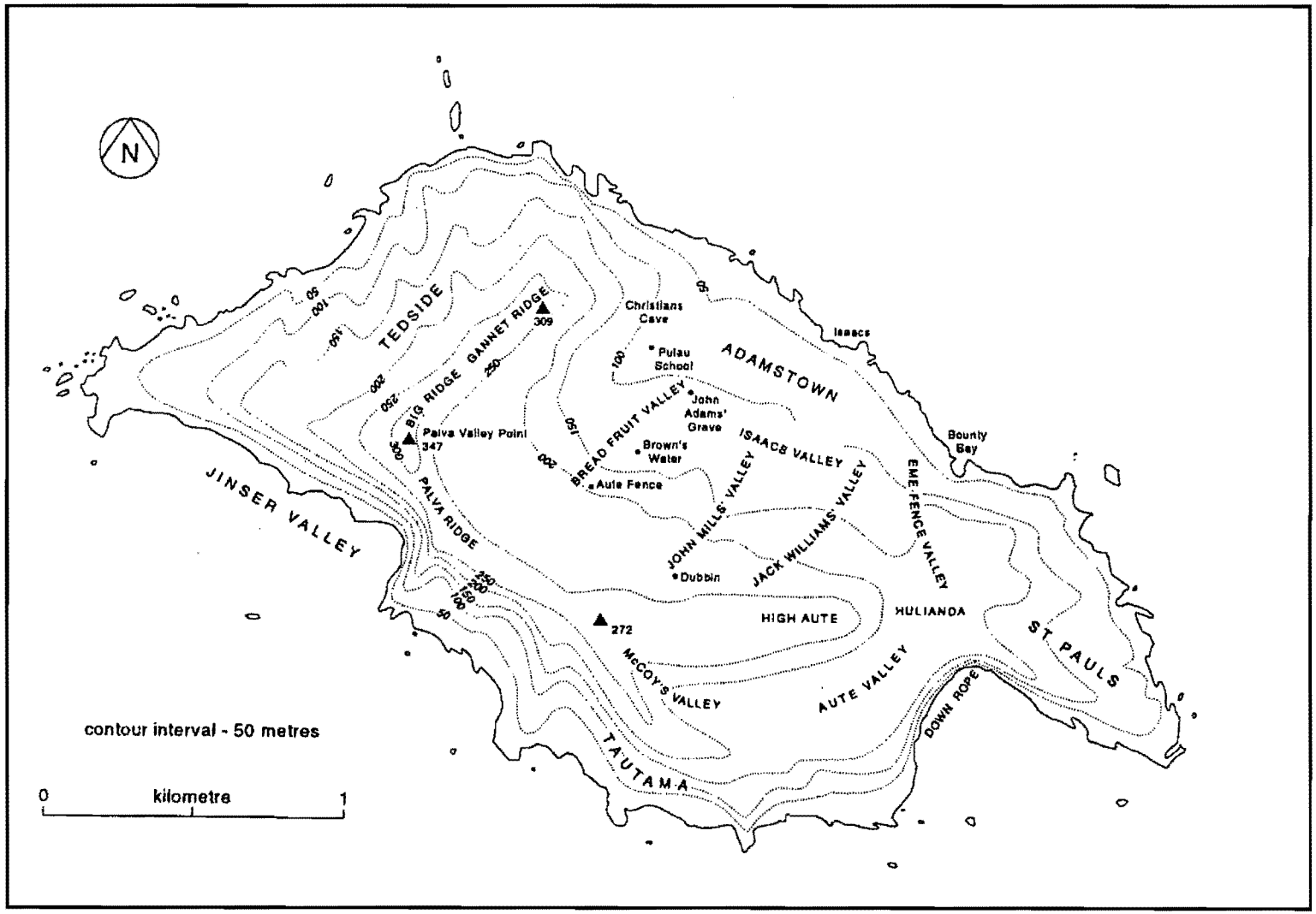

Figure 2.4 Pitcairn Island (Source: Pitcairn Island Administration)

The *Bounty* Settler Group

The colonising group arriving at Pitcairn aboard the *Bounty* in 1790 was small and consisted of two culturally distinct groups - comprising nine British seamen and 19 Polynesians. By the time of arrival at Pitcairn, the Europeans in the settler group had been aboard the *Bounty* for two years. Several writers (Lenihan 1983; Muckelroy 1978; Murphy 1983) have recognised the rigid hierarchy of life at sea and Rediker (1987:83) has described this:

> The ship, prefiguring the factory, demanded a cooperative labour process. Waged workers, the preponderant majority of whom did not own the instruments of their production, were confined within an enclosed setting to perform, with sophisticated machinery and under intense supervision, a unified and collective set of tasks. Large parts of this labour were performed at sea in isolation from the rest of the population. The character of seafaring work and its lonely setting contributed to the formation of a strong labouring identity among seamen.

In a similar vein, N.A.M.Rodger (1986:14) chose the phrase '*the Wooden World*' as the title of his anatomy of the Georgian Navy "...to refer to the Navy not as a fleet of ships or an instrument of national policy, but as a society in miniature, a floating world with its own customs and way of life". In this context the Europeans in the settler group represent a clearly defined and established group. Table 2.1 on the following page lists the known details of the 28 settlers in the colonising group.

Table 2.1 illustrates that less is known about the Polynesians in the settler group and indeed chance appears to have played a significant part in determining the composition of the group. Jenny described how after the failed attempt to settle at Tubuai, the ship returned to Matavai Bay, where the majority of the mutineers moved ashore (1829):

> Only nine remained on board, attracted by the native females who were in the ship, about nineteen in number, and told the women that the vessel was to proceed to Pare, the king's district, the next morning.
>
> The same evening, while the women were below at supper, the mutineers cut the cable, and stood to the northward. Four natives of Otaheite and two Tabouai men were then on board. When the ship got about a mile outside the reefs, one of the women leaped overboard and swam ashore. Next morning the vessel was off Tethuroa, a low island to the northward of Otaheite, but not so near as to permit any of the women venturing to swim ashore there, which several of them were inclined to do, as they were much afflicted at being torn from their friends and relations.

Men	**Other Names**	**Origin**	**Other**	**Died**	**Status**
Fletcher Christian		Whitehaven	25 years	1793	Acting Lieut.
Edward Young	Ned, Nedjun	St Kitts	24	1800	Midshipman
John Mills		Aberdeen	42	1793	Gunner's Mate
Isaac Martin		Philadelphia	33	1793	Able Seaman
William Brown	Bill		26	1793	Ass. Gardiner
William McCoy		Ross shire	25	c.1799	Able Seaman
Matthew Quintal	Matt	Cornwall	21	c.1799	Able Seaman
John Adams	Jack	London	23	1829	Able Seaman
John Williams	Jack	Stepney	29	1793	Able Seaman
Teimua	Timoa, Timua	Tahiti		1793	*Manahune*
Manarii	Menalee, Manali	Tahiti		1793	*Manahune*
Niau	Nehow	Tahiti	(A boy)	1793	*Manahune*
Tararo	Talaloo	Raiatea		1791	
Oher	Oopee, Oohu	Tubuai		1791	
Titahiti	Tetaheite	Tubuai		1793	*Iatoai*
Women			**Consort of**		
Mauatua	Isabella, Mi Mitti	Tahiti	Fletcher Christian	1841	*Raatira*
Teraura	Mataohu, Sussanah	Tahiti	Edward Young	1850	*raatira*
Vahineatua	Bal'hadi	Tahiti	John Mills	1800-17	
Teio	Mary, Sore Mummy	Tahiti	William McCoy	1829	
(Teio's daughter)	Sally, Sarah, Sully	Tahiti	(A baby in 1790)	1826	
Teatuahitea	Te Lahu, Sarah	Tahiti	William Brown	Prior 1817	
Faahotu	Fahutu, Fasto	Tahiti	John Williams	1790	
Teehuteatuaonoa	Jenny	Tahiti	Isaac Martin	Left 1817	
Tevarua	Big Sully	Tahiti	Matthew Quintal	c.1799	
Obuarei	Opuole	Tahiti	John Adams	Prior 1817	
Toofaiti	Nancy	Raiatea ?	Tararo	1831	
Mareva		Tahiti	Teirnua & Manari	?	
Tinafornea		Tubuai ?	Titahiti & Oher	1808-14	

Table 2.1 Settlers arriving at Pitcairn in 1790
(Sources: ADM 36/10744; Beechey 1968; Brunton 1989; Ellis 1969; Jenny 1829; Lucas 1929; Maude 1964; Oliver 1974)

> The ship now tacked and stood to the southward, and next morning was close in with the island of Eimeo (Moorea), about five or six leagues distant from Otaheite. A canoe shortly afterwards came off, and six of the women, who were rather ancient, were allowed to depart in her: twelve then remaining on board.

It is clear from this passage that many of the Polynesians aboard the *Bounty* when it left Tahiti, had little or no choice in the matter, and that the principal selection criteria was youth. The presence of the Tubuaian men is a notable exception. Titahiti was the younger brother of the Tubuaian chief Taroatohoa (Maude:1964:51), and he and Oher had befriended Christian at Tubuai. After the failure of the settlement at Tubuai, Tatahiti and Oher faced the prospect of reprisal, and had joined Christian aboard the *Bounty.* Of the women, both Teehuteatuaonoa (Jenny) and Mauatua had participated in the attempt to settle at Tubuai. The Polynesian group can be characterised as consisting of predominantly young, female Tahitians.

The Polynesian group can be further divided by class. Oliver (1974:750) notes that general agreement exists amongst all sources after Cook, in dividing Polynesian society into three major categories. These are *arii* – chiefs; *raatira*-landed upper class; and *manahune*-commoners. A range of sub-classes further refines these categories. Sahlins (1958:37) notes *iatoai* as patrilineal relatives to chiefs, and *raatira* as more remote relatives of *arii.* Oliver (1974:751) quotes Forster's use of *tetua* as women of the lowest rank who consorted with European sailors, and presumably at least some of the women aboard *Bounty* were of this class. Maude (1964:51) places both Mauatua and Teraura as *raatira* – apparently on the bases that women of this class were the natural companions to the higher ranks on visiting ships. In this respect Ellis (1969:94) described the distinct separations within Polynesian society "...the higher orders being remarkably tenacious of their dignity, and jealous of its deterioration by contact with inferiors". From these descriptions, it can be seen that a range of social divisions existed both within and between the European and Polynesian groups at the time of arrival at Pitcairn.

The *Bounty* settlers in context – culture contact in the Pacific

In the literature of Pacific culture contact, the concept of the beach as a dividing line separating indigenous and shipboard cultures is now widely accepted (Campbell 1998;

Dening 1980, 1992; Maude 1968) and the term beachcomber has been used to describe those who crossed the cultural frontier. Dening describes these (1980:129):

> Beachcombers were those who crossed beaches alone. They crossed the beach without the supports that made their own world real into other worlds that were well established and self-sufficient. They were strangers in their new societies and scandals in their old.

Campbell (1998:83) has suggested a number of ways men became beachcombers, ranging from the involuntary – such as shipwreck, kidnap and dismissal, to the various degrees of voluntary contact resulting from desertion, escape (convicts) and discharge, to occasional cases of recruitment by indigenous leaders. A common factor in the literature describing beachcombers is an alienation from their natal culture combined with relatively superficial acceptance by indigenous society. In this respect beachcombers were marginalized and had very little lasting effect on the established culture of their adopted island. Campbell makes the point clearly (*ibid*:136).

> Superficially, people like beachcombers who infiltrate a society like white ants seem to have enormous potential for introducing change because they reach into society at a basic and intimate level. In fact, they penetrated only its coastal fringes both literally and metaphorically; they were largely powerless to effect change because they were poor and divided and because neither they nor their hosts had change on their minds. Their hosts were getting on with their own lives and ambitions, and the beachcombers were trying initially to stay alive and then to leave or fit in. Sometimes, islanders' aspirations and beachcombers' skills dovetailed, but in almost every case, the latter were obliged to serve the former, so any cultural offerings were shaped by Polynesian values and traditions.

In contrast to this, the situation at Pitcairn was very different. Although the nine *Bounty* seamen can be seen to have rejected their customary life in much the way beachcombers did, Pitcairn was an uninhabited island, devoid of a resident indigenous society and the early history of settlement indicates that both Polynesian and European cultural influences shaped the life of the settlement in a manner unique in Pacific history. The evidence of these cultural influences is examined in detail in Chapter Six.

HISTORIOGRAPHY OF PITCAIRN SETTLEMENT

It is pertinent here to briefly review the historical literature relevant to the Pitcairn settlement in order to identify how the settlement has been considered and represented in conventional histories. Historical sources are discussed in detail in the following chapter.

While numerous visitors to the island published short accounts of their experiences, these are generally limited in their perspective and the publication of *Pitcairn's Island and the Islanders in 1850* by Brodie (1851) represents the first substantial attempt to document the history of the island. Brodie was one of five passengers who went ashore from the *Noble* and were stranded on Pitcairn Island when the ship was blown offshore. For almost three weeks, Brodie was entirely dependant on the generosity of the Pitcairn community and, as stated in the preface, the purpose of the book was to repay this kindness (1851:iv):

> My time was principally occupied in gathering materials for an account of this virtuous and interesting community, which I feel myself bound to make public, in hope it may draw attention, now more than ever needed, to their condition, and thus partially discharge the obligation which my fellow passengers and myself incurred

Brodie used the Pitcairn Island Register, combined with the accounts of Royal Navy ships and his own private journal to demonstrate that in patriotic fervour and religious conduct, the Pitcairn Islanders were a virtuous and commendable community deserving greater assistance from the British government. Brodie's work is important as it provides the first complete transcription of the Pitcairn Island Register and draws together much official correspondence relating to the community in an attempt to demonstrate that the writer's experiences are impartially corroborated. This aspect is particularly emphasised when Brodie's book is compared with the Reverend Thomas Murray's work *Pitcairn: The Island, the People, and the Pastor* (1853).

Although Murray's work adopted a broader historical perspective – commencing with the *Bounty* mutiny and ending after the move to Norfolk Island, the book focused on the religious piety of the community and the proper example demonstrated in the life of the Pastor, George Hunn Nobbs. Murray's view of the community was influenced both by

his own religious convictions and membership in the Society for Promoting Christian Knowledge, and his personal friendship with Nobbs, and the book is partisan and says little about the secular affairs of the island.

In 1870, Lady Diana Belcher published *The Mutineers of the Bounty and their Descendants in Pitcairn and Norfolk Islands.* Belcher was the step-daughter of mutineer Peter Heywood who did not accompany Christian to Pitcairn and was captured by HMS *Pandora* at Tahiti. He was subsequently brought before a Court Martial and found guilty of mutiny, but pardoned by the King. In his later career he rose to the rank of Post Captain. The friendship between the Heywood and Christian Family is well documented (Christian 1999; Dening 1992; Hough 1979) and Belcher's purpose in writing about the descendants of the mutineers was to portray the Pitcairners as historic victims of Bligh's original tyranny aboard the *Bounty.* Like Murray, Belcher's book highlights the work of George Hunn Nobbs and focuses particularly on the religious life of the Pitcairn community. Belcher's main contribution regarding the Pitcairners lies in the personal correspondence with Admiral Fairfax Moresby that she brings to light.

A more recent work in a similar vein is *Fragile Paradise* by Glynn Christian (1999). As a descendant of Fletcher Christian – the author's main thesis appears to be to vindicate the actions of his ancestor. He attempts to do this by revisiting the well-known events of the *Bounty* story retrospectively and attempts to learn more of the 'real' Fletcher Christian by visiting the places where the various phases of the story took place. The real contribution of this text is the private records of the Christian family which the author accesses, however apart from this there is little new evidence about the life of the mutineers and their descendants on Pitcairn Island.

Hough's 1979 work – *Captain Bligh and Mister Christian* remains a thorough (if shallow) resource of information about most aspects of the *Bounty* voyage, mutiny and aftermath but is focused on attempting to find a rationale for the events in the relationship between the main protagonists in the event. While Hough reiterates the events surrounding the death of Christian at Pitcairn and John Adams' conversion to Christianity there are no new details of the Pitcairn community. Nicolson's book – *The Pitcairners* (1997) provides perhaps, the single, most comprehensive history of the

Pitcairn community and remains an extremely useful chronology of events on Pitcairn and later Norfolk Island.

Finally, of the most recent works written about Pitcairn - Lummis' *Pitcairn Island: Life and Death in Eden* (1997) provides a new analysis of the events surrounding the death of Christian and the survival of John Adams as leader of the community and questions the now traditional depiction of Adams' as a benevolent patriarch.

While each of these books has individual strengths, none have added to our understanding of the mechanisms of daily life on Pitcairn Island or used the available evidence to discuss more fundamental processes of colonisation, survival, cultural integration, contact, trade or the effect of isolation on the settlement at Pitcairn. In this regard the thesis developed here, focuses on the documentary and archaeological evidence to understand how the settlement was established and sustained in the course of the study period.

DEVELOPMENT OF COLONISATION THEORY

The focus of this thesis is the colonisation of Pitcairn Island in the historic period. However regardless of temporal period, Pitcairn is a Pacific island and many of the factors raised in relation to prehistoric colonisation of the Pacific are equally relevant to the current study. The following section identifies the main factors raised in the literature of prehistoric Pacific colonisation.

Prehistoric Colonisation of Polynesia

Central and Eastern Polynesia was progressively settled between about 1600 B.C. and A.D. 1000 by canoe voyagers, initially originating from the area of the Bismarck Archipelago (Bellwood 1979; Kirch 2000; Spriggs 1997). The Pacific islands spread over extensive areas of ocean and reflect considerable variation in size, isolation, ecological diversity and ability to sustain human settlement. The impact of human settlement on island ecologies is a major theme in Polynesian colonisation of the Pacific. In this context Fosberg (1963) noted the great variation between islands of the eastern Pacific and large continental islands of the western Pacific and emphasised the effects of isolation and limited size in creating insular and fragile ecological

environments which were highly vulnerable to disturbance associated with human settlement. Describing the environmental history of human arrival on oceanic islands in the Pacific, Kirch (1997:2) noted that human arrival was "...often an event with dramatic consequences for ecosystems characterised by biota lacking defences against large, omnivorous vertebrates". Prominent amongst those effects was depletion of birds (Steadman 1997), however other consequences included deforestation and erosion following clearing of vegetation (Spriggs 1997:80).

Anderson (2002:384) has postulated a relationship between successful settlement (increasing population) and ecological complexity and noted that humid, tropical islands typically offered significant economic choice and were characterised by continuous settlement, compared with arid, and relatively less ecologically complex islands which suffered population stagnation, decline or collapse. Amongst the islands affected in this way were Easter Island where it is suggested three quarters of the population died out as a result of starvation and warfare (Diamond 2000), and about twenty-five oceanic islands which show evidence of prehistoric settlement and abandonment (Anderson 2002:378). All four islands of the Pitcairn group – Pitcairn, Henderson, Oeno and Ducie fall into this category of abandoned islands. Weisler's study of Henderson Island (1993) has indicated that occupation of that island was facilitated by a trade network operating between Henderson, Pitcairn and Mangareva up to about A.D. 1500, but that after that time pearlshell artefacts of Mangarevan origin disappear from the archaeological record at Henderson. This collapse of exchange networks is likely to have coincided with catastrophic landscape degradation at Mangareva which resulted in violent competition for limited food resources and population decline. These circumstances isolated Pitcairn and Henderson, and both islands were ultimately abandoned.

Dalton (1977:104) has argued that the prime impetus for eastward colonisation of the Pacific was to export commodities to parent communities and Anderson (1992:11) has suggested that the expansion into the isolated islands of Eastern Polynesia was "...fueled by competition to reach anticipated reserves of unowned and prestigious commodities such as pearlshell and red feathers." This process involved the dispersal of settlers from a parent community to uninhabited and often isolated islands, and raises

a further major theme in Polynesian colonisation referred to as the *Founder Effect* (Dobzhansky 1963). Vayda and Rappaport (1963) described the mechanism:

> ...if the migration to an isolated place, whether a small island or a large continent, is by a relatively small group of people who are unable to reproduce in full the culture of the population from which they derived, then the culture in the new place will be immediately different from the culture in the homeland.

Cultural variations could also be brought about as part of the colonisation process as founder groups adopted new technologies or adaptive strategies suited to their new environments. In this regard Sahlins (1958) noted that socio-political complexity was greatest in resource-rich archipelagos and generally declined in atoll societies where resources were limited.

In summary, Polynesian colonisation of the Pacific was characterised by the movement of small settler groups over significant distances to uninhabited islands displaying varied ecological stability. Human arrival affected the ecology of all islands but was most significant where isolation, size and/or limited natural resources produced particularly fragile environments. Colonisation of these environments was marked by rapid faunal collapse and may have contributed to abandonment and movement to new islands. Colonisation was closely linked to transportation and factors affecting settlement included size and composition of settler group, proximity to other islands and connection to the 'mother' population. These factors are discussed in relation to the colonisation of Pitcairn by the *Bounty* settler group in Chapter Six.

The Swiss Family Robinson colonisation model

Many of the circumstances described in the novel, *Swiss Family Robinson* written by J.D. Wyss in 1812 strike remarkable parallels to events surrounding the destruction of the *Bounty* at Pitcairn Island and the subsequent colonisation of the island. Wyss' book describes the fictitious story of the Robinsons, a Swiss family isolated on a deserted island when the ship on which they are passengers, is wrecked and the crew disappear. As with Defoe's (1719) character, Robinson Crusoe, the Robinsons survive using the resources of the wrecked ship, and by applying their skills and knowledge to the new

environment. Over a period of ten years, the family meet the challenges of their situation and create a settlement on the island.

In Australian historical archaeology, the story of the Robinson family has been used by Birmingham and Jeans as an allegory of the process of European colonisation of Australia and developed in their 1983 paper – The Swiss Family Robinson and the Archaeology of Colonisation. In that paper, the authors produce a model of colonisation divided into three phases. This is illustrated in Figure 2.5 on the following page.

In the first phase - the Exploratory Phase, colonists arrive in a new and unknown environment equipped with skills, social structures and material culture derived from their parent culture. An initial exploration of the immediate environment follows and provides the basis for preliminary assessments and decisions.

In the second stage – the Learning Phase, the emphasis is on selecting a viable and appropriate system of production. This phase is characterised as an experimental stage during which, different products and methods are used and a greater understanding of the environment developed, prior to consolidation of successful, (rudimentary) systems.

In the third – Developmental Phase, increasingly complex systems are developed as new technologies are developed or imported, allowing greater control and exploitation of the environment. Products and manufactures increasingly compete in a world system.

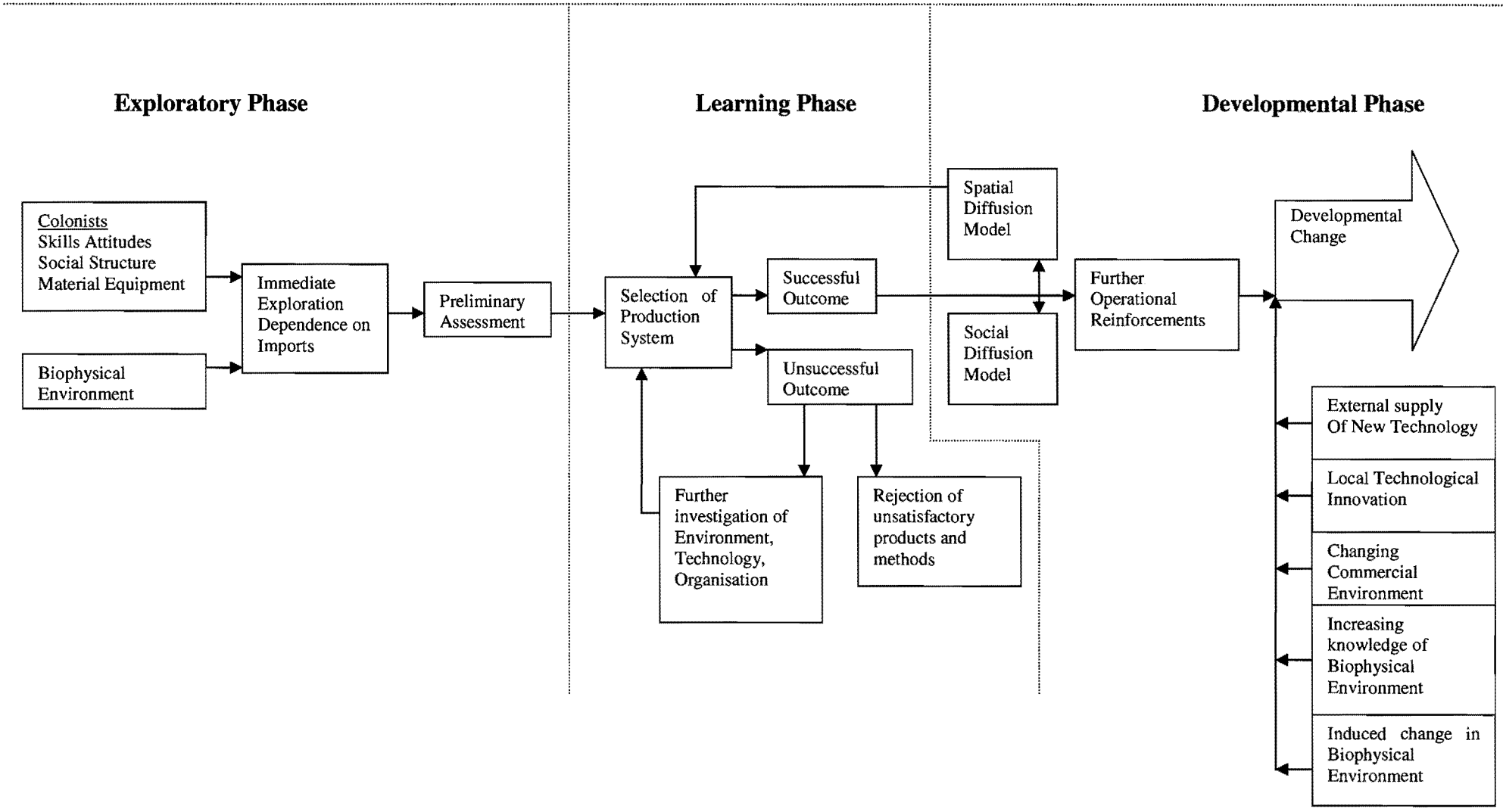

Figure 2.5 The Swiss Family Robinson model of Colonisation (after Birmingham and Jeans 1983)

The Swiss Family Robinson model has been criticised on a number of counts. Bairstow (1984:3) objected to what she saw as a simplistic flow chart, inappropriate to the inductive formulation of general theories practiced within Australian historical archaeology. Egloff (1994:4), writing ten years later, objected to the implicit European ethnocentric approach promoted by the model. Birmingham and Jeans (1983:11) themselves acknowledged that a limitation of the model (based as it is on the experiences of a single cohesive family) is its inability to explain complex social structures that exist in colonies, and although effusive about the potential application of the model to Allen's work at Port Essington – it is suggested that only parts of the model are applicable (*ibid*:10). Despite the optimism expressed in the paper by its authors, the Swiss Family Robinson model has generally failed to live up to its potential and has not been utilised. Acknowledging these shortcomings, the model remains particularly apt for interpreting the colonisation and settlement of Pitcairn Island and is used to examine the fourth research objective, in Chapter Seven.

Themes for Interpretation

The preceding discussion of colonisation has highlighted several key issues relevant to the study of colonisation process. Pre-historic models of Pacific colonisation have emphasised the importance of considering the environment in which settlement occurs and the human impact of settlement on fragile island ecosystems. The relationship between colonising settlers and the environment is also emphasised in the initial stage of the Swiss Family Robinson model of colonisation. Isolation has been raised as a key factor influencing survival and related to culture change and development of distinct colonial settlements. Integrally linked to the discussion of isolation is the theme of contact. Contact, and changes in the level of contact over time, are important elements impacting upon the Pitcairn settlement in the study period. How did developments in Pacific and world transport networks impact on the settlement? What was traded, what were the mechanisms of trade, and what impact did trade have on productions?

In order to answer these questions and interpret the colonisation process at Pitcairn Island in the context of colonisation literature, factors relating to environmental resources at the time of settlement, exploitation of resources over time, persistence of

cultural practices, social organisation, and the impact of contact and population increase are examined in depth in Chapters Five and Six.

CHRONOLOGICAL OUTLINE

The following chapter details the sources of historical evidence, the area of fieldwork at Pitcairn and the methodologies used to gather evidence relating to the settlement of Pitcairn Island in the study period. To assist the reader, it is useful to list the main chronological events in the history of the Pitcairn settlement before leaving this chapter.

- Dec 23 1787 — *Bounty* departs England on a voyage to Tahiti to collect breadfruit plants for transport to the West Indies. Vessel under the command of Lieutenant William Bligh with a crew of 45.
- Oct 1788 — *Bounty* arrives at Tahiti and begins collecting and cultivating young breadfruit plants.
- Apr 4 1789 — *Bounty* departs Tahiti for West Indies
- Apr 28 1789 — Mutiny aboard *Bounty* led by Acting Lieutenant Fletcher Christian. Bligh and 18 members of crew set adrift in open launch. 25 mutineers sail *Bounty* for Polynesian island of Tubuai.
- May 24 — *Bounty* at Tubuai. Mutineers determine to establish a settlement at Tubuai and sail to Tahiti for supplies and women.
- Jun 26 – Sep 17 — Mutineers construct fortifications at Tubuai and attempt to establish settlement. Attempt finally abandoned in face of increasingly violent clashes with indigenous Tubuaian community. *Bounty* returns to Tahiti where 16 mutineers leave vessel.
- Sep 23 1789 — *Bounty* departs Tahiti with 9 mutineers and a group of Polynesians. Vessel sails into the western Pacific before heading east and sailing for Pitcairn Island.
- Jan 1790 — *Bounty* arrives at Pitcairn Island with 28 people. Transfer of people and material to the land. Vessel destroyed by fire.
- Oct 1790 — First child born – Thursday October Christian.
- 1790 — Death of Polynesian woman Faahotu.

- 1791 — A plot to kill the Europeans is discovered and the Polynesian men Tararo and Oher re murdered.
- 1793 — Mutineers Brown, Christian, Martin, Mills and Williams murdered. Remaining Polynesian males Teimua, Manarii, Niau and Titahiti murdered in response.
- c. 1799 — Mutineer William McCoy commits suicide.
- c. 1799 — Mutineer Matthew Quintal threatens Young and Adams and is murdered by them.
- Dec 1800 — Mutineer Edward Young died.
- 1808 — First ship since arrival of *Bounty* settlers stops (*Topaz* – Capt. Mayhew Folger).
- 1814 — HMS *Briton* and HMS *Tagus* 'discover' Pitcairn settlement. Second ship visit since 1808. Sole surviving mutineer John Adams permitted to remain on Pitcairn.
- 1817 — Departure of Polynesian woman Teehuteatuaonoa aboard vessel *Sultan.*
- 1823 — Seamen John Buffett and John Evans of vessel *Cyrus* join Pitcairn community.
- 1828 — Seamen Noah Bunker and George Hunn Nobbs arrive at Pitcairn in small boat from South America. Bunker dies shortly after arrival. Nobbs permitted to stay.
- 1829 — John Adams died.
- 1831 — Population of Pitcairn moved to Tahiti with assistance of British government. In ensuing months 14 Pitcairners die of fever and the remainder return to Pitcairn Island.
- 1832 — Englishman Joshua Hill arrives at Pitcairn and claims British government authority to lead community. His claims are later proved fraudulent and he is forced to depart in 1837.
- 1838 — Pitcairn community requests Captain Elliot of HMS *Fly* to draw up laws for the community. Elliot institutes system of annual election of a Magistrate to administer the laws. The laws also allow for contentious disputes to be held over for resolution by the captain of the next Royal Navy vessel visiting Pitcairn Island. This marks the start of a

close relationship between the Pitcairn community and visiting naval ships ultimately leading to recognition of the Pitcairn Islands as a British protectorate.

- 1848 — Question of removal of Pitcairn Islanders raised again with the British authorities.
- 1852 — Norfolk Island first suggested as a new home for the Pitcairn Islanders.
- 1854 — British government approve Norfolk Island proposal and begin arrangements for transfer of Pitcairn community.
- 1855 — Penal settlement at Norfolk Island closed.
- 1856 — Entire population of 194 Pitcairn Islanders removed to Norfolk Island.

These chronological elements are developed in detail in Chapters Five and Six.

Summary

This chapter has provided a contextual background for the study and illustrated that Pitcairn was settled in the early period of European exploration in the Pacific and that the settlement initially developed in a situation of total isolation from external forces. The settler group has been shown to have comprised both Polynesians and Europeans, and to have reflected a diverse range of experiences and social backgrounds. The theoretical context of the study has also been examined and will be discussed in detail in Chapter Seven. Having placed the study in context, the following chapter examines the sources of evidence relating to the colonisation of Pitcairn Island.

CHAPTER THREE

SOURCES OF EVIDENCE

This chapter considers the sources of historical evidence relating to the Pitcairn settlement and defines the area where fieldwork was conducted, and the methodologies used to collect archaeological evidence.

HISTORICAL SOURCES

Of the original 28 settlers who arrived at Pitcairn Island aboard the *Bounty,* three – John Adams, Edward Young and the Polynesian woman Jenny, produced accounts. Adams' literacy skills appear to have been limited. Apart from a few faltering sentences regarding his birth (Scott 1982:36), and a short prayer (Lucas 1929:95) – both written in his own hand, Adams' accounts were recorded by various visitors to the island (Bechervaise 1839; Beechey 1968; Moerenhout 1837; Pipon 1834; Raine 1821) and are notable for their discrepancies. Jenny's two accounts were also records of interview by a second party. Edward Young's account is limited to a few references from his journal recorded by Captain Frederick Beechey during HMS *Blossom's* visit to the island in 1825. By that time Young had been dead for 25 years and although no further reference to his journal survives after the *Blossom's* visit, it is clear that Young's journal formed the basis for the Pitcairn Island Register Book.

The Island Register was formalised by the English sailor John Buffett after his arrival on Pitcairn in 1823 and records births, deaths and marriages, and notable events such as ship visits, accidents and storms. The Register covers the period 1790 – 1853. Buffett was reliant on extracts from Young's journal for the period 1790 to about 1798 (Young died in 1800), and Adams' journal from 1798 to 1823. Although Buffett reproduces some extracts from Young verbatim other details have been withheld. For example Beechey quotes Young's journal regarding the Polynesian women (1968:89):

> [March – August 1794]
> ...since the massacre, it has been the desire of the greater part of them to get some conveyance, to enable them to leave the island.

...according to expectation she upset and it was most fortunate for them that she did so, for had they launched out upon the ocean, where could they have gone or what could a few ignorant women have done by themselves, drifting upon the waves but ultimately have fallen a sacrifice to their folly?

Buffett reproduces this in the Register as (Lucas 1929:31):

[1794]

A great desire in many of the women to leave the Island a boat built for the purpose of removing them launched and upset fortunate for them that she did so for had they launched out upon the ocean where could they have gone by themselves drifting upon the waves but ultimately have fallen a sacrifice to their folly.

It will be seen that this is a relatively clear transcription, however Young's journal includes other entries for 1794 that are not reproduced by Buffett (Beechey 1968:89-90):

[March 12 1794]
Going over to borrow a rake, to rake the dust off my ground, I saw Jenny having a skull in her hand. I asked her whose it was, and was told it was Jack Williams's. I desired it might be buried. The women who were with Jenny gave me for answer, it should not. I said it should, and demanded it accordingly. I was asked the reason why I, in particular, should insist on such a thing, when the rest of the white men did not? I said, if they gave them leave to keep the skulls above ground, I did not. Accordingly when I saw McCoy, Smith and Mat Quintal, I acquainted them with it, and said I thought that if the girls did not agree to give up the heads of the five white men in a peaceable manner, they ought to be taken by force and buried.

[16 August 1794]
Dug a grave and buried the bones of the murdered people.

[3 Oct 1794]
Celebrated the murder of the black men at Quintal's house.

[11 November 1794]
A conspiracy of the women to kill the white men in their sleep was discovered upon which they were all seized and a disclosure ensued. We did not forget their conduct and it was agreed among us that the first female who misbehaved should be put to death, and their punishment was to be repeated on each offence until we could discover the real intentions of the women.

Buffett clearly considered these matters unsuitable in what was to be the official record of the community, and the Register studiously avoids controversial issues throughout

and records only births, deaths, marriages and annual shipping to March 1839. After that date George Hunn Nobbs took over the Register and a summary of the events of each year became a standard entry. Nobbs' was the schoolmaster and also acted as doctor and pastor. His entries in the Register are generally longer and often include details of medical treatments, sermons and weather conditions. The Pitcairn Island Register is of particular value however, as a record of shipping and population and this data is used for statistical analysis in the thesis.

Further sources of information regarding ships visiting Pitcairn are the Pacific Manuscripts Bureau; Reports of visiting British naval vessels and Ford's book *Pitcairn - Port of Call* (1996).

The Pacific Manuscript Bureau (operated by the Research School of Pacific Studies – Australian National University, Canberra) was established in 1968 to promote the preservation of unpublished manuscripts relating to the Pacific Islands. In 1970, 1976 and 1981 the Bureau conducted three New England microfilming projects which copied logbooks and related material for more than 2100 American whaling, trading and naval ships which visited Pacific ports during the nineteenth century. The principal results of this work are published in *Where the Whalers Went* (1984) and *American Whalers and Traders in the Pacific: A Guide to Records on Microfilm* (1978) - both edited by Robert Langdon. As Langdon points out (1978:vii), as a result of these projects, the Pacific Manuscripts Bureau amassed the largest collection in the world of American whaling logbooks, albeit on microfilm. These sources list microfilm records from the logbooks of 96 vessels that called at Pitcairn Island – 77 of which were during the study period. Considering the Pitcairn Island Register lists over 400 vessels stopping at Pitcairn Island between 1808 and 1853 it will be seen that the Pacific Manuscript Bureau sources represent only a small percentage of potential information relating to ship visits. These sources are also unevenly spread chronologically. For example, of the 77 references during the study period, the majority are for the years after 1840 – with some years well represented (1842 – 8 records; 1843 – 6 records; 1846 – 14 records; 1850 – 12 records), while many others have far fewer records (1841 – 1 record; 1844 – 1 record; 1845 – 3 records; 1848 – 1 record.

Herbert Ford's book, *Pitcairn – Port of Call* (1996) uses entries in the Pitcairn Island Register Book and later Pitcairn shipping records to produce a maritime history of the island from 1790 to 1990. The book is well researched and especially useful as a source for the late nineteenth and twentieth centuries – incorporating Pitcairn Island Council minutes, correspondence between Pitcairn Islanders and ships captains with official government records. Sources for shipping during the study period however, reveal little not already available in the Pitcairn Island Register Book.

The accounts of British naval ships visiting Pitcairn throughout the study period are derived from a range of sources. A principal source of British records relating to the Pacific are the microfilm records produced by the Australian Joint Copying Project. The project was established in 1945 by an agreement between the National Library of Australia and the State Library of New South Wales to microfilm material in the Public Record Office, London and elsewhere relating to Australia and the Pacific, and concluded in 1993. Included in this material are Admiralty records consisting of Captains' logs for the period 1739 – 1851 [ADM 51]; Admiralty and Secretariat log books 1836 – 1858 [ADM 54]; Admiralty Station records: Pacific 1845 – 1858 [ADM 172]; Admiralty Station records: China 1828-1900 [ADM125]; and ships' musters 1764 – 1795 [ADM 36]. This last includes the *Bounty* ship's muster 1787 [ADM 36/10744]. A thorough search of this material (approximately 100 microfilms) produced relatively frugal results and highlighted particular problems.

In the case of log books, these are principally records of navigation, weather conditions and hydrographic data and make little or no mention of Pitcairners – as exampled by the entry in HMS *Blossom's* log [ADM 51/5742]:

> Remarks HMS Blossom December 5th 1825
> Island NW/W – daylight bore up and made sail. Set the fore topsail and topgallant studding sails. 8:00 – Observed a boat coming from the island. 8:30 – Shortened sail and hove to come along side a boat with John Adams and eleven of the natives. Took him in tow and filled. Tacked occasionally working to windward. Noon – light airs and fine ...

In other cases entries are illegible or missing. For example the journal entry '...of a tour in the Islands of the South Seas made in His Majesty's Ship *Seringapatam* in the months of March, April, May and June 1830' [ADM 51/2321], is missing pages for

March (when the vessel stopped at Pitcairn) and only starts again on 7 April 1830 at anchor in Matavia Bay, Tahiti.

Despite these short-comings, the Admiralty records of the Australian Joint Copying Project do contain some useful accounts. Among these are the Journal of Surgeon Gunn aboard HMS *Curacao* at Pitcairn Island 18 – 20 August 1841 [ADM 101/95]; Remarks on the passage made in HMS *Calypso* from Callao to Pitcairn Island 1848 [ADM 172/2]; Report of HMS *Daphne's* visit to Pitcairn Island 1850 [ADM 172/3]; Proceedings of HMS *Dido* at Pitcairn Island 1853 [ADM 172/2]; and Report of removal of Pitcairn Islanders to Norfolk Island by Lieutenant Gregorie 1856 [ADM 125/135].

A most useful unpublished account of the visit of HMS *Blossom* to Pitcairn Island is contained in the notebooks of Richard Beechey held at the Public Record Office of Northern Ireland [T2479/2]. Richard Beechey was the younger brother of Captain Frederick Beechey whose published account (Beechey 1968) is the standard reference for the *Blossom's* visit at Pitcairn. Richard Beechey appears to have had ample opportunity during the 17 day visit of the *Blossom* to observe and speak to the Pitcairn Islanders and it is possible that Captain Frederick Beechey used his brother's notes when compiling his own account of the visit to Pitcairn Island.

Certified copies of the reports of Captain Sir Thomas Staines (HMS *Briton* 1814), Captain William Waldegrave (HMS *Seringapatam* 1830), Captain Charles Fremantle (HMS *Challenger* 1833), Lieutenant James Lowry (HMS *Sparrowhawk* 1839) are published in Brodie (1851). A certified copy of Captain Pipon's report (HMS *Tagus* 1814) - as well as a certified extract from the logbook of Captain Folger (*Topaz* – 1808) are available in the manuscript collection of Sir Joseph Banks held by the State Library of New South Wales (www.slnsw.gov.au/Banks). The State Library of New South Wales is the manuscript source for the journal of *Bounty* mutineer James Morrison [Mitchell Library CY 265] and the journal of William Ebrington (HMS *Virago* –1851) [CY 1139] and the visit of Captain Raine (*Surry* –1821) [CY 901]. Other accounts of British naval vessels visiting Pitcairn Island are from published sources. These include accounts by Captain Pipon (1834), Lieutenant Shillibeer (1817), Quarter Master John Bechervaise (1839), Captain Waldegrave (1833) and Lieutenant Shipley (1851).

Useful descriptions by visitors to Pitcairn Island include those of Moerenhout (1837) and Bennett (1840). Moerenhout first visited Pitcairn in January 1829 and was at Tahiti in 1831 when the Pitcairn Islanders arrived there aboard the *Comet* and *Lucy Ann.* Frederick Bennett was surgeon aboard the ship *Tuscan* and visited Pitcairn in March 1834. An account of the Pitcairn Islanders arrival at Tahiti in 1831 is included in the London Missionary Society – South Seas Letters 1831[ML G309/24]. Captain William Driver's account of his passage back to Pitcairn Island with the Pitcairners in July 1831 is found on Pacific Manuscripts Bureau microfilm 780.

Further information was derived from maps and images of Pitcairn. These were principally used to define the study area and are discussed in that context in the following section. Other sources of information regarding continuing traditions, events and past uses, are oral history and topynomy. In this context the Gathercole expedition surveyed local informants regarding Pitcairn place-names and developed a map showing the location of these. The origins and events associated with these names were analysed in a linguistic study of the Pitcairnese language by Ross and Moverley (1964) and is used in Chapter Five when discussing the resources of the island and social organisation. Several Pitcairn Islanders provided information regarding continuing traditions. Information regarding the manufacture of tapa cloth was provided by Mavis Warren and Nola Warren. Charles Christian, Jacob Warren and Len Brown gave valuable details regarding Pitcairn canoes. The information from these informants augmented evidence in the letters of Lincoln Clark who arrived at Pitcairn in 1881 as a shipwrecked sailor from the *Acadia.* Between 1923 and 1933 Clark corresponded with Benjamin Wall of Grapevine, Texas, and these letters were collected by Wall's daughter (Fraser 1993).

ARCHAEOLOGICAL FIELDWORK AT PITCAIRN ISLAND

Two centuries after the arrival of the *Bounty* at Pitcairn Island, the descendants of the *Bounty* settler group continue to occupy sites at Adamstown. In 1998 the resident population of Pitcairn was 46, living in 19 houses - 15 of which were located in Adamstown. In addition to these, seven vacant houses (six as ruins) and several service buildings and areas existed in Adamstown. These include the main administrative

complex comprising the church, post office and council chamber (*the Square*), as well as the medical centre, co-op store, radio station, generator plant, works depot, saw mill, school, cemetery and dump. Adamstown is the focus of a living community and presents as a multiple patchwork of gardens, roads, plantations and buildings. As is common in fieldwork involving indigenous populations, access for archaeological work at Pitcairn Island was subject to negotiation at both a community and individual level. Accordingly an initial visit to Pitcairn Island was made in 1997 to meet the Island Council and seek permission to undertake fieldwork. The Council agreed to support the project on the proviso that the right of individual landowners to grant access was respected. This principal dictated the direction of surveys and excavations at Adamstown.

Defining the study area - Map of Adamstown

The first phase of the archaeological study was to locate the likely area of the historic settlement. This was done by reviewing the historical evidence. A literature search conducted during the initial stages of research produced written descriptions, views and a map of the village at Pitcairn. At Pitcairn Island this documentary evidence was augmented by field surveys and information from local informants.

The first map of the island was produced by Captain F.W. Beechey of HMS *Blossom* and published in 1831. Over 100 years later the Templeton Crocker Scientific Expedition produced a second map in 1934. In 1964, during an expedition to Pitcairn, the archaeologist Peter Gathercole found these maps to show numerous discrepancies and asked H. Knight (Otago Medical School) to produce a new map. Knight produced both a general map of Pitcairn at a scale of 1:5000 and a detailed map of Adamstown at a scale of 1:2500. In 1967 the US Corps of Engineers established survey marks at several locations as part of a geodetic survey of the Pacific. An updated map of Adamstown at a scale of 1:1000 was produced by the Pitcairn Island Administration in 1985 for use with a new Pitcairn Island Land Register and was used as a basis for establishing temporary benchmarks for use in the archaeological survey. These were established by Drs Roe and Gibbs along the principal Adamstown road, starting at the US Corps of Engineers benchmark at *the Edge* and finishing at John Adams' grave.

These benchmarks form the reference for location of all land features identified during fieldwork.

Views of Pitcairn in the documentary record

A range of views of Pitcairn survive from the early nineteenth century and exhibit considerable variation in ability and usefulness as reliable source material. The earliest of these is a watercolour by Lieutenant Shillibeer who visited Pitcairn aboard HMS *Briton* in 1814 (DL Pd 702). This picture is highly stylised and provides no evidence for locating the village site. The simplicity of Shillibeer's painting is further highlighted in contrast to the sketches and paintings produced by William Smyth and Frederick Beechey during the visit of HMS *Blossom* in 1825. Smyth's unpublished sketchbook, held by the Mitchell Library, contains eight sketches at Pitcairn. The most important of these for locating the site of the village is shown in Figure 3.1. The view is a pencil sketch showing four buildings situated on relatively flat land with the prominent peak of *Gannets Ridge* in the background. A large tree in the left of the picture is recognisable as a banyan tree. The archaeological importance of this picture is that it shows the village in relation to surviving identifiable features (banyan tree, *Gannets Ridge*, *Christian's Cave*) and provides a reference for locating the village centre. Of equal importance is the fact that Smyth was a skilled draftsman (the detail in his pictures comparing favourably with later photographs) and we can have considerable faith in the location, size and details of the buildings shown in his picture. However, we also have verification in the sketches of Frederick Beechey. Figure 3.2 shows the same houses depicted in Smyth's sketch from a slightly different perspective. The principal two-story building is common to both drawings and is recognised by the opening in the gable – end and the generous thatch overhang at the rear of the building. Beechey's drawing also shows the banyan tree, *Gannets Ridge* and *Christian's Cave.*

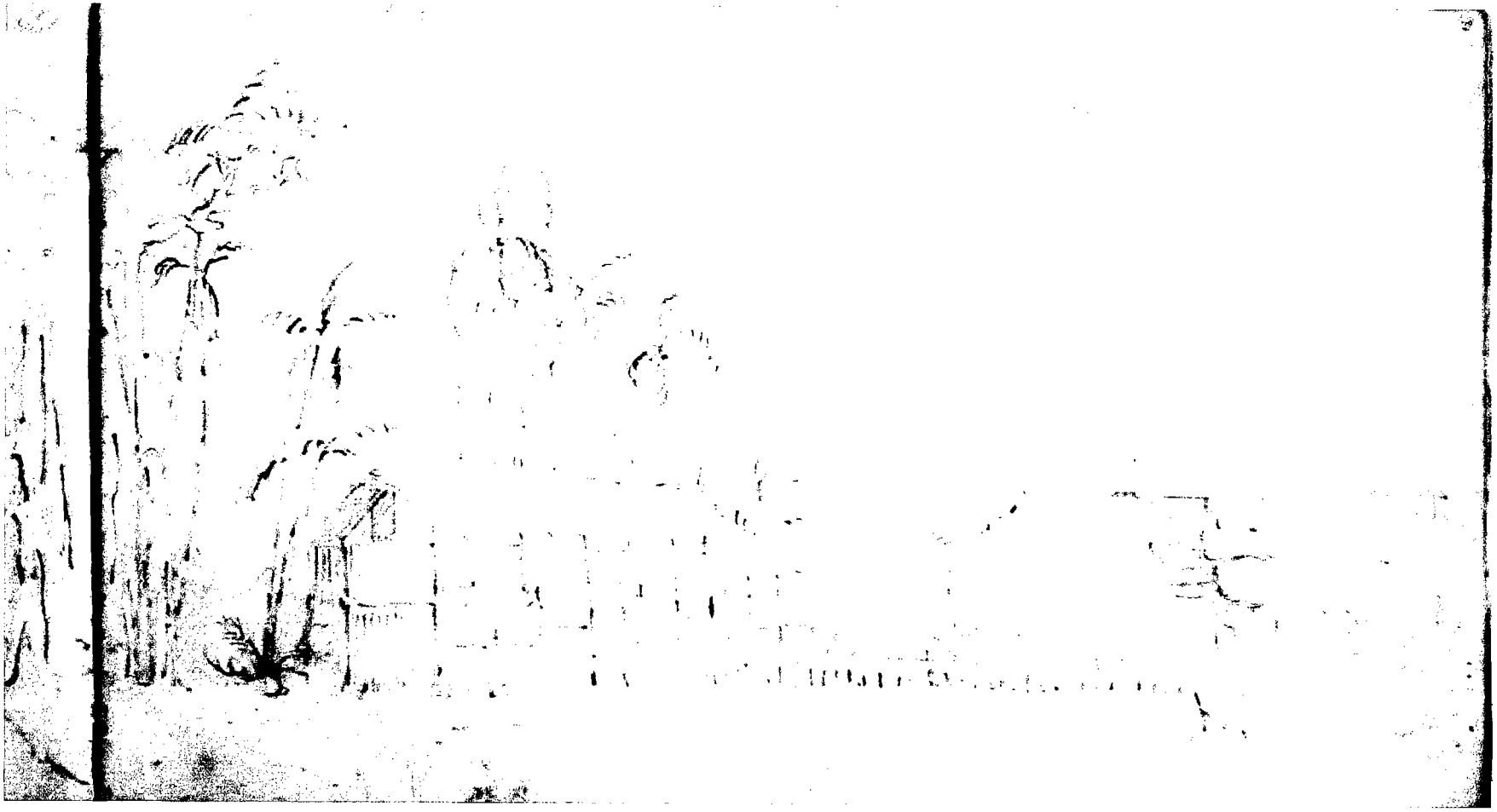

Figure 3.1 Sketch of John Adams' house in village at Pitcairn, William Smyth, 1825
(Reproduced by permission of the Mitchell Library)

Figure 3.2 House of John Adams at Pitcairn Island, F.W. Beechey, 1825
(Reproduced by permission of the National Library of Australia)

The visit of HMS *Blossom* produced two further pieces of information helpful for locating the original village site. These are a map of Pitcairn Island and the written descriptions of the village in the accounts of both Captain Frederick Beechey (1968:105) and his younger brother Richard (PRONI:T/2479/2).

Description of the village

G.S.Ritchie (Hydographer of the Navy 1966 – 1971) describes Captain Beechey's narrative as setting new standards in reporting (1995:170). This is particularly true in his cameo description of the village at Pitcairn:

> The hamlet consisted of five cottages, built more substantially than neatly, upon a cleared patch of ground, sloping to the northward, from the high land of the interior to the cliffs which overhang the sea, of which the houses command a distant view in a northern direction. In the N.E. quarter, the horizon may also be seen peeping between the stems of the lofty palms, whose graceful branches nod like ostrich plumes to the refreshing trade-wind. To the northward, and north-westward, thicker groves of palm-trees rise in an impenetrable wood, from two ravines which traverse the hills in various directions to their summit. Above the one, to the westward, a lofty mountain rears its head, and toward the sea terminates in a fearful precipice filled with caverns, in which the different sea-fowl find an undisturbed retreat. Immediately round the village are the small enclosures for fattening pigs, goats and poultry; and beyond them, the cultivated grounds producing the banana, plantain, melon, yam, taro, sweet potatoes, appai, tee and cloth plant, with other useful roots, fruits and shrubs, which extend far up the mountain and to the southward; but in this particular direction they are excluded from the view by an immense banyan tree, two hundred paces in circumference, whose foliage and branches form of themselves a canopy impervious to the rays of the sun. (Beechey 1968:106)

From this account it is clear that Beechey considered the main village was situated north of a very large banyan tree. The account goes on to mention other cottages (*ibid*:107) – four to the east belonging to the Youngs and Quintals and '...three or four' built on the plantations. " One of these, situated higher up the hill than the village, belonged to Adams, who had retired from the bustle of the hamlet to a more quiet and sequestered spot" (*ibid*). This description provides a key to interpreting buildings shown on Beechey's map of Pitcairn Island.

Figure 3.3 Map of Pitcairn Island by Captain FW Beechey 1825
(Reproduced by permission of the Dixson Library)

Figure 3.4 Detail of village at Pitcairn from Beechey's map

The map shows thirteen buildings. Four of these are situated east of the main group and are separated from it by a watercourse. These are interpreted as the four houses belonging to the Youngs and Quintals. Of the other group, one is clearly removed from the main centre and is interpreted as John Adams' place of retirement. The remaining buildings are interpreted as the village centre. Richard Beechey (n.d.) described this as consisting of '... five dwellings in two lines leaving a space or square...'. This supports Captain Pipon's (1834:194) description of the village in 1814 where he notes that ... "The little village at Pitcairn forms a pretty square. John Adams occupies the house at the upper end, and Thursday October Christian one opposite him ..." In the end however, while the location of buildings on the map can be interpreted from the written descriptions, the location of the banyan tree remains central to identifying the village site in the present landscape.

Location of Banyan trees in Adamstown

Only two banyan trees survive in Adamstown at the present time. These are located at *Forge* and *the Banyans* – the second tree being very much larger than the first. Figure 3.5 is a view of Adamstown taken from *Christian's Cave* in 1999 and *the Banyan* can be seen as a dominant feature in the centre of the image.

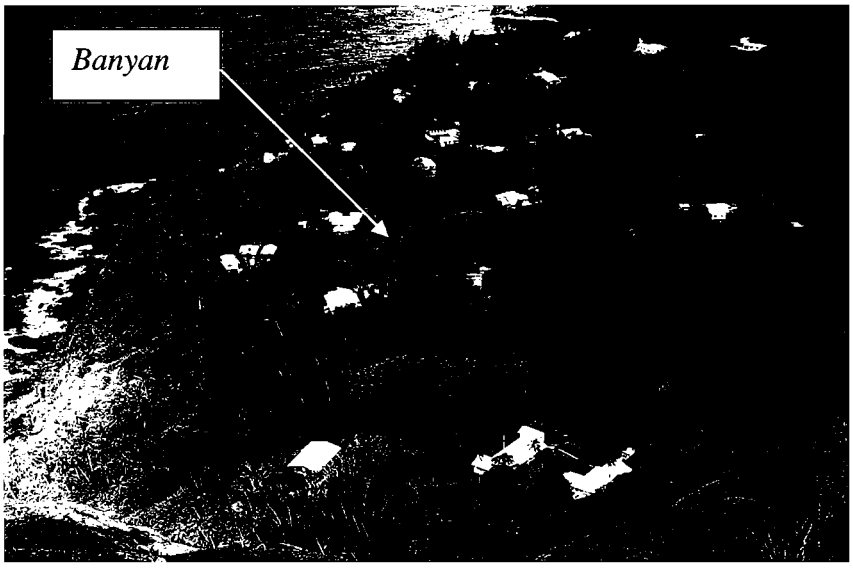

Figure 3.5 View of Adamstown from *Christian's Cave* 1999

The *Banyan* can be shown to have remained essentially unchanged throughout (at least) the twentieth century by looking at Figure 3.6, a view of Adamstown in 1906.

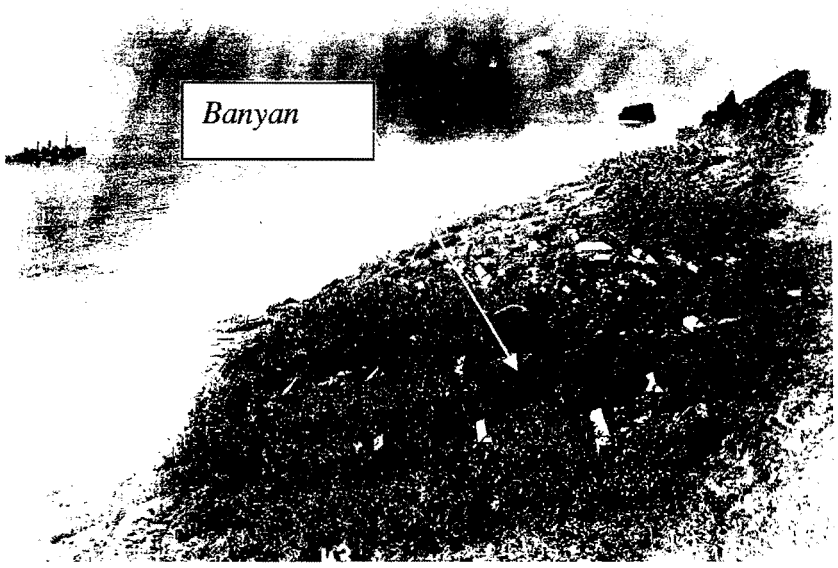

Figure 3.6 View of Adamstown 1906
(Reproduced by permission Mitchell Library)

The botanist Gothesson (1997:268), referring to Beechey's description of the banyan tree close to the village states ... 'This majestic banyan was probably identical with the one still present at *Shady Nook* in the northwestern part of Adamstown'. In view of this combination of botanical and photographic evidence it is hypothesised that *the Banyan* is the tree noted by Beechey and that its location remains fundamentally unchanged since the visit of HMS *Blossom* in 1825. This is further supported by the location of the oldest surviving house on Pitcairn – the home of Thursday October Christian. It must be acknowledged that some confusion accompanies the use of this name. Thursday October Christian (1) was the son of Fletcher Christian and was born in 1790 and died in 1831. Thursday October's son, born in 1819, was also called Thursday October Christian. Despite this confusion however, the location of the oldest house on Pitcairn in such close proximity to *the Banyan* supports local oral traditions that this area is the site of the original village.

Local Topography

Adamstown is located at the foot of the Adamstown basin and presents as a landscape of alternating ridges and valleys. Evidence that the valleys have been a permanent feature of the Adamstown landscape since the arrival of the *Bounty* is attested in the surviving mutineer names – *Brown's Water, John Mills' Valley, Isaac's Valley* and *Jack Williams' Valley.* Indeed, *Brown's Water* is one of only three semi-permanent springs on the island and this is likely to have been a factor in establishing the village at this site. During periods of heavy rain the valleys change dramatically as large volumes of water funnel down from the high slopes and descend to the sea. Given this periodic dynamism, the valleys have traditionally been regarded as unsuitable for houses and these have been built on the ridges. Within the cultural landscape several sites on the Adamstown ridges are directly linked to the study period through surviving features, associated place names or oral traditions and were further used to define the study area.

