Maritime Mechanisms of Contact and Change: Archaeological Perspectives on the History and Conduct of the Queensland Labour Trade.

Thesis submitted by

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STATEMENT ON THE CONTRIBUTION OF OTHERS

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My candidature was confirmed with supervision from Dr Peter Veth. After his departure, Dr Martin Gibbs took over and helped me develop the initial structure of the thesis while facilitating two field work visits to the wreck site of the *Foam.* As co-supervisor, Dr David Roe provided invaluable insights into Islander socio-economic systems and Oceanic archaeology in general. On assuming the role of principal supervisor, Dr Roe offered critical and constructive feedback on the structure and content of chapters. The final stages were supervised by Dr Nigel Chang who provided the guidance, momentum and support essential to mould my research into a completed thesis.

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ABSTRACT

This thesis examines, from an archaeological perspective, the 'maritime mechanisms' of contact and change between Europeans and Indigenous populations (Islanders) in Oceania in the late 19th and early 20th centuries; in particular, how those mechanisms might be better understood through the application of archaeological methodology. For the purposes of this thesis, maritime mechanisms are defined as those mechanisms of contact and change associated with human activities on the sea.

The Queensland labour trade is used as a case study. The key research questions are:

- How were the Islanders being changed as a result of their participation in the Queensland labour trade?

- Was the Queensland labour trade affected, changed or controlled by the Islanders involved in the trade, and

- Did Victorian society and its values, as expressed in part through a changing legislative framework, have any influence on the Queensland labour trade?

The thesis begins with a re-analysis of the historical sources, in particular citing the changing legislation that pertained to the Queensland labour trade. This analysis concentrates on understanding the nature of trade relationships within the islands before European influence and what changes seem to have come about after.

Archaeological research centred on the wreck of the *Foam*, combined with my analysis of the artefacts recovered from this site by the Queensland Museum, are also key to this dissertation.

The main conclusions fall into two groups. First, the more practical outcomes include the following; 1. schooners were the favoured types of vessels used across the labour trade, 2. some island groups were frequented more by recruiters than others, and 3. the ceramic armbands used as items of trade were not specifically manufactured for the Queensland labour trade but were part of a larger European trading system in which

ceramic copies of Indigenous status goods were used as trade items from Africa across to Papua New Guinea and the South Sea Islands.

Secondly, the broader conclusions are that; 1. when analysed as artefacts in their own right and due to their nature as 'built environments', the vessels themselves should be considered as sites of change for the Islanders as they were being transported, 2. the Islanders' identity continued to transform during their participation in the various stages of the trade, 3. part of the reason for these transformations is that the existence of the Queensland labour trade allowed individuals to bypass traditional restrictions on travel and provided the opportunity to increase status and/or develop new trading relationships, 4. people of influence on the islands exploited the Europeans, their vessels and trade goods to maintain and enhance their status, and 5. given the prevailing position on slavery and with ongoing lobbying from Missionary groups, legislation did bring about changes in the European method of operation.

In sum, the Queensland labour trade was a catalyst for change in indigenous social, political and economic systems. Further, it is argued that it is critical to recognise that the Queensland labour trade was as much a Melanesian system as it was a European one.

Finally, it is recommended that further field work on the wreck of the *Foam* be conducted, together with an investigation of the extent to which trade goods are present in the South Sea Island archaeological record. A major question that remains to be answered is whether the labour trade challenged, subverted or inflated traditional systems.

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Chapter One

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This thesis uses the Queensland labour trade as a case study to investigate how archaeological enquiries can contribute to a better understanding of contact and change between Europeans and indigenous populations in Oceania in the late 19th and early 20th centuries. The concept of 'maritime mechanisms' of contact and change is introduced to help understand these processes.

By the mid 19th century, a mercantile European presence was well established in the South Pacific. Competing nations had laid claim to the various island groups and had demonstrated their authority by establishing settlements and plantations. However, the success of this colonisation depended on access to a large, reliable and cheap labour force. This was sought and obtained from New Guinea and the Pacific regions of Melanesia, Micronesia and Polynesia. Between the early 1860s and the beginning of the 20th century, approximately 200,000 Pacific Islanders were transported to colonies throughout the Pacific region. Of these, it is estimated that 100,000 labourers worked in British colonies (Moore 1985). One of these colonies was Queensland.

Between 1863 and 1904, at least 109 vessels were involved in what became known as the Queensland labour trade. Approximately 60,000 South Sea Islanders were transported in these vessels to work the Queensland cane fields (Price and Baker 1976). These Islanders established the local sugar cane industry and contributed to Queensland's overall prosperity. Their role, together with the recruiters who brought them to Queensland, is a well documented and sometimes controversial part of North Queensland history. However, this thesis does not focus on whether the labour trade was slavery or indentured employment. This issue has already been widely debated by historians such as Corris (1973) and Moore (1985) and is still a contentious topic within Australian South Sea Islander communities.

Much of the historical work on the operation of the Queensland labour trade looks through a western lens. Moore's (1990) bibliography of the Queensland labour trade lists over 300 published articles from 1912 to 1990; even this does not include various earlier first hand maritime accounts of recruiting voyages such as Hope (1872) and Morrison (1882). Moore's bibliography highlights the lack of Melanesian commentary on the Queensland labour trade.

Early works on the nature of contact and change arising from interactions between indigenous peoples and Europeans used dependency theory as an explanatory device. This framed contact and economic exchanges between the two groups as the civilised control of a primitive desire for goods and/or as the exploitation by core groups over peripheral ones. Such approaches placed Europeans in positions of power and argued that socio-economic structures in the islands were fractured or broken down in part by the introduction of European goods and ideas. However, works by historians and anthropologists such as Dening (1996), McKinnon (1975), Sahlins (1995) and Thomas (1991) questioned this model of assumed European dominance. Although scholars of Pacific archaeology have yet to fully engage in debates on the nature of contact in Australia, this has become a topic of significant interest.

Partly driven by the needs of Native Title legislation, archaeological approaches to the nature of contact and change (e.g. Clarke and Paterson 2003; Harrison and Williamson 2002; and Torrence and Clarke 2000) have also begun to question traditional assumptions about the inequality of contact events. Contrary to the active/passive model of dependency theory these new works explore notions of resistance, negotiation and exploitation by indigenous peoples of contact experiences. In the archaeological literature particularly this has focused on the incorporation of new technologies and knowledge into existing indigenous structures. Such new perspectives have yet to be applied to the historically well documented Queensland labour trade.

The current history of the Queensland labour trade is based on official government reports, ships' logs, missionary reports, personal diaries and the views of descendants of the South Sea Island labourers.

All of these sources are based within the Australian context and privilege the written historical record as the primary data source. The corresponding Melanesian voice in the islands at the time of the labour trade does not exist in the historical record.

1.2 Aim

The overall aim of this thesis is to investigate if an archaeological approach can add depth to our understanding of the Queensland labour trade. It will be argued that because contact and change in the Queensland labour trade has a material expression, an archaeological approach is appropriate and, amongst other things, may help us to discover a Melanesian view of contact and change in the islands. To achieve this aim, three main research questions will be addressed:

- How were the Islanders being changed as a result of their participation in the Queensland labour trade?
- Was the Queensland labour trade affected, changed or controlled by the Islanders involved in the trade, and
- Did Victorian society and its values, as expressed in part through a changing legislative framework, have any influence on the Queensland labour trade?

This investigation will combine historical research with new archaeological fieldwork and data. In so doing, this thesis will provide archaeological perspectives on the history and conduct of the Queensland labour trade and the extent to which they complement, question and expand the knowledge of contact and trade in the Pacific.

There will also be an emphasis on the maritime context of the Queensland labour trade. Much of the discussion will be framed in terms of 'maritime mechanisms'. Muckelroy (1978) defined maritime archaeology as "the scientific study of the material remains of man and his activities on the sea" (Muckelroy 1978:4). Following on from this definition and for the purpose of this thesis, maritime mechanisms can be defined as those mechanisms of contact and change associated with human activities on the sea.

1.3 Thesis Outline

In order to achieve this aim, two background chapters review the literature and theory relating to contact, trade and adaptation to change from Islander and European perspectives. Chapter two begins with a review of the theoretical approaches used to investigate the larger picture of early contact and trade interactions between Australia and the Pacific Islands. Early contact in Tahiti is used to introduce the concept of mutual misunderstanding between both sides of the contact. The historical record is then used to examine the Tahitian pork trade, New Georgia turtle shell trade, Gilbert Islands coconut oil trade and the sandalwood trade to identify changes in the material culture exchanged, as a means of illustrating the Islanders' manipulation of the systems to satisfy their needs.

The focus is narrowed in chapter three by drawing attention to the development and operation of the Queensland labour trade from 1863 to 1904 as it is known from historical records. Changes in economic demands and Victorian social attitudes led to a number of legislative acts being passed in an attempt to control the trade. By using these acts as a framework, this chapter reviews the changes in the labour trade as a means of showing how Europeans adapted the system. The means by which labourers acquired European goods in Queensland as payment for their labour is also examined. This procedure was known as the Trade Box System and it was a significant factor in trade and exchange mechanisms.

Having established a background to the current state of research into contact and trade and the Queensland labour trade, gaps in our knowledge are identified and research issues developed in chapter four, along with the methodology used to address these issues. Chapters five, six and seven provide the data and analysis for the research.

The changes in the operation of the recruiting vessels themselves along with the demographics of the recruits are investigated in chapter five. This study explores the status of labour vessels as artefacts in their own right as they were the means by which contact was established and trade achieved.

Changing patterns in the destinations of recruiting vessels are compared with recruiting numbers over time to determine the demographics of the labourers and subsequent access to European goods by different island groups. As such it suggests changing dynamics of socio-political structures in Melanesia to which the Queensland labour trade had to adapt.

Chapter six narrows the focus even further with a detailed examination of the wooden labour schooner *Foam,* covering its history, physical structure and operation in the labour trade. The wreck of the *Foam* is significant archaeologically because it is the only known wreck of a Queensland labour vessel in Queensland waters that was actively engaged in the labour trade at the time of its demise. The *Foam's* voyages are reviewed as a means of corroborating the conclusions drawn about recruiting voyages and providing an example of the mechanism of recruiting at a specific time in the labour trade.

Chapter seven forms the main archaeological source for this thesis by presenting a re-classification and re-analysis of the artefacts recovered from the *Foam* in 1982 by the Queensland Museum. As such it introduces sets of data that are not available from the historical records. The analysis was conducted in order to identify those artefacts with the potential to provide insights into life onboard a labour vessel and the process of contact and change within the Queensland labour trade. An analysis of the artefacts recovered from the *Foam* has revealed issues relating to trade and exchange including the use of ceramic copies of Melanesian status goods. The analysis also suggests influences on status systems and changes to notions of diet and health. A review of a number of trade goods held in international and local museums is also conducted to augment the *Foam* assemblage.

Chapter eight is the discussion chapter of the thesis. By addressing the main research questions, new perspectives on the mechanisms of contact and change in the Queensland labour trade are presented. The chapter begins with a review of Melanesian socio-economic diversity. It introduces the changes that occurred to the Islanders themselves as they became recruits and were introduced to European systems, food and medical practices. Their transformation continued as they became labourers and then returns.

The Islanders' desire for European goods had a marked influence on their socio-economic structures. Thus, the chapter presents perspectives on particular Islanders' use of the Europeans, their vessels and trade goods for their own benefit.

Based on the data and analysis in previous chapters, chapter eight concludes with a new model for contact and change in the islands. This model illustrates the European view of commerce and contrasts it with the Islanders' version based on their social, economic and political systems. By combining European and Islander views, a new model with a Melanesian perspective is presented, highlighting the significant role of middle men and their exploitation of the European system.

Chapter nine is the conclusion and provides a summary of the new perspectives developed in the previous chapter and identifies areas for future research in contact, trade and exchange in Oceania.

1.4 Protocols

For the purpose of clarity and continuity, it is my intention to use the geo-cultural regions of Melanesia, Micronesia and Polynesia first put forward by Dumont d'Urville in 1832 in his influential work "Sur les îles du grand Océan" (On the Islands of the Great Ocean). As Clark (2003) points out, d'Urville's work places a European construct on Islander identity based on geographic location not cultural characteristics. It is not within the scope of this thesis to provide a summary of the debate that d'Urville's work has inspired. These issues have been discussed at length elsewhere, in particular the 2003 *Journal of Pacific History* Vol 38:2 which includes a full English translation from the French of d'Urville's paper (D'urville 2003).

The term Islander is used in this thesis with a capital I as it is a group identifier just as European and Australian. The term Government Agent is also written with initial capitals as this is the format that was used in all the legislation referring to the position. The term indigenous is written without a capital as recommended by the Australian Style Manual (ASM 2002:56). The glossary of terms used in this thesis follows the reference list.

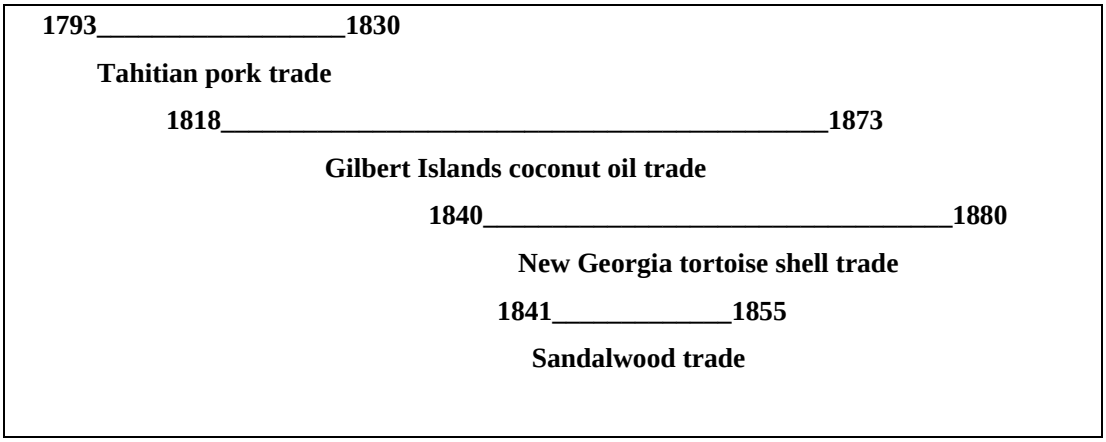
Chapter Two

THE NATURE OF EARLY TRADE EXCHANGES

2.1 Introduction

This chapter will reinterpret the historical record relating to early maritime contact and trade in the Pacific, with a focus on the Tahitian pork trade, the Gilbert Islands coconut oil trade, the New Georgia tortoise shell trade, and the wide ranging sandalwood trade. As these four trading operations overlapped between 1793 and 1880 (Table 2.1), insights into trading contacts between Europeans and Islanders over time are presented. This review will identify changes in the nature of the trade goods, who was doing the trading and who was in control, and how these operations changed over time. In doing so, the process of maritime contact and trade preceding the Queensland labour trade is revealed. A strong theme of diversity within and between trading systems is recognised.

Table 2.1 Early Trade Operations



Source: (Maude 1968; McKinnon 1975; Shineberg 1967)

One of the emerging trends in researching European / Islander cross-cultural exchange is a movement away from notions of European dominance to an approach focusing on the manipulation and control of Europeans and their trade goods by the Islanders for their own purposes. Early works on the nature of contact and change arising from interactions between indigenous peoples and Europeans used dependency theory as an explanatory device (Torrence and Clarke 2000). This framed contact and economic exchanges between the two groups as the civilised control of a primitive desire for

goods. This was achieved by exploiting the peripheral societies for the benefit of the core groups (Champion 1995; Wallerstein 1974; 1980). Boutilier's (1989) work "Metropole and Margin" argues for this approach in dealing with contact and change brought about by the Queensland labour trade and for the 1920s development of international companies in the Solomon Islands.

Such approaches placed Europeans in positions of power and argued that traditional socio-economic structures were fractured or broken down in part by the introduction of European goods and ideas. For example Dening (1998) when referring to Sharp (1952) argues that steel axes introduced into the Yir Yirant society on Cape York Peninsula led to the breakdown of the internal power structure of the society.

However, work by historians and anthropologists such as Dening (1996a; 1996b; 1998), McKinnon (1975), Thomas (1991) and Sahlins (1995) have questioned this model of assumed European dominance. Nicholas Thomas, in his seminal work "Entangled Objects", states that "many of the factors which make a particular exchange relation distinctive are not visible in its enactment but must be traced through the longer term dynamics of the social situation" (Thomas 1991:9). Moreover, he suggests that when considering the influence of introduced European goods, it is "important to recognise the process of selective indigenous recognition and use of foreign contact" (Thomas 1991:118-119).

Thomas's approach is supported by Dening (1996a) who uses early English interactions in Tahiti to suggest that there was mutual misunderstanding from the period of initial contact between both parties in their exchanges. The trade between and the ceremony presented by both sides when the English claimed Tahiti in 1767 was not carried out by heads of state themselves. The second lieutenant who conducted the flag raising ceremony was representing his King and neither he nor his King understood the Tahitian view of the contact. Likewise the Tahitians laying the plantain branches on the ground were representing their King and did not understand the English view of the ceremony. Each side was only able to understand and use the ceremony from their own cultural point of view. However, it is important to note that the Tahitians incorporated material from the English red pennant into the red feather girdle that was their King's symbol of authority and the English claimed Tahiti as part of their kingdom (Dening

1996a). They each possessed the other and each, at the time, saw the process as beneficial.

Despite such discussions, the move away from dependency theory has not been universally adopted as evidenced by Gosden and Knowles (2001) who state that they still prefer Wallerstein's (1974; 1980) core/periphery approach as a tool for examining colonial exchanges. Given the diversity of cultural systems in the Pacific it is entirely possible that one theoretical approach might not be suitable for all interactions at all times.

Archaeological approaches to the nature of contact and change, for example Clarke and Paterson (2003), Harrison and Williamson (2002), and Torrence and Clarke (2000) have also started to question assumptions about the inequality of contact events. Contrary to the active/passive model of dependency theory, these new works explore notions of resistance, negotiation and exploitation of contact experiences by indigenous peoples. In particular, archaeological literature has focused on the incorporation of new technologies and knowledge into existing indigenous structures.

Such new perspectives have yet to be applied to the historically well documented Queensland labour trade and as Johnston (1980) asserts:

> "until a counter-interpretation exists, based on the knowledge and experiences of the Melanesians, we may be creating too rational an explanation on why and how the labour trade operated" (Johnston 1980:59).

2.2 The Tahitian Pork Trade

The information for this review of the Tahitian pork trade and the following Gilbert Islands coconut oil trade derives mainly from Maude (1968). Based on an extensive range of historical material, Maude sets out to provide examples of the diversity of economic, religious, status and social systems in the Pacific. European maritime contact and trade in both the Tahitian pork and Gilbert Islands coconut oil trade is viewed as a dynamic agent for change in the islands.

In 1793, the newly formed colony of New South Wales was desperately in need of food supplies. Salted pork was required as part of the rations for the colony's military, civilian and convict populations and was purchased from Great Britain at considerable expense. To overcome this problem, Governor King dispatched the *Daedalus* to Tahiti (Figure 2.1). It returned with 100 pigs paid for with European goods. This exchange began the earliest sustained commercial interaction between Australia and the Pacific Islands (Maude 1968:183; Ward 1972).

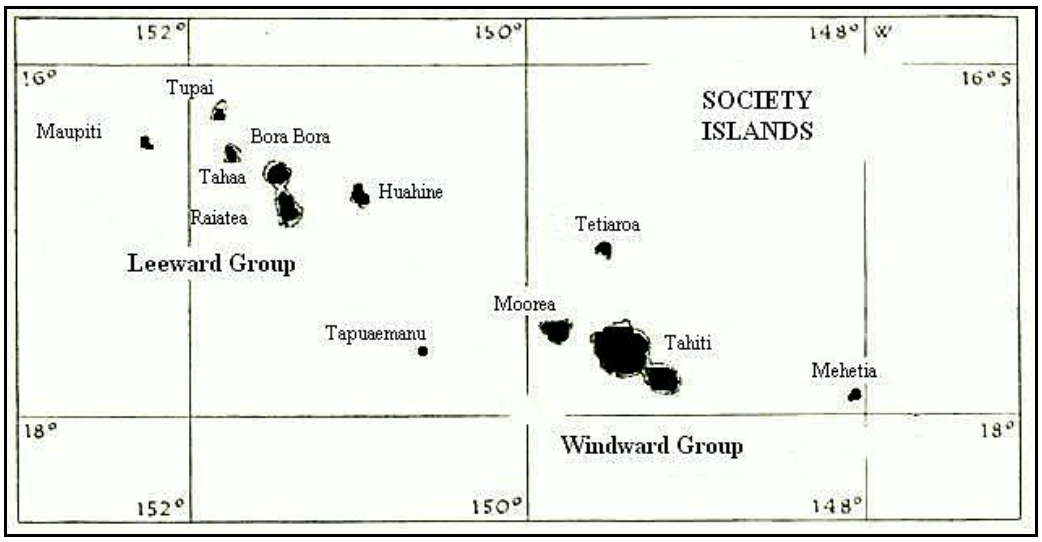


Figure 2.1 Map of French Polynesia

Tahiti was selected as the destination for this venture as it was already known as a safe port and a reliable source of pork and live pigs (Newbury 1972). In 1767 on Wallis's arrival in Tahiti, his ship was met by Islanders willing to provide all manner of food in exchange for beads, knives, nails and hatchets. Initially, a medium size pig could be purchased for a small nail. The exchange rate increased as subsequent vessels visited and by 1769, a small pig weighing approximately 5 kg could not be exchanged for anything less than a good hatchet or white glass beads (Maude 1968:180).

In 1801 and 1802, Governor King dispatched H.M.S *Porpoise* to Tahiti. From the list of trade goods taken on board for these voyages (Table 2.2), it is evident that although metal tools remained a desirable commodity, old iron and cloth had fallen from favour, and in their place firearms and ammunition started to take hold as desirable trade commodities. In 1802, Governor King also sent the colonial brig *Norfolk* to Tahiti to

obtain pork and at the same time contracted traders Charles Bishop and George Bass to provide additional supplies to the colony. The *Norfolk* arrived in Tahiti in early January. Pigs were purchased in exchange for tomahawks, axes, knives, shirts, scissors and razors. When Bishop and Bass arrived in the *Venus* in late January, they brought with them a range of goods that the Islanders found more desirable, including firearms. The *Venus* paid one pistol for five pigs while the *Norfolk* had difficulty purchasing a single pig for a large axe. After this, no Government vessels were used in the pork trade (Maude 1968:186-7).

Table 2.2 European Goods taken by H.M.S *Porpoise* for trade in Tahiti

First Voyage 1801	**Second Voyage 1802**
Metal Tools and Hardware 100 felling axes 180 tomahawks 20 drawing knives 43 clasp knives 48 cheap knives 50 field hoes 12 half round files 5000 x 40 pence nails 6000 x 30 pence nails 100 x7 inch (17 cm) spikes 180 scissors	Metal Tools and Hardware 200 felling axes 150 tomahawks 72 x No 6 clasp knives 6 grind stones 12 half round files 2000 x 40 pence nails 3000 x 30 pence nails 100 x 7 inch (17cm) spikes 96 scissors 35 fish hooks
Firearms and Ammunition 6 stand [sic] of old firearms	Firearms and Ammunition 8 muskets and 3 bayonets 159 musket balls 4 ram rods 4 pistols 1 swivel gun 10 swivel gun shot 2 cartouche boxes
Metal 9lb (4 kg) copper sheet 216 lb (97.9 kg) old iron	Metal Nil
Personal and Cloth 48 razors 287 small tooth combs 63 yards (57.6 m) red cloth 356 yards (325 m) red / yellow bunting 100 white shirts 15 red military jackets 72 cooking plates 6 tin quart pots	Personal and Cloth 108 x No 15 open tooth combs 36 x No 14 open tooth combs 100 check shirts 15 military jackets

Source: Adapted from Maude (1968:224)

It was not long before English and American entrepreneurs moved into the market. Mindful of their bargaining position, the Tahitians demanded more in exchange for their pigs. By 1803, traders were complaining that Tahiti had been so well supplied with European goods that the Tahitians were now very difficult to deal with (Maude 1968:191).

Consequently, the market was extended to surrounding islands where the supply of European goods had not been so extensive and pigs could be purchased for what was considered reasonable exchange.

At Bora Bora and Raiatea, 14 tonnes of pork was traded for muskets. On Mehetia, 20 pigs could still be purchased for hatchets, knives, scissors and looking glasses. However, internal wars heightened the demand for firearms and they soon became the standard exchange medium. The Tahitian King Pomare even received a deck-mounted swivel gun in exchange for 20 pigs (Maude 1968:191-2). This exchange was not exceptional as a swivel gun is listed as part of the trade goods onboard HMAS *Porpoise* (see Table 2.2).

All of the maritime contacts and trade were carried out using sailing vessels and as such, mention should be made of the types of vessels involved. The vessels engaged, mostly schooners and brigs, previously plied the Australian coastal trade. Initially the fleet averaged a cargo carrying capacity of about 50 tons but by 1813, this had increased to between 125 and 140 tons. This increase in size was due not so much to the development of the pork trade, but rather to accommodate the needs of the nascent sandalwood and pearl shell trades (Maude 1968). The pork trade continued until 1807, gradually declining until its virtual demise in 1830.

Each side of the contact viewed the exchange from their own perspective. Neither side fully understood what the other wanted their goods for. It could also be argued they did not need, or want to know. As long as each side received what they wanted, the trade was successful. Moreover, from a cultural contact perspective, I suggest that each side changed their method of interaction but they were doing it within their own understanding of the exchange. Further, the pork trade and the resulting desire for

firearms and metal axes led to an increase in internal wars, causing social upheaval and the dislocation of internal political structures.

The Tahitian pork trade was instrumental in the development of early trading contacts between Australia and the Pacific Islands. It was also Australia's first incursion into an offshore mercantile venture from which the basis for future trade in the region was set up. The next trading system to be examined moves the focus closer to Queensland and onto the Gilbert Islands.

2.3 The Gilbert Islands Coconut Oil Trade

Between 1820 and 1850 approximately 600 whaling vessels, hunting sperm whales in the equatorial regions of the Pacific, used the Gilbert Islands (Figure 2.2) as a resupply base. The trade in coconut oil as a commercial entity started as a sideline to whaling. As Gilbert Islanders were already manufacturing coconut oil for their own use, there was no need to set up a new shore industry or to obtain workers. The Islanders simply had to manufacture extra coconut oil to sell to the whalers. A vessel would arrive and arrangements would be made to purchase oil for a set amount of tobacco. The vessel would depart to hunt whales and return in a few weeks to collect the oil. The whalers also exchanged hoop iron, nails, beads, mirrors and whales' teeth for women, chickens and coconuts (Maude 1968:235).

It was whalers who introduced tobacco into the region and it soon became the main exchange medium. In 1841 Captain Hudson recorded that Gilbert Islanders were extremely eager to obtain tobacco which they would "eat and swallow" with great pleasure. It was the European view that the Gilbert Islanders would trade their most valued articles to obtain tobacco (Wilkes 1845:V:62). American whalers reported that Gilbert Islanders were very keen traders and, as stated in Maude (1968:235), they would exchange all manner of local goods for tobacco and pipes. In fact, they were such avid traders they would follow the whaling vessel for several miles in their canoes in order to trade.

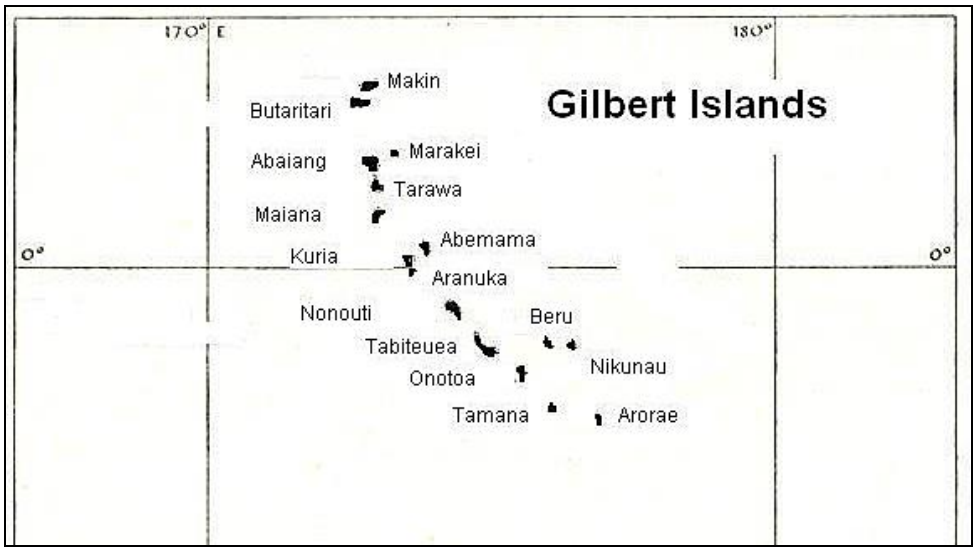


Figure 2.2 Map of the Gilbert Islands

Islanders' desire for European goods was such that some captains took extraordinary measures to prevent theft. In 1835, the *Hound*, a 200 ton brigantine owned by Captain Tanner was armed with a long barrel brass 9lb cannon, four carronades and small arms for the crew. Tanner also erected nets around the gunwales to prevent unauthorized boarding. These nets were only raised for trading, allowing just a few Islanders on board at a time (Maude 1968:241).

The 1840s heralded new uses for coconut oil in the manufacture of candles and soap. The subsequent increase in demand saw an increase in its price. The outcome was a change in focus from whaling to coconut oil trading, resulting in a relocation of the trading bases from the southern region of the Gilbert Islands to the northern region. The move from south to north was significant given that Samoan influences in the 14th century had led to the development of a hierarchical society in the Gilbert Islands (Howard and Durutalo 1987:81). The command of the chiefs was strongest in the northern region of the islands. By the 17th century the southern region had moved to a system of gerontocracy. The whaling industry was based in the southern region of the islands. The coconut oil trade was now mainly in the northern region which was controlled by chiefs (Howard and Durutalo 1987).

Traders such as Randell, Durant and Handy moved into the region and set up stations specifically for trade in coconut oil (see Figure 2.3). By the late 1840s, Handy could

purchase 13 litres of coconut oil for half a kilogram of tobacco, costing him 17 cents. The oil was later sold for US$3.50. Thus, the coconut oil trade was very profitable and soon more vessels started to arrive specifically to trade for coconut oil (Maude 1968:244).

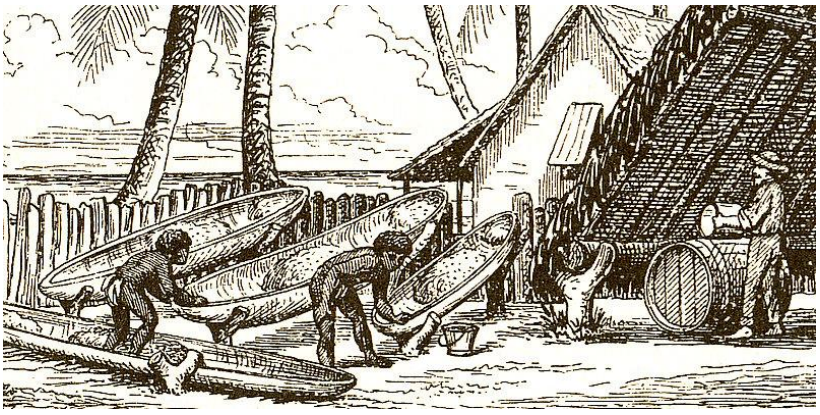


Figure 2.3 Coconut Oil Station

Source: (Wawn 1893:222)

It was reported that there was no trade in cloth and only a few knives were traded. However, in the northern islands while tobacco was still popular, a knife could now purchase more oil than several sticks of tobacco. The trading cargo carried on the early voyages consisted mainly of boxes of tobacco and a few cases of hardware (Maude 1968:251).

By 1866, the goods in demand by the Islanders had diversified beyond the original tobacco. The brig *Tyra* carried a wide range of trade items including: tobacco, clay pipes, various types of muskets and rifles, ammunition, powder, shot, axes, knives, calico, beads, scissors, fishing line and hooks, umbrellas, pots and pans (Maude 1968:277). This expansion of goods resulted from the Islanders' demands for different trade goods and reflects the similar trend previously identified in the Tahitian Pork trade.

Not all traders found the coconut oil trade profitable. Robert Towns, a significant player in the later Queensland labour trade, moved into the trade in 1852 when he despatched the *Genii* on an unsuccessful whaling and coconut oil venture. Only three whales were taken and no coconut oil was obtained. In 1853, Towns tried again this

time despatching the *Blackdog* to set up trading contacts in the islands. The results of this second venture were inauspicious with the *Blackdog* returning with only 40 tuns of oil and 5,400 kg of Beche-de-mer (sea cucumber, class: *Holothuroidea*) for an outlay of just over six kegs of tobacco. After this, Towns quit the coconut oil trade (Maude 1968:264).

Chiefs in the northern regions were given gifts by individual traders to ensure their patronage and protection. The chiefs would provide favour to a number of traders and play them off against each other to see who could provide the highest payment for the coconut oil. However, some chiefs took a more active role in the trade. In 1851, on the island of Abemama, the High Chief Tem Baiteke wanted more control and profit. He took control of the island's coconut oil trade by killing the European traders and replacing them with his own agent. All traders were required to pay his agent for the privilege and their vessels were restricted to trade from one specific place on the beach (Maude 1968:251).

Baiteke was not the only chief to exercise control. After a battle in 1858, Kaiea became the High Chief of Abaiang and took control of the coconut oil trade in the region. He demanded a payment of US$3.00 per cask and US$15 for a tun of coconut oil. It has been estimated that these payments netted him an income of about US$500 a year. By taking total control of the coconut oil trade Baiteke and Kaiea became very rich and powerful. Kaiea imported a US$600 frame house from the U.S.A. and Baiteke purchased luxury European goods such as furniture and phonographs (Maude 1968:258). Similarly, Macdonald (1982) argues that it was the chiefs who were the main beneficiaries of the coconut oil trade. By controlling access to the oil and using Europeans to consolidate their position, the chiefs were able to amass large profits and ensure their authority.

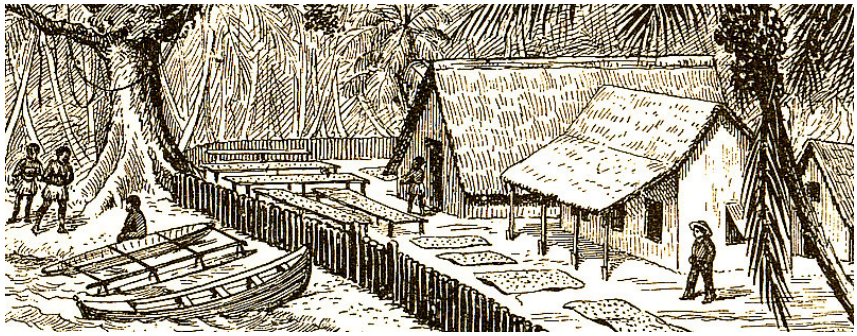


Figure 2.4 Copra Station

Source: (Wawn 1893:220)

In the mid 1860s, the coconut oil trade started to decline when the German company of J.C Gedeffroy and Son started to transport the dried meat of the coconut (copra) (see Figure 2.4) instead of the processed coconut oil. This change proved to be more economical for the European traders as it was easier to transport copra in bulk than manufacture the oil and transport it in barrels (Maude 1968:281). However, I suggest that this change may not have been readily accepted by some of the Islanders as it required them to set up a new manufacturing process to trade copra while maintaining oil production for their own use.

The influence of European contact and trade in the Gilbert Islands varied. Maude (1968) argues that it depended on the amount of oil collected from the islands. On islands with small populations and a surplus of oil, European goods soon replaced the traditional items and reduced workloads. On islands with larger populations and very little oil surplus, the desire for European goods always outstripped supply and caused dissonance in the community. Maude avers that the overall influence of European goods on the Gilbert Islands was to produce a "technological revolution accompanied by a decline in morals, political stability and health" (1968:279).

In conclusion, I suggest that, once again, each side of the contact viewed the trade exchange from their own perspective and changed their methods of interaction to ensure their desired outcome. The next section moves the focus from a land based to a marine based resource and, geographically, to the New Georgia group of the Solomon Islands.

2.4 The New Georgia Tortoise Shell Trade

The data for this review of the New Georgia Tortoise Shell Trade comes mainly from McKinnon (1975). McKinnon asserts that contact and trade with Europeans played a vital role in the development of organised large scale raiding parties in the New Georgia group of the Solomon Islands (Figure 2.5).

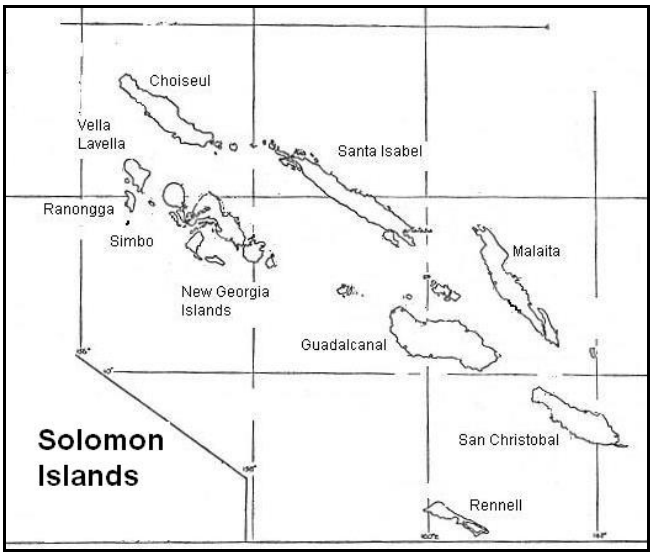


Figure 2.5 Map of the Solomon Islands

In the 1780s, Europeans ventured into the New Georgia regions of Simbo and Ranongga, and found that Islanders were keen to exchange their shell armbands and local goods for nails and European beads. By the 1820s, whalers moving into the region found that the Islanders were well acquainted with Europeans and were demanding iron for trade (McKinnon 1975:292). The process of contact and trade continued and 1840 saw the arrival of traders seeking the shell of the hawksbill turtle (*Eretmochelys imbricata*). Despite being the shell from a turtle, it was called "tortoise shell" and was in demand in Europe for jewellery and as inlay for furniture. The Islanders were very keen to hunt the turtles and trade their shells (McKinnon 1975:293). In 1844, seeking tortoise shell and bêche-de-mer in Simbo, the trader Captain Andrew Cheyne recorded that Islanders would only trade their tortoise shell for tomahawks which they used in battle. Cheyne was disappointed as he only had a few tomahawks to trade and stated that he could have obtained about 450 kg of shell. To ensure that he

had tomahawks for future trade, Cheyne recruited a blacksmith for the sole purpose of manufacturing tomahawk heads on board (Shineberg 1971a).

The Islanders of New Georgia were known as zealous head hunters. McKinnon (1975:290) suggests that large scale raiding developed after contact with Europeans and access to tomahawks. To achieve and maintain their position, men of influence (whom McKinnon refers to as big men) needed to control the hunting of tortoise shell and access to tomahawks. Thus, McKinnon argues that the introduction of European goods (iron, guns and tomahawks) led to the development of large organised raids under the control of a single chief. Moreover, iron tools enabled some villagers to complete their work in a shorter period of time. This provided more opportunity for the manufacture of shell valuables and the collection of tortoiseshell and bêche-de-mer which were then traded with Europeans. Sheppard, Walter and Nagaoka (2000) presents archaeological evidence to support the use of shell rings in the head hunting culture of the Roviana lagoon in New Georgia.

Local leaders controlled this manufacture and trade. Shell rings were used to pay warriors for head hunting raids and the marine products were traded for guns and tomahawks. These were then used for large raids which further advanced their position.

In effect, a cycle of exchange and control between big men and European traders was developed. This cycle involved the internal use of tomahawks to gain control over hunting grounds. This led to acquiring more shell for trade thus enabling greater access to more tomahawks and eventually firearms. Turtle hunting voyages were combined with head hunting raids. To maintain status, heads/skulls were traded, as were slaves, as part of the internal trade system (McKinnon 1975:303-4). Judging from the collections of Islander skulls in regional and international museums, it could be argued that skulls also became part of the external trading system with Europeans.

However, Aswani and Sheppard (2003) offer an alternative view to the development of large scale raiding. Based on oral traditions and archaeological evidence from the region they argue that social structures involving powerful local chiefs were in place before the arrival of Europeans and their goods. Moreover, they state that these chiefs

were already conducting large scale raiding and trading voyages to the extent that there were instances where nearly all of the inhabitants in some villages were killed (Aswani and Sheppard 2003). Despite the views of Aswani and Sheppard (2003) it still seems likely that contact and trade with Europeans, especially access to axes and eventually firearms, would have enabled chiefs to expand their region of authority.

2.5 The Sandalwood Trade

This review of the Sandalwood trade is based predominantly on the work of Shineberg (1967 and 1971a). Shineberg (1967) asserts that most Pacific historians have focused on the changes in the islands brought about by the forced introduction of external political and religious systems. What sets Shineberg's analysis apart is her focus on the influence of introduced European goods. Shineberg argues that the European view of these goods having a detrimental effect on the Islanders' internal systems and of Islanders being passive participants is flawed. Shineberg (1967) contends that the Islanders were dynamic in their engagement and actively incorporated the Europeans, their goods and vessels into the island trading system for the Islanders' benefit. In Shineberg (1971a), this theme is continued with the transcription and editing of Andrew Cheyne's personal accounts of his sandalwood trading voyages. In Cheyne's account, the need to fit into the diverse, local systems and adapt to changing preferences for European goods is clearly illustrated.

Sandalwood was originally obtained from the Mysore forests in the Kerala district of India. It was highly prized in China as incense and was also used to manufacture medical preparations, perfumes, coffins and inlaid boxes (Cowan 1936; Shineberg 1967). Traders from various nations had transported this fragrant wood to China since the 6th century AD.

The sandalwood trade in the Pacific resulted from the new European fascination with drinking tea. Tea was obtained from China and while the English could pay for it with commodities such as cotton, the population of New South Wales had to pay for their tea in hard currency which was in short supply at the time. The discovery of sandalwood

in the South Sea Islands changed the whole operation. China readily accepted sandalwood as payment for tea (Shineberg 1967:6-7).

In 1825, the trader Peter Dillon discovered sandalwood on the Vanuatu island of Erromango. Despite offering trade goods, Dillon was unable to obtain any workers or sandalwood as the Islanders were "in such a state of barbarous ignorance as not to attach the least value to any of our goods" (Shineberg 1967:16). A few other traders followed in his path with modest success. In 1841, the London Missionary Society vessel *Camden* arrived in Sydney from the South Seas and unwittingly launched Australian merchants into the sandalwood trade. One of the crew members had noticed a few pieces of sandalwood in the firewood that the *Camden* had collected from the Isle of Pines, southeast of mainland New Caledonia (Figure 2.6). He sold this intelligence to a group of Sydney merchants who dispatched two vessels under great secrecy and started an industry that changed the internal power structure of some Western Pacific islands (Shineberg 1967:29).

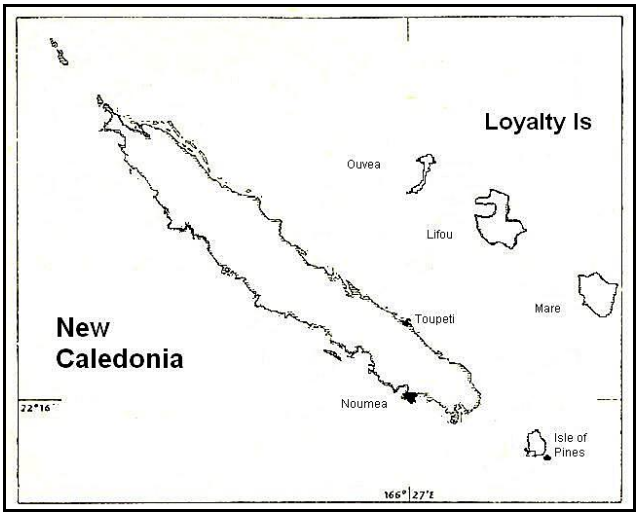


Figure 2.6 Map of New Caledonia

In 1841, a trading station was built on the Isle of Pines and two vessels were based there. In the mornings the boat crew, accompanied by about 50 Islanders, would head inland. The Islanders would cut and carry the sandalwood back to the trade store. For a piece of sandalwood weighing between 9 and 36 kg, the Islander would receive a piece of hoop iron about 12 cm long. For smaller pieces and any decayed wood, the exchange was a few beads or a fish hook (Shineberg 1971a:42). By the following year,

the sandalwood trade had expanded to take in other islands in the region. Shineberg (1971a:113) records that at Ouvea in the Loyalty Islands (Figure 2.6), the trader Andrew Cheyne (aforementioned tortoiseshell trader) purchased approximately 4 tonnes of sandalwood for two bars of iron, some old nails, one cotton shawl and three pocket knives.
Five days later at the same beach, 3 tonnes of sandalwood were exchanged for one iron bar, 900 grams of beads and a quantity of old metal spikes (Shineberg 1971a:116).

When going ashore, Cheyne would be presented with gifts of food by chiefs whom he already knew. The expectation was that this gift of food would be reciprocated with trade goods of a higher value. The traders also needed to provide gifts to ensure that they would be allowed to collect sandalwood at a later date. In 1842, before sailing to China with a full cargo of sandalwood, Cheyne presented the King of the Chiefs with an extensive range of gifts. According to Shineberg (1971a:153), Cheyne handed over an officer's coat, a frock coat, a pair of trousers, a hat, one musket with bayonet, six axes, six tomahawks, a cross cut saw, two small pigs, one dog, one sheep, one duck, one cooking pot, calico, beads and a quantity of spike nails. The King's son was presented with his own gifts as were the other chiefs.

By 1844, the Islanders' desire for European goods had changed and the most requested items of trade were tomahawks, adzes, axes, cloth, hoop iron, fishing hooks, knives and large light blue glass beads (Shineberg 1967). As the demand for sandalwood increased so did the area of operation, and traders were now required to resupply their vessels while still in the islands. This resulted in extra trade goods being carried onboard as they were needed to exchange for water, firewood and food. This in turn introduced more goods into the island systems.

As mentioned earlier, Robert Towns was not particularly successful in the coconut oil trade. However, sandalwood heralded a change in his fortunes. In 1844, Towns dispatched the *Elizabeth* to Erromango. The voyage was hailed a financial success when it returned with 100 tons of sandalwood Shineberg (1967:110). Towns warned his captains not to underestimate the Islanders, particularly the New Caledonians and Erromangans, as they were well aware of the value of their sandalwood and the value of any trade goods offered in exchange.

The cost of purchasing goods for trade was an issue with the traders. On 16 July 1846, Towns sent a request to London for trade goods (Table 2.3) as he could get the stores cheaper there than by purchasing them in Sydney. The list was for two years' supply of trade goods for use by his vessels in Erromango and New Caledonia.

Table 2.3 Trade Goods Requested by Captain Robert Towns 1846

100 dozen tomahawks	20 dozen tomahawks, bright without handles
100 dozen felling axes	10 dozen clearing axes
50 dozen adzes	5 cwt glass beads, assorted sizes and colours
30 dozen common small scissors	20 dozen sailors' knives
10 dozen drawing knives	10 dozen butchers' knives
20,000 fish hooks, assorted	20 dozen saw files, x cut and handsaw
20 dozen musket flints	20 dozen pistol flints
60 good adzes for use	
12 pieces of broad bright coloured scarlet cloth, coarse fabric	

Source: Adapted from Shineberg (1967:148)

This appears to be a substantial quantity of goods to be introduced into two locations over a two year period. However, it only represents a small fraction when one realises that Towns operated only four vessels out of the 23 that Shineberg (1967:149) states were operating each year in the islands. In any case, this list provides a useful illustration of the quantity and types of goods being introduced into the region.

Between 1847 and 1849 as more vessels arrived at the islands, competition increased and Islanders acquired more bargaining power. Thus, traders had to adapt to what the Islanders wanted. For example, in June 1848, Robert Towns sent another order to London, this time specifying the types of beads by size and colour, and even drawing a picture of the exact shape of tomahawk that Islanders wanted. In fact, Islanders were demanding good quality tomahawks of a specific shape instead of the cheaper trade axes that had originally been exchanged. At least one trader had to send back his entire supply of tomahawks as the Islanders would not accept them due to their poor quality

and undesirable shape (Shineberg 1967:154). In Town's 1848 order, the quantities are similar to the 1846 order (Table 2.3) however the quantity of scissors had been increased to 42 dozen and 50 gross (7,200) of Jews harps had been added (Shineberg 1967:149). This supports the emerging view that traders had to respond to the changing demands of the Islanders.

Around the end of 1848, tobacco and clay pipes had started to become the Islanders' trade items of choice. Tobacco was ideal for the trader as it was compact and cheap. It was expended when used and created further demand for itself. In the late 1850s tobacco became so popular that Towns received a letter from his Isle of Pines agent complaining that Islanders now only wanted tobacco, pipes and fish hooks. The agent went on to say that Towns should send only good quality small pipes as these were what Islanders wanted and could be exchanged for two or three times the amount of sandalwood that could be had for the inferior kinds of pipes (Shineberg 1967:151).

By 1849, European cloth became the desired commodity. Thus, in February of that year, Towns placed another order to London (Table 2.4). Shineberg (1967:150) suggests that this change in demand was brought about by the saturation of other utilitarian trade goods hence Islanders wanted decorative or luxury items. The order also specified 100 to 150 kg of beads every 3 months, specifically green, yellow and bright red in colour. It is interesting to note that the cloth caps had to be either blue striped or scarlet with white insides. These specific requirements further indicate the extent to which traders had to go to provide the exact goods that Islanders demanded in exchange for their sandalwood.

Table 2.4 Cloth Trade Goods Requested by Captain Robert Towns 1849

400 pieces of 27 inch Super Calicoes
100 pieces 8/4 Blankets
1000 yds [914 m] 4/4 Blue Derry or Dungaree
50 pieces Turkey Twill
200 pieces 27 inch grey Domestico
20 dozen scarlet woven comforters
20 dozen scarlet worsted caps (white inside)
20 dozen blue striped caps
200 9/4 & 10/4 fancy printed ruggs [sic], showy patterns
Any job lots of gaudy prints, bright colours.

Source: Adapted from Shineberg (1967:149-50)

As already shown, it became apparent that Islanders, once exposed to European goods, changed their demands over time. Shineberg (1967:150-1) asserts that, based on manifest lists, the demand for European goods within the sandalwood trade changed as follows:

Initial contact: hoop iron, beads, fish hooks, tomahawks and pots, calico, glass bottles

↓

metal tools such as saws, knives and scissors, as well as cloth, clothing and axes

↓

Tobacco, smoking pipes and clothing

↓

muskets, powder, good quality edged tools and more tobacco

As Shineberg points out, there were overlaps in the demands and while a tomahawk could always be traded, it was common practice to pay for small goods and services with beads and then tobacco.

Firearms do not appear to have entered the trade cycle until the latter part of the sandalwood trade. Shineberg puts this down to the expense of purchasing muskets for trade. In 1849 muskets were being traded in New Caledonia and by 1854 they were being traded for Nunpuri shells (*Cypraea moneta*) which were in demand on Erromango (Shineberg 1967:152). In 1846, Robert Towns had placed orders for musket and pistol flints and in 1853 he placed an order for 10 cases of trade muskets, one case of percussion pieces and 20 percussion pistols with bullet moulds. Traders lost money if they did not keep up with changing demands in the types of trade goods desired. One Sydney trader departed for Tanna not realising that muskets were in demand. Upon arrival he had to send back a request for 100 trade muskets and 200 lb (90.7 kg) of gunpowder (Shineberg 1967:152).

A significant change in the later stages of the sandalwood trade was the practice of employing contract labour gangs. As the trade developed so did the number of sandalwood trading stations. However, local Islanders were not always willing or available to cut and carry the sandalwood when the trader wanted. As Towns had been employing South Sea Islanders in his various enterprises since 1842, it seemed a natural step to start employing labourers from other islands to work under contract at the trading stations (Shineberg 1967:190). Contract labourers had access to European goods as payment and did travel to other parts of the world. However, their quality of life was not always as favourable as on their own island. The labourers were now dependent on the traders for food and shelter and no longer had the support of their families and friends. As Shineberg points out, contract labourers were foreigners in sometimes hostile lands and they had lost any bargaining power they once had as a supplier of sandalwood on their own island.

Islanders were also signed on as crew on sandalwood vessels. Islander crews were very good sailors and keen to sign on. At first, Islanders were the minority on board. However, as Shineberg (1967:191) relates, during the Australian gold rush of 1851-56 many European crew departed for the goldfields and their places were filled by Islanders who proved themselves to be good sailors and were cheaper to employ. Soon it became common practice to have a majority of Islander crew on sandalwood vessels.

A unique trading cycle evolved in the later stages of the sandalwood trade. The Islanders were so well supplied with European goods that their preferences reverted to traditional status and trade goods, thus presenting the next challenge for traders at established sites. Now profit-conscious traders had to acquire the traditional trade goods that Islanders had valued, such as pigs and certain types of shells. Shineberg (1967:152) describes how on Espiritu Santo in Vanuatu, the demand was for pigs and dogs. This resulted in vessels sailing to Tanna in Vanuatu, Lifou in the Loyalty Islands and Fiji to obtain pigs. On Tanna, Islanders wanted tortoiseshell and it was regarded as equal to tomahawks and muskets in trade. On Erromango the "Nunpuri" shell (*Cypraea moneta*) came back into favour and had to be acquired from New Caledonia.

To adapt to the Islanders' new demands a new luxury goods cycle evolved (Figure 2.6)

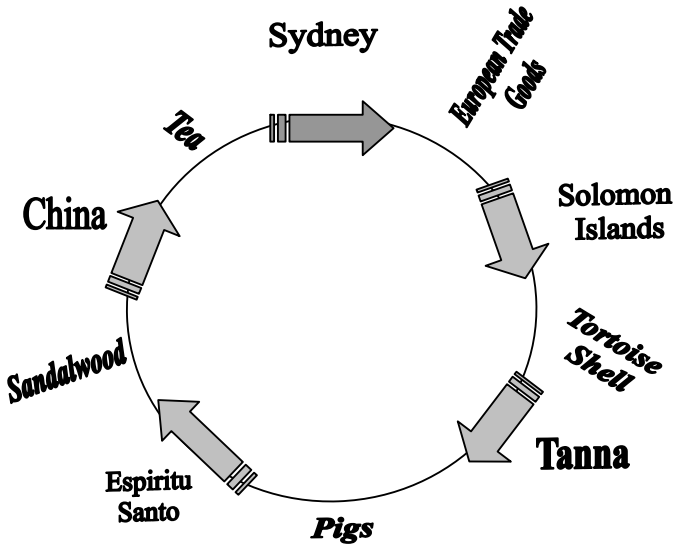


Figure 2.6 New Traditional Goods Trade Cycle

In this cycle European goods were traded in the Solomon Islands for tortoiseshell. This tortoiseshell was then traded for pigs at Tanna which were then used as trade for sandalwood on Espiritu Santo. The sandalwood was taken to China to pay for tea which was then taken back to Sydney (Shineberg 1967:151). This procedure set up a whole new demand cycle within the new and old contact sites, each with its own changing demands for trade goods. In effect, *the Islanders now had European traders performing their trading voyages for them* and in so doing developed new trading cycles.

2.6 Archaeological Evidence for Contact and Change

Archaeological research into the pre-history of Southern Vanuatu reveals that on Aneityum, chiefly power was based on the control of wealth and status goods that were obtained by long distance exchanges. This trade was sporadic at the time of European contact resulting in a decline of the political power base. This inturn resulted in less feasting and more wars to gain lost power. In contrast on Tanna the external exchange system was well established and flourished with the arrival of the Europeans. The increased availability of trade goods led to a break down of the established hierarchy. The result was the development of type of big man system. So chiefly power was on a decline in Tanna and the power base had shifted for the chiefs in Aneityum (Spriggs and Wickler 1989). The diversity of socio-economic systems in Melanesia is covered in depth in Chapter eight.

On a wider perspective the fur trade in America provides interesting archaeological evidence for contact between Europeans and First Nation people. The two sites for examination are Fort Ross in California and Fort Union I North Dakota.

Fort Ross was a Russian trade post operating between 1812 and 1841. Lightfoot, Wake and Schiff (1991) investigated this site with one of their aims being to investigate how the local population acculturated the Russian trade system. The North West Pacific fur trade dealt mainly in sea otter pelts that were shipped to china where they were held in high regard. The company interacted with the local Kashaya Pomo, Southern Pomo and Miwok people in a number of ways. Some of the local population acted as middle men between the trappers and the company while others were paid employees of the company. In effect some exchanged their labour for trade goods while others sold their furs for money which they then used to buy trade goods. The company held the upper hand in these dealings. The access to European goods altered the power structure within the local potlatche based system (Lightfoot, Wake and Schiff 1991).

The second site is Fort Union in Williston, North Dakota and the archaeological investigation is reported in Sudderth and Hulvershorn (2000). This establishment was operated by the Upper Missouri Outfit (UMO) of the American Fur Company from 1826 to 1867. This period of colonisation is identified with fierce Anglo-French rivalries. Each nation wanted to establish the strongest hold in the colony. In order to achieve this through military action the UMO enlisted the support of the local Assiniboin, Blackfoot, Chippewa, Cree, Crow, and Sioux nations. To identify the chief of these allied forces the company presented him with trade goods and a bone china gorget. These gorgets gave the chief the rank of gorget captain in the local armed force. They were specifically manufactured in Staffordshire and were decorated in patterns representing local North Dakota flora and fauna. The gorgets normally used in fur trade as trade goods were made from tin, iron or brass. The china gorgets stand out as they appear to be a once only attempt to introduce a new status good (Sudderth and Hulvershorn 2000). The use of specifically manufactured ceramic goods will be further examined in chapter seven in relation to trade goods in Queenslan labour trade.

2.7 Discussion

The arrival of Europeans into the Pacific had a dynamic effect on the Islanders' way of life. Thus, it has been necessary to review the early maritime mechanisms of trade contacts between Europeans and Islanders as, I would argue, they show the significant influence of Islanders on external trade mechanisms.

Table 2.5 provides a comparison of early trade systems between Australia and the Pacific Islands. By reinterpreting the records, it has been possible to compare their mechanisms of operation and identify the types of European goods exchanged and how they changed over time.

The Tahitian pork trade is an example of an existing traditional exchange system that was expanded to meet the demands of European traders. There is no doubt that the Tahitian king was involved in the control of the supply of pigs and the type of goods demanded for them. The European goods in demand started with nails and hatchets but soon escalated into a range of goods, the most popular of which was firearms.

Table 2.5 Comparison of Early Trade Systems

Tahitian Pork Trade	• Expanded an existing trade system • Changes in the quantity and types of European goods traded driven by Islander demands • Trade controlled by Chiefs
Gilbert Islands Coconut Oil Trade	• Expanded the existing system • Changes in the quantity and types of European goods traded driven by Islander demands • Trade taken over by Chiefs in some areas
New Georgia Tortoise Shell Trade	• Expanded the existing system • Tomahawks and firearms were the main trade item • Trade controlled through "big men"
Sandalwood Trade	• Introduced a new trading system • Changes in the quantity and types of European goods traded driven by Islander demands and eventually returned to traditional exchange goods • Development of introduced labour gangs • Trade controlled by "men of influence"

The Gilbert Islands coconut oil trade is another example of an existing traditional production system that was expanded to meet European demands. However, I suggest that not all of the Islanders had access to a sufficient supply of coconuts to produce oil and therefore did not have direct access to European trade goods. Soon, local chiefs were controlling the supply of oil and the quantity of goods required in exchange. European traders were making specific gifts to chiefs to ensure continued supply and the chiefs were playing the European traders off against each other. The example of the chiefs' demand for payment in money indicates a change within traditional exchange systems. The chiefs were operating a cash based system within their own traditional exchange system that enabled them to access goods not normally available, and giving them status in both the European and Islander systems.

In the New Georgia tortoise shell trade, it was men in positions of influence who were controlling the hunting of turtles and therefore the supply of shell. By demanding that tomahawks were the only item suitable for exchange, they ensured a supply of weapons

that enabled them to control the trade within the islands. Unlike the two preceding examples, the range of goods did not appear to expand in variety over time. The trade is an example of Islanders changing within their own system by adapting contact with Europeans and their goods into an established dynamic trading and raiding system.

The sandalwood trade was driven by a European desire for tea which was, at that time, a luxury item. The Islanders did not traditionally trade in sandalwood. Thus, in order to obtain what they wanted, Islanders needed to incorporate sandalwood into their existing trading systems. The Islanders' demands changed as they developed a good understanding of the value of their sandalwood to the Europeans, and the value of the trade goods given in return. The unique change in this trade was the return to traditional goods as payment. This resulted in Europeans having to change their whole trading system to acquire these goods. In effect, both participants changed their mechanism of trade within their own systems. The Europeans had to adapt to what the Islanders wanted, and the Islanders had to assimilate the Europeans and their trade goods into their own diverse trading system.

A common theme evident in all four trading ventures is that when Europeans first arrived, they had the upper hand as far as trade exchange was concerned. However, this soon changed and Islanders, especially men of influence, be they kings, chiefs or big men were controlling the interaction and trade in the islands. If European traders wanted a financially successful voyage, they had to adapt to the changing demands in the islands.

I would argue that the Queensland labour trade, which is the focus of the next chapter, is a continuation of European contact and control by individuals of influence in the islands. Furthermore, it was the early trade interactions that set up the exchange mechanisms for the initial operation of the Queensland labour trade. To maintain their status, men of influence in the islands still needed to control access to goods or risk losing their position to new men of influence who were using European goods to develop their position. What set this trade system apart was that the commodity being exchanged was not copra, tortoise shell or pigs. It was human beings and their labour.

Chapter Three

THE QUEENSLAND LABOUR TRADE

3.1 Introduction

During its 41 years of operation, the Queensland labour trade involved the transportation of over 60,000 South Sea Islanders (Price and Baker 1976). This chapter begins with a background to the events leading up to the introduction of the Queensland labour trade, and follows with an examination of changes in the mechanisms and methods of operation. One of these mechanisms was the trade box system which was vital to the Islanders' acquisition of European goods.

First however, it is necessary to provide a brief background to other related academic investigations. According to Moore (1990) and Munro (1995), the emphases of historical works on the Queensland labour trade can be divided into four sequential phases:

- Imperial
- Revisionist
- Counter-revisionist and,
- Neo-revisionist.

The Imperial approach had a Eurocentric focus on how the system was administered, the violence of early recruiting, and reprisals by the Islanders. This approach was criticised by the Revisionists in the 1960s and 1970s because it did not investigate the function of the labourers. The Revisionists argued that the labour trade should be viewed as a series of cultural contacts and that the Islanders had a proactive role in these contacts. For example Scarr (1967) asserts that the early episodes of kidnapping were soon replaced by voluntary recruiting, driven by pressure from within the islands and the desire to acquire European goods. Corris (1973) amplified this approach by investigating the labourers' life experiences on Queensland plantations.

Conversely, the Counter-revisionists argued that the Europeans were in control, especially on the plantations. Saunders (1974) asserts that physical coercion and harsh conditions were central to the operation of plantations while Graves (1979) takes a Marxist perspective arguing that in order to ensure maximum production, the state used its power to control the Islanders.

The Neo-revisionists viewed the Counter-revisionists' argument as being too narrow in focus, and expanded the area of research. For example, Shlomowitz (1981a) investigated statistical data based on contemporary government records to reveal the *active* participation in the plantation system by time-expired labourers who had chosen to remain in Queensland. In another approach, Moore (1985) used extensive oral testimony to bring to light issues in the labourers' lives such as magic, religion and resistance to authority, that was lacking in the documentary record. This revealed that labourers adapted to life on the plantations in their own way (Munro 1995).

It is clear that the Queensland labour trade was not static politically, socially or economically. Therefore, it would be impractical to treat the period as one homogenous episode. To understand the changes taking place throughout the period, it is necessary to partition the labour trade into phases and this has been recognised by other researchers. For example, Ivens (1918) divided the labour trade into three phases based on his view of changing recruiting practices, whereas Graves (1993) used the economic development of the Queensland sugar industry as the basis for five phases. By contrast, this thesis identifies four phases based on changes in the legislation governing the trade, as it is argued that these changes affected all of the parties involved, the mechanism of operation, and the physical structure of the recruiting vessels. Each is further characterised by key pieces of legislation in operation during that phase. The phases identified are:

1. **Establishment to 1868.** This phase covers the events and issues leading to the arrival of the first Queensland labour vessel in 1863, and continues on to the passing of the first Act specifically created for the labour trade.

2. **1869 to 1884**. This period covers the operation of the labour trade up to and including the ban on firearms as trade goods.

3. **1885 to 1892**. This spans the period from the ban on recruiting Islanders up to and including the repeal and extension of South Sea Islander recruitment.

4. **1893 to 1904**. The final phase covers the period up to Federation and the enactment of the legislation that finally abolished the Queensland labour trade and started the deportation of the South Sea Islanders.

This analysis of the changes in legislation, to some extent, addresses the third research question identified in chapter one, "did Victorian society and its values, as expressed in part through a changing legislative framework, have any influence on the Queensland labour trade?".

3.2 Establishment to 1868

The key pieces of legislation that apply to this phase are:
The *Masters and Servants Act of* 1861 and
The *Polynesian Labour Act of* 1868.

In Australia, as in other developing colonies, there was a need for a large labour force. The demand for this labour force was initially solved by utilising convict labour and Ticket of Leave holders (Mercer 1995). It is estimated that at least 150,000 convicts were transported to the eastern coast of Australia between 1788 and 1841. In 1841, when the transportation of convicts to the east coast of mainland Australia ceased, a new reliable source of cheap labour was desperately needed (Dunbabin 1935). Initially, indentured labour was sought from India and China. However, the Indian labour force had their pay and conditions regulated by the British government and were difficult to obtain due to demands from other British colonies. Chinese labourers were not similarly regulated but they demanded better working conditions and higher wages (Docker 1970; Mercer 1995).

Vessels from Peru and Chile were transporting Pacific Islanders to work on Peruvian cotton plantations and in guano mines on the islands of Chincha and Lobos. The Peruvian labour trade was viewed by the English and French governments as a slave

trade. Political pressure was brought to bear on Peru and, in 1863, the Peruvian labour trade ceased to operate (Maude 1981; Moore 1985; Short 1870). That same year, the Queensland labour trade commenced with the arrival in Brisbane of a group of Pacific Islanders recruited on behalf of Captain Robert Towns (Short 1870). Captain Towns, mentioned in the previous chapter, was a mercantile trader and ship owner involved with whaling, coal, cotton, sandalwood and meat processing. He was also involved in the financial, political and legal circles of society as the chairman of the Board of Directors of the Bank of N.S.W., a member of the first Legislative Council of N.S.W. and a magistrate of the City of Sydney (Carver 1993; Stevens 1966).

When the American Civil War (1861-1865) severely curtailed the supply of cotton to England, Towns planned to take advantage by exporting cotton produced in Queensland. He established a cotton plantation called "Townsvale" on the Logan River south of Brisbane (Carver 1993; Docker 1970; Lack 1960; Stevens 1966). The abilities of Islanders were known to Towns due to his involvement in the sandalwood trade (Docker 1970), and so, in response to a scarcity of labour, Towns decided to obtain his workforce from the South Sea Islands. In July 1863, Towns dispatched the schooner *Don Juan* to recruit labourers from the South Sea Islands. The *Don Juan* returned in August of that year with 67 Islanders (Carver 1993; Holthouse 1969; Stevens 1966). Moore (1985) and Mercer (1995) report that these Islanders were all recruited from Vanuatu.

As Townsvale developed, more labourers were needed. Between 1864 and 1866 just over 360 Pacific Islanders worked on the Townsvale cotton plantation. The tenure of engagement was officially 12 months. However, the initial group of Islanders from the *Don Juan* were not returned until after 14 months' stay. Although also engaged for just 12 months, upon their arrival in Queensland, subsequent recruits appear to have been indentured for three years (Short 1870).

When the American Civil War ended in 1865, American cotton production resumed. Australia's cotton boom came to an end and sugar cane emerged to fill the economic void. Beginning in 1862 with Captain Louis Hope's experimental plantings in the Moreton Bay area, sugar cane plantations soon developed along the banks of the Brisbane, Albert, Logan and Caboolture Rivers. Production increased and in 1864

Hope constructed the area's first sugar mill. In 1865, Captain Claudius Buchanan Wish approached Robert Towns with a proposal to obtain Pacific Islanders for his "Oaklands" sugar plantation on the Caboolture River and on 17 December, 1865, Robert Towns sent 33 newly arrived recruits to Oaklands (Docker 1970; Holthouse 1969). This was the beginning of the Queensland sugar industry's reliance on Pacific Island labourers, a reliance that lasted until 1904. It also appears to have signalled the end of Robert Towns involvement in the Queensland labour trade (Kennedy 2004; Stevens 1966).

Sugar production started to expand northward along the Queensland coast (see Figure 3.1). By 1868, a sugar plantation and mill had been established in Mackay and labour was desperately needed. In 1871, the labour vessel *Isabella* delivered 44 Pacific Islanders. By 1885 there was over 19,000 acres (7,689 hectares) of sugar planted in the Mackay region and by 1888 some 32 sugar mills had been constructed. Mackay was not the only district needing a labour force. In 1876, Maryborough had 15 sugar mills processing 3,400 tons of sugar (Docker 1970; Moore 1985).

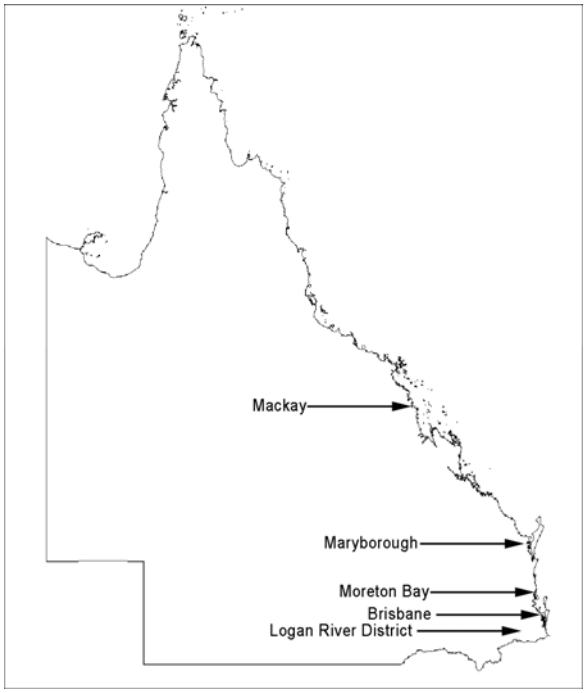


Figure 3.1 Expansion of the Sugar Industry

While the sugar industry and associated labour trade were expanding, there were no official records of how many Islanders it employed. Further, there were no set

mechanisms for recruiting, arrival or departure and there were no standards for the contracts under which the Islanders were engaged. Clearly without specific regulations, plantation owners, ships' masters and recruiters would have had a free hand in the methods they used to obtain and employ labourers.

Initially the only legislation applicable in any way to the Queensland labour trade was the *Masters and Servants Act of* 1861. This Act could impose a fine not exceeding £20 or imprisonment for up to three months if workers absented themselves from their place of employment (MSA 1861). As Mercer (1995) points out, the main function of this Act was to control the actions of the workers and to prohibit any attempt by individuals or groups to improve their conditions of service.

Perhaps not surprisingly, without legislation it was not long before reports of ill treatment on plantations and kidnapping and murder by recruiters reached the Queensland government (Holthouse 1969; Moore 1985; Parnaby 1964). Public opinion and pressure from missionaries and the British Colonial Office resulted in the Legislative Assembly of Queensland passing "*An Act to Regulate and Control the Introduction and Treatment of Polynesian Labourers*" generally cited as *The Polynesian Labour Act of 1868* (hereafter referred to as PLA 1868). The Act recognised that Polynesian [sic] labourers were needed for the success of "tropical and sub-tropical agriculture" in Queensland. In other words, this Act formally legalised the Queensland labour trade and introduced into it a series of restrictions, conditions and requirements for the shipmasters, recruiters and plantation owners involved.

One of the first requirements of the 1868 Act was to demand a report from all employers stating the number of Islanders employed and the terms of their contracts. To ensure that reports were compiled, a fine not exceeding £50 was imposed on employers who defaulted. Inspectors were appointed to ensure that the Act was enforced and local magistrates were required to make quarterly reports on any matter coming before them relating to the Act (PLA 1868).

The procedure required to recruit labourers was also formalised. Recruitment was to be for a period of three years and before a licence to recruit could be issued, employers had to apply to the Colonial Secretary in Brisbane specifying the number of Islanders

needed and where they would be employed. The application had to be accompanied by a signed bond from the plantation owner for £10 per labourer. This bond payment was to ensure and pay for the return of the labourers to their islands. The 1868 Act also required the masters of recruiting ships to enter into a £500 bond agreement to prevent kidnapping and to ensure that the regulations were followed (Docker 1970; Giles 1968; Mercer 1995; PLA 1868).

The procedures for vessels arriving in Queensland and the offloading of labourers were also formalised. The 1868 Act introduced a lengthy examination process in an attempt to ensure that all Islanders were voluntarily engaged. Before any Islanders were allowed to be landed, shipmasters had to provide a list of all the Islanders onboard and where they were to be employed. The forms signed at the islands by the consul or missionaries stating that the Islanders were voluntary and not deaf, dumb, blind, maimed or insane were to be produced. Employers were required to produce their licences to recruit and contracts between employers and Islanders were inspected. On completion, Islanders were individually questioned to confirm that they understood the terms and conditions of their contracts. If all was in order, the shipmasters were issued with a certificate allowing them to land the Islanders. Any vessels attempting to bring in Islanders contrary to the regulations were taxed at a rate of £20 per Islander. Failure to pay resulted in the forfeiture of the vessel (Docker 1970; Giles 1968; Mercer 1995; PLA 1868).