John Adams' grave and house site

One year after the death of John Adams, Captain Waldegrave of HMS *Seringapatam* was shown Adams' grave and described this as located at the end of his cottage garden (Waldegrave 1833:157). In 1837 the grave and house were sketched by James Addison and in the mid nineteenth century the original lead and timber grave marker was replaced with a gravestone that is still in place. This marks the site of Adams' place of retirement situated ... 'higher up the hill than the village' (Beechey 1968:107) which he appears to have made his principal residence by 1821 (Raine 1821:82), though still retaining an earlier house in the main village square. Adams' grave is therefore indicative of the outer limit of the village – the main centre being situated on the lower slopes.

House site of George Hunn Nobbs

Sixty metres below John Adams' grave is an area named *Mr Nobbs*, believed to be the house site of George Hunn Nobbs (Ross and Moverley 1964:179). Nobbs arrived at Pitcairn in 1828 and married Sarah Christian, a grand-daughter of Fletcher Christian, in 1829. Support for this site association is strengthened by the presence of a soap-seed tree (*Sapindus saponaria*). Gothesson (1997:324) notes that the seeds of the tree produce a frothy 'soap' used as a shampoo and that Nobbs brought a single seedling from Valparaiso in 1853.

Area associated with Fletcher Christian

One hundred and fifty metres below John Adams' grave is an area named *Fletcher's,* believed to be the site of Fletcher Christian's house (Ross and Moverley 1964:176). The area is owned by Tom Christian – a direct descendant of Fletcher Christian and at the time of fieldwork an old house survived on the site. Tom Christian's modern house is situated a few metres north of the old family house.

House of Thursday October Christian

The house of Thursday October Christian (II) is located on gently sloping land, south of *the Banyans* in an area that accords closely with topographic details in both Beechey and Smyth's 1825 sketches of the village. Local oral traditions also claim this is the site of the original village.

The Gun

The place named *the Gun* is situated on the cliff edge where a path leads down to the rock flats at *Down Isaac.* A cannon recovered from *Bounty Bay* in 1845 was mounted at this place and used to salute visiting ships.

THE STUDY AREA DEFINED

Based on the accumulated evidence of historic sources, local topography, associated place names, surviving architectural remains and information from local informants, an area of Adamstown was identified for archaeological investigation. In addition to Thursday October's house and the house at *Fletchers,* three other old timber houses survive at Adamstown (Henry's house, Shady Nook, Nola's old house) and the boundaries of the study area were extended to include these sites. The area was defined by the landscape features of *Brown's Water* valley in the west and the high water mark at *Down Isaac's* to the north. In the south, the area was defined by a line generally following the road above the square. The fourth boundary was closed by a line bearing north, east of *the Gun.* The study area is shown in Figure 3.7 on the following page.

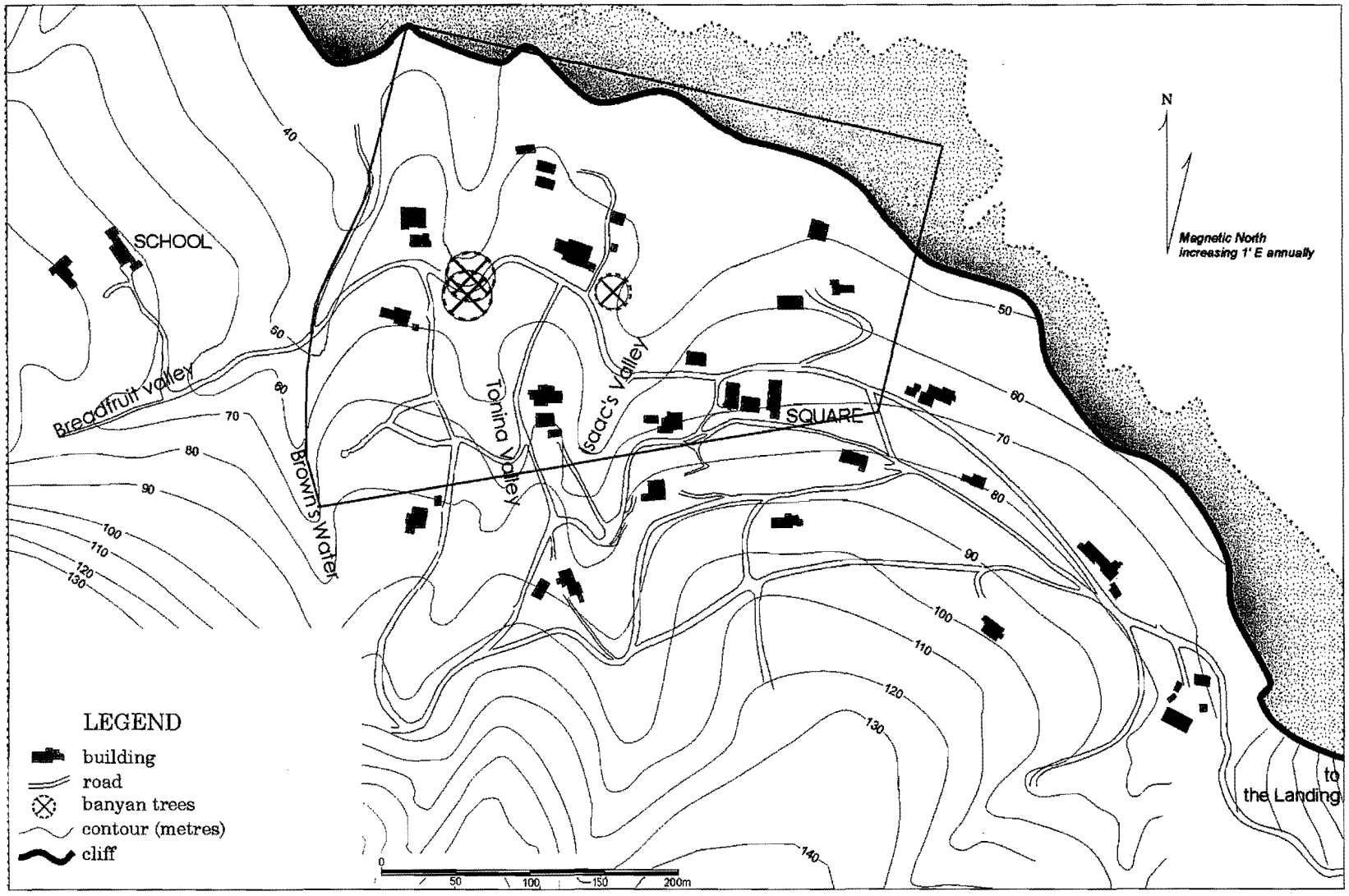

Figure 3.7 Adamstown study area

Limitations within the survey area

The presence of the contemporary Pitcairn community at Adamstown posed challenges for archaeological investigation. The study area is approximately 84,000 m^2 and has been a focus of human habitation since 1790. The area can be divided roughly into 78,000 m^2 located in the main Adamstown basin and 6,000 m^2 of rock flats. 30 m cliffs extending for 350 m separate these areas. The archaeological potential of the area is affected by both cultural and natural factors. Foremost of these is the impact of the present community and access for archaeological investigation was limited by the presence of buildings, roads, paved areas, gardens and modern refuse areas, and subject to negotiation with individual landowners. Within the study area access to approximately 20,000 m^2 was either impossible (being located under a modern structure) or withheld by the landowner. The Pitcairn community is deeply insular - regarding all 'outsiders' with some degree of suspicion and not all Pitcairners are interested in the past. In one case access around a house was denied where a person lay seriously ill, while in another case (Nola's old house) the owners restricted investigation to measuring and recording the structure. The areas affected in this way are tabulated in Table 3.1 and their location indicated in Figure 3.8.

Description	**Area**
Sections where access was impossible or withheld.	12,130 m^2
Other buildings	2,000 m^2
Roads	2,500 m^2
Vegetable gardens	1,100 m^2
Current refuse area (dump)	2,500 m^2
TOTAL	20,230 m^2

Table 3.1 Areas of restricted access within the study area.

As a result of these restrictions, an area of 64,000 m^2 was available for investigation. Visibility and access was further affected by vegetation and cultivation practices.

Impact of local vegetation

Banana plant:

The main plant cultivated in Adamstown is the banana. In recent years the export of dried bananas to New Zealand has provided an important cash crop, and relatively large areas are now cultivated for this purpose. Where banana plantations have been established for some time, the combination of large root mass, close planting and abundant discard of foliage, results in a very thick ground cover that cannot be penetrated. The area of *Tonina Valley* between *the Banyans* and the cliff is the oldest banana plantation in Adamstown and surface visibility in this area was as low as 30 per cent. In other areas where bananas had only been planted recently, the mat of ground cover was not yet established and visibility was relatively high (80 per cent). At the time of fieldwork the preferred location for banana plantations in Adamstown was in the valleys where the soil is moist and the plants are protected from the wind.

Rose Apple tree:

The vegetation in *Brown's Water* valley on the western boundary of the study area is the Rose Apple tree (*Syzygium jambos*). According to Gothesson this species was introduced as a source of firewood (1997:278). The Rose Apple grows thickly and produces a high, dense canopy which reduces light levels to a point where no ground cover survives. Apart from leaf litter the ground is completely bare and visibility is high. The northern end of *Brown's Water* Valley is used as the community dump and is contaminated with modern refuse.

Pandanus, Coconut, Candlenut and Miro tree:

The salt-tolerant Pandanus tree (*Pandanus tectorius*) is predominant on the cliffs and margins at the northern edge of the Adamstown basin and produces a long, barbed leaf. The dead leaves of the tree accumulate in these areas but are easily pushed aside to reveal the ground surface beneath. Other species found along the cliff margins are the Candlenut (*Aleurites moluccana*), Miro (*Thespesia populnea*) and Coconut (*Cocus nucifera*). As with the Pandanus, each of these produces a thick layer of discarded foliage that must be removed to examine the ground surface.

Pineapple, Paw Paw, Sugar cane:

Apart from bananas, several other fruits are cultivated in the study area. At the time of fieldwork a large pineapple patch covered the area around John Adams' grave and several small Paw Paw gardens existed. A single field of sugar cane had also been planted in the field immediately south of Thursday October's house. Visibility in each of these areas was high.

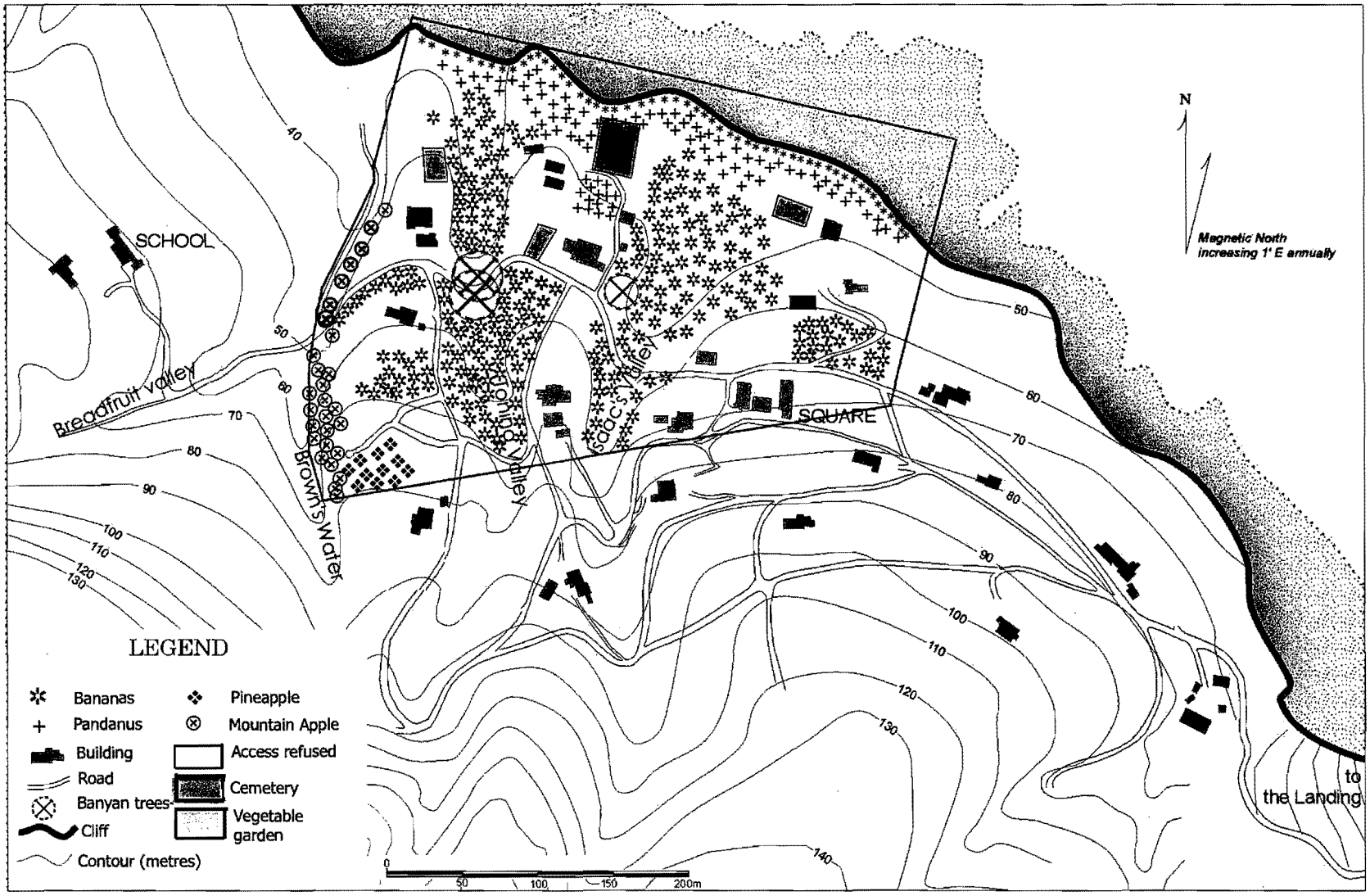

Figure 3.8 Vegetation and areas of restricted access in the study area.

SURVEY AND IDENTIFICATION OF SITES

No airstrip exists at Pitcairn Island and all equipment for the expedition was shipped from Australia and arrived at Pitcairn with the candidate and two other expedition members in late October 1998. A further five expedition members travelled by air to Mangareva and then charter yacht to Pitcairn. By November 7 the full expedition team was assembled consisting of Dr. David Roe, Dr. Martin Gibbs and Dr. Peter Veth (all from James Cook University, Department of Archaeology), Mike Nash (Maritime Heritage Officer, Tasmanian Parks and Wildlife), Jon Carpenter (Senior Conservator, Western Australian Museum); Dr. Peter Sullivan (Australian Antarctic Division), Sally Randall (volunteer) and the candidate. The full strength of this team was utilized during the survey of the study area.

A 10 day reconnaissance trip to Pitcairn in 1997 had indicated that archaeological potential varied considerably within Adamstown. While the concentration of population in the area has inevitably resulted in disturbance to the archaeological record in some areas, this is far from universal. The most obvious example of large scale alteration is the cutting of roads throughout Adamstown in the 1960s following the arrival of small motor vehicles. Since the arrival of a tractor fitted with a bulldozer blade in 1965, former bush tracks have been converted into dirt roads suitable for light vehicles. This trend has continued with the parachute delivery of a D4 bulldozer by the Royal New Zealand Air Force in 1983 and this has recently been used to clear some areas for cultivation of bananas. Balanced against this development is the steady decline in population. Since 1986 the population has fallen from 68 to 46 in 1999 and this has had the effect of creating a relative abundance of land available for cultivation. The pattern of land use is further complicated by attitudes to the land. Some older residents prefer the traditional method of tilling the soil manually with a hoe and are averse to allowing the bulldozer on their land. In other cases, where the beneficiary of a will does not live on Pitcairn, the trustee of the land may be reluctant to alter the land in any way and this has resulted in some areas remaining untouched for long periods. Still other areas are simply too steep or heavily wooded to be of practical value. The result is a patchwork of gardens, roads, cliffs, ravines, houses, plantations, ruins and rock flats displaying varying degrees of disturbance. The combination of these factors effectively precludes the use of random sampling. Indeed given the relatively small size of the study area, it was decided to survey the entire area and to attempt to locate all

significant surface material. This was done using closely spaced parallel transects. In areas of high visibility team members were spaced at a maximum of three metre intervals. This spacing was reduced to one metre when surface visibility became lower. Leaf litter was removed to reveal the ground surface and all artefact material tagged and noted on a working plan of the area.

In addition to John Adams grave and the old buildings at *Fletcher's*, Thursday October's house, *Shady Nook*, Henry's house and Nola's old house, the survey identified significant surface scatters at ten locations. These included a cliff disposal point and an individual find of a musket trigger guard on the rock flats at *Down Isaac.* This last was identified as a Royal Navy pattern in use between 1755 and 1790. The survey also noted an example of a traditional Pitcairn canoe at the site of a recently demolished house, an abandoned building containing a large number of plates decorated with various shipping company monograms, and a collapsed ruin with associated twentieth century kitchen wares.

The discovery of the trigger guard at *Down Isaacs* initiated a search of 350 m of cliff face above the rock flats. The base of the cliffs was also searched at this time. Two further cliff disposal points, a small cave and an artefact deposit at the base of the cliff were located in this manner.

By the end of the survey 26 sites had been identified for further investigation. These were numbered and are listed by type in Table 3.2 on the following page. The location of these sites is shown in Figure 3.9.

Inventory of sites

Site	Architectural feature	Artefact concentration	Site of historic association	Other
1		X		
2	X			
3		X		
4		X		
5		X		
6		X		
7		X		
8		X		
9		X		
10			X	
11		X		
12	X			
13			X	
14	X		X	
15				X
16		X		
17		X	X	
18		X		
19		X		
20		X		
21	X			
22	X			
23				X
24	X			
25	X			
26		X		

Table 3.2 List of all sites in survey area.

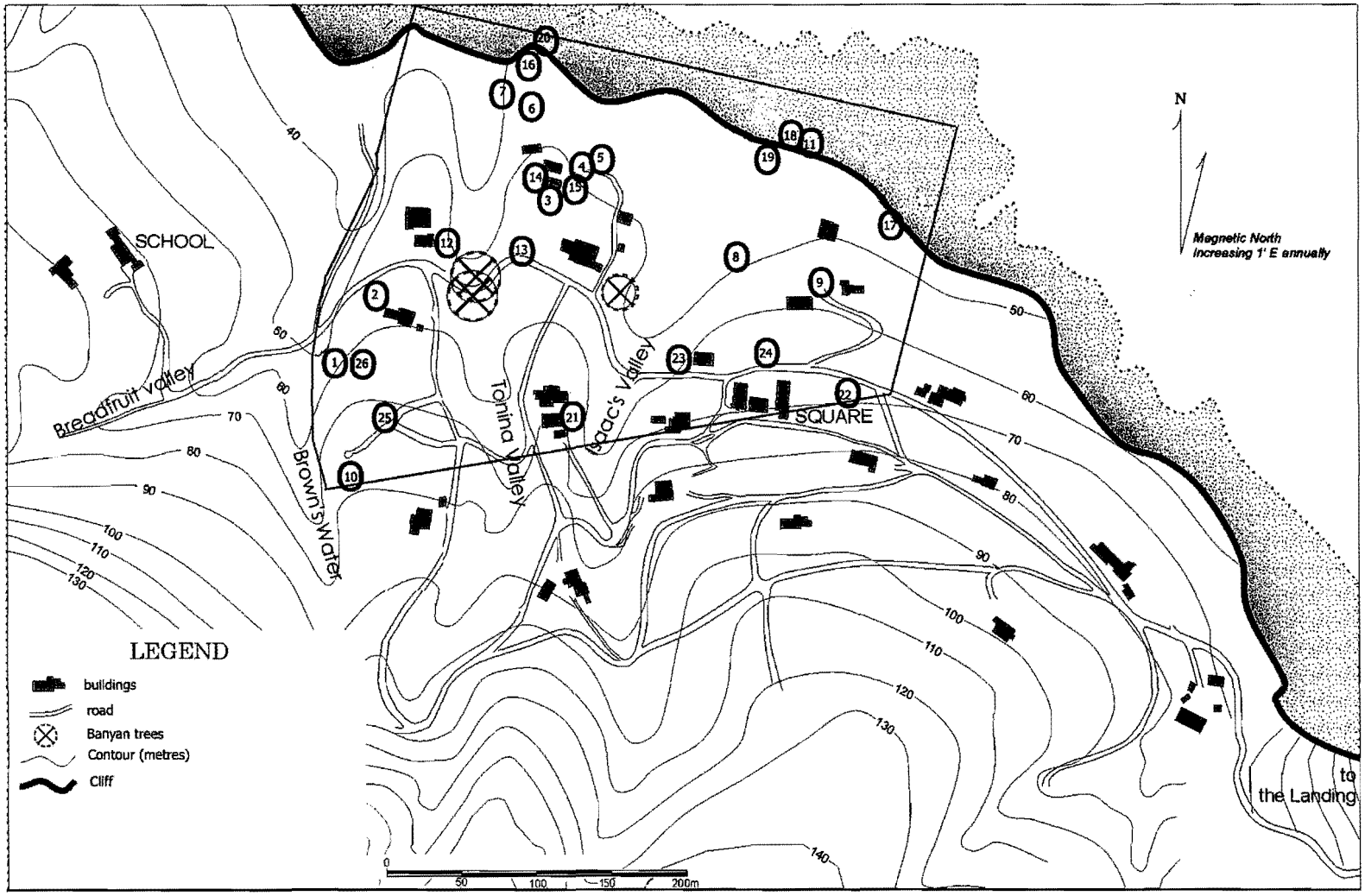

Figure 3.9 Location of all archaeological sites in study area

DESCRIPTION OF ADAMSTOWN SITES

Figure 3.9 is a plan of the village of Adamstown showing the location of archaeological sites in relation to the main distinguishing features of the area. Standardised recording forms were used at each site and these were given individual identifying numbers. Each number is prefixed by the letters LF (Land Feature). In the course of the initial survey LF numbers were used to identify features, which in some cases were later found to have no archaeological significance and these areas were not investigated further. As a result, LF numbers defining investigation areas do not follow consecutively. Artefacts from these sites are discussed in Chapter Five.

Techniques

1. Architectural Recording

Architectural features at sites 2, 12, 14, 21 and 22 were measured and documented photographically in order to produce scale drawings, and property owners were interviewed for details of the site history. Timber samples were taken for identification at site 14.

2. Surface Collections

Surface material was collected at 19 sites. At each site a grid formed by multiple tape measures was laid out over the surface to form a matrix of $1m^2$ units. The orientation and location of the surface grid was recorded and all archaeological material was defined by the grid co-ordinates. Each unit was identified alphabetically and all surface material was collected and bagged by unit. Material was examined in the field, photographed and assessed for conservation requirements prior to packing and removal to Australia. All artefacts were secured at the Museum of Tropical Queensland in Townsville.

At cliff disposal points it was not possible to grid the ground surface due to the extreme gradient and the difficulty of forming a grid when suspended from a rope. Material collected at these points is therefore defined by location only.

3. Magnetometer Survey

A Geometrics G816/826A proton magnetometer was used at sites 10, 14 and 17. Magnetic surveys were carried out on a 5m grid pattern and the results calibrated against an initial reading to establish diurnal shift. The results were entered on a Microsoft Excel spreadsheet and plotted as a surface graph.

4. Metal Detector Survey

A metal detector was used in conjunction with all magnetometer surveys.

5. Excavations

Excavations were carried out at nine locations. In the majority of cases initial test pits of $1m^2$ units preceded larger excavations. Where stratigraphy was apparent, excavation was by stratified layer. Where no stratification was apparent, excavation was by arbitrary spits of 10 cm. Apart from a small number of test holes sunk by machine auger, excavation was by trowel. Depths were recorded by dumpy level. All excavated material was sieved through 6mm and 3mm screens and bagged by unit and spit. Bulk samples were taken at each excavation for later sieving through a finer mesh. With the exception of a very large amount of material excavated from a privy pit, all excavated material was retained for further analysis in Australia. Material from the privy was sorted, recorded and only significant finds retained. All other material was redeposited in the privy and backfilled.

LF0001 (Fig 3.9, Location 14)

House of Thursday October Christian

Surface collections and excavations were conducted along the southern side (rear) of this house. In contrast to the northern side which is regularly mowed and maintained, the rear of the building was overgrown and appeared essentially little disturbed. The house is roofed in galvanized iron but open to the elements where sections of wall have been removed. The house was occupied by Mr Roy Clark until 1966 when the land was bought by the government and a hostel for visiting officials was built a few metres to the north.

The ground surface at the rear of the building was cleared of weeds by hand and gridded into 1 m^2 units for surface collection. The house measures 10.75 m x 5.1 m and 11 units were established along the full length of the building. Figure 3.10 is a plan of Thursday October's house showing the position of units.

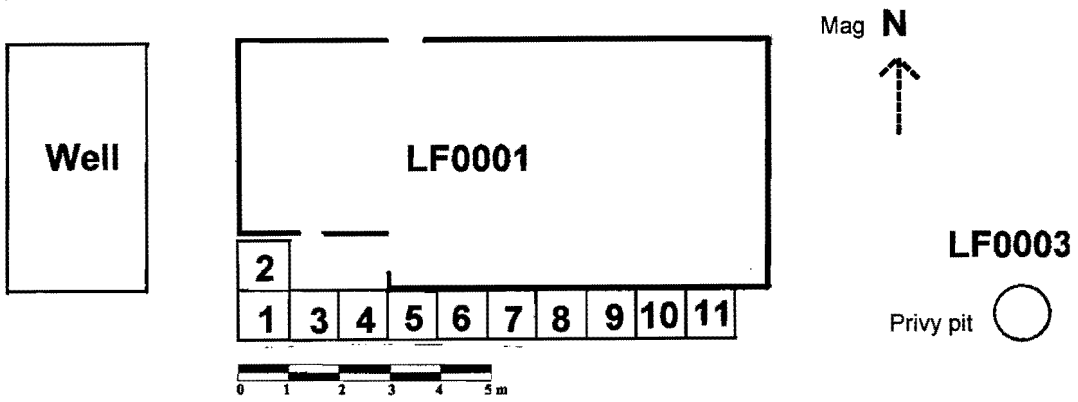

Figure 3.10 Location of 1 m^2 units at excavation of southern boundary of Thursday October's house.

The plan shows that the south west corner of the house is missing. The house is constructed on hardwood (*Thespesia populnea*) bearers raised above the ground on large stones. These are placed at the corners of the building and under scarf joints in bearers. In the south west corner of the house, remaining stones indicate that the main bearer supporting the southern wall extended to the south west corner of the building. (A complete analysis of Thursday October's house is presented in Chapter Eight in the context of addressing the main research questions). A 1 m^2 test pit was excavated in square 1 in an attempt to gauge the potential of subsurface deposits. A 0.5 m^2 excavation was extended into square 2 as it appeared this area was originally covered by the house. The ground surface beneath the house is uniformly dry and compacted and it was thought that this might indicate an earlier earth-floored building. Square 2 provided easy access to this area. Square 1 was excavated in 7 spits to a maximum depth of 35 cm and square 2 in 5 spits to 25 cm. Square 1 (spit 7) was largely sterile and produced just one small clay pipe fragment and one black bottle sherd. Square 2 (spit 5) produced a small number of stone tool flakes but was otherwise similarly sterile. Material represented in the spits included 19th and 20th Century ceramics, buttons and bottle glass mixed with stone tool flakes of potentially prehistoric origin. No clear stratification was apparent and modern material was mixed with artefacts from earlier periods. In general these results mirrored surface finds and there appeared no benefit in pursuing excavations beneath these levels. In the absence of evidence suggesting greater deposit of artefacts in any particular squares, alternate squares 4, 6 and 8 were selected at random for further limited excavation. A view of the units at LF0001 is shown in Figure 3.13.

LF0003 Clark's dunnekin (Figure 3.9, Location 15)

Dunnekin is the word for a toilet in the Pitcairn language (Ross and Moverley 1964:225) and LF0003 is a privy pit located 6 m east of Thursday October's house. The pit was indicated by a hollow depression in the ground surface approximately 1.5 m in diameter. The location of the dunnekin indicated that it had been used by occupants of Thursday October's house though at what time was unclear. Steve Christian and Jay Warren offered the information that they had found an old dunnekin at the western end of the building some years previously. This had been located while building a concrete water storage tank to collect water from the galvanized iron roof of Thursday October's house. This tank (known locally as a well) supplies water to the government hostel.

The tank is shown in Figure 3.10 and is approximately 3 m x 5 m and 3 m deep. Approximately half of this depth is below ground surface. Steve Christian described finding a whalebone tapa beater in this dunnekin. The construction of the tank over this area made further investigation impossible, however remains of a bone tapa beater were later found in a nearbye garden (LF0036). In light of this information it was decided to excavate LF0003 as a possible disposal point associated with occupation of the house and as an indicator of the type of material disposed of in this way. The possibility also existed that the dunnekin dated from the earliest phase of the building, or that it had been used over an extended time period, either continuously or periodically. A test-pit placed in the centre of the hollow indicated the pit had been sealed with an oil drum and covered over with soil. The island tractor (with auger attachment) was brought in to remove this obstruction and the bulldozer was used to scrape off topsoil and expose the outline of the pit. This presented as a loose fill material which was easily distinguished from the more compacted surrounding soil.

Figure 3.11 View of excavations at LF0001 (southern wall of Thursday October's house. Note 1 m scale parallel to string line)

Figure 3.12 LF0003 (Clark's dunnekin) looking west to Thursday October's house.

The edge of the pit became obvious very quickly and it was a simple matter to follow the shaft down through the loose material. Large artefacts were initially separated and all remaining material was sieved through 6 mm and 3 mm screens. Excavation was by stratigraphic layers and five separate layers were identified. These are shown diagrammatically in Figure 3.13.

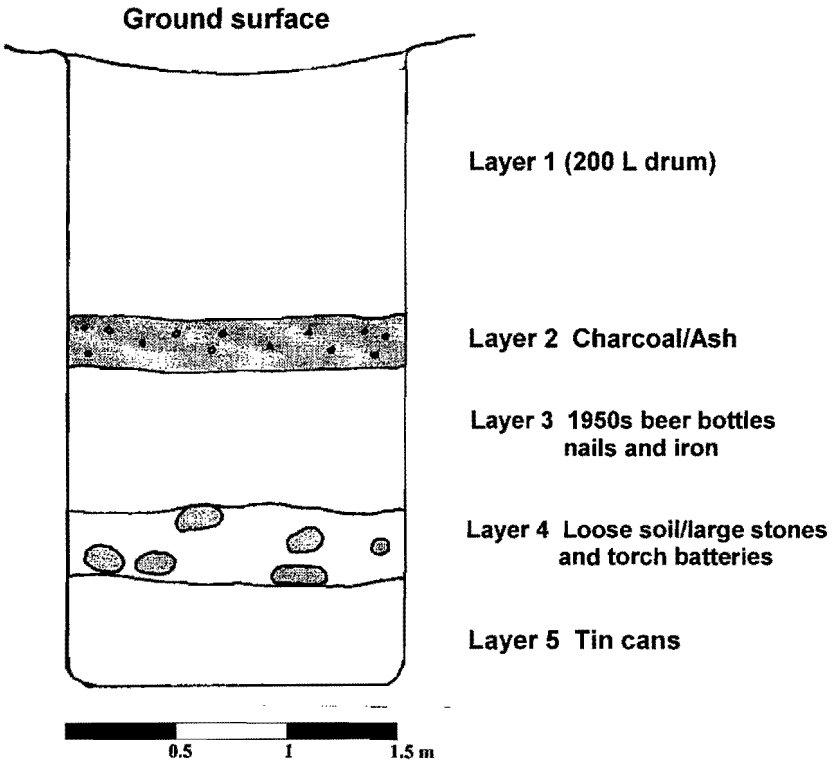

Figure 3.13 Section through LF0003 indicating layers

At the close of layer 5 the excavation had reached a depth of 2.97 m below datum level. Despite the presence of small amounts of late nineteenth century and early twentieth century material, the bulk of artefacts were identified as mid twentieth century and consisted of a large number of bottles and rusted cans. The mean date ascribed to this material indicates the last phase of occupation of Thursday October's house and is thought to relate to occupation by Roy Clark. At the close of layer 5 a decision was made to stop any further excavation. Based on the material excavated, it appeared unlikely that any significant new information was to be found by further digging. The volume of material already produced was sufficient to identify patterns of disposal and there was no evidence to suggest that the dunnekin was directly related to the study period. All excavated material was sorted by layer into the functional typologies listed in Table 4.8. Faunal remains and special finds were retained for further analysis. All other material was returned to LF0003 and the pit was back-filled from the spoil heap.

LF0004 Adams 1 house site (Figure 3.9, Location 13)

LF0004 is located 44 m south of Thursday October's house, close to the *Banyan* with a view of *Gannets Ridge* to the west. The alignment and perspective of these features accord with the site of John Adams' house drawn by Smyth and Beechey in 1825 and the site is thought to be the location of Adams' house in the village. By 1825 Adams had moved out of the village but appears to have retained his earlier house close by the *Banyan.*

A small excavation was conducted by Dr. P. Veth and M. Nash. In summary, two excavation squares were opened and taken down to sterile sediments. While several layers of different coloured sediments were exposed and a potential hearth feature located, it is thought that considerable vertical disturbance has occurred here. A sparse assemblage of mid to late nineteenth century artefacts are mixed with Polynesian artefacts with no clear evidence for a structure nor disposal relating to the early nineteenth century. It is assumed that extensive gardening, tilling and recycling of material originally located on the site has occurred.

LF0005 Tom Christian's old house (Figure 3.9, Location 12)

LF0005 is located west of the Banyan tree close by the current house of Tom Christian in an area known locally as *Fletcher.* The house is known to have been lived in by Daniel Christian (b.1855, d. 1904) a son of Thursday October Christian II and later, Fred Christian and finally, Tom Christian and his family. The site was investigated by Dr D. Roe and Dr M Gibbs. This investigation was aimed at examining the sub floor ground surface for indications of previous structures which might be linked to Fletcher Christian's house site. In summary, part of the floor was removed in the main living area and the sub-floor area exposed and inspected. This examination failed to find any indication of an earlier dwelling on the site and the great majority of artefacts collected date to the 1970s and are directly associated with Tom Christian's family. A 1 m^2 test pit placed adjacent to the main entrance (Figure 3.9, Location 2) found no archaeological remains.

LF0007 John Adams' grave and house site (Figure 3.9, Location 10)

LF0007 is the site of John Adams' second house and is situated on a ridge between *Brown's Water* and *Tonina Valley.* John Adams was living in this house at the time of

Frederick Beechey's visit in 1825 and he was subsequently buried close by. A drawing by James Addison about 1837, entitled "The house and tomb of John Adams" (DL PX55f.24) shows the house situated close to Adams' grave. Today only the grave remains to mark the general location of Adams' house. The area is approximately 38 m x 18 m and an archaeological investigation was conducted by Drs Roe and Gibbs as part of the Pitcairn Project. At the time of investigation the area was under cultivation with pineapples and the owners wanted the land to remain undisturbed. As a result, investigation was limited to non-intrusive methods including magnetometer survey and surface collection. In summary, the results of the magnetometer survey were inconclusive and only very few surface artefacts were located.

LF0008 Jacob's canoe (Figure 3.9, Location 23)

LF0008 is traditional Pitcairn canoe located at the former site of Christie Warren's house. The canoe represents the last surviving example of small craft used on Pitcairn before the introduction of motorised skiffs and was recorded as an example of traditional Pitcairn boat building technology. Additional information about this technology was recorded at Oeno Island where remains of two further canoes were located. This is discussed in Chapter Five.

LF0009 Bernice's house (Figure 3.9, Location 24)

LF0009 is an abandoned house – formerly the residence of Bernice Christian. The large number of plates decorated with shipping company insignia found in the house are a clear example of the total reliance of the Pitcairn community on ships for all imported material. While these examples date to the twentieth century and fall outside the period of the present study, they are indicative of the particular influence of shipping in Pitcairn culture throughout the history of the settlement and the effect this has had on the material record at Adamstown. The plates were recorded and used when analysing ceramic material recovered from Adamstown.

LF0010 Oscar's pump house (Figure 3.9, Location 25)

LF0010 is a collapsed building with associated surface scatter of ceramics. These were found to date to the twentieth century and the building was identified as the former site

of a pump drawing water from *Brown's Water* in the 1950s. After investigation the site was considered to be of no significance to the study.

LF0026 Nola's old house (Figure 3.9, Location 21)

LF0026 is an old house located close to the residence of Nola and Reynold Warren and was last occupied by Reynold's grandparents – Roberta and Skelly Warren. The house and associated eating house and kitchen were recorded as an example of an archaic Pitcairn house and used for comparative purposes when analysing Thursday October Christian's house.

LF0027 Henry's house (Figure 3.9, Location 22)

LF0027 is an old house last occupied by Henry Young in the 1970s, but believed to have been built by Mahew McCoy. McCoy returned to Pitcairn Island from Norfolk Island in 1858. At the time of fieldwork the house was being demolished and provided a useful insight into contemporary recycling practices at Pitcairn. As with Nola's old house, Henry's house was used for comparative purposes and is discussed in relation to Thursday October Christian's house in Chapter Five.

LF0028 *Shady Nook* house (Figure 3.9, Location 2)

LF0028 is a house located in the area known as *Shady Nook* – a reference to the shade cast by the nearby banyan tree. The site is south of *Fletcher's* and may have some association with that site. Despite this possibility, the current house, sheds and cisterns effectively mask the area. The house was investigated and recorded but found to be of relatively modern construction and no archaeological investigation was attempted.

LF0029 (Figure 3.9, Location 1)

LF0029 is located on the steep eastern slope of *Brown's Water* valley, south west of *Shady Nook.* The area is too steep for crops and is covered by Rose Apple trees (*Syzygium jambos*) which produce a thick overhead canopy resulting in reduced ground cover. Several bottle sherds and nineteenth century ceramic fragments were found in a small area and focused attention on locating a source of this material higher up the slope. During a search of the edge of the ridge using a probe to penetrate the ground, a discreet deposit of glass and ceramics was located and this was excavated in a 1 m^2

square (LF0029 unit 1). Two 0.25 m^2 test pits (LF0029 TP1, LF0029 TP2) were also placed close by and a surface scatter collected in an area of 275 m^2. LF0029 thus refers to excavations and surface collections at this location. Several objects found at LF0029 are marked with the letter 'N' (and in one case '$\mathcal{G}$') and are thought to have belonged to George Hunn Nobbs who lived on Pitcairn from 1828 to 1856. A plan of LF0029 is shown in Figure 3.14 on the following page.

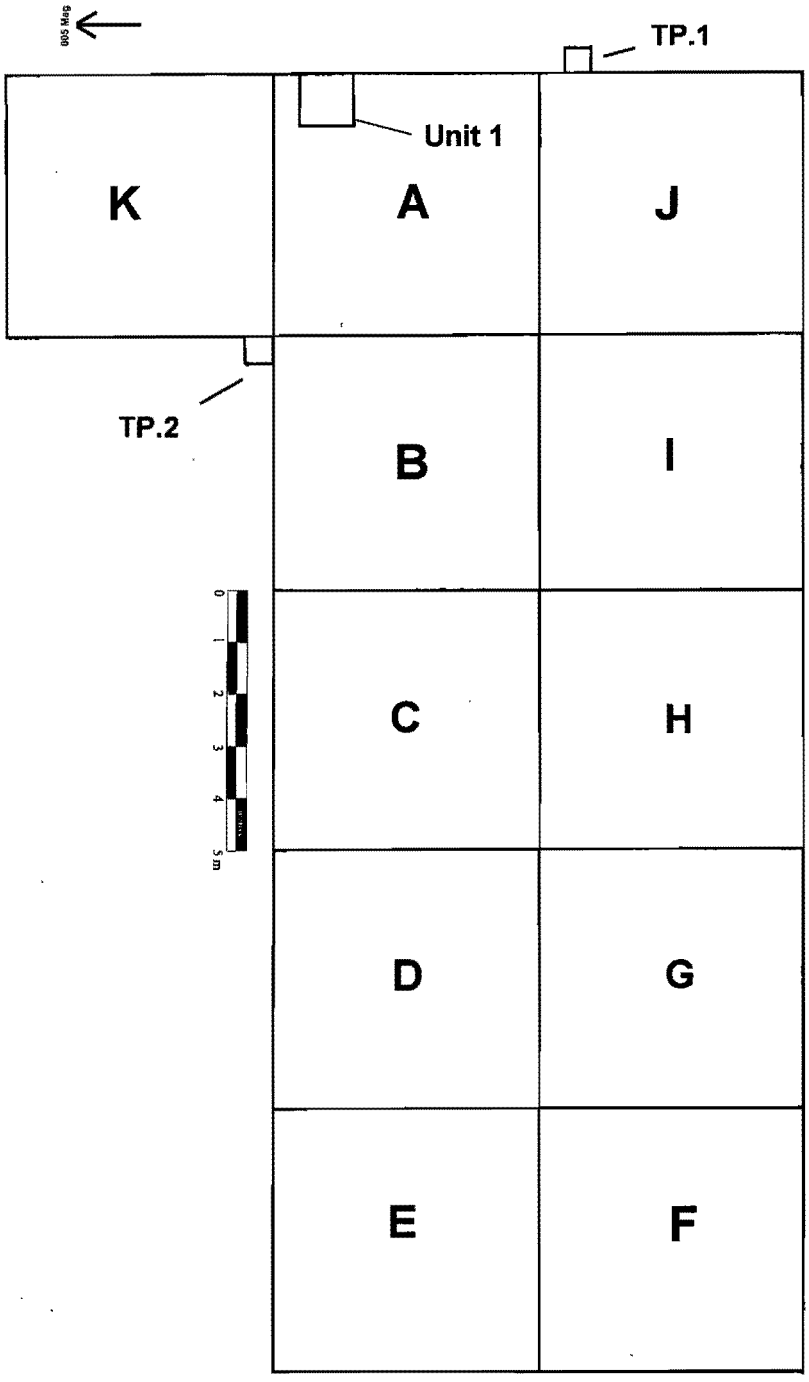

Figure 3.14 Plan of LF0029 showing excavation and surface collection areas.

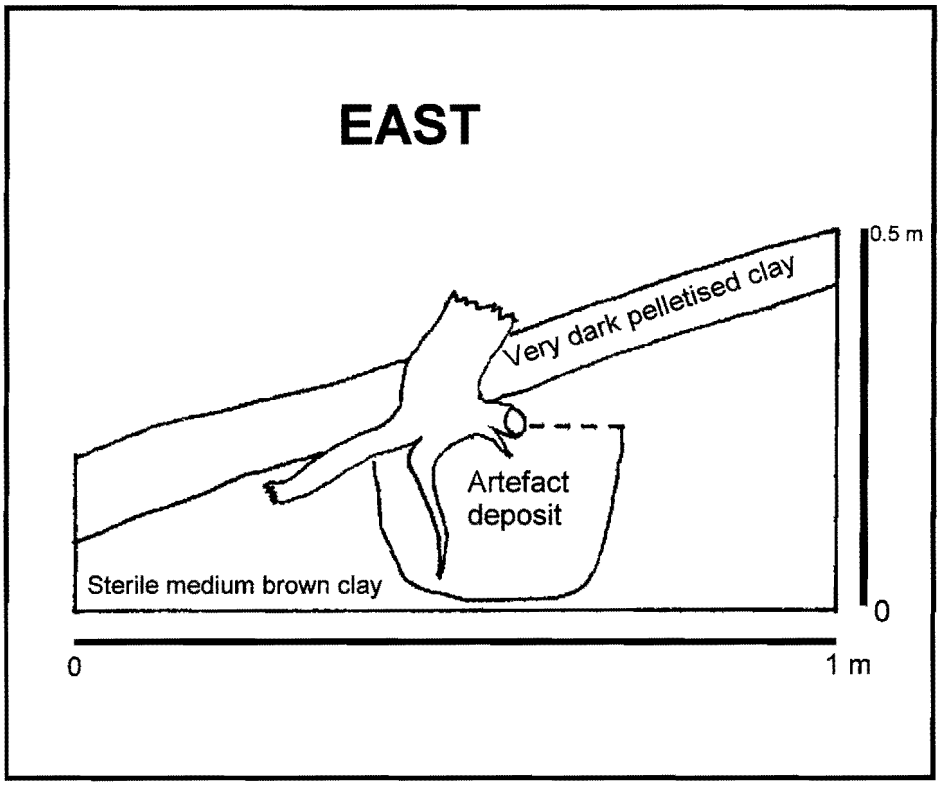

Figure 3.15 East section at LF0029 unit 1 (Nobbs site)

Figure 3.16 View of LF0029, Unit 1

LF0030 Cliff disposal point below Lincoln's (Figure 3.9, Location 16)

LF0030 is situated on the edge of 30 m cliffs at an area known locally as *Lincoln's.* This is a reference to Lincoln Clark, an apprentice aboard the *Acadia* wrecked at Ducie Island on June 5th 1881, who returned to live permanently on Pitcairn in 1909. His house was located approximately 50 m north of Thursday October's house. The entire cliff edge below Adamstown (a length of 500 m) was searched intensively and three separate disposal points were located. LF0030 is one of these. The collection area at the top of the cliff was 10 m x 8 m. Beyond this point the cliff falls vertically and material was collected at the base of this cliff at LF0031.

LF0031 Surface collection at base of LF0030 (Figure 3.9, Location 20)

LF0031 is situated immediately below LF0030 and is regarded as part of that disposal point. Material was collected in a narrow (2 m) strip formed between the base of the cliffs and the highest point affected by waves.

LF0035 Surface collection north of hostel (Figure 3.9, Location 6)

LF0035 is a 15 m^2 surface collection area on the side of a track leading from the Government hostel to the cliff edge. The remains of two *yollas* (stone graters of Polynesian type traditionally used on Pitcairn) were found at this point.

LF0036 Surface collection at Reynold's garden (Figure 3.9, Location 7)

LF0036 is a 35 m^2 collection area located 75 m north-west of Thursday October's house. At the time of survey the garden was free of vegetation and several Polynesian stone tools were visible. The area is on sloping ground forming one side of a narrow ravine and is cultivated by Reynold Warren. At the time of fieldwork the garden was fallow and the ground surface was clear of all obstructions. The area was gridded and the location of all surface material noted prior to collection. A view of LF0036 is shown in Figure 3.17.

Figure 3.17 View of LF0036

LF0037 Surface collection south of Thursday October's house (Figure 3.9, Location 3)

LF0037 is a concentration of surface material in the field south of Thursday October's house. The field is situated between LF0004 and LF0001 and is thought to be the original area of the village green as depicted in Smyth's picture of the village drawn in 1825 (Figure 3.1). An area of 63 m^2 was grided into 1 m^2 units and all surface material collected. Three 1.0 m x 0.5 m test pits were also placed at intervals across the field (LF0037T1, LF0037T2, LF0037T3) as a means of testing the potential of subsurface deposits. Of these LF0037T2 alone produced a fragment of an ironstone plate, bone and a turbo shell. These were located at a depth of 20 cm below surface level in loose friable soil. The pit was excavated to a depth of 50 cm with no further material uncovered. Figure 3.19 shows the location of LF0037 in relation to LF0004 and LF0001 and the position of the three test pits. A section of LF0037T2 is shown in Figure 3.20.

Figure 3.18 View of LF0037 with Thursday October's house in background.

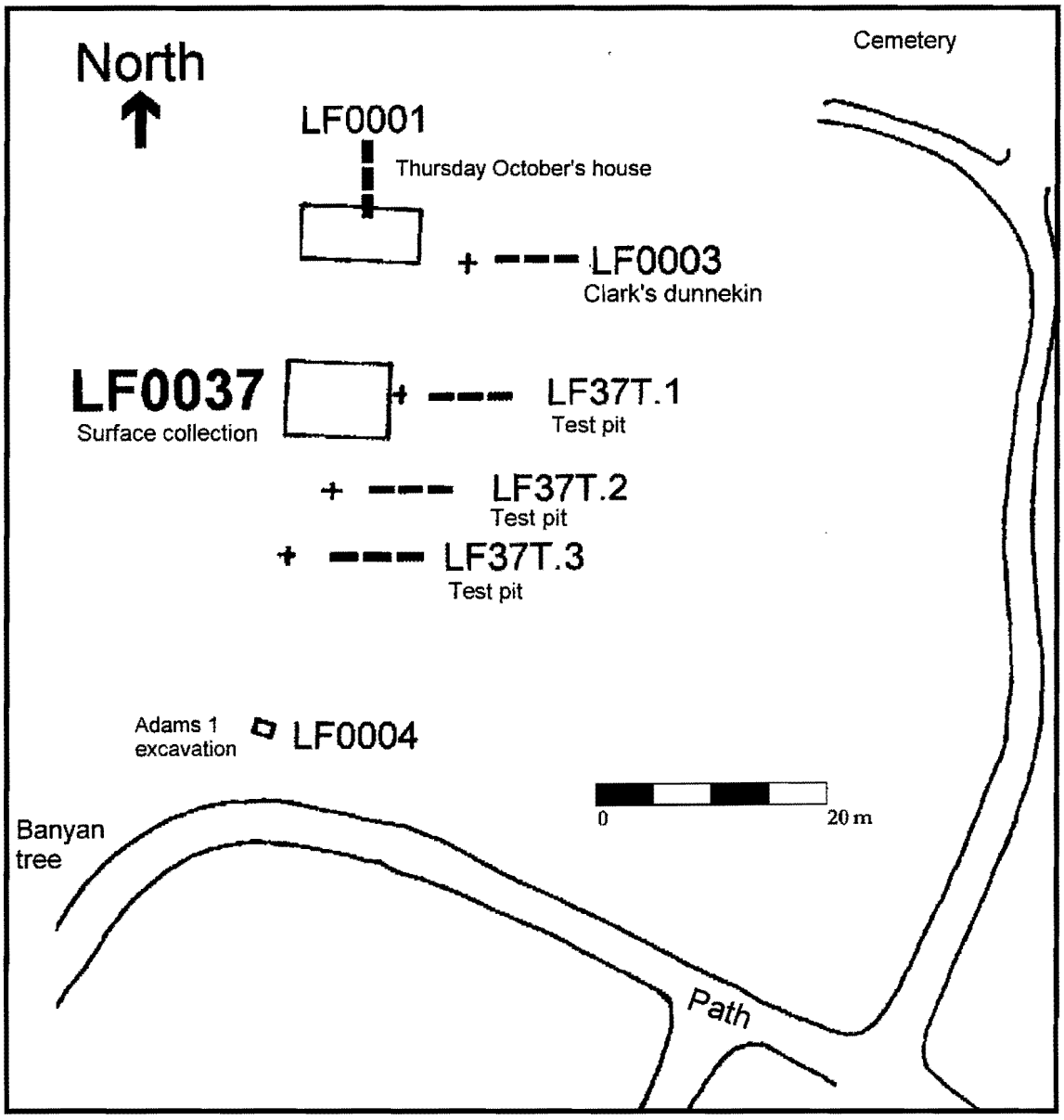

Figure 3.19 Location of LF0037

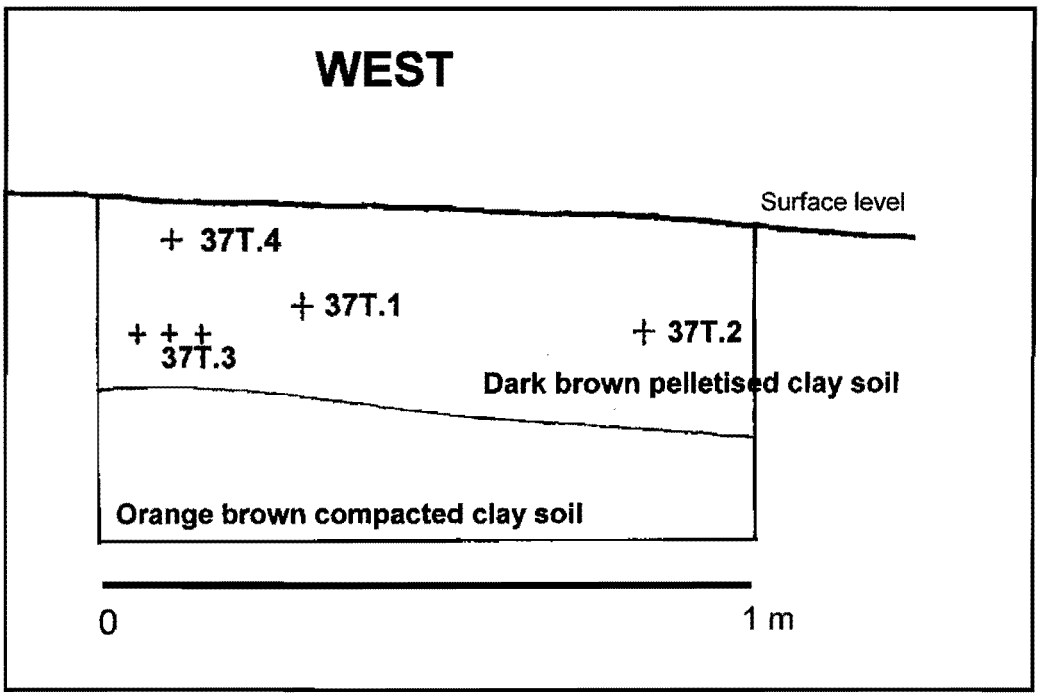

Figure 3.20 West section of test pit LF0037T2 showing position of artefacts (37T.1 – turbo shell; 37T.2 – bone fragment; 37T.3 – bone fragments; 37T.4 – ceramic fragment)

Sections LF0037T1, LF0037T.2 and LF0037T.3 exhibited a general stratigraphic uniformity with a layer of dark brown pelletised clay soil over a deeper layer of compacted orange brown clay. The uniformity of the surface layer is a likely consequence of mechanical preparation of the field for crops. As a consequence of the low density of subsurface material found in the test pits, no further excavation was carried out.

LF0038 Hostel lawn surface collection (Figure 3.9, Location 4)

LF0038 is a surface collection area of 36 m^2 located at the road entrance to the Government hostel lawn. This area is the only vehicular entrance to the hostel and the grass cover is affected by traffic. Several small artefacts became visible after heavy rain and all surface material in the area was collected

LF0039 Surface collection at cliffs below *Gun* (Figure 3.9, Location 17)

The area known locally as *Gun* is so named because a cannon salvaged from the *Bounty* was mounted there and used to salute visiting ships. The cannon was one of two recovered from *Bounty Bay* in 1845 (Lucas 1929:52) and was placed at the cliff edge at the point where a path leads down to the rock flats at *Down Isaacs*. The path provides convenient access to the cliff edge and this has been used as a disposal point. Because of the difficulties of working on the cliff, the collection area was not physically divided into grid units. However, the disposal plume is well defined as a triangle of base 6 m and a height of 18 m. LF0039 is largely devoid of vegetation and the surface is unstable. This has resulted in erosion and transport of material to the base of the area where a greater density of artefacts was apparent. The base of the collection area coincides with a narrow rock ledge. Below this point the cliff is undercut and any material transported over this edge, falls a further 10 m to boulders at the base of the cliff. Despite a search amongst these boulders, no cultural material was found. The cliff was also searched to the east and west and found to be similarly devoid of artefacts. The disposal area is therefore defined as a discrete area of 54 m^2. A magnetometer survey was made of the area adjacent to *Gun* as it was thought possible that a *Bounty* cannon might have been discarded in this area. Young (1894:113) states that, following a fatal accident, the cannon was used as the foundation for a flagstaff. In the event however, no magnetic anomaly was found.

LF0040 Surface collection below Health Centre (Figure 3.9, Location 9)

LF0040 is a surface collection area of 325 m^2 located between the Health Centre and the Seventh Day Adventist Pastor's house. The main driveway to the pastor's house passes through LF0040 and the ground surface is either completely exposed or covered by grass and small shrubs. A small section immediately below the Health Centre is planted with young banana trees. The Health Centre is a new building constructed in 1995 and the area of bananas appears to have been landscaped at that time. The area of the

Pastor's house was formerly the location of the school house prior to construction of the present school at Pulau in the 1950s (Warren, M. 1999, pers.comm.). Several clay pipe fragments and ceramic sherds were visible in this area and LF0040 was grided into 5 m units and the co-ordinates of all artefacts recorded prior to collection.

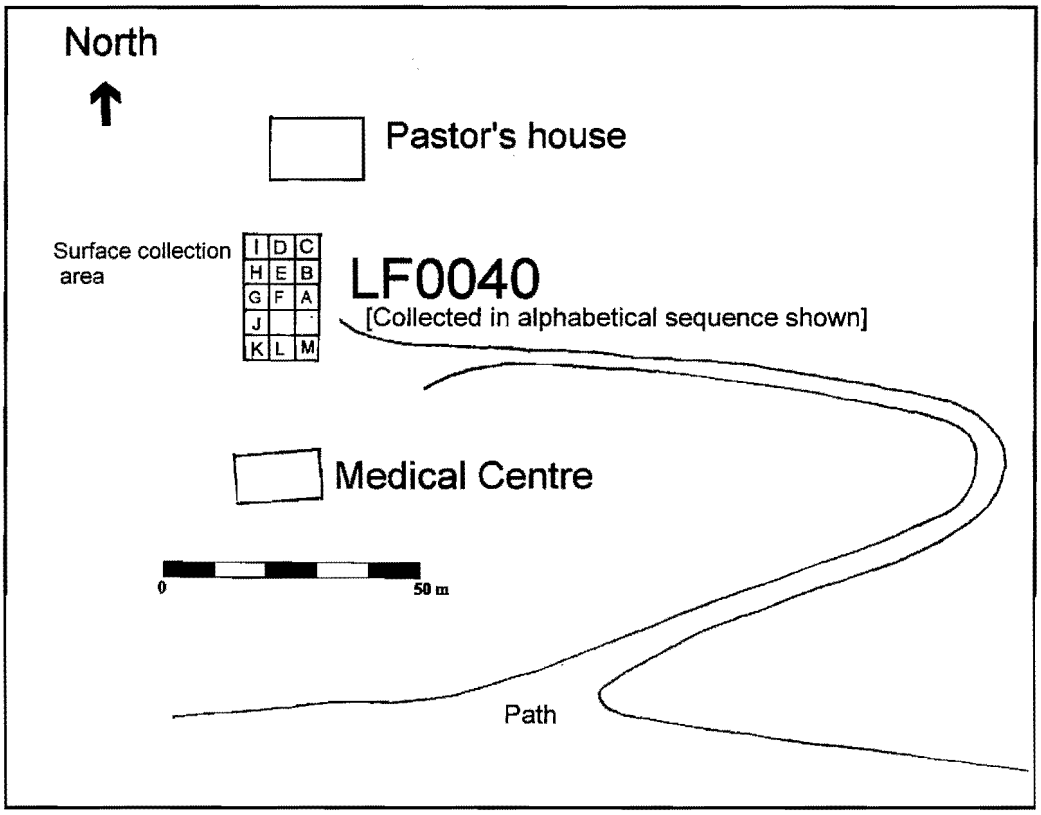

Figure 3.21 Plan of LF0040

LF0041 Surface collection near the mango tree (Figure 3.9, Location 8)

LF0041 is a 70 m^2 surface collection point located 15 m west of a large mango tree in *Isaac's Valley.* The area is on the edge of land recently planted with bananas. A small amount of glass and bone was visible at this point and was systematically collected.

LF0042 Surface collection at cemetery (Figure 3.9, Location 5)

LF0042 is a 120 m^2 collection area at the site of the present cemetery. The cemetery is maintained free from weeds and the ground surface is regularly raked, providing excellent visibility. The colour of the soil is a rich brown and a number of clay pipe fragments were visible in this area. A copper alloy nail typical of sheathing nails found on the *Bounty* site was also found. The discovery of these artefacts combined with the fact that the area has undergone minimal alteration over many years provided a unique opportunity for collection. Figure 3.22 is a plan of the cemetery showing the collection area. It should be noted that material was only collected around graves and on the paths and margins of the cemetery.

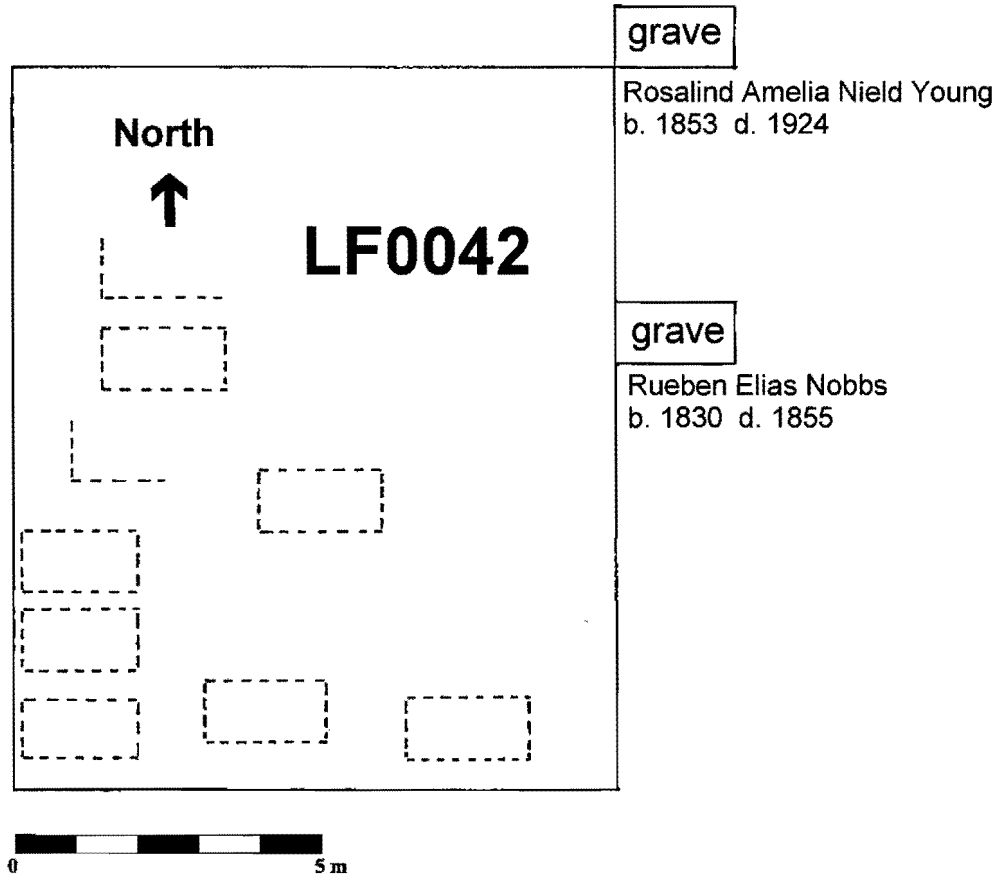

Figure 3.22 Plan of cemetery showing location of LF0042

LF0043 ***Mr Nobbs*** **(Figure 3.9, Location 26)**

LF0043 is a 51m^2 surface collection area located 100 m down the ridge from John Adams' grave at the area known as *Mr Nobbs.*

LF0044 **Surface collection at rock pools *Down Isaac* (Figure 3.9, Location 11)**

LF0044 is a collection area located on the rock flats at *Down Isaac* where a musket trigger guard was recovered. During periods of heavy rain a waterfall forms above the area and has the potential to transport artefacts. A 1000 m^2 area below this point was systematically searched but located only three further artefacts. – two copper-alloy nails and a molded glass fragment. A view LF0044 from the sea is shown in Figure 3.23 with the position of LF0039, LF0045 and LF0046 indicated.

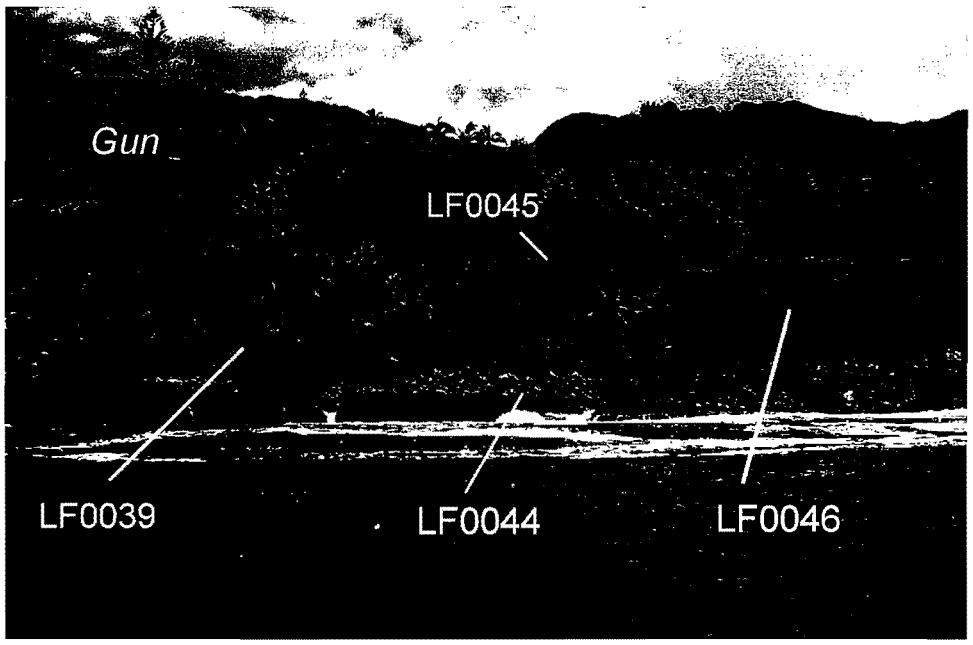

Figure 3.23 View of LF0044 and other described sites from the sea

LF0045 **Cave (Figure 3.9, Location 18)**

LF0045 is a small cave formed by an overhanging lava flow 20 m above the rock flats at *Down Isaac.* The lava flow exists as a pronounced band in the cliff below

Adamstown and in some areas creates a crawl space with a roof extending up to 2 m out from the cliff below. LF0045 is approximately 2.5 m x 1.5 m and ranges in height from 1.75 m at the outer edge of the space to about 0.3 m at the back of the cave. Although all the overhangs along the cliffs in this area were searched, LF0045 was the only area where cultural material was located. This consisted of small pieces of lead and brass and a small amount of animal bone.

LF0046 Cliff disposal point (Figure 3.9, Location 19)

LF0046 is a cliff disposal point located 150 m west of LF0039 and is of relatively recent origin. The area was searched from above using ropes and harness, while the lower accessible areas were reached by climbing. Despite a wealth of jars, bottle glass, plastic and aluminium, no material of significance to the study period was found and consequently no artefacts were collected at this location. Len Brown's house is one of the closest houses to LF0046 and Dave Brown said the area was used to dispose of rubbish when he was a child (Brown, D. 1998, pers.comm.).

MARITIME SURVEY AND EXCAVATION

The underwater remains of the *Bounty* are located a short distance from Adamstown in Bounty Bay and potentially formed an important source of supply to the settlement from its earliest beginnings. For example, Captain Raine, visiting Pitcairn in 1821, noted that the islanders were in no need of iron as they got this from 'old *Bounty*' (1821:113). The use of the *Bounty* as a source of supply to the settlers at Pitcairn parallels the story of the Swiss Family Robinson where many of the Robinson family's initial needs are obtained from a wreck and instances of the importance of wrecks exist in the literature of shipwreck survivor camps (McCarthy 1998; Nash 2002). In light of this, it was anticipated that material from the *Bounty* may have been recycled and used by the Pitcairn community and could be reflected in the Adamstown artefact assemblages. As a result, archaeological investigation and analysis of the remains of the *Bounty* formed a component of fieldwork at Pitcairn Island. Aspects of this work are discussed later in Chapter Five.

A further source of archaeological information is derived from other islands in the Pitcairn group. Oeno island, 85 miles to the north-east, is the closest island to Pitcairn and has been the site of five shipwrecks between 1858 and 1918. In late 1998 the candidate accompanied the Pitcairn Islanders to Oeno for a period of six days and recorded the sites of three of these wrecks. In the course of this work, a small number of copper-alloy nails were collected at the wreck sites of the *Bowden* (1893) and *St James* (1918) and later used when analysing copper-alloy nails found at Adamstown sites. These sites are identified as LF0033 (*Bowden*) and LF0034 (*St James*). Copper-alloy sheathing and nails from the wreck of the *Acadia* (1881) at Ducie Island were also given to the candidate for this purpose and are identified as LF0048. Details of work on the *Bounty* site and at Oeno Island are presented in Appendixes B1 and C1 respectively.

Discussion of results

Of the 64,000 m^2 available for investigation within the study area, approximately 59,000 m^2 or 92 per cent of the area was systematically searched using closely spaced transects. Five houses, representing 100 percent of surviving historic Pitcairn house forms and including the oldest house on Pitcairn, were also investigated and recorded. A total volume of 7.41 m^3 was excavated at six sites and surface collections made at 19 sites amounting to an area of 2577.75 m^2 - or four per cent of the investigation area. In addition, magnetometer surveys were conducted at three sites over an area of 850 m^2.

Summary

In Chapter Three I have discussed the documentary and topographic evidence used to define the size of the study area as well as the natural and cultural factors affecting the investigation. The investigative methods and location of sites have also been described and indicated graphically in a number of figures. The following chapter describes artefacts from these sites and groups artefacts by use – after the functional typology adopted by Orser (1988). Chapter Five combines this archaeological evidence with other sources of evidence to interpret colonisation themes previously discussed, and address the research objectives of the thesis.

CHAPTER FOUR

ANALYSIS OF ARTEFACTS FROM ADAMSTOWN

This chapter identifies and describes artefacts from the land sites identified in Figure 3.9 and described in the previous chapter. In Chapter Five archaeological and historical evidence is interpreted in relation to themes reflecting colonisation processes at Pitcairn Island during the study period. Artefacts are divided into excavated and surface collections and initially sorted by material classes before sorting by functional groups listed in Table 4.8. In the following analysis it has been found convenient to refer to the Adamstown collection sites by numerical codes discussed in Chapter Three, however, wherever possible the name commonly used on Pitcairn has been included. As indicated in the previous chapter, some sites located during investigation of the study area were found to be of no significance to the study period (sites 2, 19, 24, 25) and are not included in the analysis of artefacts presented here. Table 4.1 lists the area codes and descriptions of all other archaeological sites and features identified in the Adamstown study area, and cross-references these to locations indicated in Figure 4.1.

Area Code	Description	Figure 4.1 Reference Area
LF0001	House of Thursday October Christian.	14
LF0003	Clark's dunnekin	15
LF0004	Adams 1 house site.	13
LF0005	Tom Christian's old house.	12
LF0007	Adams II house site and grave.	10
LF0008	Jacob's canoe	23
LF0026	Nola's old house	21
LF0027	Henry's house	22
LF0029	Nobbs' disposal point.	1
LF0030	Cliff disposal point at Clark's	16
LF0031	Base of cliff of above disposal point.	20
LF0035	Area north of Government hostel.	6
LF0036	Reynold Warren's garden.	7
LF0037	Field south of Thursday October Christian's house.	3
LF0038	Entrance to Government hostel area.	4
LF0039	Cliff disposal point at *Gun.*	17
LF0040	Area north of Health Centre.	9
LF0041	Area near mango tree in *Isaac's Valley.*	8
LF0042	Cemetery.	5
LF0043	Mr Nobbs	26
LF0044	Rock flats at *Down Isaac.*	11
LF0045	Small cave in cliff at *Down Isaac.*	18

Table 4.1 Adamstown Collection Area Codes

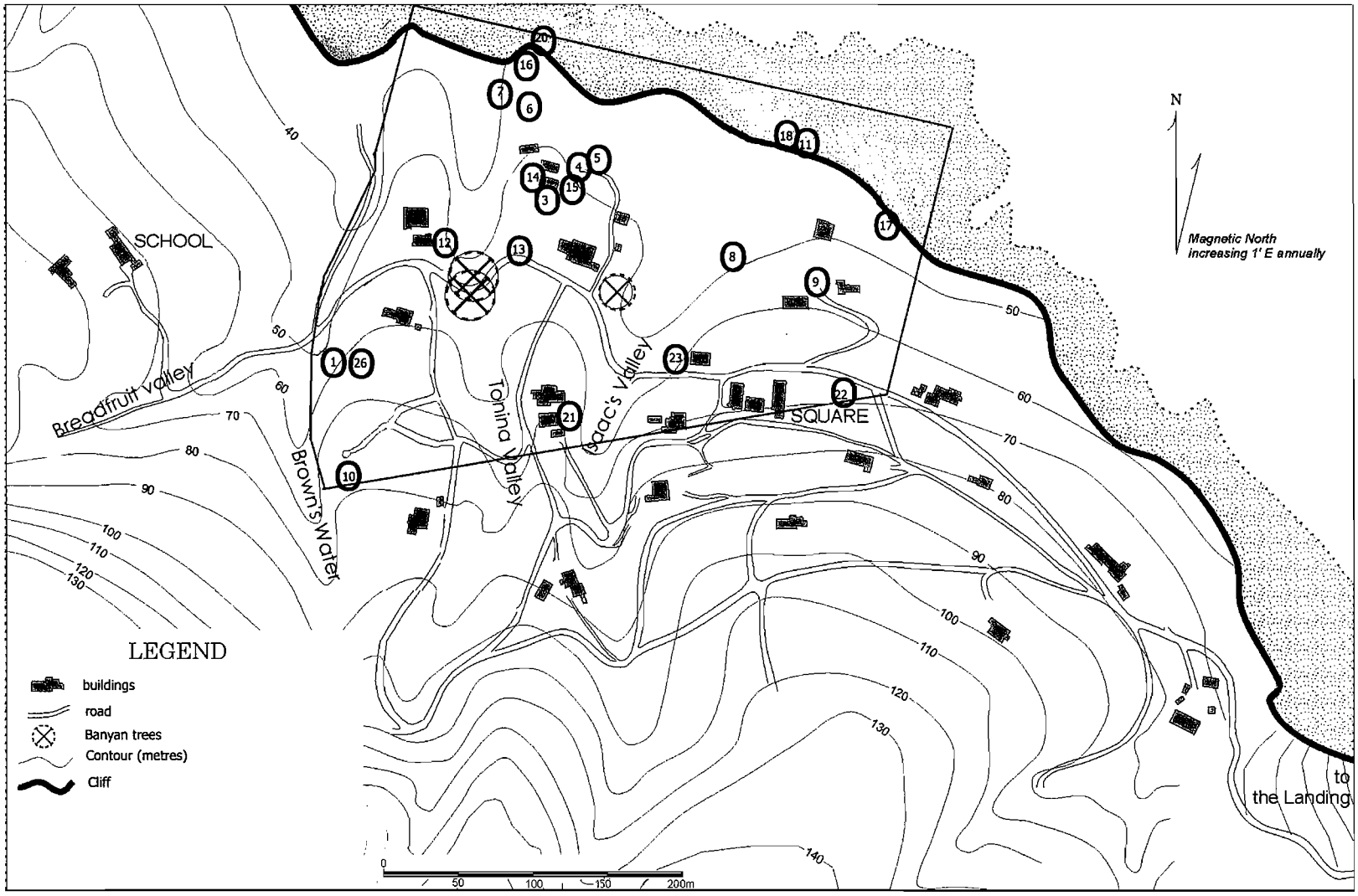

Figure 4.1 Location of collection areas at Adamstown

In order to provide a meaningful comparison of weights of material from excavations, these are corrected for volume from each unit. For example LF0001 has an excavated volume of 0.76 m^3. If we multiply this figure by 1.315 the volume is 1 m^3.

That is: $0.76 \times A = 1\ m^3$

$A = 1/0.76 = 1.315$

By multiplying the weight of different material classes in LF0001 by 1.315 we calculate a corrected figure compared to a standard volume of 1 m^3. For LF0003 the factor is: $4.95 \times A = 1\ m^3 = 0.202$ and so on. Applying this system all weights are considered relative to 1 m^3. Relative densities for material classes at each excavation are shown in Table 4.4 on the following page.

Area	Excavated Volume
LF0001	0.76 m^3
LF0003	4.95 m^3
LF0004	0.50 m^3
LF0005TP1	0.30m^3
LF0029	0.15 m^3
LF0037TP1	0.25 m^3
LF0037TP2	0.25 m^3
LF0037TP3	0.25 m^3
Total excavated volume 7.41 m^3	

Table 4.2 Excavation Volumes (m^3)

Material classes by weight (gm)

Area	Shell	Bone	Stone	Metal	Glass (bottle)	Glass (Other)	Ceramic	Wood	Other
LF0001	85	15	1066	1091	122	218	760	0	43
LF0003	159	44	2	10,289	34,029	5,168	2,023	0	467
LF0004	0	0	106	243	86	17	24	0	1
LF0005 TP1	0	0	0	0	0	0	0	0	0
LF0007	0	0	0	0	0	0	0	0	0
LF0029	2	0	0	114	9160	19	1248	0	1
LF0037 TP1	0	0	0	0	0	0	0	0	0
LF0037 TP2	14	47	0	0	0	0	17	0	0
LF0037 TP3	0	0	0	0	0	0	0	0	

Table 4.3 Excavation Collection

Area	Shell	Bone	Stone	Metal	Glass (bottle)	Glass (other)	Ceramic	Wood	Other
LF0001	112	20	1402	1435	160	287	999	0	57
LF0003	32	9	0	2078	6874	1044	409	0	94
LF0004	0	0	212	486	172	34	48	0	2
LF0005 TP1	0	0	0	0	0	0	0	0	0
LF0007	0	0	0	0	0	0	0	0	0
LF0029	13	0	0	759	61067	127	8312	0	7
LF0037 TP1	0	0	0	0	0	0	0	0	0
LF0037 TP2	56	188	0	0	0	0	68	0	0
LF0037 TP3	0	0	0	0	0	0	0	0	0

Table 4.4 Corrected weights of material classes (gms / 1 m^3) from all excavations

Table 4.4 indicates that LF0001 had the greatest weight of shell of all excavated areas. Test-pit 2 at LF0037 situated in the middle of the field a few metres south of LF0001 also showed a high figure for shell and the highest weight of bone. LF0001 had extremely high values for stone artefacts. The highest value for metal was at LF0003 and this was also a prominent material class at LF0001. The greatest concentration of any material was bottle glass at LF0029. The adjusted weight of bottle glass at this excavation exceeds the next highest figure for bottle glass at an excavation (LF0003) by a factor of 8. LF0003 was however, the highest in Other glass category (flat glass, beads, buttons). The highest relative density of ceramic from all excavations was at LF0029, followed by LF0001 and LF0003. No wood was recovered from any of the excavation areas and Other material (mainly plastic and some charcoal) was present in only small amounts at LF0001 and LF0003.

Area	Site name	Surface collection area
LF0001	Thursday October's house	11.5
LF0003	Clark's dunnekin	1.8
LF0004	Adams 1	50
LF0005	Tom's old house	6.2
LF0007	John Adams' grave and house site	360
LF0029	Nobbs' disposal	275.5
LF0030	Cliff disposal at Clark's	80
LF0031	Base of cliff	20
LF0035	Area north of Government hostel	15
LF0036	Reynold's garden	35
LF0037	Field south of Thursday October's house	63
LF0038	Hostel lawn	36
LF0039	Cliff below *Gun*	54
LF0040	Area north of Health Centre	325
LF0041	Area near Mango tree	70
LF0042	Cemetery	120
LF0043	*Mr Nobbs*	51
LF0044	Rock flats *Down Isaac*	1000
LF0045	Small cave	3.75
Total Surface Collection		**2577.75 m^2**

Table 4.5 Adamstown Surface Collection Areas (m^2)

Area	Shell	Bone	Stone	Metal	Glass (bottle)	Glass (other)	Ceramic	Wood	Other
LF0001	32	318	503	985	287	1452	559	0	16
LF0003	0	30	0	40	0	0	2	0	0
LF0004	0	0	0	0	0	16	36	0	0
LF0005	70	11	274	175	0	173	26	0	235
LF0007	0	0	0	683	0	0	1	0	0
LF0029	13	0	174	54	3332	5	688	0	0
LF0030	219	0	279	520	607	0	1006	0	0
LF0031	26	0	0	56	53	0	729	0	0
LF0035	0	0	2263	0	12	0	11	0	0
LF0036	33	163	526	7	52	3	73	0	0
LF0037	18	86	1524	3228	55	27	976	0	5
LF0038	0	0	0	77	49	5	179	0	0
LF0039	15	0	14	81	338	6	668	0	0
LF0040	270	38	522	449	280	48	781	0	0
LF0041	328	65	822	637	381	3	227	0	0
LF0042	0	1	0	4	17	2	40	0	0
LF0043	39	6	7	7	55	0	164	0	0
LF0044	0	0	0	107	0	38	0	0	0
LF0045	0	10	0	103	0	0	0	0	0

Table 4.6 Material classes by weight (gm) at Adamstown Surface Collection Areas

Average weights per square metre for material classes for the surface collections are given in Table 4.7. Average weights are obtained by dividing the weight of material collected by the value of the collection area. For example the weight of shell collected at LF0001 is 32 gm. The area collected was 11.5 m^2. The average weight of shell is calculated as: 32 / 11.5 = 2.78 gms/m^2. Figures are rounded to the nearest whole number – in this case, 3 gms/m^2.

Area	Shell	Bone	Stone	Metal	Glass (bottle)	Glass (other)	Ceramic	Wood	Other
LF0001	3	28	44	86	25	126	49	0	1
LF0003	0	17	0	22	0	0	1	0	0
LF0004	0	0	0	0	0	0	1	0	0
LF0005	11	2	44	28	0	28	4	0	38
LF0007	0	0	0	1	0	0	0	0	0
LF0029	1	0	1	0	13	0	3	0	0
LF0030	3	0	3	7	8	0	13	0	0
LF0031	1	0	0	3	3	0	36	0	0
LF0035	0	0	151	0	1	0	1	0	0
LF0036	1	5	15	0	1	0	2	0	0
LF0037	0	1	24	51	1	0	15	0	0
LF0038	0	0	0	2	1	0	5	0	0
LF0039	0	0	0	1	6	0	12	0	0
LF0040	1	0	2	1	1	0	2	0	0
LF0041	5	1	12	9	5	0	3	0	0
LF0042	0	0	0	0	0	0	0	0	0
LF0043	1	0	0	0	1	0	3	0	0
LF0044	0	0	0	0	0	0	0	0	0
LF0045	0	3	0	27	0	0	0	0	0

Table 4.7 Relative Density of Material Classes (gm/m^2) at Surface Collections

Table 4.7 indicates that the highest average figure for shell at surface collections was at LF0005. Bone was relatively abundant at LF0001 and LF0003 but otherwise hardly visible or totally absent from all other surface collections. The highest figure for stone was at LF0035, however this is misleading as the weight of stone at LF0035 consists of just two stone graters (*yollas*). Significant densities of stone are also present at LF0001, LF0005, LF0036, LF0037 and LF0041. The highest figures for metal were recorded at LF0001 and this area also had the highest weights for bottle glass, other glass and ceramics. Indeed the adjusted weights across all material classes (both excavation and surface collection) at LF0001 is consistently higher than that of other areas. Other significant densities of ceramic are found at LF00031, LF0030, LF0037 and LF0039. Wood is absent in the material collected at surface areas. The abundance of Other

material at LF0005 can be attributed to the large number of plastic objects recovered from this area.

Tables of adjusted weights of material classes provide only a limited analysis of artefact assemblages. The following section considers artefacts by functional groups listed in Table 4.8. This is based on Orser's (1988:233) typology with small modifications.

1. FOODWAYS
- a. Service – flatware, tableware
- b. Storage – bottles, stoneware, closures, hoop iron
- c. Preparation – cooking vessels, hearth stones
- d. Food remains – faunal and floral
- e. Procurement – ammunition, gun parts

2. CLOTHING
- a. Fasteners – buttons
- b. Manufacture – thimbles, scissors, pins
- c. Other - shoe leather, clothing remains

3. PERSONAL
- a. Decorative – jewellery, spectacles, ornament, souvenir
- b. Recreational – toys, musical instruments, gaming pieces, pipes
- c. Cosmetic – mirrors, razors, toiletries, wash basins
- d. Monetary – coins
- e. Medicinal
- f. Other – watches, ink wells, slates

4. LABOUR
- a. Farming – implements
- b. Fishing – canoes, weights, boating equipment
- c. Industrial – forge, anvil
- d. Other – Prehistoric tools

5. ARCHITECTURAL
- a. Construction – nails, flat glass, hinges, thatching tools
- b. Furnishings – furniture pieces, chests

Table 4.8 Functional Typology, with examples of artefacts in each subcategory (after Orser 1988:233)

In presenting data for functional typologies, artefacts are listed by weight and minimum number where appropriate. For purposes of this analysis, excavation and surface collections from areas are combined and considered as a whole. This is also the case with the artefact assemblages recovered from the 19 collection areas. Despite some variations in artefact classes and densities the assemblages from some areas are simply too small to be individually significant. Data from all areas are therefore grouped as a means of establishing a single profile characteristic of the entire settlement area. Please note that in the case of buildings, it has been found more convenient to discuss Thursday October's House and other relevant structures in Chapter Five when interpreting the archaeological evidence.

FOODWAYS

Area	Ceramic Cups		Ceramic Saucers		Ceramic Mugs		Ceramic Bowls		Ceramic Plates		Ceramic Other *		Ceramic Unident
	No.	gms	No.	gms	No.	gms	No.	gms	No.	gms	No.	gms	gms
LF0001	5	40	1	37	0	0	6	122	16	693			98
LF0003	4	107	3	45	1	1	2	7	11	426	1	9	319
LF0004	0	0	0	0	0	0	0	0	1	24			0
LF0005	0	0	0	0	0	0	0	0	0	0	1	26	0
LF0007	0	0	0	0	0	0	0	0	0	0			0
LF0029	2	8	0	0	4	257	4	385	8	678			126
LF0030	0	0	2	30	0	0	1	94	7	191			22
LF0031	2	16	0	0	0	0	0	0	2	21			30
LF0035	0	0	0	0	0	0	1	7	1	2			2
LF0036	0	0	0	0	0	0	1	1	1	26			1
LF0037	1	22	0	0	2	4	0	0	8	192			64
LF0038	1	1	2	5	1	1	1	18	7	25			18
LF0039	1	24	1	1	1	16	4	51	9	183			11
LF0040	5	53	1	2	0	0	3	23	22	312			133
LF0041	2	30	1	3	0	0	0	0	3	28			17
LF0042	0	0	0	0	0	0	1	10	3	13			6
LF0043	0	0	0	0	0	0	1	7	5	72	1	47	11
LF0044	0	0	0	0	0	0	0	0	0	0			0
LF0045	0	0	0	0	0	0	0	0	0	0			0
Total	**23**	**298**	**11**	**123**	**9**	**279**	**25**	**792**	**104**	**2889**	**3**	**82**	**857**
Minimum number	**23**		**11**		**9**		**24**		**95**		**3**		

Table 4.9 FOODWAYS 1a. Service

(* The 3 vessel forms listed under Ceramic Other are a serving platter [LF0003], an egg cup [LF0005], and a teapot lid [LF0043])

Table 4.9 gives the number of individual cups, saucers, mugs, bowls, plates and other ceramic forms collected from all sites at Adamstown. Minimum numbers were determined on the basis of decoration and rim profile. Each of these forms is considered for body, decoration, pattern, maker, place of manufacture and manufacture date range. This information is presented in detail in Tables 1-7 in Appendix A.2. Reference sources used to establish individual identifications and dates of manufacture are also listed in the tables.

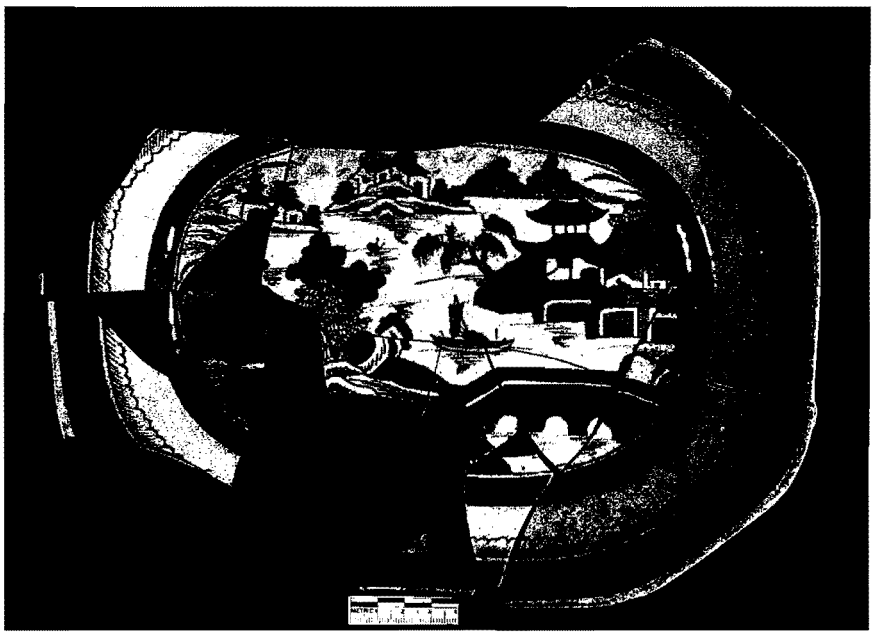

Figure 4.2 Chinese Export plate (29.40) Width 280 mm

Tableware

Table 4.9 shows that from a total collection weight of 5320 gms, 4463 gms (84%) of ceramics in this category are identified by form and that 57 per cent of all vessel forms are plates. Plates are almost four times more numerous than the next most prevalent forms, bowls and cups, followed by significantly fewer mugs and saucers. Manufacture date ranges have been established for 78 of the total 167 forms identified, of which 38 fall within the study period. The forms in this group are two cups, five mugs, seven bowls and 24 plates. Although the ratio of plates to bowls remains little changed, it will be seen that a significant number of mugs are represented in this group and that cups are few and saucers totally absent. This suggests that mugs were more widely used in the study period than cups and saucers and may infer that tea drinking was uncommon in

the period. Table 4.10 lists the manufacture date range and decoration for identified tablewares falling within the study period.

Vessel form					Manufacture Date range	Decoration
Cup	Saucer	Mug	Bowl	Plate		
1					1780 - 1810	Pearlware
1					1820 - 1840	Sponged flowers Over glaze
		1			1799 - 1856	Mocha pattern Yellow ware
		2			1834 - 1851	Transfer pattern (Flow blue) WHAMPOA
		1			1818 - 1829	Transfer pattern GRAPE VINE border
			1		1780 - 1810	Pearlware
			1			Twist pattern
			1			Incised bands on yellow ware
			1		c.1779 - 1830	Floral design on Pearlware Hand painted
			1		c.1780 - 1810	Chinoiserie style Hand painted
				3	1819 - 1864	Transfer pattern PALESTINE
			1	2	1836 - ?	Transfer pattern GIRAFFE
				1	1830 - 1854	Transfer pattern TYROLEAN
				2	c.1816 - ?	Chinese Export ware THREE ARCH BRIDGE pattern
				1	c.1840 - 1860	Transfer pattern Anchor and Naval coronet
				5	1800 - 1840	Shell edge (blue) (even scalloped)
				1		Relief pattern (Creamware) MELBOURNE beading
				1	1780 - 1810	Shell edge (green)
				1	1849 - ?	Transfer pattern CALIFORNIA
				4	1840 - 1870	Shell edge (blue) (unscalloped)
				1	1826 - 1838	Transfer pattern CANOVA
				1	c.1839 - 1846	Transfer pattern NAPIER
				1	1780 - 1810	Chinoiserie style Hand painted

Table 4.10 Summary of identified vessel forms with manufacture ranges falling within the study period.

Tableware decoration and identified manufacturers

Despite considerable fragmentation and the relatively small size of many surviving sherds it is possible to identify 22 distinct decorative types used on tableware of the study period. Although some ironstone tableware has also been identified, the considerable manufacture range, extending from Mason's patent in 1813 and including the related wares Stone China, Granite China and New Stone manufactured into the second half of the Nineteenth Century (Godden1971:XI), combined with a lack of pottery marks, makes this of limited use for dating occupation of sites or defining specific tableware used in the study period. As a result, unless identified by some other method, ironstone tablewares are not discussed further in the context of the study period.

There can be no doubt that the introduction and popularity of transfer printing on earthenware forms, towards the end of the eighteenth century and the considerable amount subsequently written on the subject by collectors, provides a particularly rich source for comparison and analysis. As a result it has been possible to identify many patterns and manufacturers of forms decorated in this manner, even when only small sherds remain.

Edged Ware:

Chronology of shell edge wares collected at Adamstown is based on Miller and Hunter (1990:114 – 116) and as these authors point out "...Shell edge was the cheapest type of tableware with decoration throughout the nineteenth century" (*ibid*:114), it is therefore not surprising to find ten examples represented in the 24 identified plates from the study period. Of the seven shell edge styles identified by Miller and Hunter (*ibid*) the collected examples include one *Rococo* style green shell edged plate, five *Even-scalloped* blue shell edged plates and four *Unscalloped* blue shell edged plates.

Mocha ware:

The earliest recorded marked example of this ware is dated 1799 (Godden 1974:223). Godden notes that "...Mocha decorated wares are usually utilitarian" (1980:xvii) and

"...much favoured for beer tankards" (*ibid*:173). Indeed the mug excavated at LF0029 (29.35) appears very similar to one advertised as a porter mug by T.G. Green and Company in 1864 (*ibid*). Although mocha ware continued to be produced into the twentieth century (*ibid*:xvii), mug (29.35) is marked with the letter 'N' scratched into the base and is therebye identified as the property of George Hunn Nobbs. Nobbs left Pitcairn permanently in 1856 – indicating the mug was in use during the study period. It would appear that Nobbs did not mark the mug himself as the 'N' is inverted and this is an unlikely mistake for a person who served as the island's school teacher. It is therefore likely that a member of Nobbs' family (perhaps his wife Sarah) made this particular mark.

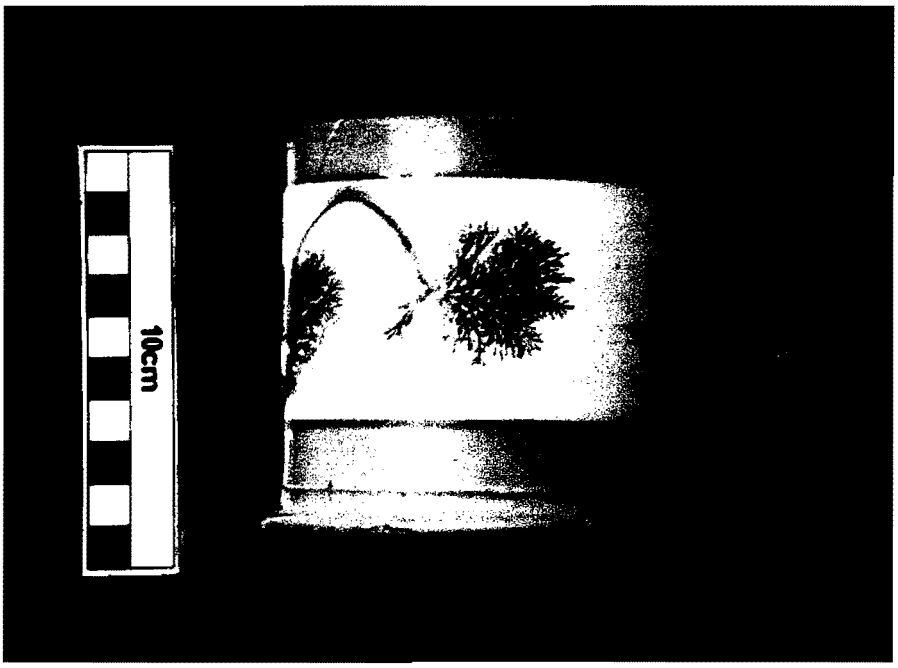

Figure 4.3 Mocha Ware mug (29.35)

A further yellow ware excavated at LF0029 is part of a bowl decorated with two incised bands, highlighted in blue (29.32). Another bowl (29.2) excavated at LF0029 exhibits a

simple twist pattern of 'cat's eyes' applied with minimal refinement and is a further example of a utilitarian ware.

Chinese Export Ware:

Plate (29.40) is an oblong octagonal porcelain dish decorated with a *Cloud* border and *Triple-Arch* landscape. *Cloud* border (or *Rain and Cloud*) is particularly associated with wares manufactured in Canton (Schiffer 1980:186). Indeed the largest documented collection of *Triple-Arch* plates is that salvaged from the East India ship *Diana,* wrecked in the Straits of Malacca in March 1817 enroute from Canton to Madras. Examples of *Triple- Arch* plates illustrated in Christie's *Diana* Cargo auction catalogue (1995:35) show sets of five graduated plates ranging in width from 25 cm to 40 cm. Plate (29.40) has a width of 29 cm and appears to equate to the second smallest plate in such a set. Two further sherds of *Triple-Arch* porcelain (40.32; 40.120) were located at LF0040 and represent a larger plate in a graduated set.

It is interesting that an example of a complete *Triple-Arch* plate was excavated in a post 1812 context at La Purisima Mission in California (Deetz 1978:178). Given this occurrence and the direct association between the *Triple-Arch* pattern and the wreck of the *Diana* in 1817, it is likely that the two examples recovered at Adamstown relate to the period of first contact after 1808 when the first post *Bounty* introductions arrived in the mutineer settlement.

Sponge decorated ware:

One example (29.91; 29.110) only of this ware was recovered at the Adamstown sites and is identified as part of a cup. The decoration consists of a line of alternating blue and red flowers with yellow centres, linked by hand painted stems. All decoration is applied over the glaze on a white earthenware body.

Transfer ware:

Grapevine border pattern

Two earthenware sherds displaying this border pattern were located at LF0037 and LF0038. While no conjoin exists and despite a distance of 50 metres between sites, these are taken to represent a single mug. Grapevine border is synonymous with the

pottery of Enoch Wood and Sons which produced a series of landscape views utilising this border:

> Most of the scenes were copied from prints by John Preston Neale in his *Views of the Seats of Noblemen and Gentlemen in England and Wales, Scotland and Ireland,* issued in two series and eleven volumes between 1818 and 1829. The distinctive border includes vine leaves and tendrils and bunches of grapes on a cellular ground. Items are found both with and without an impressed maker's mark, although there appears to be little reason to doubt the maker of any unmarked pieces with the same grapevine border inspected to date.
>
> (Coysh and Henrywood 1989:160)

Although wares decorated with grapevine border were therefore almost certainly produced after 1829, evidence exists which indicates the pattern was introduced at Pitcairn prior to this date. This is in the form of a grapevine border decorated mug bearing the personal mark of John Adams (died 1829) held by the Mitchell Library, Sydney [R 806], together with a letter written by Josiah Chester Adams (grandson of John Adams) to his daughter, dated 13th March 1905 at Norfolk Island, regarding the mug :

> My dear daughter hopeing (*sic*) these few lines will find you in good health and I hope you will succeed. My dear old grandfarther (*sic*) died March the fifth 1829 and my dear farther (*sic*) he died october 29th 1873 and pleas (*sic*) dont (*sic*) let Sofia have the mug for I send you the mug and to nobody else. (T)he mug is in your own possession and I think you can know for yourself of our age by looking on these lines. (M)y grandfarther (*sic*) born november 4th 1763. (M)y dear farther (*sic*) born June 16 1804. (M)y birth day june 19th 1830 and I don't think I can tell you any planer (*sic*). (M)y grandfarther born november 4th 1763. (M)y farther born june 16 1804 and my own birth day June 19th 1830. (P)lease give my loving respect to miss Sarah Fish. (I) do wish that she is here with me. (A)lso I will ask you if you [see] george and sofia pleas (*sic*) to give them my best respect. (P)lease if there is anything down here that will be any benefit to you to let me know and I will try to get it and send it up to you. (F)rom your affectionate farther (*sic*)
>
> Josiah C Adams
>
> (ML Mss 5444)

Despite the ramblings of age, it is clear that Josiah Adams prized the mug and regarded it as an important part of the family history. Although he does not specifically say that the mug was owned by John Adams, this is obviously implied. This is further supported

by the fact that the mug is a pearlware. Hume (1970:72) sets a median date of 1818 for transfer printed pearlware.

As the body of the mug in the Mitchell Library is intact, it appears that the two sherds (37.98; 38.7) collected at Adamstown represent a second ware of this type and it would appear highly likely that these were both introduced at Pitcairn at the same time. The personal mark scratched on the 'Adams' mug is discussed later in this chapter. The view on the mug remains unidentified.

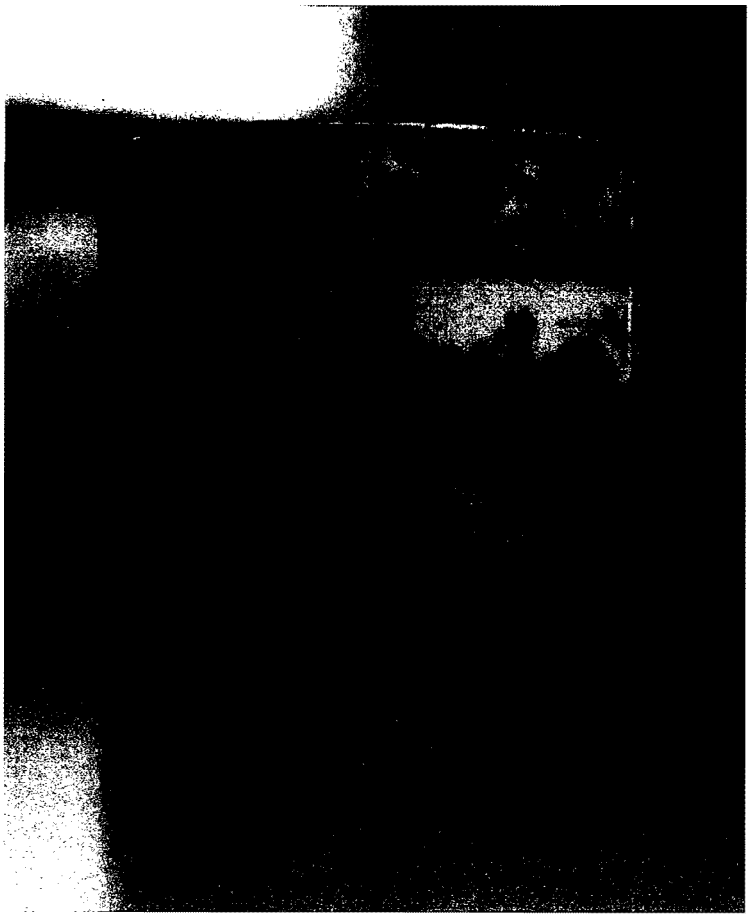

Figure 4.4 Grapevine border mug owned by John Adams. Height 93 mm (Courtesy of the State Library of NSW)

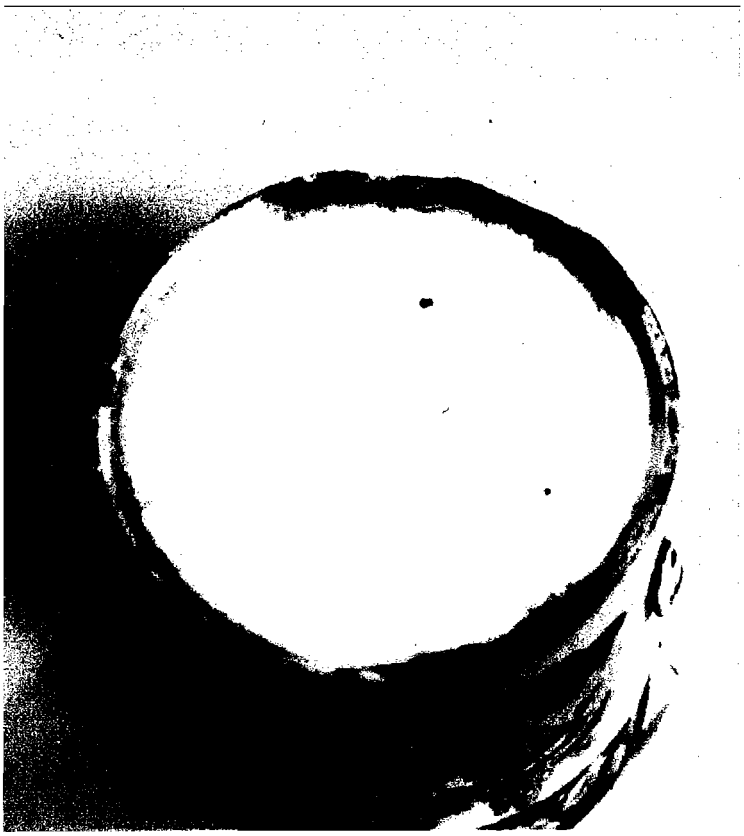

Figure 4.5 Personal mark of John Adams on base of Grapevine border mug (Courtesy of the State Library of NSW)

Whampoa pattern

Two sherds collected at LF0029 and LF0037 are identified as examples of flow blue china in the Whampoa transfer pattern (Snyder 1994:121; Williams 1981:56). Whampoa was the main anchorage for the port of Canton (Campbell 1989:4) and the design features a prominent pagoda gate and large willow tree. A distance of 250 m separates LF0029 from LF0037 and it therefore appears probable that the sherds represent two individual forms (mugs). A flow blue Whampoa pattern mug in the Norfolk Island Museum collection may have been brought to Norfolk Island during the relocation of the Pitcairn population to Norfolk Island in 1856. This bears the personal mark of Thursday October Christian (b.1820 – d.1911) who lived on Norfolk Island for seven and a half years before returning to Pitcairn Island permanently in 1863 (Nicolson 1997:205).

Giraffe pattern

Sherds from forms decorated in Giraffe transfer pattern were collected at LF0001, LF0003, LF0004, LF0037, LF0038, LF0039, LF0040 and are identified as representing two plates and a bowl by John Ridgway. Ridgway's Giraffe pattern commemorates the successful arrival of four giraffe at Regent's Park in 1836 and is based on a lithograph by G. Scharf (Blunt 1976:81). The printed cartouche includes the words "...Published Augst 30th 1836..." (Snyder 1997:143). One sherd (3.240) bears traces of a scratched personal mark but is incomplete and unrecognisable.

Palestine pattern

Sherds of Palestine transfer ware were collected at LF0001, LF0029, LF0039 and LF0040 and represent at least two plates. The potter's mark 'ADAMS' is impressed on two sherds together with a printed cartouche 'PALESTINE'. Sixteen sherds were located at LF0029 and are all part of one plate which is marked with the letter '*G*' and part of a scratched personal mark. Many objects recovered from LF0029 are marked with a capital 'N' in a scratched frame and almost certainly indicate ownership by George Hunn Nobbs. The letter '*G*' is therefore taken to be the initial of his first name. A small section of another Palestine pattern plate (40.14) bears evidence of scratched personal marks, but these are incomplete and unrecognisable.

The distribution of sherds across four sites may indicate the presence of more than two Palestine pattern forms. The disposal point LF0039 is located over the cliff just north of LF0040 and it is likely that objects used at LF0040 were disposed of at LF0039. By contrast LF0001 is located approximately 200m from both LF0029 and LF0040 and is separated by valleys. This combination of distance and topography makes it unlikely that sherds collected at LF0001 originate at either LF0029 or LF0040.

Other transfer patterns

Four other transfer patterns are identified by individual sherds. These are Tyrolean, California, Canova and Napier. California pattern was registered by Podmore, Walker and Company in 1849 (Godden1991:501), the year of the Californian gold rush. Part of a plate of this pattern can be seen in the Norfolk Island Museum ceramic collection

(NIM 4065). This bears a personal mark 'IXI' and is also likely to have arrived on Norfolk Island from Pitcairn as a result of the migration in 1856.

One further plate should be mentioned here. This is impressed and printed with the Davenport mark. The impressed mark reads 'Davenport. Ironstone China' and Godden (1971:65) identifies this as manufactured between 1840 and 1860. The centre of the plate bears a transfer printed anchor with Naval coronet, suggesting a Royal Navy origin.

Tableware distribution and personal marks

Analysis of the decorated forms testifies to the success of the Staffordshire potteries during the study period and identified manufacturers include Mellor, Venables & Co., Enoch Wood & Sons, John Ridgway, William Adams, Davenport, Podmore Walker & Co., Thomas Mayer and J & G. Alcock. A full analysis is presented in Tables 1-6 in Appendix A.2. The distinctive decoration of these forms provides further evidence of distribution patterns across the Adamstown sites and this is shown in Table 4.12 on the following page. For convenience, the area codes and locations are repeated in Table 4.11.

Area Code	Description
LF0001	House of Thursday October Christian.
LF0003	Clark's dunnekin
LF0004	Adams 1 house site.
LF0029	Nobbs' disposal point.
LF0030	Cliff disposal point at Clark's
LF0031	Base of cliff of above disposal point.
LF0035	Area north of Government hostel.
LF0036	Reynold Warren's garden.
LF0037	Field south of Thursday October Christian's house.
LF0038	Entrance to Government hostel area.
LF0039	Cliff disposal point at *Gun.*
LF0040	Area north of Health Centre.
LF0041	Area near mango tree in *Isaac's Valley.*
LF0042	Cemetery.
LF0043	Mr Nobbs

Table 4.11 Sites listed in Table 4.12

Decoration	Site																
	LF0001	LF0003	LF0004	LF0029	LF0030	LF0031	LF0035	LF0036	LF0037	LF0038	LF0039	LF0040	LF0041	LF0042	LF0043	LF0044	LF0045
Pearlware																	
Sponged flowers Over glaze																	
Mocha pattern Yellow ware																	
Transfer pattern (Flow blue) WHAMPOA																	
Transfer pattern GRAPE VINE border																	
Twist pattern																	
Incised bands on yellow ware																	
Floral design on Pearlware Hand painted																	
Transfer pattern GIRAFFE																	
Chinoiserie style Hand painted																	
Transfer pattern PALESTINE																	
Transfer pattern TYROLEAN																	
Chinese Export ware THREE ARCH BRIDGE pattern																	
Transfer pattern Anchor and Naval coronet																	
Shell edge (blue) (even scalloped)				2								3					
Relief pattern (Creamware) MELBOURNE beading																	
Shell edge (green) (Rococo)																	
Transfer pattern CALIFORNIA																	
Shell edge (blue) (unscalloped)												2					
Transfer pattern CANOVA																	
Transfer pattern NAPIER																	

Table 4.12 Distribution of decorated forms across Adamstown sites

Table 4.12 indicates the multiple presence of particular decorative wares at the settlement in the study period, specifically Whampoa, Giraffe, Palestine, and Three Arch Bridge patterns as well as several shell edgewares. In general the distribution over disparate sites suggests these wares were common to a number of different households, particularly those associated with sites LF0029, LF0037 and LF0040. This evidence is interpreted and discussed in the following chapter.

Flatware

Area	Flatware		Glassware	
	No.	gms	No.	gms
LF0001	0	0	0	0
LF0003	1 fork 1 knife	28 42	0	0
LF0004	0	0	0	0
LF0005	0	0	0	0
LF0007	0	0	0	0
LF0029	1 fork	54	1 stem glass	123
LF0030	0	0	0	0
LF0031	0	0	0	0
LF0035	0	0	0	0
LF0036	0	0	0	0
LF0037	0	0	0	0
LF0038	0	0	0	0
LF0039	0	0	0	0
LF0040	2 spoons	52	0	0
LF0041	1 spoon	18	0	0
LF0042	0	0	0	0
LF0043	0	0	0	0
LF0044	0	0	0	0
LF0045	0	0	0	0
Total	**6**	**194**	**1**	**123**

Table 4.13 FOODWAYS 1a. Service

Table 4.13 lists the small amount of flatware recovered from all Adamstown sites. Analysis, suggests these objects all post-date the study period.

Glassware

Only one example of glassware was found at the Adamstown sites. Glassware is typically associated with the consumption of alcohol and this practice was officially restricted or banned for much of the history of Pitcairn (McLoughlin n.d.:23). Although

it is known that rum was distilled on Pitcairn and that illicit drinking occurred (Bechervaise 1839:177), it is unlikely that this generally included the refinement of drinking glasses.

Figure 4.6 Stem glass (29.33)

The form is a stemware wine glass made in three pieces and exhibiting a central bladed knob and bucket bowl. Jones and Smith (1985:48) state that such glasses were popular with the military. The glass was excavated at LF0029 and forms part of a group of objects believed to have belonged to George Hunn Nobbs. Some mystery surrounds Nobbs life prior to his arrival at Pitcairn in 1828 (Nobbs1984:9) but he is likely to have

spent at least some time in the Royal Navy (*ibid*) and the glass is perhaps a legacy of that service. The piece is certainly conspicuously elegant and may serve to emphasise the extent of the social division which existed between Nobbs and the rest of the Pitcairn community. This is explored more in Chapter Five.

FOODWAYS: 1b Storage

This section considers storage containers associated with food and alcohol found at Adamstown sites. For the purposes of analysis containers are listed in two tables. Table 4.14 lists all glass storage containers and separates these by area and colour and calculates weights and minimal vessel numbers for each category. While conscious of Jones' (1989:12) caution that colour is only weakly related to function, a significant amount of glass at Adamstown is 'black' glass and is specifically identified with alcohol bottles. Indeed the majority of glass containers listed in Table 4.14 are identified by surviving vessel forms. This is particularly the case for material found at Nobbs' disposal point (LF0029) and Clark's dunnekin (LF0003) where vessels are either intact or substantially recognisable and can be classified with authority. Minimal vessel numbers are established by the presence of bottle base or neck. Table 4.16 lists evidence of the other main storage containers found at Adamstown sites. In each case the tables are used to identify patterns of distribution and frequency across all sites and provide a framework for further analysis of significant vessels.

Area	Storage glass									
	Black		Colourless			Green		Brown		Site total
	gm	bottles	gm	bottles	jars	gm	bottles	gm	bottles	gms
LF0001	9	1	286	1	4	77	1	47	1	419
LF0003	0	0	13719	20	23	2355	2	4823	10	20897
LF0004	54	1	0	0	0	0	0	0	0	54
LF0005	0	0	0	0	0	0	0	0	0	0
LF0007	0	0	0	0	0	0	0	0	0	0
LF0029	10500	20	376	2	1	606	1	0	0	11482
LF0030	0	0	200	1	3	69	1	162	1	431
LF0031	6	1	32	1	0	6	1	0	0	44
LF0035	0	0	7	1	0	3	1	0	0	10
LF0036	38	1	2	0	0	0	0	0	0	40
LF0037	4	1	65	1	1	2	1	0	0	71
LF0038	0	0	41	0	1	109	1	0	0	150
LF0039	106	1	57	2	0	109	2	0	0	272
LF0040	78	1	107	1	2	19	1	9	1	213
LF0041	64	1	63	1	0	0	0	0	0	127
LF0042	0	0	0	0	0	16	1	0	0	16
LF0043	0	0	28	1	0	26	1	0	0	54
LF0044	0	0	0	0	0	0	0	0	0	0
LF0045	0	0	0	0	0	0	0	0	0	0
TOTAL	**10859**	28	**14983**	32	35	**3397**	14	**5041**	13	**34280**

Table 4.14 FOODWAYS: Storage glass

Table 4.14 shows that a total weight of 34.280 kg of storage glass was recovered from the Adamstown sites. The tabulated weights of glass indicate 31.4 per cent of all storage glass was black, 44.25 per cent colourless, 9.8 per cent green and 14.6 per cent brown. The largest single deposit of storage glass was at LF0003 where the total site weight of 20.897 kg accounts for over 60 per cent of the category and represents the largest deposits of colourless, green and brown glass. These were identified by form (or in some cases surviving label) as principally cordial (11), sauce (2), soft drink (4) and beer (8) bottles of mainly New Zealand origin. Thirty five glass jars were also recovered from LF0003, along with a few tins and plastic containers. In general the deposit at Clark's dunnekin (LF0003) contains material typical of the twentieth century, with very occasionally, earlier objects. It appears likely that these were introduced to the assemblage episodically and by chance with soil thrown into the privy.

A remarkable feature of the collection is that, with the exception of material recovered from Nobbs' disposal point (LF0029), a relatively small amount of glass is present on sites. This may have also been the case at LF0029. Of a total of 11.482 kg of storage glass found at this site, 8.663 kg was excavated from a shallow hole on the edge of steep ground falling to *Brown's Water*. The surface collection of 275.5 m^2 at Nobbs' disposal point (LF0029) includes significant numbers of conjoins and close association with the excavated material, as well as distinct concentrations immediately down slope from the excavation. In light of this it would appear that some of the surface collection was originally buried and that the site may have also once exhibited a relatively small amount of glass.

Black bottle glass

Table 4.14 indicates that black glass was present at less than half the Adamstown sites and generally represented in very small amounts. The contrast between this light scatter of black glass and the deposit found at Nobbs' disposal point (LF0029) indicates a significant anomaly and suggests the existence of behavioural differences between George Hunn Nobbs and the community. It is fortunate that the deposit found at LF0029 can be directly connected to Nobbs. The scratched letter 'N' appears on six bottles, as well as a plate and a mocha ware mug. The letter 'G' appears on one bottle and a plate.

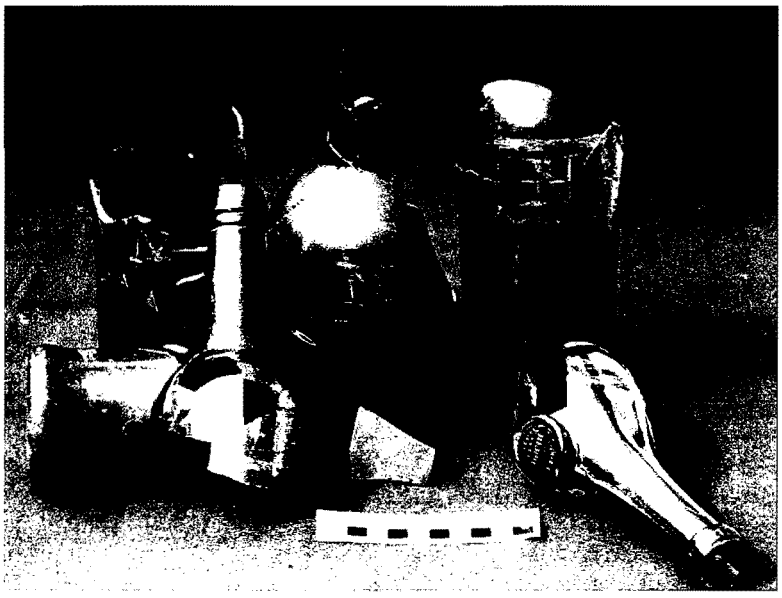

Figure 4.7 Personal marks on bottles from Nobbs' disposal point (LF0029)

Identification of storage bottles from Nobbs' disposal point (LF0029)

Following sorting and mending, a total of 20 black bottle bases and 12 black bottle necks were recovered from LF0029. In only one case was it possible to reconstruct a bottle (29.8) to a point where all measurements could be established beyond doubt. The bottle has a height of 275 mm, a base diameter of 80 mm and a down-turned lip dominant over the string rim. These features identify the bottle as a typical wine-style bottle of about 1790 to 1820 (Jones and Smith 1985:21). The bottle is marked with the letter 'N' in a scratched square. The base has a conical push up and a bare iron pontil mark. Another bottle (29.1) is substantially complete but missing the neck. The base of this bottle is 95 mm in diameter and more typical of a beer-style bottle (*ibid*). The body exhibits marks of a three part mould and the push up is moulded. The combination of these features indicates a manufacture date after about 1840 (Boow 1991:38). This bottle is also marked with a scratched 'N'.

Of the remaining 18 bottle bases, 2 are small case bottles (29.55; 29.61) traditionally associated with gin, but also used for other drinks (Jones and Smith 1985:15). The neck and base of another bottle (29.38) are recognisable as from the same vessel, but parts of the body are missing. This bottle has a base diameter of 77 mm, a double collar and rounded lip and bulged neck. Although rather small, the bottle has some of the features of a wine-style bottle about 1790 to 1820 (*ibid* 1985:21) and possibly represents a pint size. This is scratched with the letter 'G'. No further connections can be definitely made between the remaining 14 bases and 10 necks. As a result, dating and identification of these is based on the individual attributes of each base or neck. In this regard, bottle necks were generally found to be more useful, however some general associations between bases is apparent.

Six of the remaining bottle bases have diameters between 78 mm and 82 mm and have conical push ups similar to bottle (29.8) identified as a wine – style bottle from about 1790 to 1820. Another two bases are 80mm in diameter but have shallow moulded push ups of a type produced after 1840 (Boow 1991:38). Another bottle base (29.5) appears very similar to bottle (29.1) and has a domed push up with mamelon and is likely to also date to around 1840. Two bases (29.6; 29.47) have very pronounced domed push ups and are much smaller than the majority of bases in the assemblage. One of these (29.6) exhibits a blowpipe pontil which suggests French manufacture

(Jones1971:71). Jones (*ibid*) notes that the blowpipe pontil is about the same diameter as the neck of the bottle - the one tool being used for both purposes. In this case the diameter of the pontil is 30 mm and this is the diameter of bottle neck (29.75) suggesting a match. Bottle neck (29.75) exhibits a single applied collar, cracked off lip and tapering neck, all of which suggest a French wine-style bottle (*ibid*:80). These features are certainly markedly different from the double collars with equal lips and string rims typical of English wine-style bottles from about 1770 to 1820 (Jones and Smith 1985:14). Bottle neck (29.75) is also very similar to bottle neck (29.51) which bears a prunt identifying it as a French claret bottle from the St Julien region of the Medoc. The combination of this evidence and the similarities between bottle bases (29.6) and (29.47) suggests both represent French wine-style bottles. Beyond these conclusions, the black bottle bases found in the assemblage at LF0029 are largely undiagnostic. A complete list of the features of each bottle base is given in Appendix A.3.