While the legislation was introduced with the best of intentions, I would argue that due to practical difficulties it was not always possible to adhere to the letter of the law.
For example, consuls or missionaries on the islands may not have been capable of determining the medical or mental state of the recruits. The 1868 Act made it even more difficult as it did not require the recruits to be examined by a qualified medical practitioner on their arrival in Queensland. Further, if interpreters were not available for all the languages spoken by the recruits, it would be impossible to determine if they were volunteers or not.

The 1868 Act also introduced a set of standards for pay and conditions. Specifically, a wage of not less than £6 a year, a minimum daily diet, and an annual clothing allocation for each Islander. There was no gender based distinction. Female labourers received

the same pay and conditions as their male counterparts. Prior to 1868, the lack of such standards was clearly a recipe for abuse. For example, Parnaby (1964) relates that the first South Sea Islanders employed on Robert Towns's cotton plantation were only provided with a daily ration of 68 gm of rice and 22 gm of meat per person per day.

The 1868 Act specifically stated that no money was to be docked from Islanders' pay for food and accommodation, and that alcohol was not to be provided to them. Subsequent Acts revised the rations and clothing entitlements for Islanders both on recruiting vessels and in the plantations (PILA 1880; PLA 1868; RPILA 1892). The effect that these changes in diet had on the lives of the recruits is analysed in chapter eight. The 1868 Act also specified changes to the internal configuration of the vessels relating to Islanders' accommodation. These changes are investigated in chapter five, where the recruiting vessels and their voyages are analysed.

Prima facie, the *Polynesian Labour Act of* 1868 appeared to have been effective. However, in reality the system was still wide open to abuse. For example, the initial standard wage of £6 a year was never increased throughout the whole 41 years of the labour trade (an experienced labourer returning for a second time was paid about £9 to £10 a year). Even though Islanders were provided with clothing, food and accommodation, £6 a year was a minimal wage when compared with the European equivalent for similar working conditions. According to the *Australasian Sketcher* (1873:143), "pick and shovel" men working in the building trades were paid six shillings a day (£1. 16s per week, potentially about £90 per year) and farm servants and ploughmen were receiving £40 to £50 a year. By 1888, European cooks on labour recruiting vessels were earning £10 a month (*Maryborough Chronicle* 1888d).

Two accounts of recruiting voyages in Parnaby (1964) illustrate the difficulty in enforcing the Act. In July 1868, the master of the *Lyttona*, a recruiting vessel licensed under the *Polynesian Labour Act of* 1868 was accused of kidnapping nine Islanders from Erromango. The Colonial Office stated that no action could be taken as kidnapping was only an offence if accompanied by violence. A second case illustrating the inadequacies of the 1868 Act concerns a murder on the *Young Australian*. In October 1868, the *Young Australian* obtained three recruits from Vanuatu. On being placed in the hold, they started a fight with other recruits. To put a stop to this, the

three recruits were shot while still in the hold. The master and an Islander crew member were charged in the New South Wales Supreme Court with murder on the high seas. Two Islander witnesses from Rotuma gave evidence and it was determined that the three Islanders had been kidnapped with violence. The accused were sentenced to life imprisonment. However, the defence successfully argued that the witnesses did not fully understand the significance of the oath they took on the English Bible. It was a technical point of law and, combined with a claim that the case had been prejudiced by articles in the press, the sentences were remitted (Parnaby 1964). Episodes such as these led the House of Commons to recognise the need for new laws specifically drafted for the labour trade.

3.3 1869 - 1884 Government Agents to Firearms Ban

The key Acts of legislation that apply to this phase are:
The *Pacific Islands Protection Act of* 1872,
The *Pacific Islands Protection Act of* 1875,
The *Pacific Islands Labourers Act of* 1880 and
The *Pacific Islands Labourers Act of* 1884.

It soon became apparent that one of the faults with the 1868 Act was that there was no Government authority on board the vessels to enforce the regulations (Giles 1968).
In December 1870, this oversight was addressed when the Executive Council of Queensland legislated that Government Agents were to be appointed and accompany all British vessels engaged in recruiting from the South Sea Islands. Government Agents were granted authority over the master of the vessel in matters of recruiting procedures and it became a requirement for a Government Agent to be appointed before a licence to recruit would be issued. They were paid at a rate of £10 a month and they were to be provided with their own cabin and provisions from the Captain's table at no cost to the Government. As one can imagine the presence of a Government Agent onboard may have been regarded by some operators as an unwelcome intrusion. To ensure that the Captain of the vessel and the Government Agent understood their respective roles, a Queensland Government Gazette promulgated the duties and responsibilities of

Government Agents on board vessels (Blackall 1870; Corris 1973; Docker 1970; Moore 1985; QGG 1871a; QGG 1871b).

Further pressure from missionaries and anti-slavery societies combined with the inadequacies of the Queensland legislated *Polynesian Labour Act of* 1868 led to the English Parliament passing "*An Act for the Prevention and Punishment of Criminal Outrages upon Natives of the Islands of the Pacific Ocean*" commonly cited as *The Pacific Islanders Protection Act, 1872* / *The Kidnapping Act of 1872* (Parnaby 1964; PIPA 1872). The 1872 Act made the oaths taken and the evidence given by South Sea Islanders legal in courts of law. The Act also specifically made it an offence to decoy, detain or contract an Islander without consent or to use a vessel to commit an offence under the Act. A new "Licence for the Carriage by Sea of Native Labourers" was introduced which was also only issued after the master of the vessel had paid a £500 bond (PIPA 1872).

Traders to the islands, including labour traders, had started to employ Islanders as crew on their vessels. Islander crew soon became popular as they knew the local waters, could act as interpreters and were cheaper to employ. However, this posed problems for the labour traders. For example, if a licence was issued to recruit and carry 50 labourers, the Islander crew was counted as part of the quota thereby reducing the number of labourers who could be recruited and lowering the profit margin. This was rectified in 1875, when the 1872 Act was amended by "*The Pacific Islanders Protection Acts of 1872 and 1875*". This amendment introduced the ability to employ Pacific Islanders as crew on British vessels (PIPA 1875). This allowed Islanders to work on labour vessels and to act as interpreters. These crew were paid with trade goods. This is a point that will be returned to later when the dissertation focuses on the introduction of European trade goods into the various island exchange systems. For now, it is important to note that the employment of Islanders as crew changed the role of some Islanders in the labour trade in that they were now physically and consciously assisting in the transportation of fellow Islanders to and from Queensland and being paid for their participation.

In 1880, in order to revise its 1868 Act, the Legislative Assembly of Queensland passed "*An Act to make provision for Regulating and Controlling the Introduction and Treatment of Labourers from the Pacific Islands*". This Act was commonly cited as the

Pacific Island Labourers Act of 1880 and it repealed in total the 1868 Act and transformed the way labour recruiting was carried out (PILA 1880). According to Docker (1970) and Mercer (1995), the 1880 Act provided more control over the recruitment of Islanders and improved their conditions of employment.

Once again the application and arrival procedures were changed. Plantation owners now applied to the Immigration Agent and Islanders could only be employed in tropical or semi-tropical agriculture. Masters of recruiting vessels were required to apply for a "Shipmaster's Licence" that would not be issued until a £500 bond was paid (PILA 1880). Despite the fact that Government Agents had been onboard recruiting vessels for 10 years, it appears that some Islanders were still not being returned to the areas they were recruited from. To enforce this, the 1880 Act introduced an additional £500 bond to ensure that all returning Islanders were delivered back to their villages (PILA 1880). As a total of £1000 of bond monies had to be deposited each time a vessel departed for the islands, one can assume that the viability and profitability of the Queensland labour trade must have been under constant scrutiny by ship and plantation owners. It also indicates that the labour trade was very profitable.

In addition to an increase in bonds, several conditions for the issuing of new Shipmaster's Licences were introduced. For example, Government Agents were to be accommodated in first class cabins and medical supplies and equipment had to be carried at all times.

It was also customary for the shipowner to pay the captain and recruiter a small amount per head for each recruit transported to Queensland and deemed fit for service. For example, the recruiter on the *Bobtail Nag* received an extra payment of 10 shillings a head for each recruit that he obtained (Giles 1968). This practice was referred to as head money and was abolished with the advent of the 1880 Act Consequently, wages had to be increased to compensate. The master went from £15 – £20 a month to £28 – £35 a month and the recruiters received an extra £4 – £5 a month above their standard wage (Wawn 1893).

Another new specification of the 1880 Act was a minimum age of 16 for all recruits (PILA 1880; RPILA 1884). However, it can be argued that this requirement was

difficult to enforce as no guidance was given as to how the age of a recruit could be determined. Even if they had an interpreter, the concept of age and birthdays from a legal, European perspective may well have been unknown to some Islanders.
This issue appears to have been recognised at the time and thus, in 1892, it was decided to determine age by chest measurement. Government Agents were instructed to reject any male recruit whose chest measurement was less than 32 inches (81 cm) (RPILA 1892). No such edict was made for female recruits, indicating that, though evolving, the legislation had not completely come to terms with females being employed as labourers.

The 1880 Act also revised the arrival procedure before labourers could be landed in Queensland. The Immigration Agent came onboard and inspected all of the reports, certificates, licences and recruits' contracts. The recruits were individually questioned to ensure that they were volunteers and understood the conditions of their indenture.
In further contrast to the 1868 Act, individual medical inspections, conducted by a port medical officer, were now required before the new recruits were finally permitted to land. Any Islanders deemed unfit for employment were to be returned to their islands at the vessel master's or owner's expense (PILA 1880).

It is apparent that these changes in legalisation would have drastically reduced the level of abuse and kidnapping in the labour trade. However, they did not remove it entirely. Giles (1968) argues that some of the early Government Agents were not very effective. He suggests that the unofficial policy of the Immigration Department encouraged Government Agents to stay out of the way and not disrupt affairs by following their instructions too closely.

In the early 1880s, social and political pressure from a different source started to influence legislation. European labourers were protesting that the availability of cheap island labour was preventing them from obtaining employment. This led, in part, to the passing of *The Pacific Island Labourers Amendment Act of* 1884. The definition of tropical and semi-tropical agriculture was adjusted to exclude domestic or household service, engine operation, wheel making, carpentry and other trade occupations (PILA 1884). In effect, this amendment restricted Islanders to agricultural field work.

The 1884 Amendment also banned the sale or gifting of firearms and ammunition to Islanders. This had a drastic effect on them as one of the main motivations for coming to Queensland was to obtain firearms to take back to their islands. The ban led to protest action by labourers in Mackay, and anger on the islands when no rifles were offered in exchange for recruits (Docker 1970; Mercer 1995). The influence that this ban had on the types of goods purchased by returning Islanders is addressed later in this chapter.

3.4 1885 – 1892 Labour Trade Banned and Repealed

The key pieces of legislation that apply to this phase are:
The *Pacific Islands Labour Act of* 1885 and
The *Pacific Islands Labour (Extension) Act* of 1892.

Public opinion on the morality of the labour trade and pressure from European labourers led to the passing of the 1885 Amendment to the *Pacific Island Labourers Act of 1880* which was to ban all recruiting after a deadline date of 31 December 1890 (PILA 1885). This ruling shocked sugar industry stakeholders who then lobbied Government, arguing that island labour was needed for the future economic development of Queensland. As public pressure had already led to the legislation banning the trade, there was a lot of public opposition to the sugar industry's claims. The outcome was the *Pacific Island Labourers (Extension) Act of* 1892 which repealed the ruling. While this decision clearly indicates the power of the sugar lobby, it was not a complete victory. To appease the European labour force, Islander labourers were restricted to working solely in the sugar industry, and even then only in the fields and not in the factories (PILA 1892). It should be noted that the labour trade never actually stopped recruiting even though it was theoretically illegal for at least a year in 1891.

By 1892 seven Acts of Parliament (Imperial and Colonial), 54 regulations, 18 schedules and 38 instructions for Government Agents had been developed in order to govern the Queensland labour trade (Corris 1973; Docker 1970). Undoubtedly, this volume of legislation had changed the operation of the labour trade and led to tensions between employers, recruiters and government officials (Beck 1999).

3.5 1893 – 1904 The end of the Queensland Labour Trade

The key pieces of legislation that apply to this phase are:
The *Immigration Restriction Act of* 1901 and
The *Pacific Islands Labourers Act of* 1901.

The voices of European labourers and support for a White Australia Policy had been growing during the last few decades of the 19th century. The Chinese in the gold fields were perceived to be taking all of the wealth out of Australia, and European labourers saw their positions being replaced by cheaper labour from the Pacific Islands, China and India. With Federation in 1901 came the passing of two legislative acts that effectively ensured all future labourers in Australia would be "white". The *Immigration Restriction Act of* 1901 excluded all non-white migrants. The *Pacific Island Labourers Act of* 1901 introduced a law banning any Pacific Islander from entering Australia after 31 March 1904. There was to be a gradual reduction in the number of Islanders recruited up to 31 March 1904 and all contracts ceased to be effective after 31 December 1906. Any Islanders remaining in Australia after 1906 without a certificate of exemption were to be deported (Holthouse 1969; IRA 1901; Mercer 1995; Moore 1985; PILA 1901).

The *Pacific Island Labourers Act of* 1901 ended the recruiting phase of the Queensland labour trade and heralded the start of massive deportation. The publication *White Australia Defied* by Patricia Mercer (1995) is a comprehensive assessment on the plight of the deported Islanders.

As an aside, it is interesting to note that some 100 years later labour from the South Pacific is back in demand, and just as controversial. In 2003, in response to a shortage of labour in the seasonal fruit picking industry, an Australian Senate Committee Report recommended that the government should "develop a pilot program to allow labour to be sourced from the region [Papua New Guinea and south western Pacific] for seasonal work in Australia" (ASCR 2003:76).

3.6 The Trade Box System

According to Wawn (1893), from as early as 1868 the money paid to South Sea Islanders was held by the government and, when made available, was used by Islanders to purchase European goods which they stored in solid wood boxes known as trade boxes. Graves (1983) states that this system of converting wages into trade goods as a form of payment was known as 'Truck'. It was the mechanism by which returning Islanders obtained European goods and introduced those goods into a diverse range of socio-economic island systems. The contents of these boxes reveal the types of goods that labourers believed would be of value and use to them. As such, the goods provide a vital insight into the changing material culture of South Sea Islanders over the period of the Queensland labour trade. Moreover, the boxes themselves can be regarded as introduced artefacts and indeed symbols of having participated in the labour trade. The uses to which the contents of the trade boxes were put when the recruits arrived back in the islands are discussed in more detail in later chapters.

Initially, trade boxes purchased by returning Islanders were small and painted red to imitate cedar chests. However, Docker (1970) asserts that as the demand for trade goods increased, these boxes were eventually replaced by larger imitation oak chests. Corris (1973), Moore (1985) and Wawn (1893) all suggest that the average size of a trade box measured about 3ft x 1ft 6in x 1ft 6in [91cm x 45cm x 45cm]. Corris (1973) further asserts that the average weight of a returning Islander's trade box was about 100kg (including contents). This provides an indication of the quantity of goods that some Islanders were purchasing. However, Melvin (1977) states that in addition to a trade box, some Islanders returned carrying extra bundles of trade goods. A photograph of Islanders returning with their trade boxes is shown in Figure 3.2. Unfortunately there was no information indicating where in the Solomon Islands this photograph was taken.

Figure 3.2 Solomon Islanders with their Trade Boxes

Source: Beattie Photograph Collection, Image 95, Archives & Special Collections, School of Oriental and African Studies, University of London.

The only example of an extant trade box from the Queensland labour trade appears to be in the Bundaberg Historical Museum, (Figure 3.3). Regrettably, a detailed accession record for the trade box was unavailable. The box is well constructed with tongue and groove corners, with the base securely nailed to the sides. The name "Harry Atpow" is visible on the inside of the lid. A red stain has been applied to the outside surface but the internal surfaces remain plain wood. A small internal box with an end dowel, peg hinged top has been built into the top of the left hand side of the box. Two wooden rails have been fitted to the inside of the box to support a removable tray.

I suggest that even though these boxes were used extensively in the labour trade, they were not specifically designed for it. The dimensions and method of construction are very similar to mariners' square cornered sea chests used to transport sailors' personal possessions all around the world. I contend that the larger trade boxes were originally sea chests and as demand for these boxes increased a simplified sturdy box was manufactured, based on the sea chest, and sold by the shop owners who supplied goods to Islanders. After all, to increase profits, it was in the shop owners' best interests to provide the means of conveying large quantities of goods.

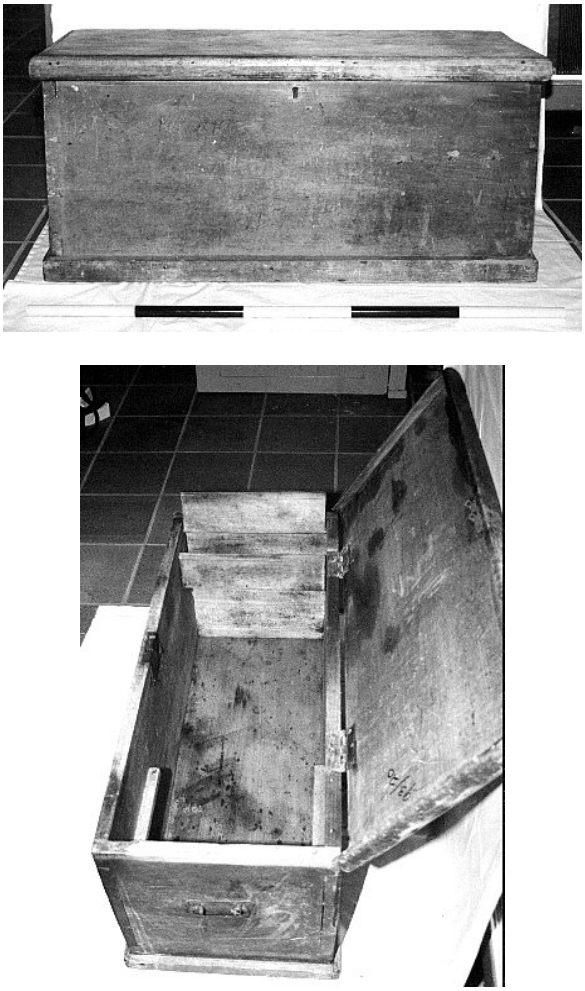


Figure 3.3 South Sea Islander Trade Box

Source: Bundaberg Historical Museum. Photograph by the author.

Physical Attributes of Trade Box

Main Box	Small Internal Box
Lid: 1m x 42cm x 2.5 cm.	Lid: 34cm x 11cm x 1.5cm.
Box: 95cm x 34cm x 40cm.	Box: 34cm x 11cm x 11cm.
Sides: 2.5 cm thick.	Sides: 2cm thick.

In order to develop a better appreciation of how the trade box system worked and what trade goods were involved, an analysis of a specific historical incident may be instructive. In August 1877 the labour schooner *Chance*, owned by J. S. Ramsay, arrived in Maryborough to await a labour licence from Brisbane. On board were 48 returning Islanders who intended purchasing their trade goods in Maryborough before returning home. However, the *Chance* moored in the centre of the river and no one was

allowed to go ashore. The following day, the *Stanley*, also owned by Ramsay, came along side with a large cargo of trade goods. The Islanders were left with no choice but to purchase their trade goods from the *Stanley* at inflated prices. The next day an Islander deputation complained to Charles Horricks, the Immigration Agent in Maryborough. Horricks conducted a detailed inspection and recorded the contents of all 48 trade boxes. An independent valuer determined the true value of the goods. His investigation revealed that the Islanders had been overcharged by £133.8s.7d (QSA COL/A264) – the equivalent of 22 years' of labourer wages. As such, this incident reveals another flaw in the 1868 legislation as it did not regulate trade between merchants and Islanders in Queensland.

As well as highlighting inadequacies in the contemporary legislation, this incident is also important because it is the first full accounting of the contents of returns trade boxes. The records made by Horricks are detailed here in Appendix 1. Three initial observations on the range and implications of the trade goods listed are:

1. *Firearms, metal axes, knives, tobacco and clay pipes made up the majority of the purchases*. This repeats the types of goods demanded in the earlier trade exchange systems prior to the Queensland labour trade and indicates that these items continued to be in demand.

2. *European clothing features in Horricks's list*. It will be argued in chapter eight that this is because, after three years in Queensland, the returns themselves were changed individuals and this clothing was a physical indicator of this transformation.

3. *Amongst other goods, the 48 trade boxes recorded contained (between them) 114 kg of gun powder, 419 boxes of percussion caps and at least 289 boxes of matches*. This provides an insight into the cargo handling and storage procedures on these labour vessels (Beck 1999). Specifically this potentially volatile cargo was stored in the hold with the returns, most of whom liked to smoke. This might suggest that the transportation of the returns and the recruiting of new labourers was a higher priority than the physical safety of vessel.

This early account of the contents of trade boxes also allows an investigation of change over time in the types of goods purchased by returning Islanders. Horricks's account is compared with other accounts of trade boxes in the *Argus* (1892b) newspaper and by Hope (1872) and Morrison (1882). Table 3.1 indicates a clear pattern of change over time. Firearms and ammunition grew in demand and remained a priority purchase until their ban in 1884. Metal axes and knives were in equal demand for some time, however, axes appear to become more popular towards the end of the trade. Glass trade beads were sought-after initially but fell from favour later on. Tobacco and clay pipes were popular throughout the trade as were various forms of European clothing.

These observations contrast to some extent with Graves (1983) who contends that before the 1884 ban on providing firearms to Islanders, the order of priority for purchasing trade goods by returning Islanders was:

1. firearms and dynamite,
2. steel implements: knives, tomahawks, axes, saws, hammers, nails, scythes, augurs and screwdrivers,
3. fishing equipment: nets, lines and hooks,
4. household goods: lanterns, kerosene, candles and saucepans,
5. personal items: tobacco, razors, mirrors, sharpening stones, cloth, clothing, and,
6. glass and ceramic beads.

Table 3.1 suggests that these priorities should be revised. Tobacco was a high priority throughout the Queensland labour trade and in much greater demand than household goods or fishing equipment. European clothing should be advanced in priority and, while firearms and ammunition were in demand, the historical record does not confirm the wide use or purchase of dynamite.

What is not known is what took the place of the banned firearms. This issue is discussed in more detail in chapter five where it will be suggested that the returns were purchasing fewer trade goods and returning to their islands with cash in hand to purchase firearms and ammunition from French and German traders who were allowed to provide them.

Table 3.1 Changes in the Contents of Returning Islanders Trade Boxes Over Time

Item	1872	1877	1882	1892
Firearms				
Muskets	♦	♦	♦	
Rifles			♦	
Shot guns		♦	♦	
D/B Shot guns	♦	♦	♦	
Revolvers			♦	
Gun powder	♦	♦	♦	
Shot		♦	♦	
Cartridges		♦	♦	
Percussion caps		♦	♦	
Bullet mould		♦		
Metal Tools				
Fantail axe		♦		
Tomahawk		♦	♦	♦
Axe		♦	♦	♦
Knives large		♦	♦	
Knives small		♦		
Sheath knife		♦	♦	
Pocket knife		♦	♦	
Cane knife			♦	
Saws			♦	
Files		♦	♦	
Scissors			♦	
Grindstone	♦			
Smoking				
Tobacco	♦	♦	♦	♦
Pipes	♦	♦	♦	♦
Matches		♦	♦	♦
Fishing				
Fishing line		♦	♦	
Fishing hooks		♦	♦	

Musical				
Jews (sic) Harp	♦	♦		
Music box				♦
Music sheets				♦
Hurdy gurdy			♦	

Item	1872	1877	1882	1892
Domestic				
Pots & Pans			♦	♦
Kettles	♦		♦	
Camp oven	♦			
Frying pan			♦	
Buckets			♦	
Cutlery				♦

Personal				
Looking glass			♦	
Beads	♦	♦		
Handkerchiefs	♦	♦	♦	♦
European clothing	♦	♦	♦	
Blankets			♦	
Soap				♦
Calico			♦	♦
Turkey red twill		♦		
Navy cloth		♦		
Printed cloth		♦		
Gingham				♦
Grey sheeting		♦		
Scent			♦	
Salad oil		♦		
Umbrella	♦	♦		
Mirrors		♦		

Source: (Argus 1892b; Hope 1872; Morrison 1882; QSA COL/A264)

It would also be interesting to compare what was bought by Islanders as trade goods with what items were potentially available to them in merchant's stores. As merchants would have only stocked those items that were known to be in demand and new types of products that were likely to be popular, the contents of these stores would indicate the level of effort that the merchants took in providing a variety of goods suitable for Islanders' needs. Unfortunately, despite an intensive search, no list of trade goods available in Queensland stores has come to light. However, the Fijian labour trade was also under British control and as a comparison, an example of the range of goods available in Fiji (NAF1884) is listed in Appendix 2. Assuming that Fijian and Queensland labourers were offered similar goods, it is apparent from the list that the choice of goods provided was extensive. At the same time, however, hand written

comments on the Fijian list indicate that the quality of some items on offer was below standard. The obvious conclusion is that the merchant was making a profit by selling second rate goods at full price. One can only assume that a similar situation was operating in Queensland especially given the example of profiteering that occurred on the *Chance*.

3.7 Wider Implications

The Queensland labour trade provided the interface between the Islanders' subsistence economy and the capitalist colonial economy, and merchants were quick to exploit this new market. Islanders spent most of their wages in the merchants' stores before returning to their homelands. This made the payment by 'truck' an important source of income for merchants in coastal Queensland (Graves 1983). In some cases, store owners and merchants also owned sugar plantations. This provided merchants with a captive market where they could regulate the range, quality and prices of goods (Graves 1983; Wawn 1893). This exploitation led to incidents like that onboard the *Chance*. Plantation owners played on the Islanders' need for trade goods and used the supply of them as a form of social control to ensure Islanders' productivity (Graves 1993).

The operation of the trade box system in Queensland was totally controlled by Europeans. It is from this perspective that the Neo-Marxist dependency theory put forward by Boutilier (1989) gained acceptance. The argument is that "colonial territories were exploited for their human ... resources in order to advance the welfare of the metropolitan power" (Boutilier 1989:22). However, while 'Dependency Theory' may have been useful for addressing the Queensland end of the process, it is not the case for contact and trade in the Islands themselves. A more in-depth analysis of the changes brought about by contact and trade, and Islander control is presented in chapter eight.

3.8 Summary

This chapter has examined how European entrepreneurs introduced South Sea Islanders as a labour force for the burgeoning Queensland sugar industry and how significant changes in legislation affected the operation of the labour trade. From a European perspective, earlier trade exchanges (for example, the sandalwood trade etc.) were standard mercantile operations and would not normally attract a significant volume of continually updated legislation. Again from a European perspective, the Queensland sugar industry was also a mercantile operation, as was the supply of labour to Queensland plantations. So what was the catalyst for the introduction of the great volume of legislation controlling the Queensland labour trade? I would argue that it was brought about by social pressure from within European society. The transportation of humans for their labour and perceived similarities with the slave trade led to political pressure. This resulted in a series of legislation, each changing the conditions and procedures for employing South Sea Islanders, while being careful to ensure the ongoing prosperity of the sugar industry.

The chapter also examined the operation of the Trade Box System. It was the mechanism by which returning Islanders could acquire European goods as payment for their labour and then use these goods into their own socio-economic systems on their return home. Unlike earlier trading systems, European merchants were in total control of the entire trading transaction in Queensland. The contents of the trade boxes changed over time. However, some items such as axes, tobacco, European clothing and, before 1884, firearms were always in demand.

The influence of the system was pervasive. When examined in isolation, goods purchased by the 48 returning Islanders on the *Chance* would not have had a significant influence in the islands. However, when one considers that over 60,000 Islanders from diverse islands, island groups and cultural backgrounds were involved over a period of 41 years, there can be no doubt that the trade box system must have had a significant effect on the socio-economic structure of South Sea Islands and colonial Queensland.

Finally, it is argued in this chapter that while in Queensland Europeans had the upper hand in controlling the various aspects of the labour trade, the situation was

significantly different on the islands. Note that in chapter two it has been argued that in the islands local men of influence tended to have greater control over the trade and exchange process. This is an important point and a discussion will be developed further in later chapters.

This and the preceding chapter have provided a background to what is currently known about early trade contacts and the Queensland labour trade. However, were South Sea Islanders changed by their contact with the Queensland labour trade? Did the Islanders have any influence on the conduct of the trade or did prevailing Victorian social mores have any impact? The next chapter deals with some of these gaps in our knowledge and the methodologies (including archaeological and material culture approaches) that will be used to address these issues.

Chapter Four

METHODOLOGY

4.1 Introduction

This investigation combines historical research with new archaeological fieldwork and data. As stated in chapter one, the aim of this thesis is to determine whether an archaeological approach can add depth to our understanding of the Queensland labour trade. To achieve this aim, chapters two and three provided historical backgrounds to the early mechanisms of contact, trade and change in the South West Pacific, and to the operation of the Queensland labour trade in general. They revealed three main research questions:

- How were the Islanders being changed as a result of their participation in the Queensland labour trade?

- Was the Queensland labour trade affected, changed or controlled by the Islanders involved in the trade?

- Did Victorian society and its values, as expressed in part through a changing legislative framework, have any influence on the Queensland labour trade?

This chapter outlines the new historical and archaeological research conducted and the methodology used to investigate these issues.

4.2 Historical Research

All of the Islanders were transported to and from Queensland by a variety of vessels. These vessels need to be identified and investigated as artefacts in their own right, therefore making it possible to pose the first of two sets of questions:

- What types of vessels were involved and did they change over time, and,
- was there a prevalence of one type of vessel and if so, why?

In order to address these issues, a comprehensive database of all the known vessels involved in the labour trade was developed. Investigating these vessels revealed anomalies regarding the type and tonnage. For example, a barquentine may have been recorded in abbreviated form as a barque. Similar discrepancies occurred with brigantines and brigs. In some cases, "schooner" appears to have been used as a generic term for a sailing vessel. However, barquentines, barques, brigantines, brigs, schooners and indeed topsail schooners are all vessel types in their own right (Desmond 1998; Paasch 1977). Different tonnages were also recorded for the same vessel. This is understandable when, according to Desmond (1998), there are five different types of tonnage used for the design and registration of vessels.

The very nature in which some vessels operated presented further challenges in identifying those involved in the trade. Docker (1970) and Holthouse (1969) both assert that the *Australian Packet* often changed its name and appearance from a Barque to a Brig by removing its mizzen mast. Docker (1970) further states that in 1868, the three-masted schooner *Young Australia*, owned by the Sydney based South Seas Trading Co. would depart for Fiji as a general cargo vessel. On arrival, it re–registered as the *Young Australian* and obtained a licence to recruit for the Fijian cotton plantations. Wilson (1882) confirms this name change. Similarly, some licensed Queensland vessels would recruit considerably more South Sea Islanders than their licence allowed. Following a name change, they sailed to Fiji to "sell" their cargo. After making a profit, they would return to the islands, re-recruit, resume their former identity and return to Queensland with the legal number of Islanders (Holthouse 1969).

To overcome these anomalies in the historical records, all references to labour vessels in Corris (1973), Cromar (1935), Docker (1970), Giles (1968), Graves (1979), Holthouse (1969), Matthews (1995), Moore (1985), Saunders (1974), Stevens (1950), Wawn (1893) and Wilson (1882) were compiled and cross-checked. This list was then cross-referenced with available data from the National Library of Australia (NLA) and Lloyds Registers at the Australian National Maritime Museum, Sydney. The resulting database is arguably the most comprehensive available, providing a larger record for analysis than previously provided by Graves (1979) or Saunders (1974). It lists all vessels mentioned in these references that were involved in the labour trade at some

time in their tenure. From this it was possible to determine the types of vessels involved over time and statistically identify a prevalence of one type of vessel.

The second set of questions are:

- What can be determined from the voyage patterns over time and what influenced the routes taken, and,
- were the vessels sites for change brought about as a result of Islanders being confined on a vessel at sea?

By re-analysing the data from Shlomowitz (1981) and Price and Baker (1976), it was possible for the first time to graph the island groups frequented by labour traders and observe the changing pattern of vessel destinations over time. By comparing this information with the historical and ethnographic record, several factors influencing changes in vessel destinations were determined. This approach also enabled a comparison between the number of voyages per year and the changing demographics in male and female recruits and returns and therefore the supply of European goods over time.

The conclusions drawn from these investigations into recruiting vessels and their voyages result from consulting a wide range of sources covering a 41 year period. First hand accounts from a labour vessel at a specific time were necessary to focus the study. In order to achieve this, the life and voyages of the Queensland labour vessel *Foam* was extensively researched locally in northern Queensland, interstate within Australia, and internationally at England's Cowes Maritime Museum on the Isle of Wight and the nearby Portsmouth Central Library. The method employed by Lenihan, Murphy, Labadie, Holden and Livingston (1987) has been used as a basis for research into the *Foam*. This approach involves the development of a life history of a vessel incorporating all aspects of its life from construction to wreck site and salvage. The resulting operational history provided specific examples of voyage mechanisms which can be compared with the general concepts presented so far.

The question of vessels being a site for change was addressed by examining ethnographies detailing aspects of traditional life in the islands and comparing them with contemporary accounts of the physical, internal structure of Queensland labour

vessels and Islander life onboard those vessels. This approach enabled assumptions to be made about changes in the recruits' attitudes and responses to new situations.

4.2.1 Diet analysis

One of the areas in which vessels were a site for change was the introduction of recruits to a European diet. As previously stated in chapter two, research into the initial 1868 plantation diet was carried out by Saunders (1974) and Moore (1985) with varying results. However, to date, no comparative study has been carried out between the 1868, 1880 and 1892 plantation diets. Further, no research has been carried out on the suitability of the 1868 and 1880 diets provided to Islanders onboard the labour vessels as they were transported back and forth across the South Seas. In order to place the labour trade diets in a context and to show change over time in British attitudes to maritime dietary requirements, the diets of the sailors and convicts of the First Fleet in 1788 and of the steerage class emigrants to Australia in 1858 were analysed and comparisons drawn.

The diets were initially analysed by the Department of Dietetics and Nutrition at the Townsville Hospital using the Xyris software program *Foodworks* Version 2.10.136, copyright 2000. The diets were also analysed by Dr Madeleine Nowak of the School of Public Health and Tropical Medicine at James Cook University using *Foodworks Professional 2005*. This is the first time that all of the plantation and shipboard diets and their respective changes have been analysed for suitability and compared.

4.3 Archaeological Research

The field work on the site of the *Foam* and the analysis of the artefact assemblage addresses the issues of:

- Cultural and natural site formation processes,
- viability of the artefact assemblage as a representative sample,
- a research plan for field work on the wreck site,
- classification system for the artefact assemblage and,
- identification of trade goods within the assemblage.

Insights into the cultural formation processes were obtained from an analysis of the Captains account of the last voyage in which details of the items salvaged from the wreck are provided. Natural formation processes were observed at the wreck site and the possible effects that cyclones may have had on the site were investigated. A map of the current state of coral growth over the site was also recorded. An assemblage of surface artefacts was collected by the Queensland Museum and forms the basis for the later artefact analysis. In order to determine the viability of the artefact assemblage as a representative sample the recovery plan, or lack of it, was researched in the Queensland Museum Maritime Heritage Archives.

In 2001, the investigation of the *Foam* wreck site commenced with an initial site reconnaissance. The main purpose of this survey was to establish the suitability of the wreck for further archaeological investigation by determining:

- The current state of the wreck site,
- the position of any cultural artefacts and if possible, detect where artefacts had been removed,
- the possibility of establishing what part of the vessel Europeans and Islanders resided in,
- if excavation was possible and,
- what level of logistics would be required to bring out a team of research divers.

The *Foam* Maritime Archaeology Project (FMAP) was then developed and two major field sessions were planned and conducted. As the wreck is located within the boundaries of the Great Barrier Reef Marine Park and protected by the *Historic Shipwrecks Act of* 1976, permits for the field work had to be obtained from the Great Barrier Reef Marine Park Authority (GBRMPA) and the Maritime Archaeology section of the Museum of Tropical Queensland (MTQ) as the delegates for the 1976 Act.

The original research design involved a survey and re-mapping of the site, and the structured and controlled underwater excavation of a number of small pits (1m x 1m). Regrettably, due to a variety of circumstances, this was not feasible and fieldwork concentrated on determining the current state of preservation of the site. Further, by examining visible portions of the wreck clues as to the final position and outline of the *Foam* could be identified. This might allow discrimination of the various areas of the ship that accommodated crew and Islanders respectively.

4.3.1 *Foam* Artefacts

As part of this study, in dealing with the classification and subsequent analysis of the *Foam* assemblage a new classification system was needed. After the 1982 recovery by the Queensland Museum, the artefacts were initially assigned a classification based on the Queensland Museum's Historical Classification Scheme (QM 1998). Subsequently, the artefacts were assigned their permanent accession numbers (MA 3200 to MA 3541) without any categorisation by form or function. While this system may be appropriate for museum accessioning, it does not provide the requisite classifications required to support the analysis of trade and exchange. Therefore, following the work of Corbin (2000), Gibbs (1995), Lawrence (1995) and Souza (1998), and as part of this study a functional typology of four major categories was developed each of which was further subdivided into categories suitable for the range of artefacts recovered from the *Foam*. Composite concretions were assigned a separate category. The physical attributes of each artefact in the assemblage were recorded and databases for each category were developed. The accession numbers assigned by the Queensland Museum were retained in this analysis to ensure continuity of identification.

Not all of the categories contain artefacts that could be used to address the issues of contact, trade and exchange. Therefore, using the tables of goods traded and exchanged in chapters two and three as a guide, a range of artefacts in the assemblage was identified as having the potential to be used as trade goods.

4.3.2 Further Artefact Research

In addition to the artefacts recovered from the *Foam*, extensive research into the range of goods employed as trade goods was conducted at the Pitt Rivers Museum at Oxford, the Museum of Mankind in London, the Australian Museum in Sydney, the Macleay Museum at the University of Sydney, the Queensland Museum in Brisbane and within private collections in Townsville. These examples of trade goods together with the recoveries from the *Foam* are used to demonstrate how archaeological data and approaches are critical to recognising that the Queensland labour trade was as much a Melanesian system as it was an Australian one.

4.4 Conclusion

This chapter has revisited the aim of this thesis and outlined the methodology and the sources of the historical and archaeological data that will be used to address the research questions. However, it must be appreciated that this approach does have limitations. The first is that the discussion of Melanesian trade and exchange systems is, by necessity a general overview. Due to the varied geographic locations of the Islanders involved in the labour trade, it is often difficult to identify which ethnographic system is being discussed. Thus, the concepts of contact, change, trade and exchange presented in this thesis are generalisations rather than a focus on a specific system from one single place. The second limitation is that I was unable to carry out fieldwork in Melanesia. One outcome of this thesis will be to suggest exactly what fieldwork would be appropriate in the future.

Chapter Five

LABOUR VESSELS AND THEIR VOYAGES

5.1 Introduction

This chapter will investigate the labour trade vessels themselves, where they went and why they went there. Gibbins and Adams (2001) in their review of maritime archaeology reveal that shipwrecks, as single events, and the artefacts associated with them, are the main focus for analysis. However, in this chapter the vessels used in the labour trade are treated as an archaeological assemblage. As such, they are investigated as artefacts in their own right and, importantly, as *sites of change* within the Queensland labour trade. A re-analysis of the data on voyages will demonstrate patterns of where recruits came from, numbers from different regions and finally, patterns in the gender of recruits and returns. As part of a life history approach, as adopted by Lenihan *et al* (1987), the chapter concludes with an in-depth investigation of the labour schooner *Foam*, in which its operation will be compared with general concepts already presented. This chapter examines issues not previously investigated in studies of the Queensland labour trade.

It is necessary to examine the labour vessels because they were not simply the means by which South Sea Islanders were transported across the Pacific. Labour vessels and indeed the explorers' and traders' vessels that came before them were the means through which cross-cultural contact was established and maintained in the South Sea Islands. Information can be derived from an analysis of the form and function of the vessels because they are examples of maritime material culture which Lenihan and Murphy (1981:70) assert are "complex creations of humans for the purpose of transportation over water". More recently, Gibbins and Adams (2001) expanded this to argue that vessels were constructed as the result of a specific need within a community to achieve socio-economic aims such as trade and communication.

From a more vessel-centred perspective it can also be argued that when at sea sailors and passengers were part of a separate community operating within its own set of requirements existing only on that vessel at that time.

Muckelroy (1978:216) viewed vessels as "closed communities" and Adams (2001:300) as "complex social organisations". Flatman (2003:150) argues that vessels are "primarily cultural and political entities". I would contend that labour vessels were also economic entities and this will be further explained later in this chapter.

5.2 Queensland Labour Trade Vessels

Previous research into labour vessels (Beck 1999) revealed that a number of them were already old before they entered the trade and were being used to make a quick profit before their demise. For example, according to Saunders (1974), the *Heath* was at the end of its life as a coal barge before being refitted for the labour trade. Stevens (1950) provides two further examples: the *Hector,* built in 1840 and joining the labour trade in 1886, and the *Ivanhoe,* built in 1837 and entering the trade in 1900. Undoubtedly, the enticement of large profits led to a variety of vessels finding their way into the trade. Docker (1970) and Stevens (1950) relate that the *Black Dog* was running opium through the China Sea blockades before moving into the labour trade. According to Cromar (1935), the *Madeline* was shipping bananas from the West Indies to London, and Parsons (1984) states that the *City of Melbourne* had been wrecked twice, gutted by fire, salvaged and repaired numerous times before joining the trade. Murphy (1983:75) refers to this reuse of vessels as the "one more voyage" hypothesis. The premise for this approach is that driven by the lure of profits, cheaply purchased vessels beyond their usual life expectancy were refitted in order to make one more voyage. If the vessel made it, the owner took the profits and the vessel went on yet another "last" voyage. If the vessel was lost, although the owner lost the cargo, the loss of the vessel was negligible.

Thus, the seaworthiness of some vessels left a lot to be desired. Saunders (1974) recounts that in 1885, the Government Agent on the *Flora* reported that the vessel's rigging was rotten, the cabin was not securely attached to the deck and that several inches of water formed in the cabin during rough seas. Saunders (1974) further relates that the *Hector* was in such a poor state that its licence was cancelled pending a complete refit. The *Argus* (1884a) reported that the *Sibyl* had been condemned and was rotten throughout and according to Wawn (1893), the *Bobtail Nag* leaked so badly that crews were kept at the pumps constantly.

It is my contention that the "one more voyage" approach was in operation during the early stages of the Queensland labour trade. However, it is argued here that over time market forces, economics and indeed legislation within the Queensland labour trade would have led to one or more types of vessels becoming more popular for labour transportation. The uncertainty of the "one more voyage" approach is overtaken by a more rational choice of vessels. In order to test this hypothesis, a regional approach to determine patterns of vessel type and preference, as proposed by Schiffer (1976), was adopted. A database of vessels involved in the labour trade was developed (see Appendix 3) and interrogated (Figure 5.1).

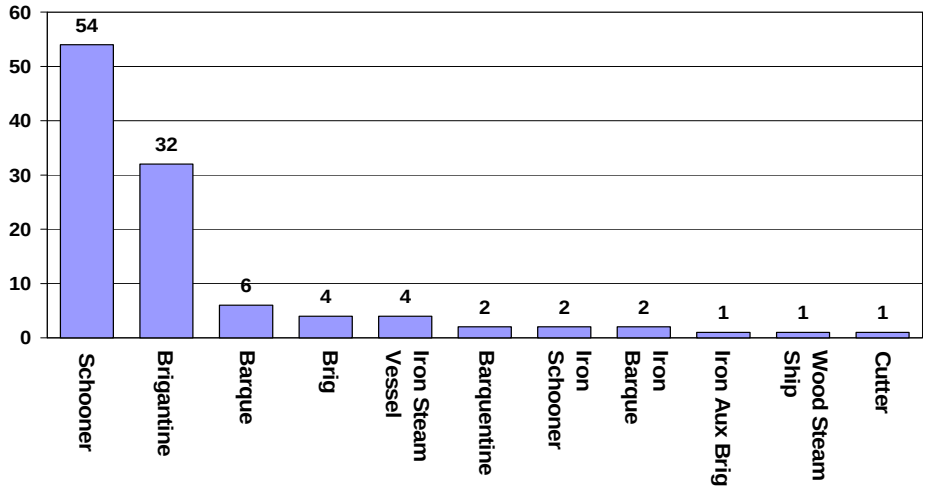


Figure 5.1

Numbers and Types of Vessels Involved with the Queensland Labour Trade

Source: Labour Vessels Database, Appendix 3

As shown in Figure 5.1, 109 vessels (excluding deportation vessels) were engaged in the trade with schooners and brigantines being the most frequently utilised vessels. To determine if this was the trend across the whole period of the labour trade, records from the National Library of Australia (NLA nd) detailing the types of labour vessels arriving at a majority of Queensland ports were analysed and the results plotted (see Figure 5.2). It is evident that schooners were the most popular vessels over the entire period of the labour trade.

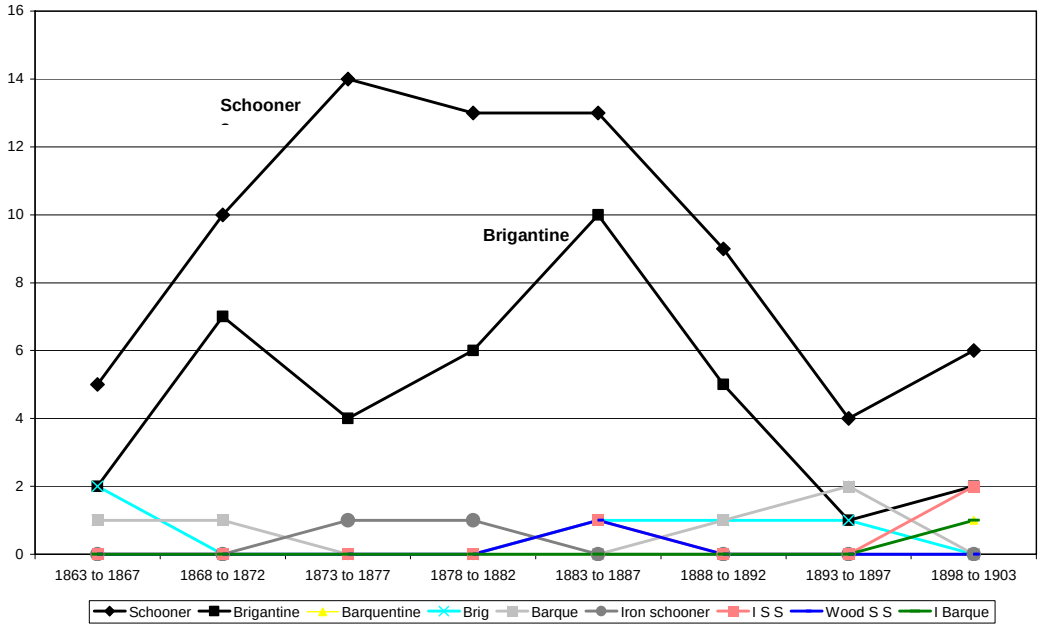


Figure 5.2 Numbers of Vessels by Type in Five Year Periods

Source: (NLA nd) National Library of Australia MS 612

My contention is that the popularity of schooners was due to their size and the configuration of their rigging. The labour vessels database (Appendix 3) reveals that schooners were generally smaller than other types of vessels engaged in the labour trade. At first glance, this might seem a disadvantage to a labour trader eager for profit. However, being smaller provided several advantages. It cost less to purchase, equip and maintain a schooner. Being fore and aft rigged, schooners were able to operate with reasonable speed regardless of the wind direction when compared to square rigged vessels. They also required less crew to handle the sails, resulting in lower operating costs per voyage. The smaller size also meant a shallower draft which was ideal for operating within the reefs surrounding most South Sea Islands. Larger vessels could carry more recruits, although this was not an essential quality as the regulations dictated the maximum number of recruits allowed per voyage. Added to this, more recruits on board meant more supplies to purchase and store.

It might be argued that when comparing two vessels of similar size but with different rigs (amount of sail), the vessel with more sail area would be able to travel faster. However,

sailing vessels of the time had displacement hulls. This means that the hull displaced the water around it as it sat at rest. When underway, the hull displaced the water out of the way creating bow and stern waves that limited the maximum speed of the vessel. The length of the hull at the water line (LWL) determines the maximum speed of a displacement hull vessel, not the amount of sail. The theoretical maximum hull speed for a displacement hull can be calculated by using the formula: Maximum Hull Speed in Knots = 1.34 x √ LWL in Feet (Gandy 2003; Rousmaniere 1999). Once again, a schooner would have been more profitable than a brigantine of the same size as they both had the same hull speed but the schooner required less crew to operate and, therefore, was cheaper to run per voyage. One obvious disadvantage of a smaller vessel would have been experienced by recruits who might have found conditions below deck very confined once a full complement was onboard.

Mercantile considerations also influenced the type of vessel employed. Vessels involved in the labour trade could only be insured for two-thirds of their value and the premium was 18 percent of the insured value. An additional 2.33% was required if the vessel was operating during the cyclone season. Life expectancy for members of the crew was also an issue with an extra premium of 30 shillings per £100 insured being charged for travel to the islands (*Argus* 1884b). Therefore, European entrepreneurs who were conscious of profit soon realised that smaller vessels with less crew were cheaper to insure. Moreover, a smaller vessel lost at sea was less of a financial disaster to a merchant than if a large vessel and cargo were lost. Thus, schooners were the most utilised vessels in the Queensland labour trade because they combined economic viability with an ability to operate in open waters and shallow reefs in a variety of wind directions.

Regardless of the type of vessel or its state of seaworthiness, the physical appearance of all Queensland labour vessels was regulated. Some recruiters for Fiji and New Caledonia were falsely claiming to be recruiting for Queensland and then taking the recruits to their own colonies. Thus, there was a need to distinguish Queensland labour vessels from those recruiting for Fiji or French vessels recruiting for New Caledonia. Therefore, in 1884 regulations were introduced requiring Queensland labour vessels to be painted white with a black stripe along their sides (Figure 5.3) (RPILA 1884). By 1892, this was changed to a light slate colour and the vessels' recruiting boats were painted red on the outside and

green on the inside. Further images of vessels listed in the labour vessels database and mentioned in this thesis are shown in Appendix 4.

The new regulation also stated that when recruiting, vessels had to display a black ball from their main mast (RPILA 1892). However, this encouraged some unscrupulous traders from other colonies to exploit the regulation. Wawn (1893) relates how the French schooner *Lulu* was painted grey to dupe Islanders into thinking it was recruiting for Queensland.

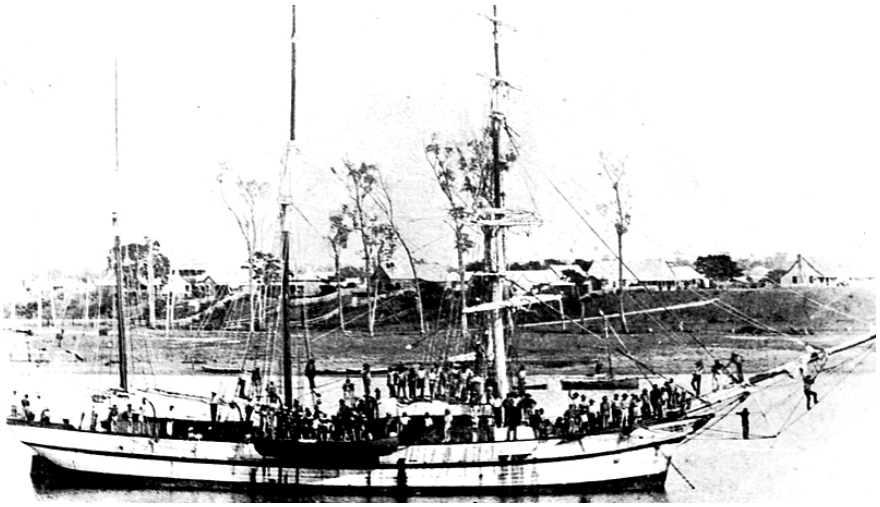


Figure 5.3 Queensland Labour Vessel *May*

Source: Townsville Library Service, Local History Collection, Kanakas No 10

5.2.1 Internal Configuration of Labour Vessels

By making a study of the internal configuration of Queensland labour vessels, this section sets out to examine the veracity of assertions that Islanders were being transported in conditions similar to slave vessels. Furthermore, as stated in chapter four, a new concept of labour vessels as *sites of change* for Islanders, brought about by the vessels' internal configurations is also introduced.

As already established, there were no governing regulations during the initial years of the Queensland labour trade. Therefore, before 1868, the internal configuration of Islander accommodation on recruiting vessels was the sole responsibility of shipowners who may have been more interested in profits than the Islanders' comfort. While no historical record of any Queensland labour vessel being fitted out as a slaver (i.e. complete with slave chains) has been discovered, Saunders (1974) does allude to the Fijian labour vessel *Daphne* reportedly being fitted out as a slaver. The *Daphne* later operated in the Queensland trade. A French labour schooner registered in Tahiti as the *Imperatrice* was visited by a British captain in 1871, who reported that it was fitted out as a slave ship, complete with slave irons (Holthouse 1969).

By 1868 the *Polynesian Labour Act* was in force. It was the first Act to specify the below deck configuration regarding the accommodation of labourers. Vessels were required to have twelve clear superficial feet (0.028 cubic meters) per adult recruit and the minimum distance between decks was set at 6ft 6in (1.95 metres). If decks were further apart, one extra adult could be accommodated per extra 144 cu ft (4.0 cu metres) of extra space. The vessel was to be fitted with no more than two tiers of open berths or sleeping places (Figure 5.4). The lower bench was to be at least 6in (15.2cm) from the deck and the distance between the tiers was to be at least 2ft 6in (0.76 metres) (PLA 1868 s16 & 17). Wawn (1893) states that the space under the lower bench was used to store firewood. By way of comparison, Hope (1872) encountered recruits on a Fijian labour vessel sleeping on ballast stones.

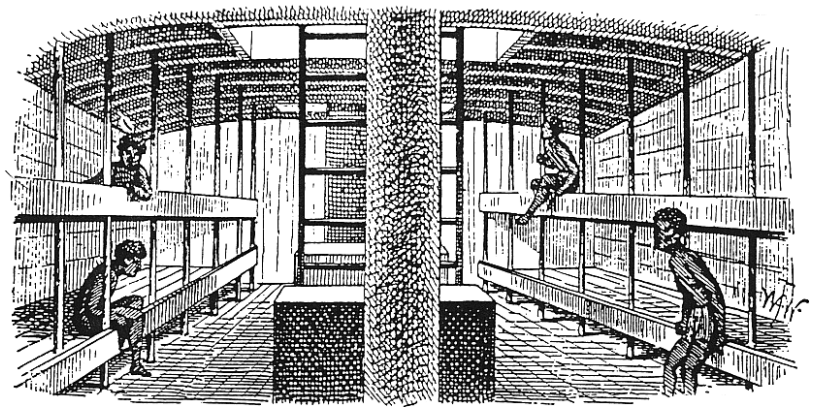


Figure 5.4 Internal Configuration of a Queensland Labour Vessel

Source: Wawn (1893:4)

The overriding regulation was that no vessel would be licensed to carry more than one recruit per five superficial feet of clear exercise space on the main and poop decks (PLA 1868). Later, when the *Pacific Island Labourers Act* of 1880 came into effect, the accommodation requirements remained unchanged with one notable exception. The additional space below decks required to allow an extra person was almost halved from 144 cu ft (4.0 cu metres) to 78 cu ft (2.2 cu metres) (PILA 1880). The effect of this change was to increase the number of Islanders that a vessel could potentially carry. However, the Act specified the space required below decks per recruit, rather than stipulating the sleeping space per adult. This had the potential for overcrowding. For example, the *Argus* (1884b) points out that the *Lizzie,* was crowded with only 120 recruits onboard but was actually licensed to carry 170. If the *Lizzie* had its full complement, recruits would have had to sleep on the floor. Giles (1968) indicates that as a result of the regulations, Queensland labour vessels were carrying slightly less that one recruit per registered ton. Turning again to the Fijian labour trade for comparison, their recruits were transported at a much less comfortable rate of three recruits per two registered tons.

Examples of the internal layout of Queensland vessels are provided by the schooners *Jason* and *Stanley* modified at Maryborough in 1870 and 1875 respectively. On the *Stanley* a lower deck was constructed over the top of the iron ballast and two long bunks each six feet (1.82 metres) wide were installed extending the length of the hold. A bulkhead made from four inch (10 cm) battens each placed four inches (10 cm) apart was installed in the aft section of the hold. This bulkhead divided the hold into two unequal parts and provided the separation between the single male and female/married accommodation. The female/married quarters were located in the smaller aft section of the hold and could only be accessed via a separate hatch in the deck (Wawn 1893). The *Jason* was fitted out in the same manner. It also had Venetian ventilators fitted over the hatch to provide air circulation and to waterproof the hatch during rough weather. Two hefty water tanks and a number of wooden casks capable of holding in excess of 2000 gallons (9092 litres) were fitted and a complete galley for the Islanders' use was also installed *(Maryborough Chronicle*1870).

With the exception of the requirement for a first class cabin for the Government Agent, the accommodation standard for the European and Islander boat crew was not regulated by legislation. Morrison (1882), a reporter for the *Argus*, provides an example of the crew's

accommodation on a Queensland labour vessel. The upper focsle had six bunks, one for each of the four European sailors plus the cook and carpenter. The lower focsle had eight bunks, one for Morrison, four for the island boat crew, one for a sick Islander, one was used as the rope locker and the final bunk was used as the paint locker. The Captain, Government Agent and the 1st and 2nd mates were all housed in the cabin on the poop deck (Morrison 1882).

This division of space onboard the vessels resulted in a general operating model (see Figure 5.5) whereby the Islanders were located in the central section and ships' crew occupied the forward and aft sections of the vessel. The physical structure of the vessels themselves is discussed in detail here because, as is contended later in this chapter, interacting with this confined and structured space may well have demanded changes in the Islanders' culture and world view as they took part in the voyage. This argument will be returned to in the discussion section of this chapter.

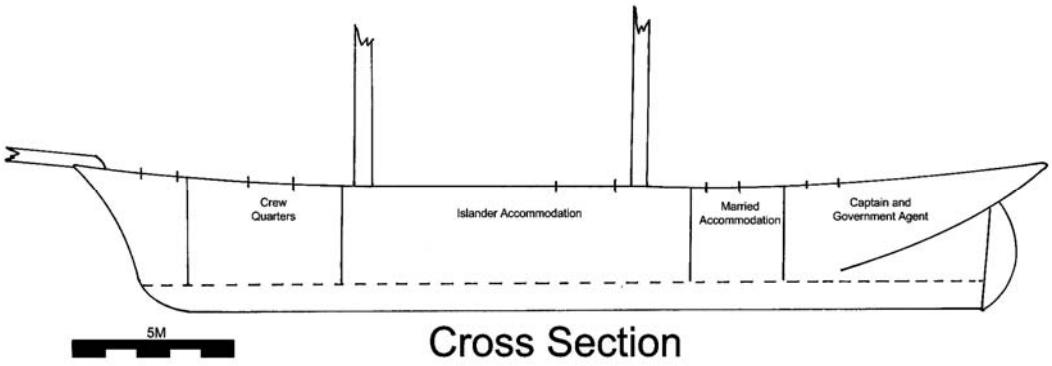


Figure 5.5 General Model for Accommodation on Queensland Labour Vessels

5.3 The Australian Station

Changes in the physical structure of recruiting vessels were not the only transformation in the maritime landscape brought about by the Queensland labour trade. The role of the Royal Navy changed as a result of political pressure from British humanitarianism. This movement viewed the "Christianisation and civilisation" of the less fortunate as a paternalistic duty (Samson 1996:14). Therefore, it became one of the Royal Navy's duties to support and protect the work of missionaries by enforcing the *Kidnapping Act of 1872*.

In order to achieve this goal, the British Government needed to boost the number of Navy vessels operating from its Australian Station. In 1872, the Sydney shipbuilders "Cuthberts" were contracted to build four armed schooners. These vessels were launched and became HMS *Beagle*, *Conflict*, *Sandfly* and *Renard*. A fifth vessel, HMS *Alacrity* was purchased separately (Gillett 1989; Lind 1988). Details of the vessels are shown in Table 5.1

According to Docker (1970), these vessels were specifically designed for anti-kidnapping patrols. However, it appears that the design was not suitable for the task. Gillett (1989) and Lind (1988) both report that the Cuthberts' schooners lacked both the speed and armaments to be effective. In 1881, eight years after the first patrol, the vessels were deemed not suitable for the task and were sold off (Lind 1988). It could be argued that the failure of these vessels provides evidence of a gap in understanding between those writing the legislation and those tasked with the physical application and enforcement of it. As was becoming a pattern in relation to the Queensland labour trade, pertinent legislation was being continually modified in an effort to keep pace with the dynamics of the trade.

Table 5.1 Vessels Built For the Australian Station

Vessel Name	Dimensions	Tons	Date Built
HMS *Alacrity*	72ft (21.4 m) x 16ft (4.8 m) x ??	85	4/11/1872 (Purchased)
HMS *Beagle*	80ft (24.3m) x 18ft (5.4m) x 6ft (1.8m)	120	5/12/1872
HMS *Conflict*	80ft (24.3m) x 19ft (5.7m) x 6ft (1.8m)	120	11/02/1873
HMS *Renard*	80ft (24.3m) x 17ft (5.1m) x 6ft (1.8m)	120	16/01/1873
HMS *Sandfly*	80ft (24.3m) x 17ft (5.1m) x 6ft (1.8m)	120	5/12/1872

(Gillett 1989; Lind 1988)

5.4 Recruiting Voyages

The viability of the Queensland labour trade depended on recruiting voyages as a means of acquiring a cheap and reliable workforce. In this section, the spatial patterns of voyages

and the number of recruits obtained during those voyages will be examined in order to explore trends in voyages and recruiting operations over time.

As previously established, 1863 heralded the first recruiting voyage in the Queensland labour trade with Robert Towns dispatching the *Don Juan* to Vanuatu. Over the next 41 years, at least 800 voyages were made, with destinations ranging from the southern tip of New Caledonia north to New Ireland in the Bismarck Archipelago.

Shlomowitz (1981) conducted a statistical investigation of the estimated number of recruiting voyages in the Queensland labour trade from 1871 to 1903. By combining his results with the data in Graves (1993), Moore (1985) and Price and Baker (1976) it has been possible to expand the time frame and reveal trends in the mechanisms of recruiting voyages and the destinations where contact took place for the duration of the trade (1863 to 1904).

In order to address trends in voyage and recruiting numbers, a comparison between the number of voyages made, the number of recruits transported, and the average number of recruits on each of the voyages over time is presented in Figures 5.6 and 5.7. The data used in these tables are shown in Appendix 5.

The number of voyages conducted and recruits obtained per year varied in accordance with the demand for and availability of recruits, and changes in legislation. With the exception of the period 1884 to 1890, changes in recruiting numbers paralleled changes in voyage frequency. However, as revealed in Figure 5.7, the average number of recruits per vessel did not follow this trend. Initially there were only one or two voyages per year and demand for labourers was minimal as Robert Towns was the sole operator recruiting South Sea Islanders. Once sugar plantations came into operation, the demand for labour increased as did the number of recruiting agents and voyages. The number of recruits per vessel increased rapidly but fell when the 1868 Act regulated the maximum number of recruits permitted per vessel.

Numbers of recruits and voyages increased through the 1870s up to 1883 when they peaked at 59 voyages and 5276 recruits during that one year. The average number of recruits per voyage peaked in 1880 and remained at around the same level until 1883.

Therefore, the increase in recruiting numbers was due to the increase in recruiting voyages not the number of recruits per voyage. This implies that until 1883, there was a ready supply of labourers in those islands sourced for recruiting. Post 1883, the numbers of labourers and voyages fell dramatically. Because demand for labour in Queensland was constant, this decline indicates a likely shortage of potential labourers in the major recruiting areas.

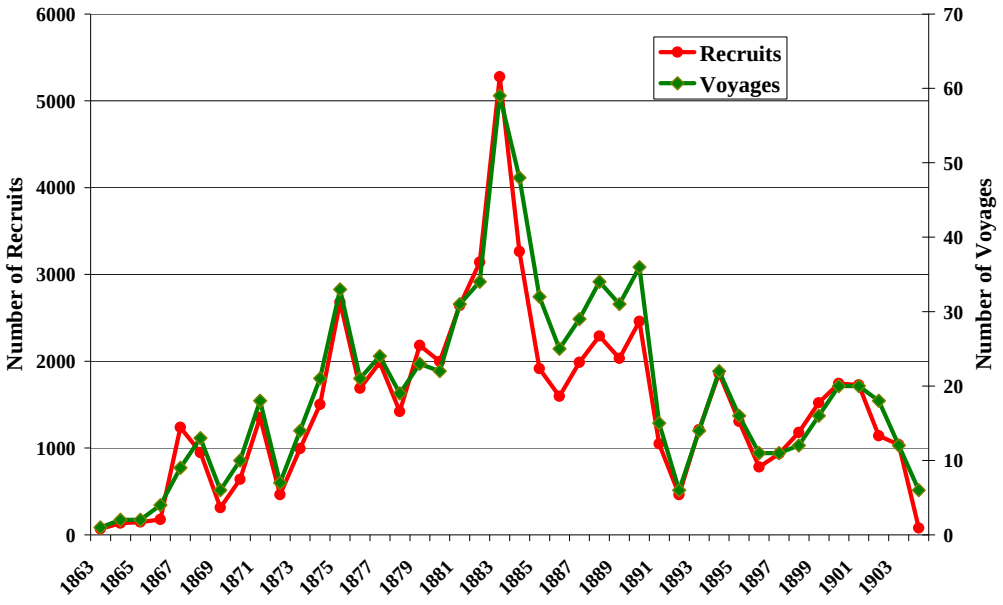


Figure 5.6 Comparison of Recruit Numbers and Recruiting Voyages

Source: Adapted from Graves (1993), Moore (1985) and Price and Baker (1976)

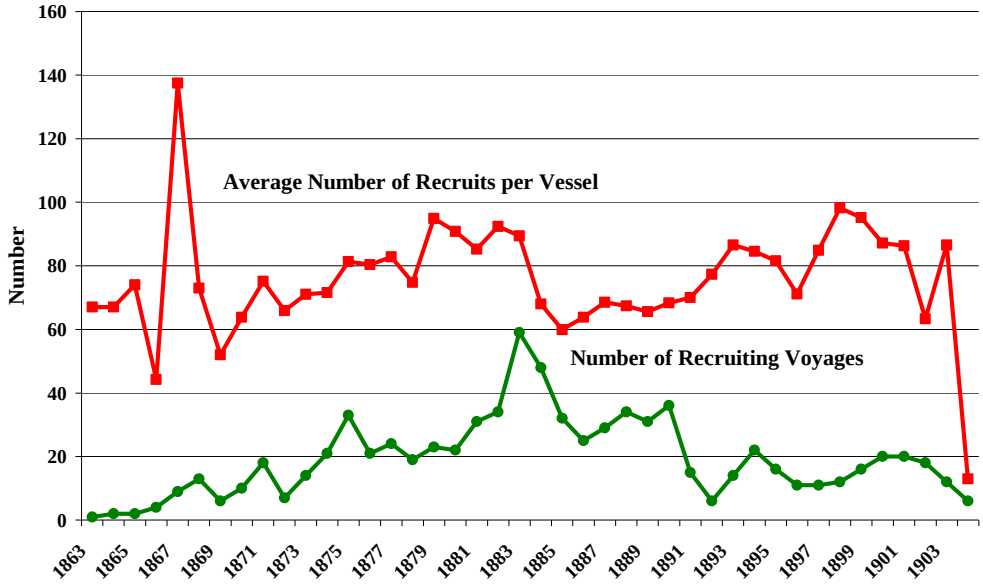


Figure 5.7 Comparison of the Average Number of Recruits per Voyage and Recruiting Voyages

Source: Adapted from Graves (1993), Moore (1985) and Price and Baker (1976)

Shlomowitz (1981) argues that this difficulty in obtaining recruits led to an increase in the length of voyages with a subsequent decrease in their number. This issue will be discussed in section 5.6. In 1885 it was legislated that there would be no further recruiting after December 1890. This led to increases in voyages and recruiting numbers as agents endeavoured to supply the needs of the plantation owners before the ban came into force. Even with the increase in voyages, recruits were still not available in the same numbers as pre-1883. Despite the 1890 ban on all recruiting, Graves (1993), Moore (1985) and Price and Baker (1976) all indicate that just over 1000 recruits were transported to Queensland in 1891.

The 1892 repeal of the recruiting ban led to an initial increase in voyages and recruiting numbers to satisfy the new demand for labourers. This continued until 1901 when legislation introduced a total ban on recruiting after 1904. The 1901 legislation saw voyage and recruiting numbers decrease as the Queensland labour trade approached its end.

5.4.1 Voyage Patterns

By investigating the number of recruits obtained from different island groups over time it is possible to plot the patterns of Queensland labour vessel movement in the South Sea Islands. As trade goods were exchanged for recruits, and returns arrived with their trade boxes, Table 5.6, in effect, also plots the frequency of the supply of European trade goods from Queensland recruiting vessels into different island groups over time. Inferences can also be drawn into why vessel destinations may have changed over time.

Price and Baker (1976) divided the main island groups into eleven regions and listed the number of recruits obtained from each over time. By re-analysing the data it has been possible to determine the total percentage of recruits that each region provided (Figure 5.8) and the changes in recruiting areas over the duration of the Queensland labour trade (Figure 5.9). A database of the recruits from each region and a list of the islands in each of regions are provided in Appendix 6

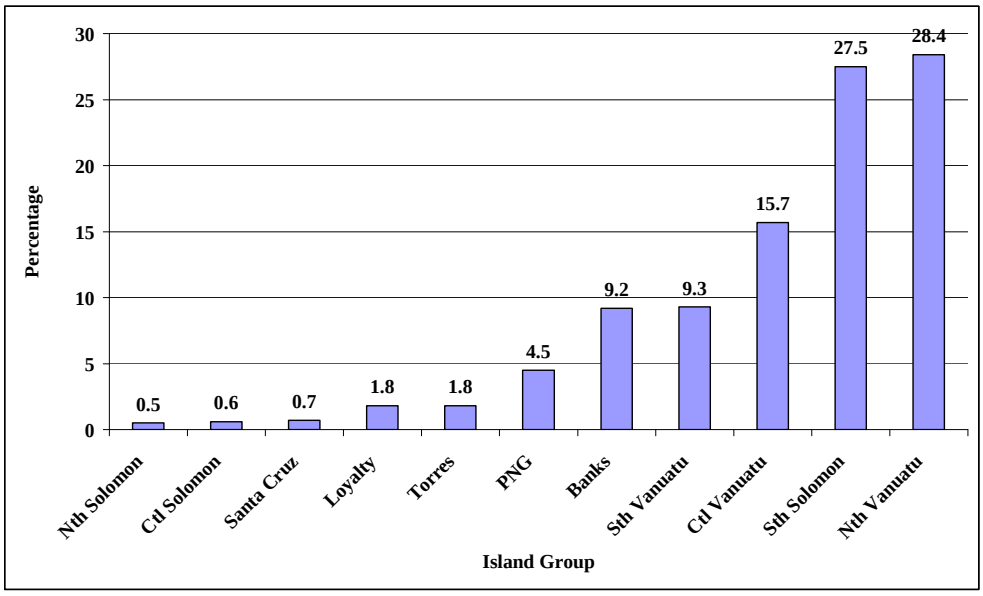


Figure 5.8 Total Percentage of Recruits by Island Group

Source: Adapted from Price and Baker (1976)

As stated in chapter two, the Queensland labour trade represented a continuation of European contact that was established with the sandalwood trade. As shown in Figure 5.9,

for the first five years of the trade (1863-1867) recruiting voyages concentrated on the well known labour resources in the sandalwood regions of the Loyalty Islands and expanded into Vanuatu with central Vanuatu providing a majority of the recruits. As the demand for labourers increased, recruiting vessels started to move northward into the southern Solomon Islands. The Banks Islands were now providing a substantial quantity of recruits.

By 1883, recruiting from northern Vanuatu was on the decline and the southern Solomon Islands were becoming a favoured destination for recruiting voyages. During this period there was a small number of recruiting voyages into the New Guinea archipelago in search of recruiting markets that did not demand the quantities of trade goods now required in Vanuatu and the Solomon Islands. Although only few in number, the voyages to New Guinea provided 20% of the recruits for the 1883 to 1887 period.

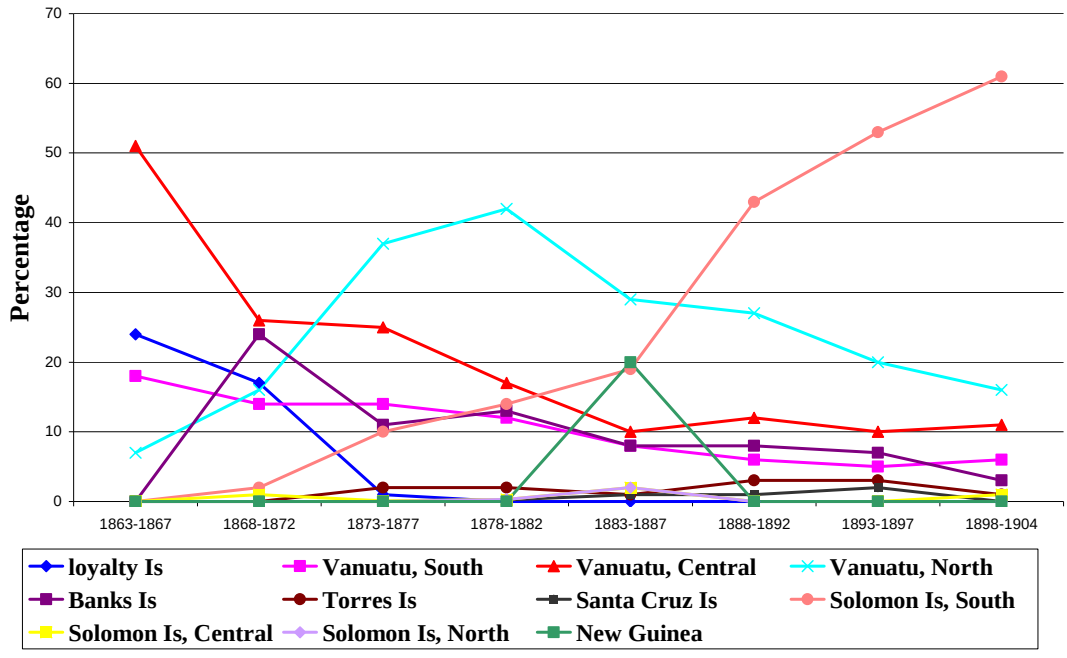


Figure 5.9 Changes in Recruiting Areas over Time by Percentage of Recruits

Source: Adapted from Price and Baker (1976)

As detailed earlier, post 1883, recruiting numbers and voyages started to decline with the southern Solomon Islands an ever increasing source of recruits. Northern Vanuatu continued to decline but still provided a substantial number of recruits when compared to

other regions. In summary, prior to 1883 Vanuatu and especially northern Vanuatu provided the majority of the recruits. After 1883 the southern Solomon Islands became the main destination for recruiting voyages. Between the two they provided 56% of all the South Sea Islanders recruited to the Queensland labour trade which poses the question of why this pattern of change occurred.