As previously stated, the characteristics of the bottle necks from the assemblage are more useful indicators of origin and use. Jones and Smith (*ibid*) state that "...English 'wine' bottles can be dated by the differing body proportions to total bottle height and by the changing lip and string rim configurations". Given that only two bottles are sufficiently intact to accurately determine total bottle heights, lip and string rim configurations offer the best possibility of defining the assemblage. Jones and Smith (*ibid*:19-21) describe an evolution of these features for English wine-style bottles from the period of the Seven Years' War through to about 1820. In the earliest part of this period string rims are dominant over lips. Between 1770 and 1785 the lip becomes more pronounced as the earlier cracked off lip is tooled and the lip and string rim are generally close. Between 1790 and 1820 the lip has become equal to or dominant over the string rim, but both display irregular form. After 1820 lips, string rims and bores become regular and reflect the introduction and widespread use of finishing tools in England after 1828 (Jones 1984:43). By contrast, French bottle collars continued to exhibit cracked off lips and applied string rims until the second half of the nineteenth century (*ibid*). Table 4.15 lists the collar dimensions for the 12 black bottle necks found at Nobbs' disposal point (LF0029) as a means of applying this evolution and suggests possible uses and a chronology.

Reg. No.	Collar	Lip Hgt.	String rim Hgt.	Neck Length	Identification
29.65	Double	12 mm Downturned	6 mm	82 mm Bulged	English wine-style c. 1790 - 1820
29.67	Double	12 mm Downturned	5 mm	85 mm Bulged	English wine-style c. 1790 - 1820
29.57	Double	15 mm Downturned	8 mm	86 mm Bulged	English wine-style after c. 1830
29.48	Double	15 mm	8 mm	90 mm Bulged	English wine-style after c. 1830
29.63	Double	21 mm Rounded	10 mm	90 mm Bulged	English wine-style after c. 1830
29.66	Double	16 mm Downturned	7 mm	92 mm Bulged	English wine-style c. 1790 - 1820
29.38	Double	17 mm Rounded	9 mm	70 mm Bulged	English wine – style c. 1790 - 1820
29.52	Double	9 mm Downturned	c. 3 mm	80 mm Bulged	English wine – style c. 1790 - 1820
29.51	Single	Cracked off	c. 10 mm	75 mm Tapered	French claret St. Julien Medoc
29.75	Single	Cracked off	c. 5 mm	75 mm Tapered	French wine - style
29.64	Single	Cracked off (fire polished)	c. 6 mm	75 mm Tapered	French wine – style c. 1828 - 1844
29.62	Double	14 mm Cracked off	c. 4 mm	128 mm Tapered	French wine – style c. 1790 - 1820

Table 4.15 Collar Dimensions of black bottles from Nobbs' disposal point (LF0029) (All measurements as per Jones 1984:117)

Table 4.15 indicates that the majority of bottles are English wine-style bottles, predominantly dating to the period 1790 to 1820 with three bottles possibly of a post 1830 date. Of the remaining bottles, one is definitely a French wine bottle and three others are possibly French wine bottles. Of the last group, neck (29.64) has a 'Champagne' type finish similar to bottles dated between 1828 and 1844 at First Government House in Sydney (Proudfoot *et al* 1991), while neck (29.62) appears very rough and is possibly a late eighteenth century form. In terms of chronology, the assemblage of black bottles from LF0029 can therefore be characterised as containing bottles from throughout the study period, but perhaps particularly from the earliest years of the settlement. This may corroborate Allen's (1969:264) note that the life of a bottle may be quite long or alternatively indicate particular preservation of bottles at Pitcairn Island during the study period.

Two more bottles (29.10; 29.14) recovered from LF0029 are possibly French wine – style bottles. These are both blue-green, a colour sometimes associated with particular

French wine bottles (Jones 1989:73) although normally of an earlier period. The bases and necks of both bottles are intact, but it has not been possible to completely reconstruct these bottles to help in identification. Both are relatively small. The diameter of base (29.10) is 65 mm, while that of base (29.14) is 56 mm. Base (29.10) exhibits a pronounced domed push up with evidence of a blow pipe pontil. The glass of this vessel is uniformly thin and about 1 mm at both shoulder and heel. The bottle neck of (29.10) is cracked off and has a single flattened collar and sloping shoulder. The neck of (29.14) exhibits the same features with a thin string rim.

Stonewares, Cask Iron and other storage

Area	Location	Stonewares		Cask iron	Other
		Min N°	gms	gms	gms
LF0001	House of Thursday October Christian.	1	49	7	4
LF0003	Clark's dunnekin	1	56	0	0
LF0004	Adams 1 house site.	1	36	0	0
LF0005	Tom Christian's old house.	0	0	0	0
LF0007	Adams II house site and grave.	0	0	0	0
LF0029	Nobbs' disposal point.	0	0	0	245
LF0030	Cliff disposal point at Clark's	3	643	0	0
LF0031	Base of cliff of above disposal point.	0	0	49	0
LF0035	Area north of Government hostel.	0	0	0	0
LF0036	Reynold Warren's garden.	1	18	0	0
LF0037	Field south of Thursday October Christian's house.	3	302	169	29
LF0038	Entrance to Government hostel area.	1	84	0	8
LF0039	Cliff disposal point at *Gun.*	4	259	65	0
LF0040	Area north of Health Centre.	4	192	0	0
LF0041	Area near mango tree in *Isaac's Valley.*	0	0	90	70
LF0042	Cemetery.	2	2	0	0
LF0043	Mr Nobbs	0	0	0	11
LF0044	Rock flats at *Down Isaac.*	0	0	0	0
LF0045	Small cave in cliff at *Down Isaac.*	0	0	0	0
TOTAL		**21**	**1641**	**380**	**372**

Table 4.16 FOODWAYS Stonewares, Casks

Table 4.16 indicates that sherds of 21 stoneware containers were found at the Adamstown sites. In all cases these are wheel-turned body sherds and bases, typical of heavily potted stoneware jars. Of these, sherds (39.13) and base (30.11) are made from noticeably refined clay and identified from stoneware jars still in use in houses at Pitcairn. These contained pickled vegetables and were obtained from Shaw Savill ships in the 1950s (Warren, R. 1999, pers. comm.). Two other bases indicate jars of 180 mm

(30.12) and 225 mm (30.10) diameters. The smaller of these is finished in a brown salt glaze and the other in a clear glaze. In general, apart from the distinguishing features of glaze colour, and clay colour and refinement, the remaining stoneware sherds are undiagnostic with few exceptions. Sherd (4.2) located at LF0004 is part of a stoneware jar bearing a raised armorial cipher. This is the lion's head, crown and crest of the British Royal cipher and suggests the sherd is from a water filter. Stoneware water filters bearing the British Royal cipher are illustrated in McEwan & Co.s catalogue (1868). McEwan & Co established a department store in Melbourne in 1852 and expanded to New Zealand and Fiji in later years (*ibid*). Sherd (4.2) may therefore date to the second half of the nineteenth century, although an earlier date is possible. Another sherd (39.14) has a line of impressed beading and is from a relatively thin walled vessel of 125 mm diameter.

Amongst other non-stoneware storage containers included in the Foodways category are the base of a 103 mm diameter undecorated pearlware container (29.4) and the base of a 90 mm diameter porcelain jar (29.131). Base (29.4) was excavated with objects marked 'N' at Nobbs' disposal point, and is believed to be associated with him.

The relatively small evolution in form and continuing use of stoneware containers at Pitcairn makes it difficult to gauge the use of these wares during the study period. Apart from one stoneware jar from the *Bounty* illustrated in Marden (1957:753), no sherds are readily recognised or directly comparable to the collection of stoneware jars recovered from HMS *Pandora* (Campbell and Gesner 2000:112) and sherds from HMS *Sirius* (Stanbury 1994:53). Despite this, Table 4.15 indicates the presence of stoneware vessels across many of the Adamstown sites and suggests a relatively long history of use.

Cask Iron

Only minimal iron from cask hoops was found and amounted to a total of just 361 gm recovered from all Adamstown sites. While corrosion undoubtedly affects the survival of exposed iron, cask iron was found at the cliff disposal points at LF0031 and LF0039. These sites are close to the sea and exposed to air-borne salts, suggesting corrosion is not a significant factor affecting the presence of cask iron at Adamstown. Casks were certainly used at Pitcairn during the study period. Lieutenant George Dashwood's *View*

in Pitcairn's Island, January 1833 (ML. Z PXA 1679) clearly shows a cask behind one of the houses. Brodie (1851:102) also mentions casks in relation to watering ships and lists prices for barrels of potatoes and yams which could be obtained by ships stopping at Pitcairn. Indeed as Staniforth (1987) has noted, casks were the most common form of bulk container for storage in the nineteenth century and seen in this context, the small amount of cask iron recovered from Adamstown sites appears anomalous. This anomaly may be explained by Shillibeer's reference (1817:95), that the islanders manufactured fish hooks and needless from "old iron hoops" and it is possible that cask iron continued to be a convenient source of wrought iron throughout the study period.

FOODWAYS 1c Preparation

Area	Cooking vessels		Hearth stones	Stove parts	Preparation Bowls & Dishes		Other
	No.	gm	gm	gm	No.	gm	gm
LF0001	0	0	0	0	0	0	0
LF0003	1	925	0	2047	3	1311	318
LF0004	0	0	0	0	0	0	0
LF0005	0	0	0	0	0	0	0
LF0007	0	0	0	0	0	0	0
LF0029	0	0	0	0	1	36	0
LF0030	0	0	0	0	0	0	0
LF0031	0	0	0	0	0	0	0
LF0035	0	0	0	0	0	0	2260
LF0036	0	0	0	0	0	0	0
LF0037	0	0	756	153	0	0	4
LF0038	0	0	0	0	0	0	0
LF0039	0	0	0	0	0	0	0
LF0040	0	0	0	0	0	0	0
LF0041	0	0	0	0	0	0	325
LF0042	0	0	0	0	0	0	0
LF0043	0	0	0	0	0	0	0
LF0044	0	0	0	0	0	0	0
LF0045	0	0	0	0	0	0	0
Total	**1**	**925**	**756**	**2200**	**4**	**1347**	**2907**

Table 4.17 FOODWAYS 1c. Preparation

Cooking vessels

Cooking vessels are represented by a single aluminium frying pan. This was missing the handle and had been discarded in Clark's dunnekin (LF0003). Other material associated with cooking and food preparation found at LF0003 are, part of a cast iron stove (3.204), a metal cooking utensil (3.205), a plastic bottle brush (3.216), an enamel

dish (3.224) and lid (3.226), part of a small earthenware mixing bowl (3.228) and a complete mixing bowl marked with a manufacture date of 1929 (3.229). These objects clearly date to the twentieth century and of no particular significance to the present study. The fact that a complete mixing bowl was discarded would appear to indicate LF0003 was used in a final phase of discard, when even unbroken objects were no longer valued.

Two stone graters (35.1; 35.2) or *yollos* were recovered at LF0035 (area north of Government hostel). Ross and Moverley (1964:236) describe a *yollo* as a vegetable grater made from vesicular basalt with transverse ridges. Both *yollos* exhibit transverse saw cuts spaced to form a pattern of diamond shaped 'teeth' across the surface of the stone. The saw cuts on one *yollo* (35.2) are cut on both the upper and lower surface of the stone but are incomplete on the lower surface. *Yollos* are almost certainly an example of a Polynesian introduction dating to the arrival of the *Bounty*. Beechey (1968:119) was probably referring to the use of the *yollo* on Pitcairn in 1825 when he wrote; "...The taro-root, by being rubbed, makes a very good substitute for bread, as well as the bananas, plantains and appai".

Further apparent evidence of Polynesian preparation of food was found in the form of a concentration of volcanic rocks in the field south of Thursday October's house (LF0037) and a small amount of charcoal. The former are possibly oven stones. Gathercole (1964:17) located a substantial deposit of oven remains approximately 50 m south of LF0037 and concluded "... it appeared that this was the result of cooking with the earth oven during historic times".

The final objects included in this category are a sherd from a large ironstone dish (29.133) and a 225 mm knife blade (41.5).

FOODWAYS 1d Food Remains

Faunal remains

A remarkably small collection of faunal remains was found at the Adamstown sites and consists of a total weight of 398 gm of shell and 278 gm of bone. The shell consists entirely of *Turbo argyrostomus* either as shell or operculum. The latter is more durable

and provides a basis for establishing minimum numbers of individuals. Of the total weight of bone recovered it has been possible to identify all but 93 gm. Identification of this material is difficult due to the fragmentation of bones and the absence of diagnostic features. Identification of bones is based on Schmid (1972). In many cases identification was facilitated by the discovery of teeth. In one instance a small partial skull was sent to Dr Stephen van Dyck at the Queensland Museum who confirmed it was from *Felis catus*. In the case of shell, some small examples of *Tridacna maxima* (30.4; 30.5; 41.4; 41.52; 41.53) and a fragment of a polished pearl shell (41.4) have been listed under the functional group (3a Decorative) as souvenirs or ornaments. Neither shell is known at Pitcairn and the diminutive size of the *Tridacna maxima* suggests these were not collected as food, but rather brought back from Oeno Island (Paulay 1989:21) as a novelty. The distribution and species identified are shown in Table 4.18.

Area	Operculum		Turbo		Goat		Pig		Fish		Chicken		Other
	No	gms	No	gms	No	gms	No	gms	No	gms	No	gms	gms
LF0001	24	70	1	20	1	25	1	2	1	7	0	0	10
LF0003	20	38	8	77	1	11	0	0	1	5	1	10	23
LF0004	0	0	0	0	0	0	0	0	0	0	0	0	0
LF0005	3	6	1	2	0	0	0	0	0	0	0	0	0
LF0007	2	5	1	4	0	0	0	0	0	0	0	0	0
LF0029	1	2	1	13	0	0	0	0	0	0	0	0	0
LF0030	0	0	1	1	0	0	0	0	0	0	0	0	0
LF0031	0	0	3	26	0	0	0	0	0	0	0	0	0
LF0035	0	0	0	0	0	0	0	0	0	0	0	0	0
LF0036	9	33	0	0	1	6	1	1	1	1	0	0	1
LF0037	4	10	2	22	1	3	0	0	0	0	0	0	68
LF0038	0	0	0	0	0	0	0	0	0	0	0	0	0
LF0039	2	15	0	0	0	0	0	0	0	0	0	0	0
LF0040	9	29	5	23	0	0	1	25	0	0	0	0	5
LF0041	1	2	0	0	1	1	1	6	0	0	1	1	59
LF0042	0	0	0	0	1	1	0	0	0	0	0	0	0
LF0043	0	0	0	0	1	6	0	0	0	0	0	0	0
LF0044	0	0	0	0	0	0	0	0	0	0	0	0	0
LF0045	0	0	0	0	1	1	0	0	0	0	0	0	0
TOTAL	**75**	**210**	**23**	**188**	**8**	**54**	**4**	**34**	**3**	**13**	**2**	**11**	**166**

Table 4.18 FOODWAYS Faunal Remains

Clearly there is a problem in attempting to differentiate faunal material which belongs to the study period from subsequent deposit by later generations of Pitcairn Islanders

after 1856. The very small amount of faunal material recovered also indicates a failure to locate a primary faunal disposal area. The excavation of the privy pit at LF0003 has shown that while this was used as a point of discard for unwanted material, this did not extend to faunal material to any significant extent. Nor are there faunal remains present in the material recovered from the cliff disposal points at LF0030 and LF0039.

Despite the small amount of faunal material recovered, the evidence suggests the wide-scale consumption of *Turbo argyrostomus* over a majority of Adamstown sites both in the study period and later. This is indicated by the recovery of an operculum from amongst excavated material at Nobbs' disposal point (LF0029). The combination of evidence from pottery marks, bottles and the association with George Hunn Nobbs all positively establish this assemblage as dating from the study period.

Floral Remains

The failure to locate a defined food discard area, combined with the proximity of present day gardens to the collection sites at Adamstown effectively precludes any archaeological analysis of floral remains. In this context the documentary evidence of Beechey (1968), Bennett (1840), Brodie (1851) and Waldergrave (1833) is extensive.

FOODWAYS 1e Procurement

Fishing equipment

No evidence of any kind was found relating to fishing equipment.

Shooting equipment

Only four objects can be positively identified with the study period and these are a musket trigger guard (44.1), the end of a bronze ram-rod holder (38.3) and two gun flints (1.147; 4.25).

Trigger guard:

This is a copper alloy trigger guard identified (Neumann and Kravic 1997:210) as a naval-utility pattern c. 1755-1790. The guard is very similar to one recovered from the wreck of HMS *Sirius* at Norfolk Island and illustrated in Stanbury (1994:82), the main difference being that the *Sirius* guard is drilled laterally to receive a buckle for a

shoulder strap. Trigger guard (44.1) has no point of attachment for a strap at all and this may further differentiate the weapon from the standard Short Land Pattern musket in use by the British infantry after about 1770. Given the similarities between guard (44.1) and trigger guards recovered from the 1790 *Sirius* context, it is likely that the guard found on the rock flats at *Down Isaacs* is indicative of both the style of muskets carried aboard the *Bounty* and that brought ashore at Pitcairn island and used for hunting.

Gun Flints:

Two gunflints were found, one (1.147) as a surface find at Thursday October's house (LF0001) and the other (4.25) at John Adams 1 (LF0004). Flint (1.147) is 30 mm across the edge, 25 mm along the side and 10mm thick. The Munsell colour for this flint is 5GY 3/1 and the weight is 7 gms. The distinctive shape and colour match very closely with Skertchly's (1984:51) illustration of a Solid Grey (English) Musket flint. As the name implies, this flint is suitable for use in a musket although Lotbiniere (1984:207) points out that musket flints were also used as cannon flints. Flint (1.147) exhibits pronounced wear on the edge in the form of a 2.5 mm concavity adjacent to the point of impact with the steel battery and there are further signs of wear to one side of the forward rib. The edge of the concavity shows marks of abrasion indicative of cumulative use-wear. In general the flint shows extensive use and would have been prone to misfire. Skertchly estimated that a flint "...cannot be depended upon for more than 30 shots", and emphasised the importance of a properly maintained flint by quoting Wyatt in Rees' Cyclopaedia (1984:4):

> All military men must know that nothing is more adverse to the operations of a regiment than the necessity (which too often occurs in consequence of the proper form of gun flints not being sufficiently attended to) for men to quit their ranks for the purpose of either hammering or changing their flints.

Flint (1.147) shows no evidence of attempts to reknap the edge but rather persistent use beyond a point where the piece could reasonably be expected to fire.

Gunflint (4.25) is considerably smaller than flint (1.147) and may be a pistol flint. The dimensions are, length 22 mm, width 19 mm , thickness 5 mm and weight 5 gms. The flint is black and approximates most closely to Skertchly's (*ibid*:63) pocket pistol flint -

though it is not very finely made. One corner of the edge is chipped, but otherwise the edge shows little use and is still straight and sharp. The heel is chipped but it is unlikely that the flint was manufactured like this. The straight edge and evidence of little use may reflect the limited value of relatively inaccurate firearms such as pistols for hunting purposes.

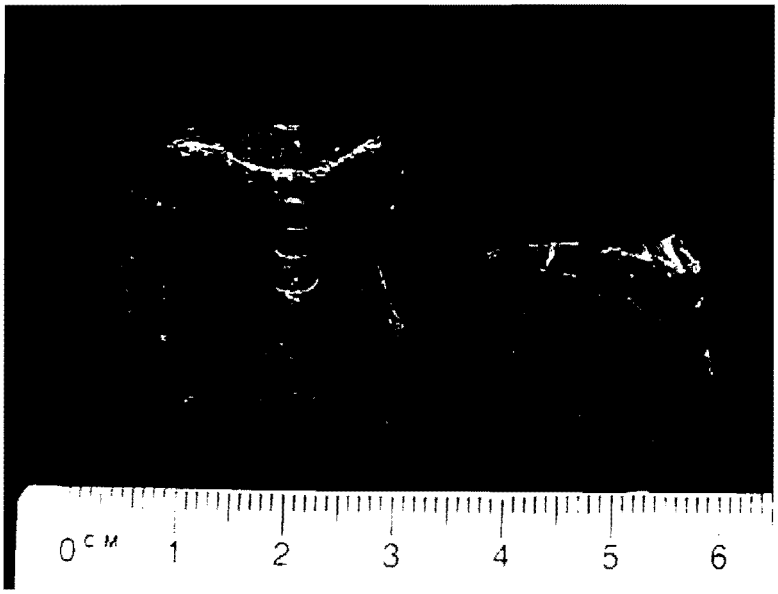

Figure 4.8 Gunflints 1.147 (left) and 4.25

Ramrod fragment:

Object (38.3) is a copper alloy rod end, 60 mm in length, ending in four distinct points and is possibly a worm used for cleaning the bore of a firearm. Neumann and Kravic (1997:264) illustrate examples of these. While there are differences between those illustrated and the object, the barbs are a common feature to both.

CLOTHING 1a Fasteners

A total of 74 buttons, one zip carriage, three metal rivets, three pins and one buckle were recovered from the Adamstown sites. Of these, the zip carriage, rivets, pins and 31 plastic buttons are clearly modern. The remaining buttons were sorted by material, diameter, hole configuration and markings and the results are shown in Table 4.19.

Material	No.	Diameter	Hole type	Markings
Cu alloy	1	25 mm	loop	
	1	19 mm	loop	Transporter Brand Regd
	2	17 mm	4 hole	
	13	16 mm	4 hole	4 x BEST RING EDGE 1 x BEST SOLID EYELET
	1	15 mm	4 hole	G.EVENSEN LE HAVRE (Front) G. ETLING PARIS (Back)
	4	14 mm	4 hole	1 x DORE & SON, 20 KING WILLIAM St 1 x LEWIS'S LIVERPOOL
	2	14 mm	2 hole	
	1	13 mm	4 hole	
	1	12.5 mm	loop	Gilt + backmark (indecipherable)
Glass	1	17 mm	4 hole	
	1	14 mm	4 hole	
	1	11 mm	2 hole	
	1	9 mm	4 hole	
	1	8 mm	4 hole	
	2	8 mm	2 hole	
	2	8 mm	Loop	
Bone	1	15 mm	4 hole	
Shell	1	22 mm	4 hole	
	1	11 mm	4 hole	

Table 4.19 Buttons

A general problem shared by all archaeologists attempting to use buttons as chronological markers is that while some very general works have been written for those interested in collecting buttons (Albert and Kent 1949; Luscomb 1967; Whittemore 1992) these deal mainly with valuable and fashionable buttons and are of very limited use when dealing with common or purely utilitarian buttons. However some general observations are possible.

Table 4.19 indicates that the majority of buttons found at Adamstown sites are copper alloy, have diameters of 16 mm and 14 mm and are singularly plain. Where buttons are marked with maker's trade names, these project messages of durability rather than fashion or simply record the suppliers address. Four of the 16 mm buttons are marked 'BEST RING EDGE' and a button bearing this manufacturer's mark has been excavated in a post 1843 context by Coutts (1984:324) at Port Fairy. Allen (1969) also

illustrates similar plain 16 mm copper alloy buttons recovered from the 1838 to 1849 Port Essington context.

The glass buttons are very difficult to date with any accuracy as all of the forms recovered are still in general use. However, Coutts dates the mass production of glass buttons to about 1840 (1984:302) and this at least suggests that any glass buttons from the study period belong to the latter stage of the period. The bone and shell buttons recovered appear to be even less diagnostic and no attempt is made to date these. In general, the limited diagnostic features of the buttons recovered from the Adamstown sites suggest manufacture dates after about 1835. This correlates broadly with significant growth in the number of ships visiting Pitcairn at this time, and increasing opportunities for foreign imports.

Bone belt buckle:
Buckle (40.152) is a hand carved bone belt buckle exhibiting very fine workmanship. The buckle features Chinese style dragons and may originate from that country, or be the work of a sailor. While it has not been possible to date the buckle it is possibly associated with the increased influence of American whalemen at Pitcairn in the later years of the study period.

CLOTHING 2b Manufacture

Tapa beater:
Four fragments of a bone tapa beater were recovered as surface finds at Reynold Warren's garden (LF0036) and another fragment at the western end of Thursday October's house (LF0001). Fragment (36.36) exhibits regularly defined ridges on one surface. These are 5 mm wide, rounded and separated by grooves approximately 2.5 mm wide. In 1998 I documented two bone tapa beaters at Pitcairn Island owned by Mavis Warren. One of these is grooved on one face only and the ridges are 6 mm wide and spaced 5 mm apart. The other beater is grooved on all four faces and these are graduated in fineness. The coarsest face has ten, 2 mm ridges spaced at 2 mm intervals and the other faces have 16, 25 and 32 ridges respectively. Oliver (1974:145) notes that different qualities of bark cloth were produced, the finest (*Hoboo*) exhibiting great regularity of thickness, while (*Marro*) was only half beaten and was generally used for upper garments (*ibid*:146). Given the different configurations of the two beaters owned

by Mavis Warren, it is probable that the single, coarse-ridged beater was used to make *Marro,* while the other more refined beater was used for *Hoboo.* In this context, fragment (36.36) is probably also from a *Marro* beater. Tapa beater fragment (36.36) and Mavis Warren's beaters are illustrated in Appendix A.4.

Thimble fragment:

A small fragment of a thimble is the only other item which shows any evidence of clothing manufacture. This is too small to be diagnostic.

CLOTHING 2c Other

The only objects recovered which come under this category post date the study period.

PERSONAL 3a Decorative

Objects in this group are divided into shells, beads and other. Shells have been included in this category if they are of a size or species that suggests they were not collected for food – for example small cowrie shells. However it is not possible to establish a chronology for these shells and they are therefore of very limited value to the present study and are not discussed further. Seventeen beads, a nose bracket from a pair of spectacles (1.181), and a pressed metal lion's head (40.79) possibly relate to the study period.

Reg No.	Description	Colour	Diam.mm	Hole mm
1.54	Regular bead	Blue	9	2
1.55	Regular bead	Blue	10	2
1.71	Regular bead	Colourless	8	2
1.110	Cut-glass bead, clear	Colourless	9	1
1.160	Regular bead	Black	8	1
5.36 (i)	Regular bead	Colourless	9	2
5.36 (ii)	Regular bead (in 2 pieces)	Pale blue	10	2
5.36 (iii)	Regular bead	Blue	8	2
38.17	Irregular bead	Pale blue	7	3
38.20	Irregular spun glass bead (5.5 x 10 mm)	Colourless	5.5	3
38.25	Regular bead	Blue	10	2
39.21	Regular bead	Blue	9	2
39.22	Ovoid cut-glass bead, translucent	Blue	13	1
39.23	Elongated/tapered square bead	Brown	7	1
40.150	Irregular conical bead	Pale blue	9	2
42.6	Regular bead (half only)	Blue	9	2

Table 4.20 Beads

It is possible that the use of sea chests in Pitcairn houses derives from sea chests owned by the mutineers. Lavery (1989:91) uses two contemporary drawings of midshipmen's berths to illustrate living conditions aboard Royal Navy vessels at the end of the eighteenth century. In both drawings sea chests feature prominently and are used as seats around the mess. Considering that the mutineers who left the *Bounty* in Tahiti took their sea chests with them (Morrison 1935:75), it is highly probable that the mutineers arriving at Pitcairn did the same, and that the use of chests in Pitcairn houses represents a cultural transferral derived from the *Bounty* seamen.

Table 4.20 indicates that the beads can be divided by form into the sub-categories – Regular spherical, Irregular and Other. Sorted into these categories, there are ten Regular Spherical beads (7 blue, 2 colourless, I black), three Irregular beads (2 blue, 1 colourless), and four Other beads (cut glass/elongated). Bead (38.20) exhibits clear evidence of spun manufacture in the form of thread-like windings and possibly represents the earliest technology of all beads recovered from the Adamstown sites. It is noticeable that the hole diameter of this bead and another irregular bead (38.17) is relatively large, whereas the more elaborate forms have rather small holes of about 1 mm. This is perhaps a further indication of less technologically advanced manufacture. Table 4.20 also shows that the majority of beads are regular and range in diameter from 8 to 10 mm with 2 mm holes. The majority of regular beads are blue.

Spectacles:

Object (1.181) is the nose bracket for a pair of spectacles. The bracket appears to have supported the lenses framed in horn.

Pressed metal object:

Object (40.79) is a small pressed copper alloy face of a lion (length 36 mm, Width 29 mm). The object is manufactured in the same fashion as a shako badge and may be part of a military insignia, although there is no evidence of an attachment point as is often found on such badges. Montague (1981:7) illustrates shakos with lion head badges terminating the chin strap.

PERSONAL 3b Recreational

Clay Tobacco Pipes

Forty-eight clay tobacco pipe fragments weighing a total of 66 gms were recovered from the Adamstown sites. The great majority of these are small stem sections and are unmarked. Only one maker's mark is represented (42.1) in the assemblage and this is W.WHITE with (GLA)SGOW impressed on the other side of the stem. The firm of W.White produced pipes from 1805 to 1955 (Dane 1979). Two other sections (38.31;38.42) have part of the word GLASGOW impressed on the stem. Four sections of pipe bowls also have features of interest. Fragment (42.3) is part of a small spurred bowl with the bowl set at right angles to the stem. Fragment (40.192) exhibits a pattern of fluting extending part way up the bowl. Fragment (42.4) has impressed 'veining' along the seam mould. Fragment (38.58) has an impressed letter 'D'. A combination of all these features suggests a minimum number of three pipes present, however the distribution of pipe fragments suggests a larger presence. Distribution of clay pipes across the Adamstown sites is shown in Table 4.21.

Area		**Fragment number and bore size**				
		4/64 in	**5/64 in**	**No hole**	**Area total**	**Area Wgt gm**
LF0001	Thursday October's house	6	1	1	8	14
LF0003	Clark's dunnekin	4			4	8
LF0030	Cliff disposal at Clark's	1			1	3
LF0036	Reynold Warren's garden		1	1	2	2
LF0037	Field south of Thursday October's house	1	1		2	2
LF0038	Hostel lawn	9	3	4	16	19
LF0039	Cliff below *Gunn*	2			2	5
LF0040	Area south of Health Centre			3	3	4
LF0041	Area near Mango tree			1	1	2
LF0042	Cemetery	8		1	9	7
Total		31	6	11	**48**	**66**

Table 4.21 Distribution of clay tobacco pipe fragments

Table 4.21 indicates the presence of two bore sizes in the assemblage with the majority of fragments having a bore of 4/64 in [1.6 mm]. Despite the relatively small number of fragments recovered from the Adamstown sites, Table 4.21 indicates a broad presence

with particular concentrations at LF0001, LF0038 and LF0042. These three areas are relatively close – LF0038 being at the entrance to the government hostel where Thursday October's house (LF0001) is located, and just a few metres south of the cemetery (LF0042). The current cemetery dates to the period after 1858 and the presence of tobacco pipes possibly relates to former use of the area.

Toys

The largest collection of toys was located at LF0005. These are predominantly plastic construction pieces, game counters and marbles, but also include 86 painted seeds. These toys relate to Tom Christian's four daughters who lived at LF0005 during the 1950s, 1960s and 1970s and are outside the interest of the study period.

The collection of toys recovered from other Adamstown sites, is by contrast, small and confined to a few doll's arms, heads and legs and three marbles. The Pitcairn community included a large number of children particularly in the later years of the study period. In 1855 Captain Fremantle (1857:26) reported the population consisted of 187 people "...one half being above the age of 15, may be considered adult; the rest are children and infants". Shipley (1851) stated that flying kites and walking on stilts were among their principal amusements. The distribution of toys is indicated in Table 4.22.

Area	Location	Reg. No	Description
LF0001	Thursday October's house	1.178 1.197	Ceramic doll's shoe fragment Ceramic doll's leg
LF0003	Clark's dunnekin	3.73 3.74 3.245	3 glass marbles – red/white/yellow Doll's hand Doll's hand
LF0038	Hostel lawn	38.53	Ceramic doll's head
LF0040	Area south of Health Centre.	40.78 40.114	Ceramic doll's arm Fragment of ceramic doll's head

Table 4.22 Distribution of toys

Given the small remaining evidence it is not possible to state whether these toys were used during the study period or subsequently.

Musical instruments

Several copper alloy pins (1.171) recovered from LF0001 are locating pins for the keys of a small piano, however no date of use has been established.

PERSONAL 3c Cosmetic

The largest collection of material in this category was excavated from Clark's dunnekin (LF0003) and is twentieth century in origin. The distribution of all other material in the Cosmetic category is shown in Table 4.23.

Area	Location	Reg. No	Description
LF0001	Thursday October's house	1.36 1.52 1.187	Fragment, chamber pot Fragment, chamber pot Fragment, chamber pot
LF0029	Nobbs' disposal	29.60 29.68 29.82 29.87 29.144	Blade, razor Bottle, perfume Fragment, wash basin Fragment, wash basin Fragment, wash basin
LF0030	Cliff disposal at Clark's	30.39	Fragment, chamber pot
LF0039	Cliff below *Gunn*	39.46	Fragment, wash basin
LF0040	Area north of Health Centre	40.70	Fragment, chamber pot
LF0043	*Mr Nobbs*	43.15	Fragment lid, hair preparation

Table 4.23 Distribution of Cosmetic material

Razor:

The blade of a 'cut-throat' razor was excavated along with bottle and ceramic fragments at LF0029. Many of the objects from this site are marked with George Hunn Nobbs' personal mark and the association of the razor with this material, strongly suggests it belonged to him. Razor (29.60) is 125 mm long and approximately 20 mm wide. An image of this is shown in Appendix A.4.

Chamber pots:

Table 4.23 shows that Chamber pots were found at three of the Adamstown sites. The majority of these fragments are undecorated, rim fragments of limited diagnostic value. Only two are decorated. Fragment (1.36) has a simple grey transfer pattern of scalloped lines and large dots. Fragment (40.70) is decorated in a mauve 'marbled' finish.

Wash basins:

Table 4.23 lists fragments of wash basins found at two sites. All fragments located at LF0029 are undecorated ironstone. A rim fragment found at LF0039 is decorated in a blue transfer Wild Rose pattern. Coysh and Henrywood (1989:399) state that the Wild Rose pattern was extremely popular from the 1830s to the 1850s and was produced by many potters.

Hair treatment:
Fragment (43.15) is part of an earthenware pomade jar lid decorated in a black transfer print. The word 'HAIR' is visible as part of the border and the rim indicates a jar of approximately 75 mm diameter.

PERSONAL 3d Monetary

A total of eighteen coins were found at the Adamstown sites, however all post date the study period and are of not discussed further.

PERSONAL 3e Medicinal

Table 4.24 on the following page lists material in the Medicinal category. Of the artefacts listed in Table 4.24, several of those recovered from Nobbs' disposal (LF0029) exhibit wide mouths and flange lips typical of early nineteenth century medicine containers (Jones and Smith 1985:94). Two of these (29.27; 29.28) are vials and neck (29.28) appears very similar to an 'Essence of Peppermint' vial illustrated in Jones and Smith (*ibid*:97). Indeed fragment (29.19) has the moulded letters 'MI' and may be part of this vial although no conjoin exists. Object (29.26) is an example of a wide mouth container often associated with snuff. Jones and Smith (*ibid*:107) state that snuff was used for both recreational and medicinal purposes in the early nineteenth century. Three bottle fragments from LF0029 appear to be examples of medical flats made with engraved metal plate-moulds. Boow (1991:56) notes examples of medical flats produced in Australia after about 1840, however Jones (1989:49) dates the production of these in America after 1867.

Area	Reg. No	Description	Wgt. gms
LF0001	1.234	Cobalt blue glass sherds	20
LF0029	29.16	Brown glass bottle base, Diam. 43 mm, 2 part mould, blowpipe pontil	24
	29.18	Rim sherd, 50 mm colourless wide mouth container, 1 mm wall	1
	29.19	Colourless bottle glass fragment with moulded 'M I'	2
	29.23	One side only colourless glass container, 32 mm wide, 1 mm	5
	29.24	Body and shoulder frags, colourless 50 mm jar with wide mouth	4
	29.25	Base and part side colourless panel bottle, moulded lettering ...& Co. ...ER ..N (LONDO)**N** base 38 mm x incomplete	18
	29.27	Colourless glass vial neck and shoulder, Diam. 26 mm, down-turned lip with 14 mm bore.	7
	29.28	Frosted glass vial neck and shoulder, Square 32 mm body, down-turned lip, 18 mm bore, 2 part mould * ESSENCE OF PEPPERMINT	4
	29.26	Wide-mouth jar, pale green (incomplete), Down-turned lip, bore 45 mm, base 80 mm x 80 mm,	293
	29.115	Part panel bottle, moulded ...ABLE ...RIPTIC ...URE	28
	29.116	Base fragment panel bottle	3
	29.117	Neck and part body, colourless bottle, Diam. 55 mm, lip 20 mm, bore 14 mm, moulded letters ...FLOR... MURRA... DRU... N.... (FLORIDA WATER...MURRAY & LANMA...DRUGGISTS NEW YORK)	30
	29.118	Brown glass base, approx. 62 mm	19
	29.120	Olive green glass with moulded letters '...PA...'	6
	29.121	Brown glass sherd	2
	29.140	Fragment of colourless glass panel bottle	3
LF0031	31.9	Panel bottle fragment, moulded letters '...RK' (NEW YO**RK**)	9
LF0035	35.6	Panel bottle fragment	4
	35.10	Panel bottle fragment	2
LF0036	36.35	Panel bottle fragments (3)	12
LF0039	39.1	Panel bottle neck, bore 13 mm	37
	39.49	Panel bottle neck fragment, bore 11 mm	4
LF0040	40.46	Cobalt blue glass fragments	3
	40.86	Shoulder fragment, small colourless bottle, Diam. 25 mm	6
	40.89	Body fragment, small brown bottle with graduated scale	2
	40.183	Small bottle neck, bore 6 mm	4
	40.183	Heel, small brown bottle, Diam. 40 mm, 2 part mould	10
LF0041	41.10	Colourless glass bottle neck, bore 16 mm	15
	41.36	Panel bottle fragment	2
	41.49	Base and part body panel bottle, 'L.GREEN' + Chinese characters	183
	41.57	Cobalt blue glass	1
LF0042	42.14	Cobalt blue glass	1

Table 4.24 Distribution of material in the Medicinal category

PERSONAL 3f Other

Writing materials

A relatively small number of artefacts associated with writing materials were found at the Adamstown sites. Fragments from writing slates totaled 75 gms and slate pencil fragments, 8 gms. Three artefacts are identified as stoneware ink bottles. One bears the maker's mark J. BOURNE, Denby and Codnor Park Pottery. Godden (1991:90) identifies this mark as predating 1850 when "& Son" was added to the mark.

LABOUR 4a Farming

Hoe:

Three objects are listed under this category. These are a hoe (37.133), an adze (37.131) and an axe head (7.1). The hoe is very crudely made and appears to be hand wrought. Only half the object remains but this indicates a blade 130 mm by 85 mm and a handle opening of approximately 48 mm. Hoes are the main implement used on Pitcairn Island for all gardening.

Axe head:

This object also appears to be crudely manufactured and the metal is wrapped around the handle and hammered back on the blade. The blade is 165 mm long and the axe is suitable for relatively light duty.

Adze:

In contrast to the tools above adze (37.131) shows signs of greater regularity in the manufacturing process and is a cast iron tool produced in a mould. The tool appears to be a shipwright's adze, but the similarity in form to a hoe suggests it may have been used for gardening.

LABOUR 4b Fishing

While a small number of objects may be associated with fishing, these provide no information relating to this activity during the study period. Some insight however,

may be gained from an examination of a traditional Pitcairn canoe belonging to Jacob Warren located during the survey of archaeological sites at Adamstown.

The canoe was built in about 1940 and originally constructed with a pointed stern and was over 5 m in length (Warren, J. 1998, pers. comm.). In the 1970s the stern of the canoe was modified to accept an outboard motor. The canoe is box-shape in section with flat sides and bottom meeting almost at right angles. It is fitted with three thwarts, the forward being fitted for a mast and the middle with rowlock plates, indicating the craft could be both sailed and rowed. The bottom of the canoe is made from two carved halves, joined along the centerline with wooden dowels. The side is a separate plank joined to the bottom and this is raised at the bow by the addition of a second short insert. The canoe has no internal framing and relies on wooden dowels to connect the several parts.

The basic design and construction features evident in Jacob's canoe are mirrored in the remnants of two canoes at Oeno Island, originally used by Charles Christian and Len Brown. Charles' canoe was built in 1949 by Parkin Christian – then aged about 70 years. The canoe bottom was carved from a mango tree and the side planks made from Pulau (*Hibiscus tiliaceus*). According to Charles, all Pitcairn canoes were built in the same manner and could be rowed, paddled or sailed by two men. Canoes typically had short masts (about 3.6 m) and long booms (5.4 m) – producing a low profile sail plan, which maximized stability. A paddle was used as a rudder when sailing the vessel (Christian, C. 1998, pers. comm.). These canoes were used to access fishing spots at offshore rocks and reefs around Pitcairn. These canoes are discussed further in Chapter Five.

LABOUR 4c Industrial

Very little material evidence of industrial activity was found at the Adamstown sites and is confined to two coal fragments (1.145; 37.45), an unidentified iron object (30.1) and the remains of a CHAMPION Forge (1.251; 1.260) used in the twentieth century.

LABOUR 4d Other

Stone tools

A total weight of 4.324 kg of stone artefacts was recovered from the Adamstown sites. The great majority of these are primary flakes, but there are also fragments from nine adze preforms (29.147; 37.9; 37.34; 40.170; 40.171; 40.172; 41.9; 41.17; 41.43), one awl (37.75), three polished adze forms (29.146; 37.85; 41.13), a sling stone (36.1) and a grinding stone (36.20). The distribution of stone artefacts is shown in Table 4.25.

Area	**Stone flakes**		**Stone tools**		**Area wgt.**
	No.	**gm**	**No.**	**gm**	**gm**
LF0001	56	1466			1466
LF0004	4	100			100
LF0005	4	273			273
LF0029			2	67	67
LF0030	2	247			247
LF0035	1	3			3
LF0036	6	178	2	348	526
LF0037	22	304	4	445	749
LF0040	16	274	3	135	409
LF0041	5	181	4	303	484
Total	116	3026	15	1298	**4324**

Table 4.25 Distribution of Stone Artefacts

Table 4.25 illustrates that evidence of stone tool manufacture, either as discard flakes or partly finished forms, is common to a significant number of the Adamstown sites. Considering the large collections of stone tools from Pitcairn Island held at the Auckland, Otago and Canterbury Museums (Gathercole 1964:100), and the documentary evidence suggesting these were not infrequently presented as gifts to visitors (Bennett 1840; Raine 1821), it is likely that far more evidence of stone tools once existed at the Adamstown sites.

Object (36.1) is a modified stone disc and may be a sling stone. Grinding stone (36.20) is red volcanic tuff and is worn and slightly concave on one face. Carter (1967:36) noted the presence of "...bright red gritty olivine feldspar basalt tuff, often found in association with polished tools, and sometimes bearing marks of use for honing" and

reported that this material only outcropped in Jinser Valley Cave. Heyerdahl (1965:6) recorded a visit to this cave in 1956 and noted "...It seemed evident that this was not a natural formation, but a quarry dug into the mountain in order to utilize the local type of rock". A small sample of grinding stone (36.20) was sent to the Geology Department at the University of Otago, Dunedin, for comparison with a sample (OU 18870) taken from Jinser Valley Cave by Carter in 1963. Professor Alan Cooper (1999, pers. comm.) confirmed that the samples were "...essentially identical, in terms of colour, grain size, texture, clast:matrix ratio and clast composition".

ARCHITECTURAL 5a Construction

Area	Nails (Fe)		Nails (Cu)		Screws		Bolts		Flat glass	Other
	No.	gms	No.	gms	No.	gms	No.	gms	gms	gms
LF0001	138	888	15	52	2	14	0	0	1660	411
LF0003	101	372	22	123	4	272	1	234	5009	1634
LF0004	3	21	2	19	0	0	0	0	17	15
LF0005	15	53	7	14	4	22	0	0	60	0
LF0007	0	0	0	0	0	0	0	0	0	0
LF0029	0	0	0	0	0	0	0	0	33	0
LF0030	0	0	0	0	0	0	0	0	0	122
LF0031	1	2	1	1	0	0	0	0	0	0
LF0035	0	0	0	0	0	0	0	0	0	0
LF0036	0	0	0	0	0	0	0	0	6	0
LF0037	9	36	4	4	0	0	0	0	27	277
LF0038	1	26	4	19	0	0	0	0	0	0
LF0039	0	0	0	0	0	0	0	0	0	4
LF0040	4	27	4	32	0	0	0	0	33	10
LF0041	2	21	0	0	1	5	0	0	1	335
LF0042	0	0	2	1	0	0	0	0	1	0
LF0043	0	0	1	7	0	0	0	0	0	0
LF0044	0	0	0	0	0	0	0	0	0	0
LF0045	0	0	0	0	0	0	0	0	0	0
Total	**274**	**1446**	**62**	**272**	**11**	**313**	**1**	**234**	**6847**	**2808**

Table 4.26 ARCHITECTURAL 5a. Construction

Nails and fastenings

Table 4.26 indicates that iron nails were the most numerous form of fastenings found, however these were concentrated at Thursday October's house (LF0001) and the associated privy LF0003. Although many iron nails were degraded it was possible to

identify the vast majority as wire nails of relatively modern manufacture (Varman 1993). Indeed a significant number of nails located on the surface at LF0001 are roofing nails of the type commonly used to fix galvanized iron roofs. In a video interview with Hilda Young recorded by Paddy Craig in 1996, Hilda Young showed a photograph of a house at Pitcairn and stated "...That is the first iron roof house on Pitcairn Island. My grandfather, James Russell McCoy [b. 1845, d. 1924] was a guest of Queen Victoria in 1892-3 ... and when he came back ... he brought iron roofing and glass windows ...and that was the first one built." In light of this observation the use of roofing nails and glass windows can be seen as an evolution in the use of building materials outside the study period. It should be noted that apart from 15 iron nails collected at LF0005, only 20 other iron nails appear in the entire artefact register. Although this is possibly the result of local environmental conditions, the soil pH is generally neutral (6.4) and the altitude of Adamstown above the sea appears to reduce the worst effects of airborne salts. The low presence of iron nails may therefore indicate these were not used extensively in Pitcairn buildings. This aspect is discussed in greater detail in conjunction with analysis of surviving buildings at Adamstown in the Chapter Five.

Table 4.26 also indicates the presence of copper, or copper-alloy nails at the Adamstown sites. Several of these appear to be copper sheathing nails and are discussed in the context of recycling in Chapter Five.

Apart from copper alloy sheathing nails, the majority of remaining copper nails are identified as a type used in boat building (*ibid* 1993). Of the 11 screws collected at Adamstown sites, eight are copper alloy and may also be associated with this activity. Copper alloy fastenings are generally favoured in boat building because of their durability compared to ferrous metals. However it is also likely that many fastenings were obtained from ships calling at Pitcairn and copper alloy screws may be associated with these ships rather than particular boat building activities on Pitcairn Island.

Window glass

As with iron nails, the greatest concentration of flat glass was at LF0001 (Thursday October's house) and LF0003 (Clark's dunnekin) and the combined weight of flat glass from these two sites accounts for over 97 per cent of all flat glass collected at

Adamstown sites. The great majority of flat glass was 2 mm in thickness, with the remainder ranging to a maximum of 7.5 mm. It is interesting to note Brodie's (1851:98) description of Pitcairn houses during his forced stay on the island in 1850. He states "... There is no glass upon the island, except one small window, which came out of the *Bounty*, and which is in Mr Nobbs' house. The windows, more like the portholes of a ship, go all round the houses, and are closed in bad weather with sliding shutters". This statement together with Hilda Young's testimony clearly indicates that window glass was not used in dwellings during the study period apart from in exceptional cases.

Other construction fittings

The remaining construction fittings include electrical cable and fittings, a shower rose, and iron hinges. Several small pieces of copper sheathing are also included in this category as they appear to have been used to stop holes on walls. It will be seen from this short list that many of these fittings are relatively modern additions and introductions outside the study period.

ARCHITECTURAL 5b Furnishings

A very small collection of material falls into this category. The total assemblage collected at LF0001 appears to be part of a single plastic lamp shade, while material from LF0003 consists of three metal wick assemblies for oil lamps and one curtain ring. A diesel generator used to supply electricity to island homes was installed in 1976 (Ford 1990:405). Although some homes may have had private generators before this date, this marks the general introduction and use of electric lighting on Pitcairn. An amber-coloured glass prism located at LF0040 (40.179) may have formed part of a decorative oil lamp. A small piece of flat glass (40.139), frosted and etched with floral motifs, may be the decorative border of a mirror. Other items collected in this category include a cog from a clock (39.30), part of a glass lamp chimney (41.59), a turned copper alloy fitting which appears to be part of an ornamental rail (40.126), a brass ring catch with tongue of the type used to secure wooden boxes (40.11), two small copper alloy hinges (29.31; 42.7) and an iron handle from a chest (30.2). One of the hinges (29.31) forms part of the assemblage of artefacts associated with George Hunn Nobbs and is marked with a broad arrow mark. While it is possible this comes from the *Bounty,* it is equally

possible this may have arrived with Nobbs and be a legacy of his former naval career, or may be an introduction from one of the many Royal Naval ships which visited Pitcairn in the first half of the nineteenth century.

Area	Lamp parts gm	Furnishings gm	Other gm
LF0001	43	0	0
LF0003	251	10	0
LF0004	0	0	0
LF0005	0	0	0
LF0007	0	0	0
LF0029	0	0	29
LF0030	0	39	0
LF0031	0	0	0
LF0035	0	0	0
LF0036	0	0	0
LF0037	37	0	0
LF0038	0	0	0
LF0039	0	0	12
LF0040	15	28	246
LF0041	4	0	0
LF0042	0	0	1
LF0043	0	0	0
LF0044	0	0	0
LF0045	0	0	0
Total	**350**	**77**	**288**

Table 4.27 ARCHITECTURAL 5b. Furnishings

The iron chest handle (30.2) was located at the bottom of the cliff at LF0030. The area at the top of the cliff is close to the former house site of Lincoln Clark. Clark was an apprentice aboard the British ship *Acadia* wrecked at Ducie Island in 1881 who returned to live permanently on Pitcairn in 1908. Sea chests were traditionally used by sailors to contain their personal belongings and Lincoln Clark owned such a chest. Indeed Clark specifically refers to his chest in a letter written to Benjamin Wall on December 17, 1925 (Fraser 1993:113).

During a reconnaissance visit to the island by the candidate in 1997, large wooden chests were noted as the primary furnishings in the abandoned houses of Christie Warren and Henry Young, suggesting that these were a common feature of household furniture.

POST-DEPOSITIONAL PROCESSES

The preceding sections of this chapter have identified and described the physical evidence recovered during survey of the Adamstown study area. This will be interpreted in Chapter Five. In general the archaeological evidence from the study period presents as a remarkably thin scatter of materials, and contrary to expectation, very little evidence of the recycling of material from the *Bounty* was found in the Adamstown study area. In his work - *Formation Processes of the Archaeological Record*, Schiffer highlighted the need for archaeologists to consider the role of natural and cultural post-depositional processes in forming the archaeological record prior to attempting to interpret that record. Schiffer describes these formation processes (1991:7):

> Formation processes are of two basic kinds: cultural, where the agency of transformation is human behavior; and non-cultural, in which the agencies stem from processes of the natural environment. Cultural formation processes can be defined more concretely as the processes of human behavior that affect or transform artefacts after their initial period of use in a given activity. ...Non-cultural formation processes are simply any and all events and processes of the natural environment that impinge upon artefacts and archaeological deposits.

The following section considers formation processes potentially affecting the archaeological record at Adamstown and develops a summary of site conditions before interpreting the evidence in Chapter Five. The method used here follows Schiffer's example and outlines the main biological, chemical and physical agents present at Adamstown and their potential to modify particular material classes.

AGENTS OF DETERIORATION AT ADAMSTOWN

Temperature and Relative Humidity

(Biological, chemical and physical)

Pitcairn Island has a sub-tropical climate where the average monthly temperatures range from a minimum of 19° C in August to a high of 24° C in February (Pitcairn Island Administration 1999). Spencer (1995:28) reports the mean annual rainfall is 1716 mm

(1941 – 1991) but points to considerable variability – the three highest annual rainfall records being 2630 mm (1958), 2296 mm (1973) and 2580 mm (1984), compared with the three lowest annual rainfall records of 669 mm (1976), 942 mm (1977) and 608 mm (1978). These extremes of precipitation are almost certainly linked to phases of the El Nino Southern Oscillation (*ibid* 29). Some idea of the average monthly percentage relative humidity can be gauged from recordings at the Pitcairn radio station for 1996.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% RH	82%	80%	79%	84%	73%	76%	81%	82%	79%	80%	84%	83%

Table 4.28 Average monthly relative humidity at Pitcairn Island 1996
(Source: Daily Weather Reports 1996, Pitcairn Radio Station)

While figures for a single year cannot be taken as representative, these do indicate periods of extremely high relative humidity are experienced.

Discussing preservation of organic materials, Renfrew and Bahn (1994:55) emphasise the importance of stable environments and example cases of good preservation in extremely dry, extremely cold, and waterlogged environments. In each case preservation can be attributed to individual factors such as desiccation, freezing or an anaerobic environment, however these factors will only continue to preserve organics while the individual environment remains stable. In the case of Pitcairn Island, although the mean temperature range exhibits low variability, the rainfall record indicates the local environment periodically oscillates through an extreme range and this can be expected to produce correspondingly significant variation in relative humidity. Gilroy and Godfrey (1998:6), in an introduction to conservation practices for museum collections, underline the importance of minimising fluctuations of relative humidity when attempting to preserve all materials, and consider the ideal range for many materials falls between 45 and 65 percent relative humidity – higher percentages fostering increased rates of fungal decay in organic materials, and increased oxidation on the surface of inorganics such as metals (*ibid*:160). Based on this information, very few artefacts made from organic materials can be expected to have survived Pitcairn's high levels of relative humidity and ferrous objects are likely to have suffered some degree of corrosion. Fluctuations in temperature are also likely to have brought about

morphological changes in particular material classes and sunlight may have induced chemical and physical changes to glass objects.

Soil PH (Chemical)

The soil at Adamstown was routinely tested during survey of the area and found to be nearly neutral (PH 6.5) and unlikely to have any effect on artifacts. In this context the small amounts of bone recovered from the Adamstown sites cannot be attributed to soil PH, however physical deterioration associated with desiccation was apparent in some bone recovered in surface collections.

Insect decay (Biological)

A notable feature seen in the construction of many Pitcairn houses is the use of timber 'dunnage' obtained from ships. Aboard ship, this timber is used for crates and pallets intended for a single voyage and low-quality softwoods predominate. Such timber is seldom fumigated and has introduced wood-boring beetles to the island and these are frequently found in furniture. While local hardwoods are free from attack, borers are active in such indigenous timbers as Pulau (*Hibiscus tiliaceus*) and Taapou (*Homalium taypau*) and this may be another factor potentially affecting the archaeological record.

Wind (Chemical)

East to north-east winds predominate at Pitcairn Island for much of the year (Spencer 1995:39). The village of Adamstown - located on the northern side of the island, is subject to sea breezes, which transport airborne salt. This is a further factor potentially producing increased corrosion in ferrous objects.

Fauna (Physical)

Prior to the arrival of the *Bounty* settler group, the principal fauna at Pitcairn Island were the Pacific rat (*Rattus exulans*) and sea-birds. Although several of the bird species are ground nesting, none establish burrows that might affect archaeological deposits or compare with the disturbance produced by pigs, goats and chickens introduced by the *Bounty* settlers. In this context it can be anticipated that pigs and rats may have modified bone, but will be unlikely to have eliminated this material from the archaeological record entirely.

Erosion (Physical)

Principal defining features of the landscape are the steep slopes that surround Adamstown and which, when added to cliffs, account for over half the island's terrain (Twyford 1958) – indeed Adamstown is located on one of the few flatter areas of land. Twyford noted that the majority of rocks on the island are easily weathered and that no truly stable soils exist. This combination of steep slopes and unstable soils has resulted in the transport of sediments and the accumulation of thick soils in the Adamstown basin. The most obvious vehicle for this movement has been hydrological and a number of deep valleys divide and drain water out of the basin and over the cliffs below Adamstown. Apart from the potential for the secondary deposition of artefacts, such movement may alter artefacts through physical abrasion and other contact. In the context of cliff disposal areas this may result in breakage of fragile materials.

Vegetation (Physical)

Twyford (1958) characterised the soil of Pitcairn Island as highly fertile and Gothesson has noted that the landscape offers a variety of habitats for diverse vegetation. Phillip Carteret, sighting Pitcairn Island in 1767, described it as "covered with trees" (Hawkesworth 1773:561). The growth of vegetation, and particularly the associated root systems may be a further agent affecting artefacts at Pitcairn.

Other

The agents listed above are considered to represent the main environmental agents affecting artefacts at Adamstown. In this context Pitcairn is free of atmospheric pollutants, effects of freezing and wind-borne abrasives noted by Schiffer (1991:148) as affecting some sites.

EFFECTS OF IDENTIFIED AGENTS ON MATERIAL CLASSES

The following section looks at the potential of agents identified at Adamstown sites to affect particular material classes of artefacts.

Shell

The material qualities of shell vary considerably depending on size and species. Delamination of shell surfaces from exposure to heat and sunlight, and breakage of fragile shells by animals such as pigs may have affected this material class. Such effects however, are likely to be small. In this context, Weisler (1993) found *Turbo argyrostomus* in artefact assemblages at Henderson Island which date prior to A.D. 1500 – attesting to the durability of this species in a similar environment.

Bone

Desiccation may have also had a small affect on bone at Adamstown. A bone tapa-beater located as a surface find at Reynold's garden (LF0036) was cracked and showed evidence of photochemical processes contributing to the break down of the artefact. Bone may have also been modified or redeposited by animals such as pigs, cats, dogs and rats at Adamstown however, the neutral PH of soils in the area will not have affected this material.

Stone

As previously noted, stone quarried at Tautama and used for making tools is extremely fine-grained and hard, and appears to be unaffected by chemical, biological or physical agents to any significant degree. Stone implements such as *yollas* are manufactured from porous volcanic stone, which, while extremely sharp, is relatively brittle. These may be affected by physical agents.

Metal

Ferrous metals show significant evidence of chemical corrosion generally associated with a high degree of relative humidity and the presence of salt. Ferrous metal is also likely to have been affected by fluctuations in temperature. By contrast none of the agents identified at the Adamstown sites are considered likely to have produced significant effects on non-ferrous metals.

Glass

While glass is known to be affected by chemical agents, and exposure to sunlight may affect the colour and surface of glass objects, this is considered unlikely to significantly affect the quantity of glass present at Adamstown sites. Again, physical agents

associated with large animals or erosion may change the integrity of glass objects without affecting their archaeological presence.

Ceramic

None of the agents identified are considered likely to affect porcelain, earthenware or stoneware, although these may be modified by physical effects. Low-fired ceramics may be affected by chemical agents to some extent.

Wood

Wood (particularly softwood) and organic material generally, is susceptible to chemical and biological agents at Adamstown associated with fluctuations in relative humidity and borer infestation.

Material Class	Effect of Chemical agents			Effect of Biological agents			Effect of Physical agents		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Shell	–	–	–	–	–	–	X	–	–
Bone	X	–	–	–	–	–	X	–	–
Stone	–	–	–	–	–	–	–	–	–
Metal - ferrous	–	–	X	–	–	–	–	–	–
Metal - non-ferrous	–	–	–	–	–	–	–	–	–
Glass	X	–	–	X	–	–	X	–	–
Ceramic – high fired	–	–	–	–	–	–	–	–	–
Ceramic – low fired	–	X	–	–	–	–	–	X	–
Wood – hardwood	–	–	–	–	–	–	–	–	–
Wood - softwood	–	–	X	–	–	X	–	–	–

Table 4.29 Potential Effects of Agents of Deterioration on Artefact Material Classes at Adamstown Sites.

CULTURAL FORMATION PROCESSES

Isolation

The choice of Pitcairn Island as a place of settlement was an important factor affecting the development of the community and formation of the archaeological record. The historic evidence indicates that, after leaving Tahiti for the last time in September 1789, the mutineers set out to find an island where they might establish a secluded settlement. Maude (1968) has shown that the *Bounty* first sailed west through the Cook, Tongan and Lau islands before returning to the eastern Pacific in search of Pitcairn Island. In an interview with Beechey in 1825 (1968:80), John Adams stated that Fletcher Christian had decided to go to Pitcairn Island after reading Carteret's account of the island. Looking at the chart of the Pacific in that account (Hawkesworth 1773), it is clear that at least part of the appeal of Pitcairn lay in its isolation and the protection this offered the mutineers, however, long after the mutineers were dead, the isolation of the island continued to affect the settlement's opportunities for contact and trade and produced an unusually insular community.

Maritime cultural influence

Equally important is the fact that Pitcairn is an island and contact with the outside world has necessarily depended on ships. This not only affected the flow of goods entering the settlement, it ensured the community was singularly exposed to maritime cultural influences and this is reflected in both systemic and archaeological contexts. This influence is pervasive throughout the history of Pitcairn and continues in the contemporary community. An example of maritime material in systemic context in the recent past is evidenced by the many maritime caps worn by Pitcairn men in Figure 4.9 on the following page.

Figure 4.9 Pitcairn men 1936
(Reproduced by permission Mitchell Library)

Settlement history

A further factor affecting the archaeological record can be attributed to the origins of the settlement. The *Bounty* settlers consisted of a hybrid group of Europeans and Polynesians attempting to create a settlement on an uninhabited Pacific island. The cultural traditions of the settlers, modified Polynesian landscape, and survival of members of this group well into the study period, are all likely to have affected the nature of the archaeological record at Adamstown. This aspect is perhaps obvious and anticipated, however the origins of the settlement are also integrally connected to the story of the mutiny on the *Bounty* and this has further affected the archaeological record. Public fascination in the *Bounty* story has made this a defining feature of the settlement in the eyes of the world and significantly influenced transactions between the community and visitors to the island.

A further defining feature of the settlement can be attributed to early reports, which emphasised the religious aspect of the community. In this context, the decision by Sir Thomas Staines in 1814 (captain of HMS *Briton*) to allow John Adams to remain on Pitcairn, was made in the belief that the mutineer nurtured an innocent and fervently religious community, which deserved support. Surgeon William Gunn, visiting Pitcairn in 1841, indicated the importance of this approbation to the Pitcairn community (ADM 101/95):

> Captain Beechey says he found on this little spot "a happy little society, well instructed, orderly and friendly". Candour obliges us to state that this description will no longer apply to them. They remained so, as long as 'their father, their patriarch and pastor' (Adams) lived, but they have changed since his death. We ascertained that some strifes and dissentions had sprung up and crimes appeared amongst them, although they were anxious to conceal the facts from us, believing that it was only the character of their being a virtuous and innocent family which made the English Government, as well as the English people, take such an interest in their welfare and happiness.

This social contract between the Pitcairn community and the British Government influenced contact throughout the study period – Royal Navy ships visiting regularly during the later part and providing authority and legal direction, and the British Government twice assisting in the relocation of the Pitcairn community.

Longevity of the settlement at Adamstown

The combination of relatively flat land, convenient access to fresh water and proximity to marine resources at *Down Isaac* are all possible factors in selecting and developing Adamstown as a centre of settlement. The location of the *Bounty* remains may have been a further factor. Other initial considerations may have included the relative obscurity of the site. However, regardless of exactly what combination of factors influenced the initial selection of the site, following the establishment of a village in the first years of settlement, Adamstown has remained the centre of the Pitcairn community for over 200 years. Such concentration of population will have inevitably contributed to disturbance and mixing of the archaeological record.

Considering the longevity of the settlement at Adamstown, the area shows a marked paucity of sites and presents as a thin scatter of surface material concentrated almost exclusively on the ridge areas. One possible reason for this may be associated with recycling practices. Evidence of this cultural process was witnessed in the demolition of Henry's house during fieldwork. All furniture and fittings were removed from the structure and taken away, prior to removing the iron roofing. The iron sheets were sorted and those beyond use, taken to the dump. All windows were removed and the hinges cut out of doors before using the bulldozer to pull down the walls. The timber from the structure was then divided into softwood to be burnt in the kitchen, and local

hardwood – prized for carving souvenirs for the tourist trade. A deep pit was dug with the bulldozer and all remaining waste material burnt and finally buried. The last act was to push the foundation stones down the dunnekin and fill this with soil.

Schiffer (1991:44) has noted a similar recycling of materials in rural areas of the United States and recognized the importance of such material where economic or geographic factors potentially limit the availability of goods entering a community. He writes:

> In rural areas of the United States, the hoarding of objects for future use is so widespread that one can scarcely speak of 'discard' at all. Instead of transporting their refuse to centralized dumps, rural folk often accumulate material – including cars and major appliances – in their yards. In such backyard 'dumps' objects or parts of them are continually re-entering systemic context through reuse. This pattern of warehouse-disposal at the household level furnishes a model for all settlements where space and available refuse make it possible.

Aspects of this general relationship between location and accumulation of material are also evident at Pitcairn in the hoarding of material by particular individuals. At Pitcairn, however, such material is generally stored under houses and in old buildings and the land is kept for agricultural purposes. Such activities may be a further factor reducing the presence of archaeological material across the Adamstown area.

Summary of site conditions

In summarising the environmental and cultural transformations likely to have affected the Adamstown sites it may be anticipated that destructive agents associated with the island's record of generally high levels of humidity and periodic heavy rain will have significantly reduced or possibly eliminated, organic materials from the archaeological record. The combination of unstable soils and periodic heavy rain may have also resulted in some post-depositional movement of artefacts - particularly in valleys and areas of steep slope. In the context of the Adamstown sites however, the documentary evidence indicates houses were located in relatively flat areas and this may have largely mitigated against such movement. This is supported by the survey results, and despite thorough investigation of cliffs and valleys in the Adamstown study area, no evidence of re-deposition of artefacts was found.

In regard to artefact material classes, analysis of agents of deterioration at Adamstown sites suggests that stone, non-ferrous metals, high-fired ceramics and hardwoods will be relatively unaffected; shell, bone and glass will be little affected; low-fired ceramics will be affected to a moderate degree; and ferrous metals and most organics will be altered to a high degree.

Analysis of cultural formation processes operating at Pitcairn suggests the main impacts on the archaeological record will be associated with isolation, cultural influences inherent in the settler group, and increasing exposure to external forces through shipping contacts. The effects of isolation may be reflected in the material record by evidence of resource curation, recycling and generally low levels of imported materials. Finally, it is probable that the archaeological record will have been affected by the longevity of cultural activities in Adamstown and as a consequence of the history of the mutiny aboard the *Bounty*.

Summary

Chapter Four has identified the nature of archaeological and other material evidence located in the study area, and attempted to evaluate the possible effects of natural and cultural post-depositional processes in forming the archaeological record at Adamstown. The following chapter combines this with historical evidence relating to the study period as a means of identifying and interpreting the changing nature of colonization at Pitcairn Island from 1790 to 1856.

CHAPTER FIVE

INTERPRETATION OF THE EVIDENCE

The preceding chapters have located the study within a broad historical and theoretical context and described the nature of the study area, the methodologies employed and the artefacts and data recovered during fieldwork. This chapter interprets the evidence. In order to maximise the interpretative potential of the archaeological data described in the preceding chapter, the following section draws together the known historical data relating to the Pitcairn settlement, before interpreting the archaeological evidence using the typological framework applied in Chapter Four. This historical archaeological material is then focused to address the research aims of the thesis in Chapter Six.

INTERPRETATION OF THE HISTORICAL EVIDENCE

Colonists

The details of the 28 colonists forming the initial setter group have been described in Chapter Two.

Colonised Environment

At Pitcairn the new arrivals found themselves in a modified landscape. During their first reconnaissance of the island, the *Bounty* settlers found clear evidence of previous occupation in the form of oven stones, morais, stone tools, statues and a variety of food plants and materials valued by Polynesian societies. Although only two radiocarbon dates (AD 1350, AD 1335) are available for a single prehistoric site on Pitcairn (Sinoto 1983:61), it is likely that Polynesian occupation at least parallels that of Henderson Island, where the earliest date is AD 780 (Weisler 1993:210).

In a geological survey of Pitcairn Island in 1964, the geologist R.M. Carter noted the presence of a seam of fine-grained mugearite at Tautama on the south side of the island and described this as an artefact source par excellence (Carter 1967:36). Indeed Weisler (1993:182) has described this site as the largest known adze quarry in southeast Polynesia and it has long been speculated that this resource may have been the principal inducement for prehistoric Polynesian voyages to Pitcairn (Carter 1967:36; Gathercole 1964:83; Sinoto 1983:61).

Flora

The Polynesian woman Jenny's accounts (1819, 1829) refer to the discovery of Taro *(Caladium esculentum)*, Ti *(Cordyline fruiticosa)*, Breadfuit *(Artocarpus altilis)*, and Paper Mulberry *(Broussonetia papyrifer)* and it is clear that in 1790 the Pitcairn landscape contained remnants of prehistoric Polynesian settlement. These are likely to have included the Banyan tree *(Ficus prolixa)* and Coconut *(Cocus nucifera)*, and augmented an already rich indigenous vegetation of Candlenut trees *(Aleurites moluccana)*, Pandanus palms *(Pandanus tectorius)*, Taapou trees *(Homalium taypau)*, Miro trees *(Thespesia populnea)*, Pulau *(Hibiscus tiliaceus)* and Nono trees *(Morinda citrifolia)* (Gothesson 1997:7; Moerenhout 1993:40). In addition to these existing botanical resources, the *Bounty* brought sweet potatoes *(Ipomoea batatas)*, yams *(Dioscorea pentaphylla)*, plantains *(Musa paradisiaca)*, coconuts and aute (paper mulberry) (Jenny 1819).

It can be assumed that the Polynesians amongst the *Bounty* settlers found much that was familiar and useful in the existing Pitcairn landscape. The importance of some of these resources is indicated in Table 5.1.

Local Name	English Name	Botanical Name	Polynesian Use
Taro	Taro	*Caladium esculentum*	Food crop
Ti	Ti plant	*Cordyline fruiticosa*	Food crop, food wrapper, thatching, medicinal
Bread	Breadfruit	*Artocarpus altilis*	Food crop
Aute	Paper mulberry	*Broussonetia papyrifer*	Tapa cloth
Banyan	Banyan	*Ficus prolixa*	Sacred tree, resin
Coconut	Coconut	*Cocus nucifera*	Food, drink, oil, thatch
Doodwi	Candlenut	*Aleurites moluccana*	Lighting, canoes, tattoo ink
Pawalla	Yam	*Pandanus tectorius*	Thatching, cordage, baskets
Kumara	Sweet potatoe	*Ipomoea batatas*	Food crop
Plun	Plantain	*Musa paradisiaca*	Food crop
Jinser	Turmeric	*Curcuma longa*	Dye, medicinal
Ape	Giant taro	*Alocasia macrorrhiza*	Medicinal
Nono	Indian mulberry	*Morinda citrifolia*	Medicinal, dye
Pulau	Cottonwood	*Hibiscus tiliaceus*	Fishing lines, rubbed to make fire, medicinal
Miro		*Thespesia populnea*	Timber
Taiti	Sugar cane	*Saccharum officinarium*	Food crop
Taapou		*Homalium taypau*	Timber

Table 5.1 Principal Polynesian uses of botanical resources at Pitcairn. (Sources: Ellis 1929; Gothesson 1997; Morrison 1935; Oliver 1974)

Fauna

Birds:

A remarkable feature of Pitcairn Island today is the small number of birds, however there can be no doubt that greater numbers and varieties of birds were formerly present. In this regard Williams has noted (1960:65) the name *Gannets Ridge* survives, while the Masked Booby *(Sula dactylatra)* no longer breeds on Pitcairn. The arrival of the *Bounty* settlers must be considered a principal reason for the decline in bird species and numbers as both birds and eggs were collected for food (Beechey 1968:88). Table 5.2 lists the principal avifauna resources available to the mutineer settlers in 1790, based on surviving species, and geographic and linguistic references at Pitcairn. Nesting locations and average weights (where recorded) are included as indicators of target species. Although Murphy's petrel no longer breeds on Pitcairn, Williams (1960:62) states "...No doubt it once bred on Pitcairn, but being a surface nester it would soon fall prey to human and other predators".

Local Name	**English Name**	**Latin Name**	**Nesting location**	**Av. Weight**
Bosun bird	Red tailed tropic bird	*Phaethon rubicauda*	Cliffs	800gms
Snipe	Wandering tattler	*Heteroscelus incanus*	Migratory only	115gms
Noddy	Black noddy	*Anous minutus*	Banyan trees	
Noddy	Common noddy	*Anous stolidus*	Cliffs, trees	196gms
Petrel	Blue-grey ternlet	*Procelsterna cerulea*	Cliffs	
Frigate	Great Frigate bird	*Fregata minor*	Introduced only	
Sparrow	Pitcairn warbler	*Acrocephalus vaughani*	Trees, shrubs	27gms
Shipmate	Bristle-thighed curlew	*Numenius tahitiensis*	Migratory only	345gms
Gannet	Masked booby	*Sula dactylatra*	Surface	360gms
Putu putu	Murphy's petrel	*Pterodroma ultima*	Surface	450gms
White bird	Fairy tern	*Gygis alba*	Banyan tree	112gms

Table 5.2 Principal birds at Pitcairn since 1790
(Sources: Brooke 1995; Williams 1960)

Fauna

Marine:

Table 5.3 lists the principal marine fauna available at Pitcairn. Habitats are listed as an indicator of the technologies required to access individual fish types; pelagic species normally only being taken on a lure from a boat while inshore varieties can be speared

or caught on a line, or in some cases (urchins and whelks), picked from the rock shallows.

Local Name	English name	Latin Name	Habitat
Bonito	Skipjack tuna	*Katsuwonis pelamis*	Pelagic
Cuta	Wahoo	*Acanthocybium solandri*	Pelagic
Yellow-tail	Yellow-fin tuna	*Thunnus albacares*	Pelagic
Jackass	Dog-tooth tuna	*Gymnosaida unicolor*	Pelagic
Nanwi	Rudder fish	*Kyphosus*	Inshore
Cod	Grouper	*Epinephelus tauvina*	Inshore
Goat fish	Trigger fish	*Sufflamen bursa*	Inshore
Po'ou	Wrasse	*Thalassoma purpureum*	Inshore
	Soldier fish	*Myripristis murdjan*	Inshore
	Squirrel fish	*Adioryx*	Inshore
Ohu	Parrot fish	*Scarus*	Inshore
	Butterfly fish	*Chaetodon*	Inshore
Whelk	Whelk	*Turbo argyrostomus*	Inshore
Wana	Sea urchin	*Heterocentrotus trigonarius*	Inshore

Table 5.3 Principal Marine Fauna available at Pitcairn (Sources:Paulay 1989; Randall 1973)

Introduced Fauna

The only native mammal found on Pitcairn is *Rattus exulans* and it was almost certainly introduced during pre-historic Polynesian occupation (Weisler 1993:195). In addition to the resources already available at Pitcairn, the *Bounty* brought pigs (*Suscrofa),* goats (*Capra hircus*) and fowl (*Gallus gallus*).

***Bounty* Resources**

In addition to the natural resources of the island, the colonists were equipped with the resources of the *Bounty.* As indicated in Jenny's account (1829:59), the colonists brought ashore all that they wanted from the ship prior to its destruction and this may be considered as consisting of components of the ship's structure, and stores and equipment aboard the vessel. In regard to the ship's structure, the documentary record (Bligh 1961; McKay 1989; NMM 6339A) indicates that the vessel was 26 m on deck, had a displacement of about 223 tonnes and had been extensively refitted for a botanical expedition to the South Seas. These modifications included coppering the hull and turning the great cabin into a plant conservatory. The vessel carried approximately 19 tonnes of iron ballast (Bligh 1961:14) and was armed with

four 4-pounder cannon and ten half-pounder swivel guns (*ibid* 15). Viewed in terms of potential resources, the basic structural components of the *Bounty* included timber (hull, decks, masts), iron (ballast, fastenings, mast fittings), copper (sheathing, nails, bolts), bronze (gudgeons, pintles), glass (great cabin windows) and lead (scuppers, sheathing), as well as canvas (sails) and rope associated with the rigging. While the quantity of stores and provisions aboard the ship would have altered in the course of the *Bounty's* voyage, it can be assumed that the basic structural components of the ship were largely unaffected and remained a potentially important resource of materials for the colonising group.

Our knowledge of the stores and equipment available to the colonists arriving at Pitcairn relies on references made at the various stages of the *Bounty* voyage. In this context it should be noted that a search of Admiralty orders to the Victualling Board (ADM/G/789) for the period 1783-1789, of the Victualling Board in-letters from the Admiralty (ADM/C/665 – 668) for 1787, and Admiralty in-letters from the Victualling Board (ADM/D/36) for 1787, failed to locate any reference to the victualling of the *Bounty.* Bligh (1961:15) states that the ship was stored and victualled for eighteen months but that in addition to the customary allowance "...we were supplied with sour krout, portable soup, essence of malt, and a proportion of barley and wheat in lieu of oatmeal". Based on the provisions supplied to Cook's ship HMS *Resolution* in 1772, the 'customary allowance' is likely to have consisted of biscuit, flour, salt beef, salt pork, beer, wine, spirits, peas, wheat, butter, cheese, sugar, olive oil, vinegar, suet, raisins, salt, malt and water (Price 1971:105). The ship also received gunner's stores and was provided with a quantity of trade goods consisting of 2,808 iron chisels, 576 sheath knives, iron nails (400 kg), hand saws (48), small iron bars (300 kg), hatchets (168), gimlets (120), files (120), rasps (108), mirrors (168), glass beads (36 kg), glass drop earrings (264) and 72 coarse shirts (Knight 1936:195). The ship was equipped with two boats, being a launch (7m) and a cutter (6m) and carried five anchors (*ibid*).

In relation to equipment carried aboard the vessel, both the Admiralty plan of the *Bounty* (NMM 6340A) and the ship's muster (ADM 36/10744) indicate a range of specialist functions requiring particular equipment.

1 Lieutenant	2 Master's Mates	1 Carpenter's Mate
1 Master	2 Midshipmen	1 Carpenter's Crew
1 Boatswain	2 Quartermasters	1 Sailmaker
1 Gunner	1 Quartermaster's Mate	1 Corporal
1 Carpenter	1 Boatswain's Mate	1 Clerk/Steward
1 Surgeon	1 Gunner's Mate	25 Able Seamen

Table 5.4 *Bounty* Establishment (Source: ADM 36/10744)

On the lower deck, the great cabin was fitted with 629 pots and the floor was lined with lead to drain excess water from the pots into barrels below (Bligh 1961:13). Forward of the great cabin were the Master's and Captain's cabins and the Captain's dining area and pantry. According to the established hierarchy operating within the Royal Navy in the late eighteenth century, the Master, Surgeon, Boatswain, Gunner, Carpenter and Sailmaker were warrant officers in charge of specialist departments or trades within the ship (Rodger 1989:14) and their equipment included navigation instruments, medical supplies and manuals, carpenter's and sailmaker's tools, and equipment for maintaining the ship's guns. The areas associated with this equipment are the sail room, Boatswain's store room, Gunner's store room, Carpenter's store room, block room, pitch room, magazine and shot locker. Other equipment or store areas include the Steward's room, slops room, fish room, spirit room and bread room.

In addition to the structural modifications made for the voyage, the vessel was fitted with a new Brodie stove and copper oven and equipped with a camp forge (Knight 1936) and a new Kendall chronometer (Bligh 1961:15). With the vessel packed and fully equipped for a voyage around the world, the *Bounty* sailed from England on the 23rd of December 1787.

In order to ascertain the potential resources aboard the *Bounty* when it arrived at Pitcairn, it is necessary to review the progress of the voyage with particular reference to depletion and replenishment of equipment and supplies. Two sources document the *Bounty's* voyage. These are the Log of the *Bounty* (Bligh 1937) and the Journal of

James Morrison (Morrison 1935). The Log of the *Bounty* is Bligh's official record of the voyage which covers the period from the commencement of the voyage in December 1787 to the mutiny on the 28th of April 1789. It also documents the voyage of the *Bounty* launch to Coupang. Morrison's journal parallels the *Bounty* log up to the mutiny but then goes on to document the mutineers' attempts to settle at Tubuai and the final return to Tahiti. Morrison remained at Tahiti until the arrival of HMS *Pandora* in 1791.

Amongst the remarks at the beginning of the *Bounty* log, Bligh (1937:11) notes that the vessel carried three sextants (two made by Ramsden, and one by Troughton) and that two steering compasses by Adams were mounted in the binnacle (*ibid*:14). Bligh's orders instructed him sail to Tahiti by way of Cape Horn (Bligh 1961:17) with the first leg of the voyage being to Teneriffe. During this first leg, the *Bounty* was damaged in a severe storm and the log entry for December 28th 1787 states that much water entered the Spirit room and Fish room (Bligh 1937:28). Other provisions lost as a result of the storm were two casks of rum, four barrels of beer, and one cask of cheese (*ibid*:33). At Santa Cruz Bligh bought water, 863 gallons of wine, 230 pounds of fresh meat, pumpkins and potatoes, and two dripstones for filtering water (*ibid*:41).

The vessel left Teneriffe on the 10th of January 1788 and was off Cape Horn on the 20th of March. Over the next 32 days Bligh attempted, unsuccessfully, to make the passage into the Pacific but finally turned the ship about and headed for the Cape of Good Hope. It is clear from the log that the *Bounty* leaked constantly while in the Southern Ocean and after arriving at the Cape in late May, carpenters were hired from the shore to recalk the vessel and all the ship's provisions were inspected for damage. The log entry for the 2nd of June states that 2500 pounds of bread and two barrels of pork were found to be unfit for consumption (*ibid*:223) and the gunner later reported that three barrels of gunpowder were lost. On the 8th of June the ship received "...a craft load of stone ballast in lieu of coals expended" (*ibid*:224). Prior to departure, the ship received additional provisions, being 9200 pounds of bread and biscuit, 7166 pounds of flour, 34 gallons of oil, 69 bushels of beans, 776 gallons of wine, 1656 pounds of fresh meat, 119 pounds of raisins, 256 cabbages, 256 bunches of 'greens', and three barrels of gunpowder (*ibid*:227). While at the Cape, Bligh also "...took care to procure seeds, and plants that would be valuable at Otaheiti, and the different places we might touch at on

our way thither" (Bligh 1961:43). Morrison's journal adds that a supply of hay and barley was procured for the stock of sheep, goats and poultry aboard the ship (1935:25).

The *Bounty* next sailed for Adventure Bay in Van Diemen's Land and arrived there on 21st July 1788. Here the ship's company was employed in cutting firewood and taking fresh water aboard. It was also at Adventure Bay that Bligh planted some of the seeds he had collected at the Cape. An entry in the log indicates an extensive variety of seeds was carried aboard the vessel. Bligh states (1937:302):

> I went with Mr Nelson to the east side of the Bay and planted three fine young apple trees, 9 vines, 6 plantains, a number of orange and lemon seed, cherry stones, plumb stones, peach, apricot and pompions, also 2 sorts of Indian corn, and apple and pear pips.

The *Bounty* departed for Tahiti on the 5th of September and arrived there on the 27th of October 1788. During this voyage several men reported sick and Bligh ordered that the entire ship's company receive a dose of 'Elixir Vitrol' each day from the ship's medicine chest (*ibid*:363).

Once anchored in Matavai Bay the Gunner, William Peckover was put in charge of trading, and the trade goods taken aboard the ship in England were bartered for hogs, goats, fruit and vegetables throughout the five and a half months the vessel remained in Tahiti. Morrison states that all the salt in the ship was used in curing pork for sea stores during this period (1935:28). On December 11th, the ship's Surgeon, Thomas Huggan died and the Bounty log notes that his medical equipment, comprising medicine chests and unspecified instruments, was sold to the Surgeon's Assistant (Bligh 1937:420). While references to trade during the period at Tahiti are common in the log, these are generally unspecific. Some idea of the quantities of traded goods is indicated at the time of departure when Bligh states "...ship loaded with coconuts, plantains, breadfruit, hogs and goats" (*ibid*:122). The details of plants taken aboard the ship are much more specific and theplants consisted of 1015 breadfruit trees in 774 pots, 39 tubs and 24 boxes, as well as other local plants. At the time of departure, Bligh presented Tinah – the Chief of Matavai district with two muskets, two pistols and a stock of ammunition (*ibid*). The ship left Tahiti on April 4th 1789 and stopped at Wytootackee (Cook Islands) on April 12th, and Annamooka (Tonga) on April 23rd.

At both Wytootackee and Annamooka Bligh distributed hatchets, knives, beads, mirrors and chisels from the supply of trade goods brought from England (Bligh 1961:128). Regarding the trading at Annamooka, Morrison adds (1935:39):

> As this was likely to be the last island where iron currency was most valuable, everyone got rid of their trade as fast as they could, purchasing matts, spears and many curiosities and a quantity of yams for private store..., and what with yams and clubs in all quarters, the ship fairly lumbered that there was scarcely room to stir in any part.

The mutiny aboard the *Bounty* occurred five days after leaving Annamooka. The equipment removed from the ship at the time of the mutiny consisted of a quadrant, a sextant, a steering compass, four cutlasses, the Carpenter's tool chest and the 7 m launch. Bligh was allowed to take his Commission, the *Bounty* Log, two casks of water, three bags of bread and a small quantity of pork, rum and wine (Morrison 1935:43). Morrison also states that after Bligh's departure, Christian ordered the great cabin cleared, and the plants were thrown overboard during the following days (*ibid*:47).

The vessel next sailed to the island of Tubuai, arriving on the 28th of May. Christian wished to settle on the island but finding no stock, decided to return to Tahiti (*ibid*:50). The vessel then returned to Matavai Bay where the mutineers obtained 460 hogs, 50 goats, a bull and a cow, chickens, dogs and cats.

The attempt to form a settlement at Tubuai lasted just over 11 weeks. The bull died on the return passage to Tubuai and the cow was later eaten, however, the hogs and goats were landed on the island. During this period a concerted effort was made to establish a fortified stockade and Morrison refers to the Armourer making axes and the Carpenters wheelbarrows (1935:56), and also to Christian's intention of dismantling the ship in order to build houses (*ibid*:60). By early September the mood had changed and at a council called on the 10th , a vote was made to return to Tahiti:

> On a call for a show of hands, sixteen appeared for Taheite; When it was agreed that those who went on shore should have arms, ammunition and part of everything on the ship, the ship to be left in charge of Mr Christian in a proper condition to go to sea...
>
> (*ibid*:61)

In preparation for departure, Christian ordered the men to get a sufficient stock of animals, however it is unclear from Morrison's account how many animals were taken aboard.

The *Bounty* arrived back at Matavai Bay on the 23rd of September. Morrison states that during the return trip "...we hove to and divided the Trade, ammunition, arms, wine, slops, etc..." and once anchored, those leaving the ship landed with their chests and hammocks (*ibid*:74-76). Morrison then gives details of what was removed:

> Among the things which we carried on Shore was the Carpenters Mates and part of the Armourers tools; - a pig of Iron for an anvil, a grindstone, some bar iron, a suit of collours, some Iron pots and a copper kettle, about 3 gallons of wine per man, and (except Byrn) each man a musket, pistol, cutlass, bayonet, cartridge box, 17 lbs of powder, a quantity of lead to make ball, and some spare belts ...We wanted the saws, of which there were a whip and cross-cut in the ship, but Mr Christian told us he wanted them himself, and gave us some trade in liew, he also gave us two spy glasses and an old Azimuth compass for which I provided cards and glasses privately, he also told us to take the 10 swivels on shore but they were no use to us...
>
> He intended to cruise for some uninhabited island where he would land his stock (of which the ship was full, together with plants of all the kinds that are common in these islands) and set fire to the ship, and where he hoped to live the remainder of his days without seeing a European face but those who were already with him.

Based on the preceding evidence, the *Bounty* resources available to the colonising group included timber, iron, copper, bronze, glass, lead, canvas, rope, muskets, pistols, bayonets, ammunition, gunpowder, saws, axes, a forge, bellows, anvil, wheelbarrows, medical supplies, fishing lines, gardening tools, plants, seeds, navigation equipment, charts, telescopes, stationery, books, clothing, curiosities, casks, cooking pots, bottles, pigs, goats and chickens. It is also likely that they had a proportion of sea stores remaining as well as a share of the personal property and equipment of the men who left the *Bounty* with Bligh.

In terms of preparation, Christian and the other seamen amongst the Pitcairn colonists must have learnt much from the Tubuai experience. At a fundamental level, the failure there had illustrated the futility of attempting to establish a settlement in an environment dominated by hostile natives. In this respect Morrison's comments indicate that Christian, at least, was looking for an uninhabited island; one removed from the world and devoid of any attraction to a passing ship. However, Tubuai had also provided

positive lessons. The first reconnaissance had shown the necessity of bringing women and a large stock of plants and animals to any potential settlement. The benefit of the forge for manufacturing and repairing tools had also been illustrated during the construction of the fort at Tubuai, and Christian's actions regarding the distribution of resources, particularly the demand for the saws and retention of the forge, suggests some degree of planning occurred before the colonists arrived at Pitcairn.

Initial Stages of Settlement

Jenny (1829:591) described the morning after the burning of the *Bounty* provides some evidence for the earliest phase of settlement at Pitcairn. She stated:

> The next morning they began to build some temporary houses. Between the huts and the seashore were a number of trees, which concealed them from the view of any vessel that might pass. After a few weeks they ventured upon the high land, and began to erect more substantial buildings; to plant sweet potatoes and yams, the seed of which they brought with them. They shortly after divided the ground and allotted to each his proportion. The cloth plant of the South Sea Islands was discovered growing upon one of the lots, about which some squabbling took place, but they afterwards agreed to divide it equally among them.

Jenny's description clearly indicates that the initial pattern of settlement was directed by the colonists' fundamental concern for concealment. As leader of the mutiny aboard the *Bounty*, Fletcher Christian was guilty of an act punishable by death, and those who had thrown in their lot with him were equally guilty. If discovered and returned to England, the mutineers would almost certainly be hanged and their survival now depended on remaining totally hidden from the outside world. Their need for concealment affected the choice of site for the settlement.

Jenny's description also indicates that initial settlement progressed sequentially. The first stage was short and was focused on building shelter – the temporary houses. Adams told Beechey that these were tents made from the sails of the *Bounty* (1968:82). The second stage entailed selecting a suitable site for establishing a settlement, planting introduced food crops and beginning the task of building permanent houses.

The Village

The evidence identifying the location of the village settlement has been discussed in Chapter Three and it has been shown that the village was situated on the lower slopes of

the Adamstown basin with convenient access to fresh water and the sea. The most detailed documentary evidence indicating the layout of the settlement in the early part of the study period is Pipon's description of his visit in 1814. He wrote (1834:194):

> Their habitations are extremely neat, infinitely superior to those we saw at the Marquesas Islands. The little village at Pitcairn forms a pretty square. John Adams occupies the house at the upper end, and Thursday October Christian, one opposite to him; the centre is a fine lawn where the poultry wander; but it is fenced in so as to prevent the intrusion of hogs etc. It was easily to be perceived that in this establishment the labour and ingenuity of European hands had been exerted; we never witnessed any regular plan in laying out the ground or forming plantations on the other islands we visited.

Pipon's account indicates that the settlement was fundamentally European in its layout and appears to describe an English village, arranged regularly around a central green. Such regularity and clustering of houses contrasts sharply with descriptions of Polynesian settlements. In this regard Oliver (1974:176) states that Polynesian residential units were spaced far apart, even in densely populated centres. The evidence of houses and particular cultural influences is discussed in detail in Chapter Six.

Division of the land

The third stage of settlement was to divide and apportion the island amongst the colonists. Beechey described this stage (1968:81):

> A suitable spot of ground for a village was fixed upon with the exception of which the island was divided into equal portions, but to the exclusion of the poor blacks, who being only friends of the seamen, were not considered as entitled to the same privileges.

This description makes it clear that land was divided amongst the Europeans only, and that the division was based on equal portions. However, it does not indicate how divisions were marked in the landscape or where individual mutineer's land was. In this context, some evidence of boundaries, ownership of property, and land use in the first phase of settlement (1790 – 1808) survives in Pitcairn place-names.

Pitcairn place-names were recorded and located on a map by Hardwicke Knight as part of the Gathercole expedition in 1964. This map is reproduced on the following page. A striking feature of the map is the number of names applied to what is a relatively small

area (4.5 sq km), attesting to an intense history of settlement over 200 years. Instances of possessive names referring to colonists in the first phase of settlement are *Isaac's Valley, Jack Williams' Valley, John Mills' Valley, Matt's Valley, Ned Young's Ground* and *McCoy's Valley.* The specific possession of valleys by five of the nine European colonists suggests that valleys may have been used as convenient geographic references for defining ownership in the landscape, however it appears that these valleys do not represent the entire land allocated to these men. The quality of land varies considerably at Pitcairn. But even allowing for extreme alteration of the natural vegetation over 200 years, areas such as *St Pauls, Goathouse* and *Faute Valley* are extremely steep, marginal land of little practical agricultural value and may not have figured in the original land division. In this context, modern patterns of agriculture place a premium on flat or fertile land (Pitcairn Island Administration 1990:29) and such factors may have also influenced the division of land in 1790. Evidence of the division of land into multiple land parcels is indicated by place-names referring to particular crops. In this regard, *Jack's Yam* is the site of John Williams' yam patch (Ross and Moverley 1964:177) which is a distinct and separate area high above *Jack Williams' Valley.* Evidence of possessive place-names around the coast of Pitcairn indicates that proportionate division applied also to marine resources, and *Adams' Rock, Isaac Stone, Young's Rock, Matt's Rocks, Christian's Point* and *John Mills Harbour* all indicate fishing spots allocated to European colonists.

Another feature of Pitcairn place-names is the number of references to fences. These include *Breadfruit Fence, Big Fence, Old Fence, Mirowood Fence* and *Aute Fence* and are indicative of methods of agricultural management during the early settlement. Pigs and goats brought to the island aboard the *Bounty* had the potential to devastate the environment if left uncontrolled and references to particular fences (*Breadfruit, Miro, Aute)* indicate these were constructed around valuable plant resources. In this context, Jenny's account (1829:591) indicates that the *Aute* plant was recognised as a valuable resource from the first days of settlement. Forster (in Oliver 1974:143), visiting Tahiti with Cook in 1773, commented on the particular attention taken in cultivating *Aute* for the manufacture of *tapa* cloth.

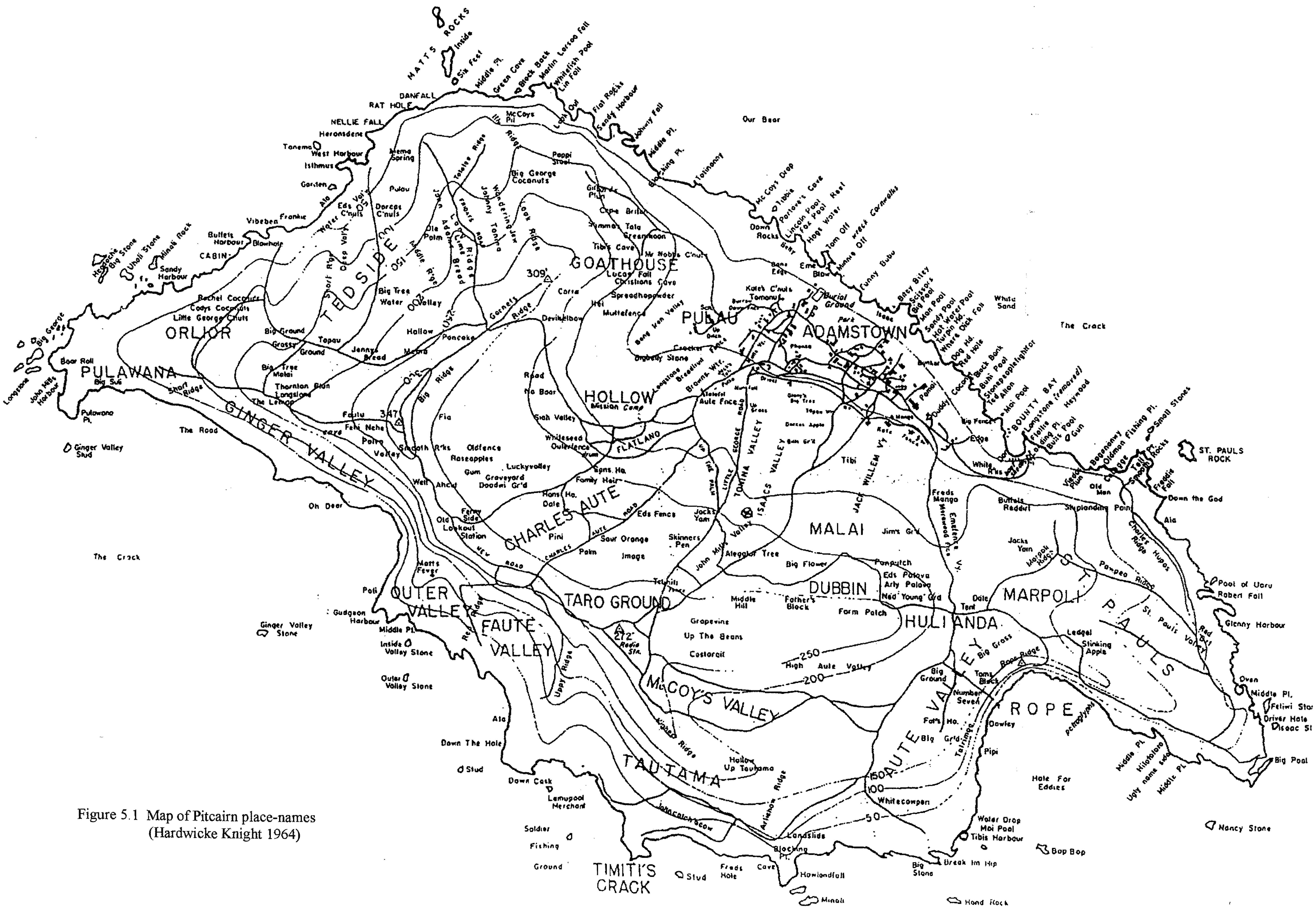

Figure 5.1 Map of Pitcairn place-names
(Hardwicke Knight 1964)

Animals were both fenced in and out of particular areas. Beechey noted the use of small enclosures around the village for fattening pigs and housing chickens (1968:106) and both Smyth's and Beechey's sketches of the village (previously illustrated in Chapter Three, Figures 3.1 and 3.2) indicate fences constructed between the houses. Other place-names indicative of animal control are *Blocking Place* and *Goathouse.* The first, refers to a narrow pass below the cliffs west of the village, and the second, is the name given to the rocky peak above Adamstown where goats still wander.

Defined ownership of resources

While natural land features provided a simple way of defining areas of the island, the evidence suggests that ownership could also be defined by physical marks. During a visit to Pitcairn in 1934, the anthropologist Shapiro noted the existence of a Register of Family Brands was used to identify goats, chickens and trees. A copy of this document is kept in the old Council office at Adamstown and the preamble explains the method of 'branding' (Pitcairn Island Administration:nd):

> As goats and chickens belonging to the different families are allowed to roam together, it is necessary that some brand or mark be placed upon them for the purpose of distinguishing a man's property from that of his neighbour's. The ears of goats serve for the purpose, and the terms "forked" and "split" in addition to "cut off" show how goats were marked. "Forking" is done by folding over the ear, and with a sharp knife, cutting a V-shaped opening. "Splitting" is simply making a slit in each ear. The eight toes upon the feet of chicken afford room for marking, the last joint being taken off from the toes that a man may choose as his brand. Alphabetical letters serve to mark trees etc.

During fieldwork isolated examples of tree brands were found cut in old coconut trees and examples of alphabetical letters scratched on plates and bottles dated to the study period, indicate 'tree' brands were applied as marks of ownership to a wider range of objects. It appears that such brands were used in the earliest phase of settlement and evidence for this exists in the form of a plate marked with the letter 'Y'. This plate, originally owned by the mutineer Edward Young at Pitcairn, is now on display at Government House, Norfolk Island. Young died in 1800, which suggests that this system of marking property operated at Pitcairn before that date. Personal marks are discussed further, later in this chapter.

Social organisation in the period of early settlement

While the number of Polynesians in the settler group inevitably affected the nature of the settlement, the early history clearly indicates that the European colonists had no intention of relinquishing power or of sharing the resources of the island equably with the Polynesians. This is evidenced by the exclusive division of the land amongst the Europeans. Referring to the relationship between the European seamen and the Polynesians, Beechey stated that the Polynesians went from being the friends of the seamen to become their slaves (1968:81) and the accounts of Jenny and Adams both depict an extremely unstable and violent relationship between Europeans and Polynesians. The root cause of this confrontation was the death in 1790 of Faahotu – consort of John Williams.

Up to this time, nine of the Polynesian women were partnered with European seamen and the three remaining women lived with six Polynesian men. Jenny's (1819) account states that the Europeans took the women belonging to the Polynesian men and "...cast lots for them, and the lot falling upon Toafaiti, she was taken from Tararo and given to Jack Williams". Having lost his woman to Williams, Tararo attempted to incite the Polynesians to revolt against the European men, but the plan was discovered and he and the man Oher were killed (Beechey 1968:82; Jenny 1819). In 1793 an attack by the remaining Polynesian men succeeded in killing five of the Europeans but was thwarted by the actions of the Polynesian women who sided with the surviving seamen. Shortly after this attack, all of the Polynesian men were murdered. Both Jenny and Adams attributed the second revolt to the treatment of the Polynesians by the seamen Quintal and McCoy.

Entries from Edward Young's journal copied by Beechey (1968:89) indicate that the Polynesian women were also dissatisfied with their treatment. Their dissatisfaction led to an unsuccessful attempt to build a boat to leave the island. When this attempt failed, the women plotted to murder the four remaining Europeans. Their plot was discovered and came to nothing but the severity of the threat is recorded by Young (*ibid*:90):

> We did not forget their conduct and it was agreed among us, that the first female who misbehaved should be put to death, and this punishment was to be repeated on each offence until we could uncover the real intentions of the women.

Relations between the Polynesian women and European men appear to have remained unresolved throughout 1793 and 1794, but improved after that time.

Apart from building houses, the activities of the colonists during this initial stage of settlement are noted as fencing and cultivating their gardens, catching birds, collecting seabird eggs from the cliffs, making tapa cloth, constructing pits for trapping pigs, cooking in earth ovens, building canoes and fishing (*ibid*:88; Jenny1819). Some evidence of co-operative behaviour amongst the Europeans is also indicated. From Young's journal, Beechey noted (1968:92):

> There was also a mutual accommodation amongst them in regard to provisions, of which a regular account was taken. If one person was successful in hunting, he lent the others as much meat as they required, to be repaid at leisure; and the same occurred with yams, taros etc.

This appears to be a continuation of the journal entry system commonly used aboard ships to record goods advanced during a voyage. But despite this example of co-operation, it is evident that serious differences existed between the Europeans, such as illustrated by the murder of Matthew Quintal by Young and Adams in about 1799. According to Adams, Quintal grew 'discontented' after his woman, Tevarua fell from the cliffs while collecting eggs. Following that accident, Quintal demanded the partner of one of his shipmates and attempted to kill Young and Adams to achieve this. Their response to this threat was to murder Quintal (*ibid*:93). Jenny's account (1819) of this is slightly different and states "...Old Matt, in a drunken fit, declaring that he would kill Fletcher Christian's children, and all the English that remained, was put to death in his turn". The reference to Christian's children alludes to the changes in partnerships following the deaths of Christian and the other four Europeans in 1793. With Christian dead, Young left his partner Teraura and lived with Christian's woman, Mauatua. As a result of this arrangement, Young effectively adopted Christian's children. The threat to kill Christian's children may be evidence of hereditary status attached to the descendants of the leader of the mutiny.

A few months before Quintal's murder, McCoy had killed himself, and a year later Edward Young died of asthma. The first ten years of settlement had thus witnessed the deaths of all but one of the male colonists and by every account had failed to produce a successful organisational structure. The threat to survival had come, not from the natural

environment, but from tensions within the settler group itself. At the same time twenty-three children had been born and there was clearly a need to adopt a social structure that would provide stability for the future.

Religion

> Adams and Young were now the sole survivors out of the fifteen males that landed upon the island. ...During Christian's lifetime they had only once read the church service, but since his decease this had been regularly done on every Sunday. They now, however, resolved to have morning and evening family prayers, to add afternoon service to the duty of the Sabbath, and to train up their own children, and those of their late unfortunate companions, in piety and virtue.
>
> (Beechey 1968:94)

The model adopted for the future was a fundamentalist Christian doctrine derived from the *Bounty*'s Bible and Prayer Book and a bible belonging to Fletcher Christian. These books were still on Pitcairn in 1839 (Murray1992:143). Pipon's description of Pitcairn in 1814 indicates that Adams imposed a strict morality on the young islanders and that no sexual relations were tolerated until after marriage, a ceremony performed by Adams. Marriages were only allowed after males had acquired sufficient property and only with the approval of Adams (1834:194). Adams also appears to have demanded labour in return for religious instruction. Visiting Pitcairn in 1825, Lieutenant Peard (1973:79) remarked that the young islanders begged Adams for instruction and would "... buy his acquiescence by working and attending his crops".

Importantly for Adams, his establishment of a Christian community received general approbation from the commanders of HMS *Briton* and HMS *Tagus* and it was on the basis of his reformed and exemplary character that he was allowed to remain on the island. In this context Captain Staines observed that "...the correct sense of religion which has been instilled into their young minds by this old man, has given him the pre-eminence over the whole of them". (in Brodie 1851:154). Staines also commended the islanders to the attention of the missionary societies - noting that the Pitcairn Islanders were fluent in both English and Tahitian, and this is likely to have influenced the later decision to send the community to Tahiti in 1831.

Although Folger had 'discovered' the Pitcairn community in 1808, Sir Thomas Staines' report appears to have had a much more profound effect in opening up the island to

contact. The religious attitudes of the community had also proved to be a means of successfully engaging with the outside world and the piety of the community continued to impress visitors throughout the study period.

By 1825 the population of the island had grown to 66, comprising 36 males and 30 females and Adams expressed concerns for the future food resources of the community (Beechey 1968:133). This number also included the Englishmen, John Buffett and John Evans, the first Europeans to join the community since 1790. The increase in population had created a need for a dedicated schoolmaster and Buffett was permitted to reside in that capacity. Evans' right of residence was initially more tenuous but by 1824, both men had married; Buffett to Dorothy Young, and Evans to Rachel Adams (Lucas 1929:33). Buffett also took over some of the religious duties performed by John Adams (Nicolson 1997:92). In 1828, the number of Europeans resident on Pitcairn was further increased by the arrival of George Hunn Nobbs. Nobbs had arrived with Noah Bunker aboard a small sloop, and following the suicide of Bunker, Nobbs moved ashore and the vessel was broken up. Three months later John Adams died. Later in the same year, Nobbs married Sarah Christian – a granddaughter of Fletcher Christian (Lucas 1929:35).

Transition in leadership

Following Adams' death, Buffett and Nobbs competed for the positions of school master and pastor (Nicolson 1997:111). Buffett (1846:34) later wrote "...Mr Nobbs being a good scholar, and my family increasing, I gave up school teaching and he succeeded me". However, a letter written to the London Missionary Society's representative in Tahiti in 1830, which was signed by Nobbs and the heads of 12 Pitcairn families (ML FM4/351) indicates that relations between Buffett and Nobbs were at a low ebb at that time. The heads of families listed are Thursday October Christian, Daniel McCoy, Charles Christian, Arthur Quintal, George Young, Robert Young, Edward Young, William Young, Edward Quintal, George Adams and John Quintal. With John Adams dead, these men were the senior representatives of the Pitcairn Island community. A description of the situation on Pitcairn at this time illustrates the divisions and hiatus in leadership, following the death of John Adams. Waldegrave, visiting the island in 1830 aboard HMS Seringapatam, wrote (1833:159):

> Three Englishmen have arrived and had wives given to them. Their names are George Hunn Nobbs, John Buffett, and John Evans. The first has married the daughter of Charles Christian and calls himself pastor, registrar, and schoolmaster; he has sixteen scholars. Two of these titles, however are claimed by John Buffett – hence a source of division, and since their arrival, dissention, heretofore an unknown evil, has appeared. Buffett, a native of Bristol, a shipwright and joiner, a very useful mechanic, arrived first; he has eight scholars; at to him land has been allotted. Evans enjoys land through his wife, a daughter of John Adams, an heiress. The two last maintain themselves, but Nobbs claims exemption from labour as pastor; by law he is maintained by the community. His information is superior to the natives, therefore he wishes to become the chief – in which he will be disappointed; they do not like a superior. As education increases, also, their minds will expand, when native talent will appear which will claim and obtain superiority. Had the family of Christian possessed but a moderate share of sense, one of its members would have been chief by general consent; but Thursday and Charles Christian, the sons of the mutineer, are ignorant, uneducated persons, unable to maintain superiority.

The above passage demonstrates that, in the absence of a leader chosen from within the community, Nobbs had aspirations to leadership. The statement also indicates a continuing attachment of status to the descendants of Fletcher Christian. In regard to the community support of Nobbs, this is outlined in a document between Nobbs and the heads of five families, drawn up in 1829. In it, it was agreed that in consideration of Nobbs performing divine service twice on the Sabbath and twice in the week, and teaching reading, writing and arithmetic for six hours each day, five days a week, the families would build Nobbs a house, and supply food (ML CY 346).

It will be seen from this evidence that the community in 1830 was divided and largely without leadership when the colonial transports *Comet* and *Lucy Ann* arrived in February 1831 to remove the population to Tahiti. The decision to remove the islanders stemmed from Adams' discussions with Beechey in 1825 and appears to have progressed through official departments over a period of several years without consultation with the Pitcairn islanders themselves (Nicolson 1997:118). In the event, the removal proved disastrous for the community. Twenty weeks after arrival at Tahiti, Captain William Driver found the Pitcairners in a state of despair (PMB 780):

> On 17th of July I touched at Tahieti....Found there sixty-four of the inhabitants of Pitcairn Island: these were the most forlorn, distressed looking creatures I ever saw. Twelve of their number, 'Flower and Strength' of them having died recently of the 'typhois' or Ship Fever left no doubt in my mind as to the fate of the balance of them if left...

Captain Driver took pity on the Pitcairners, and, accepting payment in cash, blankets and a quantity of 'old copper', he returned 65 islanders to Pitcairn in early September 1831. The remaining thirteen returned aboard a French schooner.

Among the reasons later given for agreeing to the removal was the severe drought then affecting Pitcairn, and the perception by some that Tahiti was a land of 'milk and honey' (PMB 780). Buffett's account indicates that while such a perception existed amongst the Pitcairn Islanders, it was quickly dispelled by the realities of Polynesian life discovered at Tahiti (1846:34):

> Some of those who were in favour of removal, said they were going to the land of Canaan, to induce the others to join them, but after their arrival they did not find it so. When we drew near the shore some of the Tahitian women would not believe it to be Tahiti, and the Pitcairners no sooner saw the Tahitians come along side than they repented having come.

Apart from the deaths of Pitcairn Islanders at Tahiti, the Tahiti experience had other detrimental results. Driver refers to Mary Christian "...with her helpless little one, a girl who had fallen" and indicates that all shunned her (PMB 780). This seems to be the case for mother and daughter alike as the Pitcairn Island Register records Mary Christian as without issue and no daughter or grandchild is recorded. The Tahiti experience also exposed the islanders to alcohol and in 1832 Nobbs wrote to the British authorities in Valparaiso stating that some of the Pitcairners had 're-commenced distilling rum since returning from Tahiti (in Brodie 1851:181). While at Tahiti, Nobbs firmly established himself as the sole teacher and minister of the Pitcairn community - as evidenced in an agreement to that effect which was signed by all the heads of families and witnessed by the British Consul, George Pritchard (*ibid*:178). However, the divisions raised by the death of Adams remained latent and quickly surfaced with the arrival of the Englishman Joshua Hill at Pitcairn in October 1832.

On arrival at Pitcairn, Hill declared (falsely) that he had been sent by the British Government to order the affairs of the island and between 1832 and 1836 he assumed dictatorial authority over the community. He established his authority by creating a 'government' consisting of five elders and assumed the title of President. As President, Hill attempted to remove all opposition to his rule and Buffett, Evans and Nobbs were

systematically ostracised, removed from influence, and finally ordered to leave the island. At this time Nobbs was accused of drinking spirits distilled on the island (Nicolson 1997:134) and Buffett was found guilty of persistent adultery, and flogged.

For four years Hill played on the divisions within the community and combined coercion and the threat of punishment to manipulate the islanders. During this period a gaol was built, censorship introduced, and Hill's faction confiscated all guns on the island. A law was also passed that removed the right of property inheritance from the children of marriages between natives and Europeans, and prohibited marriage between the children of Europeans and the children of natives (Buffett 1846:50). Hill's fraudulent claims to authority were uncovered in early 1837 with the arrival of HMS *Acteon*, and he left the island at the end of that year.

In 1836 Nobbs had been reinstated as school master, and following Hill's departure he attempted to heal rifts in the community. However, the question of leadership remained unresolved. Throughout his period of rule at Pitcairn, Hill had been supported by Edward Quintal and despite the departure of Hill, Quintal refused to send his children to Nobbs for schooling and remained generally hostile to the three Europeans, Nobbs, Buffett and Evans (Nicolson 1997:155). A letter addressed to Quintal by Captain Bruce of HMS *Imogene* in late 1837 regarding flag signals (NAA CP6971/1), indicates that Quintal was still regarded as an authority on the island at that time and in the following year his status was confirmed by his election as the first Chief Magistrate of Pitcairn Island. Hill's presidency had underlined the vulnerability of the community to external influence and the benefits of establishing a closer relationship with British authority in the Pacific and, following problems with the unruly crew of a visiting whaleship, the community requested Captain Elliot of the HMS *Fly* to draw up laws for regulating the island and appointing a chief (McLoughlin n.d:20).

Establishment of Chief Magistrate and Code of Laws

The regulations and laws drawn up by Elliot reflected the past difficulties experienced by the community. Fundamental to the Code was the establishment of a leader who was empowered to regulate the daily affairs of the island in accordance with the laws, and to

govern by the authority of the British Government. The regulations for the appointment of the magistrate provided for (in Brodie 1851:84):

> ...a magistrate to be elected by the free votes of every native born on the island, male or female, who shall have attained the age of eighteen years; or of persons who have resided five years upon the island.

Only native-born inhabitants of the island were eligible for election. The magistrate was to keep a journal of complaints and decisions made during each year and this was to be submitted to the captain of any British naval vessel for inspection. Where decisions were beyond the authority of the magistrate, these cases were also to be submitted to the captain of a British naval vessel. The Code consisted of ten laws. Law One referred to the maintenance of a journal by the magistrate. Laws Two, Three and Four regulated control of dogs, cats and hogs. Law Five regulated education and confirmed Nobbs as school master. All children between the ages of six and sixteen were obliged to attend school for five hours, five days a week, and parents were obliged to pay a fee of one shilling (or equivalent in kind) for each child, per month to Mr Nobbs. Laws Six and Seven regulated the cutting and use of timber and protected the indigenous *White bird* (Fairy Tern). Law Eight required the magistrate and interested parties to inspect property landmarks and replace those removed or damaged during the year. Law Nine prohibited women from going aboard ships and the import of spirits. Law Ten regulated the use of the public tools from the blacksmith's shop.

Some additions to these basic laws were made between 1838 and the visit of HMS *Calypso* in 1848 as evident from Shipley's account (1851). In regard to visiting ships Shipley noted that the law stated:

> No person is allowed to go on board of any ship before the pilot boat ... [and the pilot] is to conduct the Captain on shore, and let him say what he has to trade for before the community, that everyone may speak for himself, and let the Captain know what of his trade they want.
> ...Whoever is detected in trading privately with the Captain for any article that the public wants, before the public is done, the goods is to be taken from him.

With these regulations in place, Pitcairn was effectively accorded the status of a British protectorate. This system of magistrates operated successfully at Pitcairn Island until 1856 after which it was transferred with the community to Norfolk Island where it continued to provide a basis for government into the twentieth century.

Cultural Dynamics

Figure 5.2 (on the following page) shows the changes in the number of European males, Polynesian males and Polynesian females from the original settler group over the study period. The value of this information is premised on the belief that distinct cultural attributes exist between Europeans and Polynesians, and that by graphing changes in the proportional contribution of these groups we can gauge the likely influence and possible archaeological representation in, at least, a broad chronology. Figure 5.2 shows that no Polynesian males survived after 1793 and that the period 1790 to 1793 saw a dramatic decline in the European population to just four males. This group further declined by 1800, by which time only one mutineer – John Adams, survived. Adams remained as the only male living on Pitcairn until 1823 when John Buffett and John Evans, from the English ship *Cyrus,* chose to settle at Pitcairn. In 1828 their numbers were further increased by the arrival of George Hunn Nobbs. (Nobbs' companion, Noah Bunker died a few weeks after arriving at Pitcairn and is therefore not included in the graph). John Adams died in March 1829.

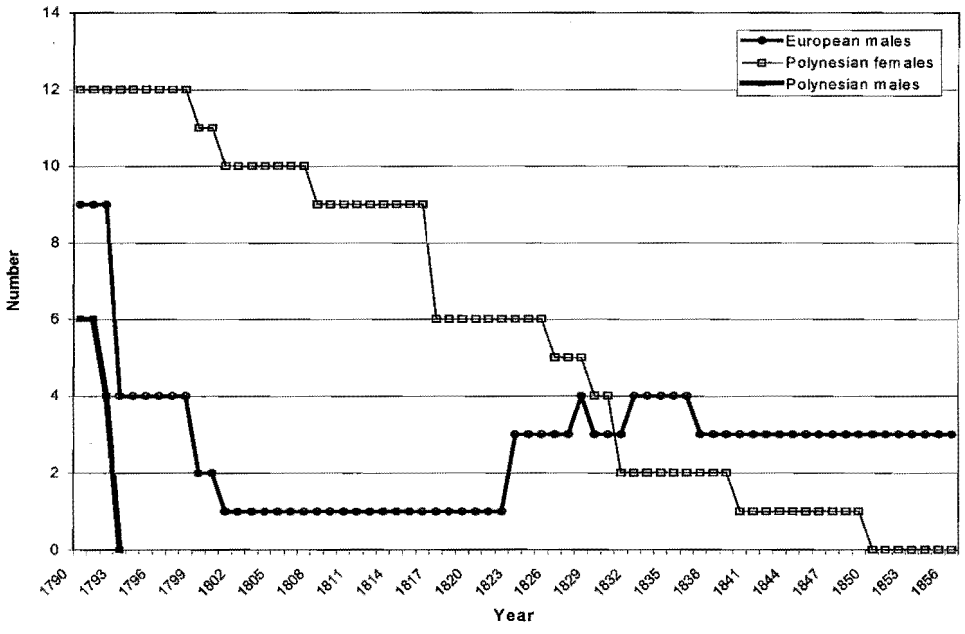

Figure 5.2 Cultural groups at Pitcairn 1790 – 1856

In 1832 Joshua Hill settled at Pitcairn. His arrival brought the number of European males back to the level maintained between 1793 and 1800. Hill remained at Pitcairn until 1837. His period at Pitcairn is marked by open rivalry with Buffett, Nobbs and Evans which led to temporary departures of these men to Mangareva and Tahiti. Between 1837 and 1856 the population of European males resident at Pitcairn remained unchanged at three.

Figure 5.2 shows that the period 1793 to 1831 is dominated numerically by the Polynesian women. Despite some doubt about exact dates of death for Vahineatua, Teatuahitea, Obuarei, Mareva and Tinafornea and despite the departure of Jenny to Tahiti in 1817, the Polynesian women remained the numerically superior group until 1831. With Toofaiti's death in that year a slow decline in this source of Polynesian cultural influence continued until the final death of Teraura in 1850. Of course the influence of this Polynesian group needs to be seen in the light of exotic influences operating at Pitcairn during the study period. The most important of these is the arrival of ships at Pitcairn. Figure 5.3 reproduces the material presented in Figure 5.2 with the addition of shipping arrivals at Pitcairn from 1790 to 1856.