It is argued here that aside from the *Pacific Island Labourers Acts* of 1880 – 1892 underpinning the mechanisms of recruiting voyages, there were four main factors influencing the destinations of the recruiting voyages over time.

1. The European political structure in the South Sea Islands.
2. The home location of returning Islanders
3. Depopulation of Island Groups
4. The influence of local intermediaries

European Political Structure

Claims held over the South Sea Islands by various Colonial powers determined where recruiting could be carried out, and by whom. In 1882, the French company "Compagnie Caledonienne des Nouvelles Hebrides" was established at Noumea. This was a private firm with full French government backing. Its aim was to take control of Vanuatu to provide labour for New Caledonia (Wawn 1893).

In 1884, the political structure changed and with it recruiting patterns. Papua, the south eastern section of New Guinea was proclaimed a British Protectorate. The north eastern section was claimed by the Germans and called Kaiser Wilhelm Land. The western section of New Guinea had been a Dutch colony since 1828. The Germans also laid claim to the islands of the Bismarck Archipelago and the northern Solomon Islands. The French claimed New Caledonia and the British had authority in Fiji. This left a triangle of territory encompassing the middle of the Solomon Islands to the north of the Santa Cruz Islands down to the south of Vanuatu (see Figure 5.10) as unclaimed recruiting ground surrounded to the north by the Germans, the French to the south and the British to the west (Cromar 1935). Shipmaster's Licences issued in pursuance of the *Pacific Island Labourers Acts* of 1880 – 1892 support this political division of the South Sea Islands. In 1892, instructions were printed on the back of the license issued to the *Foam*, (see

Appendix 7) detailing the demarcation line between the recruiting areas for Germany and Great Britain (QSA PRE/85).

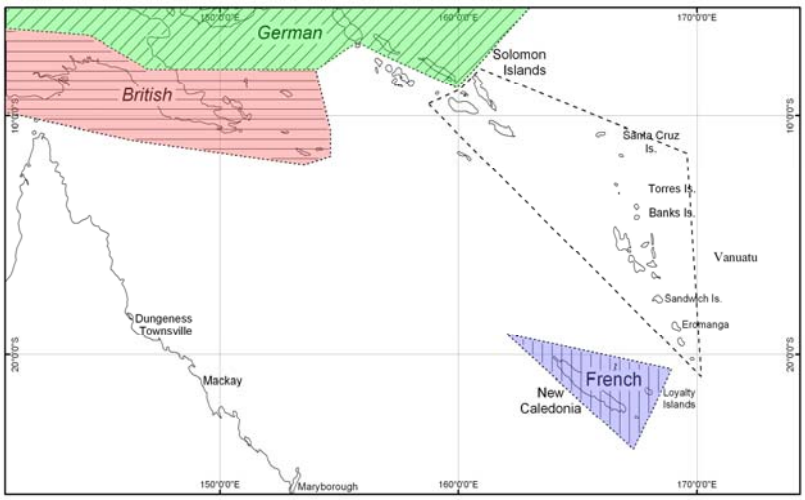


Figure 5.10 Political Division of the South West Pacific

Home Location of Returning Islanders

The *Pacific Island Labourers Acts* of 1880 - 1892 stipulated that Islanders be returned to the same location from where they were recruited. As most captains wanted to make space for new recruits, they usually started by delivering the returns and attempting to recruit at the same time. If they were unable to obtain the numbers required they would move onto island groups known to have a supply of labourers. The *Argus* (1892i) provides an example of this. The reporter, commenting the flow of life on board, states "thus by a gradual process one living freight supplanted the other without any break in the ships routine" (*Argus* 1892i). This pattern is evident in the recounting of the recruiting voyages of the *Foam* presented later in this chapter.

Depopulation of Island Groups

Like all business ventures, the Queensland labour trade was subject to the laws of supply and demand. A reduction in availability of recruits was one of the major factors influencing a shift in recruiting patterns. Unfortunately, there is no data on the depopulation of specific island groups in the records of the labour trade voyages.

However, by analysing the data in Graves (1993) it is possible to plot the pattern of male and female recruits and returns over time (Figures 5.11 and 5.12) and subsequently draw conclusions about the effect of recruiting on the South Sea Island population. Unfortunately, the data does not allow for an analysis by individual island groups. The data base of male and female recruits and returns over time is shown in Appendix 8.

The study revealed that 63% of all the South Sea Islanders arriving in Queensland were returned to their islands. Obversely, this indicates that 37% died in Queensland, decided to remain as time-expired labourers or died on the return voyage.

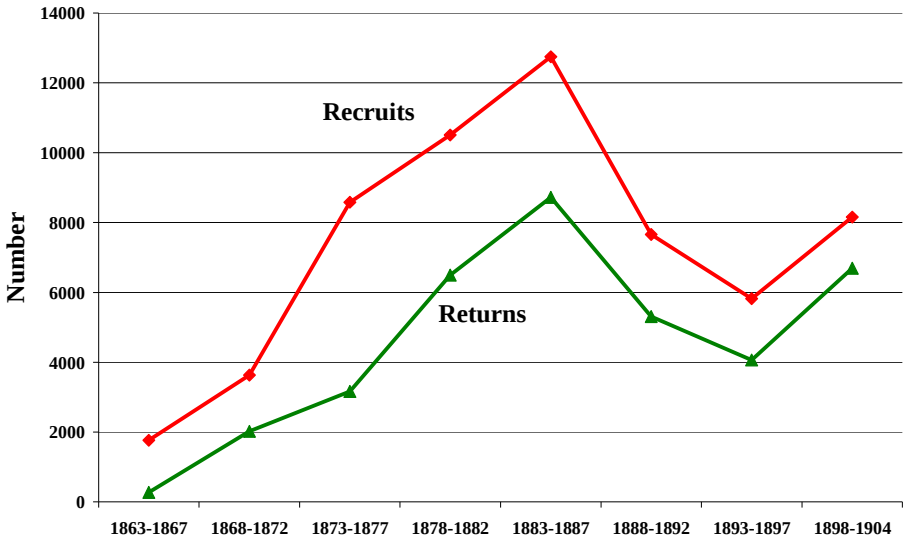


Figure 5.11 Comparison of Male Recruits and Returns

Source: Data adapted from Graves (1993)

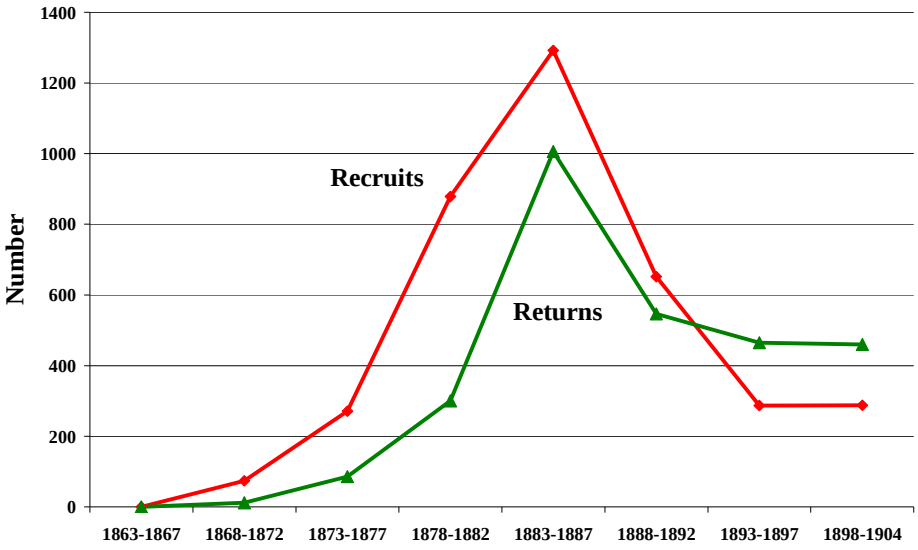


Figure 5.12 Comparison of Female Recruits and Returns

Source: Data adapted from Graves (1993)

As shown in Figures 5.11 and 5.12, the recruitment and return of both male and female labourers peaked in 1883 and there was a considerable difference between recruiting numbers and returns. This difference increased as the trade expanded into Vanuatu and southern Solomon Islands with its peak corresponding with the recruitment peak of 1883. Thus, the population of the islands was not being replenished at the same rate as it was being depopulated by recruiting. Moreover, the male and female recruits were the reproductive youth of the islands and, therefore, the birth rate on the islands is likely to have been reduced.

After 1883, the difference was less significant. However there was always a difference between the number of male recruits and returns. Conversely, after 1892, the female returns started to exceed the number of female recruits. It could be argued that this was due to the 1884 Amendment Act which specifically stated that domestic and household duties were not classified as tropical or semi-tropical employment. In effect, this amendment restricted the employment of South Sea Islanders to the fields and crushing plants which, in turn, reduced the number of females recruited and, at the same time, increased the number of female returns. The 1885 Amendment Act banning the recruitment of all labourers after 31 December 1890 further reduced the number of female recruits. When the 1885 Act was repealed and recruiting resumed, the definition of

tropical and semi-tropical work was refined further to exclude maize cultivation and the work of ploughing, leaving only field work in the cane fields which was a predominantly male occupation.

However, recruiting was not the sole cause of depopulation. From the time of early contact with missionaries and traders, introduced diseases were a major problem. Measles, influenza, dysentery, small pox, venereal disease, diphtheria and the respiratory diseases of tuberculosis, bronchitis, pneumonia and whooping cough are all reported as being introduced into the islands by contact with Europeans (Durrad 1922; Hopkins 1922; McArthur 1978; McArthur and Yaxley 1968; Speiser 1922).

The introduction of these diseases had a devastating effect on the population as the Islanders had no built up immunity and the high humidity provided an ideal climate for the survival of the pathogens. McArthur (1978) asserts that in 1861 a sandalwood vessel arrived at Aneityum with some of the crew suffering from measles. The infection spread through the island and four months later one third of the population had died. Five years later, in a single event, 300 people died from diphtheria and the following year over 100 children died from whooping cough.

McArthur (1978) also asserts that a change from separate family village life to a communal church existence brought about by the missionaries provided an avenue for the rapid spread of airborne diseases among the population. In a separate argument, Speiser (1922) asserts that the population of Aneityum was severely reduced by syphilis. Speiser further asserts that the Banks group and Northern Vanuatu were infected by small pox and a range of respiratory diseases and that on Santa Cruz the population was halved due to an introduced epidemic (Speiser 1922). Durrad (1922) contends that in 1863 the population of the island of Mota in the Banks Group was decimated by an outbreak of dysentery introduced by missionaries. In two weeks 52 people had died from the infection. The population of the Torres group was also drastically reduced due to introduced infections in combination with labour recruiting.

From the available data in McArthur and Yaxley (1968) (see Appendix 9), it has been possible to estimate some of the population changes in Vanuatu during the Queensland labour trade. It appears that the southern region of Vanuatu suffered the greatest

percentage of population loss. In particular, Aneityum and Erromango suffered a 78% and 70% loss of population respectively. This suggests a possible reason for the recruiting vessels moving north towards the Northern Vanuatu and Southern Solomon Islands regions.

The depopulation of the Solomon Islands was not as extreme as it was for Vanuatu and the Santa Cruz Islands. However, it still occurred. Hopkins (1922) contends that the decrease in population was due to introduced venereal disease, dysentery, pulmonary diseases, infant mortality and recruitment to plantations.

The influence of local intermediaries

The role played by South Sea Island middlemen acting as local interpreters, passage masters, and facilitating access to potential recruiting populations also influenced patterns of recruiting by demanding ever increasing amounts of trade goods for recruits and supplies. This increasing demand for goods resulted in recruiters moving to new regions. A classic example of this comes from Wawn (1893) where the ban on firearms initially resulted in Islanders from Vanuatu and the Solomon Islands refusing to recruit to Queensland. The result was a trial voyage by the *Lizzie* to the New Guinea Archipelago as it was an untried area for recruiting and therefore, the Islanders would not have developed an expectation to receive firearms or demand large quantities of trade goods. The role of local intermediaries or middlemen will be discussed in greater depth in chapter eight.

5.5 The Labour Vessel *Foam*, nee *Archimedes*

Thus far, the chapter has concentrated on vessels and voyages in general. The discussion now narrows to focus specifically on the labour schooner *Foam* and, using a life history approach, as adopted by Lenihan *et al* (1987), a vessel from a specific period of the labour trade and its voyages will be investigated and compared with the general concepts presented so far. Furthermore, the artefacts and trade goods assemblage from this wreck will be discussed in the next chapter.

The *Foam* was chosen for this research as it enjoys the unique status of being the only known wreck on the Great Barrier Reef of a Queensland labour vessel that was actively engaged in the labour trade at the time of its demise. The schooner was wrecked in 1893 on the first day of an outward voyage to the South Sea Islands. It was fully laden with the ship's stores, trade goods and equipment required for a recruiting voyage along with all of the personal possessions of 84 returning Islanders and ten European crew. Thus, the *Foam*, together with its wreck site, has the potential to provide insights into the mechanisms of life onboard a labour vessel, both for the returning Islanders and the European crew, at a specific time in the Queensland labour trade.

As established earlier in this chapter, vessels entered the labour trade with a myriad of backgrounds, and in varying states of seaworthiness. What made the *Foam's* entry into the trade atypical was its comparatively "tender age" and seaworthy state. The *Foam,* originally named *Archimedes,* started life as a speculative venture by the White family shipbuilding dynasty on the Isle of Wight in England. In February 1875, John White laid the keel in the Medina docks at West Cowes. September 1877 saw the then unnamed topsail schooner launched in an incomplete state as the slipway was needed to build an Admiralty revenue cruiser. A survey in February 1878 recorded that the hull was carvel built with a keel of English elm. The stem and stern posts, main deck beams, frame and main rudder components were all constructed from English oak. The raised quarterdeck was larch and most of the planking appears to have been a mixture of English oak and pitch pine (CMMA; QMMHA; Williams 1993).

In March 1878 another survey was conducted to establish what further work was required to bring the vessel up to the standard for registration by Lloyds. A number of letters passed between John White, various surveyors and Lloyds on this matter. The main issue was that the length of the schooner was more that eight times its depth and therefore Lloyds now required diagonal iron trussing. However, this was not practical as trussing was normally installed during construction. The solution was to install iron hanging knees on every beam end, iron lodging knees in the mast rooms and six pairs of iron rider knees that extended over the bilges. The survey also indicated that the hull of the vessel needed to be sheathed in "yellow metal" and that all of the iron bolts in the vessel had to be removed and replaced with either galvanised iron bolts or bolts made from yellow metal

(CMMA; QMMHA). Yellow metal also known as “Naval brass” or “Muntz metal” is an alloy made from copper and zinc and was patented in 1832 (Stone 1993).

The schooner was modified at considerable cost to John White and was sold in late 1882 to John Blyth & Co who named the vessel “*Archimedes”*. According to the Lloyds Shipowners Register (1883), the registered address for John Blyth was "8 Great Winchester St, London and at Melbourne, Victoria". However, archival records from the Cowes Maritime Museum reveal that on 18 December 1882, the *Archimedes* was sold to William Baxter McGavin also of 8 Great Winchester St, London. Furthermore, the Cowes Maritime Museum record states that a certificate was given to Blyth with instructions to sell the *Archimedes* within 12 months (CMMA). However, it is obvious that Blyth did not sell the vessel, as the Lloyds Registers for 1883-87 all have Blyth & Co listed as owner. The significance of McGavin has not been established.

The *Archimedes* was registered by Lloyds as being built under special survey with an A1 rating for 10 years (Lloyds 1883; QMMHA). The “A” in the Lloyds’ classification indicates that the vessel was in a sturdy and efficient condition for its intended use and the “1” indicates that all equipment onboard such as chains, rigging and anchors were up to the standard required by the Lloyds tables (Desmond 1998). The specifications of the *Archimedes* are shown in Table 5.2.

The dimensions of the masts and spars were not recorded by Lloyds. However, by using the calculations and tables in Fincham (1982) it has been possible to calculate the approximate lengths of the masts and spars.

From the list of labour vessels (see Appendix 3) it is possible to determine that the average length of wooden schooners operating in the labour trade was 85 feet (26 metres) with an average registered tonnage of 109 tons. By comparing this with the specifications in Table 5.2, the *Archimedes* was larger than the average schooner operating in the Queensland labour trade.

Table 5.2 *Archimedes'* Specifications

Lloyds official number	84265		
Rigging:	Top Sail Schooner		
Registered dimensions:			
Tonnage	162		
Under Deck Tonnage	152		
Length	100 feet 1 inch (30.4 metres)		
Breadth	22 feet 8 inches (6.8 metres)		
Depth	11 feet (3.3 metres)		
Anchors and Equipment:			
Two Bower anchors, numbers 14137 and 14138 each weighing 7 cwt (355 6 kg)			
One Stream anchor, number 14141,weighing 2.1 cwt (106.6 kg)			
One Kedge anchor, weighing 1 cwt (50.8 kg)			
Two number 6 pumps			
One Winch			
One Windlass			
One Long boat and one other ships boat			
Masts and Spars (estimated):			
Main mast:	74ft (22.5 metres)	Fore mast:	69ft (21 metres)
Main boom:	70ft (21.3 metres)	Jib boom:	23ft (7 metres)
Main gaff:	37ft (11.2 metres)	Fore gaff:	27ft (8.2 metres)
Bowsprit:	26ft (7.9 metres)		

Source: (Fincham 1982; Lloyds 1883-87; *Mercury* 1883; QMMHA)

Blyth & Co had purchased the *Archimedes* for the Australian coastal and overseas trade. In January 1883, the vessel sailed on its maiden voyage around the Cape of Good Hope and east to Australia. In June, the *Archimedes* arrived in Hobart and then departed for Port Mackay (1883). In February 1884, the vessel was re-registered at the port of Melbourne. The registration record revealed that the *Archimedes* now had a "closed in poop deck". Surveys were carried out on the vessel in August 1884 at Adelaide and subsequently at Melbourne in July 1885 (QMMHA).

5.5.1 Entering the Queensland Labour Trade

On 9 September 1887, the *Archimedes* was sold to Captain Timothy O'Dwyer, a Maryborough based ship owner, for use in the Island labour trade. The registration was transferred from Melbourne to Maryborough on 29 September, 1887. The *Archimedes* arrived in Maryborough under Captain O'Dwyer's command on 10 October, 1887 where it joined O'Dwyer's other labour vessels which included the *Fearless*, the *Freddy* and the *Roderick Dhu* (*Maryborough Chronicle*1887b; QMMHA).

At this stage of its life, the *Archimedes* had only spent four years in the Australian coastal trade and would still have been considered as A1 by Lloyds. This indicates that it was a reasonably new and serviceable vessel when it entered the labour trade. The *Maryborough Chronicle* (1887c) reported that the *Archimedes* was to be fitted out for the South Sea Island trade. As detailed earlier in this chapter, to comply with the regulations, this fit out would have seen a change in the physical appearance of the vessel. The hull would have been painted dark grey with a black band running bow to stern on each side of the hull. Two rows of sleeping benches would have been installed along with partitions in the hull to separate male and female/married Islanders. Three recruiting boats would have needed to be installed, and after 1889 the recruiting boats would have been painted red on the outside and green on the inside. An indication of how the *Archimedes* may have looked after being converted for use in the labour trade is provided by a 1:32 scale, open section model in the Maritime Museum of Townsville (Figure 5.13). This model was built using the scantlings (see glossary) provided by the Lloyds surveys.

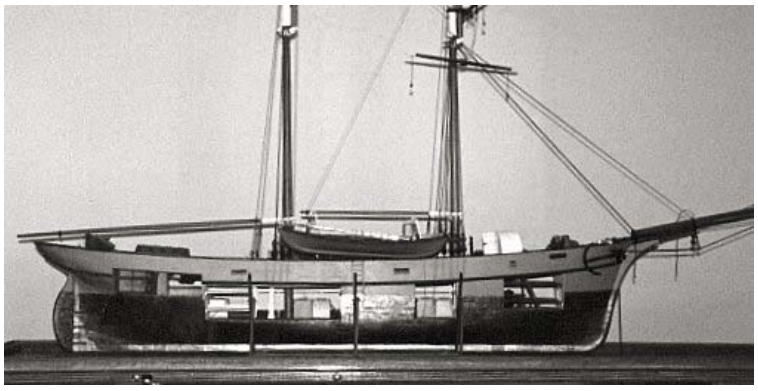


Figure 5.13 Model of the *Archimedes*/*Foam*

Source: Maritime Museum of Townsville, Photograph by Author

5.5.2 Recruiting Voyages 1887-1890

The *Archimedes* operated in the latter phase (1887-1893) of the labour trade. As previously discussed, by 1883 the number of recruiting voyages and recruits had reached their peak. This was followed by a dramatic fall in the number of voyages and recruits. In 1887, at the start of the recovery, the *Archimedes* entered the Queensland labour trade and remained in service until the ban on recruiting at the end of 1890. When the ban was rescinded, the *Archimedes* resumed service as the *Foam*. The vessel operated during the period that the southern Solomon Islands were gaining popularity as a recruiting area while voyages to northern Vanuatu were on the decline. However, both of these regions continued to provide a higher percentage of recruits than the other individual regions. The *Archimedes* made eight successful recruiting voyages over a period of three years and four months. During that time, it was at sea (voyaging and recruiting) for a period of two years and six months. Seventy five percent of its time in the labour trade was spent at sea. Information detailing the dates, duration, Captains, Government Agents, and number of returns/ recruits for each of the voyages has been compiled and is shown in Table 5.3.

Table 5.3 Details of the *Archimedes* / *Foam's* recruiting voyages

Voyage	Dates	Captain	Government Agent	Returns	Recruits
1	19 Nov 1887 08 Apr 1888	Oliver	Parnell	2	81
2 *	09 Jun 1888 16 Oct 1888	Callender	Thompson	6	83
3 *	07 Nov 1888 15 Feb 1889	Callender	Thompson	27	33
4	12 Mar 1889 20 Aug 1889	Ross	Thompson	9	31
5 *	17 Sep 1889 30 Nov 1889	Svensen	Craig	5	57
6	13 Jan 1890 17 May 1890	Svensen	Cockle	71	27
7 *	24 Jun 1890 12 Nov 1890	Rothwell	Sparks	98	98
NOT IN LABOUR TRADE DURING THIS PERIOD					
8*	08 Oct 1892 28 Dec 1892	Norman	North	102	39
9	23 Jan 1893 N/A	Norman	Rannie	84	N/A
			Total	404	449

Source: Data collated from the *Maryborough Chronicle*: 1887 d, 1888 a, b, c, e, f; 1889 c, d, e, f, h; 1890 a, b, c, d, e, g, h; 1892 k, p; 1893 a, d.

* Indicates that the voyage has been mapped

First Voyage: After being fitted out at Maryborough, the *Archimedes* departed for its first recruiting voyage in November, 1887. After 142 days, the *Archimedes* returned in April 1888 with 81 South Sea Islanders (*Mackay Mercury* 1888a; *Maryborough Chronicle* 1887d). Unfortunately there does not appear to be a report detailing the islands visited on this voyage.

Second Voyage: In June 1888, the *Archimedes* departed Mackay. This voyage lasting 130 days, took the *Archimedes* to the southern group of the Solomon Islands to recruit for plantations at Bundaberg and Mackay (*Mackay Mercury* 1888b; *Maryborough Chronicle* 1888a). As shown in Figure 5.14, the first port of call was Guadalcanal where all of the returns were landed. The *Archimedes* then sailed between the islands recruiting. Fifteen Islanders were obtained at Guadalcanal, 52 at Malaita, 14 at Florida Is and four at San Cristobel.

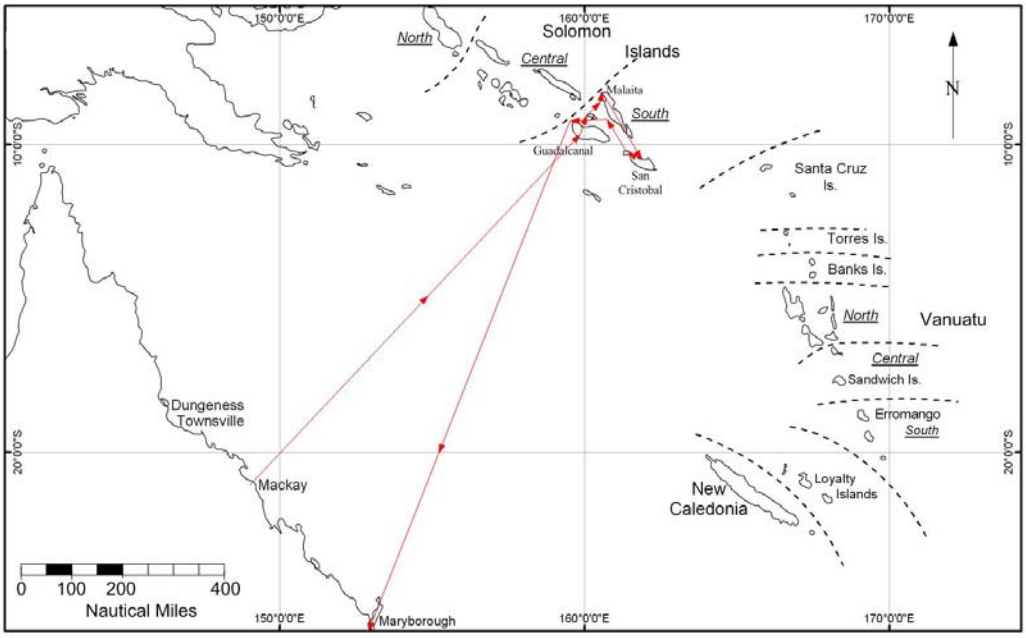


Figure 5.14 Route of the second recruiting voyage of the *Archimedes*

The *Maryborough Chronicle* (1888c) reported that the *Archimedes* departed for Maryborough with 85 recruits on board. However, on the return voyage two recruits died, one from consumption. The remaining 83 recruits were landed at Maryborough in October 1888. The passage taken on this voyage supports the argument that the destinations of the returning Islanders determined the initial destination and that the *Archimedes* was

following the trend of the time by using the southern Solomon Islands as a recruiting ground (see Figure 5.9).

Third Voyage: The third voyage lasted 100 days. The *Archimedes* departed from Maryborough in November 1888 with 27 returns on board all bound for Malaita. Twenty-two were time expired labourers from Bundaberg plantations. Five Islanders were from the previous voyage of the *Archimedes* and had been rejected when they arrived in Queensland (*Maryborough Chronicle* 1888e; 1888f). As shown in Figure 5.15, the track taken by the *Archimedes* once again headed for the southern group of the Solomon Islands. An account of the voyage published by the *Maryborough Chronicle* reported that when the *Archimedes* arrived in Malaita at Kwai Harbour, it found itself in the company of the *Ariel* from Bundaberg with 67 recruits on board and the *Fearless* with 34 recruits.

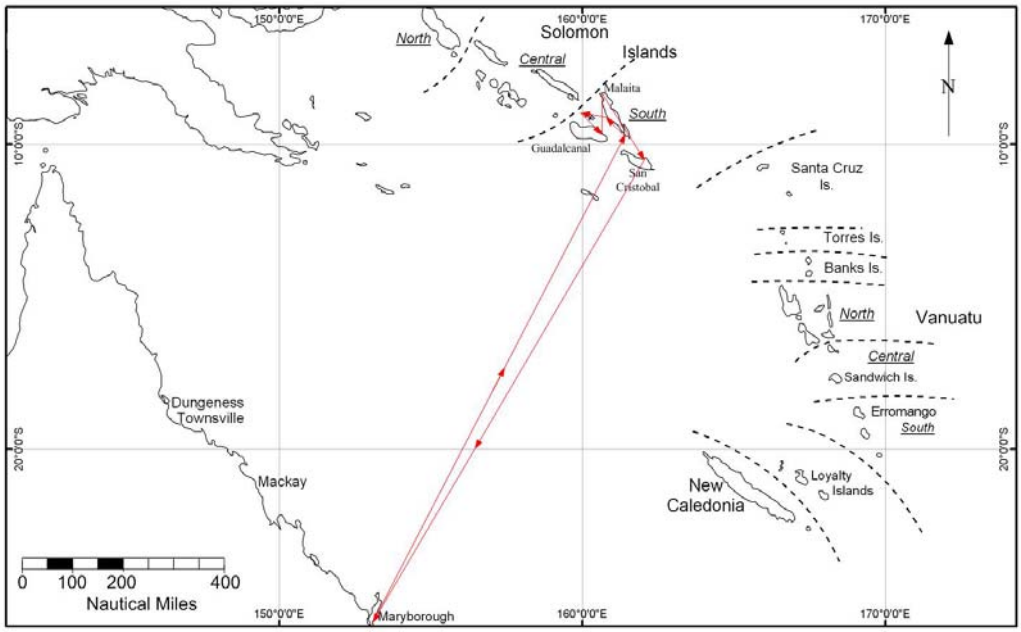


Figure 5.15 Route of the third recruiting voyage of the *Archimedes*

Departing Kwai Harbour the *Archimedes* sailed amongst the islands of the southern group of the Solomon Islands. In the previous voyage all of the returns were landed before recruiting commenced. On this voyage Islanders were recruited as the returns were being landed around Malaita and the surrounding islands. Upon being landed, one of the rejected recruits from the previous voyage was allowed to re-recruit. During the voyage the captain, two of the European crew and two of the Islander crew were laid up with

fever. Despite this, recruiting continued until February 1889 when it was decided to head back to Maryborough as the captain was still sick with fever. On this voyage nine recruits were signed up from Malaita, 24 from San Cristobel and four from Guadalcanal. Four of these recruits swam ashore while the *Archimedes* was still in the Islands, leaving 33 to arrive at Maryborough (*Maryborough Chronicle*1889a; 1889b). New forms of contact and change between Islanders are revealed through this voyage. These will be examined in the discussion section of this chapter

Fourth voyage: Very little information was available about this voyage which is unfortunate given it was the longest voyage made by the *Archimedes* in the labour trade. The schooner departed for the South Sea Islands in March 1889, returning to Maryborough via Dungeness 162 days later in August 1889. The only information available about the voyage, apart from that shown in Table 5.3, was that in July 1889 a sailor, Gerald Fitzgerald passed away onboard when the *Archimedes* was off Malaita (*Maryborough Chronicle*1889c; 1889d; 1889e). From this it can be determined that at some stage of the voyage the *Archimedes* was operating in the southern group of the Solomon Islands.

Fifth Voyage: In September 1889, the *Archimedes* departed for the southern and central island groups of Vanuatu (Figure 5.16). Onboard were five returns, four of whom were rejected recruits, two from each of the last trips of the *Archimedes* and *Fearless.* In October, after 39 days at sea, 45 recruits had been signed on, all from the southern group of islands. At the same time the Government Agent was reported as being very ill and in need of medical assistance (*Maryborough Chronicle*1889f; 1889g). Despite the Government Agent being unable to perform his duties, a further 12 recruits must have been signed on because the *Maryborough Chronicle* (1889f) reported that after 75 days at sea the *Archimedes* arrived at Maryborough with 57 recruits and a very ill Government Agent. I would argue that due to his physical condition, the Government Agent would have been unable to accompany recruiting boats to shore as required by the regulations, therefore, no recruiting should have taken place. From this voyage it can be shown that Islanders who did not meet the standards were still being recruited (and were subsequently rejected upon arrival in Queensland). Regulations were flouted in favour of profit and the role and physical presence of a Government Agent was not a universal panacea.

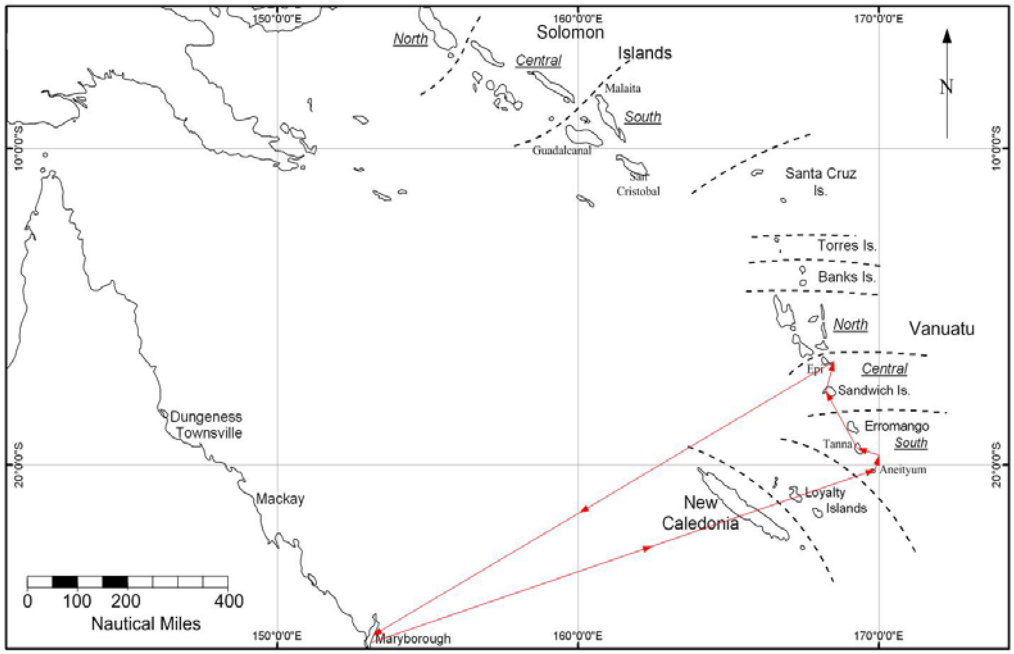


Figure 5.16 Route of the fifth recruiting voyage of the *Archimedes*

Sixth Voyage: The *Archimedes* next departed Maryborough in January 1890 on a 125 day voyage. Onboard were 71 returns (61 male and 10 female) all destined for Vanuatu. Twenty eight of the returns were from Maryborough, with the remainder from Bundaberg (*Maryborough Chronicle* 1890a). Once again no records were discovered listing the details of this voyage. After a four month trip, the *Archimedes* returned to Mackay in May1890 with only 27 recruits onboard. An article in the *Maryborough Chronicle* (1890b) states that nine recruits were lost on the voyage and that some of those on board were suffering from dysentery. After landing the recruits the *Archimedes* returned to Maryborough where it remained until June 1890.

Seventh Voyage: The *Archimedes* departed in June 1890 with 80 returns from Bundaberg and 18 from Rockhampton. This voyage took 142 days and covered an area from the southern group of Vanuatu all the way up to the southern group of the Solomon Islands (Figure 5.17). The first returns were landed at Aneityum. Tanna was the next port of call where more returns were landed (*Maryborough Chronicle* 1890c; 1890d; 1890e). Two recruits were signed on before the *Archimedes* arrived in Erromango where more returns were landed (*Maryborough Chronicle* 1890f).

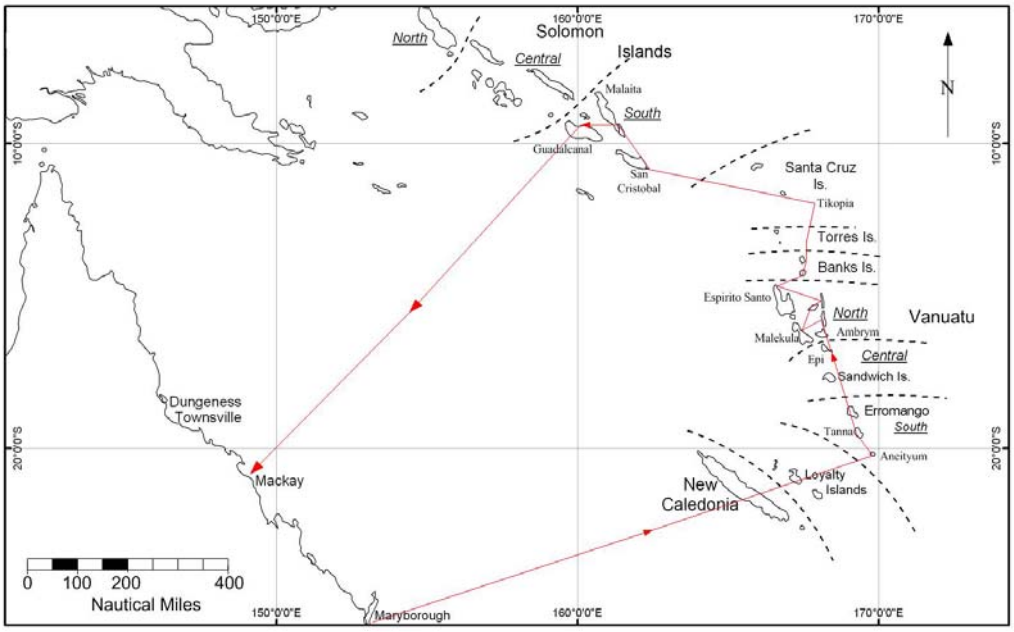


Figure 5.17 Route of the seventh recruiting voyage of the *Archimedes*

Passing through the Shepherd Island group the vessel arrived at Epi where they found themselves in company with the labour vessels the *Lucy and Adelaide* and the *Para*. The *Archimedes* then sailed to Paama, Ambrym, Pentecost, Malekula, Aoba, Maewo and Espiritu Santo landing returns and recruiting a further 22 Islanders. The vessel departed for the Banks group of islands where more returns were landed and six more recruits were obtained from the islands of Gaua, Vanua Lava and Mota. In late August 1890, the *Archimedes* arrived at Tikopia Island where six more recruits were obtained. The Torres Group was the next destination where an Islander boat crew was landed *(Maryborough Chronicle*1890g; 1890h).

The *Archimedes* arrived in the Solomon Islands in September 1890 and recruited at Santa Ana, Maramasike and Guadalcanal. Having signed on 98 recruits, 11 of which were female, the vessel set sail for Queensland and arrived at Mackay in November 1890 (*Maryborough Chronicle*1890g; 1890h) As shown in Figure 5.17, this voyage covered a larger area than previous voyages, one explanation being an increase in returns. Table 5.10 demonstrates that for the *Archimedes* the numbers of returns steadily increased which, as indicated in Table 5.8, goes against the general trend for the period. An increase in the number of returns per vessel increases the possible number of destinations and therefore

the length of the voyage, depending on the distance between destinations. An increase in returns over a period also indicates an increase in the quantity of European goods entering the islands over that period. Once again, this voyage reinforces that the destinations of returning islanders dictated where the vessel needed to go and, therefore, where recruiting was carried out.

5.5.3 A Departure from and Return to the Labour Trade 1891-1893

The *Pacific Islanders Labourers Act* of 1880 *Amendment Act* of 1885 stated that no recruiting was to be conducted after the end of 1890. As a result, the *Archimedes* was transferred to the coastal shipping trade. When *The Pacific Island Labourers (Extension) Act* of 1892 repealed the ban on recruiting, the *Maryborough Chronicle* (1892b) ran an article indicating that the *Archimedes* was being refitted for the labour trade. The vessel's internal layout would have reverted to the criterion discussed earlier in this chapter as no new regulations concerning lodgings had been issued. However, as part of the refit one of the recruiting/lifeboats was buoyancy tested. This was not a requirement of the existing Queensland labour trade legislations and, as such, indicates that the safety of those onboard was an important issue for the wider maritime society if not indeed the labour trade itself. The *Maryborough Chronicle* (1892c) reported that the method of testing involved loading 180 lbs (81.6 kg) of iron into the boat, eight men then boarded and the plug was removed. The boat filled with water and sank to within a few inches of the gunwale, at which point it remained stable, satisfying the authorities. Despite passing the test, an article from the same newspaper stated that two of the vessel's recruiting/life boats were subsequently fitted with buoyancy tanks made from Muntz metal which, according to the article, were more buoyant and less cumbersome than the cork they replaced (*Maryborough Chronicle* 1892h). As will become apparent in the following chapter it was fortuitous that the lifeboats were tested and upgraded as, some five months later, they saved the lives of some of those onboard.

In August 1892, the *Archimedes* was renamed *Foam.* A newspaper article stated that the name change was made "in deference to a sailor's superstition that a change in name brings a change in luck" (*Maryborough Chronicle* 1892f:2). From this it can be deduced that the *Archimedes* had a history of bad luck. As the vessel had already made seven

voyages to the islands without any disasters, one can only assume that it was unlucky in some other way. It may be that the name change was profit-driven. From Shlomowitz (1981), it can be determined that over the period 1887-1890, the average time taken in the labour trade per voyage to sign up a recruit was 1.7 days. By plotting this data (see Figure 5.18) against the average for the *Archimedes* (Table 5.11), it is evident that for a majority of its voyages the crew of the *Archimedes* was taking longer to obtain recruits than their competition. Therefore, it is suggested that the owner of the *Archimedes* changed its name to *Foam* in the hope of bringing more financial success. In addition, and despite extensive research, it has not been possible to discover why the name *Foam* itself was chosen.

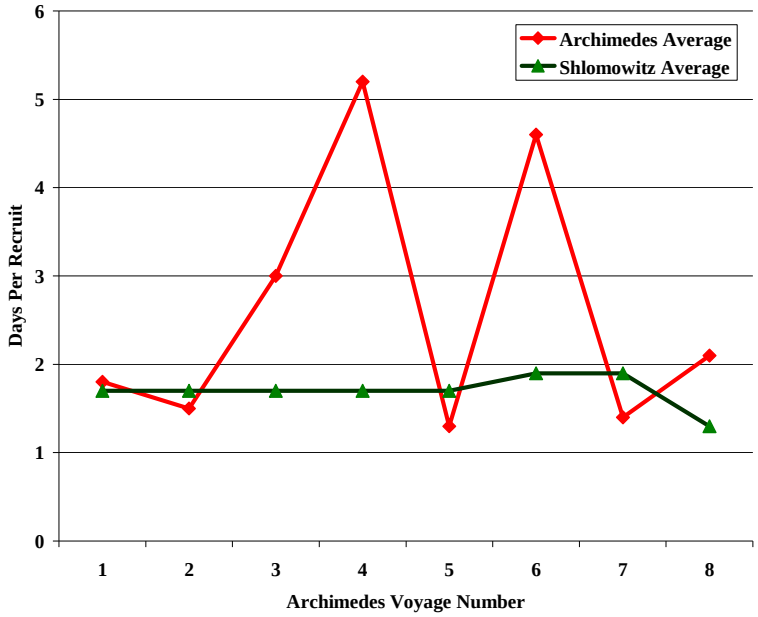


Figure 5.18 Comparison of Days at Sea per Recruit Obtained

Source: Shlomowitz (1981), Table 5.11

By September 1892 the *Foam* had been fitted out as a labour vessel in accordance with the required regulations and was due to depart for the islands (*Maryborough Chronicle*1892d). It could be argued that the *Foam* became a show boat for the labour trade. In late September 1892, His Excellency the Governor, Sir Henry Wylie Norman, accompanied by a number of local dignitaries inspected the *Foam* at Queen's Wharf. Sir Henry conducted a thorough inspection of all fittings and accommodations and appeared very pleased with the cleanliness and lay out of the vessel (*Maryborough Chronicle* 1892e).

In early October 1892, a Shipmaster's licence was issued stating that the *Foam* was licensed to carry a maximum of 120 Islanders (*Maryborough Chronicle* 1892h). As noted above (section 5.2.1), labour vessels of the same size had different maximum passenger numbers depending on which colony they were recruiting for. As a comparison, it is possible to calculate that if the *Foam* was operating in the Hawaiian labour trade it would have been able to carry approximately 160 labourers while in the Fijian labour trade 240 labourers could have been accommodated (Bennett 1976; Giles 1968).

A few days prior to sailing, two incidents occurred that I suggest indicate that the Islanders' desire for firearms was still strong some eight years after the ban. All of the trade boxes on *Foam* were inspected and two rifles and 23 lbs (10.4 kg) of shot were discovered in one of the trade boxes. It had been fitted with a false bottom to conceal the firearms. These items were confiscated and the *Foam* was cleared to depart (Corris 1973; *Maryborough Chronicle* 1892k; Matthews 1995). This clearly illustrates the lengths that some Islanders were prepared to go to obtain firearms. The second incident supports the earlier assertion that some Islanders were not purchasing large quantities of goods but returning to their islands with European money to purchase firearms. When one of the returns suddenly died on board, his trade box was examined and found only to contain: eight new large knives, 18 pieces of wire, a few yards of red tape and a quantity of dress material (*Maryborough Chronicle* 1892i). The minimal quantity of goods in the box is at odds with the quantity and type of goods reported as purchased by the returns in chapter three, especially as the *Maryborough Chronicle* (1892k) reported that the 102 returns on the *Foam* were departing with over £500 worth of goods in their trade boxes. An exchange on Tanna Island during the next voyage of the *Foam* clearly indicates that Islanders were purchasing ammunition with European currency.

Eighth Voyage: The *Foam* eventually departed Maryborough in October 1892. Of the returns onboard 54 were returning to Vanuatu, 20 to the Banks group of islands and 28 to the Torres group.

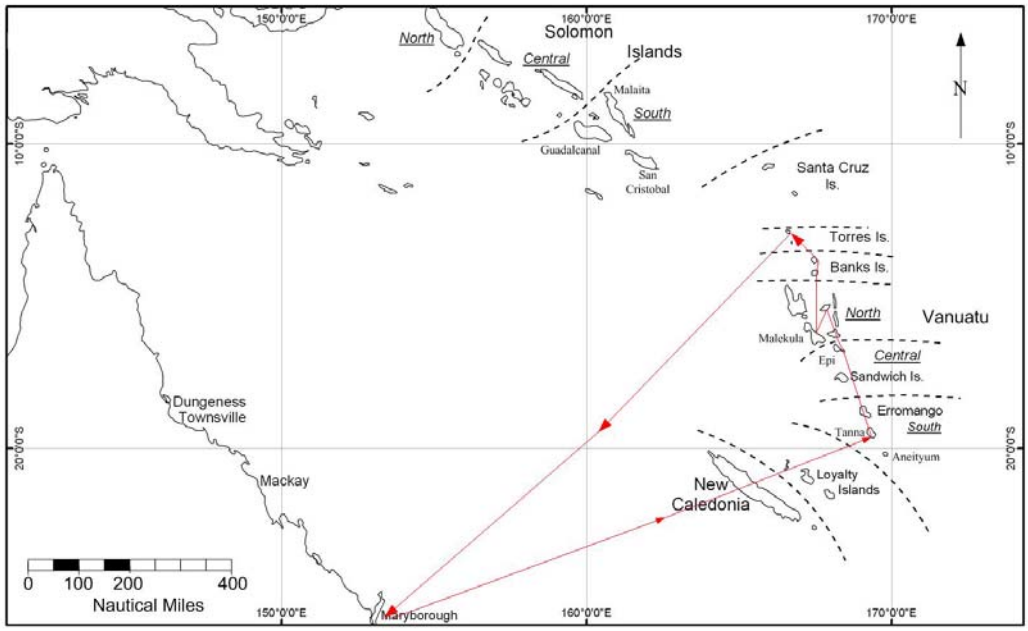


Figure 5.19 Route of the first recruiting voyage of the *Foam*

As shown in Figure 5.19, the destinations of these returns once again dictated the route taken. The *Foam* was also licensed to recruit 25 Islanders to work at Bundaberg and 17 for Maryborough. An insight into the design of the Islanders' galley on the *Foam* is provided by an incident which occurred during food preparation. The Government Agent's report to the Immigration Agent in Brisbane states that after a few days out to sea, the deck beneath the returns' cooking boilers was on fire. It appears that the only protection / fire proofing between the cooking fire and the deck was a thin sheet of galvanised iron. The Government Agent later recommended that all recruiting vessels should have three inches of concrete between the deck and the iron and further recommended that pumps and fire hoses should be installed on vessels (BPP 1890-94). These recommendations were not adopted. This incident provides an insight into the physical structure of the *Foam* and other recruiting vessels with regards to food preparation and fire fighting.

On arriving at Tanna, the vessel's mate, Mr Meredith was offered a £1 note for 10 Snider rifle cartridges (*Maryborough Chronicle* 1892n). While this supports the notion that Islanders were purchasing ammunition from recruiting vessels with hard currency, it also indicates that a change had occurred in the islands whereby some Islanders were operating within the European system while still maintaining the traditional trade and exchange networks. This concept will be expanded on in the discussion section of this chapter.

In early November, the *Foam* arrived at the island of Paama and returned an Islander called Jimmy Bob. According to the Captain's account, after Bob landed on the beach, a large crowd of Islanders arrived and shot him. It appears that this action was carried out in revenge for an act that he had committed before departing for Queensland *(Maryborough Chronicle* 1892p). This incident brings out issues of how returns were viewed and the impact they had on their return. These issues will be discussed later in the chapter.

A few weeks later while recruiting at Aoba the Sydney-based copra trader *Mary Anderson* arrived. The crew of the *Mary Anderson* proceeded to provide alcohol to the Islanders on shore. This caused the *Foam*'s Government Agent to stop all recruiting, resulting in the loss of the recruits who had already agreed to go to Queensland (*Maryborough Chronicle* 1892p). This illustrates that there were two different European systems operating, each with their own set of methods. This issue will also be expanded on in the discussion section of this chapter.

Further evidence for the desire for firearms and the implications of their ban in the islands is provided a few days later when the recruiting boats were ambushed in a narrow inlet on Malekula. It was believed that the attack was caused by *Foam's* refusal to provide firearms. A French Cutter had been recruiting in the area a few days prior and had exchanged one Snider rifle and a quantity of ammunition for each recruit *(Maryborough Chronicle* 1892p).

When the *Foam* arrived back on 28 December 1892 with 37 male and two female recruits onboard it was the first recruiting vessel to dock in Maryborough since labour recruiting was re-introduced under the new regulations (*Maryborough Chronicle* 1892n). The *Brisbane Courier* (1892) reported that the *Foam* was due to return to the islands in about three weeks as licences had been issued to recruit a full complement of 120 Islanders. However, the *Foam's* departure was delayed when the Government Agent, Roger North, was found shot through the head in his room at Maryborough's Customs House Hotel. At first it was assumed that North had committed suicide. However, a finding of accidental death was recorded (*Maryborough Chronicle* 1893b). According to *Brisbane Courier* (1893a) the *Foam* lost its contract due to the delay caused by the inquiry. The final voyage of the *Foam* begins the next chapter.

5.6 Discussion

By investigating the maritime transportation of recruits and returns one is provided with a unique example of the changes that can be engendered in a group of people when their normal responses to situations are no longer viable and new arrangements need to be developed. Recruits confronted by the internal arrangement of a labour vessel for the first time are likely to have found it intimidating. The spatial living arrangements would have been at odds with the cultural mores to which they were accustomed. These issues included gender, age, and the fact that people from different locales who did not necessarily like each other, did not talk to each other, and had different rules for social interaction and status, were thrown together.

When a group of people are at sea in a confined space, they must find ways to work together and adapt to new situations. It is on the vessels that these social rules are modified and adapted. The group responses to new situations can be likened to the founder effect proposed by Mayr (1963) in the field of biological evolution, where a new skewed population is formed by a small section of a larger established group. In this case, the new group is largely male, of similar (working) age and from different islands. In terms of their responses, either single or collective, the recruits do not have access to the range of knowledge from their respective communities (for examples, elders or ritual experts). As stated by Lindstrom (1984), on the islands this socially valued operational knowledge is used, by those who possess it, to control those without it. The recruits do not necessarily include people who can act as spiritual leaders or in an advisory capacity. Therefore, problems which would normally have been settled in the islands by particular individuals would have had to be resolved by the group itself on the boat. These might include issues to do with taboos, acknowledged enemies, sleeping arrangements, 'pollution' from child birth and menstrual cycles. An example of this, where married couples are required to sleep in the same place, is detailed in chapter eight.

It is by dealing with these issues as a group that the recruits themselves are transformed. Moreover, it needs to be recognised that even though the physical structure and situation of life onboard caused the change in responses, it was a change driven by Melanesians, as Melanesians. Exactly how the changes were played out was not a direct consequence of a specific European law. Some of the importance of this transformation comes from the fact that Melanesians, in contrast to the view expressed in much of the literature, are not a

single, homogenous group. The onboard society of 'Melanesians' is made up of individuals from a variety of cultural and linguistic backgrounds.

Social change, brought about by a change in the physical environment, has been noted by others. Wilson (1988) was interested in explaining the social changes that seem to have occurred when our species first moved from mobile to sedentary lifestyles. Wilson argues that the built environment of the house, the village and its boundaries allowed for the development of controlled social responses to increasing population densities and other pressures resulting from sedentary life. While Wilson's approach is on a broader scale to that considered here, the concept he develops of relating changing social behaviour to a changing, built, physical environment is pertinent.

This chapter has also explored trends in voyage and recruiting numbers for the whole of the Queensland labour trade and revealed that the steady increase in recruit numbers up to 1883 was due more to an increase in voyage numbers rather than an increase in recruits per voyage. It also revealed that after 1883, the number of recruits available from existing recruiting regions fell, resulting in new regions being utilised. Over time, a majority of the recruits were obtained from northern Vanuatu and southern Solomon Islands group. A re-analysis of voyage patterns revealed that the rationale for certain destinations was not a random activity. The significance of the home location of returning Islanders in determining the voyage patterns was brought to light together with other factors for voyage patterns including the European political structure in the South Sea Islands, depopulation of Island groups, and the influence of local intermediaries.

A case study of the labour schooner *Foam* provided an opportunity to investigate a vessel at a specific period of the labour trade and compare it and its voyages with the general concepts presented earlier. The investigation supported issues raised earlier in the chapter, especially the importance of the home location of returns in dictating voyage patterns.

A re-analysis of the third voyage of the *Archimedes* brought to light new forms of contact and change between Islanders. On this voyage, there were experienced returning labourers who had changed as a result of three years' contact with Europeans, and had bonded as a group. Moreover, they had knowledge of the labour trade and were in possession of trade goods. Also onboard were rejected recruits with no trade goods but knowledge of the current state of affairs in the islands. Each group had something the other wanted. Both

groups came into close contact with each other on the voyage and I contend that there was an exchange of information between the two on life in Queensland and the current state in the islands. These two groups then came into contact with new recruits as the vessel sailed around the islands resulting in further exchanges of goods. A final change awaited the returns in the Islands. European and inter-Islander contact in Queensland over the past three years had changed them and they now all needed to adjust back to their previous way of life.

The eighth voyage also illustrated how the returns had changed. They were not the same individuals recruited three years previously and it is apparent that not all returns were accepted back in the same way. Despite having been away for three years and returning with goods, it did not negate whatever it was that Bob did before he departed and he was not accepted back into the community. Clearly, in some cases (especially Bob's) a return's personal history or status in the islands dictated what happened when they arrived back. Thus, the effect of the Queensland labour trade on the returns is not a general one. Some of the more entrepreneurial returns had the potential to influence the economic and social systems of their communities, while others did not as they were killed, robbed or simply opted to return to Queensland.

The *Foam* study also revealed how the firearm ban was circumvented by Islanders who were purchasing firearms directly from passing vessels. The *Foam*'s eighth voyage where money was offered for ammunition exposed how a change had occurred whereby some Islanders were operating simultaneously within the European economic system and their traditional trade and exchange networks. Local plantations and trade posts had been established providing several sources of European currency in the islands. Intriguingly, the offer to buy ammunition was not a barter transaction as Islanders were using external currency to buy external goods, as opposed to the traditional exchanging of items of value, for example shell rings for pigs. Here, the Islanders were exchanging apparently worthless pieces of paper to get what they desired. This suggests that people on the islands recognised that there was a completely different economic system at play, where one actually buys items. Islanders were comfortable working in various kinds of economic systems. This is another example of how adaptable Islanders were to new situations of contact, change and exchange and how the European system was incorporated into the Islanders' system.

As described in the eighth voyage, the incident when alcohol was provided to Islanders offers new insights into contact and change and illustrates that there were two different European systems operating, each with their own set of methods. The presence of a copra trading vessel indicates that there would have been Islanders who were producing the copra. These Islanders would have been changed by their contact and interaction with the European plantation operators. Where there is a European presence in an area, the impact of the labour trade and returns will be different to areas where there is no permanent European presence. The same goes for islands where there is, or is not, a missionary presence. This is part of the diversity of contact and change in the islands. It is not indigenous diversity but the diversity of the Islanders' experiences of Europeans. Thus, the impact of the labour trade will be transformed in different places, not just because of differences in the indigenous situation, but because of differences in people's familiarity with Europeans.

5.7 Summary

This chapter has examined a number of issues not previously investigated in studies of the Queensland labour trade. It has illustrated that the influence of the labour trade and the changes it instigated in the islands was dependent on the type and level of European contact already existing in the region. A hypothesis was presented that one or more vessel types were more frequently used. My analysis concluded that schooners, due to their smaller size and the configuration of their rigging, made them more economical to operate as they were cheaper to purchase and insure, required less crew and were more suitable for operations in and around fringing reefs, regardless of wind direction. The notion of labour vessels as sites of change for recruits and returns was presented along with evidence for Islanders operating within parallel economic systems. Finally, factors influencing the destinations of the recruiting vessel over time were discussed and the location of the return's homeland was revealed to be a major factor determining the vessel's destinations and recruiting process.

Having introduced the *Foam* as a study of a labour vessel at a particular time in history, the next chapter continues the theme by investigating its last voyage, the discovery of the wreck site, and the subsequent archaeological investigation. The chapter will conclude with an analysis of the artefacts recovered from the site.

Chapter Six

THE WRECK OF THE *FOAM*: SITE FORMATION AND ARTEFACT ASSEMBLAGE

6.1 Introduction

As already established, the *Foam* and its wreck site have the potential to provide insights into the mechanisms of life onboard a labour vessel, both for the returning Islanders and the European crew at a specific time in the Queensland labour trade. This chapter begins with an account of the *Foam*'s last voyage to determine what site formation processes may have been involved in producing the current wreck site. This is followed by an account of the discovery of the wreck, the initial archaeological investigation and the recovery of the artefact assemblage. The focus of the chapter then turns to the fieldwork underpinning this thesis – the *Foam* Maritime Archaeology Project (FMAP).

The chapter concludes with a discussion of the artefact classification system specifically created for the *Foam* collection and an analysis of the assemblage addressing the issues of trade and exchange within the Queensland labour trade.

6.2 The last Voyage of the *Foam*

The *Foam* departed Maryborough in late January 1893 with 12 returns onboard and set a course for Dungeness on the north Queensland coast where a further 72 returns were taken onboard. It departed for the Solomon Islands at 6:00 am on Sunday 5 February 1893. Onboard were Captain Norman, Mr Rannie the Government Agent, eight European crew, six South Sea Islander crew, and 84 returnees (*Maryborough Chronicle*1893a; QSA HAR/81A). Any plans of making a quick voyage to the Islands came asunder at 8:30 pm when the *Foam* ran aground on Myrmidon Reef (18° 16'S, 147° 22'E) on the outer edge of the Great Barrier Reef (QMMHA).

The *Brisbane Courier* (1893b), the *Maryborough Chronicle* (1893d) and *The North Queensland Herald* (1893a) all printed Captain Norman's first-hand account of the *Foam's* demise. Norman reveals that after departing Dungeness a course was set for the Palms Passage. Bramble Reef was sighted at 12:30 pm, they passed Rib and Kelso Reefs and on arriving off Arab Reef, they tacked on to a WNW heading. The *Foam* continued on this heading until it sighted Pith Reef in a NNW direction about five nautical miles distant. The vessel then tacked onto a NE heading. The *Foam* remained on this course until at about 8:30 pm when it struck Myrmidon Reef, on the eastern end of the Palms Passage. Captain Norman stated to the Marine Board of Inquiry that his course should have taken him eight miles to the north of Myrmidon reef (QSA HAR/81A).

By re-analysing this account and with the assistance of Kevin Slade from the Australian Hydrographic Office it has been possible, using period charts, to reconstruct and plot the intended and the actual track taken by the *Foam* (Figure 6.1). Moreover, issues that have a bearing on the formation of the wreck site are brought to light.

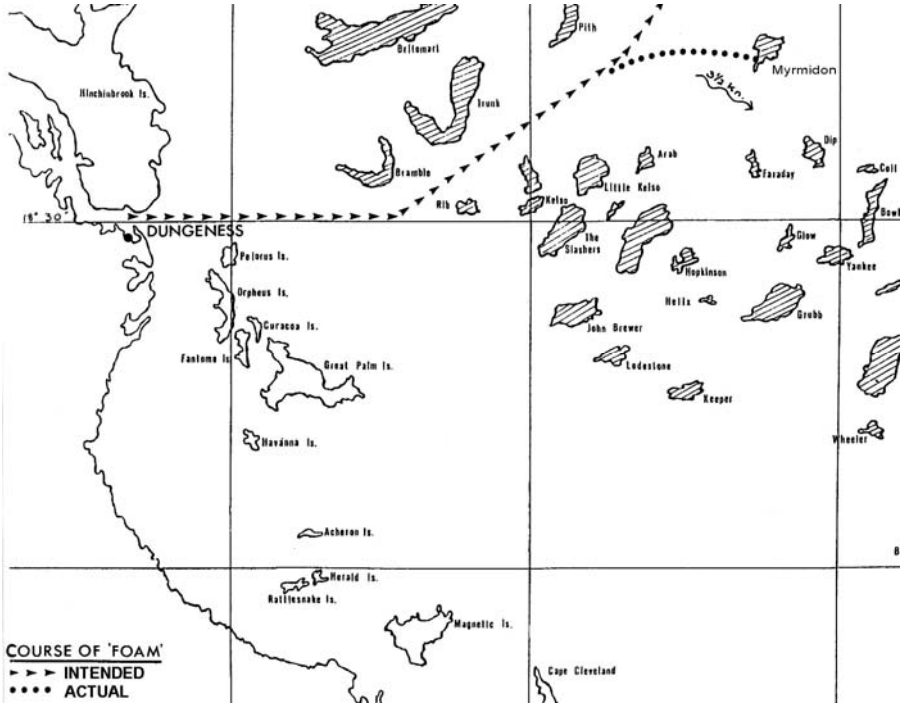


Figure 6.1 Intended and Actual Tracks Sailed by the *Foam*

Sources: QMMHA, QSA HAR/81A, *Brisbane Courier* (1893b), Slade (2003)

When the *Foam* struck Myrmidon Reef it became wedged and started to take in water. The pumps were manned, however the water level continued to rise until it was almost level with the deck. Captain Norman then had the recruiting boats loaded with life saving equipment, provisions, lamps, sea anchors and compasses. The spars were cut down and used to construct a sturdy raft. The three boats were then filled with European crew and Islanders. Those returns who could not fit in the boats were placed on the raft. The initial intention was to head for Townsville. However, this plan had to be abandoned shortly after they departed the reef as the seas were starting to rise and the Islanders on the raft were already up to their waists in water. It was Monday morning by the time the boats had towed the raft back to the wreck.

Captain Norman decided to send the Government Agent, the female returns and their children back to Townsville in a single boat under the command of the mate, Mr Burns. After the boat had departed, the returns were moved back onboard the wreck and the raft was strengthened with timber from the wreck. An awning was constructed and the crew was placed on watch. The *North Queensland Herald* (1893a) reported that, after almost 23 hours sailing, the *Foam's* boat arrived in Townsville early on Tuesday and Rannie reported the loss of the *Foam*. The *Maryborough Chronicle* (1893c) reported that Mr Burns also sent a telegram to Captain O'Dwyer informing him of the loss and that all hands were saved.

Under command of Captain Lawson, the steamer *Christina Gollan* (Figure 6.2) was chartered at government expense and dispatched to the wreck site. According to *The North Queensland Herald* (1893a), Lawson was instructed to rescue everyone, salvage anything, recover the returns' effects [trade boxes] and return to Townsville. The *Christina Gollan* arrived at the wreck site between 8:30 and 9:00 pm on 7 February 1893 and anchored four miles off the Reef.

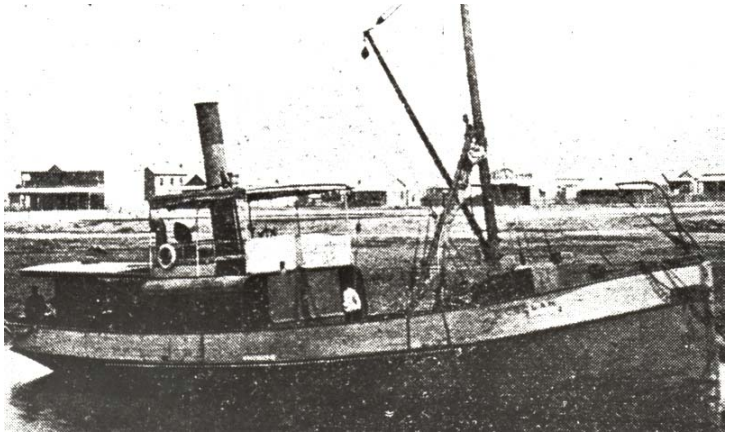


Figure 6.2 The Christina Gollan 1897

Source: Townsville Library Service, Local History Collection. Image Reference: Shipping 105

At daybreak the next day, the *Christina Gollan* moved in closer and transferred the Islanders and crew onboard. There was no loss of life although all of the Islanders' trade goods were lost, as were the crew's personal possessions. The *Foam* was stuck well up on the reef, lying on its port side with two-thirds of it underwater at low tide, the starboard quarter being just visible above the water. It was determined that the *Foam* would soon become a total wreck. The main and foremast booms were able to be salvaged as were the main gaff and the timber from the raft. The *Foam's* recruiting boats were also taken on board (*Brisbane Courier*1893b; *Maryborough Chronicle*1893d).

Initially, it was assumed that the *Foam* had encountered heavy weather soon after its departure from Dungeness (*Maryborough Chronicle*1893c). However, the Marine Board of Inquiry found that an uncharted, southerly current of 3 to 3.5 knots carried the *Foam* onto the Reef. It was estimated that this current caused the *Foam* to make half a nautical mile leeway for each mile sailed (QSA HAR/81A). The *Foam* was insured with the Victoria Insurance Company for the sum of £1000. However, Captain O'Dwyer would have made a loss as the estimated value of the vessel including stores and trade was £3000 (*Maryborough Chronicle*1893c).

The North Queensland Herald (1893a) reported that the returnees asked to be re-engaged as they no longer had any trade goods to take home. Some requested to work

at Maryborough while others wanted to work at Mackay or Bundaberg. However, the *Brisbane Courier* (1893c) reported that all of the Islanders rescued from the *Foam* were re-engaged to work on the Ashburton plantation near Mackay.

A week later, the *Christina Gollan* returned to the wreck site with a salvage party. It was observed that the port side of the *Foam* was now completely broken up and that trade goods and ships' stores were scattered over the reef and into adjacent deep water. The main mast was recovered as were all of the sails, a large quantity of chain and rope, a pair of davits and two anchors (*The North Queensland Herald* 1893b).

The *Maryborough Chronicle* (1893e) reported that the schooner *Mary Peverley* departed from Maryborough in April 1893 with a quantity of material salvaged from the *Foam*. However, no mention is made of where the vessel was headed or what salvaged items were on board. With the departure of the *Mary Peverley*, so also does the wreck of the *Foam* depart from the historical record until its eventual re-discovery some 89 years later by a group of recreational divers.

From this account it is clear that the *Foam* was broken up on the reef, with ship's stores and return's trade goods scattered over a wide area. Salvage of the wreck began with the initial rescue by the *Christina Gollan*, and Table 6.1 (below) lists what is known to have been salvaged from the wreck. It is important to note that only vessel structural items and ship's equipment are listed. None of the Islanders' or crew's possessions was salvaged, suggesting that somewhere on and around the structure of the wreck there would have remained the contents of 84 trade boxes, the personal possessions of the crew and the contents of the recruiter's trade box. Unfortunately, one cannot deduce where these goods were destined for as there is no record of where individual Islanders were returning to.

Table 6.1 Items Removed or Salvaged in 1893 from Wreck of the *Foam*

Main mast	All of the sails
Main boom	Three recruiting boats
Main gaff	A pair of davits
Foremast boom	Two anchors
Timber from the raft (spars)	Quantity of chain and rope

6.3 Discovery and Initial Investigation of the Wreck of the *Foam*

On 10 October, 1982 the T.S.M.V Divemaster took a charter group of divers to Myrmidon Reef and two divers reported that they had seen a wreck site. John Bates from *Divemaster Charters* led a team to investigate and record the location of the wreck. Upon returning to Townsville, the find was reported to the Queensland Museum as required by the *Historic Shipwrecks Act of* 1976. Divemaster Charters also provided the Maritime Archaeology Section of the Queensland Museum with a basic site description, photographs, sketch plan and two ceramic rings recovered from the wreck. Research by the Queensland Museum revealed that the wreck was either the *Young Dick*, lost in 1886, or the *Foam* (QMMHA).

In early December 1982, maritime archaeologists from the Queensland Museum visited the site onboard a scheduled recreational dive trip. As there is no detailed record of the aims or methodology associated with the fieldwork, one assumes that their aims were to survey the wreck and to record any data that might assist in determining the vessel's identity. They found that the wreck covered an area of 32 metres by 5 metres (across the ballast mound). The bow (facing north) was in 6 metres of water and the stern (facing south) was in 3 metres of water. The main features were plotted in by triangulation. Video and still photography were also used to record the wreck and a sketch of the site (Figure 6.3) was compiled (QMMHA).

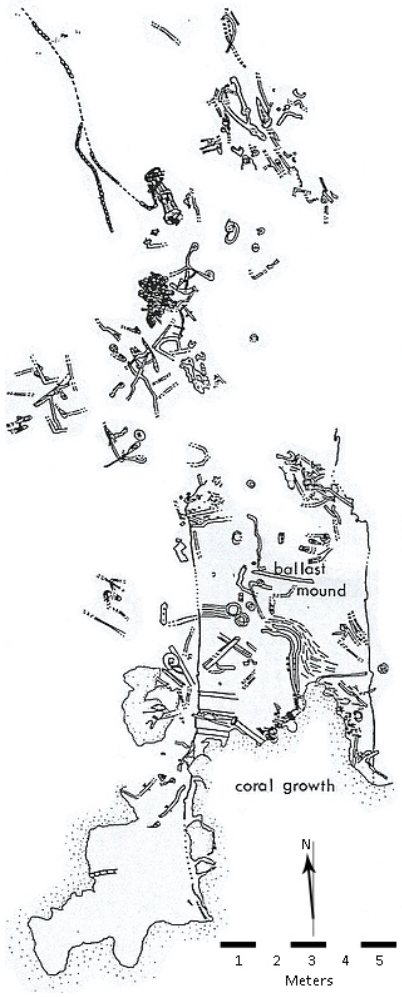


Figure 6.3 Early Site Plan of the *Foam* Wreck

Source: (QMMHA)

A surface artefact assemblage was also recovered to assist in identifying the vessel. Another reason for collecting the assemblage might have been to preserve the archaeological record and to safeguard it against looters. It appears that due to time limits imposed by the recreational dive company's schedule, no sampling strategy was developed and no provenance pertaining to any of these artefacts was able to be recorded. The recovery of a number of ceramic rings, clay pipes, examples of domestic ware and vessel fittings resulted. In all, 394 artefacts (whole, fragments and concretions) with a total weight of 34.1 kg were recovered. No structured excavation was carried out (QMMHA). The *Foam* assemblage is now stored in the Museum of

Tropical Queensland (MTQ) in Townsville. As part of this thesis a data base of all the artefacts in the *Foam* collection was compiled (see Appendix 10).

The wreck was confirmed as being that of the *Foam* and on 14 January, 1983, it was declared protected under the *Historic Shipwrecks Act of 1976*. The Queensland Museum conducted follow-up inspections in 1984, 1991 and 1996, during which the state of the site was monitored and a black and white photo mosaic was developed (QMMHA). According to Peter Gesner, senior curator of the Cultures and Histories Program at MTQ, all visible surface artefacts were recovered on the first visit to the site (Gesner 2002, pers.com). Arguably, the existing *Foam* assemblage is only a small percentage of what lies buried under the seabed, is covered by coral growth or has been removed by looters.

6.4 *Foam* Maritime Archaeology Project (FMAP) I and II

Research for this thesis involved inspecting the wreck of the *Foam* in order to examine previously unaddressed issues relating to contact and change in the Queensland labour trade. As stated in chapter four, two sessions of fieldwork were carried out. Conducted in late November and early December 2002, FMAP I consisted of four days fieldwork at the site. This was followed by FMAP II in late September 2003 consisting of a further two days on site. Each of the sessions involved an eight person team. This allowed the safe deployment of up to four dive teams on the site at any one time. Participant details are listed in Table 6.2.

Table 6.2 Team Members of the *Foam* Maritime Archaeology Project I & II

FMAP I		FMAP II	
Name	**Affiliation**	**Name**	**Affiliation**
Mr Stephen Beck	JCU, author	Mr Stephen Beck	JCU, author
Dr Martin Gibbs	JCU, supervisor	Dr Martin Gibbs	JCU, supervisor
Dr Paul Muir	MTQ	Mr Ewen McPhee	JCU, PhD student
Mr Brent Matters	MTQ	Mr Bill Jeffery	JCU, PhD student
Mr Peter Illidge	MTQ & JCU	Ms Susie Kennedy	MTQ
Mr Bruce Burnell	JCU, student	Ms Bronwyn Jewell	Invited Participant
Mr Mark Hedger	JCU, student	Mr Peter Illidge	Invited Participant
Ms Bronwyn Jewell	JCU, student	Mr Coleman Doyle	Invited Participant

6.4.1 FMAP I

The main aims of FMAP I were to:

1. Survey and examine the site to determine its current extent and condition and,

2. To identify reference points that would facilitate the positioning of a plan view of the outline of the *Foam* over the site plan to show the final position of the wreck.

The overall extent of the site was initally determined by visual inspection and the use of an underwater metal detector. Survey base lines used during previous Queensland Museum surveys were re-established, enabling continuity of survey and quickly revealing any changes in the site. Two forms of survey were used; 1. standard off-set mapping using tape measures and, 2. using an Aqua Metre D100 acoustic distance measuring system. Positional data is recorded digitally by the D100 system and can be downloaded into a graphics package and used to generate a 3D plan of the site.

Photographs for a photomosaic were taken using a Nikon F100 fitted with a 17-35 mm lens mounted in an underwater case. A moveable 1 metre grid was used as a reference for each photograph. A Sony Hi 8 video camera in a marine pack housing was used to take a series of video transects. Coral growth on the wreck site has a direct influence on the continuing formation of the site. To record the current types and extent of coral growth , Dr Paul Muir, a marine biologist from MTQ compiled a map of the coral species on and around the site (Appendix 11). The intention is that this coral map will be used as a reference for future inspections and as a site management tool.

6.4.2 FMAP II

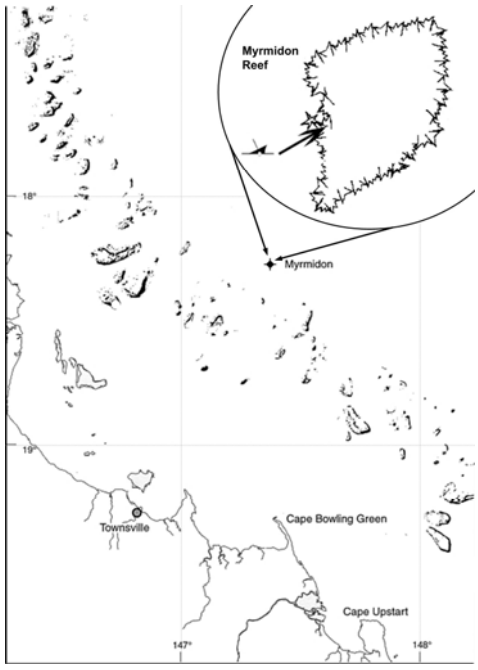
The main aims of FMAP II were to:

1. Re-shoot some of the photomosaic images deemed unsuitable from FMAP I
2. Continue with the Aqua Metre D 100 survey and,
3. To confirm the data recorded in FMAP I.

To ensure continuity, the base lines from FMAP I were re-established. Images for the photomosaic were taken with a Nikonos V underwater camera using a 15 mm lens as the camera and lens used in FMAP I were unavailable. As in FMAP I, a one metre control grid was used in each of the photographs. In order to expand the previously surveyed area and place it within the surrounding reefs, the Aqua Metre was used to record the topography of the site and the surrounding sea floor.

6.4.3 Outcomes of FMAP I and II

The wreck of the *Foam* lies on the south west side of Myrmidon Reef at 18º 16' 201" S, 147º 22' 970'' E (GPS set to WGS 84). As shown in Figure 6.4, this places the wreck on the outer edge of the Great Barrier Reef, approximately 70 nautical miles NNE of Townsville near the eastern entrance to the Magnetic and Palm passages. The site lies in shallow, protected waters on the inside of the reef. This protects the wreck site from the wave actions and currents on the outer edge of the reef. There is very little suspended sediment in the water and visibility of 10 to 15 metres can usually be expected.



Latitude
18º 16' 201" S

Longitude 147º 22' 970'' E

Figure 6.4 Location of the *Foam* on Myrmidon Reef

Using data obtained from the off set surveys in FMAP I and II, a plan of the wreck site (see Figure 6.5) was drawn Unfortunately, due to an interface problem with the Aqua Metre D-100, data was unable to be downloaded. Thus, no 3D image of the site and the surrounding coral was developed. The photomosaic images were processed by Richard Ohman from JCU's Creative Arts section of the Faculty of Law, Business and Arts, using Live Picture 2.6.1 software. The resulting colour photomosaic (see CD) provides a high quality 186 Mb (76X61cm) image of the ballast mound and serves as a reference for the state of ballast mound and further studies. A scaled down image of the photomoasic is shown in Figure 6.6.

As shown in Figure 6.5, the wreck site is oriented with the bow to the north in approx six metres of water and the stern to the south in approx three metres of water. The seabed around the wreck site is flat and consists of coarse coral sand intermixed with fragments of broken coral. In some places around the wreck there are areas of broken coral indicating that strong storms or cyclones have had an effect on the site. No evidence of the vessel's wooden structure remains. The wreck's main feature is the ballast mound located at the southern end of the site and surrounded on three sides by coral outcrops. There are only a few fragments of clay pipes and ceramic armbands visible and these are concreted into the surface of the ballast mound. A section of muntz metal hull cladding with a row of nails through it is visible under the south western edge of the ballast mound.

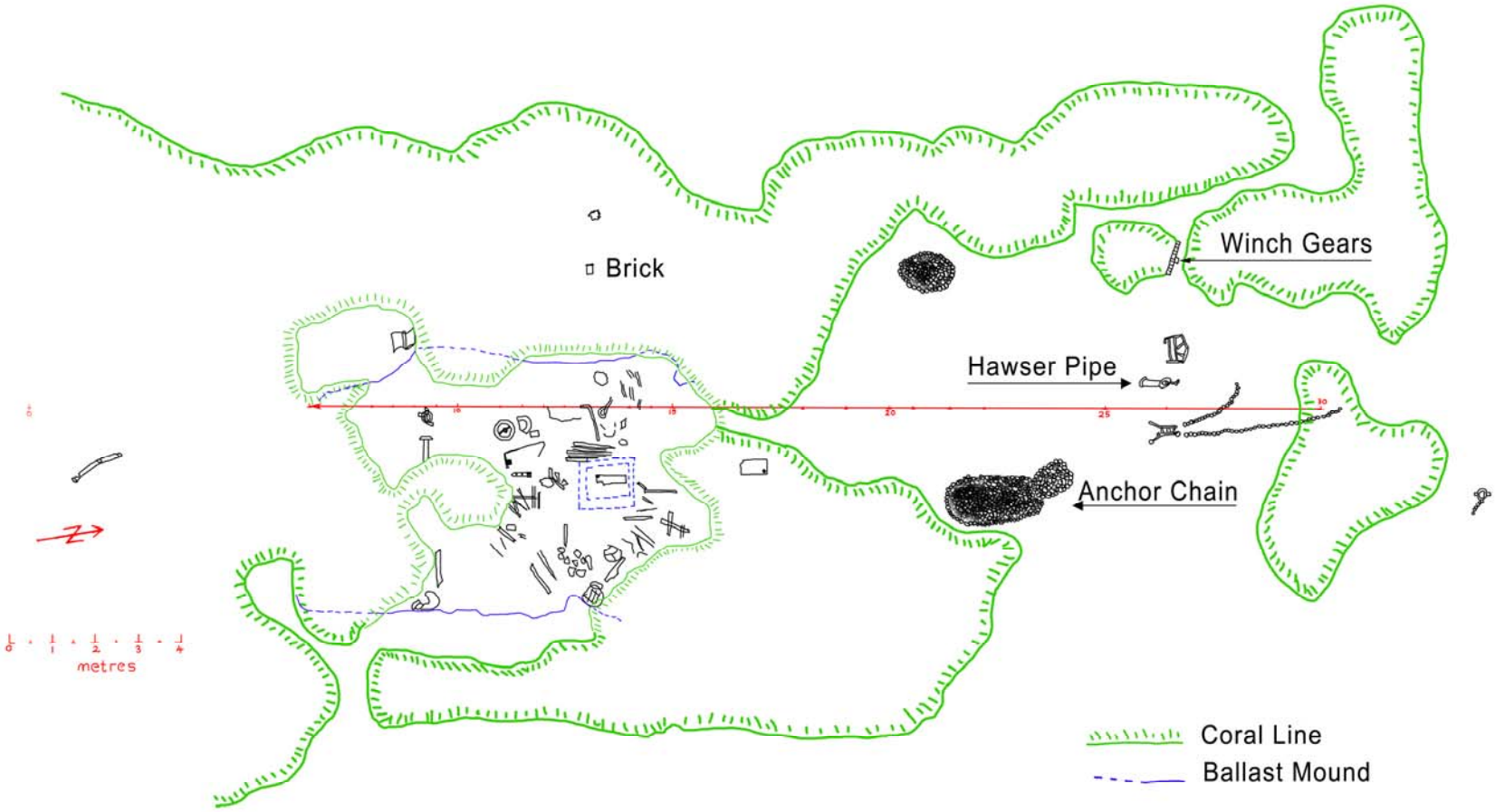


Figure 6.5 Site Plan of the *Foam* Wreck Site 2002 **Source:** Data from FMAP I & II

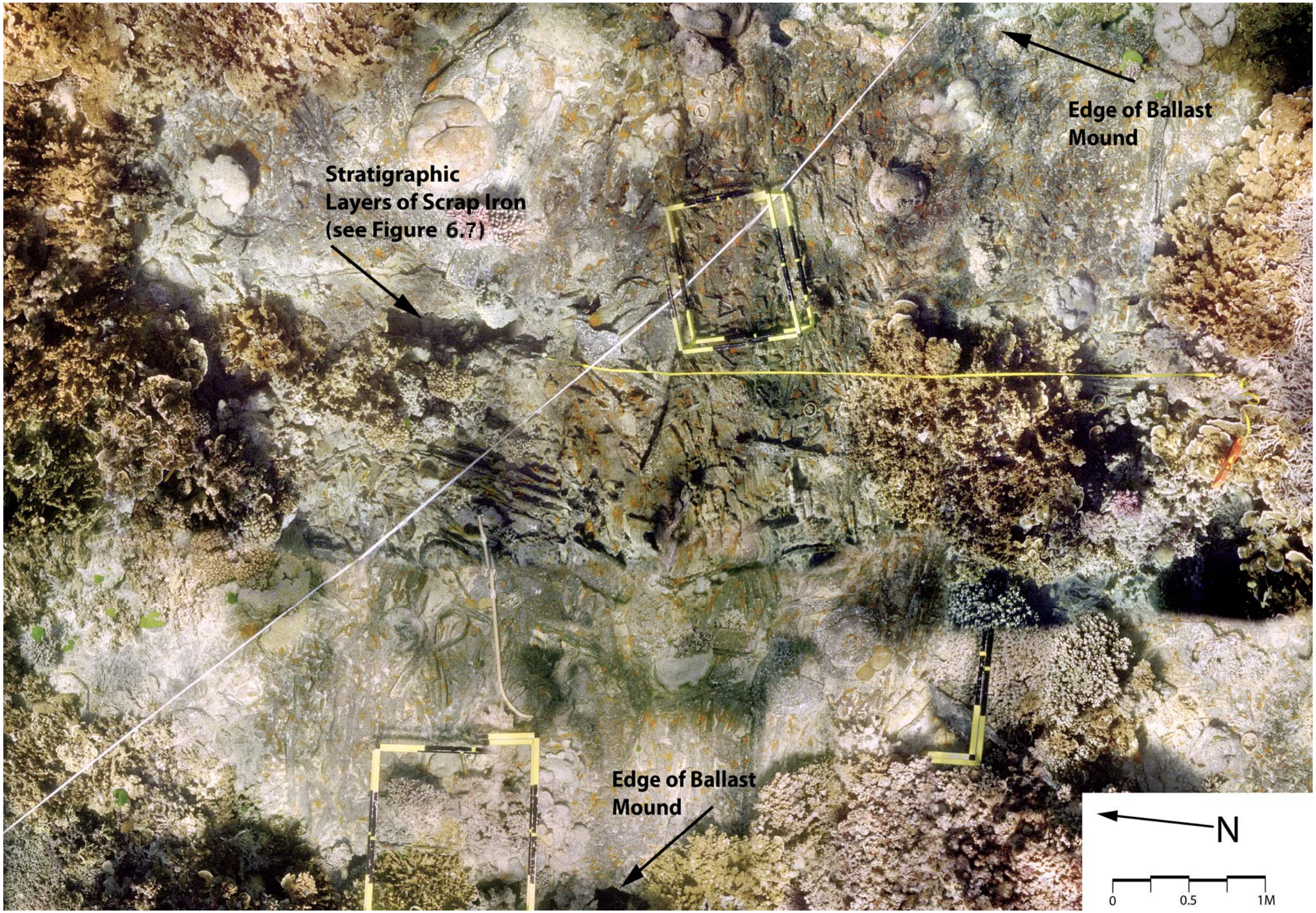


Figure 6.6 Photomosaic of the Ballast Mound at the Wreck site of the *Foam*

The ballast mound itself consists of closely packed stones with a layer of scrap metal over the upper surface. The stones and scrap metal have fused together to form a mould in the shape of the hull that once contained them. Layers of scrap metal on top of the ballast mound have been used as a more efficient means of increasing the ballast of the vessel. At the northern end, there is a rectangular opening that goes all the way through the ballast mound to the sea bed. The opening indicates the possible position of a mast base and includes a vertical keel bolt which provides a reference point for the centre line of the vessel. Concreted into the top of the layers of scrap metal are various items such as iron knees, bricks, metal discs and wire cable eye splices.

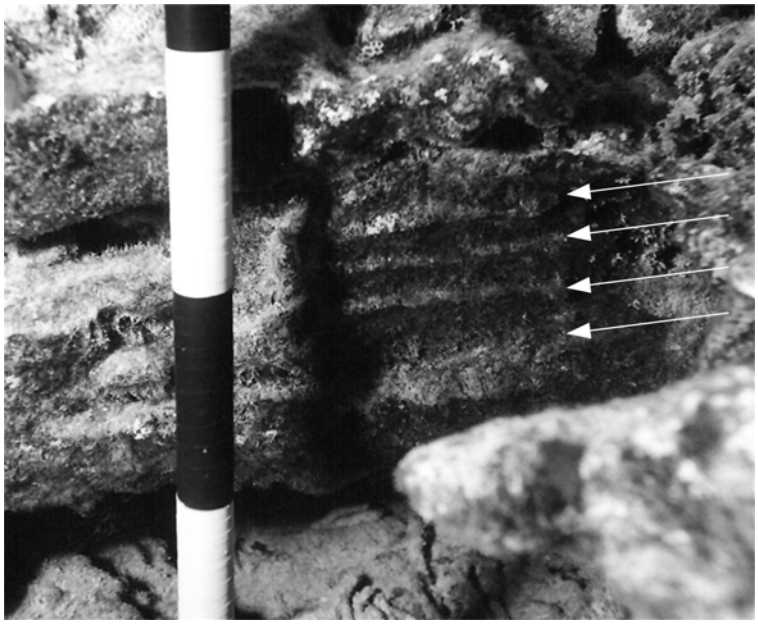


Figure 6.7 Stratigraphic Layers of Scrap Iron on Ballast Mound

Scale: 10cm divisions

Source: Photograph: Author

As can be seen in Figure 6.7, the scrap metal was specifically placed on the mound in layers and at one point was at least 15 cm thick. This use of scrap iron is supported by Wawn's (1893) account of the labour vessel *Stanley* using it as ballast. Chapter two established that iron was used as an early trade medium. Thus, consideration was given to the possibility of the iron ballast having a secondary use as a trade good. However, this was discounted as early in the labour trade iron had been superseded by metal

hatchets and firearms. Moreover, any iron in the ballast would have soon rusted and fused into a single mass making it impractical to remove small sections for trade.

Visible in a coral opening and approximately one metre north of the ballast mound lays another vertical keel bolt. By aligning this keel bolt with the one in the ballast mound opening it is possible to determine the keel's alignment. Moving further north, away from the ballast mound, among the coral that covers the sea bed are two masses of fused anchor chain. Further north is the winch which is completely covered in coral except for the face of one drive gear where the gear teeth are just visible. Near the winch is a metal frame standing up in the coral and a hawser pipe with some chain passing through it. Two lengths of chain lead off in a northerly direction from this point. The remains of a water tank lay exposed on the seabed approximately 13 metres from the winch on a bearing of 280º (magnetic). In the coarse sand around the water tank are several short sections of chain which might have been used to secure the water tank in place.

The Admiralty style anchor lies in 20 metres of water approximately 340 metres from the main wreck site at 18º 16' 080" S, 147º 22' 811" E (GPS set to WGS 84). The anchor is lying on the sea bed between two coral outcrops. A short length of rope was observed tied off through the ring. There is evidence of human disturbance on the site as evidenced by the rope attached to the anchor and numerous brown corrosion spots on the ballast mound where artefacts have been removed.

Captain Norman's account of the incident in the *Brisbane Courier* (1893b), *Maryborough Chronicle* (1893d) and *The North Queensland Herald* (1893a) all state that the *Foam* sailed into and up onto the reef. This would suggest that the bow should be located in the coral. However, as can be seen in the site plan (Figure 6.5) the bow is in the open and the stern is among the coral. The account given by the crew of the *Christina Gollan* had the *Foam* lying on the reef, on its port side with only the starboard quarter visible at low tide. Therefore, the ballast mound sealed under the floor would also have been on a steep angle to port. This is at odds with the current state of the wreck site as the top of the ballast mound is now sitting almost parallel to, and on the seabed. This indicates that, over time, the vessel has moved from its original position

on the reef and settled into its final position where the top of the ballast is now almost horizontal. This movement has implications for the site formation and distribution of artefacts on the site. Environmental factors that may have moved the wreck and advanced its breakup include the extreme wind and waves caused by cyclones. According to Callaghan (2001) there were three cyclones moving down the coast to strike Brisbane and Bundaberg in 1893-94 followed by Cyclone Sigma which flooded Townsville in 1896

Crew and passenger responses to disaster situations, as published by Gibbs (2006), are not investigated as part of this thesis. However, a joint paper is planned to address these issues and further investigate the site formation process of the *Foam*.

In order to determine which areas of the *Foam* accommodated the Islanders and the European crew, offsets from the model of the *Foam* (see Figure 5.5) were used to develop a side view of the vessel. By combining the accommodation layout displayed in the model with reports from the time concerning accommodation layout in labour vessels, *Argus* (1884b), Morrison (1882), PLA (1868), Tryckare (1964) and Wawn (1893), it was possible to establish an approximate accommodation plan for the *Foam* (Figure 6.8). As shown, this has the European crew and Islander boat crew located in the bow, the Islanders in the central section, and the Captain, Government Agent, recruiter and the First Mate/Bosun in the aft cabins.

Using the positions of the masts and the location of the anchor chains as reference points, and aligning the keel bolts to establish the centre line, it was possible to superimpose the outline of the vessel over the site plan and reveal for the first time the final position of the *Foam* (see Figure 6.9). As can be seen, the central location of the Islanders placed them and their trade goods directly over the ballast mound. This is significant as it would suggest that a majority of the artefacts recovered from this area may have belonged to the returning Islanders. The recruiter's trade box would have been located in the aft section. Therefore, some of these goods may have been strewn on the aft section of the ballast mound, however, the majority are likely to have been scattered amongst the coral.

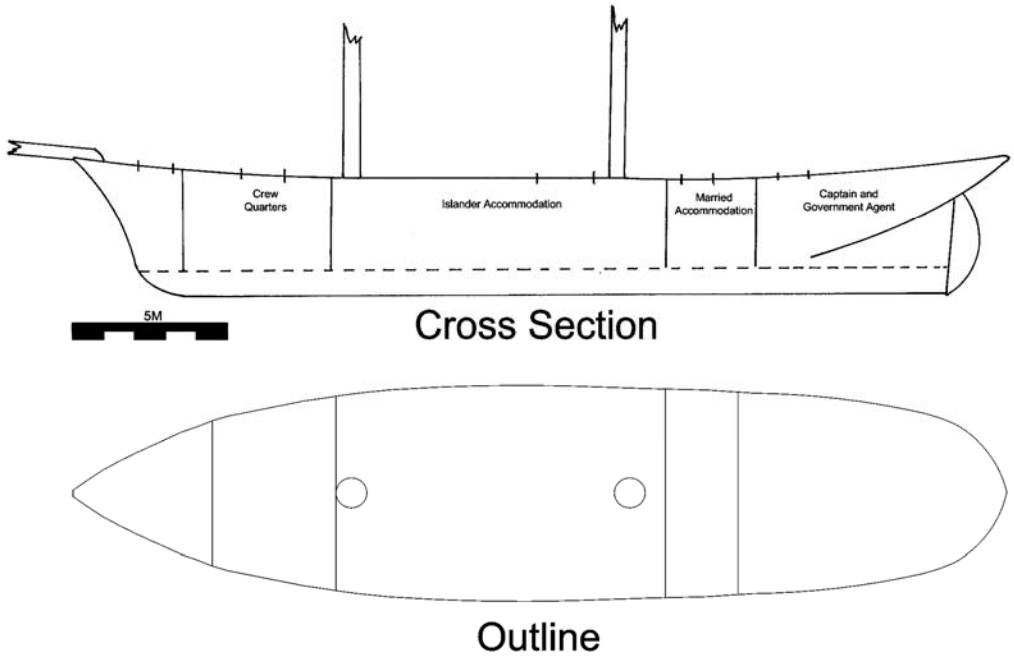


Figure 6.8 Cross section and Accommodation Plan of the *Foam*

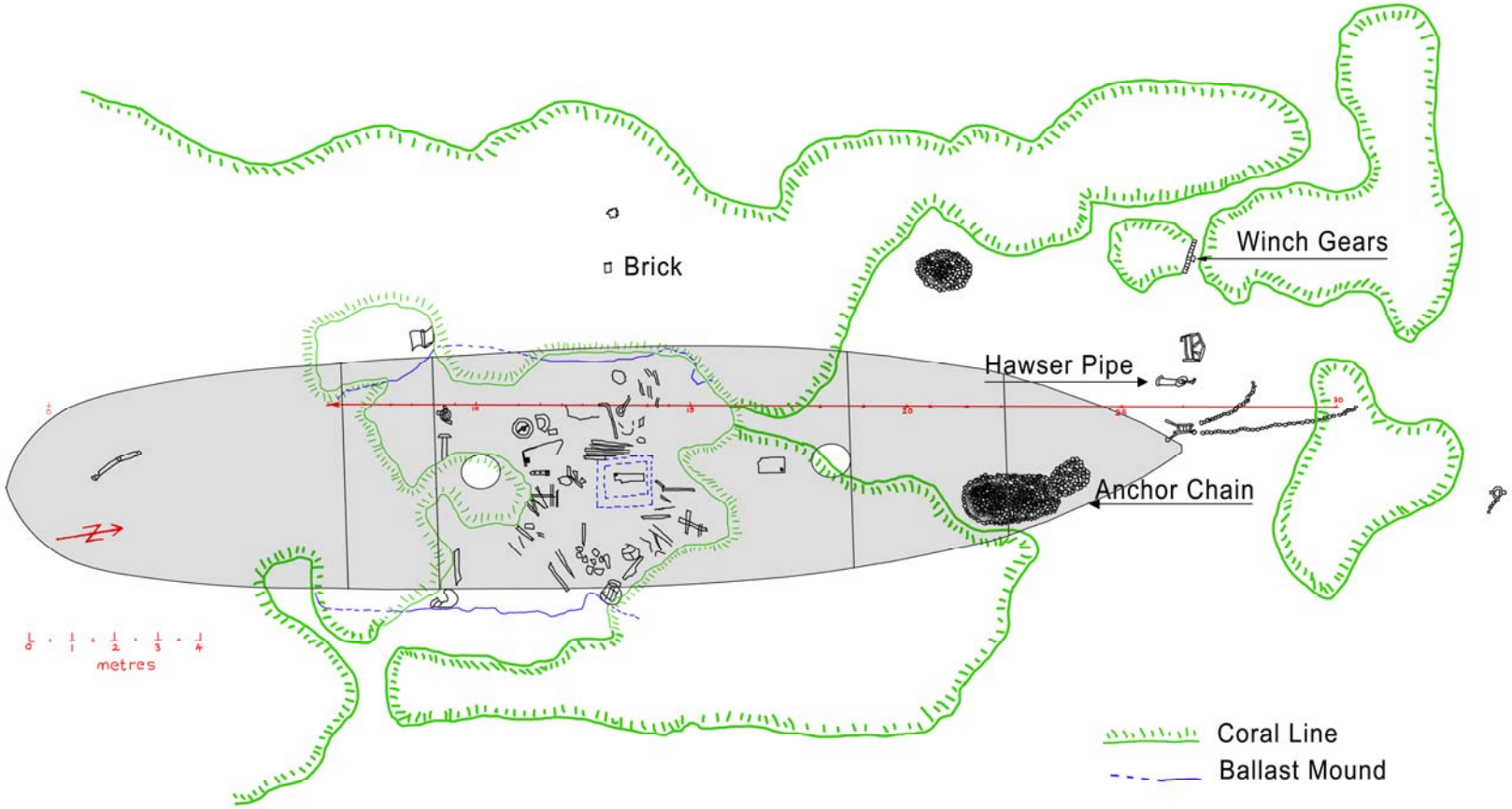


Figure 6.9 Outline of the *Foam* on the Wreck Site

Thus far, this chapter has examined the history and archaeology of the *Foam's* last voyage as a means of identifying factors that may have influenced site formation. The focus now moves to the analysis of the *Foam* assemblage.

6.5 Artefact Classification

As previously stated in chapter four, a new classification system was developed as part of this study of the MTQ *Foam* artefact assemblage. It was decided that the existing museum system was not suitable for research into trade and exchange. The new system is based on function and has four main categories (see Table 6.3). Concretions of artefacts from different categories were assigned a separate category.

Table 6.3 Classification Categories and Artefact Data Summary

Main Category	Sub Categories	Number of Artefacts	%	Weight
Vessel Structure and Fittings	*Metal fasteners, Fittings, Structure, Ballast and Navigation*	71	18	9.7 kg
Domestic	*Glassware, Ceramic tableware and Stoneware*	49	12	4.6 kg
Personal	*Clay pipes, Ceramic armbands. Glass beads and Clothing*	236	60	9.0 kg
Tools and Equipment	*Ammunition, Axes/Hatchets*	33	9	0.8 kg
Concretions	*Composites of different artefact types*	5	1	10.1 kg
	Total	394	100	34.1kg

The museum also holds a range of artefacts that were part of the vessel's structure and fittings. These items do not relate to contact and change and consequently will not form part of this analysis. Likewise, the museum collection also includes a range of

domestic artefacts that are consistent with the time. However, without contextual data (provenance) of where they were recovered and who used them, these artefacts are also not included in this analysis, although the items in both of these categories are described in depth and analysed separately in their own right in Appendix 12.

Using the tables of goods traded and exchanged in chapters two and three as a guide, a re-analysis of the assemblage was carried out to identify those artefacts that could have been used as trade goods (see Table 6.4). This procedure identified that 252 artefacts (64%) in the *Foam's* assemblage met the criteria. A database of the goods identified by the re-analysis is shown in Appendix 13.

Table 6.4 Potential Trade Goods in the *Foam* Assemblage

Category	Number of Artefacts	MNI	% of trade assemblage	Weight
Personal				
Ceramic Armbands	117	62	46	7.8 kg
Clay pipes	103	67	41	1.1 kg
Glass Beads	14	14	6	12 gm
Tools and Equipment				
Axes/Hatchets	4	4	1	5.7 kg #
Ammunition *	14	14	6	573 gm
Total	252	161	100	15.2 kg

Axe heads in concretion

* Ammunition has been included as it was a trade item before 1884

6.5.1 Personal Items

This category comprises artefacts that can be identified as part of the European crew or returning Islanders' possessions and includes items that may have been personal use trade goods. This grouping consists of 236 artefacts with a total weight of 9 kg. Resulting from the 1993 Historic Shipwrecks Amnesty, a small number of armbands were handed in to the Queensland Museum. These now form part of the *Foam* assemblage held at MTQ and their presence clearly illustrates that artefacts were illegally removed from the wreck site.

Ceramic Armbands:

Unique to the *Foam* is an assemblage of ceramic armbands, some of which have been identified as European manufactured copies of the Islanders shell armbands (Beck 1999). It is acknowledged that the author has previously researched the ceramic armbands from the *Foam* (Beck 1999). However, the work presented in this thesis is a new approach as the armbands are now in context with other types of artefacts that are going into the Islands either as trade goods or as the contents of returns' trade boxes.

The role that shell armbands and these ceramic copies played in the labour trade and island socio-economic systems is examined in chapter seven. The armbands in the assemblage can be divided into eight different types. The physical attributes of all 49 complete ceramic armbands and 68 armband fragments were recorded. The typology used to identify the ceramic armbands is based on the morphology of the armband and motifs displayed on its surface (Figure 6.10). Where possible the fragments were conjoined. The fragments were placed on a rim diameter chart to estimate the Outside Diameter (O/D) and Inside Diameter (I/D) of the complete armbands that the fragments might have come from. The fraction of a complete armband was calculated using the same diameter chart, fragments 8/16 or more were considered to indicate a whole armband for the purpose of calculating the MNI. This particular method of recording was used as it produces a suitable database for descriptive analysis.

All of the armbands originally had a white glaze applied. This glaze has cracked and been eroded to varying degrees on a majority of the armbands. Some of the armbands show signs of a dark red stain possibly from metal leaching. No manufacturer's marks are evident on any of the armbands. Research has revealed that two of the manufacturers of ceramic armbands were Messrs Sachse & Sons in Austria and R&C in Germany (Beck 1999). Despite repeated and extensive research stretching over 9 years, both locally and internationally, I was not able to locate any further information on the manufacturers or the period that they were producing the ceramic armbands, other than that already presented in chapters six and seven. Contact with the German and Austrian High Commissions in Canberra revealed that a majority of the records for this period were destroyed in World War Two.

Figure 6.10 Examples of Ceramic Armbands from The *Foam*

The armbands in Figure 6.10 are from top to bottom, left to right: Type IIA, Type IIC, Type IIA, Type IIIA, Type IV, Type IIIA, Type I, Type IV and Type I.

Source: Museum of Tropical Queensland, *Foam* Collection
Photograph by Zoltan Florian

A summary of the distribution of the eight armband types within the assemblage is shown in Table 6.5. A full description of all the armband types can be found in Appendix 13.

Table 6.5 Distribution of Ceramic Armband Types

Type	Complete Armbands	Armband Fragments	% of Total	MNI
Type I	27	29	48	36
Type IIA	5	3	7	6
Type IIB	2	9	9	2
Type IIC	1	0	1	1
Type IIIA	5	4	8	5
Type IIIB	3	11	12	4
Type IIIC	0	10	8	1
Type IV	6	2	7	7
Total:	**49**	**68**	**100**	**62**

Samples of a range of these armband fragments have previously been examined and determined to be low fired cream earthenware (Beck 1999). Two types of glaze appear to have been used; a hard high gloss glaze and a liquid clay slip. The samples were also subjected to non destructive analysis using the General Area Detector Diffraction System (GADDS) to provide a qualitative interpretation of the armbands composition. The results indicated that the raw material used was rich in quartz with high Kaolin (clay) content. The presence of Hematite and Mullite confirmed that the armbands were low fired (Beck 1999).

More recently a section of one armband fragment (MA 3541) was subjected to semi-quantitative XRF analysis at JCU's Advanced Analytical Centre. This analysis was carried out as a follow up to the earlier GADDS study in order to provide a semi-quantitative interpretation. The sample was ground up and made into a 30mm pellet. It was then analysed using a Bruker Axs S4 Pioneer 4Kw x-ray fluorescence spectrometer. The results support the earlier GADDS findings and reveal that 30.9% of the sample by weight was Silicon (Quartz). These results are not presented as being the definitive analysis for all ceramic armbands. They are provided as a base line against which any future analysis of ceramic trade goods can be compared. The results of the original GADDS analysis and the semi-quantitative XRF analysis are shown in Appendix 14.

Clay pipes:

The clay pipe assemblage recovered from the wreck of the *Foam* is summarised in Table 6.6 Following Gibbs (1995:274), the stem to bowl junction of the pipe was used as the reference for calculating the MNI for the assemblage.

Table 6.6 European Clay Pipes Data Summary

Pipe Type	Number	Total Weight in grams	MNI
Complete Pipes	10	151	10
Bowl and Stem	57	742	57
Stem only	20	64	
Fragment	16	153	
Total	103	1100	67

Due to their time on the wreck, most of the pipes and fragments have had any identifying marks eroded away or covered by concretion. However, three distinct types of pipes have been able to be identified as being manufactured by William White & Sons of Glasgow (1806-1955). Three of the complete pipes have the motif of a crown embossed between the inscription "RIFLE CUTTY" on one side of the bowl and a cross hatched shield on the other as shown in Appendix 13. On some of the stems the word "WHITE" and the number "129" are clearly visible. A fourth pipe covered in a thin layer of concretion is the same shape and size and has therefore also been identified as a rifle cutty pipe. The 1901 manufacturers catalogue in Davey (1987) confirms that William White was producing a rifle cutty pipe with the catalogue number of 129.

A concretion of pipes and a separate bowl and stem bear the inscription of the "42nd HIGHLANDERS BLACK WATCH" on the back of the bowl (Figure 6.11). One of the stems in the concretion has "GLASGOW" embossed into it. Another bowl and stem of the same shape and size has the name W. WHITE and a partial number ending in 61 on the stem. The 1901 pipe manufacturers catalogue in Davey (1987) confirms that William White of Glasgow produced a Black Watch pipe with the catalogue number

461. The pipes in the concretion are arranged in an interlocked fashion with the outside edge of the concretion forming a curve. There is also evidence of wood attached to the bottom of the concretion. This indicates that the pipes were probably packed in a circular or oval wooden container such as a barrel.

Scale: Pipe bowl 23 mm in diameter

Figure 6.11 Close up of Highlanders Black Watch Motif

Source: Museum of Tropical Queensland, *Foam* Collection MA3323-20
Photograph and drawing by author

The Black Watch Regiment Museum in Scotland was contacted in order to determine the background to these pipes. According to the Museum Curator, Major Proctor, the Black Watch did not issue a regimental clay pipe. Scottish manufacturers made clay pipes with the regimental crest on them in the hope that members of the regiment would buy them (Proctor 2003, pers.com). This poses the question of how these pipes ended up on a Queensland labour vessel? I posit one explanation that the pipes were not being purchased in sufficient quantity by the regiment so the surplus stock was sold off to the colonies at a cheap rate. From an archaeological perspective, this indicates a system whereby excess stock, as opposed to stock specifically manufactured, was dumped onto colonial markets as trade goods. As the Black Watch pipes from the *Foam* were packed interlocked in a wooden container, I suggest that they were part of a bulk purchase and, as such, were part of the recruiter's trade goods and not the property of individual returns.

The third type is identified by the embossed motif of a three masted sailing ship on one side of the bowl and an anchor and cable on the other side (see Appendix 13). This type of pipe appears to have been produced by more than one 19th century manufacturer. Pipes similar to this, manufactured by Thomas White of Edinburgh were recovered in large numbers from the wreck of the *Tigress* which sank in the Gulf of Saint Vincent in 1848 (Gojak and Stuart 1999). However, it appears that Thomas White went bankrupt in 1870 and therefore could not have produced the pipes on the *Foam*. Davey (1987:83) has an illustration of this type of pipe and confirms that it was also made by William White & Sons of Glasgow.

A single light tan complete pipe has a series of crisscross scratches on the bowl. These markings were possibly a form of individual decoration used as a means of identifying the owner. Another four complete pipes appear to be of an inferior quality to the pipes already discussed (see Appendix 13). These pipes show evidence of inclusions in the clay and the stems are twisted off centre. As such they provide possible evidence of second grade pipes being used in the labour trade, in addition to the previously mentioned excess stock. These five pipes have no manufacturer's marks or motifs and according to Ayto (1999), Davey (1987), and Oswald (1975) are typical of the pipes produced by a variety of manufacturers in the mid to late 1800s. The remainder of the bowls and stems are without manufacturer's marks and represent a range of sizes and types from the typologies for the period listed in Ayto (1999), Davey (1987), and Oswald (1975).

According to Specht (1975), the introduction of European pipes into the south-west Pacific led to some Islanders manufacturing their own version of the European model. In order to conduct a comparison between the European and Islander copies, the *Foam* pipe assemblage and the native clay pipes held in the Australian Museum and the Queensland Museum were recorded against 18 parameters. The resultant data base is shown in Appendix 15 and the comparison is addressed in more detail in chapter seven.

Trade Beads:

Twelve complete glass beads and two glass bead fragments were collected from the *Foam* with a total weight of approximately 13 grams. The basic attributes of the complete beads are shown in Table 6.7.

Table 6.7 Glass Bead Attributes

Width mm	Height mm	Bore` mm	Weight grams	Shape	Colour
11	9	3	1	Round	Black
15	11	4	2	Round	Black
12	9	4	2	Round	Black
11	9	5	1	Round	Black
12	10	5	1	Round	Bright Blue
10	7	4	1	Round	Light Blue
8	6	4	>1	Round	Dark Blue
14	11	4	2	Round	Dark Brown
10	7	3	1	Round	Light Brown
8	6	2	>1	Round	Red
10	7	2	1	Oval	Red/White
9	7	3	1	Oval	Red/White

All of the beads appear to be manufactured using the wire wound method as described by Spector (1976) and Sprague (1985). However, the extensive surface erosion and pitting on the beads makes it difficult to confirm this. As shown in Table 6.7, round beads are the most numerous. These are of a type identified by Sprague (1985:89) as "wound crumb" beads and are of one consistent colour within the bead. Both of the oval beads have a white core with a red outer surface. The two glass bead fragments are both oval with white cores and red exteriors. As revealed in chapter two, glass beads have been used extensively in the South Sea Islands as a trade item.

6.5.2 Tools and Equipment

This category contains those artefacts that can be identified as being part of the tools and equipment used onboard the vessel.

Axes/Hatchets:

One concreted axe with a partial wooden handle and a larger concretion containing a number of axe heads were retrieved from the site. The individual axe was x-rayed by the Queensland Museum and as shown in Figure 6.12 a hatchet with sloping shoulders, circular lugs and a distinctive hammer pole was revealed. According to Barlow (1989:79) Salaman (1989:239) and Arnold (2002:58) this is a shingling hatchet designed to split shingles and nail them to the roof. The hatchet had corroded away but the handle remained (see Figure 6.13). By comparing the shape of the carved handle with trade axes/hatchets held in the Queensland Museum it has been possible to determine that this hatchet was once owned by a South Sea Islander.

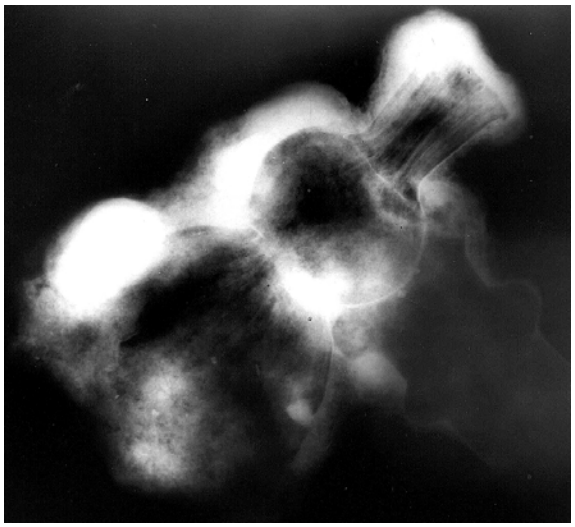


Figure 6.12 X-ray Image of Hatchet

Source: QMMH Archives

Figure 6.13 Carved Wooden Axe Handle

Source: Museum of Tropical Queensland, *Foam* collection MA3209

Photograph by author

An eroded axe head with a short section of wooden handle was observed on the outside of the larger concretion. The Queensland Museum made a resin cast of the eroded axe head which revealed it to also be a shingling hatchet (Figure 6.14). The remains of the handle indicate that this hatchet was at some stage in use and was not a separate hatchet head.

Figure 6.14 Resin Cast of Shingling Hatchet

Source: Museum of Tropical Queensland, *Foam* collection MA3200-2

Photograph by author

The edges of a further three axe blades were visible in another part of the same concretion (Figure 6.15).

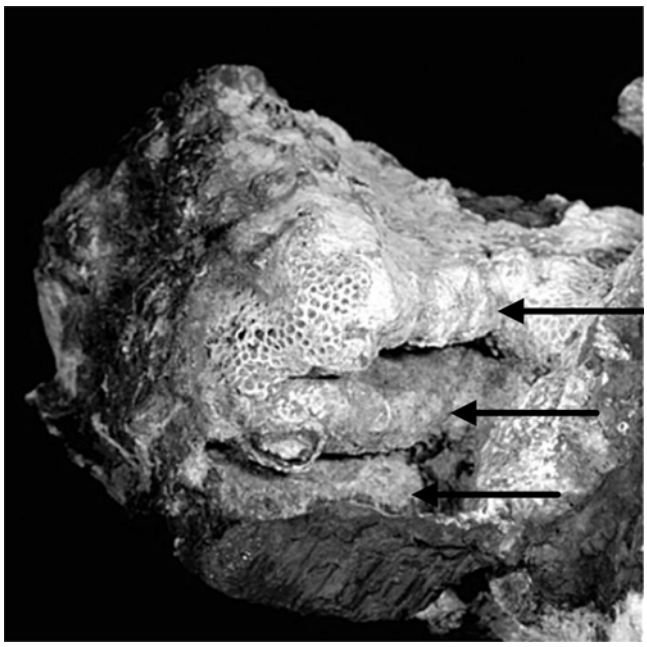


Figure 6.15 Axe Heads in Concretion

Source: Museum of Tropical Queensland, *Foam* collection MA3200
Photograph by author

As part of this thesis the concretion was industrially x-rayed at MTQ to determine what type(s) of axes these were. Unfortunately, due to the position of the axe heads within the concretion no analysis from the x-ray was possible. As a result it is only possible to determine that the *Foam* had onboard shingling hatchets and a number of unidentifiable axes/hatchet heads. As stated in chapter two, axes were used extensively in trade between Europeans and Islanders. A quantity of shingling hatchets on a labour vessel indicates that they were for trade, as the ship's carpenter would have used a shipwright's hatchet. The role that axes played in trade exchanges within the labour trade will be examined in the next chapter.

Ammunition:

Examples of three different calibres of ammunition were recovered; .577, .450 and .44. Images of the .577 and .450 calibre ammunition are shown in Appendix 13.

Rifle

Two .577 centre fire brass cartridge bases, one .577 partial brass cartridge and projectile, 16 solid lead .573 projectiles and the tapered clay plug from the base of a projectile all come from the type of ammunition used in the .577 Snider rifles. These brass cartridges were developed specifically for the Snider rifle by Colonel Boxer (Halls 1974; Hogg 1978; Roads 1983). The projectiles are .573 in diameter with a hollow base into which a tapered clay plug was fitted. When the rifle was fired the clay plug expanded the base of the projectile to form a seal in the .577 rifle chamber. Sometimes the projectiles had a hollow point to assist with stability in flight (WASA 2001).

The Snider rifle was developed as an interim issue to the British forces in 1866. The first Snider rifles in Australia were issued to the West Kent Regiment in 1868. When the Snider rifle was replaced by the Martini - Henry rifle in 1871 thousands of Snider rifles became available on the market (Skennerton 1975). Once again, this illustrates how obsolete goods were being dumped on colonial markets and being used as trade.

A complete centre fire revolver cartridge and two cartridge fragments of the same type were recovered. The base of the cartridge bears the inscription "ELEY LONDON .450". This indicates that the cartridge was manufactured by the Eley Company for a .450 (11mm) calibre revolver. The Eley Company commenced manufacturing ammunition in 1862 and is still in the business (Eley (n.d.)). In the 1890's the types of handguns that used this calibre were similar to the Webley revolver (Taylerson 1970).

The smallest calibre recovered from the *Foam* is represented by five lead ball shots each 11mm in diameter (0.44 calibre). This calibre of ball shot is too small for a musket and too large to be part of a shot gun charge. Therefore it is most likely that these are the ball shot from a .44 percussion fired revolver (O'Hennessy 2005).

These revolvers were the precursor to revolvers that fired brass cartridge ammunition. A gun powder charge, lead ball shot and wad were loaded into each chamber of the revolver and rammed into place. A percussion cap was fitted to the back of the

chamber to facilitate the firing of the charge. Examples of this type of revolver include the 1851 Army/Navy Colt and the Remington New Model Army revolver used in the American civil war (Taylerson, Andrews and Firth 1968).

The recovered ammunition indicates that there was a variety of firearms onboard representing a range of firearm technology. The original firearms traded at the beginning of the Queensland labour trade were Brown Bess muskets. These muskets were discarded by the British Army in 1853 and became trade goods. When the British Army replaced their Snider rifles in 1871, they became the trade weapon of choice until the 1884 ban on firearms. It is unlikely that the European crew of the *Foam* were using Snider rifles in 1893; thus the presence of Snider rifle ammunition indicates that it was smuggled onboard by the returns. Likewise the .44 ball ammunition was for percussion revolvers that predated the .450 brass cartridge ammunition. Given that revolvers would have been easier to conceal than rifles, it is probable that the returns were purchasing percussion revolvers and ammunition to smuggle back to the islands.

6.6 Discussion

An example of the introduction of European social mores to Islanders occurred when the *Foam's* boat was sent back to Townsville with the women and children onboard. Given the recruiting ban on children, it can be assumed that the children were born in Queensland and therefore could have only been a maximum of three years old. Further, as women could only be recruited with their husbands, it can be assumed that their partners remained on the *Foam*. This may have been their first contact with the European maritime concept of "women and children first".

The instruction to the master of the *Christina Gollan* to recover the return's goods indicates that the authorities were aware of the importance and value of these goods to the Islanders. Further, the request by the returns to be re-engaged in the plantations as opposed to having alternate arrangements made for their return clearly indicates the

need for Islanders to return home with European goods. It also indicates the extent that European goods had been incorporated into various Islanders' socio-economic systems.

Recycling of vessel structure and salvage commenced from the time of the collision and this has to be taken into account when determining the site formation process. As evidenced by the surrender of armbands during the 1993 shipwreck amnesty, it is apparent that the site has been visited by looters. Further, the viability of the *Foam* collection as a statistically representative sample needs to be called into question. With limited time on the site no provenance was able to be recorded and the survey and collection policy was a random collection of all visible artefacts in the time available. However, this does not exclude using the assemblage to address archaeological issues as has been carried out through the classification and re-analysis of the assemblage.

The existence of second grade smoking pipes and the Black Watch pipes indicates that the European traders were accepting cheaper substandard goods and excess stock as a way of keeping up with demand and maintaining profit. This is further supported by the use of second hand muskets and rifles earlier in the trade. All of these items were readily available to European traders as they were in common use. However, the ceramic armbands were not in use by Europeans and, therefore, had to be specifically manufactured for trade in the colonies. This poses the question of whether the ceramic armbands were excess stock from other colonial trading systems?

A detailed study of the last voyage of the *Foam* has brought to light a number of noteworthy issues. They range from factors affecting site formation, the extent of archaeological research carried out on the site to the classification and analysis of recovered artefacts. The next chapter expands the study of the trade goods in the *Foam* assemblage by reviewing their role in the islands and incorporates trade goods from other sources into the discussion.

Chapter Seven

TRADE GOODS IN THE QUEENSLAND LABOUR TRADE

7.1 Introduction

This chapter investigates some of the trade goods used and/or exchanged in the Queensland labour trade. Considering both those goods found in association with the *Foam* and the wider range of goods known to have been traded, it will reveal how these items were received by the Islanders, and investigate how they were adapted. Ceramic armbands in particular, are highlighted in this discussion. In order to assess how the introduction of these artefacts may have been viewed by the Islanders and how they were subsequently used in a wide range of activities, it is necessary to review the role that the original shell rings played in traditional island society

7.2 Traditional Shell Armbands

Just as diversity exists within socio-economic systems in an island and across the whole of the South Sea Islands, there is diversity in the function of shell rings across the region. In order to assess how the introduction of ceramic armbands may have been viewed by the Islanders and used in a wide range of activities, it is necessary to review the role that shell rings played in island society.

Consideration of the function of shell valuables is a complex subject. The names of shell rings varied between regions, and rings used for exchange and trade could also be used for decoration and ceremony (Quiggin 1979). Aswani and Sheppard argue that shell rings in Roviana were part of a system of multiple exchanges where goods moved between the status of gifts, commodities and inalienable possessions (Aswani and Sheppard 2003:51).

The issue becomes more complicated when shell rings from one region serve different functions to identical rings in other regions (Poulsen 1970). In order to link these

various functions, I have adapted the organisational approach to exchange media as proposed by Miller (1978). This approach required the shell rings to be grouped into general functions. The method resulted in five general groups: trade and exchange, marriage customs, ornamentation and status indicators, warfare and funeral customs. Examples of some of the shell rings/armbands discussed in this review are shown in Figure 7.1

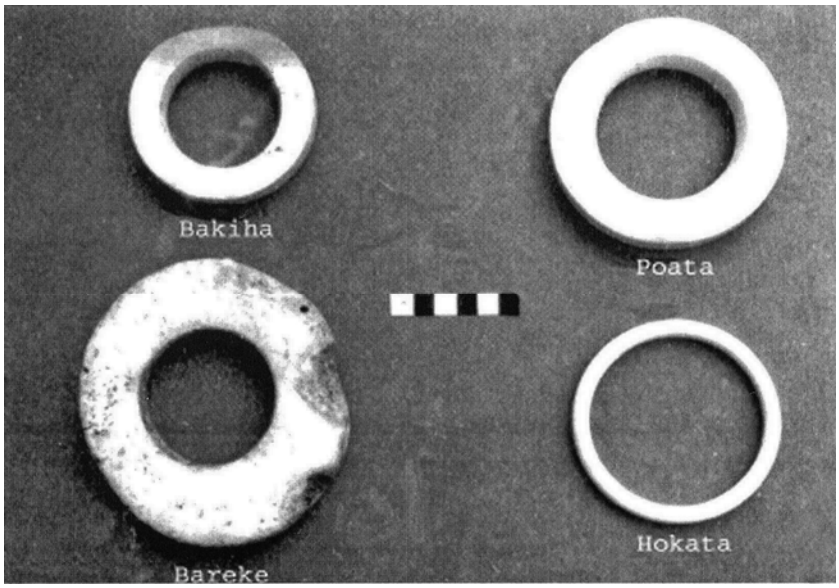


Figure 7.1 Examples of Shell Rings / Armbands

Source: Aswani and Sheppard (2003:65)

7.2.1 Trade and Exchange

In the Western Solomon Islands, poata is the general term for all types of shell rings. It is also used for a specific type of shell ring which is roughly rectangular in cross section. These poata are used as a currency to barter for goods, as payment for magical and ritual services, and for access to land and fishing areas, and placed broken at shrines to indicate transfer of land (Aswani and Sheppard 2003; Miller 1978; Quiggin 1979).

Russell (1948) and Woodford (1905) support this view of their role and state that in the New Georgia region, thin armbands known as *hokata* were used to purchase daily

needs. Aswani and Sheppard (2003) also state that small *hokata* were used as compensation payments and for general barter.

In the Choiseul region, *Ziku* which were large polished rings with a reddish streak running through them were used for day to day exchange (Scheffler 1965). Piko (1977) states that armlets with yellow streaks through them called *ngazala* were used in conjunction with *ziku* for day to day exchange between Islanders.

Shell rings were exchanged for a wide variety of goods and services. An example of the types of items exchanged in the Western Solomon Islands is shown in Table 7.1.

Table 7.1 Items Exchanged for Shell Rings

Region	Item
Choiseul	Slaves
Ghizo	Greenstone
Kolombangara	Barkcloth, Baskets and Shields
Kusaghe	Shields
Ranongga	Girls
Rendova	Blackstone
Santa Isabel	Dyed Barkcloth, Slaves and Turtles
Simbo	Megapode Eggs, Necklaces and Girls

Source: Miller (1978:291)

7.2.2 Marriage customs

The most common shell valuable used to provide a bride price was strings of shell money (Belshaw 1950; Quiggin 1979). Shell rings also played a role in providing a bride price. Burt (1989) recounts that in Kwara'ae, shell rings were exchanged for shell money which was in turn used for a bride price. A more direct link is provided by Sommerville (1897) who reports that shell rings given to the bride's father were broken in two when he died and placed with his remains. Further ethnographic evidence comes from a Buin song in which a girl pleads with her lover "buy me with arm-rings, there are many arm-rings" (Thurnwald 1910 as quoted in Quiggin1979:162). Aswani and Sheppard (2003) assert that in Roviana, the small *hokata* shell rings are used in marriage ceremonies.

7.2.3 Ornamentation and Status Indicators

In the Choiseul region, a physical indicator of status was the possession of valuable shell rings called *kesa*. Each set of *kesa* consisted of nine, thinly walled cylinders stacked into groups of three and wrapped in sago palm leaves. They were not worn or openly displayed. *Kesa* were also used to purchase women and slaves, and as a form of collateral when borrowing less valuable forms of money. *Kesa* did not have a ceremonial use in funerals or as payments to the dead (Scheffler 1965).

In New Georgia, a form of *poata* known as *bakiha* was the status indicator. They were used in ceremonies and occasionally in barter. These shell rings were highly polished, roughly rectangular in cross section and in some examples one edge was chamfered. They were graded according to physical size and the extent of the yellow or red streak of colour along one edge. This streak of colour occurs naturally where the adductor muscle joins the two halves of the giant clam shell, *Tridacna gigas*. When bound and decorated with red dyed, plaited grass, they became highly valued ornaments. This form of decorated *bakiha* was worn as a chest ornament by men of high status on great occasions. *Bakiha* were also known as *bakia*, *bakeha* and *mbakia* (Aswani and Sheppard 2003; Hocart 1972; Miller 1978; Quiggin 1979). According to Russell

(1948) and Woodford (1905), *bakeha* were of sufficient value to purchase slaves. The Type IV ceramic armbands from the *Foam* (see Appendix 13) are copies of *bakiha*.

Another type of *poata* from the New Georgia region was known as *bareke* or *mbarake*. They were the oldest form of shell ring known, and highly valued. Priests used *bareke* as status indicators and in land fertility ceremonies. In appearance they are rough edged, unpolished shell rings, manufactured with the natural contours of the shell remaining (Aswani and Sheppard 2003; Miller 1978; Russell 1948; Woodford 1905).

In Roviana, New Georgia, shell rings with a large 'V' sectioned recess on the outer surface were worn as earrings (see Figure 7.2). Split ear lobes are stretched over a number of years in order to be able to accept the large shell rings. This shell ring has an outside diameter of 95 mm which indicates how far the split ear lobe needed to stretch. Thomson (1899) asserts that Islanders wore these shell earrings with a sense of pride.

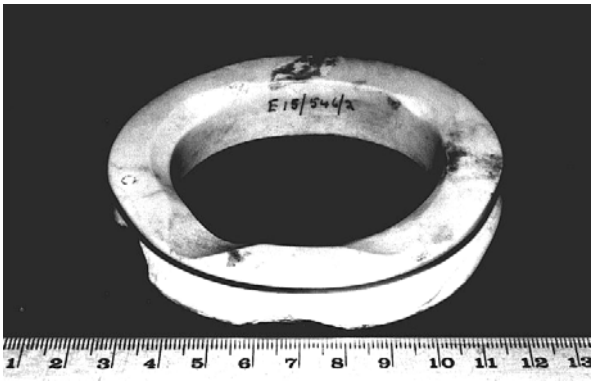


Figure 7.2 Examples of Shell Rings Worn as Earrings

Source: Thomson (1899:510) **Source:** Queensland Museum E15/546/2 Photograph by author

In the New Georgia group, *hinuili* were small shell rings used for decoration and personal ornaments, as well as protective amulets and as gifts to deities (Aswani and Sheppard 2003; Russell 1948; Woodford 1905). Furthermore, Aswani and Sheppard

(2003) state that small shell rings known as *hokata* were worn as ornaments. The Type I ceramic armbands from the *Foam* (see Appendix 13) are copies of *hokata*.

7.2.4 Warfare

Shell armbands were involved in many phases of battles in the Solomon Islands. Piko (1977) reports that *kisa* from Choiseul were exchanged for the support of others in battle. Miller (1978) asserts that the valuable *mbakiha* could be used to hire assassins and Quiggin (1979) states that in Florida a *bakia* could purchase an opponent's head. On Ulawa, armbands called *hato ime* were used as weapons. As shown in Figure 7.3, these armbands had a single groove incised around the outer surface. Worn on the upper arm, they were used to cut one's opponent in hand-to-hand combat. On San Cristobal, these cutting armbands were called *hato ima* (Waite 1987).

Figure 7.3 A "Hato ime" Armband (Cutting Band)

Source: Waite (1987) *Artefacts from the Solomon Islands in the Julius L. Brenchley Collection*. London: British Museum. Plate 16.

Another form of fighting armband used on Ulawa was *momo lalamoa*. They measured about 10 mm high and 31 mm wide (see Figure 7.4). Worn on the forearm, the armbands were used to crush one's opponents' ribs by squeezing. Similar rib-crushing armbands on Santa Ana were called *poporaworawo* (Ivens 1927; Waite 1987). Burt (1989) asserts that rib-crushing armbands were also used on Kwara'ae. Small shell rings were also used to decorate the wicker shields of important warriors and men of

high position (Waite 1987). After the hostilities, shell armbands were used as gifts in dispute settlement and as compensation to the relatives of the casualties (Miller 1978; Piko 1977; Quiggin 1979).

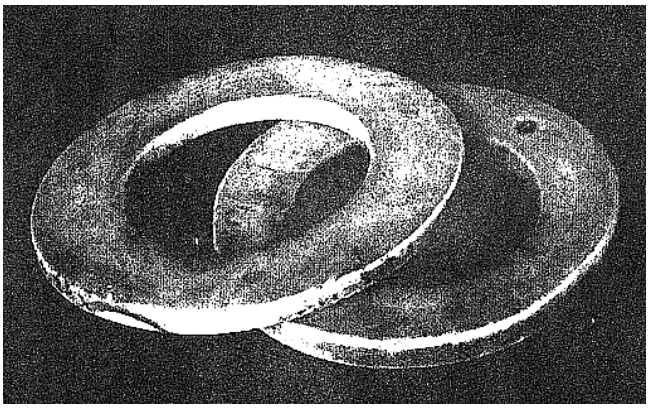


Figure 7.4 "Momo lalamoa" Armbands (Rib Cracking Band)

Source: Ivens (1927) Melanesians of the S.E. Solomons. London: Kegan Paul. p.104.

7.2.5 Funeral Customs

Shell armbands and rings were used in a variety of ways in the funeral customs of the Solomon Islands. Macfarlane (1923) states that when someone died, their body was rubbed with oil and all of the deceased's armbands were placed on the body. Evidence to support this practice is provided by Edge-Partington (1907), who reports that when Ingava, chief of the Rubiana passed away, his body was placed in a sitting position and 30 armbands were placed on each arm. His impressive decorated *bakhia* was placed around his neck with all of his *poata* placed around him.

A variation on this custom was practised at Nggtokae in the Western Solomons. The deceased's body, with only the head exposed, was entombed in stones. A relative of the deceased would then hold a shell ring over the body. If the ring vibrated or the relative collapsed, it was believed to be a sign that spirit beings were present (Wall and Kuschel 1975).

It was a custom in the Roviana for the skull to be removed, cleaned and placed in a cave or small mortuary hut called a 'tamate house' (Edge-Partington 1907).

In Roviana, Edge-Partington and Joyce (1904) describe a tent-shaped tamate house constructed of wooden slats with shell rings attached along the ridge and across one end. Shell armbands were found in the tamate house and the skull had shell rings attached over its orbital cavities. Around the tamate house 'serenbule' had been inserted into stone mounds. Serenbule are staffs to which carved shell fretwork and shell rings of various sizes have been attached. Both Waite (1987) and Woodford (1905) explain that when a headhunting voyage was undertaken, serenbule were removed from around the tamate house and placed in the bow of the headhunting canoe.

On Vella Lavella, skulls were placed into long, rectangular recesses carved from natural stone walls. In some cases, small shell rings had been threaded onto vines securing the lower jaw to the cranium. Using gum and clay, some skulls had small shell rings attached over their orbital cavities. Scattered around the skulls were large shell rings and armbands (Drowne 1930). The custom of placing the deceased's shell rings with their skull was common practice in the Solomons. Wall and Kuschel (1975) describe how on Naggatokae, *poata, hokata* and the small shell ring *hinuili* were all placed in a small tent-shaped hut made from slabs of coral.

Quiggan (1979) asserts that on Malaita, shell rings and armbands were used as gifts to placate the ghosts of the deceased. According to Hocart (1972), when *poata* were used as gifts to the spirits they were called *riko* and were regarded as being associated with the spirits.

7.3 Ceramic Armbands Enter the Trade

The use of ceramic copies of armbands provides a useful insight into the operation of the status and exchange systems. Armbands were everyday items. They had an everyday use just as an axe, fishhook or tobacco. They were for individual status and exchange or funeral use. In some regions, their use was restricted. As stated by Beck (1999), some of these ceramic armbands are exact copies of the Islanders' shell armbands while others display European motifs that are not present on any shell ring. The existence of ceramic armbands with European motifs and their use as trade goods indicates another dimension in their use by the Islanders.

Historical accounts support the use of ceramic armbands in the labour trade and as goods exchanged at trading stations in the islands. However, there are no firsthand accounts of ceramic armbands listed in the goods exchanged by recruiters at the beach or purchased by returns. Nevertheless, their presence on the *Foam* provides archaeological evidence that they were exchanged and/or purchased.

The earliest known reference available is from Henry Guppy, the surgeon on HMS *Lark* during a survey of the Western Pacific from 1881 to 1884. He reported seeing the manufacture of shell armbands on Simbo and stated that "very good imitations of these armlets made from white porcelain are used in trade" Guppy (1887:132). The *Argus* (1892c) stated that Islanders visiting the *Helena* wore armlets of the type that were in the *Helena*'s trade box, and in 1894 Dr John Paton recorded that trade goods taken onboard recruiting vessels included "earthenware armlets and bracelets" Paton (1894:46).

In 1897, Woodford reported that "articles of use for native trade are … arm rings of white earthenware (in imitation of the native shell arm rings)" (Woodford 1897:14). Moreover, he states that a trader on Gavutu received a request for stores from an outlying trade store that included "20 china arm rings" (Woodford 1897:31). The full list of stores requested is shown in Appendix 16.

Previous research indicated that ceramic armbands were manufactured in Austria/Germany (Beck 1999), thereby suggesting they were used by German traders and that the ceramic copies were not specifically manufactured for use in the Queensland labour trade. As stated above, the earliest reference to ceramic armbands in the Queensland labour trade comes from the period 1881 to 1884. Therefore, it could be argued that contact with German traders during the recruiting voyages to New Guinea from 1883 to 1887 (see Table 5.7), was the catalyst for the introduction of ceramic armbands into the Queensland labour trade.

Another hypothesis considered for the armbands' introduction was to fill the void left by the 1884 British ban on firearms. However, while the dates align, there is no research to support that the armbands were specifically introduced to fill the gap left by

the ban which only applied to vessels under British control. The armbands were German /Austrian and there was no ban in place by their governments.

7.4 The Effect of Ceramic Copies

Having reviewed the role of shell armbands /rings, it is possible to speculate on the effect that the introduction of ceramic copies may have had. In order to understand how a new item is accepted into a culture, one should consider how that item was viewed and valued by the receiving culture (Thomas 1991). As such, a cultural materialist approach informs part of my speculations into the effect of the introduction of ceramic rings/armbands into the Solomon Islands. This theoretical approach looks at how a culture is influenced by the introduction of new materials or technologies (Trigger 1989:292).

The question to be addressed is how were copies of existing objects accepted and used in the islands? Poulsen (1970) states that Islanders were manufacturing shell copies of whale teeth for use as ornaments and trade. This illustrates that copies were being manufactured, accepted and used. However, it does not reveal how they were valued in comparison to the original item.

The same can be said for the ceramic armbands/rings in the Solomon Islands. The archaeological record confirms that they were used, however, the criteria by which values were ascribed is unknown. One example of the value and function of a ceramic ring being considered equal to that of original shell rings comes from New Georgia. As stated previously, one of the funeral practices in the Solomon Islands was to attach shell rings belonging to the deceased to their skull. As shown in Figure 7.5, this skull has two shell rings attached over the orbital cavities and a number of small shell rings fixed to the skull. The base of the skull has a *bakiha* attached. According to the accession record from the Auckland Museum, this is a ceramic copy. This demonstrates that at some stage in the New Georgia region, ceramic copies of *bakiha* were attributed with a value that enabled them to be used in funeral practices in place of shell *bakiha*.

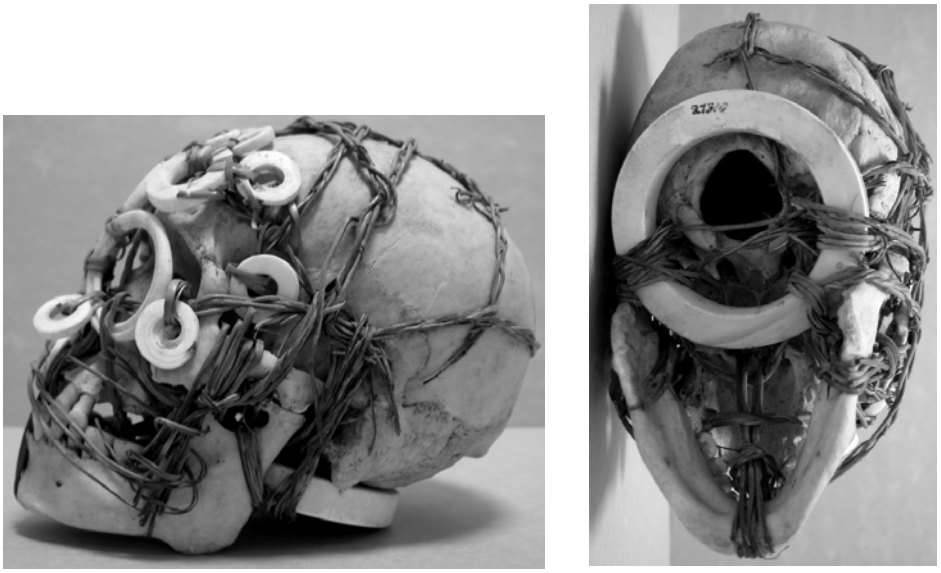


Figure 7.5 Skull Decorated with Shell and Ceramic Rings

Source: Auckland Museum, Accession: New Georgia, Solomon Islands No 27310
Accession Number: 67/44
Photographs by Fuli Pereira

As previously noted, the more (naturally occurring) yellow or red streaks on a *bakiha* the higher its value. The ceramic *bakiha* on the skull has had a yellow streak applied under the glaze. This illustrates the extent to which the European manufacturers went to copy these shell rings.

The main areas for the manufacture of shell rings were Roviana and Marovo Island. By manufacturing shell rings, they received trade and maintained their role in the internal trading system (Aswani and Sheppard 2003; Bennett 1987; Miller 1978).

The introduction of ceramic armbands would have had an effect on their internal socio-economic structure. I speculate that as the supply of ceramic rings/armbands increased, the social standing and economic structure of these regions would have changed. Aswani and Sheppard (2003) assert that after 1860, Europeans actively traded for shell rings from this region. The traders then used them as payment for tortoise shell and copra from other villages where the shell rings were desired. Bennett (1987:84) states

that “white porcelain armlets” were introduced to supply Roviana’s demand for shell rings. In so doing, the trading position of the groups manufacturing the shell rings would have, to some extent, been supplanted.

The introduction of ceramic rings/armbands changed the intra-cultural structure of some parts of the Solomon Islands. However, understanding the total degree of this change across all areas of the South Sea Islands involved with the Queensland labour trade is beyond the scope of this thesis. In any case, the change was probably minimal when compared to the influence that other European trade goods had through the medium of the trade box system.

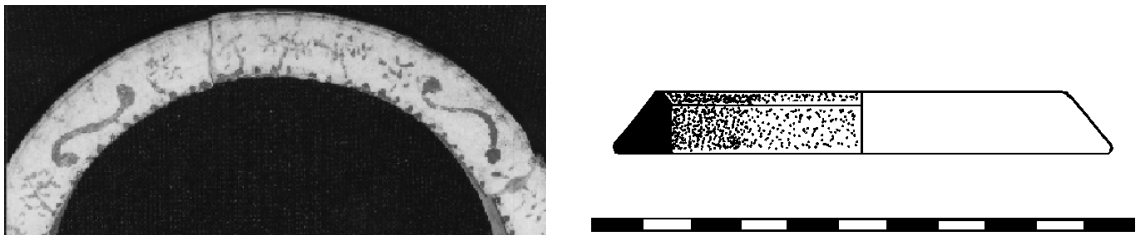
7.5 Trade Goods from Other Sources

My research has investigated and recorded a number of European trade axes, native pipes and ceramic copies of traditional goods in museums and private collections throughout Australia and the UK. In their various forms, these artefacts augment the *Foam’s* trade goods assemblage and provide examples of other types of orthodox European trade goods and ceramic copies being specifically manufactured for trade.

7.5.1 Ceramic Armbands

Macleay Museum

The Macleay Museum at the University of Sydney has a reassembled ceramic armband collected some time in the 19th century. Regrettably, the accession record does not reveal the year or location in the South Sea Islands where the armband was collected. It is basically triangular in cross section with one side of the triangle forming the base and the other side having a chamfered edge. The base of the armband has been decorated with what appears to be red and blue ink. Around their edges, the inner and outer circumferences have a series of red and blue dots. Between these dots are drawn a series of what appear to be scrolls and trees (Figure 7.6). There is no record of who personalised the armband in this manner or who reassembled the five fragments.



CM

Figure 7.6 Macleay Museum Armband

Source: Macleay Museum, Accession number A1990.
Photograph and drawing by author.

Greg Calvert

This example, collected in 2003 by Greg Calvert of Townsville, comes from Kopar Village at the mouth of the Sepik River in Papua New Guinea. It has the standard white glaze with some discolouration on one side. The armband has no markings or motifs. As shown in Figure 7.7, it is triangular in cross section with the apex of the triangle forming the outer edge. Mr Calvert purchased the armband for K10.00 and saw the same armbands for sale in Kurau Village at Murik Lakes for K60-100 (Calvert pers.com).

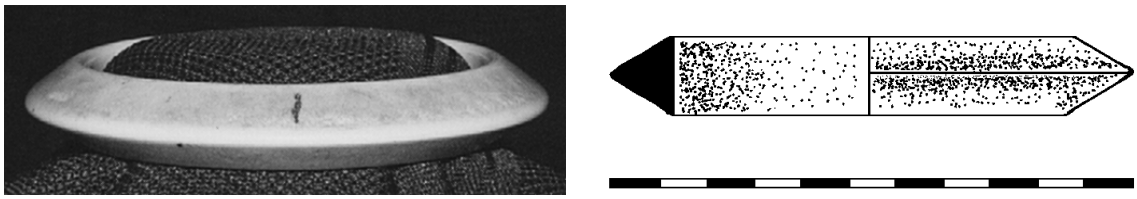


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Figure 7.7 Calvert Armband

Source: Greg Calvert, Townsville.
Photograph and drawing by author.

It could be suggested that the Calvert armband provides evidence for the next phase in Thomas's (1991) *Entangled Objects.* We have moved from the indigenous appropriation of European goods and the European appropriation of indigenous goods

to the indigenous re-selling the Europeans their own goods. This is an intriguing reversal of the role/function of the ceramic armband.

The Australian Museum

The Australian Museum has an example of a distinctive type of ceramic armband which, according its accession record comes from the northern province of the Solomon Islands. As shown in Figure 7.8, it has a series of parallel grooves covering its outer surface. The inside surface is flat with the top and bottom edges curved towards the outer edge. The entire armband is covered in a white glaze and there are no manufacturer's markings. According to Bell (1935), Foster (1995) and Summerhayes (2002), this is a ceramic copy of a shell armband, known as an "amfat" from the Tanga island group off the North East coast of New Ireland.

Amfat are incised shell rings in a range of shapes and sizes falling into two main categories, *Amfat Mil* and *Tintol*. *Amfat Mil* are tubes of shell with thin bands incised around their outer surface. Long tubes with about 25 incised lines are called *puksil* while shorter tubes with less incision lines are called *anmalmal*. Both types of *Amfat mil* are regarded as heirlooms. According to Foster (1995), the ceramic armband in the Australian Museum (Figure 7.8) is a copy of an *anmalmal* known as *amfat n'animan* which translates to a shell disc for the forearm of a female.

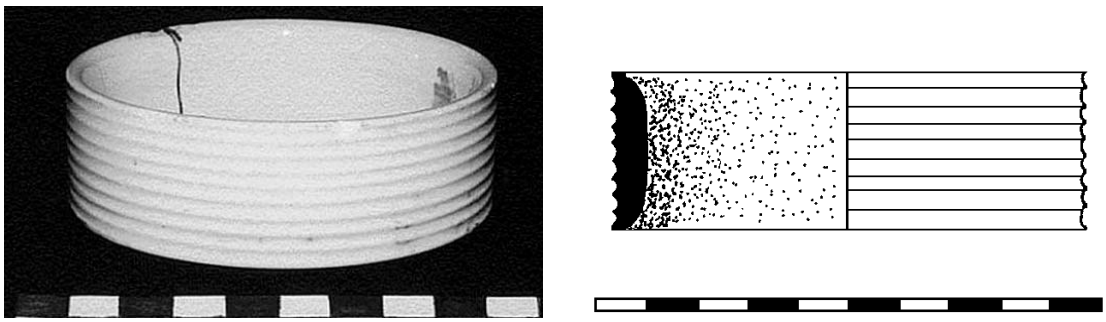

Figure 7.8 Ceramic Amfat n'animan

Source: Australian Museum, Accession Number E10871.
Photograph and drawing by the author.

The largest of the *amfat mil* were called *warantang* meaning base of the basket, indicating that they resided in the base of the basket in which shell wealth was kept, and

were not removed or traded. The possession of a *warantang* was sufficient to influence the delivery of pigs to the lineage head for ceremonial use. An amfat took about six months to manufacture. During the process, artisans were fed by the man who wanted the amfat and a large pig was presented to the artisans upon completion (Foster 1995).