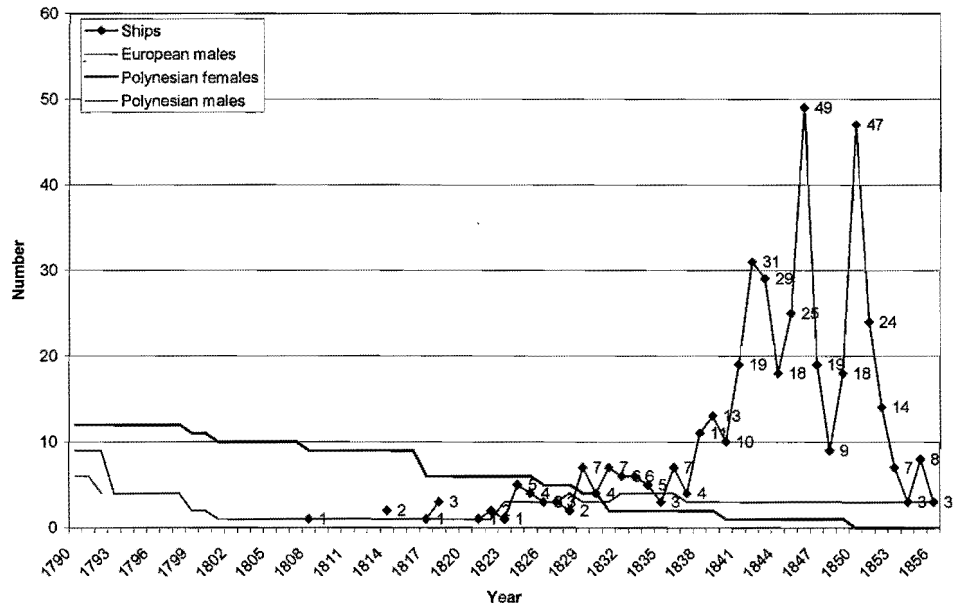

Figure 5.3 Cultural Groups and Shipping at Pitcairn 1790-1856

It is important to note that the period of Polynesian female dominance coincided with a total absence of other potential sources of cultural influence. No contact occurred between the Pitcairn settler group and the outside world for the first 18 years, and even when Mayhew Folger stopped at the island in 1808, his visit lasted only six hours. A further six years passed before the arrival of the next visiting ships, HMS *Briton* and HMS *Tagus* in 1814. Their stop was also brief. By the time of Captain Raine's visit to Pitcairn aboard the *Surry* in 1821, only seven ships had called at the island. Figure 5.3 clearly shows that Raine's visit marks the beginning of regular contact between the settlers at Pitcairn and the outside world. Despite fluctuations, the average number of ships calling at the island *per annum* between 1821 and 1837 was four. The Pitcairn Island Register Book (Lucas 1929) lists 343 ships as having contact at Pitcairn between 1838 and 1853, an average of 21 vessels per year. The great majority of these vessels hailed from the New England ports of Nantucket, New Bedford, Boston, Fairhaven, Salem and Newport and were working the Pacific whale fishery. Figure 5.4 shows the origins of all vessels visiting Pitcairn from 1838 to 1853.

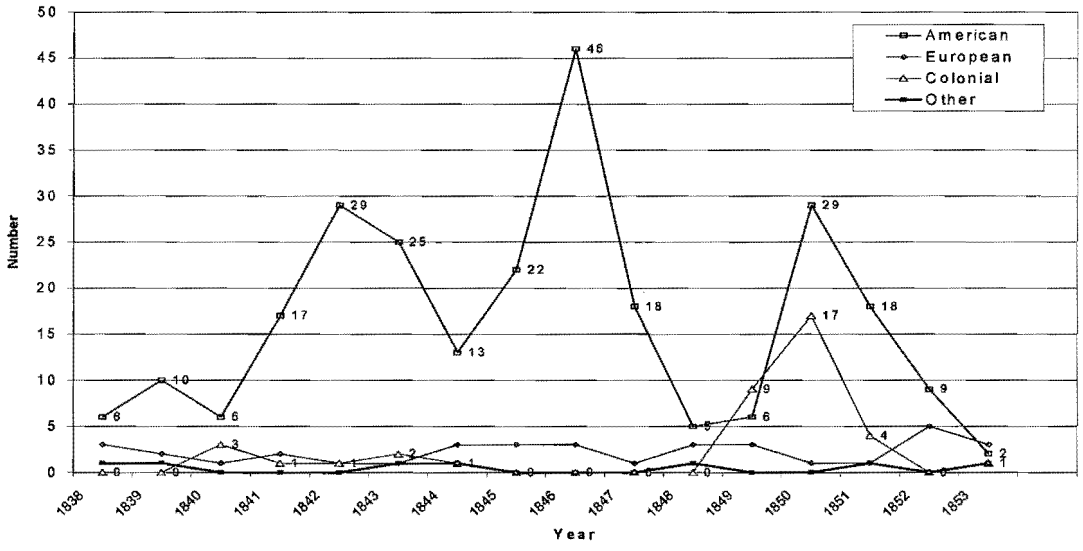

Figure 5.4 Origin of Ships at Pitcairn 1838-1853
(Source: Pitcairn Island Register)

Figure 5.4 shows that the major foreign contact with Pitcairn over the years 1838 to 1853 was American, with a sudden increase of colonial ships commencing in 1848, when gold was discovered in California.

Colonial Vessels at Pitcairn

The list of shipping at Pitcairn for 1849 records the following vessels.

Date	Vessel	From	To
Jun 29	Brig *Fanny*	New Zealand	California
Aug 1	Schooner *Bandicoot*	Hobart Town	California
Aug 19	Schooner *Union*	Port Philip	San Francisco
Aug 23	Barque *Elizabeth Archer*	Sydney	California
Aug 25	Schooner *Vansittart*	Hobart Town	San Francisco
Oct 21	Schooner *Arenaria*	Hobart Town	California
Oct 22	Schooner *Frederick*	Auckland	California
Nov 2	Barque *David Malcolm*	Launceston	California
Dec 1	Brig *Georgiana Frances*	San Francisco	Valparaiso
Dec 18	Barque *Pilgrim*	Auckland	California

Table 5.5 Colonial Shipping at Pitcairn 1849
(Source: Pitcairn Island Register)

This influx of vessels from the British colonies in Australia and New Zealand is further explained by Pitcairn's geographic location. The recommended route for sailing vessels from Adelaide, Melbourne and Hobart to San Francisco passes east of Pitcairn, and the island offered an opportunity to replenish water and fresh supplies, as well as a welcome break on the 14,000 km voyage. A sailing vessel averaging 100 nautical miles a day could make the journey in 75 days. The *Elizabeth Archer* was 36 days out from Sydney with over 130 passengers aboard when she stopped at Pitcairn and it is not surprising that "...Several of the passengers remained on shore for the night", the meeting having done "...much to elevate the spirits of the visitors" (Lucas 1929:128).

Pitcairn also lies on the sailing route between Valparaiso and both Sydney and San Francisco. In 1825, 90 British vessels called at Valparaiso compared with 70 American ships. By1840, this number had risen to 166 British vessels compared to 56 American ships and by 1861, the British population of Valparaiso was 1,900 (Blakemore 1974:11). British commercial interests in Chile continued to expand particularly after that country's territorial gains between 1879 and 1883 gave access to rich nitrate deposits. At that time Valparaiso was described as "... Nothing more than an English Colony...with almost its entire trade conducted in pounds sterling, its English newspaper, and the almost exclusive use of the English language" (*ibid*:12). British interests in the Pacific were supported by Royal Navy vessels throughout the study period - many of these visiting Valparaiso and Pitcairn. The visits of Royal Navy vessels must be seen as the principal sustaining link to British customs and traditions. This is most clearly illustrated by the visit of HMS *Fly* in

1838. Captain Elliott accepted British responsibility for Pitcairn, and as a result of this action, Pitcairn remains a British Dependent Territory to the present time. British Naval vessels that stopped at Pitcairn during the study period are listed chronologically in Table 5.6.

Vessel	At Pitcairn	Rate	Men
HMS *Briton*	1814	Fifth 38 Guns	300
HMS *Tagus*	1814	Fifth 38 Guns	315
HMS *Blossom*	1825	Sloop 12 Guns	102
HMS *Seringapatam*	1830	Fifth 46 Guns	300
HMS *Comet*	1831	Sloop 18 Guns	121
HMS *Challenger*	1833	Sixth 28 Guns	161
HMS *Thunder*	1837	12 Guns	---
HMS *Acteon*	1837	Sixth 26 Guns	---
HMS *Imogene*	1837	Sixth 28 Guns	160
HMS *Fly*	1838	Sloop 18 Guns	120
HMS *Sparrowhawk*	1839	18 Guns	---
HMS *Curacao*	1841	Sixth 26 Guns	210
HMS *Talbot*	1843	Sixth 26 Guns	200
HMS *Basilisk*	1844	Cutter 6 Guns	
HMS *Spy*	1847	3 Guns	---
HMS *Calypso*	1848	Sixth 18 Guns	200
HMS *Pandora*	1849	Survey Vessel	60
HMS *Daphne*	1849	Sixth 28 Guns	165
HMS *Cockatrice*	1851	Schooner	---
HMS *Daedalus*	1852	Sixth 20 Guns	240
HMS *Portland*	1852	Fourth 50 Guns	450
HMS *Cockatrice*	1852	Schooner	---
HMS *Virago*	1853	Steam 6 Guns	160
HMS *Portland*	1853	Fourth 50 Guns	450
HMS *Dido*	1853	Sixth 18 Guns	175
HMS *Juno*	1855	Sixth 26 Guns	---
HMS *Dido*	1856	Sixth 18 Guns	175

Table 5.6 British Naval Vessels at Pitcairn 1790 – 1856
(Sources: Dengate n.d; Ford 1996; Lucas 1929)

Population Growth

A further factor potentially affecting cultural traditions and the archaeological record is the population growth of the Pitcairn community during the study period. Figure 5.5 shows the growth in population and the arrival of shipping at Pitcairn over the study period.

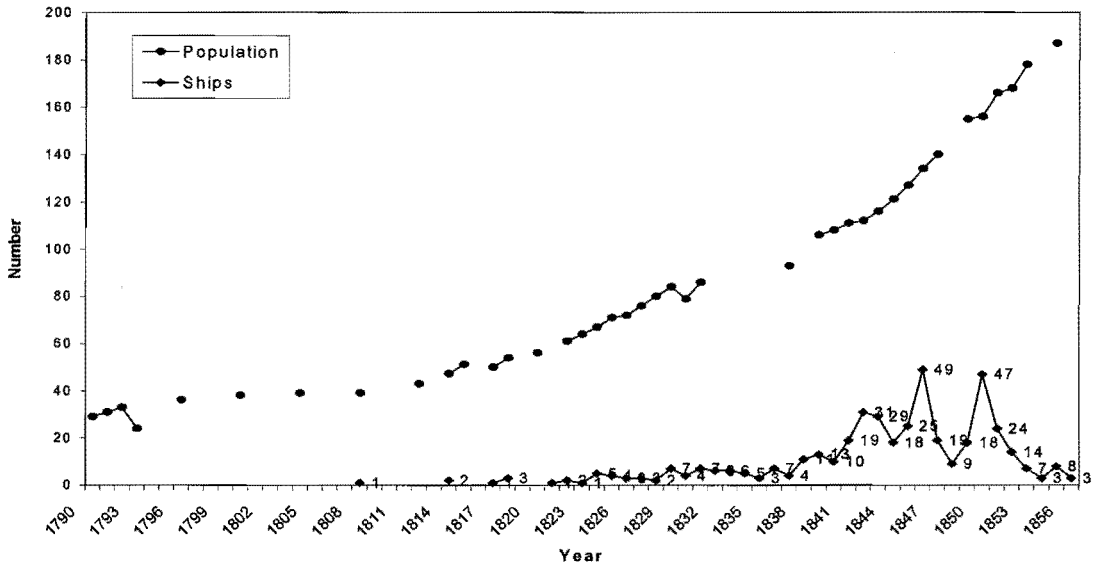

Figure 5.5 Population and Shipping at Pitcairn 1790-1856 (Source: Lucas 1929)

Where population records are maintained regularly, these are shown as a continuous line. Where the only population records available are derived from the accounts of visiting shipping or deduced from recorded deaths, these appear as spot values. Figure 5.5 shows that population growth was minimal up to about 1810, indicating that an equilibrium between births and deaths existed in this period.

By 1814 this trend was over and we see the beginning of a rapid and accelerating growth in population. This is at least partly explained by the arrival of second generation Pitcairners to sexual maturity. The first example of this is the birth of Joseph Christian in 1806 to Thursday October Christian (first child born on Pitcairn) and Teraura (surviving partner of Edward Young). In 1806 Thursday October Christian was 16 and Teraura about 31 years old (Nicholson 1997:220). The match is perhaps indicative of the small pool of available partners at this time. Elizabeth Mills, the first female born on Pitcairn, was only 14 at the time and indeed second generation males continued to partner Polynesian women from the original settler group until 1812. In that year Sarah Quintal (aged about 16) gave birth to William McCoy II (*ibid*:220). Two years later, Captain Staines (HMS *Briton)* noted that only one man and seven women of the original settlers survived (Brodie 1851:155), while Captain Pipon (HMS *Tagus*) remarked that the colony

consisted "... principally of very young men and young women, with few very old ones..." (Pipon 1834:192).

The curve of population growth indicates a sharp reversal of trend in 1831. In that year the entire population of Pitcairn was removed to Tahiti and temporarily settled on the Royal estates of Queen Pomare. The removal was a singular disaster for the Pitcairn community – the arrival at Tahiti coinciding with civil war and an outbreak of fever. Seven months after arriving, 14 Pitcairners had died, followed by a further three by the end of the year. By December all those who had survived the ordeal had returned to Pitcairn.

The movement to Tahiti had a two-fold effect. On the one hand it directly exposed the Pitcairn islanders to Polynesian and European cultures at Tahiti, while those who survived were further confronted by the start of regular contact with American whalers. Figure 5.5 shows the beginnings of regular contact with foreign shipping coincides with the deaths at Tahiti. Figure 5.5 further indicates a steep increase in population after 1831, paralleled by a rapid increase in the number of ships visiting Pitcairn. Figure 5.5 indicates that at the end of the study period this rapid increase in population is isolated by a sudden, almost total loss of contact with ships. The coincidence of high population with diminished opportunities to trade with visiting ships preceded the removal of the entire settlement to Norfolk Island in 1856.

Summary

This section has provided an understanding of the broad historical development of the settlement at Pitcairn Island during the study period as a necessary step before attempting to interpret the archaeological evidence described in Chapter Four. Using the historical evidence, it has been shown that Pitcairn was uninhabited when the *Bounty* colonists arrived, but had been occupied by Polynesians - possibly as late as A.D. 1350. The legacy left by these earlier inhabitants was immediately visible to the new settlers and included remnant food crops, cooking pits, petroglyphs and stone artefacts. The settlers also found the island endowed with fresh water, fertile soil, timber, birds and marine resources.

The settler group consisted of two culturally distinct groups and brought a diverse range of skills to the new environment, some of which however, were lost in the violent confrontations that produced a rapid decline in the male population of the group. The evidence from the initial stages of settlement indicate that the colonisation model adopted was essentially English, and that although modified in some aspects, the community became increasingly European in its social organisation as the population grew and the community came into sustained contact with the impact of western influences in the Pacific. The following section interprets and discusses the archaeological evidence recovered from the study area in light of this historical context, and in Chapter Six the documentary and material evidence is further refined and focused to address the specific research aims of the thesis.

INTERPRETATION OF THE ARCHAEOLOGICAL EVIDENCE

Foodways

a. Tableware

Table 4.12 in Chapter Four illustrated the distribution of decorated tablewares across the Adamstown study area, and indicated that the patterns Whampoa, Giraffe, Palestine and Three Arch Bridge were widely distributed and appear to have been common to a number of households. When examined in combination with documentary accounts, this distribution can be interpreted as evidence of methods used at Pitcairn for the division of traded goods. Bechervaise – visiting the island in 1825 noted (1839:171) "...knives, forks and blue plates and basins ..." were the "...produce of their traffic", and described the trade with ships as regulated by the principle that "...no purchase is private, and all tend to the general comfort, and to the general stock". Evidence of how such stock was divided exists in the continuing custom of *the share out* still practiced by the Pitcairn community today. Aboard the *Bounty* this form of division was known as *Who shall have this?* The *Bounty's* Boatswain's mate, James Morrison referred to the practice in relation to the quantity of food served on the voyage to Tahiti. This was (1935:22):

> ...so small that it was no uncommon thing for four men in a mess to draw lots for the breakfast, and to devide their bread by the well known method of 'Who shall have this' nor was the Officers a hair behind the men at it.

Bligh also used this method to divide a seabird amongst the men during the open boat voyage and described the process (1961:164):

> One person turns his back on the object that is to be divided; another then points separately to the portions, at each of them asking aloud, "Who shall have this?" to which the first answers by naming somebody. This impartial method of division gives every man an equal chance of the best share.

At Pitcairn this system of division is still commonly used for dividing goods obtained from passing ships and appears to be an example of a surviving shipboard custom derived from practices aboard the *Bounty*. In this context, the distribution of ceramics decorated in Whampoa, Giraffe, Palestine and Three Arch Bridge patterns can be interpreted as the archaeological signature of this practice operating at Adamstown during the study period.

Evidence of scratched personal marks found on ceramics appears to be a further example of a shipboard custom derived from the *Bounty* seamen, and developed by later generations of Pitcairn Islanders. In regard to marking objects Finamore states (1994:180):

> The pronounced need to mark one's personal objects is most apparent in situations where objects are by necessity stored and treated as a single group, such as aboard ship, or in camps associated with frontier settlement, resource extraction, and military activities

Several examples of plates marked with scratched initials have been recovered from HMS *Pandora* (Campbell and Gesner 2000:105) wrecked in 1791 and suggest that the use of such marks was relatively common at the time of the *Bounty* voyage. Two examples of personal marks reliably linked to *Bounty* seamen exist. These are a Grapevine border mug owned by John Adams and marked with a letter 'A' (described in Chapter Four and illustrated in Figure 4.5) and a Spode plate marked with the letter 'Y' exhibited in Government House at Norfolk Island. The Spode plate is a Young family heirloom and is said to have belonged to Midshipman Edward Young. This claim is strengthen by the impressed mark SPODE which indicates a manufacture date of about 1784 (Godden 1991:589). In each case the primary mark is a capital and the first letter of the surname which have been applied by repeated scratching. This type of mark was also found on ceramics and bottles located at LF0029 (Nobbs' disposal point) and was clearly

used by George Hunn Nobbs at Pitcairn Island during the study period. As indicated previously, Nobbs arrived in 1828 and left Pitcairn for Norfolk Island in 1856. From this evidence it appears that personal marks were used to mark property from the earliest days of the settlement and that this was done by using a single capital letter. While such a system was sufficient while the population remained small, evidence of later developments in the community indicate it was inadequate for a growing population sharing a very limited number of surnames. Some idea of the problems involved can be seen from the fact that 194 Pitcairners, sharing just eight surnames, arrived at Norfolk Island in 1856. These families consisted of 22 Youngs, 47 Christians, 16 McCoys, 17 Adams, 49 Quintals, 14 Nobbs, 10 Evans and 19 Buffetts.

No documentary evidence of personal marks used in the study period survives. However, a detailed record of marks used by those who returned to Pitcairn after 1858 is reproduced in Appendix A.5, and provides some insights into the use of personal marks generally. The second name listed is Alice Butler, the widow of Robert Young, who married Peter Butler, one of the crew of the ship *Khandeish* wrecked at Oeno Island in 1875 and the document thus must post date that date.

Stylistically it can be seen that the document exhibits a clear evolution from the first two letter marks around 1875 to the later entries incorporating three, four and even five letters around 1907. Although on one level this appears to be a reflection of an increasing population and the need to produce new marks, it can also be seen that the later marks are no longer simply initials. Close inspection also reveals a recycling of marks within families that directly parallels processes of inheritance. For example, the personal mark of Moses Young (b. 1829 d. 1909) is 'MY'. These initials also appear for Edwin Young (b. 1889 d. 1937) and Theodore Young (b.1887 d. 1973). Moses Young was grandfather to both Edwin and Theodore Young and it appears that the 'MY' mark passed to Edwin at the death of Moses in 1909. Edwin was then 20 years old. After Edwin's death in 1937, the mark appears to have reverted to Theodore, the eldest surviving male descendant of Moses Young. Presumably Theodore used another mark prior to this date. Certainly the mark 'MY' appears to have been written over an earlier mark but is illegible.

It will also be seen that the letter 'X' generally stands for the surname Christian, 'M' for McCoy, 'Y' for Young and 'W' for Warren (Samuel Warren, a whaler from Rhode Island who married Agnes Christian in 1863). However, the complex combinations of these letters is evidence of the difficulties of defining property on the basis of family names when all families are related.

A further source of archaeological evidence regarding Pitcairn Island personal marks exists in the archaeological collection of the Norfolk Island Museum and was investigated as part of the research for this thesis. The collection originates from excavations conducted during the 1980s of eight houses at Kingston which were occupied by Pitcairner families after 1856. The excavations were undertaken as part of an ongoing conservation program in the Kingston historic precinct (Erskine 2003). Of a total of 967 ceramic forms recovered, 35 bear scratched personal marks. Of these, one is a single letter 'N' recovered from George Hunn Nobbs' Kingston residence, 30 incorporate two letters, and four are marked with three letters. Apart from Nobbs' mark, seven marks are identified as those of Maria Christian 'MX' (b. 1815 d. 1889), Fisher Young 'FY' - entwined (b. 1846 d. 1864), Phillip McCoy 'PM' (b. 1830 d. 1913), Thursday October Christian II 'TX' – superimposed (b. 1825 d. 1877), Isaac Christian 'IX' (b. 1825 d. 1877), William Evans 'WE' (b.1830 d. 1873) and Charles (Driver) Christian 'CX' (b. 1831 d. 1906). These identifications are confirmed by documentary evidence regarding the occupants of the Kingston houses. The remaining marks are unidentified.

Of the identified marks, the majority are scratched on undecorated wares and are of limited use for dating purposes. However, three marks, one 'MX' and two 'FY', are on decorated wares reliably dated as post 1859, indicating that the custom of using personal marks continued after the move to Norfolk Island. However, given that the vast majority of ceramics recovered from the Kingston houses do not bear personal marks, it appears that this practice was gradually discontinued at Norfolk Island. One possible explanation for this change may be attributed to the allocation of land at Norfolk Island and the better access to goods.

The historical evidence indicates that increases in population at Pitcairn towards the end of the study period placed a severe burden on resources, and this is likely to have

reinforced the need to identify property. A law regarding property in the Pitcairn codex of 1853 illustrates this point (Norfolk Island Museum Collection):

> No children should be allowed to go after cocoanuts unless the parents or some other grown persons go with them. Should any be convicted of doing the like, the parents of the child or children so offending must be obliged to chastise them. Upon failure of observing this, the law compels them to pay 25 cents for each child. If the offending party is caught on another persons tree or trees, the law compels them to pay four fold like any other crime for stealing.

This situation at Pitcairn contrasts sharply with developments experienced by the Pitcairners at Norfolk Island after the removal. Between 1858 and 1859, Norfolk Island was surveyed and 50 acre allotments granted to each of the thirty-five Pitcairn families, with additional land reserved for future generations (Bailey 2001). As a result, all Pitcairn Island families were given legal title to their allotments and these were clearly established by surveyors from the Royal Engineers. The Pitcairn islanders were also given stock and generous supplies from the Commissariat stores. These included 1,300 sheep, 250 cows, 50 pigs, 15,000 pounds of wheat, 675 pounds of soap, 146 chairs, 150 tables, 66 axes, 50 wheelbarrows, 11 carpenter's benches, 81 chisels, 117 dishes, 100 plates and much more (British Parliamentary Papers 1857:22)! As a result of these circumstances and the generally greater access to manufactured goods, the Pitcairn islander community at Norfolk entered a period of comparative affluence, and it is possible that in this new state, the need to mark property was reduced.

b. Glassware

As indicated in Chapter Four only a single item of glassware was recovered in the study area and this almost certainly belonged to George Hunn Nobbs. The documentary evidence indicates that Nobbs was educated, and claimed to have served as an officer in the Royal Navy (Nobbs 1984:9) and regarded himself as a gentleman (Murray 1853). As Jones and Smith (1985:7) note, drinking was regarded as a normal activity of such men:

> In the 18th and 19th centuries drinking was a common, acceptable activity. Alcohol formed part of the daily diet of most men, whether military or civilian. Drinking by the officers was considered sociable; etiquette, choice of beverage and accoutrements reinforced their position as officers and gentlemen.

Despite Nobbs' concern regarding the distilling of rum at Pitcairn (in Brodie 1851:181) the evidence of the wine glass, combined with alcohol bottles strongly suggests Nobbs drank alcohol, at least occasionally.

c. Bottle usage

Analysis of bottles from LF0029 (Nobbs' disposal point) indicates that although many are wine-style bottles of English manufacture, a significant number of French wine-style bottles are also present. While this initially might appear to reflect consumption of considerable amounts of alcohol, this was possibly not the case. As Jones points out (1985:13), 'wine' bottles "...were probably multipurpose containers used to contain any of the alcoholic beverages as well as other items such as vinegar, linseed oil, or any substance sold in quantities over a pint and under a gallon". It is also likely that bottles served as 'multipurpose containers' at Pitcairn Island and that the island's isolation and the difficulties of replacement, placed a premium on bottles. In this context, the use of personal marks on bottles may be an indication of both the scarcity and utility of bottles within the settlement. Such an explanation may account for the generally low levels of bottle glass found in the study area and the apparent preservation of even early bottles in the assemblage recovered from LF0029.

d. Food preparation

As indicated in Chapter Four, two stone graters or *yollos* were recovered and exhibit evidence of the use of a fine metal saw blade in producing the grating surface, indicating the objects date to the historic period. *Yollos* continue to be used by the present generation of Pitcairn islanders and examples of well-worn and apparently old *yollos* can be seen in contemporary households. While it is impossible to date the recovered examples accurately, the presence of these objects is evidence of a Polynesian cultural continuance in regard to food preparation throughout the study period. Several *yollos* exist in the Norfolk Island Museum collection and indicate that *yollos* were brought by the Pitcairners to Norfolk Island.

e. Faunal material

The presence of *Turbo argyrostomus* at Pitcairn appears to be a further indication of Polynesian cultural influence affecting diet. Gathercole (1964:17) regarded the discovery of 'whelk' shells south of the village at Pitcairn as indicative of a prehistoric site, and

Weisler (1993) found *Turbo* the dominant gastropod in prehistoric faunal assemblages, at neighbouring Henderson Island. This evidence together with the recovery of *Turbo* with material dating to the study period, appears to be an example of a Polynesian food source that was exploited both prehistorically and in the study period.

The small amount of bone recovered in the study area is possibly linked to diet and customs regulating meat consumption. Surgeon Gunn noted in 1841 that the islanders' diet consisted almost entirely of vegetables with the only addition being fish or meat on Sundays (ADM 101/95). Buffett's account also indicates that meat was salted and generally maintained as a resource for special occasions (1846:67). In this context, the small amount of bone recovered may reflect this limited use of meat, or the routine abstention from meat may also reflect a continuance of shipboard custom derived from the *Bounty.*

Morrison's journal (1935:12) refers to 'banyan day' aboard the *Bounty* as a day when no meat was issued. According to the Oxford English Dictionary (1989:928) in 1748 banyan days were Mondays, Wednesdays and Fridays when a ship's company had no allowance of meat, and this routine was still the custom in 1813. Banyan days appear to have provided a simple means of rationing meat provisions during a sea passage and it is possible that a modified form of this system was adopted at Pitcairn as a way of regulating food supplies.

It is also worth noting that the entire population of Pitcairn Island converted to the Seventh day Adventist Church in 1886. McLoughlin describes that conversion as involving little change in the dietary habits of the islanders (n.d.:31):

> Apart from giving up the eating of crayfish and pork, with the consequential killing off of the Island's entire pig population, and the change of the Sabbath from Sunday to Saturday they continued much as before. None of them drank liquor any way, very few smoked and all lived largely on a vegetarian diet, supplemented by an occasional meal of chicken, goat meat or pork. The former two of these were permitted under the Adventist doctrine so that only the latter, namely pork, had to be given up.

In fact the Adventist doctrine extends to a prohibition on eating shellfish entirely (including *Turbo)* and the conversion marks the end of the consumption of this food at

Pitcairn and assigns a pre 1886 date for faunal remains of *Turbo* and pig. Evidence of the use of *Turbo* in the study period is also supported by the associated practice on Norfolk Island where the Pitcairn Island descendants (who remain predominantly Church of England) continue to eat *hi hi* pie which is made from the black periwinkle *Nerita atramentosa.* Periwinkle shells are found in great numbers around the Kingston houses lived in by the Pitcairn Islanders between 1856 and 1912.

f. Gun flints

As stated in Chapter Four, the pattern of wear on gunflint (1.147) indicates persistent use and shows no sign of attempts to reknap the edge. The condition of the gunflint highlights the vulnerability of some technologies in an isolated community. There can be no doubt that the early deaths of many of the *Bounty* sailors significantly reduced the skills and knowledge available to the community and this may have included the ability to reknap gunflints, or indeed repair and service arms generally. In this context Pipon (1834:197) stated that in 1814, "...their chief desire was for a few muskets to kill the wild hogs..." and he and Sir Thomas Staines gave "French pieces" and powder. In 1841 Captain Jenkin Jones presented gifts from the British Government including 25 muskets and 250 flints (Lucas 1929:105). This gift may indicate a general need for firearms up to this date and it is interesting that the British authorities sent muskets rather than percussion lock guns. The invention of the percussion cap lock in 1820 made flint locks obsolete (Blanchette 1975:44) and these were effectively no longer manufactured in England after 1835 (Skertchly 1984:3). The gift may therefore have represented a disposal of outdated technology. Alternately, it may have reflected an appreciation of the skill levels available in the community and the desire to supply appropriate technology. The archaeological record from the study area shows a complete absence of percussion caps and suggests flintlocks were used long after more modern technology was in general use in less isolated communities. One possible explanation for this is that flintlocks required only the basic materials of black powder, flints and lead.

Clothing

a. Manufacture

The manufacture of tapa cloth for clothing is possibly the clearest example of a surviving Polynesian cultural tradition at Pitcairn and it was commented on by visitors, particularly in the period before regular contact with shipping was established (Beechey 1968:98;

Bennet 1840:36; Pipon 1834:192). In 1825, Frederick Beechey found that the Pitcairn islanders almost all wore clothes made from tapa and noted "...a fashion in the beater, some preferring a broad, others a very closely ribbed garment; for which purpose they have several of these instruments with large and small grooves" (1968:131). Midshipman Richard Beechey (PRONI, T2479) added that the beater "...is a piece of hardwood or whale ivory if they can get it, grooved on all sides with different degrees of fineness". Based on these descriptions the tapa fragments recovered at LF0036 (Reynold Warren's garden) represent a type used during the study period.

In 1831, Waldergrave noted that the Pitcairn women and girls only wore tapa clothing but that the males changed out of the tapa waist cloths they used during work and adopted European dress on Sundays (1833:158). Historical evidence shows that as contact and trade became more reliable, the wearing of cotton cloth and western clothing for daily use progressively infiltrated the community (Buffett 1846; ADM 101/95). (A general illustration of this change is possibly refected in the buttons recovered during fieldwork). However, the evidence also indicates that the traditional knowledge of tapa manufacture remained in the community and indeed was utilised by the Pitcairners who returned to the island after 1858. Lincoln Clark, writing to a friend in 1925, recalled that the islanders "...were banging Aute [tapa] the afternoon we landed on the island, a shipwrecked crew" (Fraser 1993:41). This incident occurred after the wreck of the *Acadia* at Ducie Island in June 1881. Clark also described the process of cloth making :

> Square pounders were used about 2 inches on each side. Corrugations were made in the pounders – large on the first side, small on the second side and the third, and very fine on the fourth side. The wet bark was placed on the square log (*tis ta*) and pounded first with the pounders with heavy corrugations (*a'a'a'a' "tili rahi"*) until the bark became a sheet.
>
> The sheet was again wet and pounded with the next size pounders (*a ti li – I nia inia*) – wet again and pounded with the next sized pounder (*ole a tau*) – wet again and got its final pounding from the side with the fine corrugations (*u fra e*). This last pounding takes the longer time and when finished, a sheet is obtained that can be washed and rewashed many times.

In 1998, Pitcairn resident Mavis Warren was able to recite a rhyme used during tapa making which illustrates the survival of this Polynesian tradition (Warren, M. 1998, pers. comm.). The rhyme went:

Big *opeli,* Small *opeli, Uli a tau, U fah eh.*

Despite the introduction of English words, the chant described by Clark is still distinguishable and attests to the cultural importance of tapa production at Pitcairn Island until the end of the twentieth century. Clark's description of the tapa manufacture process mirrors James Morrison's 1790 account of it at Tahiti and highlights that tapa manufacture was a direct Polynesian introduction derived from the Polynesian women aboard the *Bounty.*

Personal

a. Monetary

No coins relating to the study period were located in the study area. The documentary evidence suggests that the Pitcairn community had little use for money and this may explain the complete absence of coins in the archaeological record. In 1841, Surgeon Gunn of HMS *Curacoa* wrote (ADM 101/95):

> The education of the children is well attended to. Their writing was very good but the school master avows their perfect inability to compute time or calculate money. From their being unaccustomed to the practice of the one or use of the other, they make the most ludicrous mistakes in their calculations. This does not arise from want of ability, for they are apt scholars, but from a confusion of ideas consequent upon having neither money nor time pieces upon the island.

On the other hand Murray (1853:258) states that between 1854 and 1856 the Pitcairn community contributed funds (amounting to forty dollars) to the Society for the Propagation of the Gospel and, as will be discussed in the next chapter, this evidence suggests money was used in some trade exchanges with passing ships. However, this trade is unlikely to have amounted to any semblance of a regular cash economy and it is probable that what money existed was carefully saved and did not enter the archaeological record.

Labour

a. Canoes

Some evidence exists to suggest that the fundamental design features of Jacob Warren's canoe derive from traditions of canoe building in the study period. Bennett, who visited Pitcairn in 1834, described the principal features of these canoes (1840:39):

> The canoes the natives possess are but few, and of very simple construction. They are hollowed out from one piece of wood, and each is adapted to carry two persons. When afloat, they appear as mere wooden troughs, or little better than butcher's trays; nevertheless they can brave a very rough sea, or go safely through a heavy surf, and when managed by their island owners, cleave the water with incredible velocity.

The earliest reference to canoes is from Edward Young's journal in which he recorded that two canoes were started on the 4th of May 1795 and completed two days later. These were successfully used for fishing around the island (in Beechey 1968:91). In 1814 Pipon (1834:192) noted that:

> ...on bringing to, two or three miles off the shore, we observed the natives bringing down their canoes on their shoulders and shortly after, darting through a heavy surf and paddling off to the ships.

In 1821, two-man canoes were still the only form of watercraft at Pitcairn (Raine 1821), but by 1822 these had been supplemented by the addition of a whaleboat (PMB 890). Despite the addition of two further whaleboats in 1848 (Shipley 1851), it is clear that canoes continued to be used throughout the study period, four canoes being amongst the items left at Pitcairn by Lieutenant Gregorie during the removal of the islanders to Norfolk in 1856 (ADM 125/135).

Bennett's (1840:39) description of the Pitcairn canoes emphasises the simplicity of these craft, and this may have been a factor favouring their use throughout the study period. For example, Richard Beechey's account (PRONI T2479) illustrates that although the community possessed a whaleboat by 1825, the islanders did not have the tools or skills required to maintain such relatively sophisticated craft. Accompanying the islanders in their whaleboat through the surf of Bounty Bay, he observed that they were "...very active in minding the boat, as the slightest touch might easily stave their boat, and as you may suppose, they were not much of carpenters, besides not being supplied with tools". Again in 1822, during the visit of the *Russell* (PMB 890), the ship's carpenter was set to work repairing the Pitcairner's whaleboat, again indicating that the Pitcairners lacked the ability to maintain these craft. Certainly the historical record shows that no whaleboats

or any boats reflecting a clear European heritage, were built at Pitcairn in the study period.

In regard to Polynesian canoe types, Pitcairn canoes most closely resemble the single hulled dugouts called *pu ho'e.* These were the smallest of the Polynesian canoes, being about 6 m in length and were used for inshore fishing (Oliver 1974:195). Unlike Pitcairn canoes, *pu ho'e* were hollowed from a single tree and in this feature Pitcairn canoes are constructed more in the manner of larger Polynesian canoes which incorporated both hollowed sections and additional planking. However, the planking of Polynesian canoes was sewn together and the use of dowels for joining planks is unknown in Polynesia.

b. Industrial

Despite the very limited archaeological evidence of industrial manufacture, it is clear from documentary evidence and from museum collections, that a forge and blacksmith's equipment were brought ashore from the *Bounty* and used during the study period (Pipon 1834:197). A rock shelter in *Bang on iron valley* (to the west of Adamstown) is probably the site where the forge and anvil were set up (Gathercole 1964:11; Ross and Moverley 1964:181). Heyerdahl excavated this site over two days in 1956 (Christian, T. 1998, pers.comm..) and found large quantities of charcoal but concluded "...The dig established that the cave had seen human occupation in prehistoric times, although it is impossible to judge the nature of the human activity on the basis of the material discovered (1965:6).

Joseph Coleman, the armourer aboard the *Bounty*, was responsible for operating the forge and Morrison's journal refers to the armourer making hinges while at False Bay (1935:25) and iron trade goods at Matavai Bay (ibid:28). Coleman was among the *Bounty* mutineers who remained at Tahiti, but was only permitted to take "...part of the Armourer's tools – a pig of iron for an anvil, a grindstone, some bar iron, and a suit of collars ..." (*ibid*:74). Material evidence of the armourer's tools brought to Pitcairn exists in the collection of the Mariner's Museum, Virginia. Ford (1996:242) states that Captain Irving Johnson bought the *Bounty* vice and anvil from the Pitcairn community in 1937 and documentation in the Mariner's Museum includes an affidavit from the community corroborating the origin of these tools (Collections Manager, Willoz-Egnor, J. 2001, pers. comm.).

Of the *Bounty* seamen who arrived at Pitcairn, John Williams had blacksmithing skills (Beechey 1968:82) and with his death in 1793 it appears likely that this skill was lost to the community. This hypothesis is suggested by Pipon's reference to the dilapidated state of the forge in 1814 (1834:197):

> ...here, necessity is the mother of invention: for the forge they landed from the Bounty being now out of order, if not completely useless, by dint of labour and assiduity they have got into a method of making their own agricultural tools, of solid iron, which are really very well executed, and from all appearances they are not in want of implements of any kind;

It is unclear exactly how long the community continued in this state. However, the fact that a particular law for the public anvil was drawn up by Captain Elliot in 1838 suggests that the blacksmith's shop was regarded as an important community asset by that date. That law states (in Brodie 1851:90):

> Any person taking the public anvil and public sledge-hammer from the blacksmith's shop, is to take it back after he has done with it, and in case the anvil and sledge-hammer should get lost by his neglecting to tale it back, he is to get another anvil and sledge-hammer, and pay a fine of four shillings.

In regard to the apparent loss or diminishment of iron-working skills after the death of John Williams it is possible that the community, particularly the Polynesian women, made use of the excellent stone resources available at Pitcairn to manufacture implements. In this context, Richard Beechey's statement that the Pitcairn islanders manufactured tapa beaters (PRONI T2479) indicates that 'Polynesian' artefacts were made during the study period. This is further corroborated by the evidence of the manufacture and use of *yollos*. Given these factors, the possibility exists that some of the stone tools recovered at Adamstown are of post-*Bounty* manufacture.

Architectural

a. Nails

As indicated in Chapter Three, the fieldwork at Pitcairn included limited excavation of the remains of the Bounty. Copper alloy sheathing nails represent the largest single artefact group recovered from the *Bounty* site, and, in view of this and the likely utility of

these nails to the early settlement, all copper alloy nails were carefully examined and compared with nails recovered from the *Bounty*. Although several nails recovered from Adamstown sites appear to be *Bounty* nail types, a problem with this evidence is the potential confusion of material from other wrecks in the Pitcairn group such as *Wildwave* (1858), *Cornwallis* (1875), *Khandeish* (1875), *Acadia* (1881), *Oregon* (1883), *Bowden* (1893) and *St James* (1918). It will be seen that these wrecks all occur in the second half of the nineteenth century and thus fall into a period after the widespread introduction of Yellow (or Muntz) metal. As Staniforth (1985:27) notes, this metal was an alloy formed by combining copper (60 per cent) and zinc (40 per cent), and by the 1850s was used by both colonial and foreign shipping. The use of this metal represents a technological innovation which separates the metallurgical signature of *Bounty* sheathing nails from those of vessels operating in the middle of the nineteenth century. In order to positively identify the source of copper alloy nails found at Adamstown sites, sheathing nails from the *Bounty* site and the wrecks of the *St James*, *Bowden* and *Acadia* were sent to the Advanced Analytical Centre at James Cook University for metallurgical analysis. A primary object of this study was to identify possible evidence of recycling of *Bounty* artefacts from the wreck to the mutineer settlement. The results of this analysis are shown in Table 5.7 on the following page.

Object	Location	Cu	Sn	Pb	Zn	Ag	Bi	Ni	Sb	Fe
ZA20.1	*Bounty*	889	82.1	4.75	4.56	0.70	0.93	0.30	0.33	3.49
ZA20.2	***Bounty***	918	1.02	4.4	4.50	<0.005	0.07	0.06	<0.005	6.9
ZA20.3	***Bounty***	919	1.23	3.38	1.40	0.13	0.05	0.28	0.01	4.63
ZA20.4	***Bounty***	906	51.3	3.66	1.70	0.25	0.85	0.27	0.39	12
ZA20.5	***Bounty***	906	33.36	3.21	0.77	0.27	0.86	0.29	0.28	<1
ZA20.6	***Bounty***	929	26.8	3.80	1.87	0.21	0.42	0.26	0.25	<1
ZA20.7	***Bounty***	907	49.56	4.19	8.13	0.17	0.61	0.31	0.39	1.11
33.1	*Bowden*	800	5.73	4.73	170	0.19	0.14	2.21	0.20	3.27
33.2	*Bowden*	817	25.30	5.00	171.3	0.17	0.36	1.28	0.44	1.29
34.1	*St James*	569	3.85	4.64	328	0.19	0.04	0.22	0.32	<1
37.3	LF0037	881	0.15	2.47	0.05	0.33	0.15	0.08	0.03	<1
37.8	LF0037	830	5.74	5.12	104	0.12	0.17	0.37	0.44	0.43
37.73	LF0037	887	54.8	4.21	8.37	0.16	0.79	0.25	0.41	1.60
40.188	LF0040	931	72.4	5.33	2.15	0.14	0.93	0.31	0.52	<1
42.23.1	LF0042	920	44.0	3.18	1.34	0.17	1.57	0.27	0.35	<1
42.23.2	LF0042	897	52.5	3.81	2.68	0.35	0.82	0.22	0.50	0.48
42.24	LF0042	997	0.47	0.53	0.26	0.17	1.21	0.22	0.21	<1
48.1	*Acadia*	793	15.56	3.72	112	0.15	0.26	0.63	0.14	0.81
48.2	*Acadia*	743	12.98	4.21	100	0.18	0.12	0.57	0.18	0.64

Table 5.7 Chemical analysis of copper alloy nails from Pitcairn sites (units mg/g)

Each nail listed in Table 5.7 is identified by collection type or area. Thus the first seven objects identified by the prefix ZA are from the underwater *Bounty* site. Nails 33.1 and 33.2 are from the *Bowden* site at Oeno Island. Nail 34.1 is from the *St James* site, also at Oeno island. Nails 37.3, 37.8 and 37.73 are from LF0037 (field south of Thursday October's house) at Adamstown. Nail 40.188 is from LF0040 (area north of the Health Centre). Nails 42.23.1, 42.23.2 and 42.24 are from LF0042 (the cemetery at Adamstown). Nails 48.1 and 48.2 are from the *Acadia* wreck at Ducie Island. The weight percentage of copper and zinc for each nail is shown in Figure 5.6.

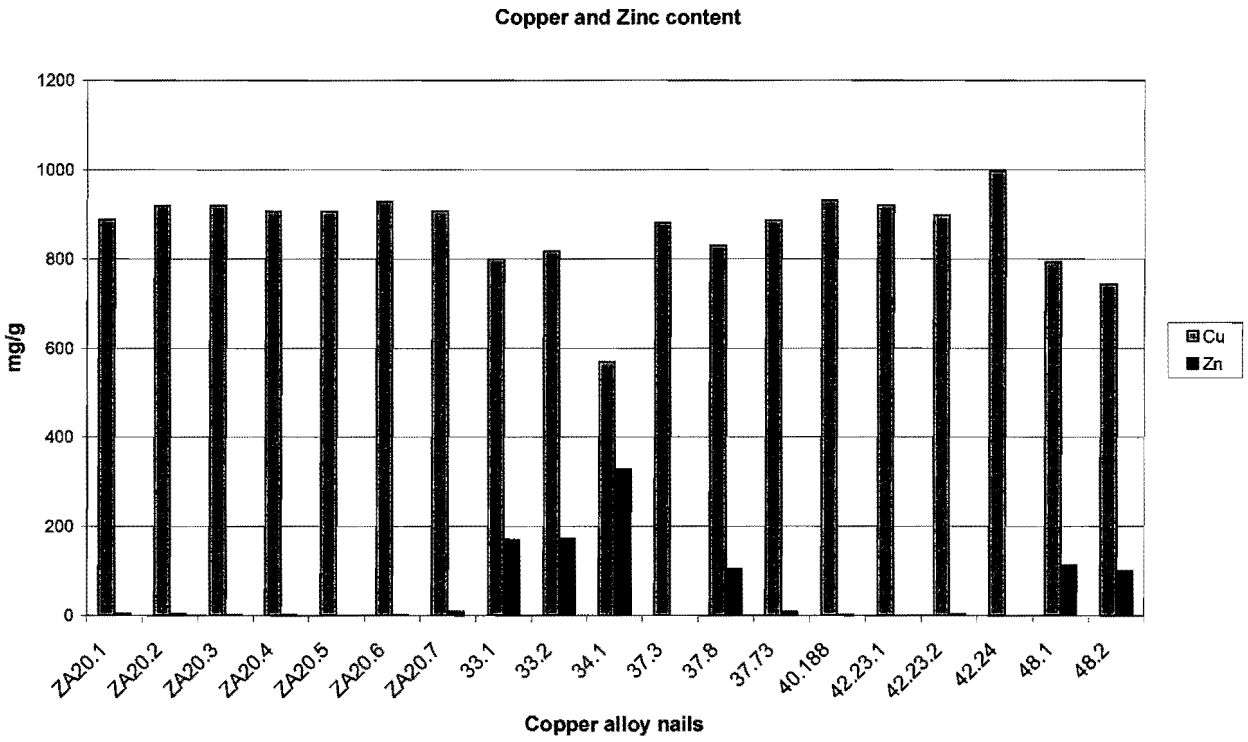

Figure 5.6 Copper alloy nails by copper and zinc content (ZA = *Bounty*; 33 = *Bowden*; 34 = *St James*; 48 = *Acadia*; all others from Adamstown sites)

Figure 5.6 clearly indicates that nails from the *Bowden*, *St James* and *Acadia* have both a lower copper content and a significant zinc content. Nail 37.8 collected at Adamstown site LF0037 is also likely to be from one of these later wrecks. It is also clear that nails 37.3, 37.73, 40.188, 42.23.1, 42.23.2 and 42.24 display copper and zinc contents identical to nails recovered from the *Bounty* site and confirm that these nails, which have

the physical characteristics of *Bounty* nails, are indeed from the *Bounty.* The metallurgical analysis thus confirms that copper alloy nails recovered from the Adamstown sites are examples of the recycling of material from the wreck to the land. Other aspects of the use of *Bounty* material during the study period are discussed in the following chapter.

b. Window glass

Brodie's (1851:98) reference that the only window on the island was in Mr Nobbs' house and that it came from the *Bounty,* is perhaps indicative of the distinction or privilege assumed by Nobbs. Nobbs later gave the window to his biographer, the Reverend Thomas Murray, informing him that this had been the window in Bligh's cabin (Murray 1853:259). As already indicated in discussing glassware, Nobbs regarded himself as a gentleman and appears to have attempted to maintain some semblance of status at Pitcairn, forbidding his family to speak the creole Pitcairn dialect at home (Muhlhausler, P. 2003, pers.comm.). In this context, Nobbs' glass window may have been used as a symbol effectively distinguishing him and his family from the rest of the Pitcairn community.

c. Sea chests

As indicated in Chapter Four, an iron handle from a chest was recovered at LF0030. Captain Waldegrave (1833:157) who visited Pitcairn aboard HMS *Seringapatam* in 1830, noted that large chests along with four-post beds, benches and tables were the only furnishings used in the houses. A sketch of the interior of a Pitcairn house drawn by William Ebrington in 1853 (ML MSS 3091) shows a spartan interior, frugally furnished with a sea chest and a small chest of drawers. It is possible that the use of sea chests in Pitcairn houses derives from mutineer custom of using sea chests. Lavery (1989:91) uses two contemporary drawings of midshipmen's berths to illustrate living conditions aboard Royal Navy vessels at the end of the eighteenth century. In both drawings sea chests feature prominently and are used as seats around the mess. Considering that the mutineers who left the *Bounty* in Tahiti took their sea chests with them (Morrison 1935:75), it is highly probable that the mutineers arriving at Pitcairn did the same and that the use of chests in Pitcairn houses represents a cultural transferral derived from the *Bounty* seamen.

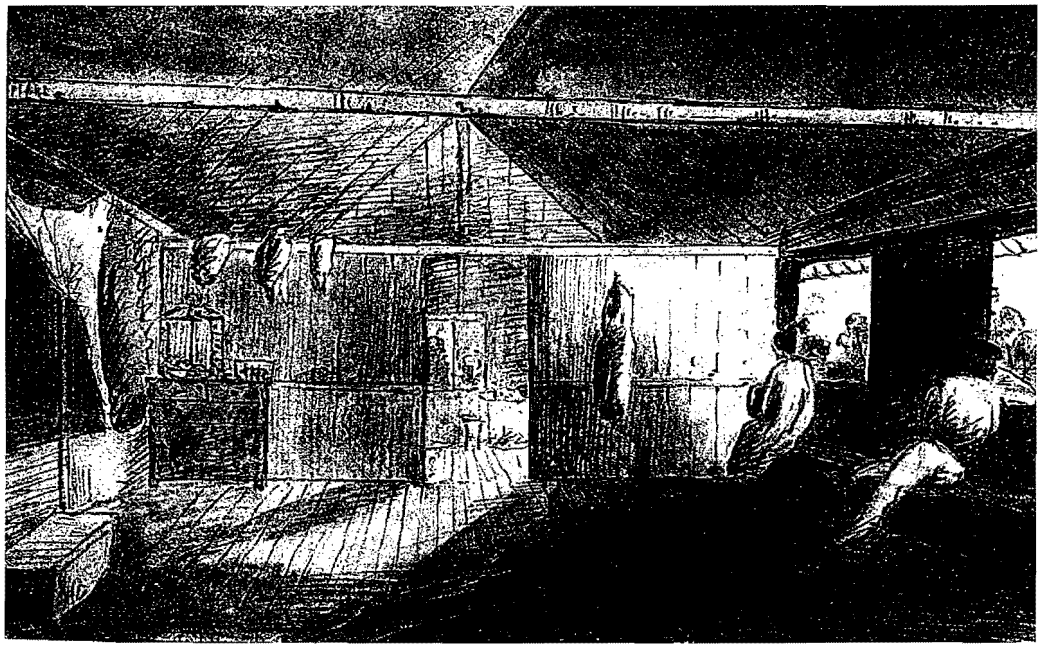

Figure 5.7 Interior of a Pitcairn house, W. Ebrington 1853
(Reproduced by permission of the Mitchell Library)

BUILDING TECHNOLOGY

Standing structures

Rather than attempt to separate the complex description of architectural features from their interpretation, it has been found more convenient to combine analysis and interpretation in a single section. While this breaks from the analytical framework used in Chapter Four, it provides a more focused connection between the historical and material evidence in keeping with the research aims of the thesis.

Thursday October Christian II's house, built in 1839 (Nicolson 1997:159), is the oldest surviving building at Adamstown and provides significant evidence of building technology and spatial organisation during the study period. Although the historic significance of the structure is generally recognised, the current study is the first attempt to interpret the building. The aims in doing this were to:

- Identify and interpret the significant surviving features of the structure as evidence of building technologies used during the study period.

- To assess the material evidence of the structure against the documentary record of earlier Pitcairn houses in order to identify possible evolutionary features of the house.

- To identify evidence of Polynesian and European technologies exhibited in the structure.

Figure 5.8 Thursday October Christian's house (front)

General description of Thursday October Christian II's house

The house is a single storey, timber structure, rectangular in plan and with the longitudinal axis oriented east–west. The front of the house faces north and the building is set above the ground on stones. A floor plan is illustrated in Figure 5.9. The building measures 10.75 m [35 ft 3 in] by 5 m [16 ft 5 in].

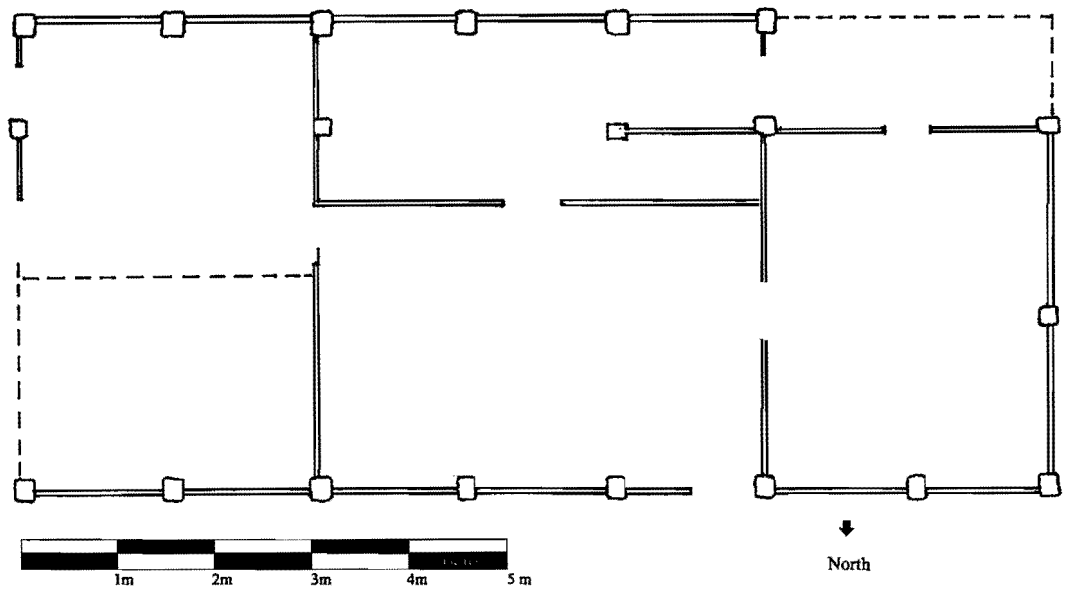

Figure 5.9 Plan of Thursday October Christian's house

Construction

Bearers:

Four rows of bearers running longitudinally, form the initial timber structure of the house. Each row is formed from short logs scarfed together to make a continuous bearer approximately 11 m [36 ft] in length. The average diameter of these logs is 350 mm [1 ft 2 in] and the length varies considerably from about 1.5 m [4 ft 11 in] to just under 3 m [9 ft 9 in]. The logs are generally knotty and remain in the round. The scarf joints are supported by stones of varying sizes, with the larger stones being used towards the north-west corner of the building where the ground slopes noticeably. No attempt appears to

have been made to level the ground surface prior to construction and the bearers rely completely on the supporting stones to achieve a level.

Wall posts:

The frame of the house is formed by squared posts which support a top plate. The posts are tenoned at both top and bottom and let into mortises cut into the bearers and the top plate. There are eight wall posts spaced at 1.55 m [5 ft] centres (average) across the front and back of the building. The western end of the building is framed with four wall posts, two of which are corner posts common to both the front and back walls. As shown in Figure 4.12, the spacing of the wall posts at the western end of the building is irregular; the intervals from the north-western corner post being 1.8 m [5 ft 11 in], 2 m [6 ft 6 in] and 1.2 m [3 ft 11 in] respectively. A log supporting the wall posts at this end of the building is half-lapped into the ends of the main longitudinal bearers.

Walls:

The spaces between wall posts are partially filled by horizontal boards. These are approximately 200 mm [8 in] wide by 30 mm [1.25 in] thick and chamfered at the ends where they slot into a groove chiselled into the side of the wall post. Architecturally, this method of construction can be identified as a form of drop-plank construction described below :

> Drop-log describes the manner in which horizontal infill logs were used. First the spaced vertical members of the wall framework were either grooved vertically down their faces, or the grooves were formed by fixing cleats to the posts. Then the logs were shaped at each end, and dropped down between the posts to fit into the grooves. Various names, including drop-log, drop-slab, drop-flitch and drop-plank, have been given to this technique, depending on how the wood was converted.
>
> (Bush *et al.*1983:4)

An advantage of this construction method is that it does not require nails or long planks and offers multiple options for wall openings. Each plank is held in place by its own weight and confined within the grooves of the vertical members. In Thursday October's house this method is used for the lower walls on the northern, southern and western walls

of the building. The eastern wall is incomplete and the surviving section is of later design and is of stud frame and weatherboard construction.

Sliding shutters form the central section of the walls at the front and back of the house. These take the form of a rectangular frame approximately 3 m [9 ft 9 in] wide and 0.9 m [3 ft] high, secured at each end to the outer faces of the wall posts. The horizontal (long) sides of the frame are grooved and form tracks for shutters. One shutter survives in the southern wall and consists of three vertical boards nailed to two horizontal cleats and a horizontal handle. The surviving tracks in the northern wall of the house indicate each frame housed four shutters and that only two of these were moveable. The tracks show that the moveable shutter slid behind the fixed shutter when it was open.

The walls above the shutters exhibit both weatherboards nailed to the wall posts in short lengths and drop-plank construction. A variation from the drop-plank construction in the lower wall is that no groove is chiselled into the wall post; the plank ends being secured between vertical cleats nailed to the wall post. This variation is possibly indicative of a later repair as the horizontal planks above the shutters are thinner and the ends are not chamfered as they are in the lower wall planks.

Top plate:
The top plates on the northern and southern walls are roughly squared timbers joined by scarf joints. At the western end of the building the structure is hidden behind galvanized iron on the exterior of the wall, and a timber ceiling in the western room and the construction details are obscured.

Roof structure:
Above the wall top plates the roof structure is modern and the ridge beam and rafters are imported timbers.

Internal posts:
Figure 5.9 shows a line of five posts inside the structure, spaced 1.2 m [3 ft 11 in] from the line of the back wall of the building. These are grooved to a height of 0.9 m [3 ft] indicating a low drop-plank wall or division in the back of the house. Describing the internal arrangements of a Pitcairn house in 1850, Brodie (1851:99) noted that "...the

whole side of the house, opposite the doorway, is fitted up with sleeping berths, raised about three feet from the ground ...each bed-place having its own window fitted like those in front". Buffett (1846:67) described the houses "...having on the back side, bed places similar to the births (*sic*) on ship board". It is therefore very likely that the internal posts in the house formed part of the beds and that these were 1.2 m [3 ft 11 in] wide and a permanent fixture. Based on the spacing of the wall posts in the back wall of the house, these beds were approximately 1.55 m [5 ft] long. Ebrington's 1853 sketch (Figure 5.7) shows beds constructed in this way, each with a cloth curtain hanging down from above and this may explain Waldegrave's (1833:157) reference to 'four-post beds'. Ebrington's sketch also shows interior beams running horizontally between the front and back walls of the building, above the living space. These beams also occur in Thursday October's house and coincide with the spacing of the wall posts in the northern and southern walls (1.55 m [5 ft]). Each beam is located in a mortise cut through the wall post and secured with a wooden dowel passing laterally through the joint. In Thursday October's house, these beams have been used to support a timber board ceiling and also form the upper support for two internal walls. Some of these beams exhibit moulded edges and mortice trenchs and are examples of recycled timbers. It is not clear whether these replace earlier beams or are entirely new additions to the structure.