Tintol are flat shell rings with a single large incised groove. Medium sized *tintol* are used in marriage ceremonies and mortuary exchanges. Smaller *tintol* are referred to as "penis rings" and were not used in exchange. Amfat are used for ceremonies and custom, while strings of shell money known as *kemetas* are used for business (Foster 1995).

During the period of the labour trade, the Tanga Islands were under German control. Therefore, it can be suggested that German traders were responsible for the manufacture and introduction of ceramic amfat to the region. It can also be argued that the introduction of ceramic amfat is an example of specific targeting of a region by the Germans, as amfat were only used in the Tanga islands.

Norfolk Island Museum

According to Nigel Erskine, Director of the Norfolk Island Museum (2003-2005), this armband fragment (Figure 7.9) was recovered from the site of the Civil Hospital privy in the late 19th century (Erskine 2005).

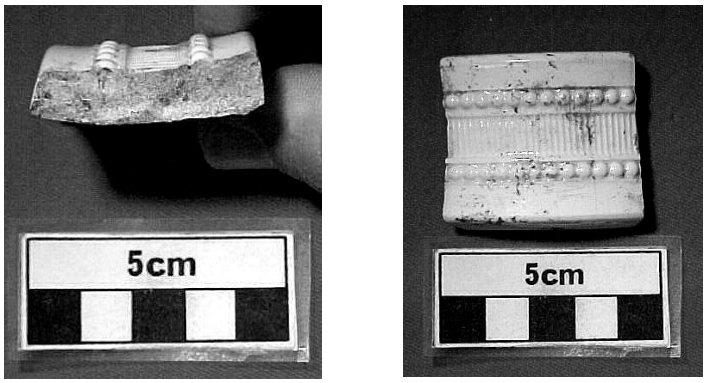

Figure 7.9 Type IIA Armband Fragment from Norfolk Island

Source: Nigel Erskine,
Photograph by Nigel Erskine

As shown, this fragment appears to be from a Type IIA "Dots and Line Motif" armband as previously described (see Appendix 13). No detailed physical attributes were provided with the photograph. However, from the scale in the photograph, one can determine that the fragment's dimensions fit into the average range of attributes for this type of armband as detailed in Appendix 13. The Melanesian Mission established a school on Norfolk Island in 1866 to train South Sea Islanders to be missionaries (Cowie 1872). Therefore, it can be suggested that missionaries on Norfolk Island came into contact with ceramic armbands. However, it raises the questions of what was the function of ceramic armbands on Norfolk Island and to what extent was the Melanesian Mission involved?

7.5.2 Ceramic Dogs' Teeth and Nose Bars

At the University of Oxford's Pitt Rivers Museum, there are examples of ceramic dogs' teeth and nose bars, all presented by H. Balfour.

Dogs' Teeth

These were presented to the Museum in 1899 and, according to the card on which they are mounted, were manufactured by Sachse of Austria and Venice. The teeth are off white in colour with a clear glaze. As detailed in Figure 7.10, they were manufactured in two sizes.

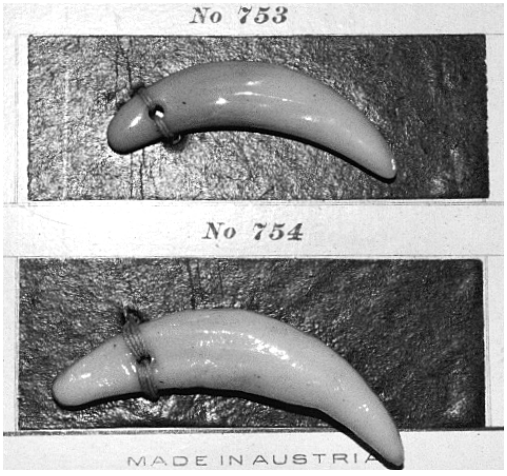

Figure 7.10 Ceramic Dogs' Teeth

Source: Pitt Rivers Museum, Accession Number Card 31, Photograph by author

The smaller (No 753) is 37mm long and 9mm wide. The larger (No 754) is 44 mm long and 10 mm wide. According to the information on the manufacturer's sample card, the No 753 teeth were sold for 18 shillings per 1000 and the No 754 teeth were sold for 27 shillings per 1000 teeth.

Nose Bars

The accession record states that these nose bars were presented to the Museum in 1902, and that they were made in Austria for trade in New Guinea. As shown in Figure 7.11, they are not symmetrical, as one side is flatter. Both have a glazed finish. The top nose bar is deep green in colour while the bottom one is white with three black rings. Both of the nose bars are 200 mm long and 15 mm wide.

Figure 7.11 Ceramic Nose Bars

Source: Pitt Rivers Museum, Accession Numbers PRM 1902.8.2 & PRM 1902.8.3
Photograph by author

7.5.3 Metal Axes

As stated in chapter two, from the time of the early trading contacts, metal axe heads were desired by the Islanders. The *Foam* assemblage has a concretion containing axe heads and a resin cast of an axe head. To augment the assemblage and provide some evidence on the types of axes traded, the collection in the Queensland Museum was examined and recorded. A database of the attributes of the axes in the Queensland Museum collection is shown in Appendix 17

The 14 axes in the Queensland Museum collection can be divided typologically into two types based on the shape of the blade (Figure 7.12). The axe heads with curved shoulders are one of the many variations of the Kent style axe, all of which have the distinctive curved shoulders (Barlow 1989; Hasluck 1998; Salaman 1989). The axe heads with straight sides are a variation of the Irish style axe (Branford 1997; Salaman 1989). Although called axes, these examples are closer in size to a hatchet or tomahawk. Both styles appear to have been commonly available and, as such, would not have been manufactured specifically for trade in the South Sea Islands. An example of the role that metal axe heads played in changing the power structure and trading cycles within the Islands has previously been illustrated in chapter two by the work of McKinnon's (1975) *Tomahawks, Turtles and Traders*.

Figure 7.12 Axes from the South Sea Islands

Source: Queensland Museum, Accession Numbers E1063, E11417, E201-1, E5596
Photograph by author

7.5.4 Tobacco Consumption Package

In order to investigate their socio-economic role, Cessford (2001) argues that clay pipes and tobacco should be viewed as part of a 'tobacco consumption package'. This package includes the production and distribution of tobacco and artefacts used for its consumption. By applying this approach to tobacco and trade pipes in the South Sea

Islands, it is apparent that their primary function changed as they moved from the European system into the Islander system. As the pipes and tobacco changed hands, their function altered from trade goods used to secure services on the beach, to tobacco consumption and assimilation as commodities into internal trading networks. In Bougainville and Buka, one of the functions of European clay pipes was as a catalyst for the manufacture of Islander clay pipes.

As a commodity, tobacco was introduced into the South Sea Islands by European explorers, whalers and traders and was established in the region by the mid to late 1800s (Riesenfeld 1951). Tobacco was the traders' ideal medium for exchange. It was inexpensive to purchase and could be used as payment for all manner of goods and services. When it was smoked, it created a desire for more and needed to be replaced. Riesenfeld (1951) relates that, in 1865 at Wango on San Cristobal, tobacco and pipes were the most desired items.

Demand for tobacco in the islands became so intense that it was delivered to recruiting vessels in three hundredweight (152kg) lots (Cromar 1935). Tobacco could be purchased in Queensland for 18d per lb. At 20 sticks to the lb, each stick of tobacco cost the recruiters less than a penny. However, the price did increase to 2s 6d a pound (Morrison 1882). As with other trade goods, tobacco was subject to changing desires. Islanders were very selective about which type of tobacco they accepted. They wanted American twist tobacco and not Australian twist which they regarded as dry and flaky. Conversely, vessel owners preferred Australian twist as it was cheaper to buy (Cromar 1935).

In 1892, the recruiter on *Helena* was so desperate to recruit that he exchanged one case of tobacco for each of the 64 recruits on the island. Each case held 70 lb (31 kg) of tobacco (Paton 1894). In contemporary terms, this equates to just over 600 x 50gm packets of rolling tobacco per recruit.

One function of tobacco not readily visible in the archaeological record is its role as a form of chemical social control. Docker (1970) states that on plantations tobacco was used as a reward for good behaviour and hard work. On some German copra plantations in New Guinea, if labourers did not work at the required rate, their tobacco

supply was removed and they suffered nicotine withdrawal (Firth 1976). Further evidence for tobacco's use as a form of control comes from section 20 of the *Polynesian Labour Act of* 1868 which states that ¼ oz of tobacco and one pipe per week was to be provided to each recruit, but only during periods of good behaviour.

In a majority of the South Sea Islands, the population depended on Europeans for clay pipes. However, by 1886 a few villages in Bougainville and Buka were manufacturing hand made copies of European pipes (1975). Examples of these pipes are shown in Figure 7.13

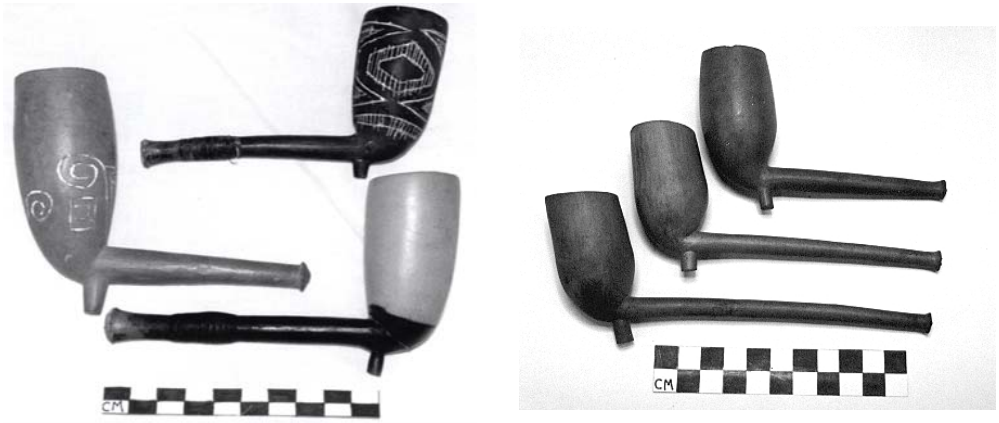

Figure 7.13 Islander Clay Pipes

Source: LH Photograph: Australian Museum, top to bottom, E38541, E12560, E38534
RH Photograph: Queensland Museum, top to bottom, E5709A, E5709B, E5709C
Photographs by author

Pipes were not manufactured in the traditional pottery making regions. In these villages, the women were responsible for the entire process of manufacturing pots. However, in the pipe manufacturing villages, it was the men who manufactured the pipes (Specht 1972; Specht 1975). There is no doubt that the pipes were modelled after European versions, even down to copying the spur at the base of the bowl which is a result of the European manufacturing process and serves no function as far as smoking the pipe is concerned (Ayto 1999; Specht 1975).

Two pipes from the Australian Museum (Figure 7.13, E38534 and E38541) have wooden mouth pieces bound onto their stems. This indicates that when the original mouth piece was damaged, rather than obtaining a new pipe, a replacement was bound

onto the stem. Thus, I suggest that the pipes were held in some value as they were not easily replaced.

The Solos speakers of western and central Buka appear to have been the main manufacturers of pipes on the island. Specht (1975) suggests that this was the result of changing trade patterns brought about by the introduction of metal tools and island depopulation. The Solos supplied taro and the volcanic rock used for making tools. The introduction of metal tools eventually depleted trade in stone and depopulation caused by the labour trade, and introduced diseases reduced the need for taro. The manufacture of local clay pipes filled the void in the Solos' exports and reduced the total dependence on Europeans for pipes (Specht 1975).

Another example of the Islanders' skill in pipe making comes from Numa–Numa on the central eastern side of Bougainville. As illustrated in Figure 7.14, these pipes have long stems and in some cases, two large bowls mounted either side by side, or in line on a single stem. According to Frizzi-Muenchen (1914) (translated from German), the reason given for the multiple bowls is that single bowls could not be made large enough. The Numa-Numa were regarded as the main pipe makers on Bougainville and their skill is demonstrated in these pipes, where the stems were up to 20 cm long with a diameter of approximately only ½ a cm. Much of the time, stems were decorated with twine (Frizzi-Munchen 1914:37).

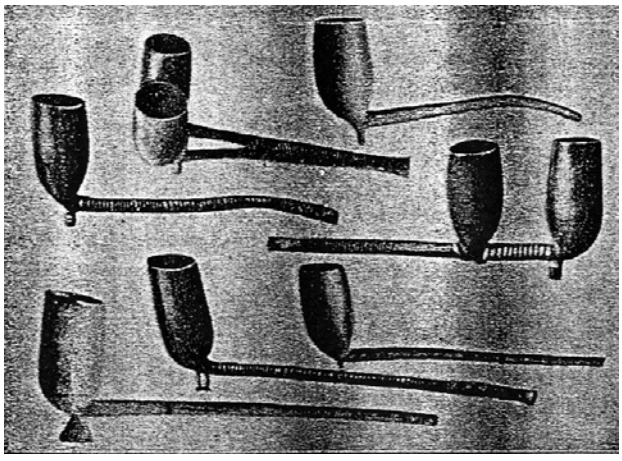

Figure 7.14 Numa Numa Clay Pipes

Source: Frizzi-Munchen (1914:38) figure 57

As stated in chapter six, a comparative study of the trade pipes from the *Foam* and the Islander pipes in the Australian and Queensland Museums (Figure 7.13) was conducted. The resulting data summary is shown in Appendix 15. Regrettably no data apart from stem length and diameter was available for the Numa-Numa pipes. Using the average dimensions of the clay pipes recovered from the *Foam* as a reference for European pipes, it is evident that the bowls of the Islander pipes are considerably larger than the European version. This may have been a result of the inability to make them smaller as they were hand made without moulds. Alternatively, it may have been their desire to fit more tobacco into the bowl. The double bowls on the Numa-Numa pipes tends to support the latter conjecture. If this is the case, it supports the purported desire for tobacco and its effectiveness as a form of social control.

The distribution of locally made pipes in the South Sea Islands is a point of debate. Riesenfeld (1951) asserts that the "short clay pipes … used in Fiji, New Caledonia, the New Hebrides, Tikopia, Santa Cruz, the Solomons, New Ireland … are certainly imitations of the European pipe" (Riesenfeld 1951:71, 84). However, I challenge his claim as Riesenfeld provides no evidence to support it, while the historical and archaeological data supports the widespread use of European clay pipes. Moreover, Riesenfeld's generalisation also contradicts Cromar (1935:66) who reports that only some Islanders from Espiritu Santo were manufacturing earthenware pipes in the form of large European clay pipes.

Given this discrepancy, future research on the actual distribution of manufacturing centres of Islander pipes in the South Sea Islands, and how they were used within internal trading networks, is warranted.

7.5.5 Firearms

Firearms were a major inducement for South Sea Islanders to leave their families and enter the labour trade (Shineberg 1971). Firearms were also a major item given to families of recruits by way of barter for the loss of their family member.

At Tanna all of the men who came down to the beach had muskets. This indicates the extent to which firearms were already in the islands by 1870 (Hope 1872). A typical example of the importance of firearms is provided by the Queensland recruiting vessel *Surprise.* In an 1883 voyage, it carried 35 Snider rifles, 100 muskets and 11 cases of powder, all for trade (Cowan 1936).

Morrison (1882) provides an example of the importance that labourers in Queensland placed on obtaining firearms. The 73 returns on the *Lavinia* had amassed 172 firearms and 9300 rounds of ammunition (see Table 7.2). The total value of the firearms and ammunition on the *Lavinia* was calculated at £730. This equates to each return spending £10 of their total £18 on firepower.

Table 7.2 Firearms and Ammunition Purchased by Returns Onboard the *Lavinia*

Firearms		**Ammunition**	
Type	**Qty**	**Type**	**Qty**
Snider Rifle	78	Snider Cartridge	7800
Spencer Rifle	6	Spencer Cartridge	800
Enfield Rifle	29	Enfield Cartridge	200
Muskets	47	Gun Powder	1861 lbs (844 kg)
Shot Guns	9	Shot Gun Cartridge	200
Double Barrel Shot Gun	1		
Revolver	2	Revolver Cartridge	300
Total	172	**Total**	9300 rounds

Source: Adapted from Morrison (1882)

The Islanders from Tanna were regarded as being very aggressive. This reputation was well founded and supported by the fact that 15 returns from Tanna onboard the *Lavinia* accounted for 14 Snider rifles, 3 Spencer rifles, 4 Enfield rifles, 20 muskets, 2100 cartridges and 769 lb (348 kg) of gunpowder (Morrison 1882). One could ask why firearms were traded at all given the aggressive nature of some Islander groups. Giles (1968) provides one possible explanation. The authorities justified the sale of firearms

to South Sea Islanders on the grounds that Islanders shot less accurately with the unaccustomed rifle than the bow, and that bullets were not as consistently lethal as poisoned arrows.

As stated in chapter three, political pressure eventually led to a ban on British vessels supplying firearms to Islanders. It caused considerable problems and distrust with Islanders who had recruited mainly to obtain them. At each place that returns were landed, there was uproar at the village when it was discovered that they had no guns. The crew of the vessel were seen to be the cause and it became very hard, if not impossible, to obtain new recruits. Islanders overcame the ban by taking some of their money back to their home and purchasing firearms from the French and German recruiting vessels that were not subject to British regulations. The ban resonated beyond the islands as it was not only Islanders and recruiters who were adversely affected. The livelihoods of Queensland merchants selling goods to returning Islanders were also diminished (Cromar 1935).

The *Argus* supports Cromar's view and provides evidence for Islanders dictating the terms of exchange and the power of firearms as exchange goods. A German vessel recruiting for Samoa had passed through San Cristobal and provided Snider rifles for recruits. Thus, when a Queensland labour vessel arrived, the village would only accept Snider rifles and ammunition. The Queensland recruiter was unable to provide these and was forced to departed without recruits (*Argus* 1892c).

The Islanders had the upper hand in the transaction as they had the recruits and the ability to access firearms from French and German recruiters. The Queensland merchants and recruiting agents were not pleased with the legislation and someone wrote a song highlighting the situation.

The Recruiting Song

Sail ho!
Far, upon the sea
Looking out for Blacks are we
We've got a decent cargo in the hold
If a hurricane don't blow
We'll soon be back in Queensland
Show
With a good lot of kanakas to be sold
We have to watch each isle
For niggers [sic] though they smile
Will knock you over if they get a chance
And rifles we don't sell
They can get them just as well
From ships that hail from Germany and France

Author Unknown
Source: (Mather and Cox 1988:10)

7.6 Summary

This chapter investigated some of the goods traded and exchanged in the Queensland labour trade. It revealed their reception, integration and adaptation by Islanders. Examples of trade goods other than the types recovered from the *Foam* were analysed. The investigation brought to light that a range of ceramic copies of indigenous items were being manufactured for trade.

A general overview of the role that shell rings played in Islander society is presented. Shell armbands were used for more than decoration and status indicators. The changing roles of shell armbands as they moved between islander systems indicates that a broad range of dynamic socio-economic systems were in place. Ceramic copies of these shell armbands appear to have been introduced into the South Sea Islands in the early 1880s by German traders and later appeared in the Queensland labour trade.

An assessment of the introduction of ceramic armbands and how they may have been viewed and used by Islanders is also provided. The introduction of ceramic copies changed some South Sea Islander internal systems. While it is not known how the ceramic copies were valued across the whole of the South Sea Islands, there is archaeological evidence that in one region of New Georgia, they were valued as being acceptable for use in ceremonies dealing with the after life. Moreover, the contemporary use of ceramic armbands as items for sale to European tourists indicates that in some regions, the role and value of these armbands is still changing.

The chapter concludes with the changing roles of tobacco and clay pipes. Their influence on the manufacture of Islander clay pipes provides archaeological evidence of the desire for tobacco in the South Sea Islands. Moreover, the existence of Islander manufactured clay pipes indicates that both societies were copying the other for their own purposes. The Europeans were copying the Islanders' shell armbands and the Islanders were copying the Europeans' clay pipes.

To develop new perspectives on the trade, the next chapter focuses on the use of these goods in the Queensland labour trade from both sides of the exchange.

Chapter Eight

MECHANISMS OF CHANGE

8.1 Introduction

This chapter investigates changes in the South Sea Islands brought about by the Queensland labour trade through contact and interaction. This will be achieved by revisiting two of the three research aims of this thesis presented in chapter one.

- How were the Islanders being changed as a result of their participation in the Queensland labour trade?

- Was the Queensland labour trade affected, changed or controlled by the Islanders involved in the trade?

The third research aim "Did Victorian society and its values, as expressed in part through a changing legislative framework, have any influence on the Queensland labour trade?" was investigated in chapters three and five.

Thomas (1991) in his seminal work *Entangled Objects* identifies two intertwined themes germane to this thesis. These are the European appropriation of the indigenous and the indigenous appropriation of the European. This chapter will follow this framework by demonstrating how the Queensland labour trade changed the Islanders and how the Islanders subsequently adapted to and exploited the European system.

It is necessary to understand what the island systems were like prior to the advent of the Queensland labour trade or any of the other European sponsored trading systems reviewed in earlier chapters. This will provide a basis for understanding the extent of change experienced by the Islanders following their exposure to the trade.

Walter and Sheppard (2006) affirm that "Melanesia …is inhabited by a mosaic of culturally…diverse people…with…complex patterns of social and political interaction" (Walter and Sheppard 2006:137). Thus, the chapter begins with a review of the diversity of traditional social structures, and trade and exchange systems in the islands. It will be argued that Islanders themselves were changed through their interaction with the Queensland labour trade as their identity transformed from Islander to recruit, and on their arrival in Queensland, to labourer. On completion of their three year term, their status changed again to that of a return then on arrival at their home island, reverted to Islander.

Having demonstrated how Islanders were changed by the European system, examples of how Islanders in prominent positions adapted and exploited the European system for their own gain are presented. The chapter concludes with a new model demonstrating these competing perspectives for contact and change in the islands. In so doing, this chapter presents a Melanesian view of contact and change in the islands based on an archaeological perspective as presented in previous chapters.

8.2 Melanesian Diversity

In order to investigate the changes brought about by contact and change in the Queensland labour trade, it is necessary to review the structure of the socio-economic systems that were already operating in the region. By necessity, this thesis deals with generalities to gloss considerable diversity. Prior to European contact and based on trade and exchange, various socio-economic systems had developed within and between islands. Despite the conflicts of warfare, every island group developed some form of trading relationships with other communities. Each region had its own structure with different levels of importance placed on different aspects of the system. There are two general principles that apply to pre–European economies in the south Pacific. The first is that as a society grows in physical size, different methods of providing for the society will be developed. The second is that as a society develops, wealth and power will generally become unequally distributed within that society (Howard and Durutalo 1987).

These principles manifested themselves in different ways dependent basically on the geographical position of the society. For example, systems ranged from highly egalitarian groups in New Guinea and Melanesia, to archetypal hierarchical chiefdoms in Polynesia. This division of systems along geographical boundaries is not strict. In some western regions there were chiefdom-like systems with more egalitarian groups in the east. Both systems were dynamic and should be viewed as such (Howard and Durutalo 1987).

In the Eastern Solomon Islands of Santa Anna, Santa Catalina and the East of San Cristobal there are two distinct kinds of value placed on goods. According to Davenport (1986) the Islanders in this region have a different language and customs to the inhabitants of Western San Cristobal. The first type of value is material and economic. These are the goods exchanged and consumed at the three ceremonies that follow the death of a relative. The number and type of goods increases with each ceremony. These goods must be obtained by calling in all the credits that the family has in order to honour the deceased. The second type of value is mystical and spiritual. These are the ritual objects carved exclusively for a ceremony by artisans linked to specific deities. All of these ritual objects are separate from everyday objects; they include carved bowls, house posts and canoes for trading voyages. All are made for the one ceremony and then become a reminder afterwards (Davenport 1986).

In the Western South Pacific, a geographic region covering Vanuatu, New Caledonia and the Solomon Islands, the mechanism of trade and exchange depended on the location of communities. Trade between coastal communities was usually between 'enduring and inheritable' trading partners while trade between coastal and inland communities was conducted via trade partners and at markets. Moreover, trade at markets was carried out over short distances while trade between partners could be conducted over considerable distances. Further, the trade system was totally bound up in the social and political system. The diversity of goods exchanged depended on what was available in each region and its particular specialisation. Pigs, dogs, shell money and feather money became forms of political currency for which big men accumulated 'obligations of indebtedness' (Howard and Durutalo 1987).

For example, Bonnemaison (1985) provides a detailed account of the diversity within Vanuatu where various societies were independent of each other and considered separate cultural environments. Groups were territorially fixed and contact between them was highly regulated. The local area provided identity and security, and travel to places outside of the group's control was considered dangerous. However, a wide range of contact, trade and exchange existed between groups serving to unite them at different levels of social and political union.

A group's territory was generally defined by set geographical features and individuals could move freely within their own territorial boundaries. However, movement outside of one's own area was restricted to certain class /status positions and considered a privilege. The right to use the paths connecting groups was restricted to those with the right to use them. Contact between coastal (saltwater) and inland (bush) groups was also restricted and only took place after considerable negotiation and payments thus allowing bush people access to the beach through the saltwater group's land (Bonnemaison 1985).

In northern Vanuatu, to control the movement of people, trade and goods, a highly structured big man system existed. To achieve status, a man was required to travel outside his own local territory. The capacity to travel was power and those without the right of movement, and therefore trade, could not gain status. In order to become a big man and move up through the levels of hierarchy, a man had to present pigs of set value. To obtain these pigs, a big man had to negotiate and manipulate the loan and exchange of pigs from various sponsors and kin within his allowable area of movement. Thus, a big man obtained his status by demonstrating his ability to manipulate contacts and the exchange of goods between them. The physical demonstration of this ability was the presentation of the pigs, enabling him admission to the next level and granting him the privilege to travel further and expand his area of contact and manipulation (Bonnemaison 1985).

Depending on the particular area, there were ten or more levels of status. In general these could be grouped into three broad categories:

- Ordinary man. Generally, there are three or four levels to be attained before being recognised as a man. Once achieved, a man can marry and participate in exchanges within the village group. Movement was restricted to within a range of about one to three hours walk.

- Nakamal. The second group was family elders known as "Nakamal" with usually about six or seven levels of hierarchy. Maintaining contact with nakamal in other regions by marriage and exchange, they had to demonstrate the ability to influence the movement of goods over an area of about a full day's walk from their own area.

- Tanmonok. The highest was the "tanmonok" with families and pigs in each of the regions they were allowed to move between. Tanmonok officiated at ceremonies and were constantly on the move between each of their houses, manipulating access to and movement of goods within their area of control (Bonnemaison 1985).

Anthropological studies in North Vanuatu reveal that on adjacent Islands there is a different bias in the acquiescing of power. Jolly (1991) identifies that in Vae on the North coast of Malekula there are two levels of graded rankings, low and high. To move up through these levels can take about 20 years and the candidate must produce a set number and type of animals for sacrifice for each grade. In addition the candidate needs to have a sponsor from within the village. The type of pig for sacrifice is very important, only boars can be sacrificed and eaten. In addition the boar's tusks are grown into a circle which adds to the status of the sacrifice. In contrast on the East coast of Aoba there are five levels of graded rankings. However, advancement through these grades is focused on the exchange of pigs not the slaughter. The pigs must be obtained by the candidates through a complicated set of exchanges within his expanding trade network. The ownership of the pigs demonstrates the candidate's ability to organise and control those around him. The highest ranking in this system hold power by ensuring the support of a large group of young men who carry out there demands (Jolly 1991).

In contrast, Bonnemaison (1985) states that further south, in Tanna, these graded systems are not used. Status was handed down through family lines either electively or via heredity. On Tanna, exchanges took place during set ceremonial periods and required a balanced, reciprocal exchange. Each area had several high ranking "Yremera" connected together in a system covering the whole island. The Yremera controlled the movement of people, goods and exchanges (both land and maritime), along set ceremonial pathways (Bonnemaison 1985).

Tanna was a very fixed territorial society. However, exchanges were very important and trading partners exchanged women and customary exchange goods such as pigs, mats, yams, taro, grass skirts and kava. What was exchanged depended on one's status and physical position along the customary exchange pathways. When contact was required between two areas, the Yremera did not travel. They sent an intermediary known as a "Yani Niko". The Yremera did not move beyond the area they had control over. The Tannese believe that sacred stones created their island and the people and, like the stones that created them, the Tannese did not move freely around the island (Bonnemaison 1985).

A classic example of the operation of this system was the highly formalised sea turtle exchange. Only some people within an area had the right to consume the cooked turtle meat. However, they did not have the right to capture or prepare it. The right to carry out these activities belonged to other groups in areas ranging along the customary pathway from the coast to the final destination where the turtle was consumed. At each handover from one group to the next along the pathway, the turtle was exchanged for pigs and kava. The group that captured the turtle had no direct contact with the group that finally ended up with the turtle. However, the passage of the turtle ensured contact and trade between each adjoining group along the way, each controlled by a Yremera and arrangements made by a Yani Niko (Bonnemaison 1985).

Aswani & Sheppard (2003) suggest that in the Solomon Islands, multiple systems of exchanges for goods and services existed well before the *c.* 1800 arrival of Europeans. In the western Solomon Islands, two centres of trade and exchange were Roviana in SW New Georgia and the Island of Simbo. Trade and military networks between the two

centres led to trade covering a wide regional area, and raids on other islands. Trade was in Canarium Nuts (*Canarium indicum and C. harveyi*), weapons, slaves, shell valuables, ornaments and food stuffs (Aswani and Sheppard 2003).

Power resided in chiefs whose authority was by descent from specific lineages and strengthened by competing with others descended from similar lineages. Competitions between the chiefs fostered the development of strong defensive alliances and the control and manipulation of trade and exchange networks (Aswani and Sheppard 2003). This view is supported by Goldman (1970) who asserts that the status system in the Roviana region was a hereditary social ranking system similar to a Polynesian chiefdom.

In their particular regions, Roviana chiefs were very powerful and dominated the political economy in the Western pacific. Chiefs were allied with area leaders from western Santa Isabel by kin, trade and war alliances. These two groups formed combined head-hunting groups to capture slaves, skulls and shell valuables Status was derived from an ability to organise and undertake a cycle of head-hunting raids, ancestor cults, ritual violence and the control of, and distribution of shell valuables. The possession of specific shell rings identified a person as being descended from chiefly ancestors. Travel was restricted to those of power. This system controlled access to goods and knowledge (Aswani and Sheppard 2003; Walter and Sheppard 2000).

Another way chiefs gained status was by controlling interactions with the outside world. When the first Europeans arrived, the Islanders of the Roviana lagoon were keen to trade with them. However, the chiefs did not allow Europeans to control the exchanges or set prices for goods. The exchanges became part of the internal trading, raiding and shell valuable exchange cycles within the region. One chief controlling this system was Ingava. He organised one of the last major head-hunting raids against Santa Isabel involving 20 canoes, two English boats and 300 rifles. These resources were obtained by locating himself with European traders and using them as part of his system (Walter and Sheppard 2000).

A common theme that appears to be evident in this review of Melanesian diversity is that individuals within these systems, whether they are egalitarian or hierarchical, used movement, contact and exchange to maintain and advance their position in that system. This section has provided a general overview of the various social status, trade, exchange and underlying power systems that were in operation within some of the South Sea Islands prior to the advent of the Queensland labour trade. The next section proposes changes to these systems both from the point of view of the individual Islander and as part of a larger system of contact and change brought about by the Queensland labour trade.

8.3 Maritime Mechanisms of Contact and Change

As stated in chapter five, when groups of people are removed from their accustomed way of life and placed into unfamiliar surroundings they must find ways to work together and respond to new situations. By investigating the maritime transportation of Islanders one is provided with a unique example of the changes in a group of people where their normal responses to situations are no longer viable and new arrangements need to be developed. This section proposes a cycle that follows the changing identity of the Islanders as they become recruits, labourers, and finally returns (Figure 8.1). By examining each of the phases in this cycle it will become apparent that the Islanders did change as a result of their involvement in the labour trade. Put another way, the returns who arrived back at the beach were not the same Islanders who had departed as new recruits some three years earlier.

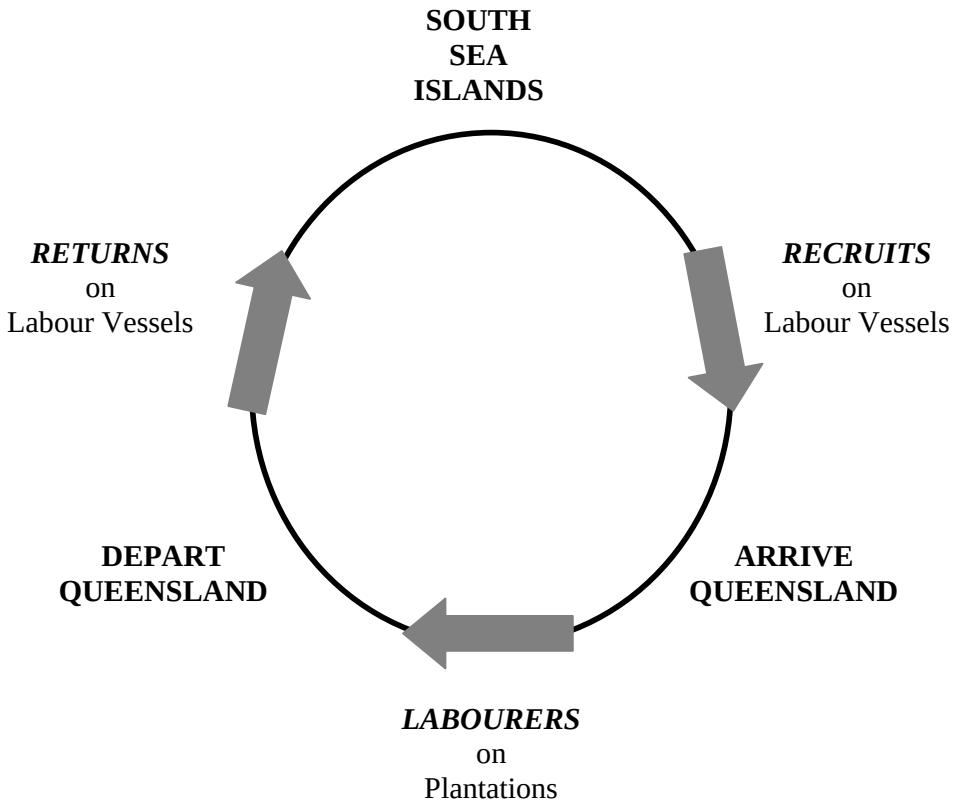

Figure 8.1 Model of Change in Islander Identity

8.3.1 Recruits

There were two types of recruits, new recruits and "old hands" who had worked on plantations before and were recruiting again. Each of these was engaged in the labour trade for different reasons and had varied responses to new situations. Each had been or would be changed in some way by their time in the labour trade. The new recruits had little or no knowledge of the labour trade while old hands had knowledge of the labour trade from either the Queensland, German or French plantations.

Recruits' individual experiences varied over time and location. As more knowledge was gained on how to adapt to and use the labour system, there were fewer new concepts to react to. However, given the diversity of the South Sea Islands, responses would have been different across regions and time. In the early period of the Queensland labour trade, there would have been fewer old hands to pass on the knowledge of how to adapt to the challenges of life in the trade. I suggest that as time

passed and with more returns arriving back at the islands, this knowledge became a commodity in its own right to be passed on or exchanged. Morrison (1882) provides an example of how Islanders with this knowledge were using the system to their advantage. Some of the Islanders who were re-recruiting specifically requested that their relatives were not to receive any trade goods in exchange for their departure. Instead the old hands demanded cash payments for themselves to be deposited in their bank account on their arrival in Queensland.

As previously stated, the pay for Queensland plantation labourers was set at £6 per annum. However, the *Argus* (1892h) reported that labourers with prior experience on Queensland plantations were offered up to £10 per annum while those from other colonies were offered about £8 a year. Thus, the Queensland labour system rewarded old hands who had served their "apprenticeship" locally above those from other colonies.

Recruiting procedures

An efficient recruiting system was essential for the profitability and long-term viability of the Queensland labour trade. Thus, as the trade evolved so did the mechanism for recruiting. The following examples provide a composite of the day-to-day activities of the recruiting process from a variety of accounts.

To notify Islanders that a recruiting vessel had arrived, shots would be fired or a charge of dynamite would be set off to attract attention (Cromar 1935). Given the uncharted reefs surrounding many islands, recruiters used smaller recruiting boats to gain access to the beaches. In 1841 sandalwood traders used two armed boats when approaching the beach to trade with the villagers (Shineberg 1971). This procedure was adapted by the labour trade for recruiting in the islands. One boat held the recruiter and the other the Government Agent. Each boat was rowed by four Islander boatmen or sailed using a "Spanish" lug sail (see Figure 8.2). As protection against attack was a principal concern, each of the Islander boat crew was armed with a cut-off musket. The recruiter and the Government Agent were each armed with Snider rifles and revolvers. The boat crews were eventually armed with Snider rifles and the European crew with Winchester rifles (Wawn 1893).

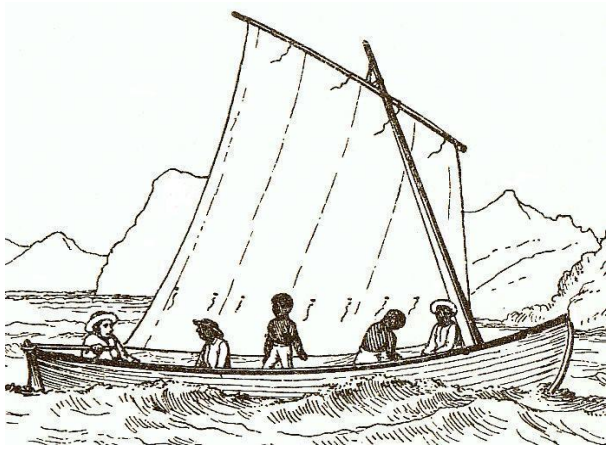

Figure 8.2 Recruiting Boat under Sail

Source: (Wawn 1893:9)

The recruiting procedure commenced with the bartering for local foods and produce. This process built up trust between the two parties. Trade goods for this purpose were kept in the recruiter's box which accompanied him onboard. Hope (1872) describes how this box was kept topped up from the main supply of trade goods on the vessel. The main items used for purchasing pigs and yams were: axes, adzes, pipes, tobacco and red calico (Hope 1872:75). Recruiting boats from the *Bobtail Nag* found it necessary to carry a set of scales when purchasing food as the Islanders wanted to verify the weight of their goods to ensure they received the correct amount of tobacco (Giles 1968).

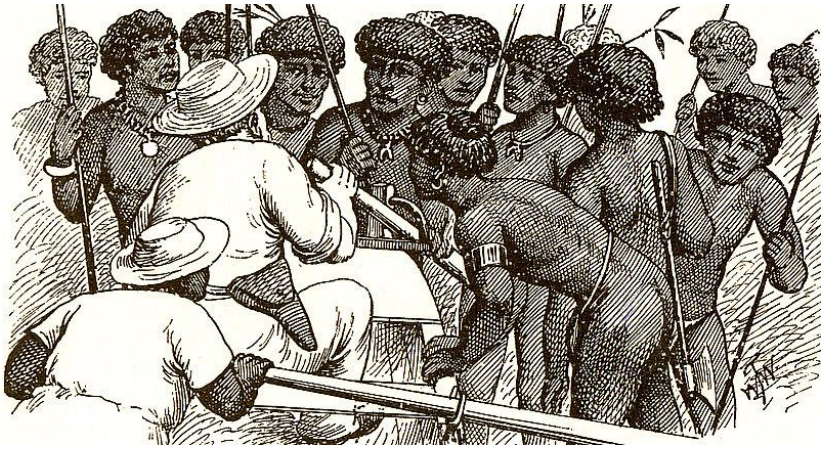

Figure 8.3 Recruiting on the Beach

Source: (Wawn 1893:11)

Once relationships were established, the topic of "boys for Queensland" would be broached. Any potential recruits would remove their shell ornaments and hand them and their weapons to a friend. Guarded by other Islanders to ensure that they were not kidnapped, these potential recruits were presented to the recruiter (Wawn 1893). Given that the recruiting process was underpinned by profit, the physical fitness of potential recruits was an important consideration and the issue of medical treatment onboard is addressed later in this chapter. The recruiter and Government Agent were willing to accept those who could be cured on the voyage but were wary of those who might incur a hospital charge against the vessel on arrival in Queensland (*Argus* 1892m). Subject to suitability, the amount of pay (goods) was determined and as soon as the recruit was safely in the boat, trade goods were handed over (Wawn 1893).

However, procedures did not always go to plan. If potential recruits wanted to go but their families did not concur or demanded too much payment, a stalemate developed. If the recruit boarded against the wishes of their kinfolk, a fight between Islanders and recruiters would ensue. However, as Wawn (1893) points out, this was not common in the Solomon Islands or Vanuatu as the Islanders viewed the arrival of recruiting vessels as an opportunity to exchange produce and goods for firearms, tomahawks and tobacco.

The exchange of goods or "pay" to relatives was an essential part of the recruiting process and failure to exchange led to claims of recruits being "stolen". Recruits unaccompanied by family could approach recruiters to engage for Queensland. However, if no trade goods were sent back to their relatives in the village, Islanders would insist that the recruit had been stolen (Hope 1872). This use of the terms "pay" and "stolen" led to many reports of slavery in the press (Wawn 1893). The debate surrounding the recruitment of South Sea Islanders continues as a point of contention within the Australian South Sea Islander community.

8.3.2 Trade goods employed in recruiting procedures

Chapter three identified the types of goods purchased by returns in Queensland. This section investigates the range of goods exchanged by recruiters on the beach in order to obtain recruits. As revealed in chapter two, during the early trading systems the

demand for goods changed over time. This pattern continued in the Queensland labour trade subject to the exposure of Islanders to European goods.

Even by 1870 it was prudent to have a wide range of goods for exchange. As stated by Hope (1872:13) “It was never safe for you to be without what he [the Islander] wanted”. Rannie (1912) supports the need for a wide range of goods to satisfy the changing demands of the Islanders.

The type of axe offered continued to be important in some locations. In 1877 at Aoba, the most sought after articles for trade were firearms and American tomahawks. The English fantail tomahawks failed to impress and would not be accepted (Giles 1968). This indicates that even in the early period of the labour trade Islanders were dictating the exchanges.

Firearms were also subject to trends. Initially, the men on Tanna only wanted “Tower” brand Brown Bess muskets as they knew that these muskets could handle a large powder charge. Over time this desire changed until a Tanna man would accept nothing short of a repeating rifle (Wawn 1893).

Despite the growing exposure to European goods, not all areas of the South Sea Islands had been infiltrated. In 1877, in Vanuatu, at the passage between the islands of Mallicollo and Santo the crew of the *Bobtail Nag* came across a group of Islanders who did not appear to have any European goods. No one in the group spoke any form of English so when tobacco was offered as a gift, they sniffed at it and threw it away. However, tomahawks and calico were accepted (Giles 1968).

By comparing and cross-referencing a number of historically based works with records from the Queensland State Archives, it has been possible to develop a representative example of what trade goods were exchanged for recruits (see Table 8.1). The table has been compiled in order to show change over time.

As revealed by Table 8.1, the quantity of goods exchanged for a single recruit steadily increased over time with firearms, tobacco and metal tools being the main items of trade. After the 1884 ban on firearms, the quantity of tobacco required for exchange

dramatically increased. Paton (1894) asserts that by the 1890s a recruiting vessel would be carrying, on average, between £500 and £600 worth of trade goods.

It should be noted that in the 41 years of the Queensland labour trade's operation, and unlike the sandalwood trade, there was no demand by the Islanders for a return to traditional goods for exchange. This may have been due to the diversity of island cultures involved but more likely it was due to Islanders going to Queensland where the trade goods were on sale and the Europeans had control of the exchanges. The Islanders had control in the islands, but once on a vessel it was the Europeans in control.

Table 8.1 Trade Goods Exchanged for Recruits over Time

Year	Trade Goods
1875	10 sticks [approx 0.74lb/0.33g] of tobacco, pipes, a tomahawk, a knife, calico and maybe a musket (1)
1877	1 musket and tobacco (2)
1877	1 musket, tobacco and pipes (3)
1882	1 musket, 1 box of percussion caps, 2 tins of powder, tobacco and 1 pipe (4)
1883	1 musket, 1 lb (0.45 kg) of powder, 1 box of percussion caps, 4 clay pipes, 10 sticks [approx 0.74lb/0.33g] of tobacco (5)
1883	1 musket, 4 tins of percussion caps, 1 axe, 1 half axe, 1 large knife, 4 tomahawks, 40 sticks [approx 3lb/1.4kg] of tobacco, 2 fishing lines, 100 fishing hooks, cloth and two handfuls of beads (6)
1892	400 sticks [approx 29lb/13.2kg] of tobacco, clay pipes, 12 boxes of matches, 3 axes, 4 knives, 1 sheath knife, 1 pair of scissors, 24 fishing hooks, 1 fishing line and cloth (7)

Source: (1) Wawn (1893), (2) Giles (1968), (3) Wawn (1893), (4) Morrison (1882), (5) Cromar (1935), (6) Giles (1968), (7) *Argus* (1892e)

8.3.3 Sign on procedure

Once the transaction had been completed on the beach, new recruits were taken back to the main vessel where they were signed on for their three year contract. A first hand account of this procedure is provided by the *Argus* (1892e). The recruits were taken onboard, accompanied by an interpreter. The Government Agent asked the recruits, via the interpreter, their names which were entered onto the inward passenger list. The Government Agent then informed the recruits of the period of their engagement, their pay per year and when they would be returning to their village. If the recruits understood and agreed they were asked to touch the Government Agent's pen. The Captain attached a strip of material with a numbered tin tag around each recruit's neck. The recruits then received a length of calico, blankets, pipe and tobacco (*Argus* 1892e). Hope (1872) gives a similar version of the sign-on procedure although in that instance the local chiefs were present in the cabin. Adherence to the procedure is borne out by Cromar (1935), Giles (1968), and Morrison (1882).

A majority of the male recruits were naked and the women wore calico 'sulus'. The regulations required that European clothing be provided to the recruits as soon as they signed on. However, it was never handed out at that time. The *Argus* (1892h) stated that the Government Agent was encouraged to use his discretion as to when the clothing should be worn. As the reporter pointed out, it would have been cruel to force the recruits to go from naked to fully clothed in the confined spaces of a ship from the moment that they were officially signed on. It should also be pointed out that the recruits did not have trade boxes or separate areas to store their European clothing and even if they wanted to wear the clothing, they would have arrived in Queensland wearing rags by the time the recruiting voyage was completed. This arrangement also saved the vessel owners the extra expense of providing additional clothing.

Another reason that the women onboard may not have wanted to cover their upper bodies is that many of them had undergone a painful tattooing process that, in their culture, was a mark of beauty. After enduring the procedure, they wanted to show off their marks, not hide them (*Argus* 1884a). This scenario exemplifies cross-cultural differences in the perception of the human body and identifies another imposed change to Islander attitudes brought about by the material culture of the labour trade.

8.3.4 Boat crews

Islanders' employment in the Queensland labour trade was not just limited to that of plantation labourers. Employment as boat crew provided another avenue for the acquisition and movement of trade goods into the islands. Islander boat crews were not a permanent part of the vessel's company. Boat crew were usually recruited in the early stages of the voyage and were returned to their villages either before the vessel departed for Queensland or on the next return voyage (Hope 1872). As previously stated, the development of Islander boat crews indicates a change in the way some Islanders engaged in the labour trade. Islanders who worked as crew and occasional interpreters were taking on active roles in the transportation of their fellow Islanders and were paid in trade goods for their participation. At the beginning of the labour trade, they were paid at a rate of £1 per month. However, this soon increased to £2 or£3 per month.

Hope (1872) cites a particular voyage earlier in the trade where members of the boat crew were each paid with a gun, powder, shot, tobacco and calico. Boat crews would trade and exchange their own trade goods (Islander and European) with the inhabitants of the islands that the vessel visited as well as with the returns onboard. After the ban on firearms, the payment normally consisted of tobacco, clay pipes, knives, axes and lengths of calico (Giles 1968; Melvin 1977; Wawn 1893). It appears that boat crews were paid at a higher rate than the labourers in the plantations. At £2 a month it would only take three months of work to earn the equivalent of a year's wage in the plantations.

8.3.5 Arrival in Queensland

Legal procedures for arrival were addressed in chapter three. The following gives examples of the preparations that took place on board prior to arrival in Queensland. Prior to arrival, the Captain had recruits scrub the accommodation hold. According to the *Argus* (1892m:5) they attacked the hold "as if they were falling on a hostile tribe for whom they had no quarter". Whitewash was handed out and the recruits delighted in painting their faces and bodies with designs.

A few days before arriving in Queensland, the clothes required by the regulations were distributed to the recruits. The *Argus* (1884d) reported that the clothing was new and clean but of a poor standard. The Government Agent had to trim the hems of some trousers to fit the smaller boys. All the men received a Crimean shirt and a pair of blue trousers. The fit was never good as the waist of the trousers was always too big for the Islanders. The women received one cloth petticoat and a print gown each. The regulations required the provision of a "wincey dress" however print gowns were provided as they were cheaper. The petticoats caused some consternation and the crew had to assist with the fitting. After the clothes had been issued and tried on, the recruits were instructed to store them below decks and not to put them on again until the day of arrival in Queensland (*Argus* 1884d). It was estimated that the cost of these poor quality garments would not exceed seven shillings and sixpence per person (*Argus* 1884d). This equates to a total outlay of £45 for clothing 120 recruits. Once again, cost cutting measures were employed to increase profit. Hope (1872) states that clothing was generally bulk purchased wholesale in Sydney and as such was second grade quality at best.

As the vessel approached the port, recruits donned their clothes. The women looked very pleased with their brightly coloured print dresses. On arrival medical inspections were carried out, as was the confirmation that the Islanders had been recruited freely. The doctor examined each recruit on the Government Agent's list. The examination was conducted with recruits fully clothed (see Figure 8.4). This appeared odd to the reporter from the *Argus* as he was sure that if the doctor was to see the state of some of the bodies, he would have rejected some of the recruits (*Argus* 1884d)..

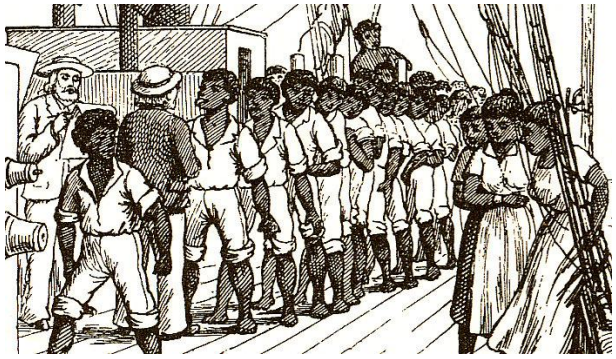

Figure 8.4 Medical Inspection on Arrival in Queensland

Source: (Wawn 1893:52)

Following all of the procedures described in chapter three, the recruits departed for their plantations to become labourers.

This section describes the first phase of Islanders' changing identities as they engaged with the Queensland labour trade. Moreover, it introduces some of the European mechanisms by which Islanders were transformed into recruits, in particular recruiting methods, the sign-on procedure and the trade goods used to facilitate that process.

8.4 Labourers

On arrival in the sugar cane fields the process of change continued as the recruits become labourers in a system that already had an established organisation. The new labourers would tend to gravitate towards groups from their own islands. The Christian Missionary groups also had an influence on the labourers. By the time the labourers were ready to depart they were not only individually a different person with new knowledge and experience, they faced the problem of going back to a system that was completely different to the one in which they had just spent three years. This was particularly so for the young men and women who came to Queensland in their formative years. In so doing they would not have had access to the cultural and ritual education they would have received on the islands. Thus, on their return as adults, they had gained knowledge about the Queensland labour trade but potentially arrived without the knowledge they would have needed in their islands.

8.5 The Returns

Just as the recruiting vessel had brought together recruits from different regions and socio-economic systems, the returns on the vessels came from different plantations each with their own systems requiring varying responses by the labourers to new situations. Just as the recruits were divided up when they arrived in Queensland, returns were allotted to a vessel on an "as available" basis. All of the returns on an individual vessel may not have been from the same plantation or even from the same area. The *Foam's* last voyage is an example of this. As stated in chapter six the *Foam* departed from

Maryborough on the southern Queensland coast with 12 returns. It sailed to Dungeness in north Queensland to collect a further 72 returns before departing for the islands. The common bond between all of the returns was that they had been recruited, spent three years working in the sugar plantations, had adapted to new challenges and were now on their way home with a box replete with European goods. It could be argued that in part, these common bonds replaced the traditional ones that regulated island life.

The departure of a recruiting vessel was not only a significant event in the Islanders' life it was also a boost to the local economy. The *Argus* (1892b) states that when the *Helena* departed, returning Islanders spent approximately £300 purchasing the goods for their trade boxes. Moreover, the vessel's agents injected at least £1000 into the local economy through the purchasing of goods and equipment needed for the voyage, payments of debts to boarding houses, and advances made to the crew.

The trade box system was developed to a point where participation in the labour trade was a *rite de passage* for some young South Sea Islanders (Graves 1983). In 1892, Bishop Selwyn wrote that "the hope of acquiring a trade box and then getting rid of the...lavish gifts, proved irresistible to...younger minds" Graves (1983:102). Corris (1973) asserts that the need for the Islanders to return with trade goods became so strong that Islanders would often sign on for an extended period rather than face the humiliation of returning empty handed. An example of this comes from the last voyage of the *Foam* where all of the Islanders rescued from the wreck were re-engaged to work on the Ashburton plantation near Mackay.

Chapter three addressed the types of goods purchased by returns and the changes over time for different goods. Before the ban on firearms, returns arriving with their trade goods had their gunpowder and ammunition taken from them on their arrival at the vessel and returned when they were due to be landed (Morrison 1882). After the ban, all of the returns were assembled on the deck along with their trade boxes and the contents inspected for illegal goods such as dynamite, firearms and ammunition. This was quite an effort as some of the boxes weighed about 2 hundredweight (101 kg) (*Argus* 1892b).

While waiting to depart, the returns occupied themselves playing cards, smoking and partaking in *sing sings* in their accommodation hold. They shaved using European razors, broken glass or cockle shells. Aside from using the ear lobes for decorative use by inserting tortoise shell points and beads, the holes were also used as handy places to carry pipes, tobacco and matches (see Figure 8.5). The returns were dressed in hats, shirts, trousers, necklaces and armbands (*Argus* 1892b). This is particularly significant as Islanders were observed wearing armbands with European clothing. The significance of armbands in the Queensland labour trade has been addressed in the previous chapter. Further, it is possible that these were ceramic armbands similar to the ones recovered from the *Foam*.

Figure 8.5 Mallicolo Man with a Clay Pipe Through his Ear lobe

Source: (Wawn 1893:77)

Before a recruiting vessel could depart for the islands, the medical officer had to inspect all returns. Hospitals had been set up specifically to care for labourers (Saunders 1976). Despite this, there always appeared to be a number of returns arriving at the docks in a less than healthy state for the voyage home. The *Argus* (1892b) reported that onboard the *Helena* one man arrived suffering from consumption and another had bronchitis. The medical officer prescribed some medicines for them but the consumption sufferer was not expected to survive the voyage home.

The contents of the returns' trade boxes did not remain fixed for the duration of the voyage. Giles (1968) describes returns trading the contents of their boxes on the deck of the vessel even before the vessel departed. Morrison (1882) states that European crew would trade with returns for clothing and blankets for far less than their actual value. Sometimes only a few sticks of tobacco were exchanged. A new blanket worth 14 shillings in Queensland was purchased from a return for 1 lb of tobacco worth two shillings and sixpence. A new pair of boots worth 13 shillings were exchanged for tobacco and matches worth 1s 6d (Morrison 1882).

Having moved from recruit to labourer, the final phase of an Islander's engagement with the Queensland labour trade was that of return. The returns possessed their own collection of trade goods and stood to reap the benefits of their three years as a labourer. The arrival at their home islands was the start of a new Melanesian cycle of change as the returns re-adapted to island life.

8.6 Arrival at the Islands.

Morrison (1882) reports that as the vessel approached, the returns for that island were given back their firearms and ammunition to pack away in their boxes, then they changed into their going ashore outfits. The standard outfit consisted of a new coloured shirt, a pair of white moleskins, new boots and a felt hat (see Figure 8.6). However, there were reports of grey bell-topper hats with long puggarees and scarlet and gold military jackets topped by black and gold smoking caps. Giles (1968) provides an account of an Islander wearing a black coat with riding trousers, a black bell-topper hat, lemon coloured kid gloves, a red neck tie and a silver watch and chain.

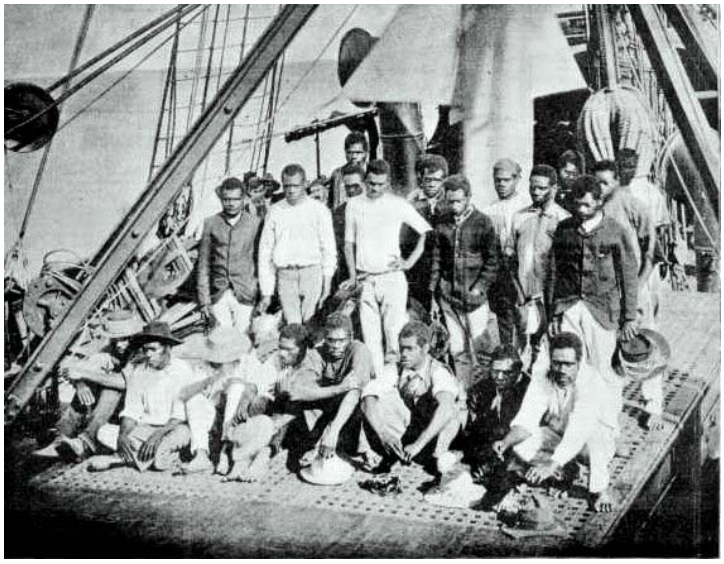

Figure 8.6 Returning South Sea Islanders, 1893

Source: La Trobe Picture Collection**,** State Library of Victoria, IAN 01/02/93/5

The *Argus* (1892c) states that some of the returns were wearing new tweed trousers, red and blue striped shirts, straw hats with broad brims and scarlet bands of turkey twill and leather belts with sheath knives attached. The *Argus* reporter remarked on the contrast between the returns and the Islanders on the beach. The returns were fully dressed in European clothes (see Figure 8.7) and in possession of a box of valued goods, while the Islanders wore only a belt and a short piece of cloth.

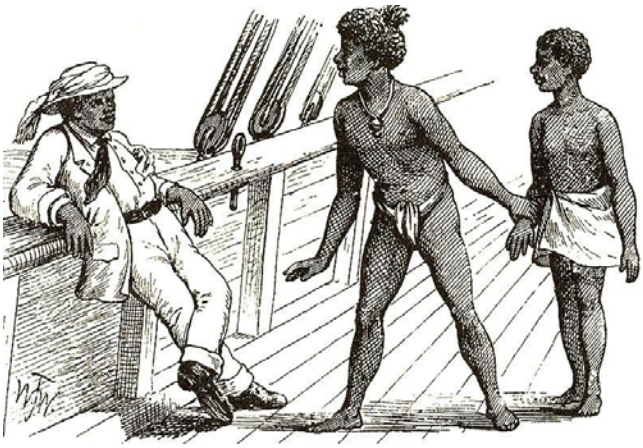

Figure 8.7 Return with New Recruits

Source: (Wawn 1893:18)

As previously explained, some returns arrived at their villages with less in their trade box than they started with. The *Argus* (1892i) describes how some returns were talking to each other in the boat on the way to the beach. The interpreter informed the European crew that they were working out how they were going to explain to their relatives the now nearly empty state of their trade boxes. The returns decided to tell their relatives that they had been very poorly paid in Queensland and therefore could not buy many trade goods. They wanted to conceal the fact that their boxes were full when they departed Queensland and that they had traded the contents at various islands on the return voyage for betel nut and other desirable island pleasures (*Argus* 1892i).

When the returns were landed, their female relatives would swarm around them. The males would hand their weapons to the women and rush to the boats to assist in the unloading of trade boxes. After unloading, the males would return to the boat and request tobacco and matches. How long the returns remained in possession of their new clothing or the contents of their boxes once they left the beach was something over which the recruiter and the Government Agent had no control (*Argus* 1892c). Cromar (1935) relates that when the returns landed on the beach they were surrounded by the women while the men took everything from their trade boxes.

Compared to three years prior, returns had a completely different persona. They arrive on the beach as a completely separate group or as a newly identified group both in terms of their own identity and in terms of the identity they are given on their arrival. These were people who had been away and they are viewed as being different. It is not known about the responses to the returns, but they were very likely to be different across the regions. Were they viewed as being dangerous or beneficial to social and economic order? Because of their knowledge, were they viewed was being valuable or controversial?

The other unknown is how the returns viewed themselves. All of the accounts are about what happened to them when they returned. From the material culture [clothing] one can support the idea that they were proud of themselves and their new possessions and eager to show them off. However, it is not possible to get any real perceptions about what the returns thought about themselves.

8.7 Life Onboard - Contact and Change

Having established the transformation of Islanders' identities as they moved through the Queensland labour trade cycle, an examination of life onboard is warranted. As discussed in chapter one, this will bring to light the role of vessels as sites of change in their own right. Once onboard labour vessels, Islanders had to adapt to a European way of life. By examining the general activities performed by the Islanders, their diet, gender issues and their introduction to European medical practices, we can gain insights into what brought about changes in the Islanders' daily life as recruits. Life onboard for recruits and returns involved a variety of activities. The following vignettes from various voyages offer insights into these activities.

On the *Helena*, recruits under the supervision of the Boatswain and another crew member restocked the wood and water supply for the voyage back to Queensland. The crew, assisted by some of the recruits, were also busy scrubbing the outside of the vessel and removing rust stains. The accommodation hold was also scrubbed and whitewashed. On the *Lizzie* half of the recruits were woken early (port side bunks one day, starboard the next) and set to work scrubbing the deck with water, sand and half coconut husks. The recruits were paid in tobacco for any tasks they carried out while onboard and when not employed in cleaning the vessel or preparing food, they were free to do as they wanted (*Argus* 1892m). Recruits from different islands who would normally be mortal enemies soon became friends and even comrades. Members from individual island groups still banded together if a dispute developed. However, generally all onboard mixed freely without any attempt to attack members from other groups (*Argus* 1884d). It was common for the recruits to form up into their island groups and perform dances and *sing sings* on board. On occasions, all of the Islanders would join in on one combined *sing sing* (*Argus* 1884b).

When visiting the *Empreza* in the islands, Melvin, a reporter with the *Melbourne Argus* observed Islanders having a *sing sing* on the deck. Then descending a ladder into the hold, he noted about 30 or 40 Islanders engaged in an Anglican service. A Florida Islander who had trained as a missionary on Norfolk Island was conducting the service. The unusual combination of a church service below deck and a *sing sing* on deck was

not lost on him (*Argus* 1892d). This episode provides evidence of the ability of the Islanders to accept new systems into their own and co-exist with them.

Recruits were schooled in the answers they were to give to the Inspector of Pacific Islanders on their arrival in Queensland. On Sundays, when it was time to distribute the weekly supply of pipes and tobacco, the Government Agent would ask each recruit "Where you go work?" "How long you go work?" "How much you get one year?" and "What you work along?" If the recruit was unsure, the recruiter would coach the recruit in a soft voice. When the questions were finally answered correctly, the recruit received his weekly supply (*Argus* 1892h). It should be noted that even though the regulations required that the recruits receive their pipes and tobacco each week, tobacco was being used as an incentive or a form of social control.

Recruits also received knowledge from the returns onboard who passed on what they could expect and their rights while in Queensland. According to the *Argus* (1884c), the recruits from the bush took longer to adapt to their new way of life.

On the voyage to Queensland, it was not only the recruits who were changing. The *Argus* (1884c) provides evidence of European passengers on the voyage and in particular a five year old European girl. Even one day in a small saloon was too much for the child so she was taken care of by any number of male and female Islanders. By the end of the voyage the girl was adorned with beads around her arms and ankles and her speech became totally bêche-de-mer English (*Argus* 1884c). This illustrates how being part of a community confined onboard facilitated change in both directions and that Islanders were not the only group affected.

8.7.1 Life Onboard - Gender

Of significance in the 1880 Act is the inclusion of the female clothing provisions. Prior to this, women were fitted out with what ever clothing was available. Hope (1872) recorded that a female recruit was supplied with a man's shirt and a petticoat made from a blanket. The 1880 Act was the first time women were specifically mentioned in the regulations. This raises specific gender questions about their accommodation on board.

The Regulations under the 1880 Act (s5) required that women and married couples were provided with their own accommodation space separated from the main male accommodation area. It appears that the recruiters already knew the value of separating the sexes well before the regulations came into force. Wawn (1893) states that in 1875 on the *Stanley*, the female /married accommodation at the rear of the hold was separated from the main accommodation by a bulkhead of four inch (10 cm) battens spaced four inches apart. This method of physical separation appears to have remained in use throughout the trade. This is evidenced by the *Argus* (1892b) report that the *Helena*'s female quarters were at the rear of the accommodation hold and were separated by wooden battens.

Married couples kept to themselves most of the time. Their bed was one broad shelf or bunk in the partitioned section of the hold. This bunk had been used for storage on the outward voyage. The women spent most of their time sleeping and did not venture far from the poop deck (*Argus* 1892b). Once a week the women came up on deck to bathe. They squatted down and buckets of water were thrown over them by the boys scrubbing the deck (*Argus* 1892c).

Sometimes a man recruited with more than one wife. As the regulations did not extend to polygamy, this caused the Government Agent some concern as he was required to enforce the regulations. The *Argus* (1884a) reported that the situation was normally resolved by marrying the extra wife or wives to single men onboard so that on arrival in Queensland each man had only one wife. Conflicts over the wives being married to another man, especially if that man was not considered a suitable match or indeed a traditional enemy, had to be sorted out onboard without any guidance from local knowledge. While this arrangement provided a quick solution for the recruiters and Government Agents, the long term implications for the Islanders involved were immense. For example, if they came from a matrilineal society, being separated from a wife may have resulted in separation from her land with the consequent loss of status upon their return three years hence. Notwithstanding any emotional attachment between the couples, any "new" marriages could have led to physical separation as there was no guarantee they would be recruited to the same plantation.

The spatial living arrangement of married couples sleeping in the same place would have been at odds with the cultural mores to which they were accustomed. The situation would have been more complex if there was more than one married couple and they were from different islands. As stated in chapter five, the physical environment of the recruiting vessel forced Islanders to change as their normal responses to situations were no longer viable and new arrangements had to be developed. Moreover, it was change caused by contact but driven by Melanesians as Melanesians.

8.7.2 Life Onboard - Diet

Recruiting vessels were the sites of change brought about, in part, by the cross-cultural mechanism of introducing Islanders to European food. A major part of daily life on a recruiting vessel (or any vessel for that matter) was meal times. Prior to 1868, no regulation existed governing the type or quantity of rations provided to Islanders onboard recruiting vessels or on plantations. The *Polynesian Labourers Act of* 1868 detailed separate diets for Islanders on recruiting vessels and those working on plantations. Research into the suitability of the 1868 diet for plantation workers was conducted by Saunders (1974) and later by Moore (1985) with conflicting results. However, until now no analysis of the shipboard diet or the effect of the legislated changes to those diets has been conducted.

To resolve the issue of diet suitability and to help our understanding of the process of change, the separate diets were initially analysed by Melanie Hedrick and Anita Reeves from the Department of Dietetics and Nutrition (DDN) at the Townsville Hospital using Xyris software programme *Foodworks* Version 2.10.136, copyright 2000. The diets were later re-calculated by Dr Madeleine Nowak of the School of Public Health and Tropical Medicine at James Cook University using *Foodworks Profesional 2005*.

The results of this analysis for both the plantation workers and the Islanders onboard are provided in a stand–alone document (see Appendix 18). The changes brought about by legislation over time are examined and the diets are compared with the diets of the 1788 First Fleet and the emigrants to Australia in 1858. A summary of results for the onboard died follows.

The diets and the Foodworks analysis of them are shown in Tables 7 to 11 of Appendix 18. A graphical representation of the results is presented in Figures 8.8 and 8.9. The analysis revealed that the 1868 shipboard diet provided insufficient daily energy (kJ) for males but more than the minimum requirement for females. Protein levels were well above the minimum for both sexes. Both Vitamins A and C were above minimum requirements, and carbohydrates provided 60% of the daily energy. The introduction of the 1880 diet removed meat from the diet and an increased the quantity of potatoes. This resulted in a further decrease in daily energy and a substantial decrease in protein; however the level of Vitamins A and C increased. The percentage of daily energy (kJ) provided by fat decreased to just over 1%, while the carbohydrate level rose to 89%.

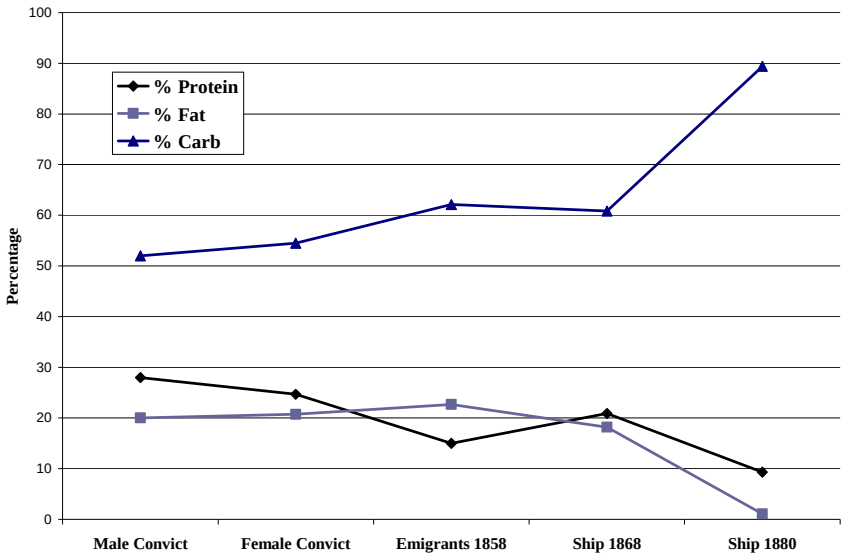

Figure 8.8 Comparison of Percentage of Protein, Fat and Carbohydrates

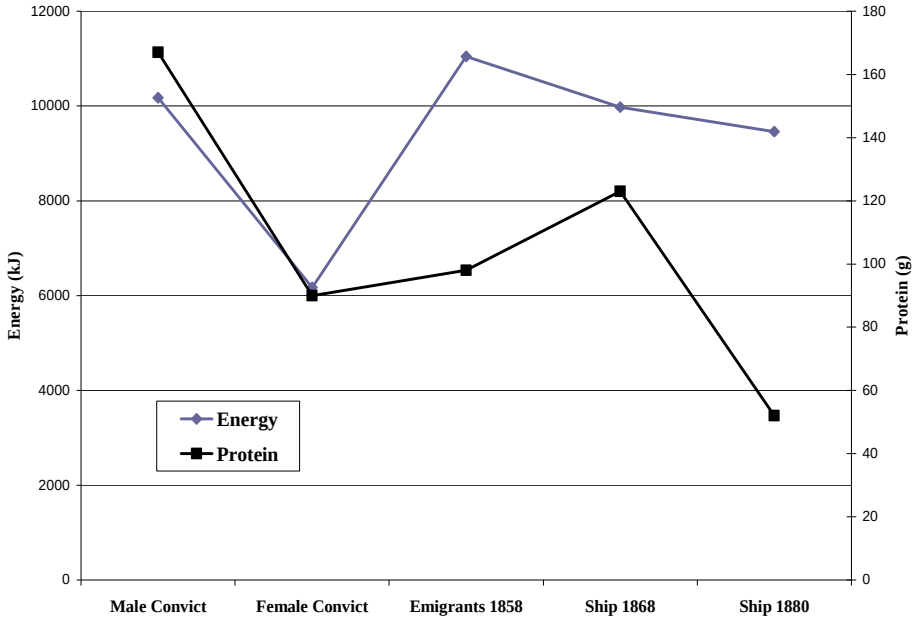

Figure 8.9 Comparison of Levels of Energy and Protein

According to Melanie Hedrick from DDN, a diet low in fat deprives the body of fatty acids which can result in itchy and flaky skin, poor wound healing and diarrhoea. A diet low in protein in combination with a low kJ intake can cause oedema (accumulation of excess fluid in the lungs and abdominal cavity) and increase susceptibility to infections. In addition, if rice was the main component of the diet provided onboard recruiting vessels, the South Sea Islanders may have also suffered from riboflavin deficiency with symptoms including seborrheic dermatitis (flaking of the skin), cracking of the tissue around the corners of the mouth, inflammation of the mouth and tongue and possibly confusion (Hedrick 2004 pers.com)

The diet legislated for the First Fleet convicts (Appendix 18, Tables 9and 10) provided inadequate daily energy for both sexes, however protein levels were good. Vitamin A was insufficient but Vitamin C was adequate and carbohydrates provided just over 50% of the daily energy (kJ). The diet for steerage emigrants (Appendix 18, Table 11) provided abundant daily energy and protein levels however both Vitamins A and C were insufficient. Carbohydrates provided just over 60% of the daily energy intake.

In summarising the analysis for the onboard diet, the 1880 changes decreased the already inadequate daily energy level and drastically reduced the protein levels to the extent that male convicts on the First Fleet were receiving higher levels of daily energy and protein. Female recruits / returns would have received sufficient daily energy and protein. Of all the diets, the shipboard diet post 1880 was the highest in carbohydrate levels (89.4%).

8.7.3 Life Onboard - Medical

Recruiting vessels were also the vehicles by which European medicine and medical practices were introduced to large areas of the South Sea Islands. In addition to those onboard, Islanders would visit vessels to seek medical help especially for coral cuts which quickly became infected and took a long time to heal (*Argus* 1892m). Some Islanders recruited so that their ailments would be treated onboard or in a Queensland hospital. Most treatments dispensed were for sores resulting from untreated coral cuts or boils and skin diseases but sometimes treatments for various sexually transmitted diseases needed dispensing (*Argus* 1892m; Cromar 1935). Hope (1872) asserts that Islanders were more impressed by having their ailments treated than they were by displays of fire power.

As dictated by the *Polynesian Labourers Act of* 1868, recruiting vessels were required to carry medical supplies. The *Pacific Island Labourers Act of* 1880 continued this requirement. The Act stated that the Captain and Government Agent were in charge of the medical cabinet and included an edict that instructions were to be issued for the use of the medical supplies. It could be argued that these instructions served as a substitute for training as there was no requirement in either the 1868 or 1880 Acts for the Government Agent to receive any formal training in the use of the medical supplies onboard. According to the *Argus* (1884a), the life of a Government Agent onboard a labour vessel was not a pleasant one. On shore he was liable to be infected by fever or attacked and onboard while attempting to treat various ailments, the Government Agent was vulnerable to infection.

In 1892, on the *Helena*, the task of providing medical care was handed over to the supercargo. To equip him for the task, the Captain provided the supercargo with a weighty tome entitled "*The Practical Home Physician and Encyclopedia of Medicine*". This volume ran to over 1000 pages and weighed about 8 lbs (3.5 kg). Initially, the demands for medicine were so numerous that the supercargo was not able to study this book and had to resort to a handier reference entitled "*The Ship Captain's Medical Guide*". Revised editions of this work are still printed and used today on vessels all around the world. The supercargo soon became proficient in mixing and dispensing ointment for sores, lotions for mouth ailments and mixtures for colds. A cough mixture was manufactured by combining "powdered ipecacuanha, paregoric and sweet spirits of nitrate with prescribed proportions of sugar and water". It became a daily task to find empty bottles and containers to hold the various mixtures and lotions prepared from the medicine chest (*Argus* 1892b). The need to reuse bottles and containers to store medical supplies indicates a change in the European use of those containers brought about by necessity. Further, the reuse indicates that the arrangement for distributing medicine onboard was inadequate at the time.

Vessels did not keep their medicine chests fully stocked. Hope (1872), who further asserted that a knowledge of the basic medicines and a well stocked medical chest was essential, remarked that his medicine chest only contained: Epsom salts, castor oil, opium, quinine, Halloway's Ointment, linseed, ipecacuanha, tartar emetic, bluestone and brandy. Morrison (1882) mentions that the medical chest on his vessel contained: castor oil, tartar emetic, tincture of iodine, linseed poultices, Chlorodyne, and sulphate of zinc, ipecacuanha, mustard plaster and antimonial wine. An example of what a medical chest should have contained, according to the *Navigation Act of* 1876 (NA 1876), is detailed in Appendix 19

Dysentery was a common aliment and proved very hard to eradicate from a vessel. Similar to earlier examples, the Government Agent on *Bobtail Nag* also had to make do with the inadequate medical supplies. To treat dysentery, he mixed up brandy, laudanum, rhubarb, ground-up clay pipes and ginger. According to Giles (1968), this mixture was able to "ease the pain and lessen the haemorrhage". The *Bobtail Nag's* Captain had the hold whitewashed with lime and fumigated twice a week but Islanders

still contracted dysentery and died from it. Their diet (see Appendix 18) was not helpful in curing it.

Morrison (1882) relates how a female return had a badly infected foot with part of the sole rotted away. Each day a strong bluestone [Potassium Permanganate] lotion was applied and eventually the infection healed. Yet another return had a large boil treated with mustard plaster. The *Argus* (1884b) has examples of the Government Agent treating cuts and sores and providing salts and senna emetic [a laxative] or tartar emetic [an expectorant].

While it appears that the level of medical treatment provided onboard was basic, this was not in fact the case. Using Saunders (1976) as a guide to the level of medical treatment available to Queensland plantation labourers, it appears that in some cases, Islanders on recruiting vessels received more medical care on a one-to-one basis than they did after they arrived at the plantations.

Unlike the historical record, the trade goods recovered from the *Foam* are of limited value in addressing the issues of general onboard activities, gender, diet and medical practices. This deficit in the archaeological record indicates that there is a major opportunity for future research involving excavation around the *Foam* wreck site specifically relating to life onboard.

8.7.4 Life onboard - Summary

Confined onboard, Islanders had no choice but to adapt to the prevailing European system. This investigation offered insights into how Islanders had to adapt through participation in general activities, acceptance of European attitudes towards gender, exposure to new diets and medical practices. For example, in the interests of their new situation, recruits had to be pragmatic and set aside any inter-island rivalries and Islander couples had to come to terms with new sleeping arrangements. Islanders' exposure to European medical practices was a positive one, especially in the treatment of serious cuts and wounds. However, by comparison, the introduction to a European

diet had adverse effects. By 1880, recruits were receiving less daily protein and inadequate daily energy levels, compared to convicts on the First Fleet.

8.8 A New Model for Contact and Change

Having examined historical, anthropological and archaeological perspectives on the history and conduct of the Queensland labour trade, and the impact that the trade had on the Islanders, it is now possible to suggest a new general model for a Melanesian view of contact and change in the islands. The model is based on the influence that the Islanders had on the conduct of the labour trade and is in two parts. The first presents a European view of the process of contact and change while the second emphasises an Islander perspective. It is the sum of the two parts that is important.

8.8.1 The Islanders-Their Impact on the Queensland labour trade

The Islanders' desire for European goods had a marked influence on their socio-economic structures. This section looks at examples of how Islanders were in control in the islands and using the Queensland labour trade for their own benefit. The influence of chiefs to act as intermediaries in recruiting was well known even in the early phases of the labour trade. In 1872, Hope was counselled that the most astute way to conduct business in the islands was to purchase a trade musket in Queensland for 15 shillings and then present it to the chief of the village as a gift. This would ensure his support in obtaining recruits from his village (Hope 1872). In 1884, the Government Agent on the *Ethel* reported that most of the labourers from the Solomon Islands were obtained from the kings [chiefs] (Corris 1973). Furthermore, in 1892 reports to the Commander in Chief of the Australian Station indicated that a majority of labourers were being sourced from the chiefs and headmen in the regions. Moreover, Corris (1973) states that several chiefs in the islands made their living from the trade goods they received for their work as intermediaries.

Those most successful were referred to as passage masters and much sought after by recruiters. Passage masters were men of rank in their communities and had wide

ranging influence in surrounding areas. Many were returned labourers, giving them insights into the machinations of the labour trade system. Their knowledge of pidgin English facilitated communication within the trade. The goods they received as payment were used to strengthen their position by distributing these goods into their own trade networks. In so doing they were able to organise manpower and relations locally for their own benefit (Corris 1970,1973). Three of the most notable passage masters were Kwaisulia from Lau Lagoon, Mahoolla from Langalanga Lagoon and Foulanger from Walande. Passage masters appear to have been key players in the mechanism of labour recruiting for a considerable period. One chief, Raha, was believed to be involved from 1881 to 1896 (Corris 1973).

The passage master's job was to send word of a recruiting vessel's arrival, ensure the safety of recruiters, and to act as interpreter. Passage masters acted as guides and interpreters to Naval authorities investigating acts of aggression. For these services, they were generously paid in trade goods (Corris 1973). Passage masters also received their fair share of the goods exchanged each time a recruit signed on together with a share of the trade box contents returning Islanders brought with them (Corris 1970; Saunders 1974; Scarr 1967).

Before the ban on firearms, Giles (1968) reports that passage masters received firearms, ammunition, tobacco, knives, tomahawks, barbed wire, mirrors and calico. After the ban, Corris (1973) states that, for two days work in which only five recruits were signed on, Foulanger received eight lbs (3.36 kg) of rice, five lbs (2.27 kg) of tobacco, matches and 12 clay pipes. Mahoolla received £2.10s worth of tobacco for one and a half months' work as interpreter and pilot. This equates to five times the wage a labourer would have earned in Queensland for the same period of time (Corris 1973).

Some recruiting captains were so keen to secure and retain the services of passage masters they were willing to exchange a ship's boat in payment. The *Argus* (1892e) reports that one of the native vessels accompanying the *Helena* into Port Adam was a red, clinker-built ship's boat of the same design and size as the *Helena's* recruiting boats. The sails were standard for a ship's boat; however the oars had been cut in half and used as paddles. This craft was owned by a chief named "Sam" [Affee-ow] from Manokwai. As Sam was a man of influence in the islands, the boat was a gift from the

captain of the recruiting vessel *Lochiel.* Corris (1973) relates that in 1894 Wawn also gave a boat to a chief called Affee-ow.

It was not only the returning Islanders who had some of their goods claimed by the chiefs. Interpreters / boat crew were subject to the same treatment. In 1884, Wawn returned some interpreters to Teste Island. They brought with them a considerable amount of trade goods as payment. This impressed the Islander wife of the local missionary teacher who had all their trade boxes taken to her house. Noticing her delight in trade goods, Wawn sought her help in obtaining recruits and interpreters by making a gift of tobacco, pipes, beads and several fathoms of printed calico. Upon exchange of the gifts, Wawn was informed that, as it was a mission station, no Islanders were permitted to leave. This infuriated Wawn as it was evident that several men were willing to sign on. Returning after this voyage, Wawn wrote about the incident in a newspaper which only caused more problems when he later returned to Teste Island (Wawn 1893). This is an unusual encounter as it is an Islander woman who is controlling the exchange of goods either for her own benefit, that of her husband or possibly for the benefit of the mission station.

Potential labourers were not physically restrained or forced onto the boats by the passage masters nor did they have the authority to order an Islander to sign on. Corris (1973) reports that the desire for trade goods, a break from the tedium of island life and an opportunity to travel were the main driving forces behind most Islanders recruiting to Queensland. Chiefs / passage masters simply had to endorse the recruiter's claims that recruits would be well treated as the chiefs had good relationships with the recruiters. However, in 1894 there was one notable exception. The captain of the *William Manson* was desperate for recruits and offered Kwaisulia a ship's boat if he could obtain recruits by force. Tempted by such a prize, Kwaisulia kidnapped three bush men from a coastal market and delivered them to the vessel (Ivens 1930).

Chiefs also hired out labour to facilitate the resupplying of vessels. A local chief informed a visiting Captain that he was free to collect as much firewood and water as he needed and that if assistance was required the chief would provide labour at a rate of two tobacco sticks and a clay pipe per labourer per day. This was indeed a very

generous rate compared to Malaita where a chief had wanted five times that amount and a separate payment to himself (*Argus* 1892j).

However, it was not only the chiefs / passage masters who were taking advantage of the arrival of returning Islanders. When a vessel arrived at a village, the locals would come onboard and trading would ensue. There are reports that before going ashore returning Islanders would eagerly exchange some of their trade goods for local items made from pearl shell, clam or turtle shell. However, some of the coastal village men came onboard and traded small shells and other items for tobacco and matches with returns from other regions. They also provided betel nut, lime powder and pungent leaves. When the returns were under the influence of this combination they were induced to open their boxes and give some of the contents to the coastal men (*Argus* 1892d; Rannie 1912).

In the South Sea Islands, an uneasy relationship existed between coastal and bush people. Traditionally, the coastal people had opposed the inland bush people recruiting as they did not want bush people gaining access to firearms. However, this resulted in a diminution of the coastal population as recruiting depleted their numbers. This situation changed in the early 1880s with the ban on firearms. The coastal people now had no threat from their bush counterparts and were more willing to allow them to recruit. In fact they became the middle men in transactions between the recruiters and the labourers from the bush (Corris 1973; Saunders 1974; Scarr 1968).

Many of the "bush" returns had difficulty in identifying exactly where on the coast they needed to be landed. When the spot was identified the returns and their boxes were unloaded. There were nearly always a number of coastal Islanders on the beach and most of them were armed. The returns from the bush needed to transport their goods back to their village. In order to do so they need to pass through the land of the coastal people and required assistance from them to carry their boxes (*Argus* 1892c). This arrangement led to a change in the socio-economic structure of some coastal villages. The coastal Islanders would not allow passage or provide porters until the bush returns give them some of their goods as payment for their services. The *Argus* reported that by 1892 some coastal villagers did not send their own people to work in the plantations

because they had access to the full range of European goods by setting themselves up as labour agents or passage masters for the bush people (*Argus* 1892c).

It appears that the coastal Islanders of the region were very happy to be middlemen in the recruiting process. The coastal villagers would obtain goods from the recruiters by acting as interpreters and informing the recruiters where and when "bush" people gathered for their markets. They would also obtain goods by demanding payment from the returning "bush" people. In fact it could be viewed as Islander to Islander exploitation; a frontier on the beach controlled by the Islanders not the Europeans. A reporter related that obtaining European goods was about the hardest work he saw the coastal men do. Most of the fishing appeared to be done by the women and bush foods were available most of the year around. The men lived a very comfortable life and work in plantations was not part of that life (*Argus* 1892d).

Having established the extent to which Islanders controlled the exchanges on the beach, the next section introduces the European perspective of this process of contact and change.

8.8.2 The European Perspective

From a European point of view the focus was on the exchanges taking place when a recruiting vessel arrived at a village. As discussed in previous chapters, there were five main functions performed while a vessel was at a village:

- the landing of returns
- the recruiting of new labourers
- the recruiting or return of boat crews
- the recruiting or return of passage masters, and
- the resupply of the vessel.

All of these actions involved the movement of European trade goods into the local socio-economic system. As shown in Figure 8.10, these processes were essentially linear in operation.

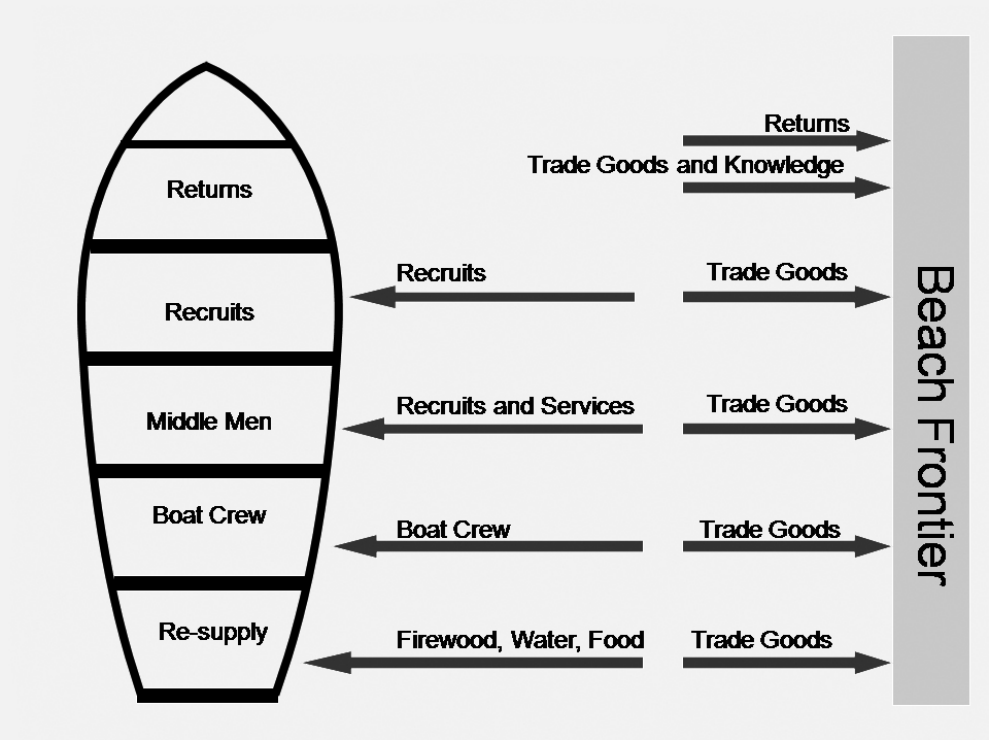

Figure 8.10 New General Model for the European View of Exchange at the Islands

The returns landed on the beach with their trade boxes. The types of goods they brought with them and how these goods changed over time have already been discussed in chapter three. The new recruits moved onboard the vessel and trade goods were passed back into the island system. The types of goods and how they changed has already been covered in this chapter. The recruiting and return of middle men / passage masters was also a linear process for the Europeans. They obtained the services of a middle man who provided them with access to recruits both in the local area and within the region where that middle man had trading partners. These services were paid for in trade goods and these goods also served to secure the middle man's services in the future.

As previously mentioned, boat crew played a vital part in the operation of the labour trade both as members of the crew and interpreters. They moved back and forth between the Islander and European sides of the operation taking advantage of the access to European goods as payment, and from returning Islanders. It is possible that the boat crew could have also been able to bring returning Islanders up-to-date with events in the region since their departure for Queensland. Finally the vessels needed to be resupplied with food, firewood and fresh water. Access to these was paid for mostly with tobacco and pipes as was the labour of the Islanders who transported the supplies to the vessel.

It is evident that the Islanders were involved in the exchanges for a variety of reasons. However, from the European view, the main aim was to arrive at a village, land the returns and recruit new labourers. All of this facilitated the movement of Islanders into and out of the islands, across the beach frontier and the movement of trade goods into the island.

8.8.3 The Islander Perspective

In contrast, the Islander view and in particular the perspective of the middle men / passage masters was far more involved and linked into their internal trade structure and therefore their status as big men or indeed aspiring big men. As stated at the beginning of this chapter, there was considerable diversity in the various socio-economic systems based on trade and exchange. However, the individuals within these systems used movement, contact and exchange to maintain and advance their position in that system.

To achieve and maintain his status, a big man needed to demonstrate his ability to manipulate his trading contacts and the exchange of goods between them in order to secure the required number of pigs or other ceremonial gifts both for the living and the spirit world. A big man needed to be able to move beyond his own area of influence to arrange trading networks. This ability to travel was in itself a privilege of status. A general model of this system is shown in Figure 8.11.

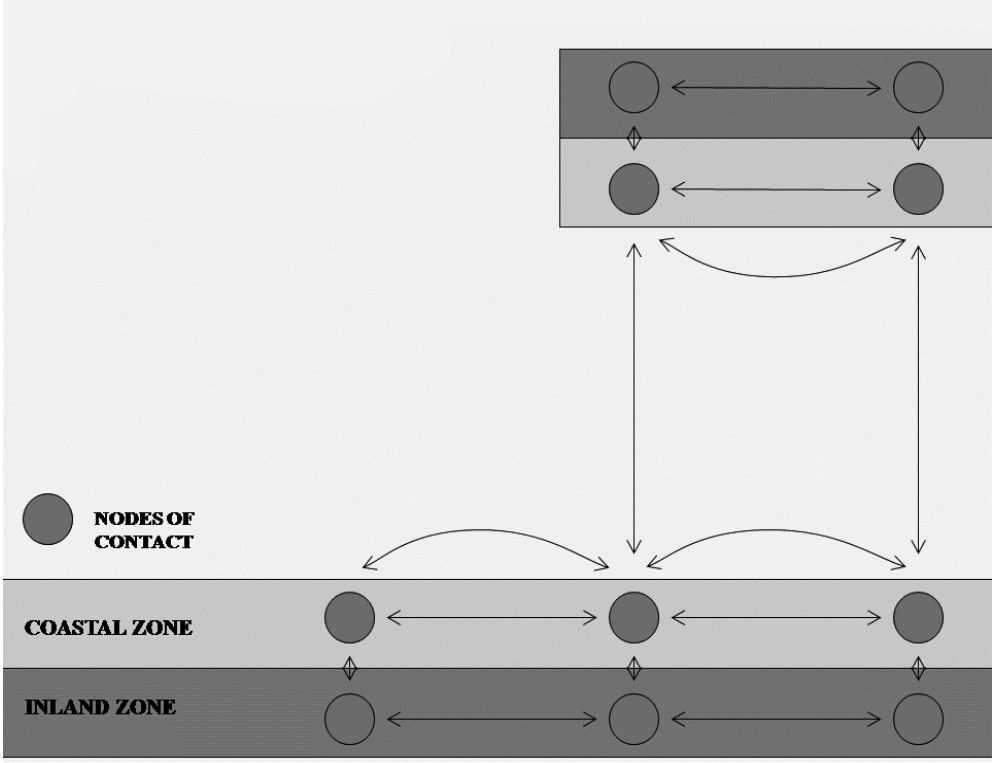

Figure 8.11 New General Model for the Islanders View of Exchange at the Islands

In this simplified general model there are trading links between individual big men on the coast and inland big men. There were also trading links with partners on other islands and it was by manipulating all of these contacts and the goods that passed between them that big men attempted to possess the required number of pigs or customary items at any set time.

8.8.4 Synthesis

The arrival of a recruiting vessel at a village or other known node of contact (Figure 8.12) was the catalyst for a series of trade and social interactions. However, it is acknowledged that Europeans were engaged in complex voyages involving ongoing relationships with middlemen and multi-village recruiting. To represent every type of contact across the whole of the South Sea Islands in a single model is not possible.

Therefore this synthesis is a general model that examines the changes brought about by the contact between the European and Islander systems across the beach frontier and allows a new Melanesian perspective to be developed.

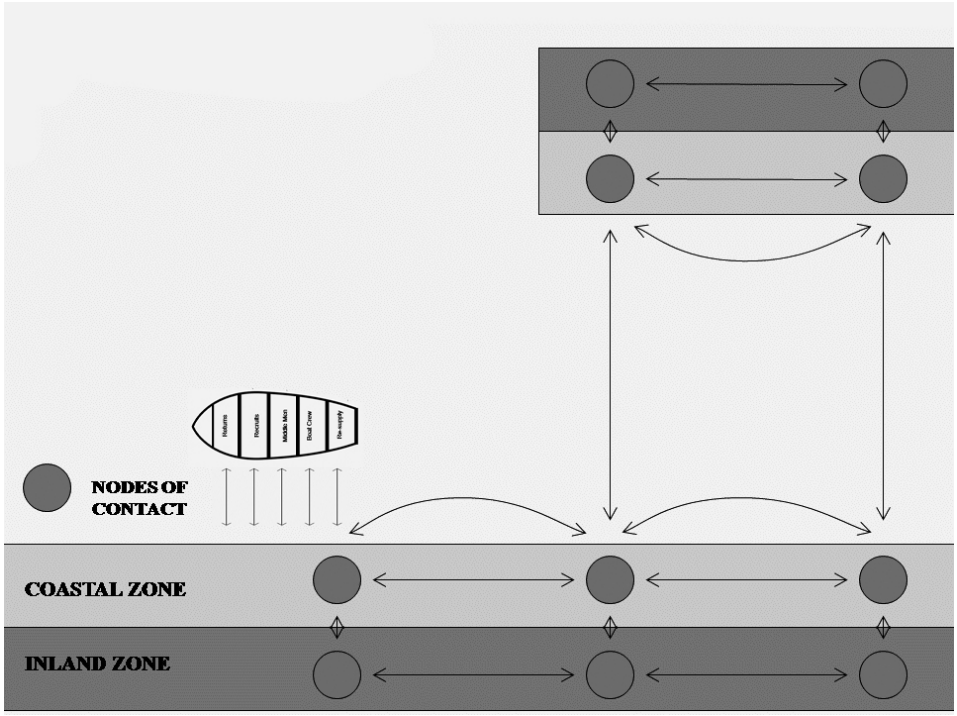

Figure 8.12 Interaction of European and Islander Systems

Two changes not apparent in the archaeological record were, firstly, the knowledge of the labour system that the returns brought with them. As previously mentioned, this knowledge was a commodity in its own right that the returns could use to their advantage. Secondly was the difference in perception between the linear European and complex Islander view of contact and its duration. To the recruiter and the Government Agent, the process lasted until they sailed away to the next village. However, to the middle men the vessels and indeed the recruits who departed for Queensland could be regarded as part of a three year trading cycle that did not come to fruition until they returned with their goods. Thus when the *Foam* sank, the three year cycle could not be closed and the middle men would not have been able to use the *Foam*, the returns or the trade goods in their own trading systems.

The labour trade changed the very structure of an individual's ability to travel based on status. Islanders engaging as recruits in the labour trade had access to movement and a range of European goods that would normally have taken years to acquire had they stayed in the islands. Further, a vessel's arrival provided limited access to goods for Islanders not engaged as recruits without the need to travel beyond their own territory.

This model suggests that the function of these trade goods themselves changed upon crossing the beach frontier. Bennett (1987) argues for changing ideas and value systems in the Solomon Islands. Aswani and Sheppard (2003) discusses the changing roles and functions of shell armbands in Island society as they moved between being gifts, commodities and inalienable possessions as part of a status system controlled by chiefs. It could be argued that the introduced ceramic armbands as recovered from the *Foam* along with other European goods such as metal axe heads, firearms and clay pipes also went through changes of perceived function. For example, to the recruiters the firearms, axes and pipes clearly had a function as trade goods as well as their utilitarian role. However, the ceramic armbands were specifically manufactured for trade. Further, the existence of ceramic copies of Amfat (chapter seven) clearly indicates the regional targeting of specific markets by European traders. However, once these goods entered the Island system they may well have become part of the internal trading system and changed function between gift, commodity and possibly even inalienable possession.

Another significant change suggested by this model is the activities performed by the big men. In order to assimilate the Europeans and their goods into the island system, the big men needed to become part of the European system. They did this by becoming what the Europeans viewed as middle men or passage masters. Thus, any aspiring big men had to include access to trade goods as part of their burgeoning trading network. Moreover, it could be argued that the Island middle men viewed the recruiters and Government Agents as trading partners in a system that was designed to maintain the middle men's status. Similarly, it can be suggested that the Queensland Government and shipowners viewed the Government Agents and recruiters as their middle men entrusted to ensure that European interests were maintained.

The middle men / passage masters, both coastal and inland, needed to adapt to this new system of contact and exchange. To consolidate their own position and ascendency, middle men needed to use this new ability to travel and access to European goods. It is suggested that one method of achieving this control was by offering their services as guides and interpreters. This would have enhanced the middle men's status as they were paid in trade goods that they could use within their own internal trading networks. Further, by guiding the recruiting vessel to nodes of contact where their trading partners were the middle men, they gained further status by bringing goods into their partners' trading network. The people who for the Europeans were 'middle-men' were, from their own perspective, 'big-men' or at least aspiring 'big-men' who *in effect, now had the European traders performing their traditional contact and trading voyages for them*.

8.9 Concluding Remarks

This chapter set out to address how Islanders were changed through their engagement with the Queensland labour trade. Moreover, the question of whether the Queensland labour trade was affected, changed or controlled by those same Islanders was posed.

Melanesian diversity formed the backdrop for the comparison into how the Islanders' lives were transformed. Through their engagement with the Queensland labour trade, Islanders were significantly changed as they moved through a cycle from recruit to labourer to that of a return. This chapter has illustrated that the control of trade and exchange by middle men that existed before European contact in the islands continued throughout the Queensland labour trade and that middle men were utilising the Europeans, their vessels and their trade goods within their own trading cycles.

A new model was developed for contact and change in the islands during the Queensland labour trade. An analysis of this model reveals that the Queensland labour trade was just as much a Melanesian trade as it was a European one.

Chapter Nine

CONCLUSION

9.1 Introduction

Based on the premise that the Queensland labour trade has a material expression, it has been argued here that archaeology can be used to suggest a Melanesian view of contact and change in the islands. This thesis set out to determine and has in fact demonstrated that an archaeological approach can add to our understanding of the Queensland labour trade. This was achieved by addressing three main research questions:

- How were the Islanders being changed as a result of their participation in the Queensland labour trade?
- Was the Queensland labour trade affected, changed or controlled by the Islanders involved in the trade, and
- Did Victorian society and its values, as expressed in part through a changing legislative framework, have any influence on the Queensland labour trade?

In so doing, this thesis has brought to light issues that have not been addressed by previous historical analyses of the Queensland labour trade.

9.2 Thesis Outcomes

A re-analysis of all of the legislation relating to the Queensland labour trade demonstrated that Victorian attitudes and social mores did lead to changes in the European mechanisms of operation. Moreover, the legislation and international political territorial claims determined that some island groups were frequented more by the recruiters than others. Legislative changes dictated the physical layout of labour vessels, the employment of government agents, the banning of firearms and alcohol, and a recruit licensing system.

A comprehensive vessels' database was compiled and it identified schooners as the most prevalent vessel across the duration of the Queensland labour trade. It is argued that this prevalence is due to their smaller size and the configuration of their rigging. This made them cheaper to purchase and insure and therefore more economical to operate. Further analysis revealed that the voyage patterns of recruiting vessels were influenced by the location of the returning Islander's homelands and the prevailing European geo-political climate.

When analysed as artefacts in their own right and brought about by the nature of their built environment, the vessels were determined as sites of change for the Islanders being transported. These changes were initially brought about by Islanders' exposure to European systems.

Fieldwork was conducted at the *Foam* wreck site in November 2002 and September 2003. The aim of this fieldwork was to record the state of the site and to address issues of cultural and natural site formation processes. Following this fieldwork a new classification system for the *Foam* artefact assemblage recovered in 1982 was developed to assess its viability as a representative sample and to identify any trade goods, with particular attention being paid to a unique collection of ceramic armbands recovered from the site. With limited time on the site, Queensland Museum archaeologists were unable to record any provenance and the survey and collection policy was a random collection of all visible artefacts in the time available. Therefore, the viability of the *Foam* collection as a statistically representative sample needs to be called into question. However, this does not exclude the assemblage from addressing archaeological issues as shown by the classification and re-analysis of the assemblage.

The analysis revealed the existence of second grade and excess goods which indicates that European traders were accepting cheaper substandard goods as a means of keeping up with demand and maintaining profit. This is further supported by the use of second hand muskets and rifles earlier in the trade. All of these items were readily available to European traders as they were in common use.

The ceramic armbands used as items of trade were not specifically manufactured for the Queensland labour trade but were part of a larger European trading system in which

ceramic copies of indigenous status goods were used as trade items from Africa across to Papua New Guinea and the South Sea Islands. The manufacture of and introduction of ceramic armbands are the archaeological evidence of the Europeans' need to provide Islanders with an item that was desirable to them. The Europeans may not have understood the function of the armbands in the Islanders' society, however the Islanders were receptive to the ceramic copies and therefore the Europeans used them.

The armbands were manufactured in Austria / Germany. From this one can deduce that the German missionaries / traders were the ones who initially introduced the ceramic armbands into the South Pacific. The English adopted the use of the ceramic copies which may indicate why there is not a larger work of reference on them.

A major outcome of this thesis has been the identification of a cycle of change involving those Islanders engaged in the Queensland labour trade. In the dynamics of this cycle, as a result of contact and exposure to European systems, Islanders changed from villager to recruit to labourer and ultimately to that of returning Islander. Moreover, by examining the general activities onboard labour vessels, gender issues, diet, medical practices, and an Islander's new role as a labourer, a compelling argument emerged that returning Islanders were not the same individuals who had left three years prior.

The operation of the Queensland labour trade allowed individual Islanders to bypass traditional restrictions on travel and gave them the opportunity to increase status and/or develop new trade relationships. Islanders who engaged as recruits had access to a range of European goods that would normally have taken years to acquire had they stayed in the islands.

By synthesising European and Islander views of contact and exchange in the islands, a new model is presented with a Melanesian perspective has been developed in which the significant role of middle men and their exploitation of the European system is presented. The manipulation and control of Europeans and access to their goods by individuals (middle men) during the Queensland labour trade is not a new concept. The middle men had been influencing the contacts in the coconut oil trade; turtle shell trade and sandalwood trade all in order to maintain their status as big men within their

region. The Queensland labour trade was the current platform for this manipulation in which European goods became part of the Islanders' internal trading system. However, instead of coconut oil, turtle shell or sandalwood, human labour was exchanged for European goods. In this instance, Islanders did not revert to demanding traditional trade items as they had in earlier trading systems.

While this thesis has brought to light new perspectives on the mechanisms of contact and change, it has also highlighted the dearth of archaeological research into the Queensland labour trade and its impact in the South Sea Islands. Given the potential that archaeology has for providing insights into this fascinating field, a range of recommendations for future research ventures follows.

9.3 Future Research

While it is known that a central part of the Queensland labour trade revolved around the use of trade goods, the impacts of these new objects and the responses to them is improperly understood. Clearly, there is a need for new research which seeks to understand whether new items of exchange, including knowledge, challenges, subverts or inflates traditional systems. To better appreciate the ways in which the Queensland labour trade may have been a catalyst for change in indigenous social, political and economic systems, these kinds of questions need to be addressed by further research in the South Sea Islands and at the wreck site of the *Foam*.

To date, no known work has been conducted in the South Sea Islands to determine the extent that trade goods are present in the archaeological record. This thesis has determined that the main island groups visited during the operation of the Queensland labour trade were the northern Vanuatu and southern Solomon Island groups. As this implies that these areas were exposed to a larger supply of European trade goods, it is recommended that they form the initial focus for further research.

Preliminary research in the islands should concentrate on two general research questions. First, what can archaeology reveal about the extent to which general trade goods became part of the everyday life of the Islanders. Secondly, what can it reveal

about the role that ceramic copies of status goods played in Islander socio-economic and belief systems.

Further historical research into the range of ceramic goods manufactured specifically for the trade with indigenous populations as part of the colonial expansion and who manufactured these goods should be conducted. There is anecdotal evidence that catalogues offering ceramic armbands and the like were produced however to date, none has come to light. The range of ceramic goods and their manufacturers need to be identified as these goods are archaeological evidence of a European industry specifically manufacturing ceramic copies of indigenous status goods. For example, the amfat from Tanga Island is a prime example of how European traders targeted specific island groups.

Finally, the role of missionaries in the European expansion into the South Pacific is well documented in the historical record. However, from an archaeological and historical perspective, their role in the distribution of trade goods and ceramic copies in particular has not been researched.

The *Foam* enjoys a unique status as the only known wreck on the Great Barrier Reef of a Queensland labour vessel that was actively engaged in the labour trade at the time of its demise. To complement the original Queensland Museum work, and the research carried out in this thesis including the FMAP field trips, controlled excavation around the ballast mound should be conducted. Significant resources would be required, however, the research findings have the potential to make a considerable contribution to the body of knowledge relating to life onboard and how the returns might have changed as a result of their three years' exposure to European systems and material culture.

Despite extensive searches in local, state and interstate archives, no records have been found listing the names of those Islanders onboard the *Foam* at the time of its sinking. One possibility is that their names may be documented in the records of the Ashburton Plantation near Mackay. Given the feelings among the local Australian South Sea Islander community about the Queensland labour trade, it would be a rewarding research outcome to be able to inform them of their forebears' fate.

9.4 A Final Reflection

In embarking on this study, I set out to challenge the paradigm that privileged the European voice in the islands, especially given that the corresponding Melanesian perspective had no place in the historical record.

Comprehensive research on labour vessels, especially the assemblage recovered from the *Foam*, the active role that Islanders played in the labour trade and the changing function of trade goods led me to develop a new model for contact and change. Thus, it is my fervent wish that these findings will engender a less Eurocentric view of the Queensland labour trade.

In conclusion, this thesis has demonstrated not only that archaeological data and approaches can add to our understanding of the Queensland labour trade but also that they are critical in recognising that the Queensland labour trade was as much a Melanesian system as it was a European one.

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Abbreviations

ASCR	Australian Senate Committee Report
BPP	British Parliamentary Papers
IRA	Immigration Restriction Act
MSA	Masters and Servants Act
NA	Navigation Act
NAF	National Archives of Fiji
PILA	Pacific Island Labourers Act
PIPA	Pacific Island Protection Act
PLA	Polynesian Labourers Act
QGG	Queensland Government Gazette
QSA	Queensland State Archives
RHCWP	Regulation under High Commissioner for the Western Pacific
RPILA	Regulation under Pacific Island Labourers Act

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GLOSSARY

Admiralty Pattern Anchor: A type of anchor characterised by a straight shank attached to the centre of a curved arm which has leaf shaped flukes at each end. The shank also has a rod (stock) passing through it at right angles to the curved arm.

Adze: A heavy chisel-like steel tool fastened at right angles to a wooden handle, used to dress timber.

Australian Station: The title given to the Royal Navy's base in Australia prior to being transferred to the Royal Australian Navy in 1913.

Auxiliary screw steamer: A sailing vessel that was fitted with a steam driven engine to provide propulsion during periods of calm (eg no wind).

Ballast Mound: The formation formed by the vessel's ballast at the wreck site.

Barque: A three masted sailing vessel. The foremast (front) and main (central) mast are square rigged while the mizzen (rear) mast is fore and aft rigged.

Barquentine: A three masted sailing vessel. The foremast (front) is square rigged while both the main (central) and mizzen (rear) masts are fore and aft rigged.

Bêche-de-mer English: A form of pidgin English.

Boatswain: (pronounced bo'sun) The officer in charge of the sails and rigging; also in charge of the day-to-day running of the vessel.

Bolts: Copper, Iron or Yellow metal pins used to attach and bind together the various timbers used in the construction of the vessel.

Bow: The forward end of the vessel.

Bowsprit: A spar that projects forward of the bow; it enables extra sails to be attached forward of the bow.

Brig: A two masted sailing vessel with both masts square rigged.

Brigantine: A two masted sailing vessel. The foremast (front) is square rigged while the taller main mast is fore and aft rigged.

Bulwark: The side of the vessel extending above the level of the deck.

Camlets: Fabric of Asian origin, originally made of silk and camel's hair.

Carvel Built: A method of constructing a hull in which the edges of the planks that form the hull are flush with each other and not overlapping as in a clinker hull.

Carronade: A short barrel muzzle loading cannon used at close range.

Cleats: Cleats are fittings on vessels that ropes are tied to; they are often shaped like horns, although other types exist.

Cutter: A small single masted vessel, fore and aft rigged usually with more than one head sail attached to the bowsprit.

Davits: A frame fitted to the side of a vessel to enable the deployment and retrieval of boats or lifting anchors on board.

Displacement Hull: A type of hull that displaces the water thereby allowing the hull to settle down into the water and not ride on top of the water. As speed increases the bow and stem are lower in the water than the mid section. This limits the maximum speed of the vessel.

Drawing Knife: A wood worker's tool consisting of a single blade with a handle at each end; used to shave surfaces by drawing the blade towards the operator, also called a drawshave.

Fathom: A nautical unit of measurement (depth) equal to 6 feet (1.8m).

Focsle (Forecastle or fo'c'sle): The seamen's quarters in the in the bow of the vessel also the short raised deck on the bow of a vessel.

Fore and Aft rigged: A method of rigging in which the sails are attached to the mast in line with the centre line (fore and aft) of the vessel.

Futtocks: The curved timbers that form the ribs in the frame of a vessel.

Gerontocracy: A system of government by old men.

Guano: Natural manure composed chiefly from the excrement of sea birds.

Hawser Pipe: The metal pipe through which the hawser, cable or chain attached to an anchor passes; located on both sides of the ship's bow.

Hanging Knees: Metal or wooden supports fitted vertically under beam ends to connect the beam to the side of the vessel.

Ipecacuanha: The dried root of the South American plants *Cephaelis ipecacunha* and *C.acuminata*. Used as a purgative.

Jews Harp: A musical instrument that is not a harp nor has it any connection with Jews. It consists of a circular frame with a metal tongue which is plucked while the frame is held between the player's teeth.

Jib Boom: A spar that forms a continuation of the bowsprit.

Keel: The main longitudinal timber running along the bottom of the vessel. The keel is in effect the backbone of the vessel.

Laudanum: A preparation in which opium is the chief ingredient.

Lee way: A deviation from the required course caused by the action of the wind, waves or current on the vessel.

Length at the Waterline (LWL): The distance from bow to stern measured at the point where the hull meets the water.

Lodging Knees: Metal or wooden supports fitted horizontally under beam ends to connect the beam to the side of the vessel.

Main Mast: The central mast on a three masted vessel and the rear mast on a two masted vessel.

Main Boom: The spar attached to the bottom of the main sail and attaching it to the main mast.

Main Gaff: The spar attached to the top of the main sail and attaching it to the main mast.

Mast Rooms: The area around the mast between the beam directly in front of the mast and the beam directly behind the mast.

Nautical Mile: One nautical mile equates to a distance of 1.15 statute miles or 1.85 kilometres.

Paregoric: A soothing medicine made from the camphorated tincture of opium.

Photomosaic: A composite photographic image constructed from multiple photographs.

Picul: A unit of weight used in Southeast Asia. One Picul is equal to 60 kg.

Poop deck: The highest deck on the aft of a vessel.

Puggaree: A scarf wound round a hat or helmet and falling down behind as protection against the sun.

Scantlings: The record of the sizes of the component parts of a vessel.

Schooner: A sailing vessel with two or more masts, all of which are fore and aft rigged.

Senna: A cathartic drug that clears the bowels.

Sheathing: A covering of yellow metal, copper or zinc from the keel to the load line, used to deter sea worms and to prevent fouling.

Spanish Lug Sail: A four cornered sail attached to a yard that crosses the mast obliquely.

Spars: A general term used to describe a vessels masts, booms and yards

Square rigged: A method of rigging where the sails are attached to yards and positioned on the mast across the centre line of the vessel.

Stern: The aft end of the vessel.

Sulu: A form of wrap around skirt

Superficial feet (Super feet): One superficial foot equated to an area of 144 cubic inches. The metric equivalent is 2,359 cubic centimetres or 0.0024 cubic metres.

Sweet Spirits of Nitrate: A diuretic and antispasmodic made from a distillation of alcohol with sulphuric and nitric acids.

Swivel Gun: A small bore muzzle loading cannon mounted on a stand that allowed the gun to swivel in a wide arc. Used to fire grape shot or small bore round shot.

Tartar emetic: A medicine used to induce vomiting.

The Lizard: The land mass at the Western end of the English channel so named because it resembled a lizard.

Topsail Schooner: A sailing vessel with two or more masts, all of which are fore and aft rigged with one or more square rigged sails fitted to the top of the foremast (front mast).

Topsides: The sides of a vessel above the load line.

Transom: The crosswise timbers attached to the sternpost of a ship to give a flat or curved stern.

Triangulation: A survey method in which an object's position is recorded by measuring from at least two known positions on a fixed base line. When plotted these measurements form a triangle with the object at its apex.

Tun: An early term for a standard sized wine cask that when filled weighed approximately 2000 lb (907 kg) and held approximately 980 litres. ***Tun*** was corrupted to ***Ton*** and became the standard for measuring the cargo carrying capacity of a vessel.

Windlass: A windlass is an apparatus for moving a heavy weight. Typically, a windlass consists of a horizontal cylinder (barrel), which is rotated by the turn of a crank or belt. A winch is affixed to one or both ends, and a cable or rope is wound around the winch, raising a weight attached to the opposite end.

Sources: (Admiralty 1943; Dean, Ferrari, Oxley, Redknap, and Watson 1996; Desmond 1998; Kerchove 1961; Paasch 1977; Patrick 1971)

Contents of the Trade Boxes
on the Queensland Labour Vessel *Chance*, 1877

Item	Quantity	Item	Quantity
Trade Boxes	48	Clay pipes	288*
Muskets	33	Fishing lines	32*
Single barrelled guns	14	Fishing hooks	No quantity recorded, only value
Double barrelled guns	14	Matches	289 boxes*
Gun powder	251.5 lbs (113.8 kg)	File	1
Bags of shot	39 bags each with 28lbs (12.7 kg) of shot = 495 kg of shot	Mirrors	15
Percussion caps	419 boxes	Umbrellas	9
Cartridges	1 lb (0.4 kg)	Jews harps	2
Bullet moulds	8	Salad oil bottles	73*
Tobacco	100 lbs (45.3 kg)	Beads	82 lbs (32.8 kg)
Flat Tobacco	5.5 lbs (2.5 kg)	Shirts	54
Fantail axes	111	Trousers	39
Tomahawks	167	Hats	14
Axes	42	Coats	12
Squaring axes	22	Jersey	3
Knives 4 ½ inch	52	Turkey twill cloth	4 pieces
Knives 5 inch	95	Red twill	5 pieces
Knives 14 inch	73	Printed handkerchiefs	23 dozen
Knives16 inch	162	Printed cloth	21 pieces
Knives 18 inch	7	Navy print cloth	13 pieces
Sheath knives	25	Grey sheeting	115 yards (105 metres)
Pocket knives	11		

Source: Queensland State Archives: Colonial Secretary's Office; General Correspondence, 1 Jan 1878-31 Dec 1878; Letter No 3440 of 1878; COL/A264.

Note: * indicates that the figure is an approximation. In some cases the value of the items were recorded not the actual quantity.

Trade Goods Available in Fiji 1884

Contractor: Messrs Henry Cave & Co

Item		Cost s.	d.
Axes	each	5	3
Axes, Small *Not up to sample*	"	3	9
Augers	"	2	6
Armlets *Large size to be procured*	"	0	6
Bullets	per lb	0	?
Billies, Tin	each	1	6
Boxes Large *scarcely up to sample & locks doubtful*	"	9	0
Boxes Small *To be procured*	"	7	0
Boilers	"	4 to 7?	
Beads	per lb	1	1
Blankets	each	7	6
Buckets	"	1	9
Belts, elastic	"	1	0
Belts, Leather, Large	"	1	9
Belts, Leather, Small	"	1	6
Belts, Leather, Fancy *To be procured*	"	2	0
Buttons *Too small*	per gross	1	0
Carbine and Bayonet *Bayonet to be provided*	each	10	0
Caps, gun	per 100	0	5
Caps, military	" "	0	5
Caps, cloth	each	1	3
Candles	per lb	0	10
Chains	each	0	2
Combs *Not up to sample*	"	0	5
Coats, serge *Not up to sample-make inferior*	"	0	9
Calico, unbleached, D.W.	per yard	0	6
Calico, unbleached, S.W.	" "	0	3
Cotton spool *Too fine*	per dozen	1	9
Concertinas	each	2	9
Cotton, lamp *Bales only ½ the size of sample*	per ball	0	6
Fowling-pieces *Not up to sample*	each	??.0	
Files, saw *Too small size*	"	0	5 ½
Gouges *Not up to sample*	"	1	9
Hatchets, bench *To be procured*	"	5	3
Hatchets, Mission, two kinds *Only one kind*	"	1	0
Hooks, fish, five sizes *No 11 to be procured*	per 100	-/4 to 3/-	
Hats *????? up to sample*	each	2	6
Hoes *Not according to sample or satisfactory*	"	1	6
Harps, Jews, two sizes *To get proper sizes*	per dozen	-/3 to -/6	
Handkerchiefs, Turkey red	" "	4	6
Irons, plane	each	1	0
Jumpers *Not up to sample*	"	4	0

Item		Cost s. d.
Knives, 16-inch	"	1 6
Knives, 15-inch	"	1 3
Knives, 14-inch	"	1 2
Knives, 12-inch	"	1 0
Knives, 10-inch	"	0 8
Knives, 5-inch	"	-/3 ½
Knives, white-handled, table	"	0 10
Knives, pocket	"	0 9
Knives, fancy	"	0 8
Knives, Williams's pipe *Proper size to be got*	"	1 5
Kerosene,	Per gallon	1 11
Lanterns	each	3 9
Line, fish, three size *Large size to be procured*	each	-/3, -/9 1/3
Musket and Bayonet	"	9 0
Matches, two sizes	per dozen	-/9, -/3 ½
Mirrors *To be procured*	each	1 0
Navy Blue	per piece	9 0
Necklaces *??? up to sample*	each	0 3
Needles, 3 to 7. Mixed	per 100	0 2
Organs, mouth *Both sizes too small*	each	-/6 to 1\6
Oil, salad	per bottle	0 7
Oil, hair	" "	0 7
Paint, red	per lb	0 5
Paint, Blue	" "	0 8
Pots, iron	" "	0 2
Pouches, large, three sizes *Some up to sample*	each	1 9
Pouches, small	"	0 9
Pouches, watch	"	1 0
Pipes, clay *Not up to sample*	per dozen	0 3
Pipes, wood *Not up to sample*	" "	0 1
Print Colour *Not satisfactory*	per yard	0 5
Print, Turkey red *Quality inferior-not up to sample*	per piece	0 5
Powder, FF, ¼ lb tins	per lb	2 5
Razors	each	1 0
Rings *2 samples to be procured*	"	0 5
Shirts, regatta	"	1 9
Shirts, white *?? up to sample*	"	3 0
Shirts, Crimean *?? up to sample*	"	3 0
Shirts, Flannel	"	3 3
Shirts, under	"	1 10
Shirts, guernsey *To be provided*	"	3 0
Shirts, serge *Not up to sample*	"	4 0
Shirting, white	per yard	0 3 ½
Saucepans	each	2/3 to 4/-
Sheaths *Not up to sample*	each	0 5
Satchels	"	3 6
Screwdrivers *Not up to sample too short*	"	0 9

Appendix 2

Item		Cost s.	d.
Soap	per lb	0	3½
Scissors *Not up to sample*	each	0	9
Shot	per lb	0	4½
Sunglasses *All sizes smaller than sample*	each	0	6
Stones, scythe	"	0	6
Sheeting	per yard	0	7½
Shawls *Not up to sample*	each	2	6
Tomahawk *Not up to sample*	"	2	6
Thread	per skein	0	2
Tobacco (in bond)	per lb	1	1
Turkey, red *Not up to sample*	per piece	4	6
Trousers, drill	per pair	3	6
Trousers, dungaree	" "	2	6
Trousers, cloth	" "	4	6
Trousers, moleskin *Not up to sample*	" "	5	6
Umbrellas, white	each	2	0
Umbrellas, fancy *Not according to sample*	"	2	10
Wicks, lamp	per dozen	0	3
Whistles	each	?	?

Source: (NAF1884)

Note: Comments in *italics* are on the list from the Fiji Archives and relate to the state of the goods as inspected by an official named Mr Beaudere in March 1884.

NAF1884: National Archives of Fiji, Tenders for Immigration Supplies, CSO MP 671/84.

Appendix 3

Database of Vessels Involved With the Labour Trade

Structure of the Labour Vessels' Database

Format

Primarily, the database lists vessels that were, at some stage of their existence, involved in the Queensland labour trade. Where data were available, vessels employed in recruiting operations for other regions have also been included. The intention was to provide comparable data for the numbers, types and sizes of vessels involved in the labour trade. At the end of this introduction there is a description of vessel types and a summary of the number of vessels by type over time.

Data Source

The information in the database is sourced from the Lloyds List at the Australian National Maritime Museum, Corris (1973), Cromar (1935), Docker (1970), Giles (1968), Graves (1979), Holthouse (1969), Matthews (1995), Moore (1985), National Library of Australia (NLA), Saunders (1974), Stevens (1950), Wawn (1893) and Wilson (1882).

Information Fields

What follows is an explanation of the individual fields in the database. A blank field indicates that the data was not available from any of the sources.

Vessel: The name of the vessel is as it was historically recorded. Different spellings for the same vessel by different sources have been included.

Construction and Rig: The construction of the vessel is the type of material that the hull was constructed from i.e. wood, steel or iron. The rig is the arrangement of mast and sails on the vessel eg schooner, brigantine etc. Therefore a wooden schooner was a vessel constructed from wood with two or more masts, and the sails rigged fore and aft

along the central axis of the vessel. A description of each type of rig is provided on the next page and in the glossary. Where there was a difference between sources in the recorded construction and rig, the description in the Lloyds List at the Australian National Maritime Museum was consulted and used.

Tonnage: The registered tonnage of the vessel is recorded. This is also known as the cargo capacity of the vessel. At times this tonnage varied between sources. Where possible the tonnage recorded in the Lloyds List at the Australian National Maritime Museum was then used.

Dimensions in Feet & Metres: The information in this field only lists the dimensions of labour vessels recorded in the aforementioned Lloyds List. The imperial measurements are in Feet and Tenths of a Foot as was the custom of the day for ships' measurements, e.g. 64.4 is 64 Feet and 4/10 of a Foot. The metric equivalent is provided in *italics*.

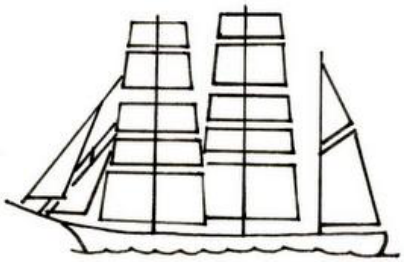
Recruiting For: The country or colony Islanders were being recruited for.

Source: An alphabetical listing of the references for each vessel. The legend for the references is at the end of the database.

Voyages: The number of recruiting voyages made by the vessel.

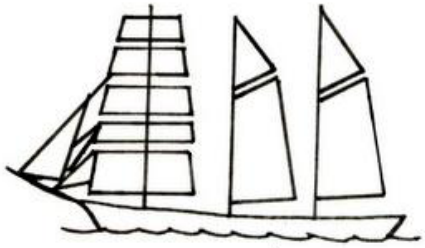
Licensed for (Year): Where available, the number of recruits that the vessel was licensed to carry and the year that the licence was issued; eg 110 (1882) is licensed to recruit 110 labourers in 1882.

Description of Vessel Types



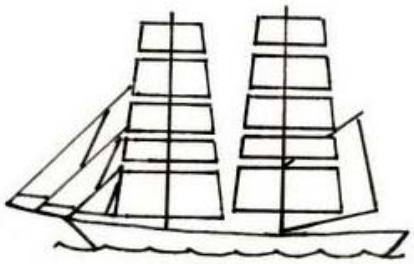
Barque

A **Barque** is a three-masted sailing vessel. The foremast (front) and main (central) mast are square rigged while the mizzen (rear) mast is fore and aft rigged.



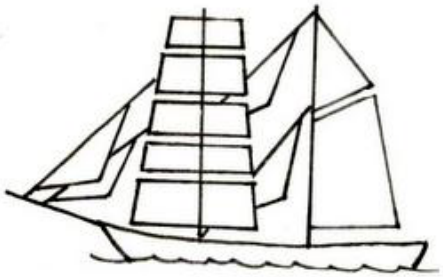
Barquentine

A **Barquentine** is a three-masted sailing vessel. The foremast (front) is square rigged while both the main (central) and mizzen (rear) masts are fore and aft rigged



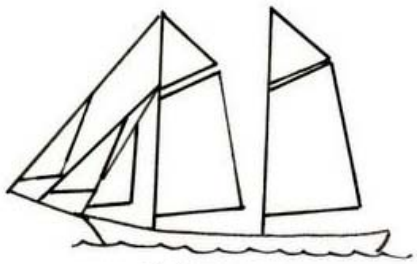
Brig

A **Brig** is a two-masted sailing vessel with both masts square rigged.



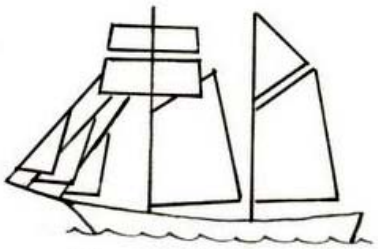
Brigantine

Brigantine: A two-masted sailing vessel. The foremast (front) is square rigged while the taller mainmast is fore and aft rigged.



Schooner

A **Schooner** is a sailing vessel with two or more masts, all of which are fore and aft rigged.



Top Sail Schooner

A **Topsail Schooner** is a sailing vessel with two or more masts, all of which are fore and aft rigged with one or more square rigged sails fitted to the top of the front mast (foremast).

Source: Desmond (1998), Paasch (1977)

Drawings by author

Summary of Vessel Types by Number in Five Year Periods

Vessel Type	1863 to 1867	1868 to 1872	1873 to 1877	1878 to 1882	1883 to 1887	1888 to 1892	1893 to 1897	1898 to 1903
Schooner	4	10	14	13	13	9	4	6
Brigantine	2	7	4	6	10	5	1	2
Barquentine	0	0	0	0	1	0	0	1
Brig	2	0	0	0	1	1	1	0
Barque	1	1	0	0	0	2	2	0
Iron Schooner	0	0	1	1	0	0	0	0
Iron Steam Ship	0	0	0	0	2	0	0	2
Wood Steam Ship	0	0	0	0	1	0	0	0
Iron Barque	0	0	0	0	0	0	0	1
Total	9	18	19	20	28	17	8	12

Source: Adapted from the National Library of Australia MS 612

Database of Vessels Involved With the Labour Trade

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Active	Wooden Schooner	163	104.4 x 23.7 x 11.8 *31.8 x 7.2 x 3.5*	Fiji	A		
Agnes Donald Agnes Macdonald Angus Donald	Wood Schooner	75		Fiji	D, F, K,M		133
Albert	Wood Schooner	44	56.5 x 16 x 8.5 *17.2 x 4.8 x 2.5*		I,K		
Alfred Vittery	Wood Schooner	122	95.6 x 20.8 x 11.2 *29.1 x 6.3 x 3.4*	Qld	C,E,G,I,J, K,L	4	110 (1882)
Amy Robsart	Wood Brigantine	72	82.7 x 18.8 x 7.4 *25.2 x 5.7 x 2.2*	Qld	I,J,K,M	2	82 (1870)
Anna	Wood Barque	144	94.6 x 24.8 x 9.6 *28.8 x 7.5 x 2.9*	Fiji	F		
Aoba	Schooner			Noumea	D,L		
Ariel	Wood Brigantine	124	86.6 x 21.6 x 12 *26.3 x 6.5 x 3.6*	Qld	A,B,C,E,G H,I,J,K,L, M	24	25 (1877) 84 (1883)
Atlantic	Wood Schooner	72	76.2 x 19.8 x 8.6 *23.2 x 6.0 x 2.6*	Fiji	F,I,K,M		40 (1880)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Au Revoir	Wood Brigantine	138	92.7 x 21.7 x 11.9 *28.2 x 6.6 x 3.6*	Fiji	A,L		
Aurora	Brig or Schooner			Noumea	F,L		
Australian Packet Australasian Packet Young Australian	Barque or Brig	182		Fiji	C,F,M		60 (1877) 80 (1878)
Black Dog	Wood Schooner	142	79 x 20.2 x 11.3 *24 x 6.1 x 3.4*	Qld	C,E,F,I,J, K	1	
Black Swan	Wood Schooner			PNG *	I,K		
Blanche	Wood Brigantine			Qld	I,K		
Blue Belle (Bell)	Wood Schooner	66		Qld	E,F,I J	2or3	
Bobtail Nag	Wood Brigantine	170	101.7 x 21.8 x 12.2 *30.9 x 6.6 x 3.7*	Qld	A,B,C,D,E F,G,H,I,J, K,L,M	5or6	123 (1875) 125 (1877)
Borealis	Brigantine	131		Fiji/Qld	A,C,F,H,I, K,L		
Borough Belle	Wood Brigantine	210	103.8 x 24.1 x 11.8 *31.6 x 7.3 x 3.5*	Qld	B,C,E,F,G H,I,J,K,L, M	23	138 (1880)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Caledonian		58		Samoa	F		
Captain Cook	Wood Schooner	12		Qld	I,J,K	1	
Carl	Wood Brigantine	164	109.8 x 23.8 x 11.6 *33.4 x 7.2 x 3.5*	Fiji	A,C,E,F, H,I,K,L		
Caroline	Wood Brigantine	149		Qld	E,F,J	1	
Ceara	Wood Schooner	193		Qld	A,C,D,E,I, J,K,L,M	14	121 (1879) 146 (1880)
Challenge	Wood Top Sail Schooner	48	67 x 16.8 x 7.8 *20.4 x 5.1 x 2.3*	Fiji	F,I,K,		
Chance	Iron Schooner	68	78.0 x 15.0 x 11.1 *23.7 x 4.5 x 3.3*	Qld	C,E,G,I,K, J,L,M	25	84 68 (1873) 50 (1880)
Charybdis	Wood Schooner	98		Fiji	D,L,M		
Christine				Fiji	AH,		
Chrishna Crishna	Wood Schooner	26		Qld	E,J	1	
City of Melbourne	Wooden Brigantine	177	118.4 x 18.5 x 8.5 *36.0 x 5.6 x 2.5*	Qld	C,E,F,J	2	
Clansman	Wood Top Sail Schooner	157	96 x 23.5 x 11.6 *29.2 x 7.1 x 3.5*	Qld/Fiji	A,D,E,F, I,J,K	10	130 (1901)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Colleen Brawn				Fiji	A		
Coquette	Wood Schooner	214		Qld	A,D,I,J,K	19	150
Corea	Iron Steam Ship	606	170.2 x 25.1 x 18.5 *51.5 x 7.6 x 5.6*		E,J	1	310 (1886)
Courier	Schooner	628			J	1	
Dancing Wave	Wood Schooner	67	82.2 x 19.9 x 7.0 *25.0 x 6.0 x 2.1*		A,C,E,F,G I,J,K,M		50 (1876) 25 (1881)
Daphne	Wood Schooner	55	61.2 x 17 x 7.7 *18.6 x 5.1 x 2.3*	Fiji/Qld	A,C,E,F, H,I,J,K,L	2or3	
Dauntless	Wood Schooner	258		Fiji/Qld	A,D,F,H,J, L,M	2	
Donald McLean	Schooner				F,I,K		
Don Juan	Wood Brigantine	130	86 x 19.3 x 8.6 *26.2 x 5.8 x 2.6*	Qld	CD,E,F,G, H,I,J,K	1	
Effie Meikle				Noumea	A		
Elibank Castle	Wood Top Sail Schooner	70	80 x 19.5 x 6.8 *24.3 x 5.9 x 2.0*	Qld	C,I,K		
Eliza Mary	Wood Brigantine	160	100.8 x 20.9 x 11.1 *30.7 x 6.3 x 3.4*	Qld	C,E,G,I,J, K,L	14	119 (1882)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Ellen	Iron Barque	644	168.6 x 29.2 x 19.3 *51.3 x 8.9 x 5.9*	Fiji/ Qld	A,H,J	1	
Elsea	Wood Schooner	35	60.8 x 15.5 x 8.3 *18.5 x 4.7 x 2.5*		E		
Emily	Wood Brigantine	190		Qld	C,E,F,G,H ,I,J,K,L	5	150 (1882)
Empreza	Iron & Wood Barque	236	123.3 x 25.1 x 11.3 *37.5 x 7.9 x 3.4*	Qld	C,H,J,K	4	159 (1892)
Ernestine				Qld	G,J	1	
Ethel	Wood Brigantine	180	97.6 x 23.6 x 12.7 *29.7 x 7.1 x 3.8*	Qld	A,B,C,D,E F,G,H, I,J,K,L	3	120 (1883)
Eugenie	Schooner			Tahiti	A,F		
Fairlie				Suva	D		
Fanny	Wood Schooner	164		Qld	C,E,F,H, I,J,K,L	4	140 (1882)
Fanny Campbell	Wood Brigantine	151	105.6 x 22.2 x 9.6 *32.1 x 6.7 x 2.9*	Qld	D,E,I,J,K, M	1	140 (1872)
Fanny Nicholson	Barque	285	118.4 x 25.4 x 15 *36.0 x 7.7 x 4.5*	Qld	C,E,F,I,J, K	1	
Fearless	Wood Schooner	100	86.6 x 21.2 x 8.7 *26.3 x 6.4 x 2.6*	Qld	A,B,C,E,H I,J,K,L	32	78 (1885)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Flirt	Schooner	30	60.0 x 15.0 x 5.6 *18.4 x 4.5 x 1.7*	Fiji	A,F,H, I,K,L		
Flora	Wood Schooner	130		Qld	A,C,E,G, H,I,J,K,L, M	8or10	120 (1875)
Foam formerly *Archimedes*	Wood Top Sail Schooner	164	100.1 x 22.8 x 11 *30.5 x 6.9 x 3.3*	Qld	A,B,C,D,E G,I,J,K,L	9	120 (1892)
Forrest King	Wood Brigantine	172	98.2 x 22.3 x 13.1 *29.9 x 6.7 x 3.9*	Qld	B,C,E,F,I, J,L	4or6	130 (1883)
Fredericka Wilhelmina	Wood Barquentine	212		Qld	C,E,I,J,K, L	2	180 (1883)
Gael Gall	Wood Schooner	98		Fiji	I,K,L,M		
Gazelle	Wood Barque	324	130.8 x 28.5 x 11.2 *39.8 x 8.7 x 3.4*	Qld	E,I,J,K	1	
Gloriana					B		
Gympie	Iron Steam Ship	220		Qld	E,J	2	
Hally Bayley	Wood Schooner	113	90.7 x 22 x 9 *27.6 x 6.7 x 2.2*	Fiji	A,D		
Harriet King	Wood Brigantine	185	100.6 x 22.5 x 10.8 *30.6 x 6.8 x 3.3*	Qld	J, M	2	130 (1870)
Heath	Wood Schooner	187	118.9 x 21 x 10.5 *36.2 x 6.4 x 3.2*	Qld	C,E,F,I, J,K,L	5	108 (1882)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Heather Bell	Wood Brig	188	102.4 x 22.4 x 12.7 *31.2 x 6.8 x 3.8*	Qld	C,D,E,F,I, J,K,L,M	2-3	50 (1877)
Hector	Brigantine	199		Qld	E,H,I,J,K	8-9	142
Heeton	Schooner	199		Qld	I		
Helen	Wood Schooner	69			F,K		
Helena	Wood Brigantine	126	83 x 23 x 10.1 *25.3 x 7.0 x 3.0*	Qld	A,B,C,D,E F,G,H,I,J, K,L	36-40	97 (1882)
Herbert	Iron Steam Ship	233		Qld	E,J	1	
Heron	Wood Schooner	91	75.7 x 20.6 x 10.2 *23.0 x 6.2 x 3.1*	Qld	B,C,E, H,I,J,K	7	
Hopeful	Schooner	84		Qld	C,D,F,J	4	
Io	Wood Schooner	71	72 x 18 x 8.9 *21.9 x 5.4 x 2.7*	Qld	E,J,K,L	3	
Isabella	Wood Schooner	89		Qld	A,D,E,F,H ,I,J,K,L,M	32-33	103 (1870)
Ivanhoe	Wood Top Sail Schooner	152	94.3 x 23.6 x 11.3 *28.7 x 7.1 x 3.4*	Qld	E,H,I,J,K	9	
Jabberwock	Wood Schooner	140	109.5 x 22 x 9.1 *33.3 x 6.7 x 2.2*	Qld	E,H,I,J,K, L,M	9	121 (1880)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Janet Stewart	Wood Brigantine	202	115.6 x 24.0 x 12.0 *35.2 x 7.3 x 3.6*	Qld	A,C,E,F,G H,I,J,K,L, M	9-10	168 (1878) 116 (1880) 143 (1880)
Jason	Wood Brigantine	105	78.8 x 18.4 x 11 *24.0 x 5.6 x 3.3*	Qld	C,E,F,G,I, J,K,L,M	7-14	100 (1870) 156 (1874)
Jessie Kelly	Wood Schooner	144		Fiji/ Qld	A,C,E,G,I, J,K,M	7-8	156 (1873) 140 (1875)
John S. Lane	Wood Schooner	82	81 x 18 x 8.6 *24.6 x 5.4 x 2.6*	Noumea	D,L,M		30 (1879)
Julia	Wood Brigantine	64		Qld	E,F,J	1	
Juventa Jeventa	Wood Brigantine	152	111.2 x 18.8 x 10.9 *33.8 x 5.7 x 3.3*	Qld	C,E,I,J,K	1-2	
Kate Kearney	Brigantine	69		Qld	I,J,K	1	
Keith	Brigantine				I,K		
Kestrel	Brig			Fiji	A		
King Oscar	Wood Barque	248	118.9 x 26 x 13.5 *36.2 x 7.9 x 4.1*	Qld	C,E,F,I,J, K	2-3	
Kone				French	H		
Lady Belmore	Wood Brigantine	254	114.6 x 26.0 x 13.8 *34.9 x 7.9 x 4.2*	Qld	B,E,G,I,J, K,L,M	4	148 (1880)
Lady Darling	Wood Schooner	109		Qld	A,E,H, I,J,K,L,M	19-20	86 (1874)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Lady Norman	Iron Steam Screw	176	130.3 x 22.5 x 7.4 *39.7 x 6.8 x 2.3*	Qld/Fiji	A,E,F, I,J,K	21	
Lalla Rookh	Wood Ketch	60			I,K		
Lavina Lavinia	Wood Brigantine	119	98.6 x 20.8 x 9.1 *30.0 x 6.3 x 2.7*	Qld	A,B,D,E,F H,I,J,K,L	19-20	97 (1882)
Leslie	Wood Top Sail Schooner	107	93 x 21.2 x 11 *28.3 x 6.4 x 3.3*	Qld	E,F,I,K,L, M		20 (1880) 25 (1881)
Lismore				Fiji	A,F		
Lizzie	Wood Barquentine	224	104.1 x 25.1 x 11.9 *31.7 x 7.6 x 3.6*	Qld	C,D,E,F, I,JK,L	4-6	
Lochiel	Wood Schooner	227	113.4 x 24.1 x 12 *34.5 x 7.3 x 3.6*	Qld	A,B,C,E,G ,H,I,J,K,L	37-39	143 (1882)
Loelia	Wood Cutter	50		Fiji NSW	I,K,L,M		15 (1877) 16 (1880)
Loongana	Wood Barquentine	279			E	1	
Lord of the Isles	Wood Schooner	208		Fiji/ Qld	B,C,E, I,JK	2	
Lucy and Adelaide	Wood Top Sail Schooner	89		Qld	D,E,F,I,JK L,M	15	88 (1875)
Lulu	Schooner			French	L		

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Lytton *Lyttona*	Wood Schooner	73	99.5 x 16.2 x 7.2 *30.2 x 4.9 x 2.2*	Qld	A,C,E,F,I, J,K,L,M	19-21	85 (1870)
Madeleine *Madeline*	Wood Schooner	114	93.6 x 21.5 x 10.3 *28.5 x 6.5 x 3.1*	Qld	A,B,C,E,I, J,K,	14-15	109(1882)
Magnet	Wood Schooner	92		Qld	E,I,K,L	1	
Maid of Riverton	Wood Schooner	82		Qld	E,I,J,K	1	
Margaret Chessell	Wood Schooner	66	69.6 x 17 x 7.9 *21.2 x 5.1 x 2.4*	Fiji	A,C,F		
Maria	Cutter or Barquentine			Samoa Noumea	L,M		
Marie				French	H		
Marion Rennie	Wood Schooner	56		Fiji/ Qld	A,D,E,F, I,J,K	1-2	
Martha Ellen	Wood Schooner	125		NSW	E,I,K,M	1	
Mary Anderson	 Schooner	52		Samoa	I,K,L		
Mary Ann Christina	Wood Top Sail Schooner	42	58.9 x 16.2 x 6.5 *17.9 x 4.9 x 1.9*	Fiji	A		
Mary Campbell	Wood Brigantine	144	102.4 x 22.8 x 10.4 *31.2 x 6.9 x 3.1*	Qld	E,G,I,J,K, M	2	130 (1870)
Mary Eliza	 Cutter			Fiji	D		

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Mary Smith	Wood Schooner	99	79.0 x 18.8 x 9.6 *24.0 x 5.7 x 2.9*	Qld	E,F,G, I,J,K	1-2	
Mary Stewart	Wood Schooner	65		Qld	E,I,J,K,M	1	72 (1874)
Mavis	Wood Schooner	80		Fiji	A,D,L,M		25 (1880)
May	Wood Schooner	237	114.7 x 25.1 x 12.8 *34.9 x 6.7 x 3.9*	Qld	E,I,J,K	14-15	150 (1888)
May Queen	Wood Schooner	97		Qld	B,C,D,E,F ,I,J,K,L,M	35-38	84 (1873) 90 (1880)
Meg Merrilies	Schooner	143		Fiji	B,C,F,G, H,I,K,L		
Melanie	Wood Schooner	136	95.6 x 19 x 10.6 *29.1 x 5.7 x 3.2*		F,I,K		
Midz				Tahiti	F		
Moorea	Barque			French (2)	F		
Myrtle	Wood Brigantine	167		Qld	B,E,H I,J,K	3-4	116 (1887)
Mystery	Wood Schooner	82	80.7 x 20.8 x 7.9 *24.5 x 6.3 x 2.4*	Qld	C,D,E,F,G H,I,J,K,L, M	16-17	96 (1870)
Native Lass	Wood Schooner	106	73.2 x 21.1 x 10.9 *22.3 x 6.4 x 3.3*	Qld	B,D,E,G,I, J,K,L,M	3-4	112 (1874) 20 (1879)

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Nautilis	Wood Barque	242	119.4 x 26 x 14 *36.3 x 7.9 x 4.2*	Qld	E,H,I,J,K,	6-7	139 (1887)
Norseman				Qld	I,J	1	
Northern Belle	Wood Schooner	214		Qld	E,I,J,K,L	2-3	149 (1887)
Noumea	Wood Brigantine	142	97.3 x 21.2 x 10.2 *29.6 x 6.4 x 3.1*		E,I,J,K,M	1	93 (1880)
Nukulau Nukulow				Fiji	A,C,F		
Pacific	Wood Schooner	60	72.0 x 19.0 x 7.8 *21.8 x 5.7 x 2.3*	Qld	D,E,G,I,J, K,M	3	86 (1877) 40 (1879)
Para	Wood Brig	266	115.7 x 23.4 x 14.6 *35.2 x 7.1 x 4.4*	Qld	A,C,E, H,I,J,K	15-16	176 (1887)
Percy	Wood Schooner	34		Qld	C,E,F,J	1-2	
Peri	Schooner	42		Fiji	C,F,H		
Petrel	Wood Brigantine	95		Qld	E,I,J,K,M	2	94 (1871)
Pioneer	Wood Schooner	197		Qld	E,J	1	
Planet	Wood Schooner	68			I,K		

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Prima Donna	Wood Top Sail Schooner	85		Qld	E,F,H,J	3	
Prince Alfred				Tahiti	F		
Princess Louise *Princess Louisa*	Wood Schooner	90	76.1 x 22.2 x 8 *23.1 x 6.7 x 2.4*	Qld	E,J,M	1	12 (1879)
Reliance	Wood Brig	117	84.9 x 21.4 x 11 *25.8 x 6.5 x 3.3*	Qld	C,I,K		
Restless	Wood Brigantine	258		Qld	E,I,J,K,M	1	130 (1871)
Ringdove	Cutter			German	D		
Rio Loge *Rio Logue*	Iron Aux Brig	250	122.3 x 24.7 x 12.8 *37.2 x 7.5 x 3.9*	Qld	E,G,H, I,J,K	24	150 (1893)
Ripple	Wood Schooner	59		Qld	C,J,K,M	2	40 (1877) 30 (1880)
Roderick Dhu	Wood Brigantine	162	102.6 x 24.6 x 11.4 *31.2 x 7.5 x 3.4*	Qld	A,B,C,E,G H,I,J,K,L	38	124 (1882)
Rotuma	Wood Brigantine	196	103.2 x 25.8 x 12.2 *31.4 x 7.8 x 3.7*	Fiji	A		
Samoa	Schooner			Fiji	A,L		
Saucy Lass	Wood Schooner	41	60 x 16.6 x 7.1 *18.2 x 5.0 x 2.1*	Fiji	A,L		