Floor joists and floor:

The floor joists consist of short timbers cut into the main bearers at such heights as to form a level base for the floor. Most of the joists bridge two bearers only and indicate a shortage of longer lengths of timber. The floorboards run parallel to the bearers and are made up from a variety of widths and lengths. The floor is secured with a great economy of nails, and the ends of boards are often held by a single nail. There is some use made of square copper alloy nails in the floor but this is far from uniform. The copper alloy nails that were examined were 75 mm cast nails of a type described by Varman (1993:186) as brads.

Internal walls and door openings:

Figure 5.9 shows that the interior is divided into several rooms by internal walls. These are made of vertical boards nailed to the ceiling beam above and a batten at floor level. A further horizontal beam supports the centre of the wall. Like the floor boards, the

internal wall boards exhibit a variety of widths but are generally one length from floor to ceiling. Figure 5.9 shows that the larger central room at the front of the house has three doorways opening into the other areas of the house. Each of these internal openings is 635 mm [2 ft 1 in] wide. The external doorway from this central room is the main entrance to the house. This has an opening width of 660 mm [2 ft 2 in] and a height of 1.86 m [6 ft 1.25 in]. A bronze hinge bearing a broad arrow mark remains in the door frame.

A door matching the size of the front door opening was found at the back of the house during a reconnaissance to Pitcairn Island in 1997. A sample of timber from this door was sent to the Western Australian Museum, Department of Materials Conservation for identification and found to be a species of spruce (Godfrey, I. 1998, pers.comm.). The remains of the door indicate it was particularly well crafted, with dowelled mortise and tenon joints and mitre-edged panels within the frame. These features, combined with identification of the timber as a species exotic to Pitcairn, indicate that the door was introduced as a complete unit and it seems likely that it is from one of the wrecks in the Pitcairn Islands. This may also be the case for the timber used in the internal walls of the house, which is long grained and has the appearance of pine. The general condition of the door indicates a much later introduction.

The only other, clearly intact, door-opening leads out of the northern room. This is 455 mm [1 ft 6 in] wide by 1.92 m [6 ft 6 in] high.

Summary of structural features relating to the study period

Although the structural remains of Thursday October's house incorporate material from several phases in the life of the building, some of the basic elements of the building are clearly original and provide evidence of building technology during the study period.

A fundamental feature of the structure is that it is elevated on stones and incorporates a timber-planked floor. The structure is rectangular and indeed relatively narrow with a length to width ratio of about 2:1. The bearers are characterised by the use of short lengths of timber which appears to have dictated the design of the walls and the use of drop-plank construction. The building is constructed with a minimum of nails and relies substantially on timber joints for structural integrity. Although the existing configuration

of the internal space is likely to be an adaptation, the pattern of vertical posts suggests a minimum of two internal spaces, the larger area being 3.75 m [12 ft 3 in] wide and extending the full length of the building, and the other being 1.2 m [3 ft 11 in] wide and also running the full length of the building. From an examination of the building it was unable to determine if the system of sliding shutters is an original element of the house. Certainly the groove to house the ends of the horizontal drop-planks does not extend to the full height of the wall post, although it generally extends a short distance above the existing sill of the shutter opening and suggests the lower walls were originally slightly higher. The existing shutter system also relies heavily on nails in the construction of the shutter itself and this appears to contrast sharply with the technology of the lower walls. The upper walls of the building may therefore have been open, or incorporated a simpler system of shutters or vertical boards.

The only surviving evidence of the original roof structure is limited to the position of a wall post in the western wall. The post is spaced 1.8 m [5 ft 11 in] from the north-west corner of the building and is the best placed in the wall to support a ridge beam. Its position may indicate that the roof was asymmetrical and that the roof angle was greater at the front of the house than at the back.

Evidence from other buildings in the Adamstown study area

Two other houses, can be compared to Thursday October's house. Henry's house is believed to have been built by Mayhew McCoy. McCoy was amongst those who returned to Pitcairn from Norfolk Island in 1858 and this house is likely to date from that period. While this date is outside the study period, elements of the house show a clear continuation of earlier building technology. As with Thursday October's house, the plan of the house is rectangular and exhibits the same 2:1 ratio of length to width. The sub-floor structure is built on stones and the oldest section is constructed of Miro using drop-plank construction. Some evidence of the shutter system used in Thursday October's house also survives. However, further evidence was obscured by the extensive modification of the building.

Nola's old house dates to the second half of the nineteenth century. Although exhibiting construction elements seen in Thursday October's house, such as the use of a length to width ratio of 2:1 and the use of stones under the frame of the house, the weatherboard

walls and regularly spaced glass windows are all later developments of the Pitcairn house. However, an interesting feature is the arrangement of cook house and eating house at the rear of the house. These are two separate buildings and mark a clear separation from the main house of cooking and eating activities which may echo earlier traditions.

Documentary evidence of buildings in the study period

Apart from the Polynesian woman Jenny's record that the mutineers initially lived in temporary houses until more permanent structures were completed (1819) and Pipon's (1834:194) general comment that "...it was easily to be perceived that in this establishment the labour and ingenuity of European hands had been exerted ..." , the earliest comprehensive evidence of their homes dates to the arrival of HMS *Blossom* in 1825. This evidence includes written descriptions and sketches of the houses by Frederick Beechey and a sketch by Smyth. Beechey's description is detailed and particularly informative:

> All these cottages are strongly built of wood in an oblong form, and thatched with the leaves of the palm-tree bent round the stem of the same branch, and laced horizontally to rafters, so placed as to give a proper pitch to the roof. The greater part have an upper storey, which is appropriated to sleeping, and contain four beds built in the angles of the room, each sufficiently large for three or four persons to lie on. ...The floor is elevated above a foot from the ground, and, as well as the sides of the house, is made of stout plank ... The floor is a fixture, but the sideboards are let in the supporters, and can be removed at pleasure, according to the state of the weather, and the whole side may, if required, be laid open. The lower room communicates with the upper by a stout ladder in the centre, and leads up through a trap-door into the bedroom.
>
> (1968:107)

Beechey's description identifies some of the design elements found in Thursday October's house, namely that the buildings are rectangular, that they have a raised floor and that the walls are constructed in the manner of drop-plank construction. While Beechey refers to raised floors, there is no mention of stones and these do not appear in the sketches by Beechey and Smyth reproduced in Chapter Three (Figures 3.1 and 3.2). Smyth's sketch illustrates the northern (front) and eastern sides of the house, and

Beechey's, the eastern and southern walls. In Smyth's work the lower wall at the front of the house is constructed with six, irregularly spaced, vertical wall posts and the wall spaces are partly filled using drop-plank construction. There is no particular uniformity of length shown in these planks and the planks finish at varying heights, thereby creating irregular openings. There is a central entrance with no indication of a door. The upper-level of the northern wall exhibits similarly irregular construction with six vertical wall posts supported on, what appear to be, very substantial beams.

Both artists show that the lower southern (end) wall is constructed with vertical planks and the upper level fully enclosed with drop-planks, divided by a central wall post. The apex of this wall is shown to be formed of vertical boards with a large opening. The roof is thatched and extends a short distance out from the end of the building, and has a drooping overhang at the rear of the building. Beechey's picture shows the back wall to have been constructed similar to the front. Both artists show a building behind Adams' house constructed in the same manner.

Some idea of the size of the houses is provided by Raine (1821:109) who visited Pitcairn Island in 1821 and slept upstairs in a room "...about 25 feet long and 15 broad". Midshipman, Richard Beechey's (unpublished journal) statement that the houses "... have no glass and consequently no windows, but the supporters of the house have grooves cut in them for boards to slide, which they can easily take out, leaving nothing but the floor and tops", clearly indicates that sliding shutters were not a part of the buildings in 1825. However, by 1830 Waldegrave (1833:157) noted that the houses had shutters "...all of wood, about a foot wide ..." and in 1834 Bennett (1840:28) found the houses "...provided with windows, to which shutters are affixed".

The only report (1851) found of the use of stones to raise the buildings is in Shipley's visit to Pitcairn Island in 1848 when he noted "...the houses are raised upon stones, to allow the wet to drain off in the rainy season", however a sketch entitled *View in Pitcairn's Island January 1833* by Dashwood (ML Z PXA 1679) appears to show houses built on log bearers, supported on stones. Shipley also observed that the houses were then built single storey, the second being found "inconvenient" (*ibid*). Some of that inconvenience is explained by Buffett:

> The houses were formerly of two stories, having a ladder to ascend from the inside through a trap door, but accidents happening to the children and being more exposed to strong winds they have been taken down and built on a new and better plan.
>
> (1846:67)

Buffett also noted that the buildings were "...an oblong form from 35 to 42 feet in length " (*ibid*), a statement which is partly corroborated by Brodie's (1851:98) description that "...The dwelling-houses are from forty to fifty feet long, about thirteen high, and fifteen feet wide".

The internal arrangement of beds along the back wall of the houses has been noted already in relation to Ebrington's sketch of the interior of a house at Pitcairn in 1853 (ML Mss 3091) however the sketch also shows the main living area is partitioned at one end and Brodie states that:

> One end of the house, about ten feet long is portioned off, as the sleeping apartment for the head of the family and his wife. Sometimes the other end is likewise cut off; when this is the case, it is generally occupied by one of the married children and family, who often still reside with the old people for some time.
>
> (1851:99)

One area of Pitcairn housing which is consistently reported throughout the study period (Beechey 1968; Bechervaise 1839; Bennett 1840; Brodie 1851; Buffett 1846; Moerenhoet 1837; Peard 1973; Shipley 1851; Waldegrave 1833) is the method of thatching. The most comprehensive account is given by Buffett who also had experience of this work:

> They are thatched with the leaf of the Pandanus. The thatching lasts seven or eight years. When a house is to be thatched each family has to pick their proportion, which is not very pleasant business as it is always picked in a rainy time, as it cannot be rubbed when dry. The edges of the leaves are armed with sharp prickers, and sometimes broken limbs are the consequence of falling from the trees when picking, as they are then very slippery, and some of the branches break very easily. The leaf is about five or six feet long, three inches wide, tapering to a point. Both male and female are employed in picking, and after they are picked, they are rubbed and made into rings. The manner of performing this is by driving a stick into the ground, and laying a billet of wood before it, the person sits down and rubs the leaf from heal to point, which smooths or opens the leaf. It is then placed round the stick and over the billet, the smaller one crossing the larger

> one and confined in that position by the foot. Another is now added and continued till it will contain no more. (A ring contains about 80 leaves). It is now tied with a piece of bark and put by for use. The leaves being thick and prickly, the hands are generally sore for some days, being well bored. Sticks are now provided, from 2 to 6 feet long and about 11/2 inches in circumference, and women are employed to fasten the leaves onto the sticks. The leaves just lap over each other widthwise and both are pierced with a pricker made of bone or hardwood, and secured by fern roots about the size of a quill. The men now place them on the rafters and secure them with rope yards; 4 or 5 hundred rings are sufficient for a house.
>
> (1846:67)

Summary of elements of the Pitcairn house in the study period

It will be seen from the preceding documentary evidence that Pitcairn houses were built of timber throughout the study period. Based on the earliest sketches, these houses were constructed using both drop-plank and vertical boards but developed using drop-plank construction only. They were built with raised timber floors, were rectangular in plan and had a width of about 4.6 m [15 ft] throughout the period. In the earlier period the living spaces incorporated an upper apartment resulting in two separate rectangular areas of about 4.6 m [15 ft] by 7.6 m [25 feet] (69.7 m^2) but by 1850 had evolved to a single storied building of about 4.6 m [15 ft] by 13.7 m [45 ft] (62.7 m^2). Whereas in the two storied form the upper storey had been appropriated exclusively for sleeping, in the development of the single storey form, the area along the back wall was used for this purpose. The wall openings also changed from having been simple holes in the wall about 1825, to incorporate more sophisticated forms of shutters, possibly paralleling developments internally (in the division of the living spaces) towards separation and privacy. Throughout the study period and indeed up until the end of the twentieth century, pandanus thatching remained the only roofing material. While a raised floor is an element of the Pitcairn house throughout the study period, it is not clear when it became general practice to use stones for this purpose.

A comparison of the dimensions of Thursday October's house with the documentary record suggests the house was transitional and developed between the two storey form of the early settlement and the longer forms built at the end of the study period. The documentary evidence also indicates that the drop-plank construction found in Thursday October's house is typical of technology used throughout the study period.

Summary

Interpretation of the archaeological evidence has indicated that aspects of maritime culture, particularly in relation to division of resources and defined marks of ownership, were probably transferred from the *Bounty* into the life of the Pitcairn settlement by the European seamen in the settler group. The use of sea chests and the observance of meat-free days in the life of the settlement may be further examples of such transferral. In regard to the skills introduced by the Polynesian settlers these appear to have been particularly focused around food resources, food preparation and cloth manufacture and to have been associated with the Polynesian women. In regard to gun flints, canoes and blacksmithing equipment used in the settlement, the evidence suggests that technology in these areas may have lagged behind and caused a general loss of skills early in the colonisation process. In the following chapter, the historical archaeological evidence from the Pitcairn settlement is focused and directed to addressing the first three research aims of the thesis.

CHAPTER SIX

INTERPRETING THE HISTORICAL ARCHAEOLOGICAL EVIDENCE IN RELATION TO THE RESEARCH AIMS

The research aims of the thesis identified in Chapter One were:

1. To identify European and Polynesian cultural influences within the Pitcairn settler group and assess the contribution of each to the life of the settlement.

2. To examine the mechanisms by which the Pitcairn settlement came into contact with the outside world and the material reflection of this interaction.

3. To explore the nature of isolation at Pitcairn Island from 1790 to 1856 and to attempt to identify the factors which led to the successful establishment of a settlement by a small and culturally divided group in an extremely remote location.

This section synthesises the historical archaeological evidence in order to address the first three research aims. The fourth research aim is addressed in Chapter Seven.

1. IDENTIFICATION OF POLYNESIAN AND EUROPEAN CULTURAL INFLUENCES

Houses

It has been illustrated from the documentary account of early visitors to Pitcairn, that the village was set out in a regular fashion around a central green and that it was essentially styled after a European village. In order to identify possible Polynesian influences in Thursday October's house it is first necessary to characterise the main features of a Polynesian dwelling. Oliver attempts to do this by quoting a description by Ellis of the construction of a house which, although built for a missionary, was built "...with the same kind of materials, and in a similar manner" as the houses of the natives (1974:166):

> The timber being prepared, they planted the square posts which support the ridge-pole about three feet deep. The piece forming the ridge was nearly triangular, flat underneath, but raised along the centre on the upper side, and about nine inches wide; the joints were accurately fitted, and square

> mortises were made to receive the tenons formed on the top of the posts. As soon as these were firmly secured, it was raised by ropes, and fixed in its proper place. The side-posts were next planted, about three or four feet apart; these were square, and nearly nine inches wide. In the top of each post, a groove, about six inches deep and an inch and a half wide, was cut; in this was fixed a strong board, eight or nine inches broad, bevelled on the upper edge, forming a kind of wall plate along the side of the house.
>
> ...The buildings are thatched with *rau fara* (the leaves of the pandanus), which are prepared with great care.
>
> ...The roof being finished, they generally level the ground within, and enclose the sides ...they dug a trench a foot deep round the outside, and then, cutting the poles to a proper length, planted them an inch and a half or two inches apart, until the building was completely enclosed, excepting the space left for a door in the front and opposite sides.

From Ellis' description it is clear that Polynesian houses were built without floors and that the principal supporting posts were buried directly in the ground. Mortise and tenon and other joints were used to connect the main structural timbers, and the walls were made from vertical poles, buried at one end. The walls were without windows, the only openings being a front and back entrance, and the roof was thatched. Given these construction elements of the Polynesian house, it is clear that the use of raised timber floors, double stories, windows and drop-plank construction in Pitcairn houses during the study period are all examples of non-Polynesian practices and can be attributed to European influences in the settler group. The use of timber joints appears to be ambiguous, this being a feature in both Polynesian and European traditions, however the method of thatching is clearly Polynesian.

The use of drop-plank construction in the walls is interesting. Some of the advantages of this form have been described already and it is possible that this construction method was particularly suited to the timber resources available, however as Bush *et al.* (1983:14) point out, the technique has no immediate ancestry in England but spread to North America with French settlers:

> The *bois en coulisse* method was brought to Quebec by the French settlers of the seventeenth century. Its European antecedent was the old Danish *bul-hus* construction, in extensive use in Denmark by the Middle Ages, and probably first used during the Viking

> age. The name comes from *bul* , boards split from the stem or bole of an oak tree. The method spread from Denmark to France and other places. In Canada, framed *bois en coulisse* construction became common in the eighteenth century, spreading through the Great Lakes area, and north-west with the fur trade.

Kniffen and Glassie refer to this method of construction as *piece sur piece* and note that while European in origin, it was the prevailing method of timber construction in early French Canada and "...generously invaded the areas of the United States peripheral to Canada – New England, New York, the Upper Lakes region, and the northern Great Plains States. It occurs also in areas as remote from Canada as Pennsylvania, Virginia and Tennessee ..." (1986:167).

Food

One area where there is strong material evidence of Polynesian influence is in food preparation. The presence of significant numbers of *Turbo* shells and operculums across a majority of the Adamstown sites, including those associated with George Hunn Nobbs, is evidence of utilisation of a traditional Polynesian food source after the arrival of the *Bounty.* The documentary evidence of Polynesian customs in regard to food preparation and the use of the earth oven is also attested to by the recovery of *yollos* at LF0035 and oven stones at LF0037.

Production

The production of Tapa cloth is a further obvious example of Polynesian influence throughout the study period. The consistency with which tapa production is reported during the study period suggests it was a major occupation of the women which supplied a reliable source of clothing, bedding and cloth generally. Again, the whalebone tapa beaters owned by Mavis Warren and the remains of a beater found at LF0036 are the only surviving evidence of this Polynesian production. In the case of traditional Pitcairn canoes, Jacob Warren's canoe and the remains of two canoes at Oeno Island may reflect modified elements of Polynesian canoe construction and design.

The material evidence relating to European industry and productions is also small. Despite documentary evidence which shows that the *Bounty's* forge was brought ashore, the only material evidence of this is confined to a crudely made hoe and an axe head.

This simple dichotomy underlines the fact that the artefact assemblages from the Adamstown sites reveal very little information about working activities during the study period and prompts an examination of why this might be the case.

The nature of production at Pitcairn Island during the study period

It is clear from many documentary accounts that the community primarily concentrated on the production of food and that this was divided between cultivation of the land, animal husbandry and fishing. Beechey (1968:119) noted that the cultivation of the land to produce yams, taro, bananas and coconuts was the major industry and required a great deal of labour:

> After their noontime meal, if their grounds do not require their attention, and the weather is fine, they go a little way out to sea in their canoes, and catch fish, of which they have several kinds, large and sometimes in abundance; but it seldom happens that they have this time to spare; for the cultivation of the ground, repairing their boats, houses, and making fishing-lines, with other employments, generally occupy the whole of each day.
>
> (1968:119)

An obvious problem in identifying these activities, is that, apart from the larger manufactures of houses and canoes, the products are generally organic and subject to rapid decay. In this context, the large fluctuations in relative humidity experienced at Pitcairn are likely to have promoted rapid deterioration of organic artefacts. It has been shown that evidence of building technology survives in the remains of Thursday October's house, however in most cases these activities are indistinguishable from continuing traditional practices of land cultivation. The same crops are grown in the same places and manner today as they were in the study period. It will be seen therefore, that one reason for the relatively small amount of material evidence of production can be attributed to the ephemeral nature of some of the materials used in those activities.

Evidence of recycling in the archaeological record

A second reason for the small amount of material evidence is that it is simply absent and this identifies a significant phenomena affecting the archaeological record at Pitcairn Island, which involves the trade and removal of archaeological artefacts. Several investigations of shipwreck survivor camps (McCarthy 1998, Nash 2002) have

underlined the importance of wrecks as sources of supply in situations of isolation where alternate sources do not exist. As has been shown earlier in this chapter, the resources aboard the *Bounty* when it anchored at Pitcairn are likely to have been extensive and it was anticipated that evidence of the use of these resources would be found present in the archaeological evidence. The analysis of archaeological material in Chapter Four has shown that this proved not to be the case, and that archaeological evidence of recycling of *Bounty* material is restricted to a few copper-alloy nails. Examination of the documentary evidence suggests an explanation for this anomaly.

In the study period, the first instance of the removal of *Bounty* material is in 1808 when Mayhew Folger was given the Kendall II chronometer and a compass formerly used aboard the *Bounty*. In 1814, Shillibeer (1817:97) noted that an account of Captain Cook's first voyage bearing Captain Bligh's name, then in the possession of John Adams, was brought on board HMS *Briton*. In 1817 Captain Reynolds of the *Sultan* procured 250 pounds of old copper sheathing from the *Bounty* and later sold this at Hawaii for $70 (Mills, P. 2003, pers. comm.). In 1825 Bechervaise (1839:175) obtained timber from the *Bounty* from which he made "many snuff boxes", and the diary of Edward Young, quoted by Beechey, appears to have vanished from the record with the departure of HMS *Blossom*. In 1834 Bennett (1840:57) was given two stone adzes. In 1838, a medical book originally owned by the *Bounty's* surgeon Thomas Huggan and inscribed "His Britannic Majesty's Ship *Bounty*, Spithead 23rd December 1787" was bought by midshipman Charles Blackett of HMS *Actaeon* (Murray 1992:152) and in the 1850s the lead-covered grave marker of John Adams was removed to England and a glass window from the *Bounty* was given to the Reverend Thomas Murray (Murray 1853:259). In 1856, a cannon and copper cauldron from the *Bounty* were taken to Norfolk Island. As these are only the documented removals, it is very likely that a large number of undocumented removals also took place. In the context of evidence of European production during the study period, the last remnant of the blacksmith's tools brought ashore from the *Bounty* left Pitcairn Island with Captain Irving Johnson in 1937. This movement of artefacts can be attributed, in part, to an increasing public fascination with the *Bounty* saga which started with Bligh's publication of *A Narrative of the Mutiny on Board HMS Bounty* in 1790 and has continued unabated ever since. The origins of this interest are inherent in the flurry of publications, (or in the case of James Morrison's *Memorandum* (1792) and *Journal* (1792), unpublished but circulated accounts), produced

during the 1790s (Bligh 1790, 1792; Christian 1794, 1795; Fryer 1790) which attempted to support either the Bligh or Christian family's explanation of the causes of the mutiny aboard the *Bounty*. Interest in the subject was again aroused by the discovery of John Adams and the descendants of the mutineers at Pitcairn Island. Although Folger rediscovered the island in 1808, the full impact of this was not realised until the widespread publication of Folger's account in Amaso Delano's 1817 *Voyages*. 1817 also marks the death of William Bligh and this may have contributed to a retrospective review of the circumstances surrounding the mutiny aboard the *Bounty*. The most prominent example of this is Barrow's 1831 publication, following on from the publication (Marshall 1825) of a biography of Peter Heywood in 1825.

The visit of HMS *Blossom* to Pitcairn Island in 1825 and the subsequent publication of Captain Beechey's account of the settlement did much to focus interest on the community of mutineer descendants. Pitcairn was also widely reported in the press on both sides of the Pacific and the names of all the inhabitants of the island were known as far away as Baltimore (Ward 1967:43). Indeed interest in the islanders was such that the British Government made HMS *Comet* and the colonial transport *Lucy Anne* available to carry the Pitcairn Islanders to Tahiti in 1831, and again in 1856 chartered the *Morayshire* to carry them to Norfolk Island. In 1851 Walter Brodie published a comprehensive account of the settlement. In 1852 George Hunn Nobbs travelled to England at the expense of Rear-Admiral Sir Fairfax Moresby, where he was ordained by the Bishop of London and later presented to Queen Victoria. Finally, some measure of the public interest in Pitcairn Island at the end of the study period is indicated by the printing of thirty thousand copies of the Reverend Thomas Murray's account *Pitcairn: The Island, The People, and the Pastor* between 1853 and 1860. Few, if any, other small communities can have felt the focus of public attention with such intensity!

This intense focus continues to generate numerous books (Allward 2000; Carlsson 2000; Christian 1999; Clark 1986; Dening 1992; Lummis 1997; Nicolson 1997) and films (1983, 1999) with the result that the mutiny aboard the *Bounty* has assumed a status far larger than the events of April 28 1789 could reasonably justify. One effect of this has been to place a premium on objects associated with the *Bounty* and to create a currency in *Bounty* artefacts. It is possible that the original objects given to Folger were given as gifts, however it is likely that this situation changed with the arrival of later vessels and

increasing exposure to the possibilities of trade. By 1839 Lieutenant Lowry (in Brodie 1851:168) of HMS *Sparrowhawk* found that "...Little is now left of the *Bounty,* as everyone that touches there tries to get a part of her". Apart from *Bounty* mementos, Pitcairn offered little which could not be obtained at other islands, while the isolation of the community ensured a total dependence on passing shipping for all but the basic necessities of life. Buffett (1846:67) referred to this dependence when he noted, "...By so much intercourse with ships, we have many wants to be supplied which were before unknown, and are now considered necessary, and which we shall feel the want of as the whaling business decreases".

In the twentieth century there is clear evidence of the trade in *Bounty* artefacts. Ford (1996:231) notes an offer for the *Bounty* rudder was received by the Pitcairn Island Council in 1934 and it was determined to ask for "...200 francs and upward for the first trial". In the 1950s souvenir tokens made of copper from the *Bounty* were manufactured bearing the stamped words "BOUNTY COPPER – 1790" and small pieces of timber from the rudder were attached to envelopes with the Pitcairn Island post mark. Examples of these are held in the Norfolk Island Museum. The Museum also holds two examples of carved models of the *Bounty* which incorporate sheathing nails from the original vessel, attached to the fore-deck. An interesting example of the trade and movement of *Bounty* material is shown in the case of a ballast block. This was traded in 1983 by the captain of a vessel which regularly voyaged between North America and Bunbury in Western Australia, for a case of whisky and some frozen beef. In 1996 the ballast block was found supporting scaffolding during renovations to a hotel in Bunbury (Warnock, J. 1998, pers. comm.). Other examples of trade in artefacts are the purchase of stone tools and tapa beaters by Heyerdahl in 1956 (Heyerdahl 1965:156). The trade in *Bounty* artefacts can be analysed in basic economic terms and suggests a model for describing the cycling of objects at Pitcairn Island.

Macro-economic theory illustrates that Price is a function of Supply and Demand, and indicates that when Demand exceeds Supply, the Price will increase. In relation to Demand, it has been shown that the level of public interest in the *Bounty* saga has increased significantly since the mutiny, however the Supply of *Bounty* objects at Pitcairn Island is likely to have passed through a number of phases. These are interpreted in the following stages.

Stage 1: Wrecking

Objects from the vessel are selected for their utility and transferred to the land. At this stage the community remains isolated and the value of an object is a factor of function.

Stage 2: Discovery

The community is exposed to the possibilities of trade and becomes aware of a demand for *Bounty* mementos. Strong Demand for *Bounty* objects is matched by relative abundance. The value of objects moves from the functional to the symbolic. Trade occurs in redundant but substantially complete objects (eg: Chronometer, compass, Cook's First Voyage).

Stage 3: Regulation

Regular trade between the community and ships is facilitated by the establishment of a system of Laws which includes standardised prices for produce. Limitless Demand for *Bounty* objects surpasses depleted Supply, resulting in increasing trade in incomplete or poorly preserved *Bounty* objects.

Stage 4: Exhaustion

Regular trade continues, with an increasing dependence on imports. A limitless Demand for *Bounty* artefacts is unmet as traditional Supply is exhausted, and results in attempts to access new sources of Supply, including the underwater remains of the vessel. An inflated symbolic value on all *Bounty* objects hastens depletion of material remains and extends trade to include even poorly preserved material.

Stage 5: Substitution

Demand is limitless and exceeds all possibility of Supply. 'Icon status' is accorded to *Bounty* material, resulting in substitutions.

By substitution, I refer to the use of an object to fill a place or discharge a function. The most obvious examples in this context are the full-scale replication of the *Bounty* in 1962 and 1979, and the films of 1930, 1936, 1962 and 1983. However there is also an effect, whereby objects assume *Bounty* status. An example of this is an ironstone plate on display at the Norfolk Island Assembly building which is claimed to have come from the *Bounty*. As noted previously, Mason's Ironstone patent dates from 1813 (Godden 1971:1). Other examples which have come to light in this study include a '*Bounty* cup' at Lord Howe Island Museum which was found to bear a Minton mark dated to 1851, a

'*Bounty* tureen' submitted for metallurgical analysis and found to be an alloy typical of the nineteenth century (MacLeod, I. 2000, pers. comm.), a 'Bounty sewing box' inlaid with pearl and dated to about 1825, and a large bronze bell at Pitcairn Island which was almost certainly that bought by the Pitcairn Island Fund Committee in 1852 (Nobbs 1984:41).

These examples indicate that a strong desire to link with the history of the mutiny often serves to overcome any real attempt to verify the provenance of objects. In effect, these objects function as symbols. Beaudry et al. (1996:275) note that the function of a symbol "...is one of linkage in the process of communicating about the unknown by means of the known" and that objects can be used as symbols of belonging to a group (*ibid*:277). In this context it is evident that at least some of the trade in *Bounty* material reflects a bond which connected sailors visiting Pitcairn Island in the nineteenth and twentieth centuries with the aspirations of the mutineers in seeking a new life in 1790.

Thomas (1991:30) has also recognized this ability of an object to prompt emotion or recall narrative and noted that '...artifacts can have peculiarly personal value arising from some association with an individual's biography'. Referring to the collection of indigenous artifacts (*curios*) by Sir Joseph Banks and Johann and George Forster during Cook's Pacific voyages, he notes that, despite claims that such collection was for the purpose of advancing scientific knowledge, in the majority of cases it was only catalogues of botanical and faunal material that were published. Thomas suggests a quite different value attached to such indigenous material (*ibid*:141):

> ...what was important about collecting, was not so much what could be said about or done with the specimens collected but the way that collected material attested to the fact of having visited remote places and observed novel phenomena.
>
> ...Just as the knowledge of Europe and of the sites of classical literature obtained through a grand tour was sometimes expressed in the acquisition and display of classical relics, indigenous artifacts virtually became trophies which reflected the broader experience and mastery of a passage around the world on the part of a traveler.

It is likely that at least some of the trade in *Bounty* artefacts in the nineteenth and twentieth centuries resulted from a similar wish by travelers to commemorate a visit to Pitcairn Island.

The removal and trade in artefacts is not unique to Pitcairn Island and classical sites have long suffered similar exploitation. However at Pitcairn Island we see an extreme example of the popularisation of an historic event and the effect this has on the material record. The particular preservation of shipwreck sites is often attributed to the physical barriers to disturbance created by aspects of the underwater environment (Muckelroy 1978; Gould 1983), and this has also been the case with some isolated land sites (Allen 1969). The documentary record indicates that the isolation of Pitcairn Island preserved the material evidence from the *Bounty* for about 20 years, but that after this period, that same isolation led to a rapid removal of material as the Pitcairn Islanders came into sustained contact with the world and discovered their past in it. It is, perhaps, ironic that the *Bounty* sent from the world of eighteenth century Europe carrying toeys, nails, beads and other trinkets "...wanted to satisfy the natives of the South Sea Islands" (Lord Sydney to Admiralty in Knight 1936:193) should, itself, become a part of that trade in curios and return long after the voyage was thought to have ended.

A further reason for the relatively small amount of material evidence of production is that, in general, the Adamstown sites reveal a community impoverished in material possessions. Analysed through the framework of functional typologies, very few nails appear in the archaeological record and the architectural features of Thursday October's house exhibit a deliberate reliance on construction techniques employing simple joints. This pattern continues in laying the floor-boards and these are secured with a minimum of nails. Nor is there any glass for windows.

The evidence from the Foodways category indicates that cooking remained an activity influenced by Polynesian technologies and was not reliant on introduced equipment for preparation and cooking. The archaeological record of ceramics in use during the study period illustrates a distinctly utilitarian presence with few cups and no other wares associated with displays of social etiquette or refinement. Amongst the large group of plates associated with the study period, almost half are cheap shell edge wares and several of the bowls and mugs are equally utilitarian yellow wares. The evidence of scratched personal marks on flatware, tablewares and glass bottles suggests these objects were relatively scarce and were consequently curated with some care. In the case of black bottles this point is illustrated by the presence of significant numbers of older forms found deposited with much later bottle types. An almost total absence of glassware

parallels the small number of cups in use during the study period and suggests that social drinking did not occur.

Some measure of the relatively restricted technologies in use during the study period is shown by the pattern of ware on a musket flint. This indicates extreme use and infers a lack of replacement flints or an inability to reknap them. At the same time, the total absence of percussion caps suggests that muskets were used long after they had become outdated elsewhere.

The small number of buttons found and the limited decoration are testimony to a world dominated by the practical rather than the fashionable. Possible decorative accessories from the study period are limited to a few glass beads. It is possible that smoking may have formed a minor recreational activity for a few members of the community but there is no particular evidence of other recreation.

The combination of this evidence suggests that despite the reliance on introductions described by Buffett (1846:67), the community remained poorly equipped in all but the most basic necessities of life. In order to expand this further, the following section examines the documentary evidence of trade and supply at Pitcairn during the study period. This addresses the second research aim.

2. MECHANISMS OF CONTACT AND EXCHANGE

The first opportunity for trade occurred in 1808 with the arrival of the *Topaz*. Although Folger refers to objects from the *Bounty* given to him by the Pitcairn Islanders, his account makes no reference to reciprocation. Reference to this first contact however, is made in Bechervaise (1839:176) who was informed by John Adams that, "...They got from this ship a great number of articles they stood in need of, after which no vessel came near the island without being visited". In 1814 the islanders received French muskets and gun powder from the British warships *Briton* and *Tagus* (Pipon 1834:197) and Captain Raine (ML CY901) gave the islanders "... spelling books, Prayer books, Bibles and tracts...", as well as canvas, knives, clothing, muskets and more gun powder in 1821 (Raine 1821:112). By 1825 the community had obtained two whaleboats and the crew of HMS *Blossom* gave books, paper, pens, needles, thread, lines, clothing and seeds (Bechervaise 1839:175) – Captain Beechey noting at this time that the islanders "...had

no wants excepting such as had been created by an intercourse with vessels, which have from time to time supplied them with European articles" (1968:115).

In 1830, Captain Waldegrave of HMS *Seringapatam* presented three sheep and a duck, a drake, a goose and a gander (1833:158) and by 1833 a donkey, dog and several cats had been added to the island's animal life (Bennett 1840:40). In 1841, Captain Jones (HMS *Curacoa*) presented a gift of 25 muskets from the British Government, and the crew gave gifts of fish hooks, fishing lines, iron pots, spoons, axes, adzes, hammers, knives, gimlets, pickaxes, scissors and a medical chest (Lucas 1929). During this visit, Surgeon Gunn of the *Curacoa* noted that boils and 'eruptions' were a further legacy of contact with whaleships and warned against the possible introduction of smallpox to the community through the barter in old clothes (ADM 101/95). Gunn further recommended that the island's medical chest be periodically inspected and replenished during the regular visits of Royal Navy vessels.

The documentary record also records occasional acts of extreme generosity by the Royal Navy, as shown by the preparations made by the crew of HMS *Calypso* in 1848 (Shipley 1851):

> So soon as it became known in Valparaiso that the Calypso was to call at Pitcairn's Island, the Reverend I. Armstrong, Chaplain of Valparaiso, and Lieutenant Woolridge set about raising a subscription from the inhabitants of the town, and the officers of the different vessels of war to purchase presents for the islanders. The consequence was two whaleboats, a small corn mill, a medicine chest, some seeds, a quantity of agricultural implements, books, tracts, clothes, fish hooks, lines etc. were sent on board.

However, such acts were uncommon, and stand out in sharp contrast to the far more numerous trading encounters with whale ships.

Some idea of the pattern of trade between the Pitcairn community and more than 400 whale ships that stopped at the island during the study period is apparent in the logbooks of some of these ships. As some other researchers (Gray 2000; Maude 1966) have found when searching whaling logs, these often reveal much about weather and whales, and little about the islands and people encountered during the voyage. This is also the case with the present study and examination of 77 logs of whaling ships recorded by the Pacific Manuscripts Bureau (PMB) found only 26 useful references to trade at Pitcairn up

to1856. However despite this small number of references, some developments in the pattern of trade are visible.

Development of trade

One of the earliest accounts describing trading activities at Pitcairn is that of the American whaleship *Russell* that visited Pitcairn in February 1822 (PMB 890). Arriving off the island, the ship was met by a boat carrying seven of the islanders who "...brought us some bananas, plantains, coconuts and melons and informed us that there was a quantity more on the island". The ship took on fresh water over a period of three days – allowing part of the crew ashore each day on liberty. Those who went ashore were deeply impressed by the devout nature of the islanders and were given yams, plantains, bananas and coconuts as gifts. This generosity continued and at the time of departure the islanders:

> ...stood around us with tears in their eyes and presented us with some little tokens of friendship and said that we were not to pay for them but send more ships there as they would be very lonesome when we were gone. They supplied us with such vegetables and fruit as the island produced without asking anything for them but seemed pleased to have us in their home. We however, prevailed on them to accept some presents - which they received as tokens of friendship.

It is clear from this account that trade at this time was largely unregulated and limited to the basic resources of water, vegetables and fruit and that the Pitcairn islanders were keen to encourage continuing contact. Indeed a feature of the visit is the relaxed nature of the exchange – the captain remaining ashore overnight and the crew given liberty ashore. Campbell (1998:134) has noted that early exchanges between Pacific islanders and Europeans were often violent and "...that captains regarded the presence of a white man as a sign that it was safe to stop". In this context, Pitcairn offered a safe and accommodating environment which encouraged shipping contact.

By 1825 the impact of shipping appears to have induced experiments with new crops. Beechey (1968:134) lists English potatoes, peas, beans and onions amongst these, noting however, that these had not prospered and did not form part of the Pitcairners' diet. The situation had changed little in 1830 and Waldegrave (1833:161) listed the limited supplies available to ships:

> Ships may obtain fire-wood at Pitcairn's Island in abundance, with a certain quantity of yams. Coconuts and plantains, but not a large supply; poultry and pigs they object to part with: it would

be impossible to water a man-of-war, as the water is carried from Brown's Well on the shoulders of the natives.

A significant change is evident by 1834 when a regular price for articles is listed in the Pitcairn Island Register. This is listed below and shows that 'foreign' produce such as Irish potatoes, beans and onions had been successfully established and that chickens were available in quantity by this date. Campbell refers to the cultivation and supply of such produce to ships as the provisioning trade (1998:13) and notes that this was an important trade affecting many Pacific islands exposed to contact with whaling ships during the 1830s and 1840s. A measure of the scale of this trade at Pitcairn is indicated in the quantities of supplies traded during this period (Table 6.1).

Article	Quantity	Price
Yams	Per barrel	$ 2.00
Sweet Potatoes	Per barrel	$ 2.00
Irish Potatoes	Per barrel	$ 3.00
Beans	Per barrel	$ 7.00
Onions	Per barrel	$ 3.00
Limes	Per barrel	$ 2.00
Pawpaw	Per barrel	$ 1.00
Lime juice	Per gallon	$ 0.50
Coconuts	Per hundred	$ 2.50
Pumpkins	Per hundred	$12.00
Water melons	Per hundred	$12.00
Oranges	Per hundred	$ 1.25
Plantains	Per bunch	$ 0.33
Fowls	Per dozen	$ 3.00
Firewood	Per boatload (with crew)	$ 3.00
Firewood	Per boatload (without the crew)	$4.00
Pilot fees per day		$1.25

Table 6.1 Prices of Articles at Pitcairn 1834 (Lucas 1929:97)

In 1836 the whaleship *Triton* (PMB 671) took two boatloads of wood, 54 chickens and a pig and in the following years there is consistent reference to the supply of potatoes, beans and pumpkins in relatively large quantities. In 1842 the *Christopher Mitchell* took three boatloads of potatoes and a boatload of coconuts (PMB 375) and the *Mariner* took two boatloads of potatoes (PMB 379). In 1843 the *Charles* took six boatloads of potatoes and four boatloads of wood (PMB 318). In 1847 the *Three Brothers* took 130 barrels of water, 34 barrels of yams, 34 barrels of sweet potatoes, five barrels of Irish potatoes, 22

chickens, five pigs, a duck and two boatloads of wood (PMB 386). In 1850 the *Henry* took four boatloads of wood, two boatloads of yams and potatoes, 25 bunches of bananas, two sacks of beans, 40 pumpkins (PMB 783) and the vessels *Constitution* (PMB 375), *Navigator* (PMB 380), *Phoenix* (PMB 847) all took an average of 20 barrels of potatoes and 20 barrels of yams, as well as supplies of water and firewood.

References in the whaling logs to articles exchanged in this trade are rare. In 1846 Captain Holmes of the *Marcus* sent a barrel of 'slush' [grease] ashore after his crew had been on liberty on the island (PMB 847). In 1847 the captain of the *Three Brothers* paid $192.65 in cash and bartered four barrels of fish and 140 gallons of oil in the exchange (PMB 386). In 1853 the *Hector* paid cash and bartered 2 barrels of molasses and 13 gallons of slush for 250 barrels of water (PMB 302). These references generally support Buffett's record listing cloth, molasses, oil, soap and clothing as the main articles of exchange (1846:67). In this context, the use of money may be a development in the later part of the study period.

Mechanisms of Trade

Parallelling the need to regulate prices in the face of growing numbers of ships visiting Pitcairn, was a need to provide new arrangements for governing the settlement and controlling trade. As early as 1814, Captain Pipon (1834:195) commanding HMS *Tagus* observed that John Adams maintained a journal system of "...regular established allowance ...", so that "...when their ship stock is expended, they mutually assisted each other with meat, and repaid punctually the first good opportunity". In 1825, John Bechervaise (1838:171), Quartermaster aboard HMS *Blossom,* described this system in more detail:

> When each of the families have gathered the produce of their ground, it does not belong to them individually, but is put into the general store, from whence it is withdrawn to supply the wants of all, without regard to the quantity each has put in. Thus it is as to trade with shipping, who sometimes call for refreshments, no purchase is private, and all tend to the general comfort, and to the general stock

1838 marks the beginning of a formal relationship between the Pitcairn community and the British Government which effectively accorded the island the status of a British protectorate. While the new laws drawn up by Captain Elliot at this time clearly

preserved the rights of the community over the individual, some private trade was allowed. To ensure all members of the community had an equal opportunity to negotiate, the captain of a ship wishing to trade was to be brought ashore to make arrangements in public. No private trading was allowed until public trading had ceased. Private trade was further controlled by requiring ships to use a local pilot to come ashore. No person was allowed to go on board before the pilot and these were rostered from each family in rotation. The Magistrate or his appointee accompanied the pilot to the ship.

Environmental impact of trade

The documentary evidence indicates the growth in trade also placed an increasing burden on the resources of the island. In 1825, Richard Beechey considered water to be the most limited resource affecting the island (PRONI T/2479). Waldegrave echoed this concern in 1830 and cautioned against the removal of trees, as this was likely to affect rainfall (1833:160). By 1833 the water problem had been alleviated by the construction of tanks to collect rainwater, which provided the community with about eight months reserve (Bennett 1840:30). Indeed Surgeon Gunn stated his opinion that the apprehension regarding water had proven to be unfounded and that sufficient excess now existed to supply the many whaleships calling regularly at the island (ADM 101/95). However, the evidence of trade in the later part of the study period indicates that, in addition to the burden on water resources, the provisioning trade significantly depleted the island's timber resources and placed an increasing burden on the land as the Pitcairn islanders attempted to produce agricultural surpluses. Some indication of the environmental impact of such changes is suggested by an example of catastrophic erosion recorded in the Pitcairn Island Register for 1845 (Lucas 1929:56):

> ...the place in question was situated at the head of a ravine which debouched into the sea; the rain mixing with the falling earth (which was of a clayey nature) brought it to the consistency of thick mud but sufficiently liquefied to glide very slowly down the inclined plane of the valley – nothing with which it came in contact could resist its force – the large trees at the head of the ravine and immense pieces of rock, were borne slowly but unresistingly along and about three hundred coconut trees were torn up by the roots and swept into the sea.

While there is no direct evidence linking the above event with land clearance, the occurrence at a time of rapid increase in shipping may not be entirely coincidental. Further evidence indicative of the community's vulnerability and inability to sustain

increasingly high levels of trade exists in the last years of the settlement. During the visit of HMS *Portland* in May 1853, Rear Admiral Fairfax Moresby found the island badly affected by drought and donated grain to sustain the community. Six months later, Captain Morshead of HMS *Dido* found the island still affected by drought and left additional supplies noting (ADM 172/2):

> With reference to the provisions you [Rear Admiral Fairfax Moresby] intrusted to my discretion, I have left them on the island. Their yam harvest had been a fair average but owing to a long drought, great fears were entertained for the potato crop on which they are equally dependent. One whaler only had been supplied for the year, yet there was not on the island a single yam, potato, hog or goat available for traffic...
> The famine has taught them a good lesson, for in many houses I saw small parcels of biscuit tied up to the beams to await their pending scarcity. Under these circumstances I was induced to leave the supplies with directions that they were to be reserved for this contingency

The crop failures of 1853 revealed the vulnerability of the community at Pitcairn and prompted application to the British Government to relocate the community to Norfolk Island. Supported by Rear Admiral Fairfax Moresby, the request was favourably received in England and Sir William Denison was instructed to make arrangements for the removal of the Pitcairn Islanders to Norfolk Island.

Summarising the evidence of trade

The documentary evidence clearly indicates that after an initial phase of complete separation the Pitcairn community embraced contact and actively encouraged ships to stop at the island. While the small number of early encounters and relatively limited trade is unlikely to have radically affected the community, the rapid increase in shipping in the 1830s and 1840s resulted in the introduction of formalised trading practices and the cultivation of new crops. The evidence suggests that such changes seriously depleted the natural resources of the island and were attended by catastrophic environmental changes which may have influenced the Pitcairn islanders' decision to abandon the island. The evidence also indicates that in the vast majority of trading encounters, the community obtained utilitarian articles such as clothing, oil, soap, canvas, molasses, fishhooks and other items commonly found aboard whaling ships. Such evidence is entirely consistent with the interpretation of the archaeological record from the Adamstown sites.

3. THE NATURE OF ISOLATION AT PITCAIRN ISLAND 1790 – 1856

In Chapter Two it has be shown that Pitcairn Island is located in the eastern Pacific Ocean and is geographically isolated from populated islands and continental landmasses by vast stretches of open ocean. The historical record indicates that the ocean formed a natural barrier separating the community from external forces for about 25 years, before growing maritime activity and enterprise in the Pacific brought increasing numbers of ships into contact with the island. In effect, the ocean changed from being a complete barrier to contact, to become a vast, fluid highway linking diverse centres of trade and facilitating the exploitation of resources on a global scale.

Pitcairn in perspective - Shipping centres in the Pacific 1788 –1856

Some measure of the relative isolation of the community at Pitcairn during the study period can be gauged by looking at the development of port towns and the routes followed by sailing ships between Pacific centres. The tracks followed by sailing vessels are determined by prevailing wind systems, which, despite small seasonal variations, remain constant in direction. Westerly winds dominate in the high latitudes beyond 35° in both the northern and southern hemispheres, but give way to south-easterly winds in a belt located roughly between 30° south and 5° north, and north-easterly winds between 12° and 30° north known as the trade winds. Whereas winds found in the areas between the trade wind belts are generally light and variable, the narrow belt separating the trade winds (known as the doldrums) is remarkable for its calms. Knowledge of these wind systems assisted seafarers to make efficient passages and led to the development of charts indicating the best routes to follow between ports. Admiralty chart 5308 - *The World Sailing Ship Routes,* which includes routes for the Pacific Ocean, is useful for defining the main routes between trading centres in the Pacific during the study period.

Just two years prior to the arrival of the *Bounty* settlers at Pitcairn Island, a British fleet had landed over 700 convicts at Port Jackson on the coast of New South Wales. Of the eleven ships forming this first fleet, only the two naval vessels *Sirius* and *Supply* were to stay with the new colony. Of the remaining transports, four continued north to China to load a return cargo for England, one sailed east to Tahiti and then north to China, and four sailed south and east to return to England by way of Cape Horn. The routes of these vessels mark, what was to become, the preferred routes for vessels trading between Port

Jackson and China and vessels returning to Europe. Arthur Phillip's orders also required that a settlement be established on Norfolk Island, located 1600 km north-east of Port Jackson, and the *Supply* unloaded the first settlers there in March 1788. Norfolk Island was to become an important satellite of Port Jackson and a total of 255 voyages between these settlements is recorded from 1788 to 1814 (Wright 1988:210).

After 1803 settlements at Port Dalrymple [Launceston] and Hobart opened up a further route between Port Jackson and Van Diemen's Land, which continued to grow throughout the study period. A large proportion of the traffic on this route was convict transports bringing prisoners from Britain to Sydney (via the Cape of Good Hope), and by 1800, 43 ships had brought over 6,000 prisoners to New South Wales (Bateson 1985:170). By 1828, the European population of the colony of New South Wales numbered over 39,000 and Sydney was the largest European settlement on the Pacific rim. An analysis of shipping arrivals and departures at Port Jackson indicates the main sailing routes in use during this period.

The record for 1822 (Cumpston 1977) lists 161 shipping movements through Port Jackson. The great majority of these (62) were small colonial vessels plying between Sydney and the small settlements along the Hawkesbury River and Newcastle, 130 km to the north. Twelve voyages were to Van Diemen's Land. Forty vessels departed Sydney taking the northerly route along the Australian east coast with 7 for Batavia, 2 for Penang, 1 for China, 16 for India and 14 for Mauritius (Isle de France). Many of these vessels were carrying speculative cargoes to Sydney and are indicative of a trade route operating in a counter-clockwise circulation around Australia. Ships from Calcutta, Madras and Mauritius sailed south in the Indian Ocean to reach the westerlies before continuing eastward around Van Dieman's Land and then north to Sydney. Once unloaded, these ships continued north and passed through the Torres Strait to Batavia and back to India and Mauritius.

In 1822 fourteen vessels departed Sydney to return to England (10), Rio de Janeiro (2) or the Cape of Good Hope (2) and indicate the main eastern shipping route. These vessels headed south beyond Van Dieman's land to pick up the westerly winds and then steered south of New Zealand before continuing east across the Pacific Ocean in about latitude 50° south before rounding Cape Horn and sailing north into the Atlantic Ocean. This

route was used by the convict transports, which, having discharged their prisoners in Australia, returned to England as quickly as possible for the next consignment.

In 1822, sixteen vessels left Sydney engaged in whaling or sealing voyages. These also headed south to Bass Strait, New Zealand and Macquarie Island. Four Royal Navy vessels and two Russian ships departing Sydney are variously listed as on voyages of discovery. The remaining vessels voyaged to destinations in the Pacific (Valparaiso 4, Lima 2, Tahiti 3, Friendly Islands 2) and represent the main sailing routes circulating in the Pacific Ocean.

Maude has noted the importance of the Tahitian pork trade to the colony of New South Wales and lists 82 voyages between Sydney and Tahiti between 1801 and 1826 (1968:227). An estimated 3 million pounds of salt pork was exported to Sydney during this period and the after 1807 the trade was well established. The sailing route followed in this trade was described by Captain Nicholson of the *Haweis* in 1820:

> Sailing from this Country we keep in the same parallel of Latitude as the North Cape of New Zealand till we get into the Longitude of Otaheite, then we steer to the northward. In Lat 24 south we generally find Easterly winds which blow nine months out of twelve. On returning we keep to the Northward and have the Easterly winds with us, making the Friendly Islands and Norfolk Island and Howe Island before we arrive at Port Jackson
>
> (Maude:1968:195)

Some measure of the relative importance of particular trade centres in the Pacific is indicted by appointment of national representatives and the growth of European populations. Ralston (1979:216) lists appointment dates for American and British consuls at Pacific centres and these are shown in Table 6.2.

Port	**US**	**GB**
Honolulu	1821	1825
Papeete	1836	1825
Kororareka (NZ)	1838	1833
Levuka (Fiji)	1846	1858
Apia (Samoa)	1853	1839

Table 6.2 First national representatives in the Pacific Islands

In 1820 Honolulu had a foreign population of approximately 90. By 1842 the total population had grown to more than 8000, of which 500 were foreign. In 1842 Papeete had a foreign population of around 70, while at Kororareka in the Bay of Islands the European population numbered over 600. Both Levuka and Apia developed later, and had European populations of around 50 by the 1850s (*ibid*:212).

Of these centres, the most important for Pacific trade was Honolulu. The location of the Hawaiian Islands in the middle of the North Pacific Ocean made them a natural centre linking trade routes between the North-West coast of America, California and China. The records of shipping arrivals at the Port of Honolulu from 1820 to 1840 show 66 arrivals from China, 150 from the North-West coast of America and 173 from California and clearly identify the main trade routes in the North Pacific prior to the discovery of gold in California in 1849 (Richards 2000:14). After 1849, San Francisco assumed much greater importance in Pacific commerce, resulting in the development of new sailing routes between Australia and San Francisco, and San Francisco, New England and the Europe. Both the route from Australia and New Zealand to San Francisco, and the route from San Francisco to Europe via Cape Horn passed close to Pitcairn and represent a significant change in the relative isolation of the island. The development of the main Pacific trade routes during the study period is shown in Figures 6.1 – 6.3 on the following pages.

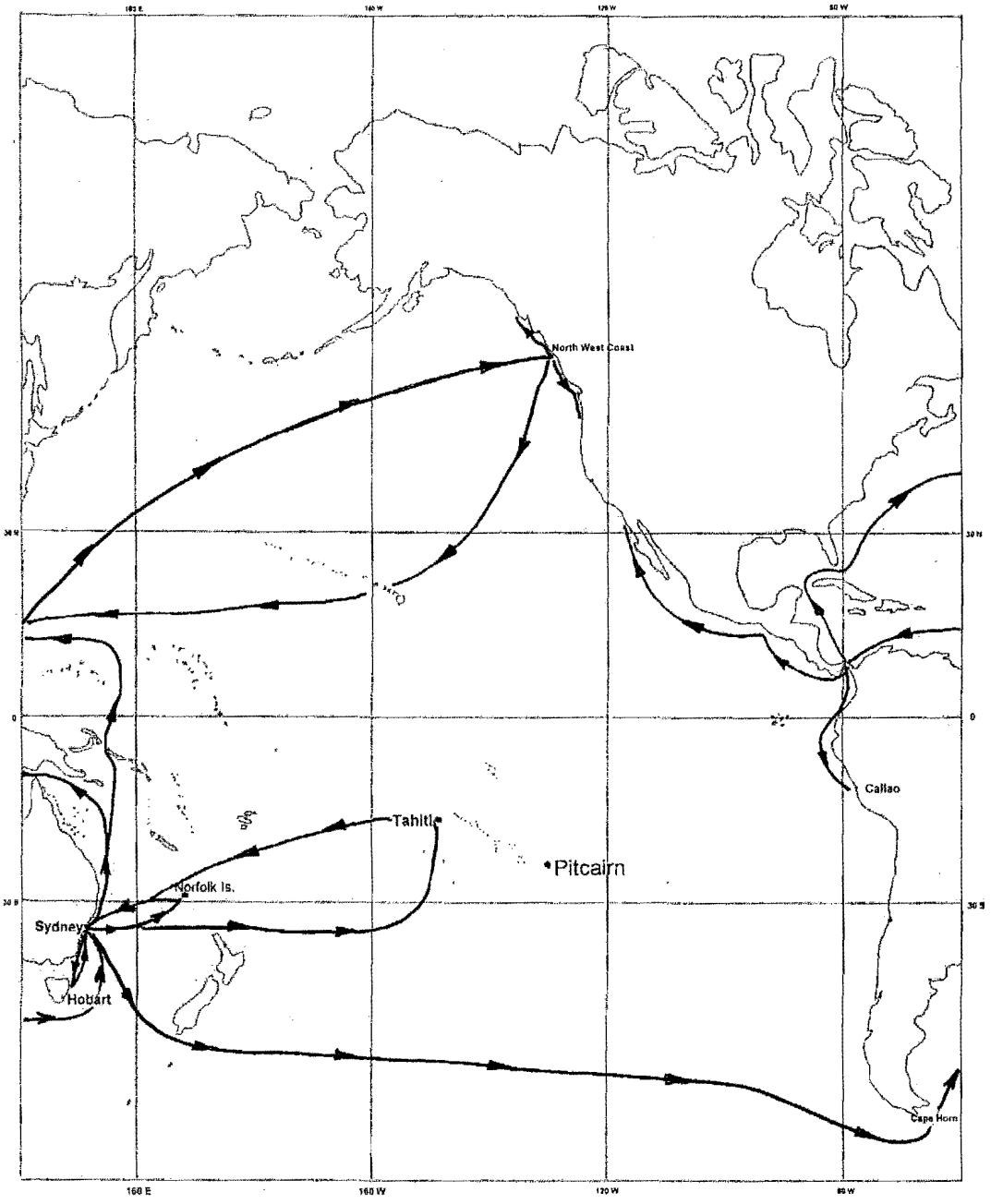

Figure 6.1 Principal Pacific Ocean sailing routes in 1800
(Based on British Admiralty chart 5308 – The World Sailing Ship Routes)

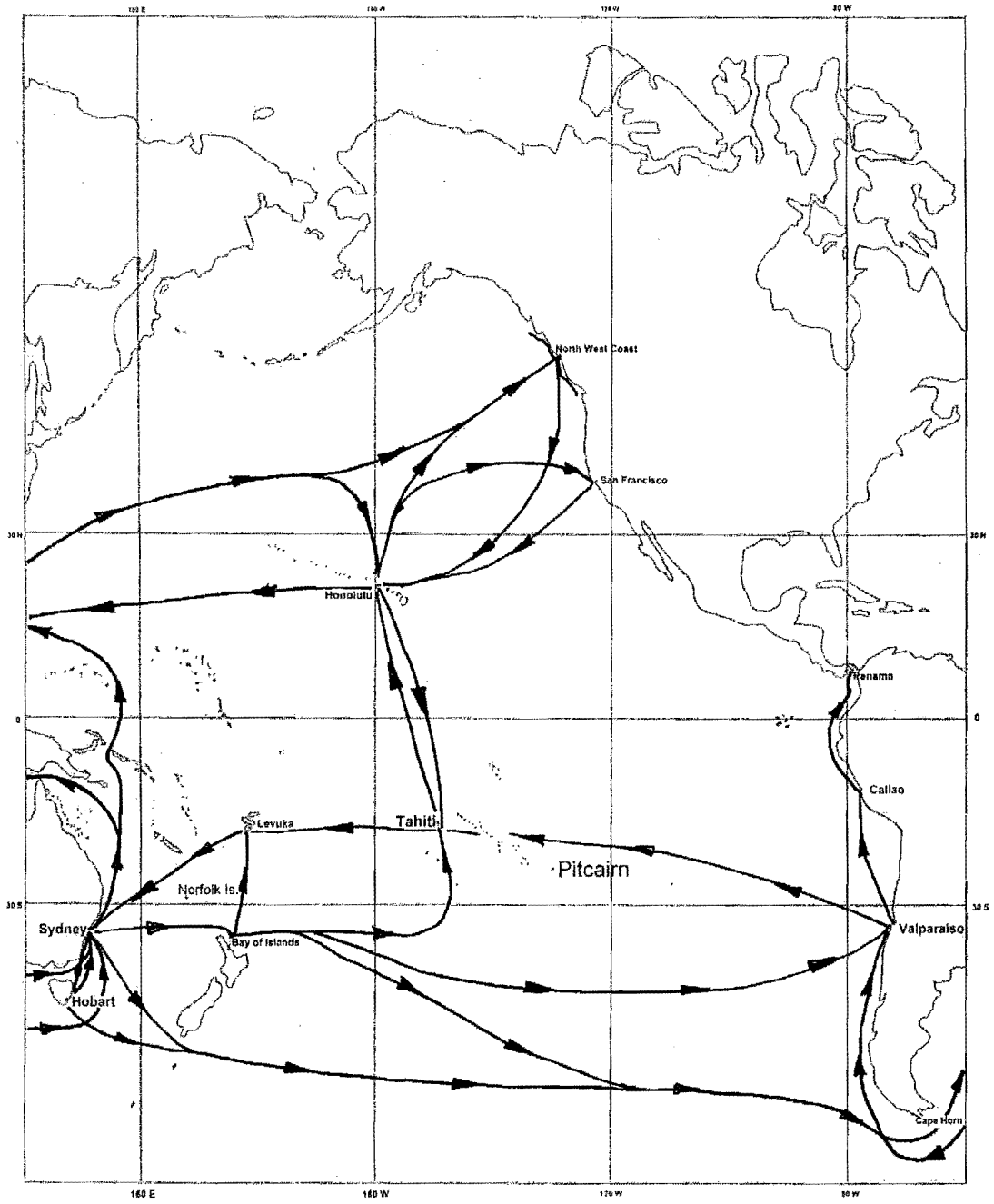

Figure 6.2 Principal Pacific Ocean sailing routes in 1825
(Based on British Admiralty chart 5308 – The World Sailing Ship Routes)

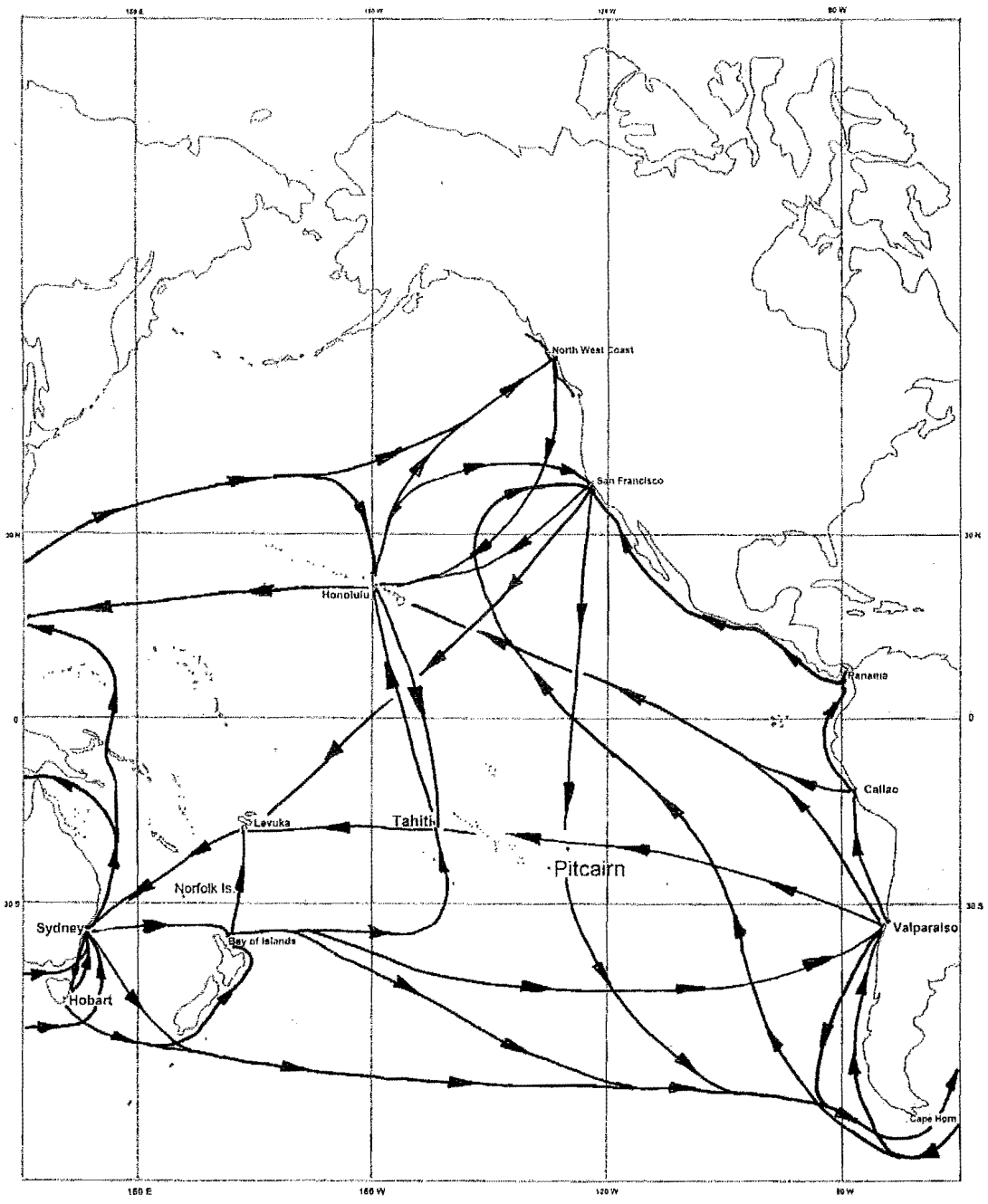

Figure 6.3 Principal Pacific Ocean sailing routes in 1850
(Based on British Admiralty chart 5308 – The World Sailing Ship Routes)

Pitcairn in relation to the main Pacific whaling grounds

While sailing ship routes and port towns developed around resources such as pork, sandalwood and pearls, whaling remained the single most important industry in the Pacific throughout the study period. The scale of the industry is revealed in the figures for shipping arrivals at several ports.

Of a total number of 1624 shipping arrivals at the Bay of Islands between 1803 and 1840, 1015 (62 per cent) were ships involved in whaling (Richards and Chisholm 1992). At Honolulu whaling ships were even more prominent and account for 1565 (76.9 per cent) in a total of 2034 arrivals (excluding inter-island shipping) between 1820 and 1840 (Richards 2000). These ships were attracted by the concentrations of whales that occurred in particular whaling grounds. By the end of the study period these areas were well defined and a whale chart was published by the United States National Observatory in 1851 (Lt. Maury). Figure 6.4 shows the main whaling grounds in the Pacific Ocean during the first half of the nineteenth century.

The main Pacific whaling grounds were located along the equator (On-the-Line, west and east), with further rich grounds in the North Pacific (Japan grounds) being discovered in 1820 (Richards 2000:9). In the South Pacific Ocean, the main whaling grounds were located north of New Zealand (Ellice Islands and Vasquez grounds), around the Galapagos Islands (Galapagos ground) and further west (Offshore ground), and off the coast of South America (Coast of Chile ground). Figure 6.4 indicates that the main whaling ground close to Pitcairn Island was the Tuamotu ground.

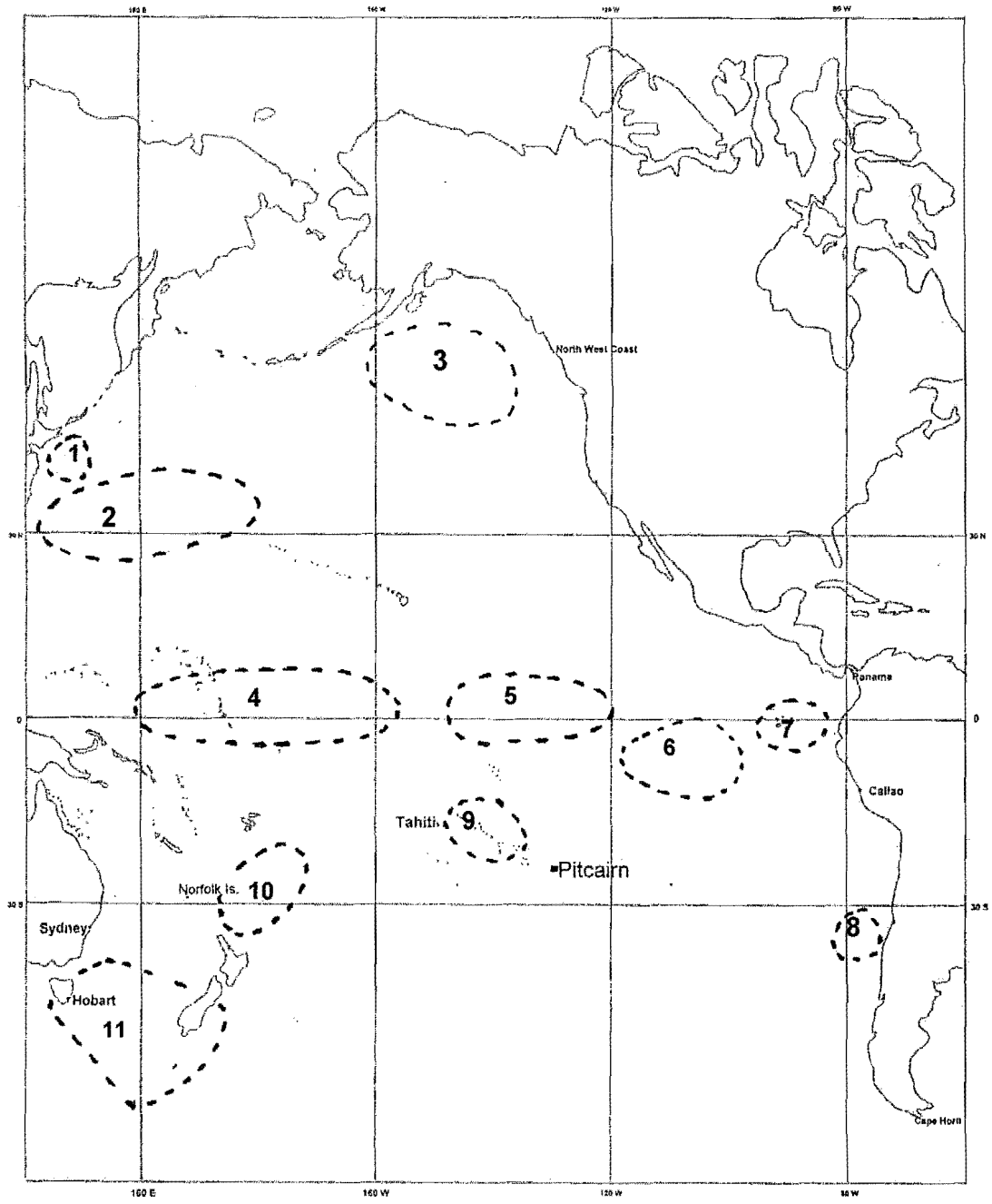

Figure 6.4 Principal whaling grounds in the Pacific Ocean.
1. Coast of Japan; 2. Japan; 3. North Pacific; 4. On-the-Line West; 5. On-the-Line East; 6. Offshore; 7. Galapagos; 8. Coast of Chile; 9. Tuamotu; 10. Vasquez; 11. Tasman. (Sources: Maury 1851; Sanderson 1958)

There can be no doubt that expansion of European activity in the Pacific in the course of the nineteenth century brought the Pitcairn community into greater contact with the world, and that the island became relatively less isolated over time. However despite this expansion, the community remained extremely insular. The logs of whaling ships and Royal Navy vessels visiting Pitcairn show that few ships anchored there, and that most ships lay 'off and on' as the off-duty watch went onshore for a few hours liberty. Only three outsiders were permitted to join the community permanently during the study period and men who attempted to desert at Pitcairn were actively hunted out and returned to their ships. As stated previously, the survival of the settlement at Pitcairn Island in the face of such isolation can be regarded as an unlikely success. In this regard, Connah (1993), in a review of several early Australian settlements has suggested that some failed because the settler group was too small and too narrow in their skill base, and that the viability of such remote settlements was affected by supply issues. In the light of this incongruity, the following section re-examines the Pitcairn settler group and attempts to identify the factors which contributed to the success of the settlement.

Settler Group Survival

While terms such as 'success' and 'failure' are relative and may change in the course of a settlement's evolution, fundamental elements in the survival of a settlement will be determined by the size, gender and age of the settler group. In the context of Polynesian settlement, McArthur *et al* (1976) have attempted to determine mathematically the number of settlers needed to establish a viable population on an uninhabited island, using computer modelling in a micro-simulation study. The model was based on the demographic logic that (i) the likelihood of death is a function of both the sex and age of an individual; (ii) births can occur only to women of reproductive age; (iii) women cannot conceive alone; and (iv) changes in the size of a population which experiences no migration are determined solely by the balance between numbers of births and deaths. The data used for simulation was based on 'Pacific' models of mortality rates for males and females by age, and age-specific fertility rates for females. Simulations were run for populations of three, five and seven couples with each group further differentiated into four age brackets (18-20 years, 21-23 years, 24-26 years and 27-29 years for females; and 20-22 years, 23-25 years, 26-28 years and 29-31 years for males).

While analysis of the results confirmed that the probability of extinction increased as the number of the original settler group diminished, the study indicated that age and gender were more important factors in determining the viability of settler groups.

> Whatever the size of the initial group, the populations founded by the youngest males and females have significantly lower probabilities of extinction than do those from founding groups with average ages of 25 years for women and 27 years for men, and in turn, these fare better than the populations started by the oldest founders.
>
> (McArthur *et al*:1976)

Although recognising the limitations of the model (for example, the assumption of monogamous matings), in the context of the *Bounty* settler group the model indicates that the group of 28 (incorporating 12 couples) was more than sufficient to create a viable population. Only the ages of the European males in the *Bounty* settler group are known (average age 27) but six of the Polynesian women had offspring – producing a second generation of 27 (15 males and 12 females). The model also serves to underline the fundamental role of the Polynesian women in sustaining a viable population. Although in this regard the deaths of the majority of males in the early years of settlement was undoubtedly a significant loss, in terms of population evolution that loss could be tolerated, particularly as the documentary record indicates that the surviving males were polygamous.

Ability to assimilate to the natural environment

Regarding the question of supply, it has been shown that the natural environment at Pitcairn was favourable to settlement and sufficiently rich to supply the fundamental needs of the community during the initial period of isolation and to produce a surplus for trade in later years. Clearly, the natural resources of the island were relatively abundant and the issue of supply was never critical as it was for settlements like Port Essington which was located in a less hospitable environment. The *Bounty* settler group also brought a broad range of skills to Pitcairn Island. The Polynesians in the group brought cultural practices that were immediately applicable to Pitcairn's environment and,(in a broader sense) allowed the settlement to embrace the new environment with confidence. Birmingham and Jeans (1983:7) touch on this issue in relation to the Exploratory and Learning phases in the Swiss Family Robinson Colonisation model and point out that early decisions affecting settlement in Australia were largely based on misperceptions

derived from a very limited European knowledge of Australia. They refer to this as a separation between the *perceived environment* and the real, *total environment*:

> Settlers, once a shelter is made, explore their environment with a view to becoming self-supporting in essentials. This exploration has continued, yet even today we cannot say we know the Australian environment objectively and in full. It is in respect to a *perceived environment*, not the real *total environment*, that Australians have made their decisions.
> ...The perceived environment differs from the total environment because the land is seen through a cultural lens or filter carried as baggage by the colonists. Belief that tall trees mean fertile soil, and that climate is stable, are two European ideas reinforced by American colonisation that formed parts of the cultural filters of early Australian colonists and led to environmental misperceptions.

Applying this analogy to the Pitcairn settlement, the inclusion of Polynesians in the original settler group effectively provided an established resource of knowledge applicable to the Pitcairn environment and allowed the community to make informed decisions about the environment from the first days of settlement.

Cohesion and Authority

The isolation of the island placed an unusual reliance on the community's social structures to provide cohesion and order to the settlement. While the first phase of settlement was marked by violent confrontation and division between the Polynesian and European settlers, Pitcairn's prodigiously rapid population increase (Shapiro 1936:234) produced a net-work of inter-family relationships that provided a process of natural integration for the settlement. The complete isolation of Pitcairn for the first 18 years of the settlement and the relatively small number of new settlers introduced after 1823 produced a high degree of inbreeding and ensured that each new generation was intrinsically linked through common ancestry to earlier generations. The effect of this integration was that the community functioned as a group of closely related families and benefited from strong organisational structures based on the primacy of Heads of Families. These families were further unified under the patriarchal authority of John Adams between 1800 and 1829 and, after his death and a period of transition, under an elected magistrate chosen exclusively from amongst the male Heads of Families.

On a wider political level, the community was united by religious practices which were approved and supported by the British Government. Following the visit of HMS *Briton* to the island in 1814 and Captain Staines' report of the Christian piety of the community,

this aspect of the community was consistently reported on, throughout the study period. The tenor of Lieutenant Lowry's account of the Pitcairners during the visit of HMS *Sparrowhawk* in 1839 is typical of these reports (in Brodie 1851:166):

> Before all meals they offer up thanks, and they nearly put us to the blush – if a blush was to be found amongst us – when they first dined on board, as some did daily, by asking us, after waiting some time, if we never said grace; and on our replying but seldom, they asked permission to do so before they would begin. There is not such another happy little community in the world.

Such accounts attracted the interest of the London Missionary Society and the Society for Promoting Christian Knowledge which resulted in both material and political support for the community.

It is impossible to gauge the extent to which Polynesian religious rituals continued within the community after the first decade. As noted in Chapter One, the documentary record of Pitcairn life was written or edited by the Englishmen Buffett and Nobbs, and references to Polynesian customs are conspicuously absent. In this context, Muhlhausler (2003:69) has argued that the model for Pitcairn society was English and that Tahitian language and culture were suppressed, particularly under the influence of the English school teacher George Hunn Nobbs. This suppression was further accelerated by the governmental arrangements made in 1838 when Captain Elliot (HMS *Fly*) drew up laws for the regulation of the island and effectively created a British protectorate. While local matters were to be dealt with by a magistrate chosen from amongst the native-born Pitcairn islanders, Elliot made it clear that ultimate authority resided with the British monarch (Brodie 1851:85):

> ...It will be incumbent on his countrymen, and the residents on the island, to respect his situation, and obey his authority, under pain of serious consequences, until he is superseded by the authority of Her Majesty the Queen of Great Britain, or her Representatives.

When writing to Edward Quintal, Rear Admiral Ross (Commander in Chief, HM Ships in the Pacific) emphasised that this relationship was dependent and involved reciprocal responsibilities (NAA CP599/1):

> HM Sloop *Fly*
> Valparaiso, 30 June 1839
>
> To Mr Edward Quintal, Magistrate of Pitcairn's Island

> Sir,
>
> Captain Elliot of Her Britannic Majesty's Sloop *Fly,* having laid before me a statement of his proceedings at Pitcairn's Island, and the mode he adopted to establish a form of civil government for the general comfort and happiness of all, as well as placing the island under the protection of the British Flag, as forming a part of the possessions of Great Britain I have to inform you that I highly approve ...
>
> ...You may always be assured of my protection and support, so long as you may prove deserving of it, and as it is my intention, occasionally to send one of my Squadron to your island, I trust to have good accounts of your progress in Religion, Morality and the general comforts of civilization.

For their part, the Pitcairn community appears to have fulfilled this compact and considered themselves closely connected to England. Shipley described the feelings of the islanders in this regard (1851):

> ...England is painted in their imagination as the happiest and most beautiful country in the world: all their good comes from her, and they feel proud and happy that they are descended from Englishmen.

This patriotism is also mirrored in the description of the celebrations for the sixtieth anniversary of the settlement at Pitcairn in the Pitcairn Island Register (Brodie 1851:153):

> ...After dinner males and females assembled in front of the church (where the British flag was flying), and gave three cheers for Queen Victoria, three for the Government at home, three for the magistrate here, three for absent friends, three for the ladies, and three for the community in general, amid the firing of muskets and ringing of the bell.

For its part, the British authorities took a reciprocal interest in the Pitcairn community, Queen Victoria herself reading accounts of the islanders (Shipley 1851) and sending a portrait of herself to the community (ADM 172/2). This regard was extended in the arrangements made for both the ordination of George Hunn Nobbs in England in 1851 and for the removal of the Pitcairn Islanders to Norfolk Island in 1856.

Summary

This section has analysed the changing nature of the isolation at Pitcairn Island during the study period and shown that, despite its geographic isolation, the island was fertile and capable of supporting a relatively large population. During the initial phase of

settlement, the presence of Polynesians in the settler group provided a source of knowledge about the natural environment which assisted the group to adapt rapidly to life on the island. In regard to the size of the settler group, it has been shown that despite the early deaths of most of the male settlers, sufficient females survived to produce a viable population which expanded rapidly and helped create a cohesive network of inter-related families. Cohesion within the group was further extended under the patriarchal authority, initially of John Adams, and later under magistrates supported by the British Government. Finally, it has been shown that expanding maritime activity in the Pacific brought the settlement on Pitcairn into ever increasing contact with the world and that the isolation of the community was diminished over the course of the study period.

The following chapter draws on the information presented in the previous sections of the thesis to place the study in a context of existing Colonisation theory.

CHAPTER SEVEN

THE COLONISATION OF PITCAIRN ISLAND 1790 - 1856

In Chapter One it was suggested that the colonisation of Pitcairn Island in the remote Pacific by the *Bounty* settler group can be regarded as an unlikely success. The preceding chapters have analysed the historical archaeological evidence in relation to the environment and resources of Pitcairn Island, the composition and skills inherent in the founding settler group, the social organisation of the group, as well as the impact of internal and external forces on the community. This has been done in order to understand how the colonisation of Pitcairn Island was achieved and to identify changes in this process between 1790 and 1856. After examining the colonisation process at Pitcairn Island in this manner, it is now possible to examine and compare theoretical constructions of colonisation process with the insight of the Pitcairn case study. The following section identifies the main contributions to colonisation theory and examines these, and particularly the Swiss Family Robinson model, in relation to the evidence of colonisation processes at Pitcairn Island revealed in this thesis.

Development of Colonisation theory

Initial developments in Colonisation theory were closely linked to Frederick Turner's nineteenth century study of the American frontier in which he attempted to identify those aspects of American frontier experience which led to the development of a uniquely American character. Writing in 1893 he stated (1962:2):

> American social development has been continually beginning over again on the frontier. This perennial rebirth, this fluidity of American life, this expansion westward with its new opportunities, its continuous touch with the simplicity of primitive society, furnish the forces dominating American character.

Although Turner's work focused almost exclusively on social and political developments in an American context, his contribution to colonisation theory lay in his conception of frontier development as an adaptive response to the physical and social environment. This concept was refined and developed in the twentieth century by Leyburn (1935) who compared pioneer societies around the world and classified them into four basic types (small farm, settlement plantation, exploitative plantation and

camp frontier) and recognised differences in the purpose and longevity of particular types.

In 1976, Meinig proposed a sequential development of colonial settlement consisting of several stages. The first stage involved exploration of the new area and limited exploitation of coastal resources. This stage was followed by the establishment of commercial outposts and the introduction of official agents and temporary residents. The next stage was one of permanent settlement with a colonial society and administration. In the final stage political and economic control passed from the homeland to the colony, and the colony became independent. Meinig's classification emphasised that colonial settlements were directly affected in their development by the degree of control exercised by the homeland. This concept was later developed by Steffen (1980) who defined frontier types on the basis of their insularity from the homeland and divided these into *Cosmopolitan frontiers* and *Insular frontiers. Insular frontiers* were those where links to the homeland were weakest and were characterised by long-term settlement and significant adaptation to local conditions such as associated with farming. *Cosmopolitan frontiers* were those characterised by short-term, specialised activities which and involved considerable dependence on the homeland. Mining and fur trading were typical activities associated with the *Cosmopolitan frontier.*

Other writers have sought to view colonisation processes within an ecological perspective analogous to the spread of plant and animal species into a new environment. For example Harris (1977) paralleled the rapid spread of unspecialised organisms in a new environment, with the colonial process characterised by the introduction of simple social, economic and political systems in the initial period of settlement, and Hudson (1969) used the example of plant spread within a new environment to postulate a theory of rural settlement. Hudson outlined this ecological process (1969:380):

> When density is low, and unsettled areas are common, settlement locations are essentially independent of each other. As density increases through a continued diffusion of settlements, competition for space becomes increasingly important. The pattern changes from clustered to a highly regular arrangement as weak individuals are forced out and the average size of holdings increase.

The outcome of such a process was the formation of settlements of similar size, spaced regularly across the region.

Casagrande *et al* (1964:281) drew from the example of colonisation in Ecuador and noted an hierarchic development of settlements based on their level of integration with the central government. Listed in order of regional importance these were the entrepot, frontier town, nucleated settlement, semi-nucleated settlement and dispersed settlement. Within these divisions, the entrepot was closely linked to the central authority and was the main conduit of supply between the metropolis and the frontier area and was the main administrative centre for the colonial area. The frontier town received goods from the entrepot and supplied goods to the surrounding areas. The distance of the frontier town from the entrepot resulted in a general reduction in administrative facilities and services available in the frontier town. These facilities were further reduced in the nucleated settlement situated between the frontier town and the more isolated semi-nucleated and dispersed settlements. At the lowest level, individually scattered houses located at the greatest distance from the entrepot maintained the most tenuous links with the central government. Such a development produced a *colonisation gradient* in which settlements were characterised by decreasing functional complexity as their distance and linkage with the central government increased.

In a similar comparative study, Taaffe *et al* (1963:503) explored the relationship between colonisation and the expansion of transport in Ghana and Nigeria. They proposed a model identifying six sequences in the development of transport networks applicable to colonial regions. In the first phase (*Scattered ports)*, colonial activity in the new area was limited to a few European trading stations scattered at intervals along the coast. In the second phase (*Penetration lines and port concentration)*, transport lines into the interior developed at particular ports in response to changing economic activity. These ports became dominant as gateways for imports and exports. In the third phase (*Development of feeders)*, subsidiary feeder lines developed from the main ports and at nodes along the penetration routes into the interior. In the fourth phase (*Beginnings of interconnection)*, the feeder lines radiated into the surrounding areas. In the fifth phase (*Complete interconnection*), the process of radiation was completed and produced a complete transportation network serving the interior of the country. Such development was accompanied by the growth of some centres, and decline of others, as

the new networks affected the strategic importance of areas. In the final phase (*Emergence of high-priority 'Main Streets'*), the routes connecting the most important centres were prioritised and developed as main transport arteries.

Conceptualising Colonial Expansion

The examples cited above are illustrative of the main approaches taken in the study of colonisation and indicate considerable variation exists. This is not surprising given the great variety of environments in which colonisation has occurred and the very varied political, economic and social motives for establishing settlements in new areas. In this regard, Steffen's (1980) differentiation of *Insular* and *Cosmopolitan frontiers* goes some way towards recognising this variety and provides a broad terminology for discussing settlements. The preceding summary of colonisation models also indicates that settlements are dynamic and may oscillate between expansion and contraction in response to developments around them. The geographical studies by Casagrande *et al* (1964) and Taaffe *et al* (1963) have shown that when such settlements are viewed in the context of a larger colonial frontier, elements of a patterned colonisation process are revealed.

In contrast to the above approaches, Birmingham and Jean's model of colonisation is built on a paradigm drawn from Wyss' 1812 book *The Swiss Family Robinson* and seeks to discuss colonisation process within a thematic framework. While initially this may appear a capricious approach to the study of colonisation, such an approach needs to be understood in the 1983 climate of Australian Historical Archaeology. In the introduction to their paper, Birmingham and Jeans emphasise the disparate nature of archaeological projects completed in Australia in 1983 and note the need to unify research around models such as the Swiss Family Robinson colonisation model (1983:4):

> ...the adoption of a more problem-oriented methodology with a greater emphasis on making significant contributions to historical interpretation is already overdue in Australian historical archaeological studies today, and the exploration and formulation of interpretative hypotheses and models must take priority over further descriptive data collection.

The authors suggest that the flow chart illustrating the Swiss Family Robinson model of colonisation provides an opportunity to focus a range of archaeological case studies

under a common theme of colonisation, and give examples of where particular archaeological studies fit in the model. For example, they suggest (1983:10) that whereas the study of the settlement of Risdon Cove (Tasmania) falls within the Exploratory Phase of the model; the studies of Port Essington and Norfolk Island fall under both the Exploratory and Learning Phases; and studies of technological innovation fall under the Development Phase.

The Swiss Family Robinson model of colonisation is drawn from an Australian perspective. However, as shown both in the above discussion and the earlier review of prehistoric colonisation of the Pacific in Chapter Two, a wider body of research exists which can contribute to our understanding of colonisation process.

The following section attempts to assess the value the Swiss Family Robinson colonisation model by comparing it to the Pitcairn case study.

The Swiss Family Robinson model and the settlement of Pitcairn Island

As stated earlier, the Swiss Family Robinson model (Figure 7.1 illustrated on the following page) represents the first stage of colonisation (the Exploratory Phase) as an interaction between colonists and their environment in which the initial development of the colony is affected by the nature of the environment and the skills, social structure and resources available to the colonists. The interplay of these elements during initial exploration results in a preliminary assessment being made and leads to the next stage in the colonisation model.

In the second phase of the model (the Learning Phase), a system of production is selected. Its successful outcome is shown to lead to a more complex Development Phase (the third phase of the model) where a range of economic, environmental and technological factors have the potential to impact on further development. In the case of an unsuccessful outcome, a re-appraisal occurs which leads to the rejection of the production system or to further investigation of a more appropriate production system.

In its third phase of colonisation, the model indicates that the area of colonial enterprise expands and the colonial society develops in size and complexity as new colonists arrive. The expansion into new colonial areas results in the reappraisal of earlier systems of production and the selection of systems appropriate to the new colonial

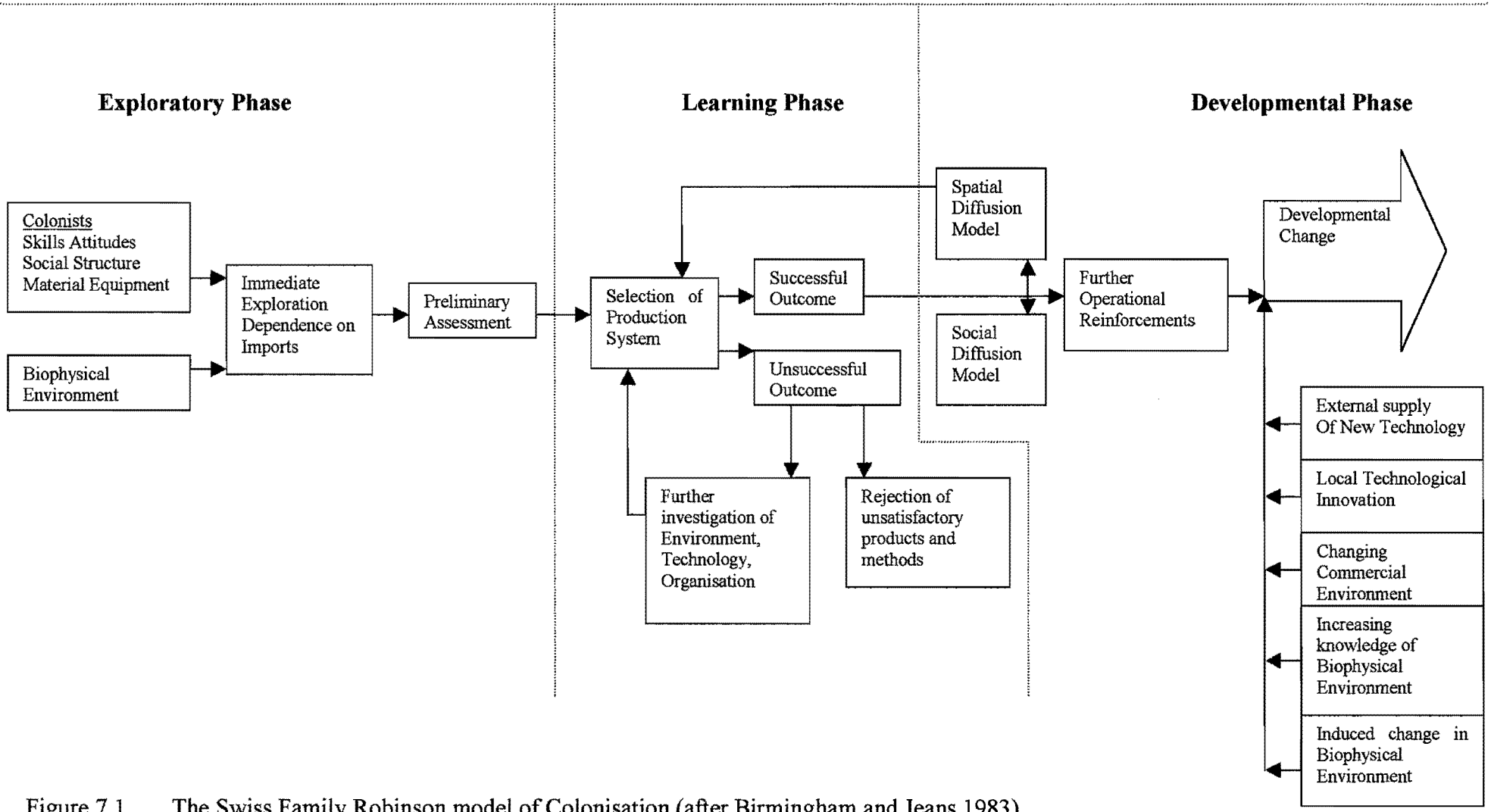

Figure 7.1 The Swiss Family Robinson model of Colonisation (after Birmingham and Jeans 1983)

circumstances. Contributing to these processes of selection are factors associated with access to external supply and new technology, increased understanding of the colonial environment and local commercial and technological development. Finally, an arrow marked Developmental Change pointing out of the Developmental Phase of the model indicates that the colonisation process continues to change in response to these influences.

The first point to make about the Swiss Family Robinson model flow chart is that it illustrates colonisation process in a way that suggests that colonisation progresses inexorably towards successful outcomes. However, as the preceding chapters of this thesis have shown, settlement does not always progress simply and at Pitcairn the initial (exploratory) phase of colonisation was accompanied by violent reversals when the success of the settlement was far from assured. The initial choice by the *Bounty* seamen to divide the island exclusively amongst the nine Europeans can be seen as the selection of an unsuccessful social system which was rejected by the Polynesian males and led to a change of organisation. And it was only after a period of ten years that a stable system of social organisation was established. The point exemplified by the Pitcairn Island study is that settlements can fail and the Swiss Family Robinson model fails to indicate this.

A further omission in the Swiss Family Robinson model is the lack of an historical context for the colonisation event. While the model appears to mirror the fictitious situation of the Robinson family wrecked on a deserted and unknown island, at Pitcairn the colonisation process was far less spontaneous. For example, the *Bounty* settlers' choice of Pitcairn Island as a place to settle was influenced by Carteret's description of the island and the initial establishment of the settlement at Pitcairn was affected by the knowledge gained by the mutineers' in their earlier attempt to settle at Tubuai. Similarly, (in the context of Australian history), the arrival of colonists at Botany Bay in 1788 was preceded by 20 years of British exploration in the Pacific and the Swiss Family Robinson model ignores this fact.

Comparing the Exploratory Phase of the model to the situation of the *Bounty* settlers, the model represents the first stages of colonisation as an interaction between colonists and the new colonial environment in which the colonists are reliant on the skills, social structure and equipment they bring with them. As is shown earlier in this thesis, the

Bounty settler group incorporated skills and knowledge derived from both Polynesian and European culture, which in respect of the food resources available on Pitcairn, is likely to have contributed to the group's successful adaptation to their new environment. Regarding equipment, the documentary evidence indicates that the settlers brought plants and animals and were equipped with the resources of the *Bounty.* The *Bounty* seamen also brought skills (including the ability to work iron, and botanical knowledge) and in this respect there appears to be agreement between the model and the actual process of colonisation at Pitcairn. However, as has been illustrated in the documentary and archaeological evidence discussed in preceding chapters, at Pitcairn the settlement experienced a loss of skills at an early stage of development and, in a state of complete isolation, appears to have developed with a diminished skill base. The loss of skills at Pitcairn and adaptation of the community to a reduced state of technological sophistication, exemplifies the mechanisms of the *Founder Effect* raised in Chapter Two and is linked to the concept of the *Insular frontier.* In his study of comparative frontiers, Steffen (1980:xi) described the effect of insularity:

> I am suggesting that there is a direct relation between the degree of insularity and the level of change experienced on any given frontier. Insularity ...can be determined by analysing the nature and number of interacting links between a given frontier and its parent culture. If the interacting links were few in number or nonexistent, the frontier was insulated to a significant degree from its parent culture. Therefore, frontiers with inherent environments that called for change and with few interacting links were more likely to experience fundamental change.

At Pitcairn, the total isolation of the community during the first 18 years of settlement removed all links to previous parent cultures and appears to have created an environment in which aspects of both European maritime, and Polynesian culture were able to develop into a unique Pitcairn culture. While the Pitcairn study represents an extreme example of isolation, the Swiss Family Robinson model of colonisation makes no allowance for any degree of insularity and fails to represent insularity as a significant causal factor influencing colonisation process.

In regard to the Learning Phase of the Swiss Family Robinson model, the chart indicates that the process of colonisation is informed by both successful and unsuccessful outcomes, and this aspect of the model is supported by the experience of the Pitcairn colonists. As discussed in Chapter Five in regard to changes in the social organisation at Pitcairn, the development of the settlement was significantly affected by leadership

issues throughout the study period, and a stable system of leadership was only established with the benefit of earlier experiences.

Linked to the Learning Phase of the Swiss Family Robinson model are the influences of spatial and social diffusion. Although not explicit in the model, it is clear from Birmingham and Jeans' paper (1983:7) that these references relate to the arrival of new colonists in Australia and the spread of pastoral activities beyond the initial boundaries of settlement. Although at Pitcairn Island, limited social diffusion occurred when new Europeans entered the community after 1823, and both the 1831 and 1856 removals to Tahiti and Norfolk Island are illustrative of spatial diffusion, the principal influence of spatial diffusion affecting the development of the Pitcairn settlement came from external forces such as the expanding commercial enterprise in the Pacific during the second quarter of the nineteenth century. Within the Swiss Family Robinson model, such external influences are represented under the headings External Supply of Technology, and Changing Commercial Environment. While these elements of the model are applicable to the Pitcairn settlement they are an inadequate representation of the external influences affecting the community in the later stages of settlement. Indeed, in this context it may be said that a weakness in the Swiss Family Robinson model lies in its degree of generalization. While this is entirely understandable in a model which attempts to "...explain the process of colonisation, not only in the context of nineteenth century Australia but in a wider context also" (Birmingham and Jeans 1983:3), the model fails to represent both the variety of settlement types and the dynamic nature of settlements inherent in colonisations. Some measure of this variety is given by Lewis who lists agricultural settlements, trading settlements, military settlements, mining settlements, exploitative plantation settlements, industrial settlements and transportation settlements and uses Steffen's division of *Insular frontier* and *Cosmopolitan frontier* to differentiate between them (1984:264):

> Within an expanding world economy, colonization follows two general courses. Insular frontier development is associated with the permanent occupation of regions by agriculturalists and is marked by the process of fundamental change... Unlike their agricultural counterparts, cosmopolitan frontiers arise to accommodate specialized, extractive economic activities in peripheral areas of the world economy. Because of their limited interests, these frontiers are often short term and impermanent. Their close economic ties with the homeland result in an absence of the insularity found in frontiers characterized by permanent settlement.

Viewed from this wider perspective, the Swiss Family Robinson model appears most relevant to situations of permanent settlement and makes little provision for the effects of engagement in a larger world system. In this context, the model of transport development by Taaffe *et al* (1963) is more relevant to the expansion of trade networks in the Pacific and provides a better model illustrative of the impact of an expanding world system on the settlement at Pitcairn Island.

In the first phase of the model by Taaffe *et al* (*Scattered ports*), the new colonisation area is represented as an unexplored land separated from external contact by a coast dotted with scattered ports of minor significance. This phase can be compared to the unexplored resources of the Pacific region in the early nineteenth century and the limited use of ports in Tahiti and Hawaii. Referring to the development of penetration lines into the new area, Taaffe *et al* state (*ibid*:506):

> Perhaps the most important single phase in the transportation history of an underdeveloped country is the emergence of the first major penetration line from the seacoast to the interior. Later phases typically evolve around the penetration lines, and ultimately there is a strong tendency for them to serve as trunk-line routes for more highly developed transportation networks.

In the Pacific, the first major penetration lines developed between Sydney and Tahiti, and between China, the Pacific North-West coast and Hawaii, and resulted in the rapid growth first of Honolulu, and later of Papeete, Kororareka, Apia and Levuka. The later development of these ports parallels the development of feeder lines and regional nodes in the third phase of the transport model. The fourth and fifth phases of the model mark the development of a more complex and interconnected system of transport between even relatively small centres which parallels the increasing exposure of the Pitcairn community to contact with external influences after 1838. The emergence of high-priority main routes in the final phase of the model parallels the growth of main shipping routes between important regional centres in the Pacific. An example of this is the increasing volume of trans-Pacific shipping connecting San Francisco and Sydney after 1849. Thus although the transport model by Taaffe *et al* was devised to illustrate the development of transport in underdeveloped countries, it is also relevant to the growth of transport networks and ports in a maritime frontier.

In summary, the above comparison of the Swiss Family Robinson model of colonisation with the Pitcairn case study reveals significant shortcomings and although the model appears to represent a logical progression from a point of initial contact to the development of a mature economy, in attempting to create a universally applicable model the authors produce an extremely generalised model of colonisation which fails to encapsulate failures, significant reversals, or indeed the wide range of settlement types discussed in frontier literature. Thus while aspects of the Swiss Family Robinson model's Exploratory and Learning Phases appear to parallel the situation experienced by the *Bounty* settlers at Pitcairn Island, in general the model describes a process particularly illustrative of the Australian experience of colonial process and is significantly limited in its ability to represent the colonisation process at Pitcairn Island.

THE MARITIME FRONTIER OF PITCAIRN ISLAND - DISCUSSION

Turner conceived of the frontier as a dynamic process of expansion, characterised by continuous movement into free land at the margins of the colonial area by a succession of industries comprising fur-traders, miners, ranchers and farmers who were irresistibly attracted to the resource opportunities of the new area (1962:12). European expansion into the Pacific was motivated by similar opportunities that were exploited by industries such as the pork trade, pearling, sandalwood, beche-de-mer and whaling. However, unlike the opening of vast new land areas of the American West, the expansion in the Pacific took place in a context of small islands which offered relatively limited opportunities for settlement. While colonial expansion in the Pacific did result in the establishment of European settlements at trade centres such as Honolulu and Papeete, the main expansion was in European shipping which worked the Pacific whaling grounds. The activities of whalemen is well documented in logbooks, paintings, and written accounts and further evidenced by the surviving equipment and products of that industry. Although such material is an invaluable resource,it provides only one perspective of European expansion in the Pacific. In this context, Pitcairn Island represents an example of a maritime settlement type and provides an alternate perspective and source of information which details the impact of European expansion on a remote Pacific community over more than half a century.

Interpretation of the historical and archaeological evidence in this thesis has shown that the settlement at Pitcairn Island was established on a remote and uninhabited Pacific island at a time when the commercial resources of the Pacific remained unexploited. Isolated from all external contact, the settlement was, in effect an *insular frontier*, totally reliant on the skills, knowledge and resources brought by the colonists and on the resources of the island itself. The colonising group included both Polynesians and European sailors and elements of both Polynesian culture and European maritime culture were merged in the new settlement. From their experience of maritime life, the European seamen introduced mechanisms for the division of resources as well as a simple system for marking property. Aspects of the allocation, use and recording of provisions within the Pitcairn settlement appear to be further examples of maritime cultural transference derived from shipboard customs, whereas examples of Polynesian introductions appear to be particularly associated with cooking and tapa manufacture.

The literature of Pacific prehistoric colonisation emphasises the ecological vulnerability of small oceanic islands to colonisation and the potential for rapid faunal collapse following the arrival of colonists. The documentary evidence illustrates that the *Bounty* settlers collected birds and eggs and that ground-roosting birds such as Murphy's Petrel (*Pterodroma ultima*) and the Masked Booby (*Sula dactylatra*) disappeared from the Pitcairn environment. The historical evidence also indicates that the settlers introduced pigs and goats, many of which escaped and posed a significant threat to the ecology of the island. Efforts to control these animals included building fences to protect gardens, and restricting animals to particular areas of the island.

The discovery of the Pitcairn settlement in 1808 and the gradual increase in shipping contact thereafter, re-established the island's links to the world and exposed the community to the growing influence of European maritime enterprise in the Pacific. While Pitcairn's cliff-bound coast remained a physical barrier impeding access to the community, the need for concealment which had fundamentally influenced the early settlement, was removed and the community actively initiated contact with passing ships and embraced the opportunity of accessing trade resources. The documentary and material records indicate that the Pitcairn islanders found a ready market for *Bounty* mementoes amongst the crews of visiting ships and that objects from the *Bounty* were used as gifts or as a currency for exchange.

In the years following contact, the Pitcairn community established particular links with the Royal Navy, missionary groups, and with the American whaleships working the Pacific grounds, with the result that the nature of the settlement shifted from that of an *insular frontier*, to assume some of the attributes of a *cosmopolitan frontier*. This shift was exemplified by the Pitcairn community's growing linkage to English authority and institutions (most obviously expressed in patriotic fervour for England) and the reciprocal interest progressively shown in the community at Pitcairn by the British Government in the later part of the study period.

The record of shipping arrivals at Pitcairn indicates that the surge in shipping that occurred after 1838 was sustained until 1853. This increase was not confined to Pitcairn but rather reflected the expansion of transport networks in the Pacific as the region was progressively linked to world markets. In terms of the transport model by Taaffe *et al,* the Pacific region passed into a phase of almost complete interconnection (1963:504), and the relative isolation of the Pitcairn community was therefore diminished. The impact on Pitcairn of this regional development was expressed in the cultivation of new crops specifically for the trade market, and the increasing regulation of prices and mechanisms of trade. Increasing contact with the crews of visiting ships also highlighted the need to introduce a formal system of authority at Pitcairn.

In the final phase of the Taaffe *et al* model, high priority routes emerge between major centres, resulting in realignment where some centres expand, and others decline in importance. At Pitcairn, this final phase never occurred. The documentary evidence indicates that the growth in trade at Pitcairn had detrimental environmental consequences. In addition to cultivating new trade crops, the community supplied relatively large quantities of firewood and water to ships which placed an increasing burden on resources with the result that Pitcairn experienced both large-scale erosion and crop failures in the later part of the study period. It remains speculative whether such disasters would have become more frequent if the community had remained at Pitcairn.

In the event, a number of factors contributed to the decision to remove the Pitcairn islanders to Norfolk Island in 1856. Pitcairn experienced a sharp decline in shipping numbers after 1854, and the coincidence of this downturn with crop failures, and

concerns regarding the size of the population, led to an assessment that the island should be abandoned. It is clear from the documentary sources that the Pitcairn islanders did not make this decision easily, or alone, and that removal to Norfolk Island was strongly advocated by the British Government. With the benefit of hindsight, it appears unlikely that the community could have stayed at Pitcairn for much longer. The downturn in shipping, experienced at Pitcairn, was followed by the outbreak of the American Civil War in 1861 and the number of American whaleships operating in the Pacific was dramatically reduced. A small number of islanders did return to Pitcairn after 1858, preferring a simple life at Pitcairn, to the new experience at Norfolk Island. The documentary evidence indicates that life for these people was much reduced and that even basic necessities were difficult to obtain. Writing from Norfolk Island to her mother at Pitcairn in 1873, Miriam Christian wrote:

> We are very sorry indeed to hear how poorly off you all are in clothing and other things that you find hard to get on Pitcairns Island. The community in general has raised a subscription for you all and given it into the hands of Russell and Stanley for the good of our Pitcairn friends. I hope it will be received with thankful hearts. I hope dear mother that you all will come back to us at Norfolk Island.
>
> (Pitcairn Island Museum collection)

At Norfolk Island, the Pitcairners inherited the legacy of almost 70 years of convict labour in the form of stone houses, bridges, jetties and mills, and were well supplied with animals and fertile land. In this environment the skills and experience of the community confronted a new colonisation threshold and developed along markedly different lines to those they had previously known at Pitcairn.

The stages in the colonisation process at Pitcairn Island, described above, are illustrated in Figure 7.2 on the following page.

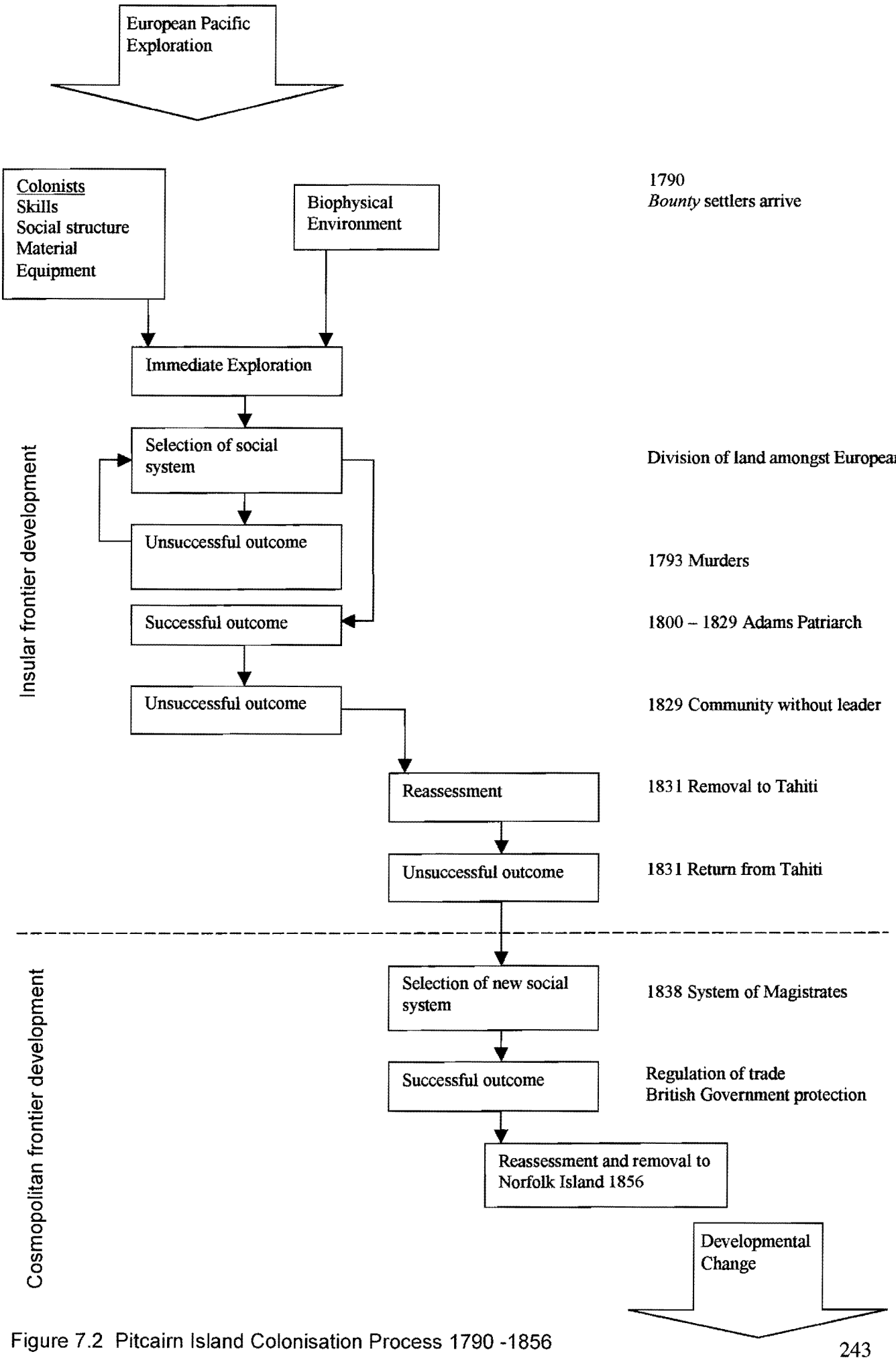

Figure 7.2 Pitcairn Island Colonisation Process 1790 -1856

SUMMARY AND CONCLUSIONS

The origins of this study grew from a wish to better understand how it was possible for a small group of European and Polynesian settlers to successfully establish a community on one of the most remote islands in the Pacific, and was sustained by a general dissatisfaction with traditional explanations which attribute this success to the religious conversion of the community under the benign tutoring of the last surviving *Bounty* seaman, John Adams.

The impetus for the archaeological investigations at Pitcairn Island described in the preceding chapters arises from a belief that archaeology provides an alternate and complementary source of information to the documentary record that has the potential to enhance our understanding of an event or historic period. As noted in Chapter One, much of the literature written about Pitcairn Island (Belcher 1870; Christian 1999; Lummis 1997) has been generated by a continuing fascination with the characters of Fletcher Christian and William Bligh or treated as an exemplary account of moral regeneration (Murray 1853). These accounts are largely irrelevant to the present study and indeed the most useful information has been found in the incidental descriptions of Pitcairn life. In the normal course of events such descriptions remain obscured and it is only when these are combined and related to a particular research focus that their full value is realised.

In this respect, the object of the present study was to investigate the archaeological resource at Pitcairn Island and to utilise both archaeological and documentary sources to address four key research questions. To reiterate, these were:

1. To identify European and Polynesian cultural influences on the Pitcairn settlement and to consider how these changed during the study period.

2. To examine the mechanisms by which the Pitcairn community came into contact with the outside world and the material reflection of this interaction.

3. To identify the factors which led to the successful establishment of a settlement by a small culturally divided group on an extremely isolated Pacific island.

4. To consider the settlement at Pitcairn Island in relation to theoretical models of colonisation.

In regard to the first research question it has been shown that whereas instances of Europeans crossing the beach and entering Polynesian societies during the nineteenth century are relatively common in Pacific history, such entries were generally characterised as temporary European submersions in Polynesian culture in which the established Polynesian culture remained dominant. By contrast, Pitcairn was an uninhabited island at the time of the *Bounty's* arrival and provided a setting where elements of both Polynesian and European culture developed uniquely within the Pitcairn community. Interpretation of the historical and archaeological evidence in Chapter Five has shown that Polynesian cultural influences were present in the areas of food preparation, the production of tapa cloth and thatching, and appear to have influenced the design of canoes at Pitcairn. The material evidence of this Polynesian influence includes stone graters (*yollos*), whalebone tapa beaters, a thatching needle, *Turbo* shells and surviving examples of traditional Pitcairn canoes. It is also possible that stone tools recovered in the Adamstown study area may have been used during the study period, particularly in the period of total isolation when the settler group were totally reliant on the resources available on Pitcairn. The skills of basket and hat making which survive in the present generation of Pitcairn islanders are possibly further evidence of Polynesian influence derived from the original *Bounty* settler group. However, as shown in Chapter Four, the temperature variation and level of relative humidity in the Pitcairn environment are such that organic materials from the study period are unlikely to have survived and no archaeological evidence of these activities was found during fieldwork.

In regard to European cultural influences, the documentary evidence suggests that the mutineers intended the Pitcairn settlement to follow a European model and that this intention was exemplified in the division of the island solely amongst the European seamen and in the arrangement of the Pitcairn settlement along the lines of an English village. However, it has been shown that this intention failed to appreciate the opposition of the Polynesian settlers to such an arrangement and led to a period of violent confrontation between the cultural groups in which all the Polynesian males and five of the European males were killed. Despite this reversal and allowing for an

increased dependence on the skills and knowledge of the Polynesian women during the period of total isolation, the progressive impact of increasing contact with European ships throughout the study period ensured that the Pitcairn settlement was continually influenced by European cultural values, particularly in respect of religion and governmental arrangements.

The documentation of Thursday October Christian's house presented in this thesis represents the first detailed investigation of a Pitcairn house from the study period and clearly identified that the main features of raised stone footings and timber bearers, wooden floor, drop-plank construction, large wall openings and internal divisions are examples of European cultural influence.

One area where there is clear evidence of European cultural influence and transfer of maritime culture is in the division of property and associated use of personal marks. The documentary record shows that the division of property into equal parts known as the 'share out', still practiced on Pitcairn Island, derives from the shipboard customs practiced aboard the *Bounty*. The historic record indicates that a communal store or "mutual accommodation" (Beechey 1968:92) with strong parallels to the purser's store found aboard naval vessels, regulated the flow of local produce and imports within the Pitcairn settlement throughout the study period. Such a system provides a stored resource and ensures regular provision during seasonal variations, times of crop failure or periods between visiting ships. In the Adamstown study area, this system is reflected archaeologically by the multiple presence of particular decorative wares across widely separated sites. Many of these wares were found to bear scratched personal marks as a means of identifying ownership and it has been shown that this is a European practice particularly associated with situations of close communal living such as found aboard ships and in military camps. Both the archaeological and documentary evidence indicate that the isolation of Pitcairn Island, rapid population growth and limited surnames within the community combined to produce a highly developed system of personal marks which saw an evolution from a single capital letter used by the *Bounty* seamen in the first generation, to combinations of letters and symbols in later generations. Analysis of ceramics recovered from Pitcairn islander houses at Norfolk Island indicates that the use of personal marks was discontinued by the Pitcairn islanders at Norfolk and that the practice gradually died out there.

In regard to the mechanisms by which Pitcairn came into contact with the outside world, it has been shown that after a period of initial total isolation the Pitcairn community embraced contact and actively encouraged ships to stop at Pitcairn. Early trade between the community and visiting ships appears to have been largely unregulated and formal prices for goods and services were only introduced in the 1830s in response to increasingly regular contact with ships. A reflection of this increased level of contact was the introduction and cultivation of new crops specifically for the provisioning trade along with the construction of water reservoirs and relatively large-scale collection of firewood for trade. In this context, increasing levels of contact with the outside world is likely to have adversely impacted on the Pitcairn environment and to have placed an increasing burden on the resources of the island.

A further result of contact was to produce a trade in *Bounty* artefacts. Prior to archaeological fieldwork at Pitcairn, it was anticipated that the isolation of the island was likely to have protected artefacts. However, following archaeological investigation it became clear that the isolation of Pitcairn Island has contributed significantly to a process of commoditisation of *Bounty* material which has resulted in the loss of all but isolated examples of copper sheathing and nails from the archaeological record at Adamstown. As such, the trade and removal of *Bounty* material from Pitcairn Island represents a significant example of cultural modification of the archaeological record and highlights the potential of popular interest in an historic event to affect the integrity of an archaeological site.

In regard to the material reflection of contact and trade between the Pitcairn community and visiting ships, the documentary evidence indicates that despite a surge in the number of ships visiting Pitcairn in the later years of the study period, in the majority of trade encounters the community obtained utilitarian articles such as clothing, soap and molasses and that very little evidence of these materials survives in the archaeological record at Adamstown.

In regard to the third research question and how it was possible for a small, culturally diverse group of settlers to successfully establish a settlement on Pitcairn Island, it has been shown that despite its isolation, Pitcairn was a fertile island where the *Bounty* settlers found remnant plant resources from earlier prehistoric occupation of the island,

and to which they introduced further plants and livestock. It has been shown that although the number of settlers in the initial group was small and despite further reduction of the population in the early stages of settlement, sufficient females survived to create a viable population. It has also been shown that despite periods of reversal when the community lacked leadership, in the later years of the study period the problem of leadership was resolved when the Pitcairn community entered into a formal relationship with Britain, and laws providing for the annual election of a Magistrate were introduced. In regard to the isolation of the island, it has been shown that while Pitcairn is located in a remote area of the Pacific Ocean, mercantile interest in the Pacific region expanded dramatically during the study period and the total isolation which characterised the period of initial settlement was progressively reduced as transportation networks in the region expanded and the Pitcairn community came into sustained contact with the world.

Finally in regard to the Swiss Family Robinson Colonisation model, it has been shown that while aspects of the Exploratory Phase and Learning Phase of the model partly accommodate colonisation processes identified in this thesis, in general the model fails to adequately represent the reversals that occurred at Pitcairn during the study period and is very limited in its ability to represent the colonisation process at Pitcairn Island. In this respect it has been shown that the colonisation process at Pitcairn Island is representative of a maritime frontier type and that the development of the settlement is directly associated with the evolution of an interconnected Pacific transport network during the nineteenth century.

Future Directions

This thesis represents the first use of historical archaeology to examine the development of the settlement at Pitcairn Island in the period 1790 to 1856. While the circumstances surrounding the establishment of the settlement at Pitcairn Island are likely to be unique and the isolation of the island more extreme than that of many other Pacific communities, it is hoped that aspects of the study will provide a basis for comparative studies of other islands or isolated communities. As illustrated in the preceding chapters, the settlement at Pitcairn was deliberately established in a remote location and initially developed in complete isolation in the manner of an *Insular Frontier*. By contrast, the settlement of Norfolk Island in 1788 was officially sanctioned and

supported by close links to the colony of New South Wales and developed as a *Cosmopolitan Frontier*. While a comparison of the development of Norfolk Island with that of Pitcairn was beyond the scope of the present thesis and the archaeological potential of Norfolk Island remains largely untapped, such a comparative study is likely to illustrate another aspect of the Pacific maritime frontier.

While the present study has focused on the period 1790 to 1856, many objects recovered in the course of fieldwork relate to the subsequent development of the community at Pitcairn Island. The complete list of artefacts recovered from the land during fieldwork is presented in Appendix A.1 and it is hoped that this will be of value to future researchers at Pitcairn.

Finally, in a recent communication from the community at Pitcairn it was announced that the British government had allocated funds for the construction of a museum on Pitcairn Island. Such an announcement is timely and all artefacts removed from Pitcairn in the course of this study will be repatriated to Pitcairn where it is hoped they will form the nucleus for interpretation of the rich culture of the descendants of the *Bounty* settlers for future generations of Pitcairn Islanders.