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Sea Breeze	Schooner			Fiji	A,D,L		
Seashell	Schooner	350			B		150
Sir Isaac Newton	Wood Schooner	121	94.5 x 19.6 x 9.6 *28.0 x 5.9 x 2.9*	Qld	E,I,J,K,M	2-3	30 (1879)
Southern Cross	Wooden Schooner	158		Qld	J,M	1-2	158 (1874)
Spec	Schooner or Brigantine	161		Qld	C,E,F,I,J	1	
Specullie				Qld	J	1	
Spunkie	Wood Schooner	132		Qld	C,E,F,G,I, J,K,M	13	134 (1870) 150 (1868)
Stanley	Wood Schooner	115		Qld	A,C,D,E,F G,H,I,J,K, L,M	17	109 (1875) 98 (1880)
Stormbird	Wood Brigantine	162		Qld	B,C,D,E,F G,H,I,J,K, L,M	16	80 (1876) 145 (1878) 139 (1880)
Superior	Wood Schooner	205	118.4 x 25.5 x 9.7 *36.0 x 7.7 x 2.9*	Qld	B,E,I, J,K,M	2-3	133 (1880)
Surprise	Wood Brigantine	146		Fiji	E,H		

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Sybil *Sibil* *Sibyl*	Wood Schooner	120	86.0 x 20.7 x 11.0 *26.2 x 6.3 x 3.3*	Qld	A,B,C,D,E F,G,H,I,J, K,L,M	26-32	120 (1874) 81 (1880) 108 (1880)
Sybil II	Wood Top Sail Schooner	150	95.0 x 23.8 x 10.1 *28.9 x 7.2 x 3.0*	Qld	H,J	23-24	116 (1890)
Sydney Belle	Wood Barquentine	175	144.5 x 21.7 x 10.5 *44.0 x 6.8 x 3.2*	Qld	A,E,F,G H,I,J,K	18-19	
Syren	Wood Brigantine	107		Qld	C,E,F,I,J	1-3	
Telegraph	Wood Cutter	21	49.5 x 14.7 x 4.9 *15.0 x 4.4 x 1.4*	Qld	C,E,F,I,J, K	2	
Trelevan Family	Wood Schooner	198	105.6 x 23 x 12.4 *32.1 x 7.0 x 3.7*	Qld	I,K		
Ubea				German	L		
Uncle Tom	Wood Brig	166		Qld	C,E,F, I,J,K	2	
Upolu	Iron Schooner	112	80.3 x 22 x 10.3 *24.4 x 6.7 x 3.1*	Qld/Samoa	H,L		
Velocity	 Schooner			NSW	F		
Venture	Wood Brigantine	166			F,G,I,J K,M	1	25 (1879)
Victoria	Iron Steam Ship	1255		Qld	E,F,G, H,I,K	1	

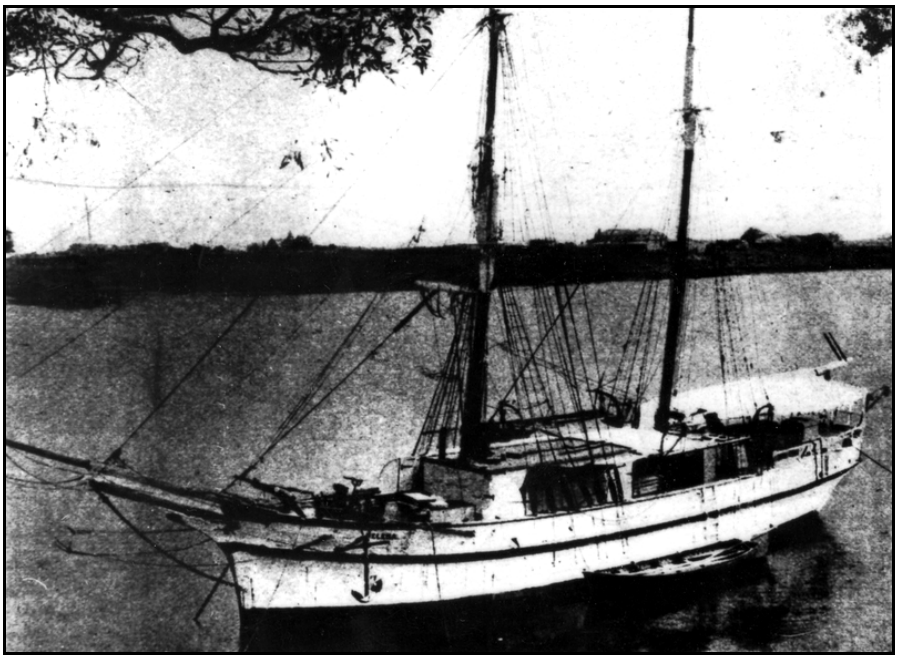
Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Victory	Wooden Steam Ship	90		Qld	E,J	1-2	
Van Tromp	Schooner			Fiji	D		
Water Lily	Brig	250		Fiji	C,F		
Wentworth	Iron Brig	607	219 x 27.3 x 22 *66.7 x 8.3 x 6.7*		E	1	
Wild Duck	Ketch			Fiji	F		
William Manson	Wood Barque	366	147.7 x 27.4 x 15.7 *45.0 x 8.3 x 6.7*	Qld	A,C,D,E, H,I,J,K	3	
Windward Ho	Schooner			Fiji	A,L		
Winifred	Schooner			Fiji	A,D,H		
Woodbine	Wood Barque	252	113.4 x 25.1 x 15.2 *34.5 x 7.6 x 4.6*		F,I,K		
Woodlark	Wood Barque	245	97.6 x 22.7 x 5.4 *28.7 x 6.9 x 1.6*	Qld	A,E,H, I,J,K,L,M	6	120 (1870)
Young Australian	Schooner	190		Fiji	C,F		

Vessel	Construction &Rig	Tonnage	Dimensions in Feet and *Metres* Length, Breadth, Depth	Recruiting For	Source	Voyages	Licensed for (year)
Young Dick	Wood Schooner	162	106.5 x 23.8 x 12.9 *32.4 x 7.2 x 3.9*	Qld	A,B,C,E,F G,H,I,J,K, L	7-8	120
Zephyr	Wood Top Sail Schooner	57	64.4 x 19 x 8.5 *19.6 x 5.7 x 2.5*	Fiji	A,F,I, K,L,M		12 (1878) 15 (1880)

Source Legend Key

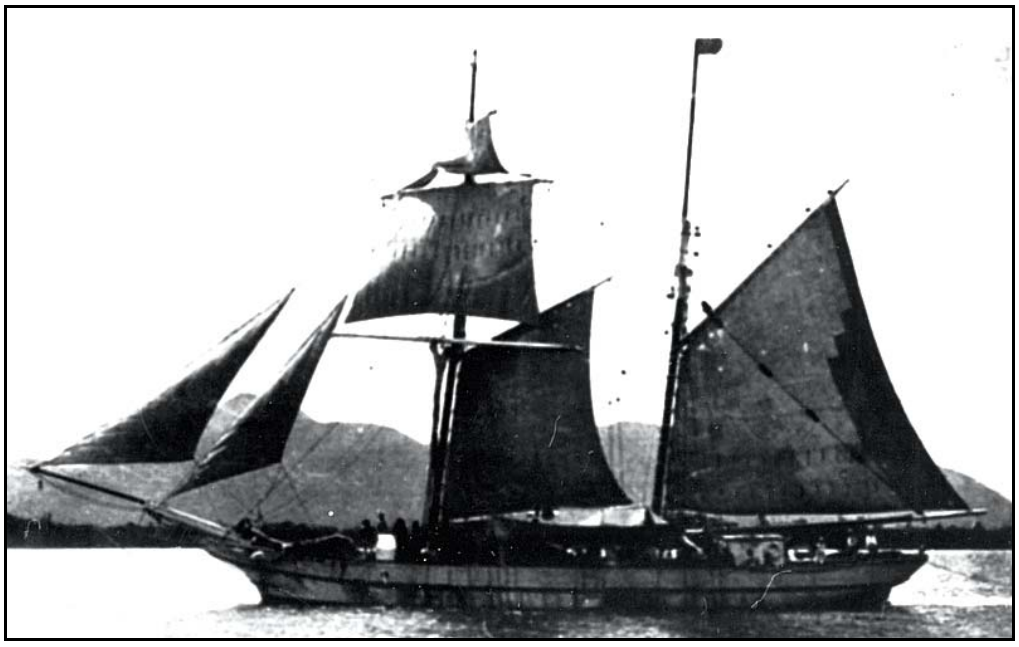
A	Corris (1973)	F	Holthouse (1969)	K	Stevens (1950)
B	Cromar (1935)	G	Matthews (1995)	L	Wawn (1893)
C	Docker (1970)	H	Moore (1985)	M	Wilson (1882)
D	Giles (1968)	I	National Library of Australia (NLA MS612)		
E	Graves (1979	J	Saunders (1974)		

Photographs of Queensland Labour Vessels



The *Helena*

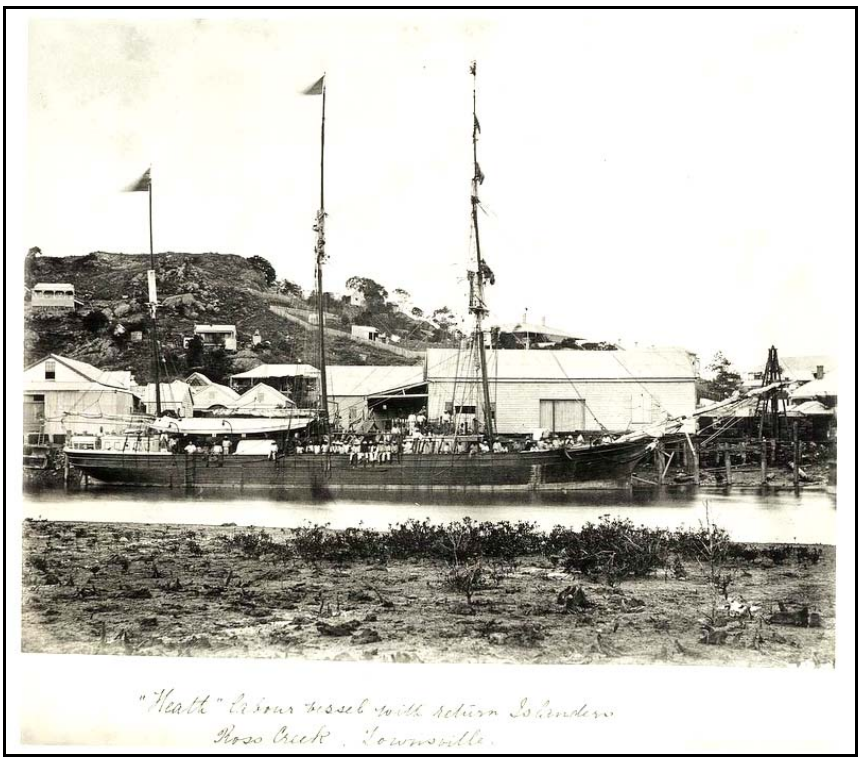
Source: Townsville Library Service, Local History Collection, Kanakas No 15



The *Fearless*

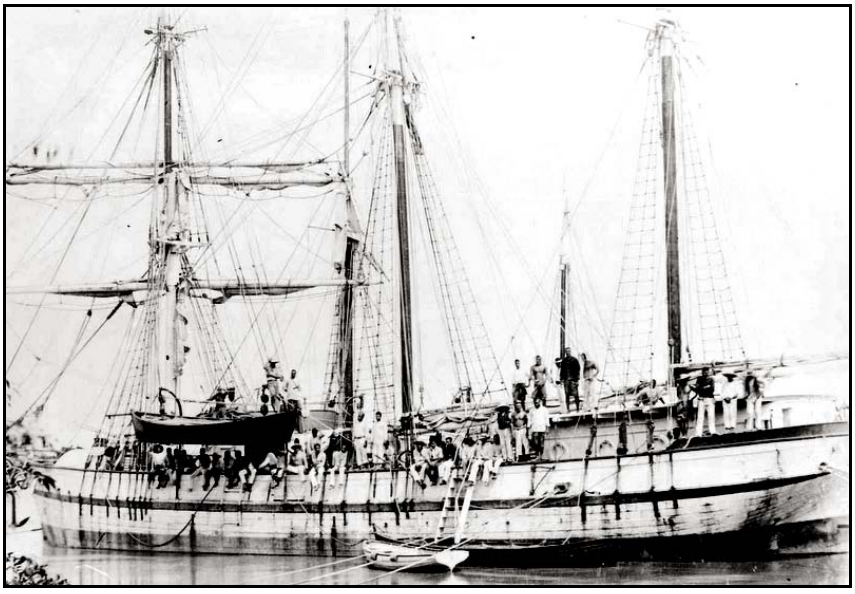
Source: Townsville Library Service, Local History Collection, Kanakas No 32

Photographs of Queensland Labour Vessels



The *Heath*

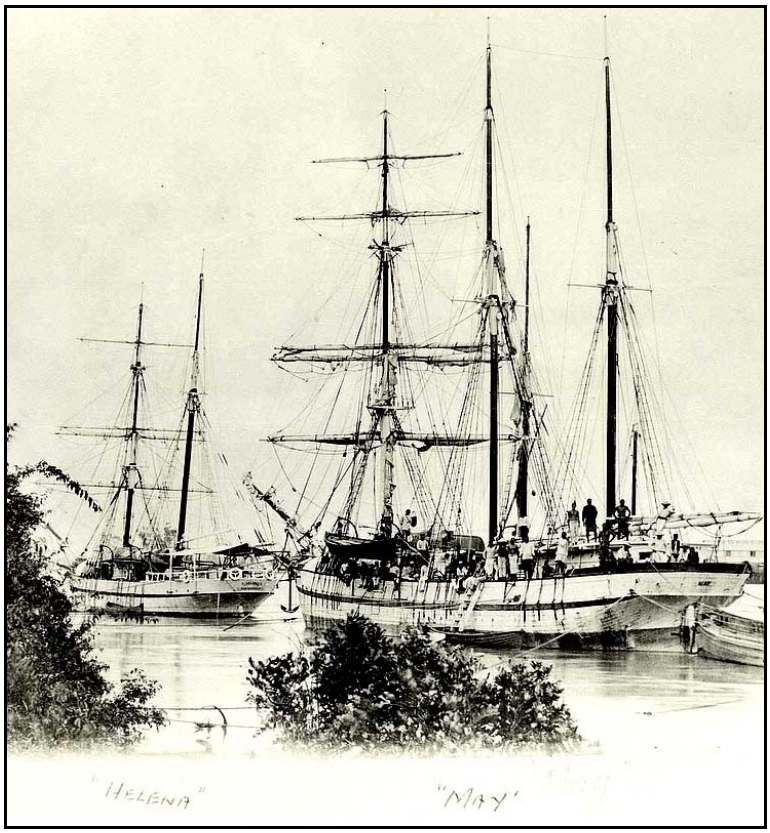
Source: Townsville Library Service, Local History Collection, Ross Creek No 132



The *May*

Source: Townsville Library Service, Local History Collection, Kanakas No 18

Photographs of Queensland Labour Vessels



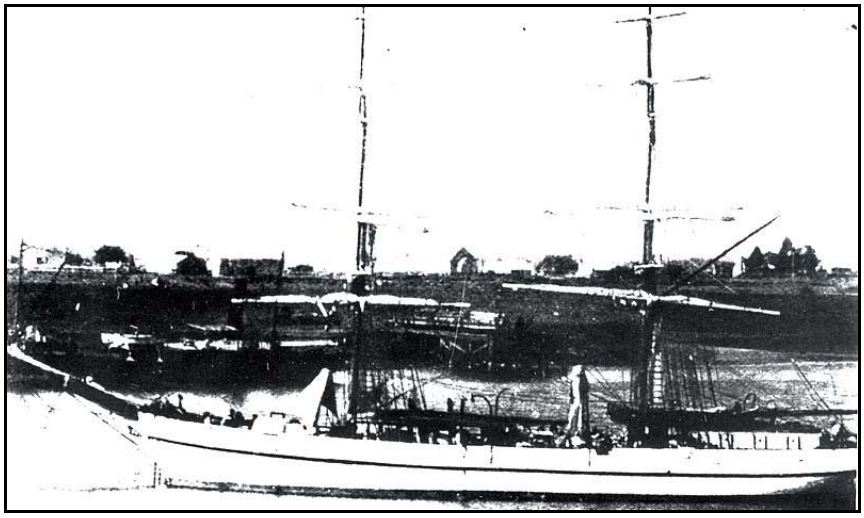
The *Helena* and the *May*

Source: John Oxley Library, Negative No 2245

Unidentified Labour Vessels

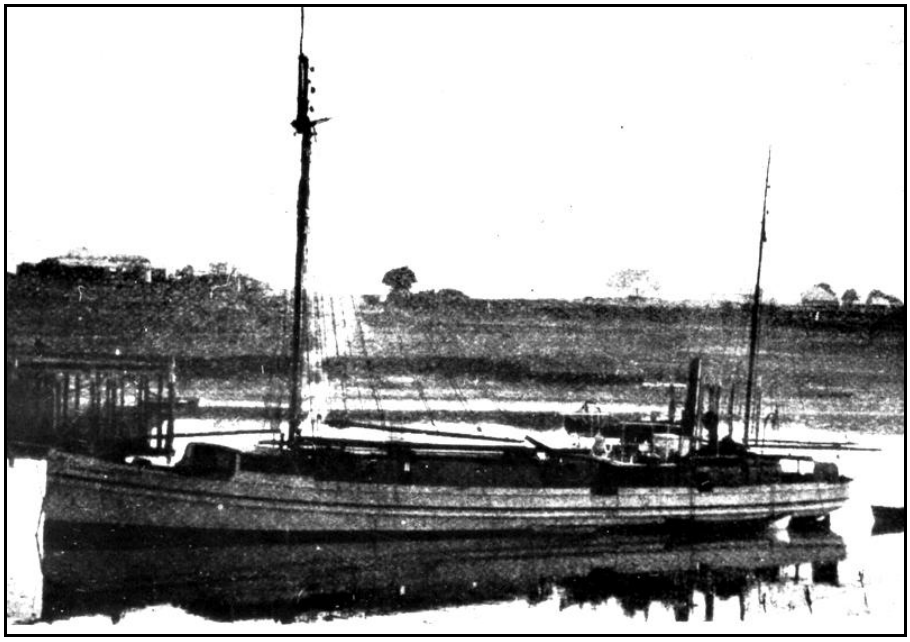
Source: Townsville Library Service, Local History Collection, Kanakas No 11

Photographs of Queensland Labour Vessels



The *Rio Loge*

Source: Townsville Library Service, Local History Collection, Kanakas No 19



The *Lady Norman*

Source: Townsville Library Service, Local History Collection, Kanakas No 16

Data for Comparing Trends in Voyage and Recruiting Numbers from 1863-1904

Year	Voyages	Recruits	Average
1863	1	67	67
1864	2	134	67
1865	2	148	74
1866	4	177	44
1867	9	1237	137
1868	13	948	73
1869	6	312	52
1870	10	638	64
1871	18	1352	75
1872	7	461	66
1873	14	994	71
1874	21	1503	72
1875	33	2682	81
1876	21	1688	80
1877	24	1986	83
1878	19	1421	75
1879	23	2182	95
1880	22	1997	91
1881	31	2643	85
1882	34	3140	92
1883	59	5276	89
1884	48	3265	68
1885	32	1916	60
1886	25	1595	64
1887	29	1988	69
1888	34	2291	67
1889	31	2032	66
1890	36	2459	68
1891	15	1050	70
1892	6	464	77
1893	14	1211	87
1894	22	1859	85
1895	16	1305	82
1896	11	782	71
1897	11	934	85
1898	12	1178	98
1899	16	1522	95
1900	20	1743	87
1901	20	1726	86
1902	18	1139	63
1903	12	1038	87
1904	6	78	13

In 5 Year Periods		
	Voyages	Average Recruits Per Voyage
1863-1867	18	78
1868-1872	54	66
1873-1877	113	77
1878-1882	129	88
1883-1887	193	70
1888-1892	122	70
1893-1897	74	82
1898-1904	104	76

As a % of Total		
5 Year Periods	Voyages	Recruits
1863-1867	2	3
1868-1872	7	6
1873-1877	14	14
1878-1882	16	18
1883-1887	24	22
1888-1892	15	13
1893-1897	9	10
1898-1904	13	14

Source: Compilation of Data in Price and Baker (1976), Graves (1993) and Moore (1985).

Data Base of Recruits by Island Groups over Time

5Year Group	Loyalty	New Hebrides			Banks	Torres	Santa Cruz	Solomon Is			New Guinea
		Sth	Ctl	Nth				Sth	Ctl	Nth	
1863-1867	421	307	881	120							
1868-1872	643	508	961	609	872			59	23		
1873-1877	59	1197	2202	3265	949	198	0	903	5		
1878-1882		1327	1892	4766	1433	230	25	1635	34	35	
1883-1887		1143	1355	4063	1081	203	192	2669	222	288	2808
1888-1892		525	953	2219	673	224	91	3588			
1893-1897		265	573	1213	393	154	121	3094			
1898-1904		528	906	1367	277	99		5085	116		
Total	1123	5800	9723	17622	5678	1108	429	17033	400	323	2808
% of Total	1.8	9.3	15.7	28.4	9.2	1.8	0.7	27.5	0.6	0.5	4.5

List of Islands within each Group

Loyalties: Lifu, Mare, Tika, Uvea.

New Hebrides (South): Aneityum, Aniwa, Eromanga, Futuna, Tanna.

New Hebrides (Central): Buninga, Efate, Emae, Emau, Epi, Eradaka, Evoso, Lamenu, Makura, Mataso, Moso, Nguna Pele, Tongariki, Tongoa.

New Hebrides (North): Ambrim, Espiritu Santo, Lopevi, Maewo, Malekula, Malo, Paama, Pentecost.

Banks: Gaua, Mera Lava, Merig, Mota, Valua, Vanua Lava, Ureparapara.

Torres: Hiw, Loh, Metoma, Tegua, Toga.

Santa Cruz: Ndende, Utupua, Vanikoro. (The individual Islands for Santa Cruz are not listed, so one has to assume that all three main Islands were involved).

Solomon Islands (South): Bellona, Floria, Guadalcanal, Malaita, Ndai, San Cristobal, Santa Ana, Santa Catalina, Savo, Ugi, Ulawa.

Solomon Islands (Central): Choisel, Rannonga, Simbo, Vella Lavella, Ysobel.

Solomon Islands (North): Bougainville, Buka, Nissan, Shortland.

New Guinea: D'Entrecasteaux, Duke of York, Feni, Lihir, Louisiades, New Britain, New Ireland, Nuguria, Tabar, Tanga, Woodlarks.

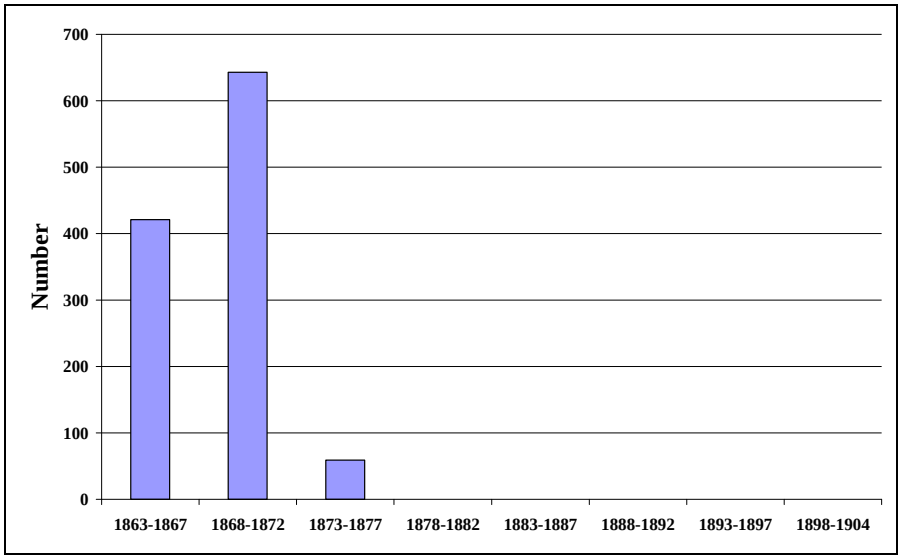
Source: Adapted from Price and Baker (1976:114-116).

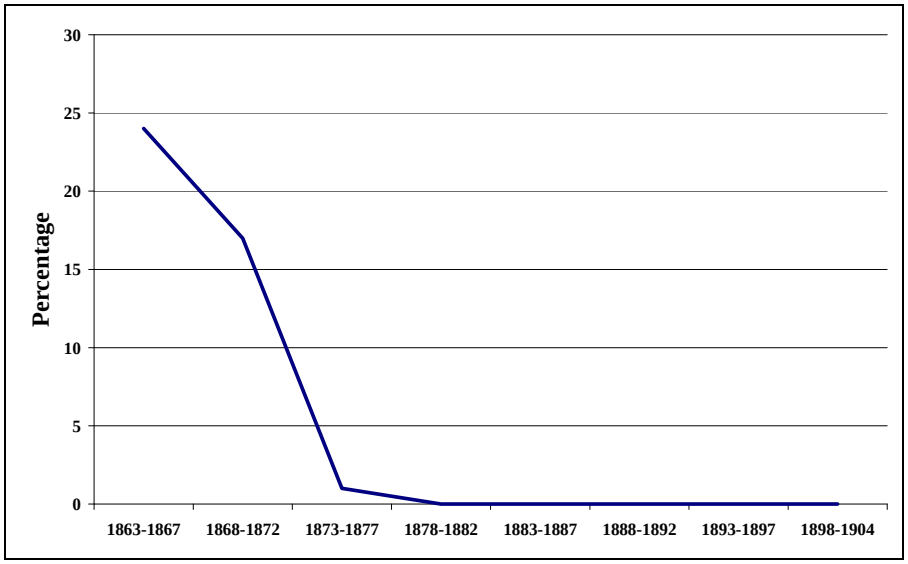
Recruit Numbers and Percentage by Island Groups over Time

The bar charts show a comparison of the numbers of recruits from a region in five year periods.

The line graphs show a comparison of the number of recruits from a region as a percentage of all recruits from all regions in five year periods.

Loyalty Islands



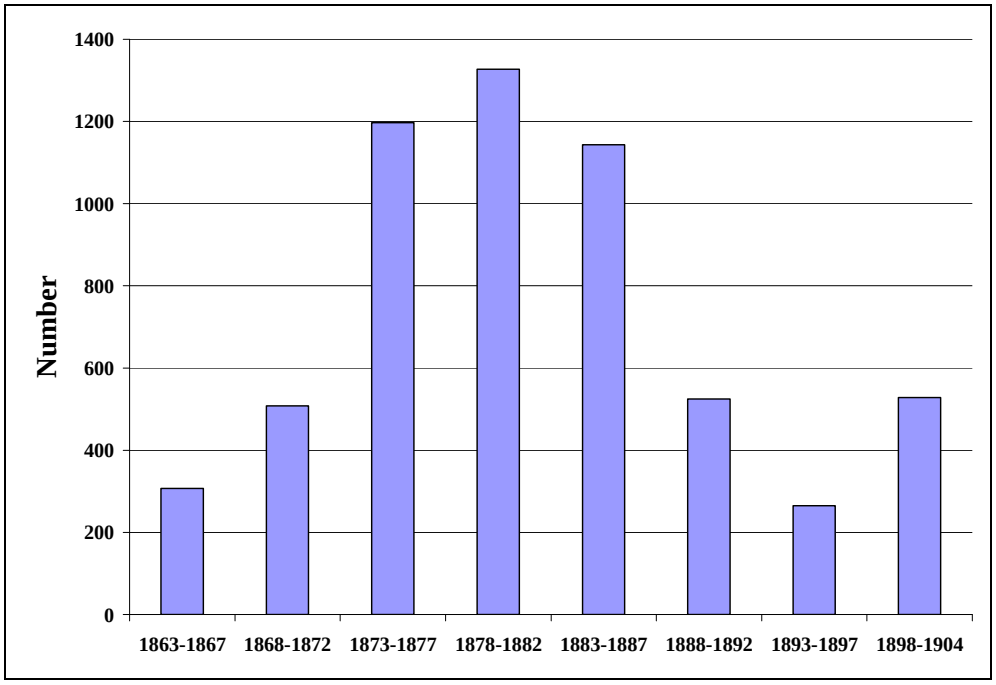


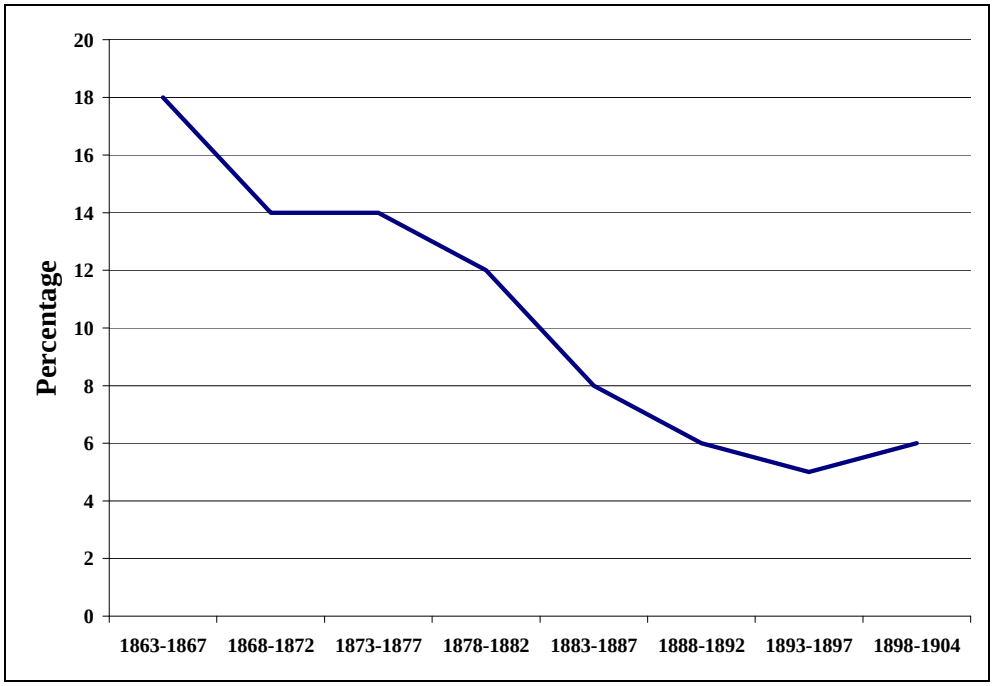
Source: Adapted from Price and Baker (1976).

Appendix 6

Recruit Numbers and Percentage by Island Groups over Time

New Hebrides (South)



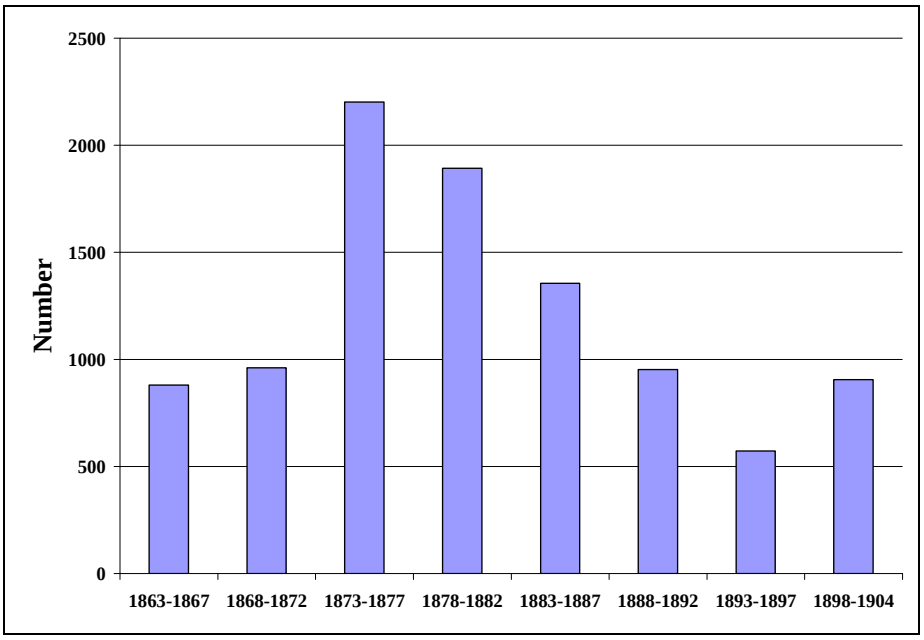


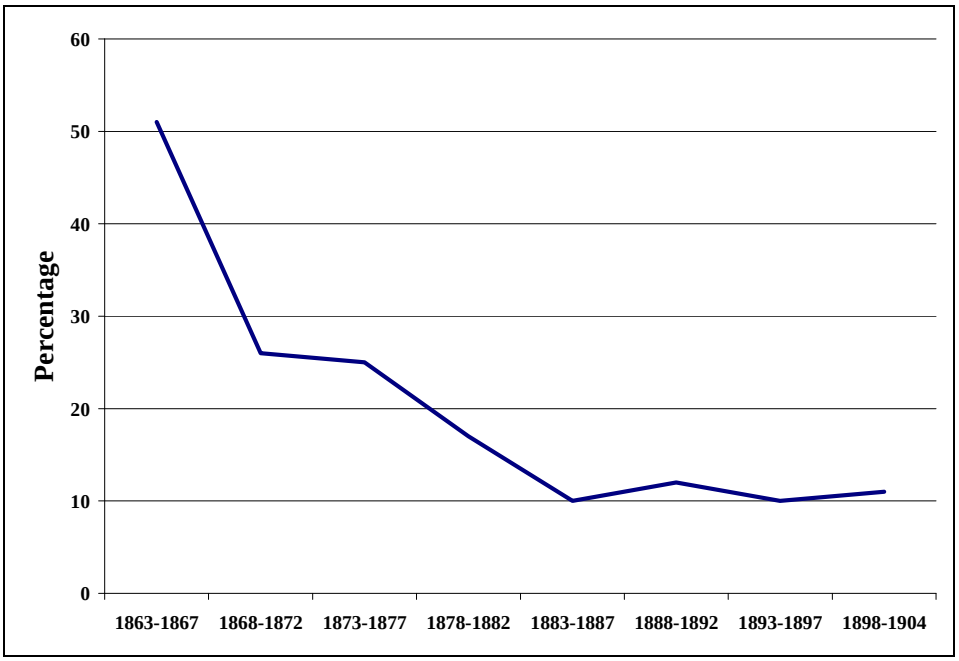
Source: Adapted from Price and Baker (1976)

Appendix 6

Recruit Numbers and Percentage by Island Groups over Time

New Hebrides (Central)



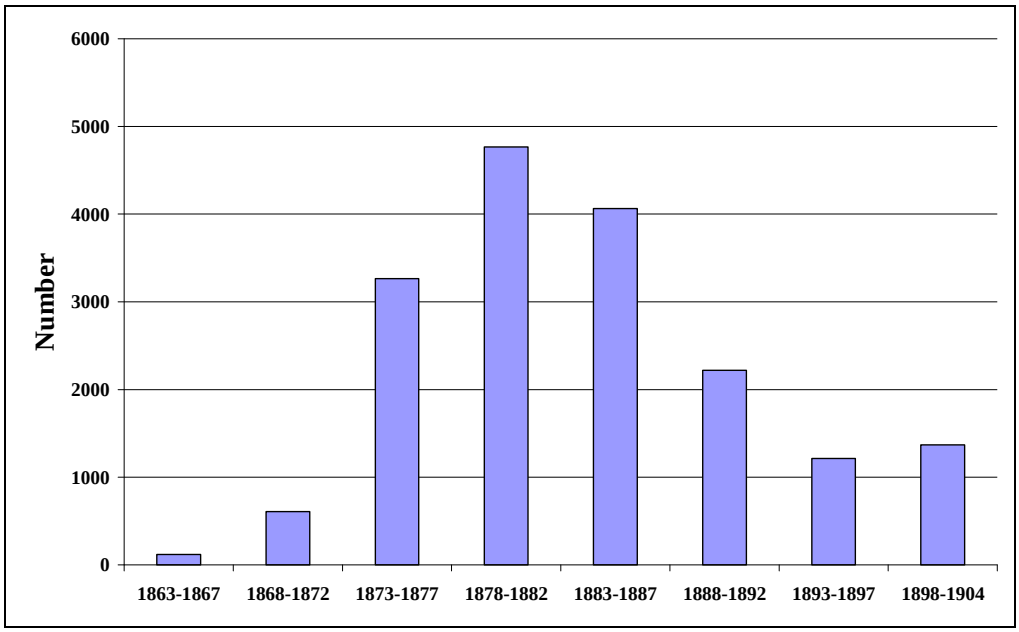


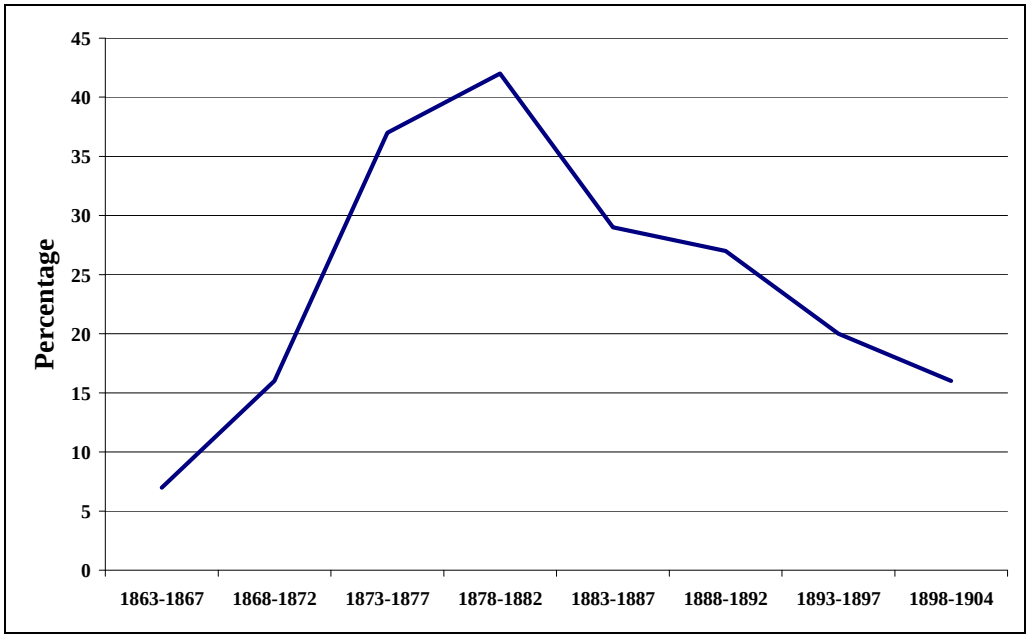
Source: Adapted from Price and Baker (1976)

Appendix 6

Recruit Numbers and Percentage by Island Groups over Time

New Hebrides (North)

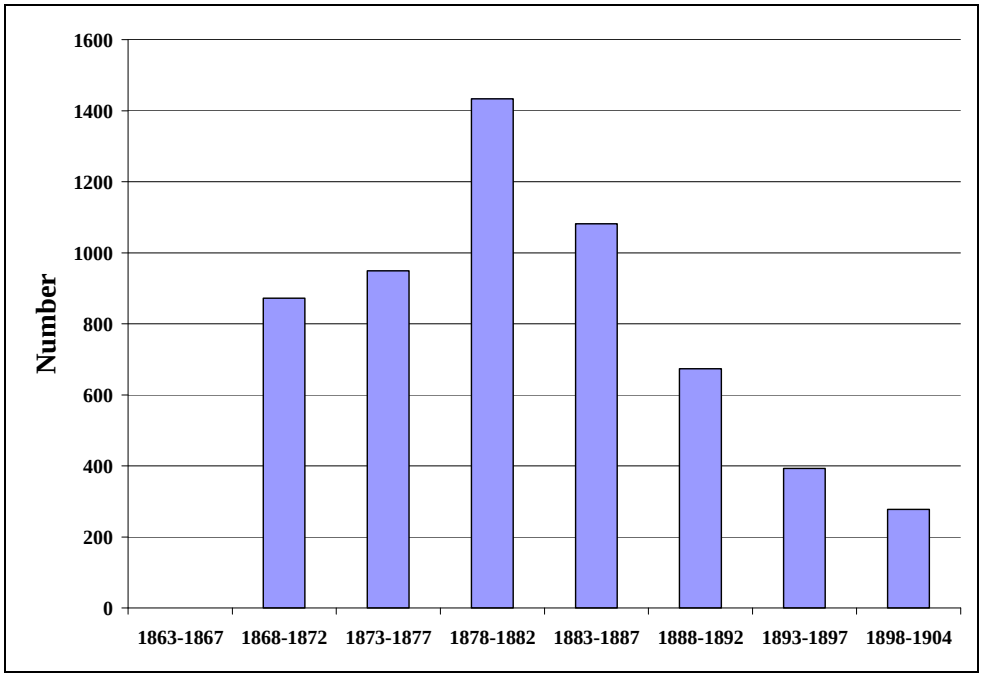


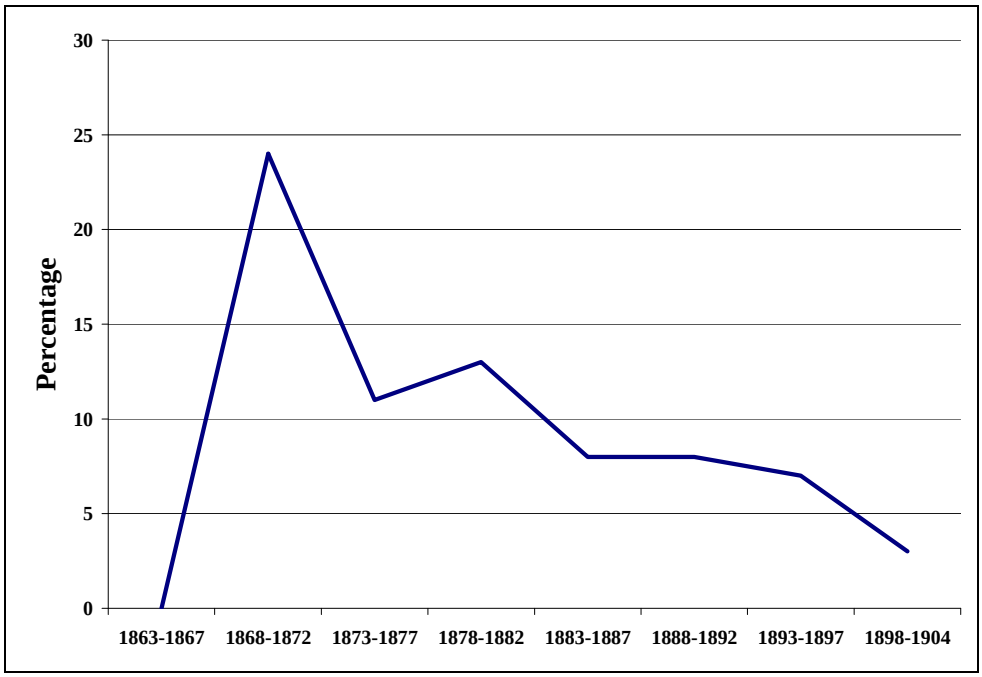


Source: Adapted from Price and Baker (1976)

Recruit Numbers and Percentage by Island Groups over Time

Banks Islands

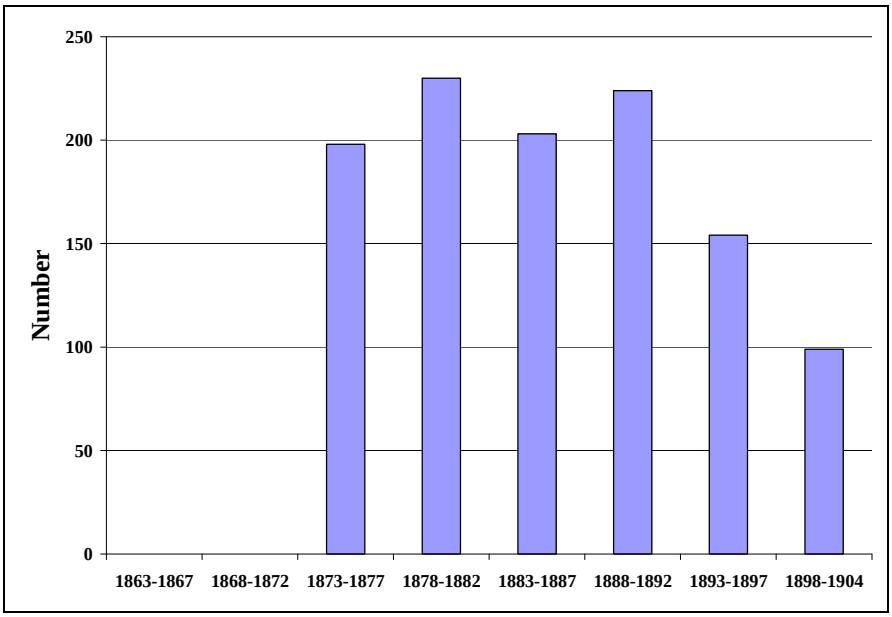


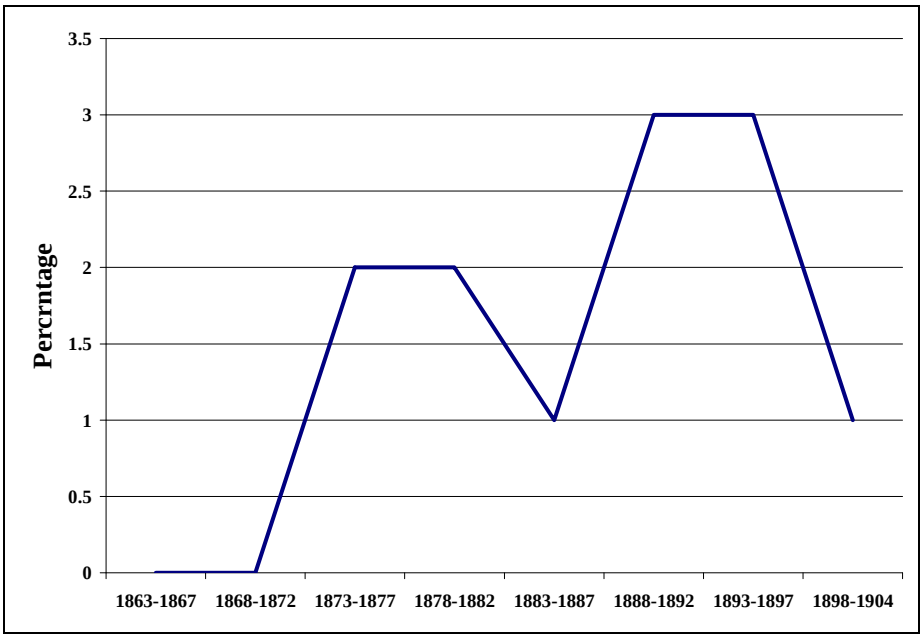


Source: Adapted from Price and Baker (1976)

Recruit Numbers and Percentage by Island Groups over Time

Torres Islands

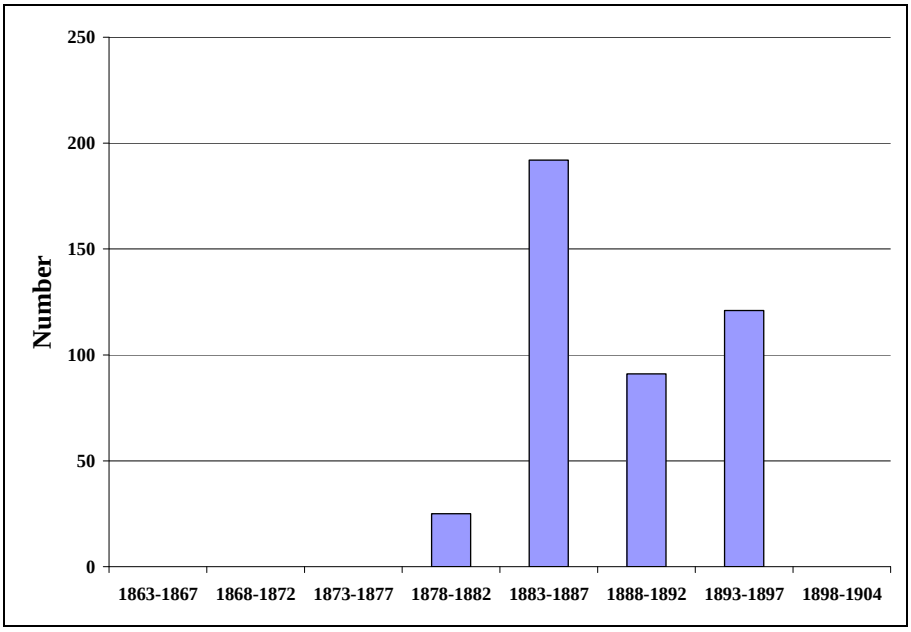


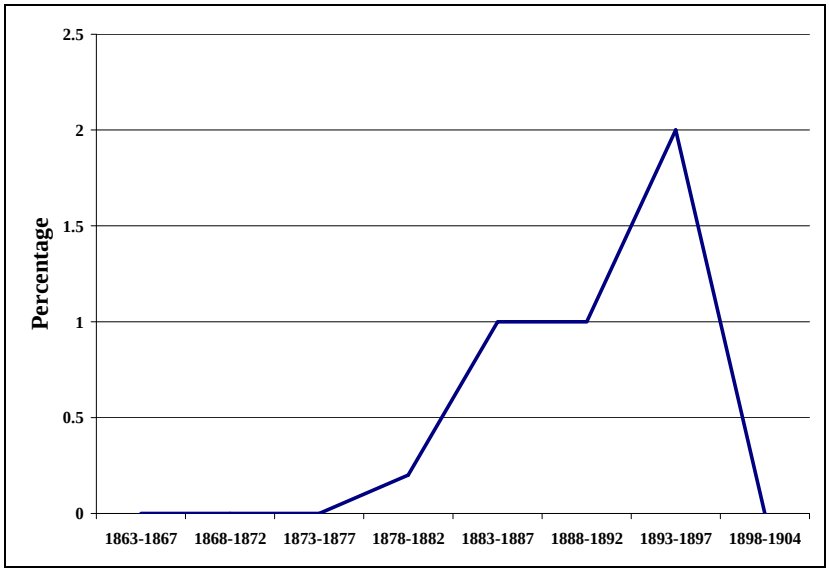


Source: Adapted from Price and Baker (1976)

Recruit Numbers and Percentage by Island Groups over Time

Santa Cruz

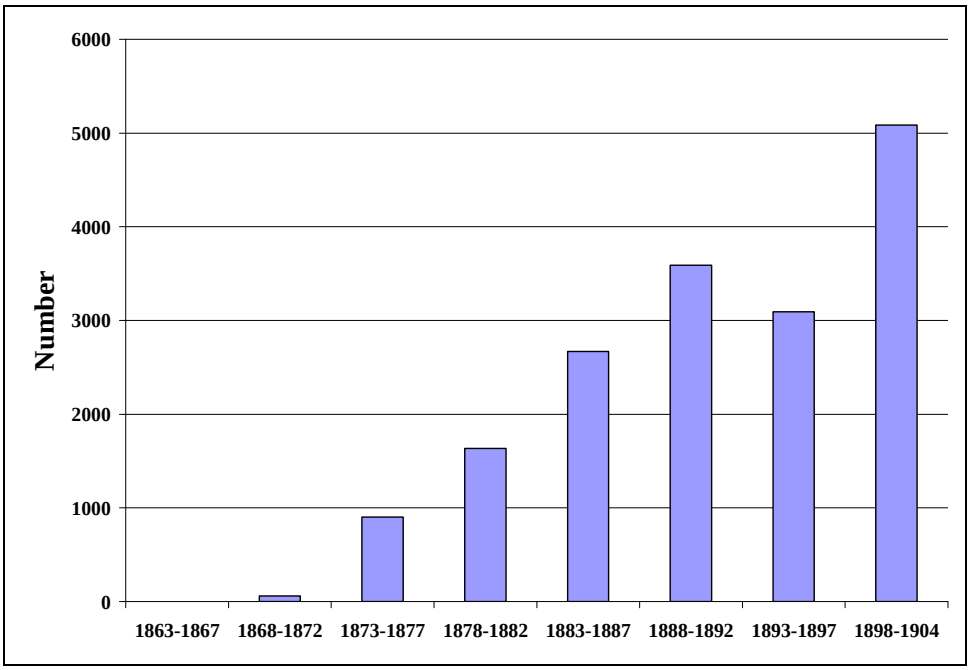


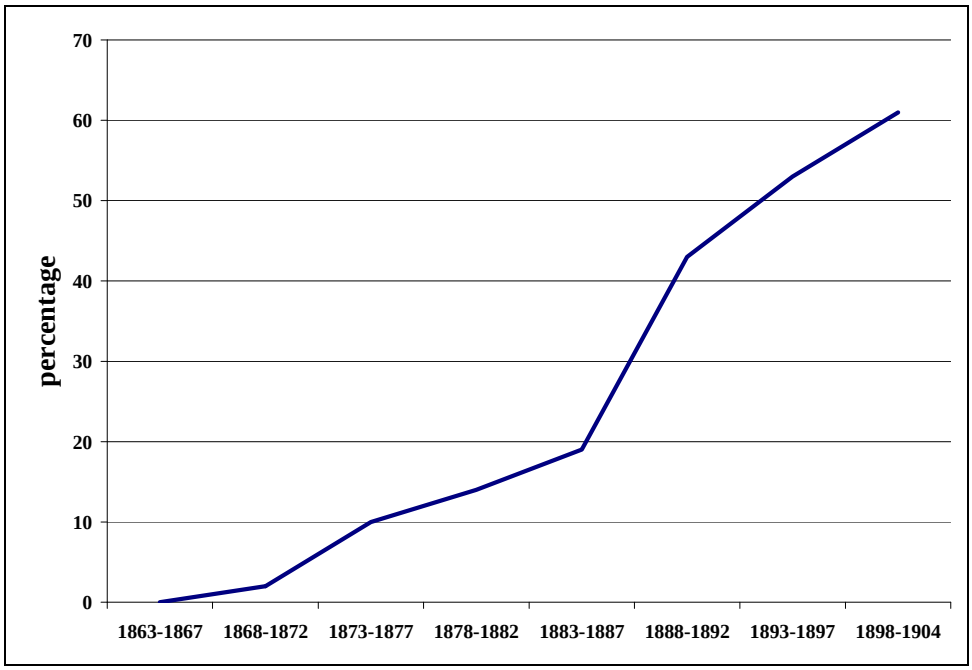


Source: Adapted from Price and Baker (1976)

Recruit Numbers and Percentage by Island Groups over Time

Solomon Islands (South)

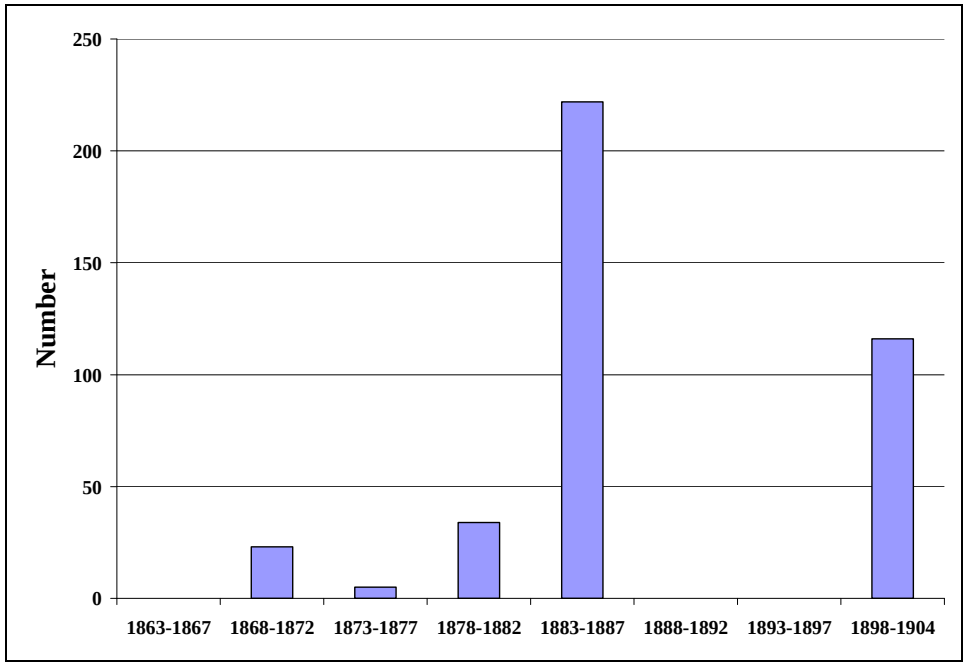


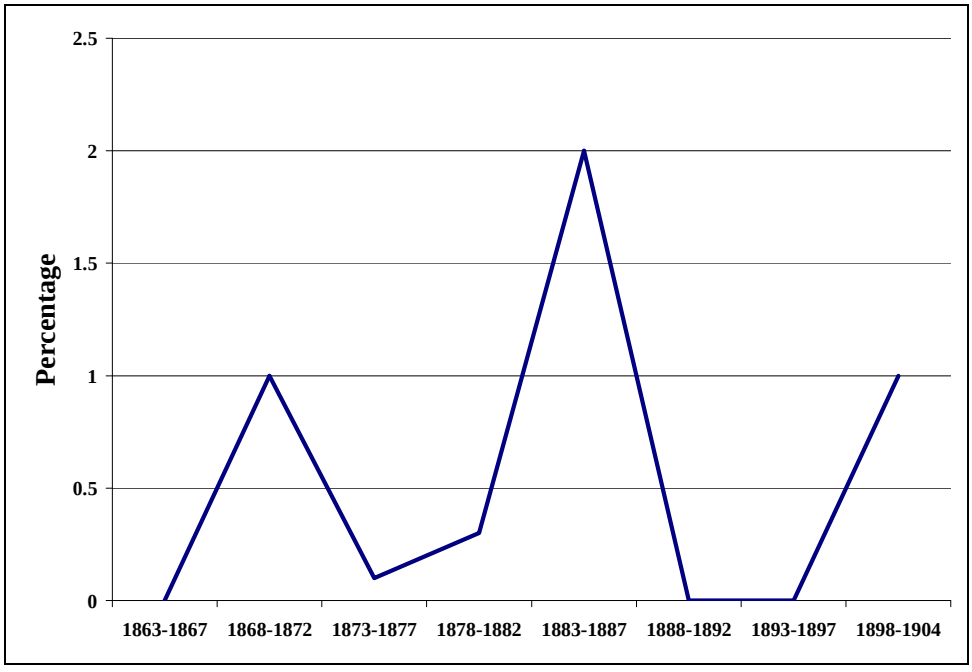


Source: Adapted from Price and Baker (1976)

Recruit Numbers and Percentage by Island Groups over Time

Solomon Islands (Central)

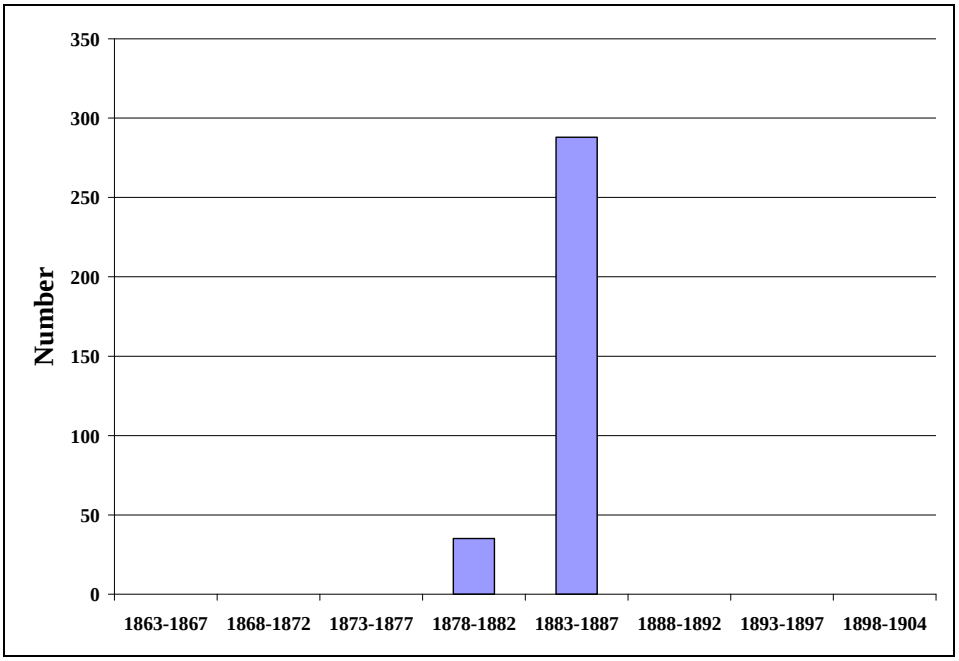


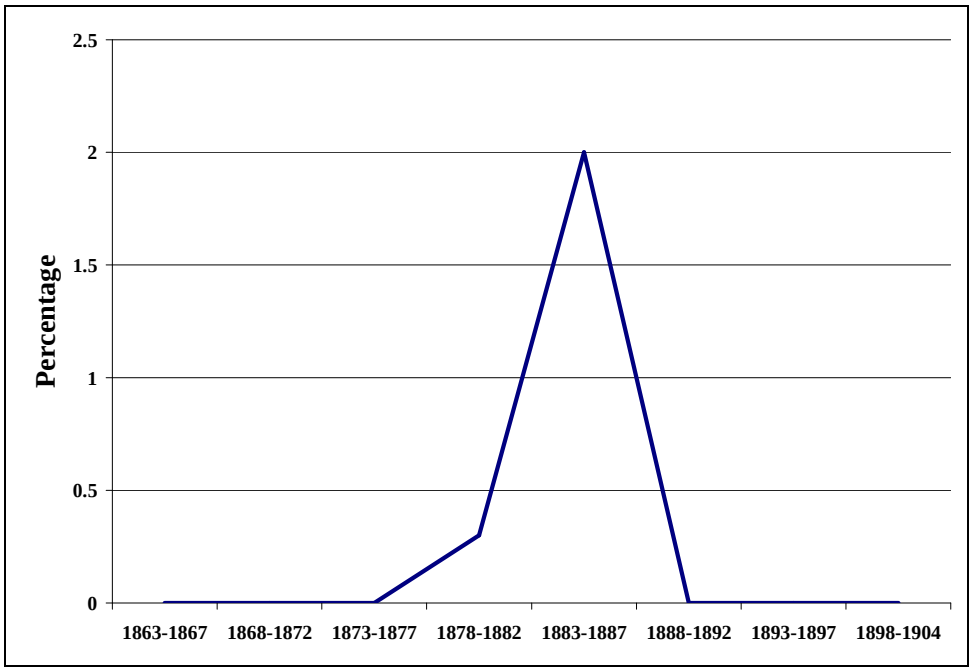


Source: Adapted from Price and Baker (1976)

Recruit Numbers and Percentage by Island Groups over Time

Solomon Islands (North)

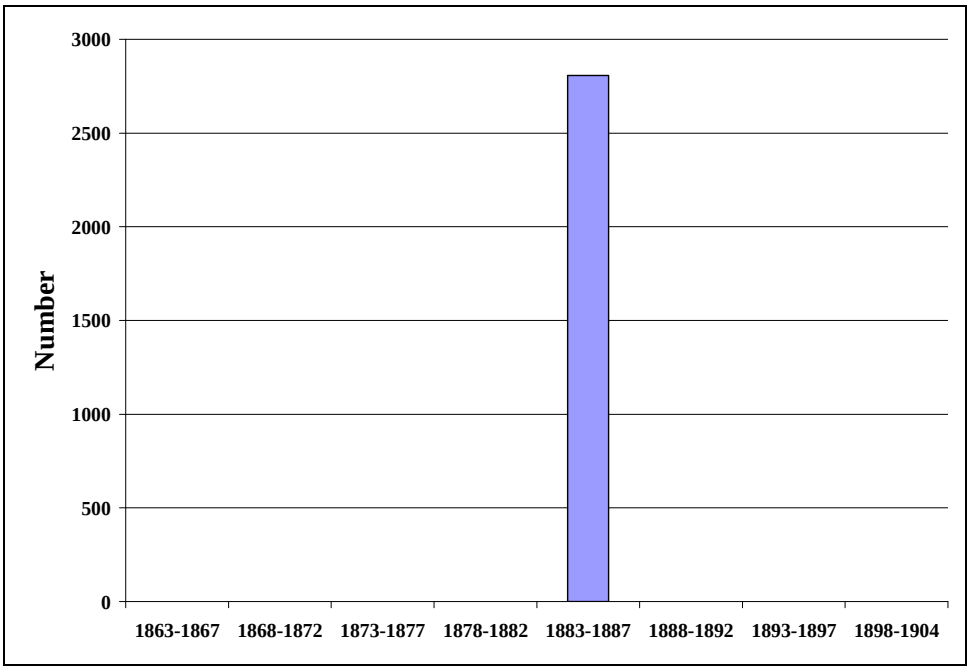


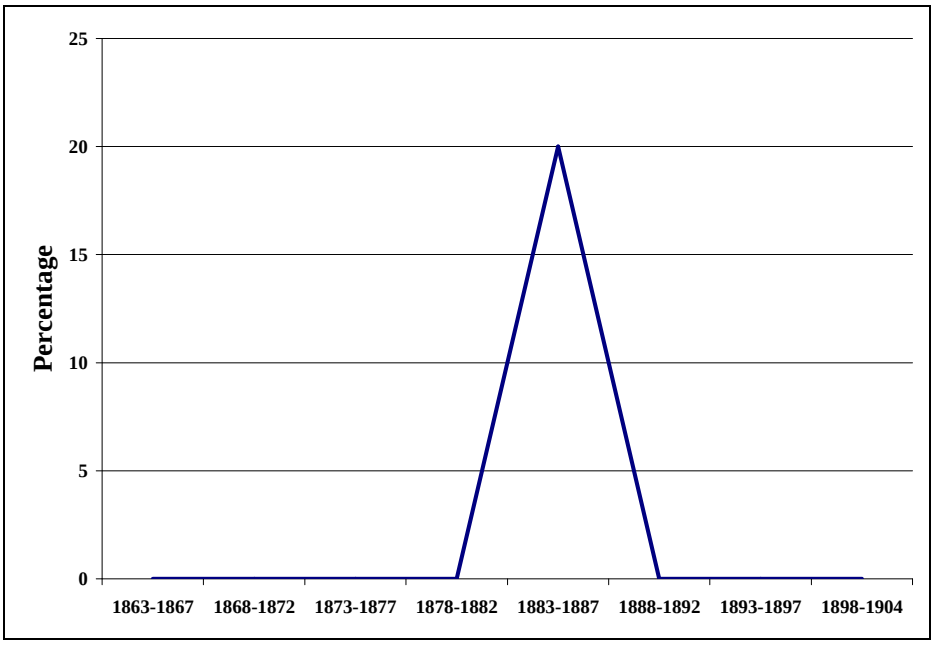


Source: Adapted from Price and Baker (1976)

Recruit Numbers and Percentage by Island Groups over Time

New Guinea





Source: Adapted from Price and Baker (1976)

Queensland Labour Trade Recruiting Area

Information printed on the reverse of the *Foam's* shipmasters licence detailing the area in which Queensland labour vessels could operate

Prohibition under Regulation No. 19 of 20th May, 1892.

RECRUITING is forbidden at the Group known as the Santa Cruz Islands, and at the Island of Tongoa, in the New Hebrides; also, at any place or island within the German sphere of influence in the Western Pacific; that is to say, any place or island lying to the west, north-west, or north of the conventional line of demarcation agreed upon by the declaration made by the Governments of Great Britain and the German Empire, and signed at Berlin on the 6th of April, 1886, and which line of demarcation is as follows:—

Starting from the north-east coast of New Guinea at a point near Mitre Rock on the 8th parallel of south latitude, being the boundary between the German and British Possessions on that coast, and following that parallel to its intersection with the 154th degree of east longitude; thence by a line to a point situate in 7° 15′ south latitude and 155° 25′ east longitude; thence by a line to a point situate in 7° 15′ south latitude and 155° 35′ east longitude; thence by a line to a point situate in 7° 25′ south latitude and 156° 40′ east longitude; thence by a line to a point situate in 8° 50′ south latitude and 159° 50′ east longitude; thence by a line to a point situate in 6° north latitude and 178° 30′ east longitude; and thence by a line to a point situate in 15° north latitude and 173° 30′ east longitude.

(Signed) J. W. Galloway
Immigration Agent.

Source: QSA PRE/85.

Appendix 8

Database of Male and Female Recruits and Returns over Time

Recruits and Returns by Numbers

5 Year Group	Total Recruits	Total Returns	Male Recruits	Male Returns	Female Recruits	Female Returns
1863-1867	1763	273	1763	273	0	0
1868-1872	3716	2035	3634	2023	74	12
1873-1877	8853	3249	8582	3163	271	86
1878-1882	11383	6795	10504	6495	879	300
1883-1887	14040	9728	12748	8722	1292	1006
1888-1892	8309	5852	7657	5306	652	546
1893-1897	6107	4527	5818	4062	287	465
1898-1904	8442	7154	8154	6694	288	460
Total	**62613**	**39613**	**58860**	**36738**	**3743**	**2875**

Recruits and Returns by Percentage

5 Year Group	Male as % of Total Recruits	Female as %.of Total Recruits	Male as % of Total Returns	Female as % of Total Returns	Male as % of Male Recruits	Female as % of Female Recruits	Male as % of Male Returns	Female as % of Female Returns
1863-1867	2.8	0	0.68	0	2.99	0	0.74	0
1868-1872	5.8	0.1	5.1	0.03	6.17	1.97	5.5	0.41
1873-1877	13.7	0.4	7.98	0.21	14.58	7.24	8.6	2.99
1878-1882	16.7	1.4	16.39	0.75	17.84	23.48	17.67	10.43
1883-1887	20.3	2	22	2.53	21.65	34.51	23.74	34.99
1888-1892	12.2	1.04	13.39	1.37	13	17.41	14.44	18.99
1893-1897	9.3	0.45	10.2	1.17	9.88	7.66	11.05	16.17
1898-1904	13	0.46	16.89	1.16	13.85	7.69	18.22	16
Total	**100%**		**100%**		**100%**	**100%**	**100%**	**100%**

Source: Adapted from Graves (1993: 224-225)

Appendix 9

Population Estimate for the New Hebrides during the Queensland Labour Trade

Northern Region

Year	Santo	Malo	Aoba	Malekula	Ambrym	Pentecost	Paama
1875	20 000	*	*	10 000	3 000	500	*
1884	30 000	1000	10-12 000	*	*	*	1 000
1897	*	*	*	*	*	*	1 200
1898	20 000	*	*	8 000	3 000	*	
1900	*	*	*			*	1 700
Estimate of Population Loss/Gain	**0%**	**N/A**	**N/A**	**20%***	**N/A***	**N/A**	**41% Gain**

Southern Region

Year	Aneityum	Tanna	Erromango	Futuna	Aniwa
1865	2100	*	4-5000	*	*
1871	*	8-12000	*	900	250
1872	*	8000	1-2000	900	*
1873	*	15-20000		*	222
1874	1488	7-8000		769	192
1875	1500	10000	2000	*	*
1878	1279	*	*	*	*
1879	*	*	*	5-6000	*
1883	1056	*	*	437/527	*
1884	954	*	*	*/524	167
1886	930	*	*	520	160
1887	*	*	*	515	152
1888	850	*	*	510	*
1889	*	*	2550	*	*
1890	760	*	*	*	*
1892	710	*	*	480	161
1893	*	*	900-1000	347	153
1894	*	*	1745	*	*
1895	678	*	*	330	170
1896	600	*	*	*	190
1897	527	*	*	310	166
1898	517	*	1500	*	*
1899	477	*	*	290	146
1900	482	*	*	287	*
1901	476	*	*	*	*
1902	527	*	*	320	*
1903	460	*	*	*	*
Estimate of Population loss	**78%**	**16%**	**70%**	**64%**	**41%**

***** Indicates that the data was unavailable

Source: Adapted from Mc Arthur and Yaxley (1968)

Appendix 10

FOAM Artefacts at the Museum of Tropical Queensland

Accession Number	Description	Quantity
MA 3200	Composite concretion containing Pipe fragments and axes	1
MA3200-2	Resin cast of axe head	1
MA 3201	Ceramic armband	1
MA 3202	Ceramic armband	1
MA 3203	Resin cast of small axe head	1
MA 3204	Ballast stones	2
MA 3205	Unidentified cast iron artefact	1
MA 3206	Concretion of clay pipes	1
MA 3207	Wood fragments	3
MA 3208	Clay pipe fragments, stems & bowls	25
MA 3209	Wooden tomahawk handle	1
MA 3210	Ceramic armband fragments	3
MA 3211	Ceramic armband fragments	3
MA 3212	Ceramic armband fragments	4
MA 3213	Ceramic armband fragment	1
MA 3214	Ceramic armband fragment	1
MA 3215	Ceramic armband fragment	1
MA 3216	Ceramic armband fragment	1
MA 3217	Ceramic armband fragment	1
MA 3218	Ceramic armband fragment	1
MA 3219	Ceramic armband fragment	1
MA 3220	Ceramic armband fragments	20
MA 3221	Ceramic armband fragments	3
MA 3222	Ceramic armband fragment	1
MA 3223	Ceramic armband fragment	1
MA 3224	Ceramic armband fragment	1
MA 3225	Ceramic armband fragment	1
MA 3226	Ceramic armband fragment	1
MA 3227	Ceramic armband fragment	1
MA 3228	Ceramic armband fragment	1
MA 3229	Ceramic armband fragment	1
MA 3230	Ceramic armband fragment	1
MA 3231	Ceramic armband fragment	1
MA 3232	Ceramic armband fragment	1
MA 3233	Ceramic egg cup fragment	1
MA 3234	Earthenware fragment	1
MA 3235	Ceramic plate fragment	1
MA 3236	Ceramic plate fragment	1
MA 3237	Ceramic plate fragment	1
MA 3238	Ceramic plate fragment	1
MA 3239	Ceramic plate fragment	1
MA 3240	Ceramic plate fragment	1
MA 3241	Ceramic plate fragment	1
MA 3242	Ceramic plate fragment	1

Accession Number	Description	Quantity
MA 3243	Ceramic plate fragment	1
MA 3244	Ceramic plate fragment	1
MA 3245	Stoneware Jar fragment	1
MA 3246	Ceramic plate fragment	1
MA 3247	Ceramic plate fragment	1
MA 3248	Ceramic plate fragment	1
MA 3249	Ceramic bowl fragment	1
MA 3250	Ceramic plate fragment	1
MA 3251	Ceramic ointment jars	2
MA 3252	Ceramic plate fragment	1
MA 3253	Ceramic bowl fragment	1
MA 3254	Ceramic bowl fragment	1
MA 3255	Ceramic bowl fragment	1
MA 3256	Ceramic plate fragment	1
MA 3257	Ceramic plate fragment	1
MA 3258	Ceramic plate fragment	1
MA 3259	Shell buttons	2
MA 3260	Ceramic armband	1
MA 3261	Ceramic armband	1
MA 3262	Ceramic armband	1
MA 3263	Ceramic armband	1
MA 3264	Ceramic armband	1
MA 3265	Ceramic armband	1
MA 3266	Ceramic armband	1
MA 3267	Ceramic armband	1
MA 3268	Ceramic armband	1
MA 3269	Ceramic armband	1
MA 3270	Ceramic armband	1
MA 3271	Ceramic armband	1
MA 3272	Ceramic armband	1
MA 3273	Ceramic armband	1
MA 3274	Ceramic armband	1
MA 3275	Ceramic armband	1
MA 3276	Ceramic armband	1
MA 3277	Ceramic armband	1
MA 3278	Ceramic armband	1
MA 3279	Ceramic armband	1
MA 3280	Ceramic armband	1
MA 3281	Ceramic armband	1
MA 3282	Ceramic armband	1
MA 3283	Ceramic armband	1
MA 3284	Ceramic armband	1
MA 3285	Ceramic armband	1
MA 3286	Ceramic armband	1
MA 3287	Ceramic armband	1
MA 3288	Ceramic armband	1
MA 3289	Ceramic armband	1
MA 3290	Ceramic armband	1

Accession Number	Description	Quantity
MA 3292	Ceramic armband	1
MA 3293	Ceramic armband	1
MA 3294	Ceramic armband	1
MA 3295	Ceramic armband	1
MA 3296	Ceramic plate fragment	1
MA 3297	Plate glass	1
MA 3298	Plate glass fragment	1
MA 3299	Plate class fragment, circular	1
MA 3300	Glass stopper	1
MA 3301	Glass bowl fragment	1
MA 3302	Glass stopper for preserving bottle	1
MA 3303	Glass bottle base	1
MA 3304	Glass bottle base, embossed	1
MA 3305	Glass tumbler base	1
MA 3306	Glass bottle base	1
MA 3307	Ceramic armband fragment	1
MA 3308	Ceramic armband fragment	1
MA 3309	Ceramic armband fragment	1
MA 3310	Ceramic armband fragments	3
MA 3311	Ceramic armband fragments	3
MA 3312	Composite concretion containing wood, clay pipe stem and ceramic armband fragments	1
MA 3313	Ballast stones	2
MA 3314	Glass salad oil bottle fragment	1
MA 3315	Glass salad oil bottle fragment	1
MA 3316	Glass bottle fragment	1
MA 3317	Glass bottle fragment with glass stopper	1
MA 3318	Glass salt cellar fragment	1
MA 3319	Glass fragments	6
MA 3320	Glass bottle small	1
MA 3321	Glass bottle fragment	1
MA 3322	Glass bottle fragment	1
MA 3323	Clay pipe fragments	24
MA 3324	Clay pipe	1
MA 3325	Clay pipe fragments	8
MA 3326	Clay pipe	1
MA 3327	Copper alloy drain	1
MA 3328	Copper alloy flange fitting	1
MA 3329	Copper alloy roller bearing	1
MA 3330	Copper alloy roller bearing	1
MA 3331	lead object unidentified	1
MA 3332	Snider rifle cartridge complete	1
MA 3333	Pistol cartridge and projectile	1
MA 3334	Pistol cartridge fragments	2
MA 3335	lead fragments unidentified	2
MA 3336	Rollers from roller bearing	2

Accession Number	Description	Quantity
MA 3337	Pistol cartridge	1
MA 3338	Brass hinge	1
MA 3339	Copper alloy rivet	1
MA 3340	Terracotta base from projectile	1
MA 3341	Brass tacks	12
MA 3342	Pistol cartridge and projectile	1
MA 3343	Pistol cartridge base fragment	1
MA 3344	Copper nails, rivets & tacks	9
MA 3345	Rifle projectile	1
MA 3346	Rifle projectiles	2
MA 3347	Cartridge base	2
MA 3348	Copper alloy tacks	4
MA 3349	Rifle projectiles	4
MA 3350	Rifle projectiles	7
MA 3351	Copper alloy pin	1
MA 3352	Copper alloy tacks	3
MA 3353	Copper alloy nail	1
MA 3354	Class bead	1
MA 3355	Cork	1
MA 3356	Buttons	3
MA 3357	Copper alloy solid pipe	1
MA 3358	Copper alloy bolt head	1
MA 3359	Copper alloy bolt	1
MA 3359-2	Copper alloy washer	1
MA 3360	Copper alloy door latch	1
MA 3361	Copper bolt	1
MA 3362	Copper bolt, shaft only	1
MA 3363	Copper bolt, shaft only	1
MA 3364	Copper bolt, shaft only	1
MA 3365	Copper bolt head with washer	1
MA 3366	Copper bolt	1
MA 3366-2	Copper alloy washer	1
MA 3367	Copper bolt with washer	1
MA 3368	Ceramic pipe	1
MA 3369	Lead object unidentified	1
MA 3370	Clay pipe	1
MA 3371	Clay pipe	1
MA3372-1	Clay pipe bowl fragment and stem	1
MA3372-2	Clay pipe bowl fragment	1
MA 3373	Clay pipe	1
MA 3374	Clay pipe fragment	1
MA 3375	Clay pipe	1
MA 3376	Clay pipe	1
MA 3377	Clay pipe	1
MA 3378	Clay pipe fragment	1
MA 3379	Clay pipe bowl	1
MA 3380	Clay pipe bowl	1
MA 3381	Clay pipe bowl	1

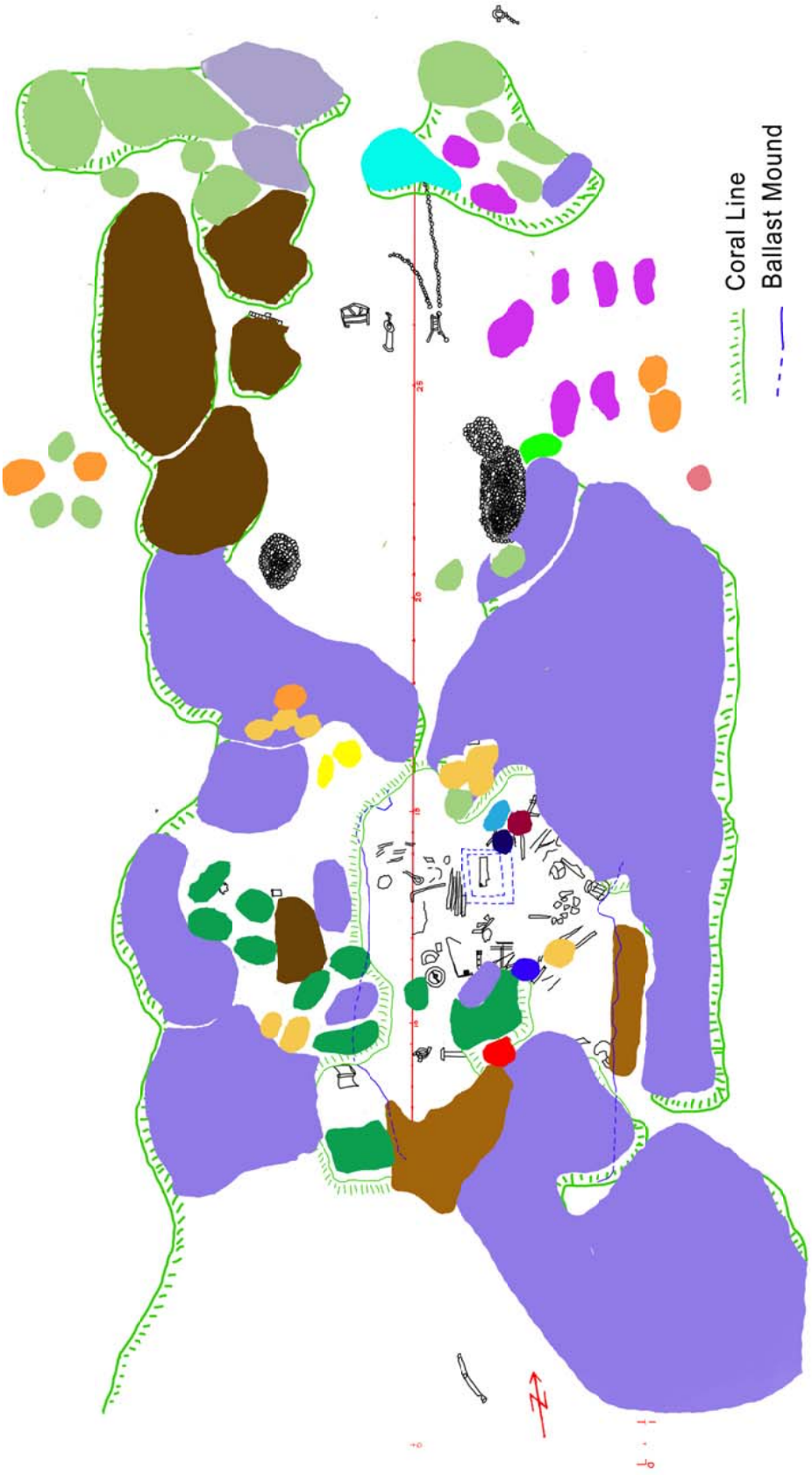
Appendix 10

Accession Number	Description	Quantity
MA 3382	Clay pipe bowl	1
MA 3383	Clay pipe fragment	1
MA 3384	Clay pipe stems	2
MA 3385	Clay pipe fragment	1
MA 3386	Clay pipe bowl	1
MA 3387	Clay pipe bowl	1
MA 3388	Clay pipe bowl	1
MA 3389	Clay pipe	1
MA 3390	Clay pipe bowl	1
MA 3391	Clay pipe	1
MA 3393	Ceramic armband fragments	3
MA 3394	Glass bottle containing black olives	1
MA 3498	Clay pipe	1
MA 3500	Ceramic armband	1
MA 3501	Ceramic armband	1
MA 3502	Concretion of 4 ceramic armbands & the base of a bottle	1
MA 3503	Ceramic armband	1
MA 3504	Ceramic armband	1
MA 3505	Sandglass in metal case	1
MA 3506	Leather heel	1
MA 3507	Glass beads	12
MA 3508	Ceramic armband	1
MA 3509	Clay pipe	1
MA 3510	Clay pipe	1
MA 3511	Clay pipe	1
MA 3512	Clay pipe	2
MA 3513	Clay pipe bowl and part stem	1
MA 3514	Class fragments	2
MA 3515	Ceramic armband	1
MA 3516	Ceramic armband	1
MA 3517	Rifle projectiles	2
MA 3518	Clay pipe bowl and part stem	1
MA 3519	Ceramic armband fragment	1
MA 3520	Shell money rings	2
MA 3521	Copper alloy roller & pin	2
MA 3522	Clay pipe stem	1
MA 3523	Concretion of clay pipes	1
MA 3524	Lead ball shot projectiles	5
MA 3525	Wood sheave from block	1
MA 3526	Clay pipe	1
MA 3527	Clay pipe bowl and part stem	1
MA 3528	Clay pipe bowl and part stem	1
MA 3529	Clay pipe bowl fragment and part stem	1
MA 3530	Clay pipe bowl fragment and part stem	1
MA 3531	Metal rod	1
MA 3532	Clay pipe stem	1
MA 3533	Clay pipe stem	1

Appendix 10

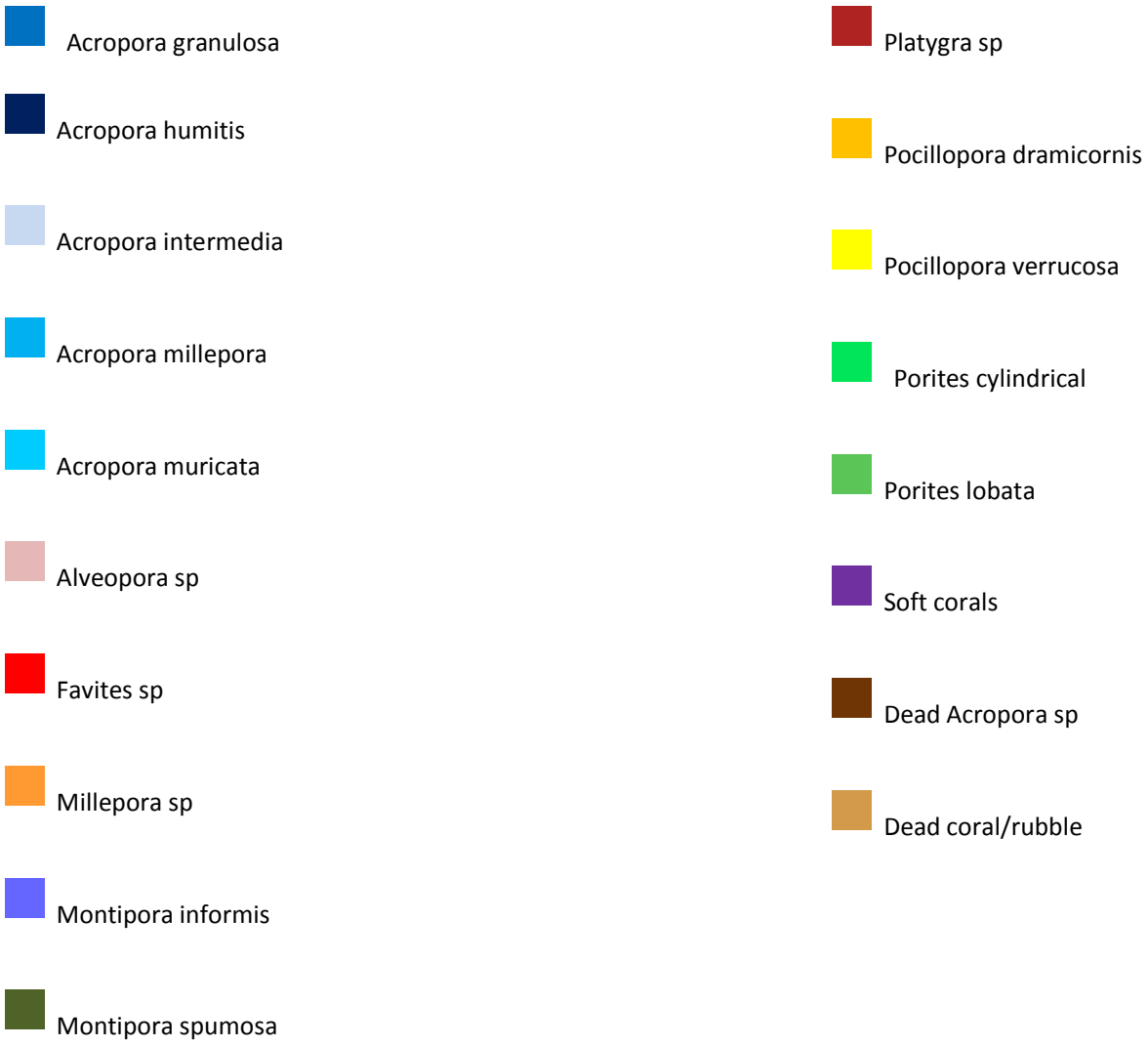
Accession Number	Description	Quantity
MA 3534	Clay pipe stem	1
MA 3535	Clay pipe stem	1
MA 3536	Clay pipe bowl fragment	1
MA 3537	Clay pipe bowl fragment and part stem	1
MA 3538	Ceramic armband fragment	1
MA 3539	Ceramic armband fragment	1
MA 3540	Ceramic armband fragment	1
MA 3541	Ceramic armband fragment	1

Note: Gaps in the accession number sequence indicate that the item is not in the collection.



Extent of Coral Species at the Wreck Site of the *Foam*. *Source:* Dr Paul Muir.

Coral Legend on next page



Legend for Coral species at the Wreck Site of the *Foam*

Appendix 12

Analysis of the Vessel Structure and Domestic Category

This Appendix is in effect a stand-alone document that provides a database and analysis for the artefacts in the vessel structure and domestic categories within the *Foam* assemblage as shown in Table 1. The databases for these classifications are located at the end of this appendix.

Table 1 Classification Categories and Artefact Data Summary

Main Category	Sub Categories	Number of Artefacts	Weight
Vessel Structure and Fittings	*Metal fasteners, Fittings, Structure, Ballast and Navigation*	71	9.7 kg
Domestic	*Glassware, Ceramic tableware and Stoneware*	49	4.6 kg
	Total	120	14.3 kg

Vessel Structure and Fittings

This category comprises artefacts that can be identified as part of the *Foam's* structure, fittings, navigation equipment, rigging or ballast.

Metal Fasteners:

Copper alloy bolts and washers

Ten sections of copper alloy bolt ranging from 50mm to 258mm in length with diameters of 18-19 mm were recovered along with two individual copper alloy washers. The function of these solid bolts and washers, according to Desmond (1998), Kerchove (1961) and Steel (1977) was to secure together the various components that made up the structure of wooden vessels. The bolts are made from a corrosion resistant alloy known

as Naval Brass which is an alloy of between 59-61% copper and 38-40% zinc. Naval Brass is also known as Yellow Metal or Muntz Metal (Kerchove 1961; Stone 1993).

Five of these bolt sections have washers attached to one end. This indicates that they are clinch bolts and the washers are clinch rings. A clinch bolt operates by being driven through the wood and a clinch ring is placed over the end. The end of the bolt is then flattened out over the ring to form a head on the bolt (McCarthy 1983).

Bolts were manufactured in various lengths and set diameters to comply with the construction regulations. By consulting Desmond (1998:21,23) it is possible to determine that bolts with a diameter of 19mm (0.75 inch) on a vessel the size of the *Foam* (164 ton) would have been used on such structures as frames and futtocks, deck beams, keel scarphs, floor timbers, hanging knees and transoms.

Copper tacks, nails and rivets

The predominant items in this group are 21 copper tacks. These tacks vary from 21 to 28mm in length with a shank diameter of 4mm. They all have a flat countersunk head and a shank that is square towards the point. This type of tack, according to McCarthy (1983), Staniforth (1985) and Steel (1977) is a sheathing tack used to attach sheets of copper or Muntz metal to the hull of a wooden vessel. The hulls of wooden vessels were sheathed in this manner to repress attack by marine organisms such as shipworms (*Teredo navalis)* and to suppress the growth of barnacles on the hull which can dramatically slow down the speed of the vessel. Despite being called copper tacks they are in fact manufactured from a copper alloy (McCarthy 1983). Kerchove (1961:715) states that sheathing tacks were bronze, an alloy of copper and tin.

The presence of the copper alloy bolts and the sheathing tacks confirms the requirement mentioned in the previous chapter that the *Archimedes* was to be sheathed in yellow metal and have its iron bolts replaced with muntz metal bolts before Lloyds would register it.

An assortment of nails, rivets and a clinch washer were also recovered. Three of the nails are 39mm long and the fourth is 66mm long. All have a square shank of approximately 3mm and appear to be manufactured from a copper alloy. The longer nail may have been used to attach sacrificial planking to the outer hull (Staniforth 1985). According to McCarthy (1983) the shorter nails may well have been used for a variety of general tasks. These types of nails may have been used with a clinch washer similar to the one recovered. The clinch washer in the assemblage is 17mm x 1mm with a 3mm circular hole in its centre. Once a nail had been driven through the timber a clinch washer was placed over the end. The end was then bent over the washer to ensure that the nail would not work itself loose (Kerchove 1961).

Two copper alloy rivet fragments form part of this category. However, it was not possible to determine their specific function.

Fittings:

Covers and Cabinet Hardware

A circular copper alloy fitting identified in the accession records as a "drain" is the largest artefact in this group. This fitting is 135mm wide and the main body is 19mm thick. As shown in Figure 1 this item has a coarse screw thread on its base indicating that it is designed to be screwed into another metal fitting and two handles have been attached to facilitate its insertion and removal.

Figure 1 Copper Alloy Drain Recovered from the *Foam*

Source: Museum of Tropical Queensland, *Foam* Collection, MA3327

Only two items of cabinet hardware were recovered, a copper alloy latch and one half of a hinge. The latch is 175mm long and is similar in design and operation to a modern cabin hook. The attachment point has two rivets that secure a small section of thin metal plate to the base. This indicates that the latch was attached through a metal surface. The hinge fragment is made from a copper alloy and is 39mm x 25mm in size. It appears to be one half of a Butt Hinge. These types of hinges were used mainly but not exclusively to attach the lids to wooden boxes (Walton 1947:69). As such this hinge may have been part of a trade box.

Glass

Only a small amount of glass associated with the vessel's fittings was recovered from the wreck site. One complete 140mm x 88mm x 8mm section of plate glass and a fragment of the same type of glass are the most substantial items recovered in this group. The plate glass has the marks where it has been scribed and cut from a larger sheet indicating that this section of glass was not manufactured in its current size. Before 1893 (the year that the *Foam* was wrecked) plate glass of 8mm thick would have been manufactured using either the cast and rolled plate or the rolled sheet method (Boow 1991). Plate glass was also expensive compared to other types of glass as the manufacturing process required it to be ground and polished (Frank 1982; Jones and Sullivan 1989). Given the size and thickness of this glass, it can be assumed that it was part of a skylight that fitted over a deck opening to allow light and air below deck (Kerchove 1961).
As the labour trade regulations did not require the installation of skylights it can be assumed that the skylight on the *Foam* was part of its original construction.

A section of circular plate glass 1.5mm thick was also recovered. This thickness of glass indicates that it was most likely Crown glass which was manufactured by spinning molten glass into sheets less than 2.8mm thick (Boow 1991; Frank 1982; Jones and Sullivan 1989). By using a concentric circle chart it has been possible to determine that this fragment came from a circular piece of glass with a diameter of 107mm. As such it was possibly the glass face of a chronometer or barometer. The final glass fragment of 140mm x 40mm x 4mm appears to be part of the circular glass shield from a wick lamp.

Sheaves and Bearings

One sheave and a number of roller bearing components were recovered from the wreck of the *Foam*. A sheave is the grooved wheel in a pulley block over which the rope or cable travels (Desmond 1998; Kerchove 1961). The sheave from the *Foam* is made from a dark hardwood and has a diameter of 120mm is 36mm thick with a 35mm circular hole in the centre. According to Desmond (1998) and Kerchove (1961) wooden sheaves were made from Lignum-Vitae *Guaiacum Officinale* which is a heavy dark hardwood with self-lubricating properties. The sheave does not appear to have had a bearing fitted which according to Desmond (1998) makes it a plain sheave. The sheave has not been analysed to determine if it is indeed made from Lignum-Vitae.

Two copper alloy roller bearings were retrieved. Neither of the bearings has any visible identification marks. The larger of the two houses six roller bearings and appears to be made to accept a shaft of about 20mm in diameter. The smaller version houses five roller bearings and accepts a shaft of approximately 13mm. Both of the bearings are flange mounted and are designed to be secured with screws. As such it is possible that they are bearings from sheaves as shown in Kerchove (1961:715). However it is not possible to confirm this use. Three individual roller bearings and three pins from other bearings similar to the above were also recovered.

Structure and Ballast

Wood

Only four samples of wood from the *Foam* were recovered. The largest is 260 mm long and is part of a concretion containing a fragment of a ceramic armband. The other three samples of wood are on average 80mm x 31mm x 11mm. The type of wood has not been identified and therefore it is not possible to determine what part of the vessel these samples may have come from.

Stone

Four small stones with a total weight of 536 grams were collected. It is presumed that these are fragments broken off the larger ballast stones carried in the bottom of the hull to provide stability to the vessel (Kerchove 1961).

Navigation:

Sandglass

The only piece of navigation equipment recovered from the *Foam* was a small sandglass. This sandglass measures 86mm x 27mm and has a thin cylindrical metal case with a screw-in cap at either end. Inside the case there is a single glass vial (Figure 2). The number 14 has been hand stamped onto the outer surface of one of the end caps. This indicates that the sandglass was used to measure 14 seconds. Sandglasses were used in conjunction with a chip log to determine the speed of a vessel. Normally a 28 second sandglass (log glass) and a line 150 fathoms (274 m) long with a knot tied every 47 feet 3 inches (14.4m) were used to determine the speed of the vessel. The line (chip log) was trailed behind the vessel and the number of knots that passed through the hand in 28 seconds indicated the speed of the vessel in knots (Kerchove 1961). The smaller 14 second sandglass was used when the vessel speed was greater than 8 knots (Tryckare 1964).

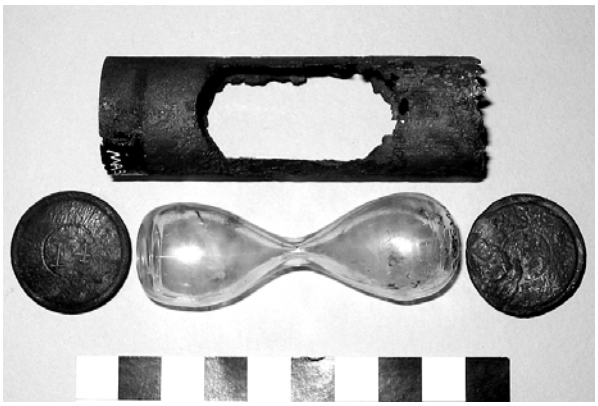


Figure 2 Disassembled 14 Second Sandglass

Source: Museum of Tropical Queensland, *Foam* Collection MA 3505. Photograph by author

Domestic

This category contains artefacts associated with food ways (serving and storage) and medical supplies.

Glassware:

A summary of the domestic glassware based on function is shown in Table 2

Table 2 Domestic Glassware Complete and Fragments

Function	Type	Qty	MNI
Storage	Food bottle	1	1
	Salad oil bottle	3	3
	Sauce bottle	3	1
	Glass stoppers	3	3
	Bottles green glass	2	2
	Bottles clear glass	5	1
Serving	Salt cellar	1	1
Medical	Phial clear glass	1	1
	Bottle dark blue glass	2	2

The complete base or the neck to shoulder joint of a bottle was used to determine the MNI.

Storage

A clear glass bottle containing olives in a liquid was recovered. The bottle is 273 x 78 mm and has a total weight of 1172 grams (Figure 3). The bottle has been manufactured in a shoulder length two piece mould and the domed basal profile has the number 7 embossed into it. The finish has a wide mouth (32mm) with a rounded side lip and flattened string rim (Jones & Sullivan 1989:93, 96 & 113). This type of bottle is

identified by Boow (1991:18) as a food or round preserve bottle. Food bottles were a semi-luxury item and as such they were reused to contain a variety of edible goods (Boow 1991:19). The bottle is 2/3 full with olives in an unidentified liquid. The stopper appears to be covered in a dark red/brown wax that may have been applied during conservation. This type of food bottle had been in use for at least 50 years before the demise of the *Foam* as evidenced by the examples recovered from the 1841 wreck of the *James Mathew* (Boow 1991).

Figure 3 Food Storage Bottle Containing Olives

Source: Museum of Tropical Queensland, *Foam* Collection MA3394
Photograph by author

Three fragments of light green salad oil bottles were recovered. Two consist of the shoulders, neck and finish while the third is the base of a bottle. The first two have flat tapered lips, one has a V string rim and the other has a rounded string rim. Both show mould marks from a two piece mould and have a spiral design on the neck which becomes a raised diamond motif on the body. The base fragment is oval (56mm x 53mm) and the body is decorated by five vertical lines embossed into the body. There are no maker's marks on any of these fragments. A photograph and drawings of these

artefacts are shown in Figure 7 at the end of this appendix. Examples of complete salad oil bottles can be viewed in Vader and Murray (1976:74).

The base and body of a clear circular bottle with a diameter of 52mm was recovered in a concretion with four ceramic armbands (Figure 4). The body of the bottle has the word PERRIN embossed into it. One small fragment from the shoulder of a bottle has the letters …ORC…embossed in it and a further small fragment of a shoulder has the letters …SA…embossed. This indicates that all of these fragments were from one or more LEA & PERRIN Worcestershire sauce bottles. This was confirmed by comparing the fragments with a complete Lea & Perrin Worcestershire sauce bottle from the period. Two further glass fragments without any identifying marks are part of the same concretion. One is light green in colour and may be from a salad oil bottle. The other is dark green and was not able to be identified.

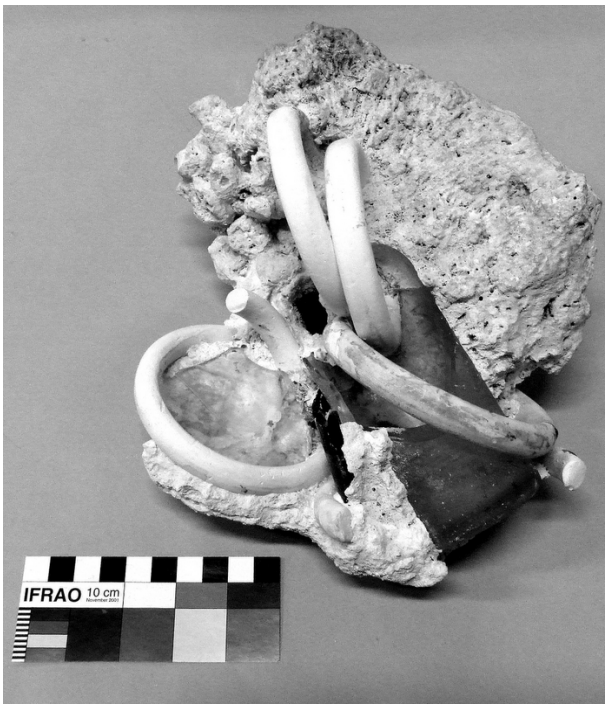


Figure 4 Concretion of Ceramic Armbands and Sauce Bottle

Source: Museum of Tropical Queensland, *Foam* Collection MA3502
Photograph by author

Three glass stoppers were recovered. Glass stoppers were used to re-seal a variety of glass containers whose contents were not used all at once and where a cork would be unsuitable, eg sauce bottles, jars and medicine bottles (Jones & Sullivan 1989:153). The largest stopper is light green in colour, weighs 83 grams and has a flat circular finish with a diameter of 59 mm and an overall height of 22 mm. The shank is short and tapers down from a diameter of 49mm to 40 mm at its base. This type of stopper is classified as a "Jar Stopper" by Jones & Sullivan (1989:153-4). No manufacturer's marks are visible on the stopper.

The next example is also of clear glass and is firmly attached in the neck of a glass bottle fragment. The stopper has an overall length of 43mm and is surmounted by a square vertical finish 8mm thick. The shank tapers down from 17mm to 14mm at its base (see Figure 8 at end of appendix). A mould line indicating the manufacturing process is evident around the outer edge of the finial.

The smallest stopper is clear glass with a flat oval finish (27mm x 20mm x 6mm). The overall length is 30mm and the shank tapers down from a diameter of 13mm to 7mm at its base. This is the classic "club sauce type" stopper as identified in Jones & Sullivan (1989:152-3). These stoppers were used to seal commercial bottles with small openings and were not limited to sauce bottles.

Two examples of different shaped light green bottle bases were recovered. According to Jones & Sullivan (1989:13) the light green colour is the result of small amounts of iron in the molten glass at the time of manufacture. The first of these is a circular base 73mm in diameter with a shallow concave basal profile. The manufacturer's mark "X" has been embossed into the centre of the base and the number "2" has been embossed between the centre and the outer edge of the base. No further identifying marks are visible.

The second example has a square base (35mm x 35mm) and vertical sides. The glass at the base of the sides is thicker than at the shoulder (Figure 8). There are no identifying marks on the example. This size and shape indicate that it was most likely a small medicine bottle (Boow 1991, Jones and Sullivan 1989, Vader and Murray 1976).

The neck and shoulder of a clear glass bottle with a mouth 28mm wide was recovered. Judging from the manufacturing mould marks this fragment was produced in a two piece mould and the rounded lip was added by hand. There are no identifying marks on the fragment.

The last examples of storage glass are four small clear fragments from the sides of bottles. None of the fragments have any identifying marks.

Serving

A clear oval glass fragment 82 x 45 x 37mm weighing 158 grams is identified in the accession records as a salt cellar. This particular example has the basal surface decorated with a square hatch pattern and sides 10mm thick (Figure 5). There are no manufacturer's marks on this example. According to Jones and Sullivan (1989) glass salt cellars were a novelty item in the 19th century. They were placed on the dining table and held a small quantity of salt. Small spoons were used to sprinkle the salt onto the food.

Figure 5 Fragment of Glass Salt Cellar

Source: Museum of Tropical Queensland, *Foam* Collection MA3318
Photograph by author

The base of what appears to be a 10 panel sided tumbler with a diameter of 56mm was recovered. The panels are 18mm wide at the base. It has a shallow concave basal profile and the interior base is distinctly concave. This configuration has resulted in a very thick base (see Figure 9 at end of this appendix).

A fragment clear glass (65mm x 17mm x 5mm) with a curved outer edge decorated in a ripple pattern was recovered. By using a concentric circle template it has been possible to determine that this fragment came from a vessel with an outside diameter of approximately 72mm. With the ripple edge held uppermost the body of the vessel would have curved down and inwards. Jones and Sullivan (1989:135) have illustrations of this type of vessel with decorated rims and identify it as a dessert or jelly glass. If this fragment is indeed from a dessert glass it raises new questions about life onboard and /or the personal possessions of those onboard the *Foam*.

Medical

A small clear circular glass phial 77 x 22mm with a flanged lip and sloping shoulders is typical of the medicine phials of the period (Jones & Sullivan 1989). The stopper appears to be an elongated cylinder of red rubber. The phial appears to have once contained a black substance which is now adhered to the inner surface of the phial. No attempt to have this substance analysed has been made. According to the MTQ conservator, Andrew Viduka, the period of time exposed to salt water would have made it unfeasible to obtain an accurate analysis of the contents (Viduka 2006, pers.com).

Two fragments of dark blue glass were recovered. One consists of the shoulders, neck and finish of a circular bottle with a diameter of 44mm. The finish has a distinctive “V shaped” string rim (Jones & Sullivan 1989:96). The second example is the base of a bottle also with a diameter of 44mm (Figure 9). Conjoining the fragments was attempted but was not successful. Despite this, it appears that these two fragments are from the same type of bottle. The dark blue colour, according to Jones & Sullivan (1989:14) is the result of Cobalt being added to the molten glass and indicates that the bottle was most

likely used to contain a medicine of some type. This concurs with the Museum accession record which lists the fragments as being from a castor oil bottle.

Ceramics:

Two complete ceramic ointment pots and twenty six ceramic fragments weighing a total of 2.4 kg were recovered from the wreck of the *Foam*. The fragments were sorted according to type, cross sectional profile and decoration. Conjoining of the fragments was attempted without success. Where possible, a concentric circle template was used to estimate the diameter of the original item. By comparing the cross sectional profile, diameter and decorative motifs it was possible to determine the MNI for the various types of ceramic fragments. The results of this procedure are shown in Table 3

Table 3

Domestic Ceramic/Stoneware Data Summary

Type	Qty	MNI	Diameter
Plate	16	10	1 x 20cm (8”), 3 x 25cm (10”), 1 x 27cm (10 ¾”)
Dish	1	1	
Bowl	1	1	
Tureen	1	1	
Egg Cup	1	1	
Stoneware Jar	1	1	23cm (9”)
Ointment Pots	2	2	6.2cm
Terra Cotta	1	1	
Curved with floral design	2	2	
Flat	2	NA	
Total	28	20	

Serving

All of the ceramic fragments with the exception of the terra cotta and the stoneware jar fragment appear to be cream ware or white ware also known as stone china (Brooks 2005; Miller 1991). This type of ceramic is very hard, mass produced white earthenware

that was developed as a cheap alternative to the popular but expensive porcelain. It was first introduced in the late 18th century and remained popular up to the end of the 19th Century (Miller 1991).

Only three of the fragments had any evidence of a manufacturer's trade mark. The most obvious was from a 20 cm (8") plate with a faint floral pattern moulded onto the rim. On the back of this plate is a partial printed manufacturer's mark consisting of an image of a man's head wearing a type of crown with the words 'Trade Mark" split either side of the crown. Under this figure is printed "Warranted [Engl]ish Stone China [***] & Mayer" (Figure 6). Despite extensive research the manufacturer was unable to be identified.

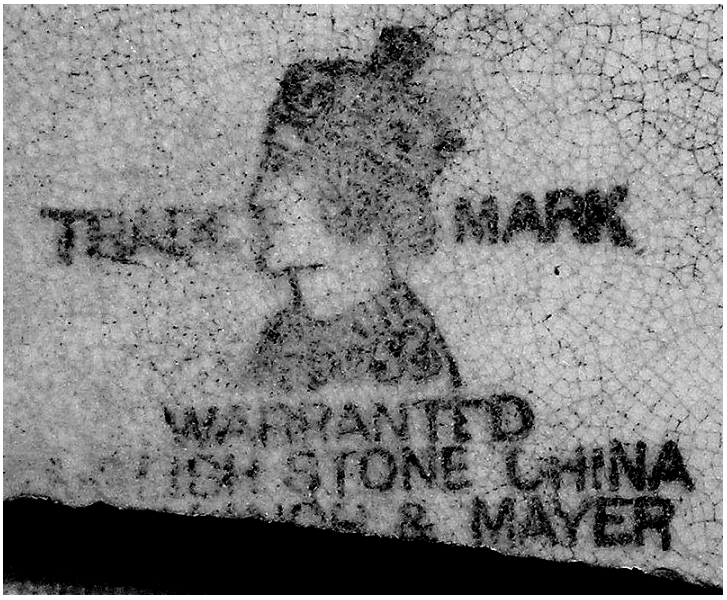


Figure 6 Trade Mark on Plate Fragment

Source: Museum of Tropical Queensland, *Foam* Collection MA3296
Photograph by author

The remaining two partial marks are very faint and had to be viewed using a X.6.5 stereoscopic microscope. The first of these is the remains of what Godden (1970) indicates to be a type of Royal Arms motif with the partial word [Eng]land under it. The other has the faint partial word Roya[l]. According to Godden (1970) the use of the words "Trade Mark, England and Royal" and the Royal Arms motif all indicate a date of

manufacture from the mid to late 19th century, which is commensurate with the wreck of the *Foam*.

Three fragments of "Band-and-Line Ware" also known as "Banded White ware" ceramics are part of the assemblage (Brooks 2005; Miller 1991). Two plate fragments from different sized plates each have one thick and one thin blue line painted around the plate next to the rim. A further thin blue line has been painted around the shoulder. As the pattern is the same and they are from different sized plates, it indicates that the *Foam* may have had a set of blue band and line ware onboard. The third example is a fragment of a serving tureen also decorated with a thick and thin blue line around its upper body and six thin blue lines on the top of the handle. The design on the tureen also appears to have thin black lines in the blue band. This indicates that it may not be part of the same set that the plates belonged to. According to Miller (1991) this type of ceramic ware was a robust utilitarian type of tableware normally found in hotels. Band and Line Ware was manufactured from the late 19th century and remained popular into the 1950s.

Four fragments have various floral designs moulded onto their surfaces. The patterns do not appear to be the same therefore indicating that they are not part of a set. One of these fragments, judging from the curve of the rim is from a large serving platter.

A single ceramic egg cup base and half bowl survived the wreck. Its presence possibly indicates that either chickens were kept onboard to provide eggs or that eggs were brought onboard as part of the diet.

The surface of the one terracotta pottery fragment in the assemblage is well worn and it is not possible to say with any certainty if it was part of a plate, bowl or dish.
Assuming that it was tableware as indicated in the Queensland Museum accession records, it indicates a different type of lower grade pottery and may have the potential to indicate social structure onboard the *Foam*.

From the styles, decoration and manufacturer's markings of the ceramic tableware recovered from the wreck it is possible to determine that the *Foam* had onboard hard wearing mass produced cream ware/stone china and terracotta ware.

Storage

A fragment of stoneware jar base recovered provides evidence for the types of containers used to store food onboard (Brooks 2005; Miller 1991).

Medical

The two complete ceramic ointment pots are beige in colour with a clear glaze. There are no motifs or manufacturer's marks on either of the pots. As shown in (Figure 10 at end of appendix) the pots have vertical sides, a recessed base and an indent around the outer rim. After calculating the internal capacity of this pot it has been determined that it would have held approximately 100 ml of ointment.

Appendix 12

Vessel Structure and Fittings Database

Dimensions in mm Weights in gm

Accession Number	Dimensions in mm	Weight in gm	Qty	Description
MA 3204	56 x 51 x 15	64	1	Ballast Stone
MA 3204-1	44 x 27 x 29	47	1	Ballast Stone
MA 3205	212 x 125 x 18	2283	1	Unidentified Wrought Iron
MA 3207	82 x 39 x 10	18	1	Wood Fragment
MA 3207-1	82 x 24 x 12	9	1	Wood Fragment
MA 3207-2	79 x 31 x 13	14	1	Wood Fragment
MA 3297	140 x 88 x 8	258	1	Plate Glass
MA 3298	74 x 88 x 8	96	1	Plate Glass Fragment
MA 3299	102 x 56 x 1.4	15	1	Plate Glass Fragment Circular
MA 3301	140 x 40 x 4	44	1	Glass Fragment
MA 3313	82 x 72	425	2	Ballast Stones
MA 3327	135 x 19	569	1	Copper Alloy Drain
MA 3328	54 x 12	82	1	Copper Alloy Flange Fitting
MA 3329	67 X 29	291	1	Copper Alloy Roller Bearing
MA 3330	72 x 22	237	1	Copper Alloy Roller Bearing
MA 3331	93 x 70 x 16	557	1	Lead Fragment
MA3335	113 x 70 x 40	332	2	Lead Fragments
MA 3336	12 x 14	37	2	Roller Bearings
MA 3338	39 x 25	14	1	Brass Hinge
MA 3339	10 x 13, 5Ø	3	1	Copper Alloy rivet
MA 3341	28 x10, 4Ø	36	12	Brass Tacks
MA 3344	66 x 3	3	1	Square shank nail
MA 3344-1	39 x 3	3	2	Square shank nails
MA 3344-2	21 x 3	3	2	Copper Alloy Tacks
MA 3344-3	12 x 15	1	1	Copper Alloy Rivet Fragment
MA 3344-4	17 x 1	1	1	Copper Alloy Washer/Rove
MA 3344-5	10 x 3	1	2	Copper Alloy Discs
MA 3348	28 x10, 4Ø	12	4	Copper Alloy Tacks
MA 3351	59 x 2	1	1	Copper Alloy Pin
MA 3352	28 x10, 4Ø	9	3	Copper Alloy Tacks
MA 3353	39 x10, 4Ø	4	1	Copper Alloy Nail
MA 3357	156 x 18	306	1	Copper Alloy Bolt
MA 3358	69 x 18	156	1	Copper Alloy Bolt Head
MA 3359	195 x19	385	1	Copper Alloy Bolt
MA 3359-1	43 x 6	30	1	Copper Alloy washer
MA 3360	32 x 21	40	1	Copper Alloy Door Latch
MA 3361	131 x 19	299	1	Coper Alloy Bolt and washer
MA 3362	149 x 18	300	1	Copper Bolt Shaft Only
MA 3363	121 x 19	196	1	Copper Bolt Shaft Only

Vessel Structure and Fittings Database (Cont)

Dimensions in mm Weights in gm

Accession Number	Dimensions in mm	Weight in gm	Qty	Description
MA 3364	258 x 19	481	1	Copper Bolt Shaft only
MA 3365	50 x 19	152	1	Copper Bolt Head and Washer
MA 3366	178 x 19	243	1	Copper Bolt
MA 3366-1	39 x 6	31	1	Copper Alloy Washer
MA 3367	245 x 19	357	1	Copper Bolt and Washer
MA 3369	99 x 15	821	1	Lead Fragment
MA 3505	86 x 27	1	1	Sandglass in Metal Case
MA 3521	22 x 15	29	1	Copper Alloy Roller and Pin
MA 3525	120 x 36	383	1	Wood Sheave from Block
MA 3531	42 x 4	1	1	Metal Rod

Domestic Database

Ceramic Tableware

Dimensions in mm, Weights in gm

Number	Dimensions	Weight	Description
MA3233	43 X 48	41	Egg Cup fragment, ceramic, half bowl missing, surface concretion, light tan
MA3234	82 X 60	21	Plate fragment, clay/terracotta, all surfaces worn, no glaze, no motif
MA3235	115 X 65	59	Plate fragment, ceramic, glaze worn off, no motif,
MA3236	66 X 52	24	Plate fragment, ceramic, worn surface glaze, faint remains of thin blue line (1mm) on outer edge
MA3237	73 X 41	18	Plate fragment, ceramic, worn surface glaze, no motif
MA3238	53 X 47	22	Plate fragment, ceramic, white glaze cracked underside, no motif
MA3239	119 x 62	57	Plate fragment, glaze worn off, no motif, part word "ROYA…" on base
MA3240	73 X 30	14	Fragment, ceramic, glaze worn off, pattern moulded onto surface
MA3241	48 X 40	16	Plate fragment, ceramic, glaze worn off, no motif
MA3242	110 x 39	21	Plate fragment, ceramic, glaze worn off, no motif
MA3243	52 X 33	13	Plate fragment, ceramic, worn glaze, no motif
MA3244	71 X 61	27	Fragment, ceramic, glaze worn off, floral pattern moulded onto surface.
MA3245	160 x 82	298	Base of stoneware jar, evidence of cream glaze on body but not on base, no maker's mark
MA3246	94 x 198	184	Plate fragment from large dish, glaze worn off, no maker's mark, rim has raised floral design
MA3247	104 x 75	85	Plate fragment, ceramic, glaze worn off, no motif
MA3248	113 x 103	110	Plate fragment, ceramic, glaze worn off, no motif
MA3249	119 X 76	75	Dish fragment, ceramic, glaze worn off, no motif
MA3250	165 x 122	171	Plate fragment, ceramic, glaze worn off, no motif
MA3252	104 X 48	42	Plate fragment, ceramic, worn glaze, no motif
MA3253	81 x 52	30	Plate fragment, ceramic, cracked glaze, one 3.5mm and one 1mm blue line on outer rim with a 1mm blue line on inner rim
MA3254	111 X 84	75	Bowl fragment, ceramic, oval, 62mm deep,
MA3255	113 X 56	108	Bowl fragment, ceramic, oval, handhold on one edge, one 7.2mm & one 1mm blue line on upper surface, six thin blue lines on hand hold

Ceramic Tableware (cont)

Number	Dimensions	Weight	Description
MA3256	217 x 88	171	Plate fragment, ceramic, glaze worn, no motif or maker's mark
MA3257	135 x 80	82	Plate fragment, ceramic, cracked glaze, One 5mm and one 1mm blue line on outer rim and one 1mm blue line on inner rim
MA3258	154 x 110	164	Plate fragment, ceramic, glaze worn off, no motif on upper surface, faint maker's mark on base, appears to be a Royal Arms crest
MA3296	132 x 192	167	Plate fragment, ceramic, glaze worn, raised floral design on outer rim, trademark of head with crown on back

Domestic Glassware

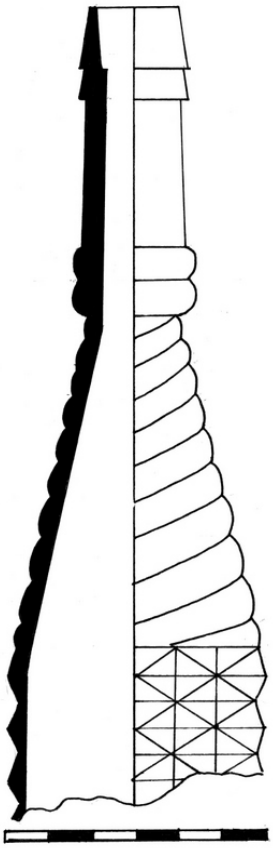
Dimensions in mm, Weights in gm

Number	Dimensions	Weight	Description
MA3300	27 x 20	12	Clear glass stopper
MA3302	59 x 22	83	Light green glass circular stopper
MA3303	56 x 53	99	Light green bottle base fragment from a salad oil bottle
MA3304	73 x 74	182	Light green bottle base fragment, X2 marking on base
MA3305	56 x 54	141	Clear base of 10 sided tumbler
MA3306	34 x 35	72	Light green square bottle base fragment
MA3314	187 x 56	155	Light green glass neck and shoulder fragment of salad oil bottle
MA3315	185 x 60	140	Light green glass neck and shoulder fragment of salad oil bottle
MA3316	46 x49	34	Clear glass bottle fragment, neck and shoulder
MA3317	60 x 57	42	Clear glass stopper in bottle neck fragment
MA3318	82 x 45	158	Clear glass oval salt cellar fragment
MA3319-1	65x 17	11	Clear glass fragment with curved ripple pattern rim
MA3319-2	42 x 33	10	Clear glass fragment from side of bottle
MA3319-3	40 x 25	5	Clear glass fragment from side of bottle
MA3319-4	25 x 13	2	Clear glass shoulder fragment with "SA" marking
MA3319-5	20 x 15	1	Clear glass fragment from side of bottle
MA3319-6	17 x 15	1	Clear glass fragment from side of bottle
MA3320	79 x 22	23	Clear small circular phial with red rubber stopper
MA3321	99 x 44	43	Blue glass castor oil bottle fragment, neck and shoulders

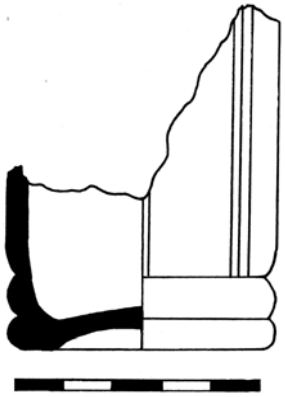
Domestic Glassware (cont)

Number	Dimensions	Weight	Description
MA3322	83 x 43	75	Blue glass castor oil bottle fragment, base
MA3394	273 x 78	1172	Clear food storage bottle containing olives in fluid
MA3514-1	40 x 19	4	Clear fragment from shoulder of sauce bottle, “ORC” marking
MA3515-2	38 x 19	3	Clear fragment from shoulder of sauce bottle

CM
MA3314 and MA3315



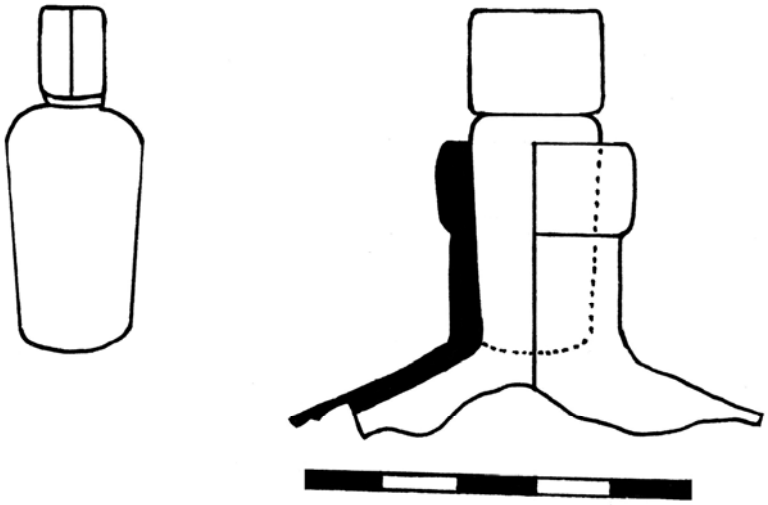
CM
MA3314



CM
Salad Oil Bottle Base
MA3303

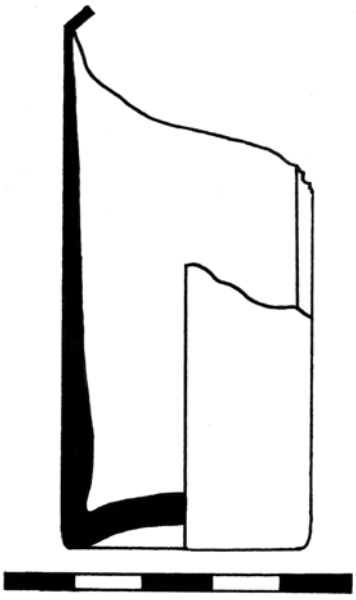
Figure 7 Photograph and Drawings of Salad Oil Bottles

Source: Museum of Tropical Queensland, *Foam* Collection
Photograph and Drawing: MA3314 and MA3315,
Photograph and Drawings by author



CM

Clear Glass Stopper MA3300

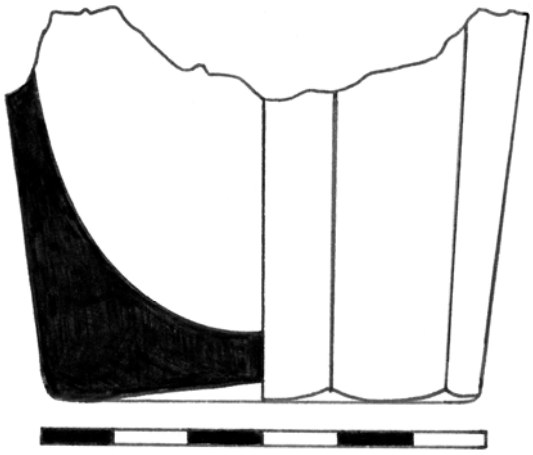


CM

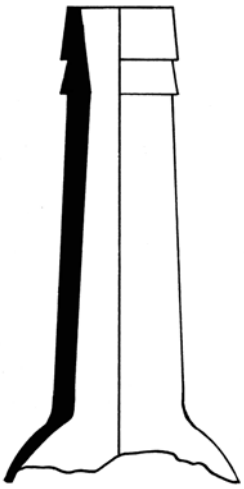
Square Base of Light Green Medicine Bottle MA 3306

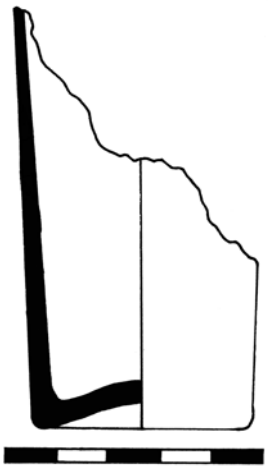
Figure 8 Drawings of Domestic Glassware Recovered from the *Foam*

Source: Museum of Tropical Queensland, *Foam* Collection
Drawings by author



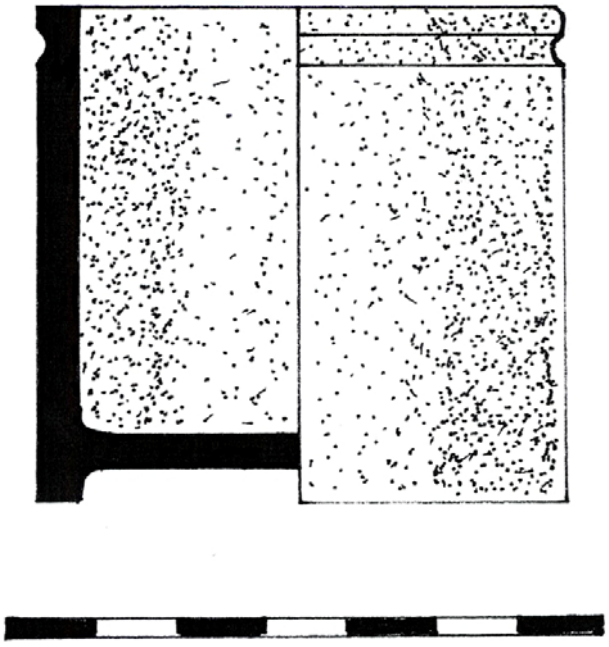
CM
Base of Clear Glass, 10 Sided Tumbler
MA 3305





CM
Blue Castor Oil Bottle Fragments
MA3321and MA3322

Figure 9 Drawings of Domestic Glassware Recovered from the *Foam*
Source: Museum of Tropical Queensland, *Foam* Collection
Drawings by author



Cm

Figure 10 Photograph and Drawing of Ceramic Ointment Pots

Source: Museum of Tropical Queensland, *Foam* Collection MA3251
Photograph and drawing by author

Personal and Trade Goods Database

Ceramic Armbands

Type I Oval in Cross Section

These armbands are basically oval in cross section and lack any motifs.

Photograph and Drawing of a Type I "Oval in Cross Section" Ceramic Armband

Photograph and drawing by author

Attribute	Maximum	Minimum	Average
O/S Dia	107 mm	80 mm	92 mm
I/S Dia	88 mm	61 mm	72 mm
Height	15 mm	11 mm	12 mm
Width	13 mm	7 mm	10 mm
Weight	76 g	40 g	49 g

Summary of the individual data for complete Type I armbands

Attributes Table for Type I Oval in Cross Section

All Dimensions in mm
All Weights in gm

Complete Armbands

Accession Number	O/S Dia	I/S Dia	Height	Width	Weight
MA 3260-0	89	70	13	10	49
MA 3261-0	88	69	12	9	47
MA 3262-0	89	69	12	10	48
MA 3263-0	90	62	12	13	43
MA 3264-0	88	70	11	9	40
MA 3265-0	96	77	12	9	50
MA 3266-0	88	71	13	9	52
MA 3267-0	84	63	13	10	45
MA 3268-0	80	61	11	10	42
MA 3269-0	80	62	11	9	40
MA 3270-0	82	63	12	10	44
MA 3271-0	82	63	12	10	42
MA 3272-0	93	80	12	7	42
MA 3273-0	94	76	12	9	47
MA 3274-0	100	80	13	10	58
MA 3275-0	97	76	13	10	56
MA 3276-0	96	71	12	13	52
MA 3277-0	97	76	13	11	57
MA 3278-0	101	81	12	10	54
MA 3294-0	98	78	12	10	47
MA 3295-0	90	70	13	10	52
MA 3505-0	107	88	15	10	76
MA 3515-0	96	76	13	10	53

Concretion MA3502 contains four complete Type I armbands.
The attributes of these armbands are:

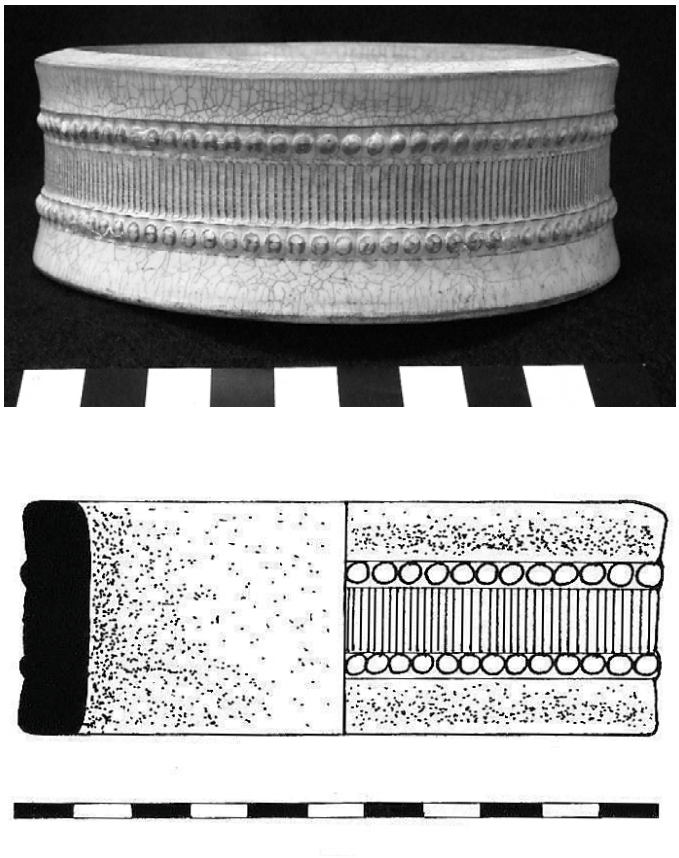
Qty	O/S Dia	I/S Dia	Height	Width
2	83	64	12	10
1	88	69	13	10
1	96	75	13	10

Type I Armband Fragments

Accession Number	O/S Dia	I/S Dia	Height	Width	Weight	Fraction
MA3218-0	97	79	11	9	21	9\16
MA3219-0	100	80	13	10	17	5\16
MA 3220-0	114	86	12	14	46	9\16
MA 3220-1	98	77	12	11	25	8\16
MA 3220-2	98	77	12	10	25	8\16
MA 3220-3	100	80	10	24	24	7\16
MA 3220-4	95	74	13	10	26	8\16
MA 3220-5	90	69	13	10	31	9\16
MA 3220-6	95	75	13	10	27	9\16
MA 3220-7	95	75	13	10	24	7\16
MA 3220-8	120	100	10	11	15	5\16
MA 3220-9	90	70	13	10	23	7\16
MA 3220-10	95	75	13	11	18	5\16
MA 3220-11	95	75	13	10	20	6\16
MA 3220-12	90	70	12	9	12	5\16
MA 3220-13	100	80	13	10	13	4\16
MA 3220-14	100	80	12	10	11	4\16
MA 3220-15	100	80	13	11	13	3\16
MA 3220-16	100	80	13	10	8	2\16
MA 3220-17	90	80	14	10	11	3\16
MA 3220-18	80	65	11	8	7	4\16
MA 3220-19	95	75	13	10	11	3\16
MA 3228-0	89	69	12	10	25	10\16
MA 3229-0	90	75	12	10	17	6\16
MA 3230-0	100	80	12	10	21	7\16
MA 3231-0	100	80	12	10	15	5\16
MA 3232-0	100	80	13	10	15	5\16
MA 3538	90	70	12	10	22	7\16
MA 3539	90	69	12	10	27	9\16

<u>Type IIA</u> Dots and Line Motif

This type of armband consists of a flat band with a slightly convex inside surface. A dot and line motif has been impressed around the outside of the band.



cm

Photograph and Drawing of a Type IIA "Dots and Line Motif" Ceramic Armband

Photograph and drawing by author

Attribute	Maximum	Minimum	Average
O/S Dia	116 mm	108 mm	112 mm
I/S Dia	97 mm	83 mm	89 mm
Height	42 mm	40 mm	41 mm
Width	14 mm	10 mm	12 mm
Weight	299 g	263 g	281 g

Summary of the individual data for complete Type IIA armbands

Attributes Table for Type IIA Dots and Line Motif

All Dimensions in mm

Complete Armbands All Weights in gm

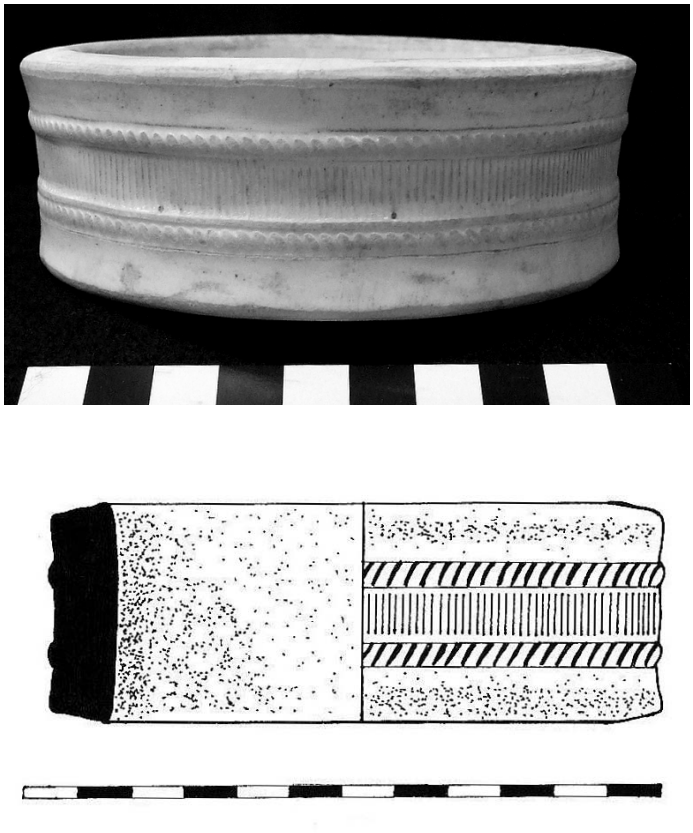
Accession Number	O/S Dia	I/S dia	Height	Width	Weight
MA 3279-0	116	91	42	12	294
MA 3280-0	112	83	40	14	299
MA 3281-0	110	85	41	12	271
MA 3282-0	108	88	40	10	263
MA 3504-0	115	97	42	10	279

Armband Fragments

Accession Number	O/S Dia	I/S Dia	Height	Width	Weight	Fraction
MA 3226-0	110	90	42	11	71	5\16
MA 3227-0	110	90	40	10	72	5\16
MA 3309-0	114	93	42	11	143	8\16

<u>Type IIB</u> Rope and Line Motif

These armbands consist of a flat band with a slightly convex inside surface. As illustrated, the top and bottom surfaces are slightly bevelled from the inner circumference to the outer circumference and a rope and line motif has been impressed around the outside of the band. Two distinct types of this motif are found. One is 19mm wide with fine detail and the other is 20mm wide with less defined detail.



Photograph and Drawing of a Type IIB "Rope and Line Motif" Ceramic Armband

Photograph and drawing by author

Attribute	Maximum	Minimum	Average
O/S Dia	117 mm	114 mm	116 mm
I/S Dia	96 mm	89 mm	93 mm
Height	43 mm	41 mm	42 mm
Width	12 mm	10 mm	11 mm
Weight	307 g	287 g	298 g

Summary of the individual data for complete Type IIB armbands

Attributes Table for Type IIB Rope and Line Motif

All Dimensions in mm

Complete Armbands All Weights in gm

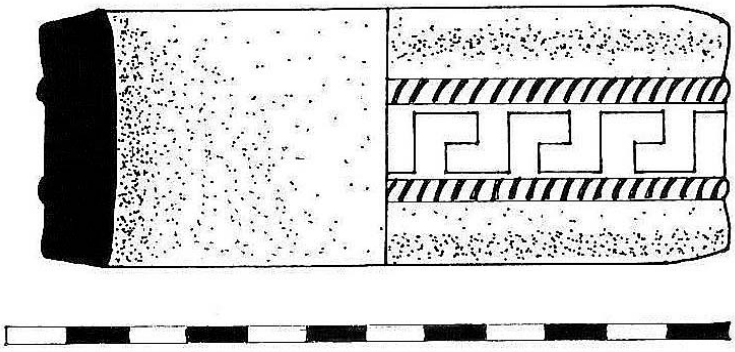
Accession Number	O/S Dia	I/S dia	Height	Width	Weight
MA 3283-0	114	89	41	12	287
MA 3284-0	117	96	43	10	307

Armband Fragments

Accession Number	O/S Dia	I/S Dia	Height	Width	Weight	Fraction
MA 3212-0	120	97	42	11	81	4\16
MA 3222-0	120	100	42	10	55	3\16
MA 3225-0	110	90	41	11	71	4\16
MA 3310-0	110	87	42	12	58	3\16
MA 3310-1	110	87	42	12	36	2\16
MA 3310-2	110	86	42	12	39	3\16
MA 3311-0	110	87	41	12	91	5\16
MA 3311-1	110	88	41	11	82	5\16
MA 3311-2	110	88	41	11	30	2\16

<u>Type IIC</u> Rope and Greek Key Motif

There is only one example of this type in the assemblage. It consists of a flat band with a slightly convex inside surface. The top and bottom surfaces are slightly bevelled from the inner circumference to the outer circumference as illustrated. A Rope and Greek Key motif has been impressed around the outside of the band.



cm

Photograph and Drawing of the Type IIC "Rope and Greek Key Motif" Ceramic Armband

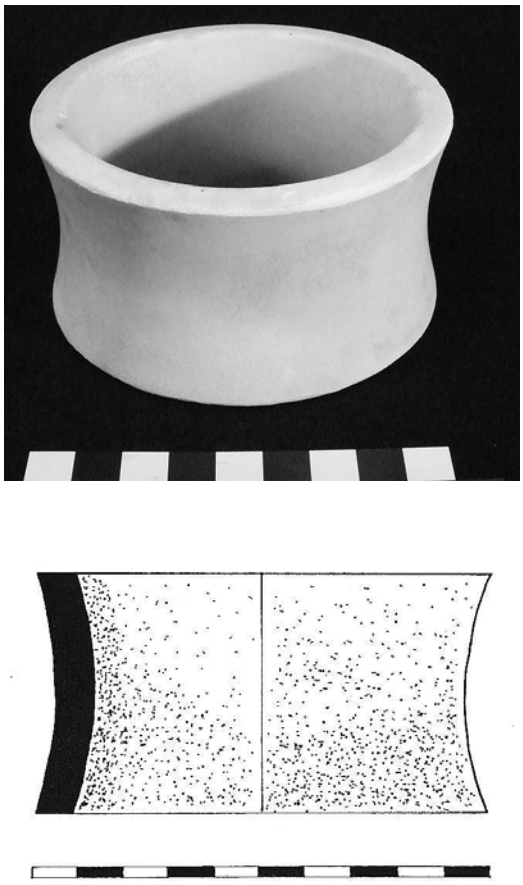
Photograph and drawing by author

Its Attributes are:

O/S Dia	I/S Dia	Height	Width	Weight
115mm	93mm	43mm	11mm	296 gm

<u>Type IIIA</u> Large Concave

These armbands consist of a large flat band with no motifs. The outer surface is concave with the inner surface parallel to the outer surface.



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Photograph and Drawing of a Type IIIA "Large Concave" Ceramic Armband

Photograph and drawing by author

Attribute	Maximum	Minimum	Average
O/S Dia	98 mm	93 mm	94 mm
I/S Dia	81 mm	68 mm	73 mm
Height	54 mm	52 mm	52 mm
Width	12 mm	7 mm	11 mm
Weight	24 g8	205 g	219 g

Summary of the individual data for complete Type IIIA armbands

Attributes Table for Type IIIA Large Concave

All Dimensions in mm

Complete Armbands All Weights in gm

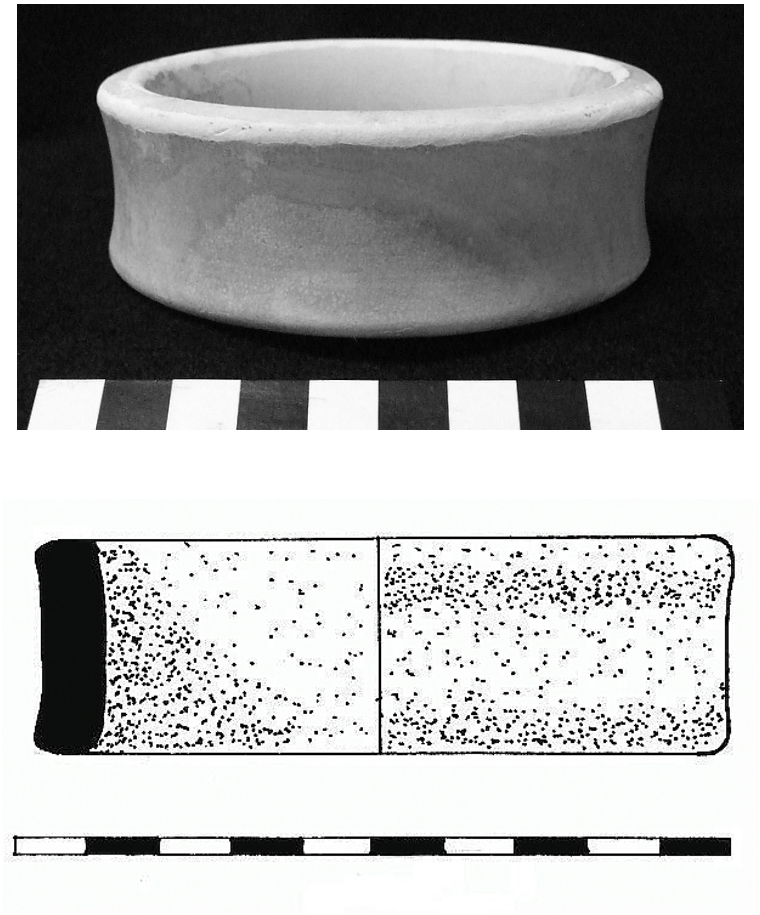
Accession Number	O/S Dia	I/S dia	Height	Width	Weight
MA 3286-0	93	69	52	12	215
MA 3287-0	93	69	51	12	205
MA 3288-0	93	68	52	12	210
MA 3501-0	98	81	54	9	248
MA 3508-0	93	77	53	9	218

Armband Fragments

Accession Number	O/S Dia	I/S Dia	Height	Width	Weight	Fraction
MA 3217-0	95	85	54	8	79	5\16
MA 3223-0	100	82	53	8	42	3\16
MA 3224-0	100	82	N/A	9	47	5\16
MA 3540	100	80	54	9	29	2\16

Type IIIB Small Concave

These armbands consist of a flat band with no motifs. The top and bottom surfaces are slightly convex. The outer surface is slightly concave and the inner surface is parallel to the outer surface.



Photograph and Drawing of a Type IIIB "Small Concave" Ceramic Armband

Photograph and drawing by author

Attribute	Maximum	Minimum	Average
O/S Dia	100 mm	97 mm	98 mm
I/S Dia	83 mm	77 mm	80 mm
Height	34 mm	25 mm	29 mm
Width	10 mm	9 mm	10 mm
Weight	151 g	96 g	128 g

Summary of the individual data for complete Type IIIB armbands

Attributes Table for Type IIIB Small Concave

All Dimensions in mm

Complete Armbands All Weights in gm

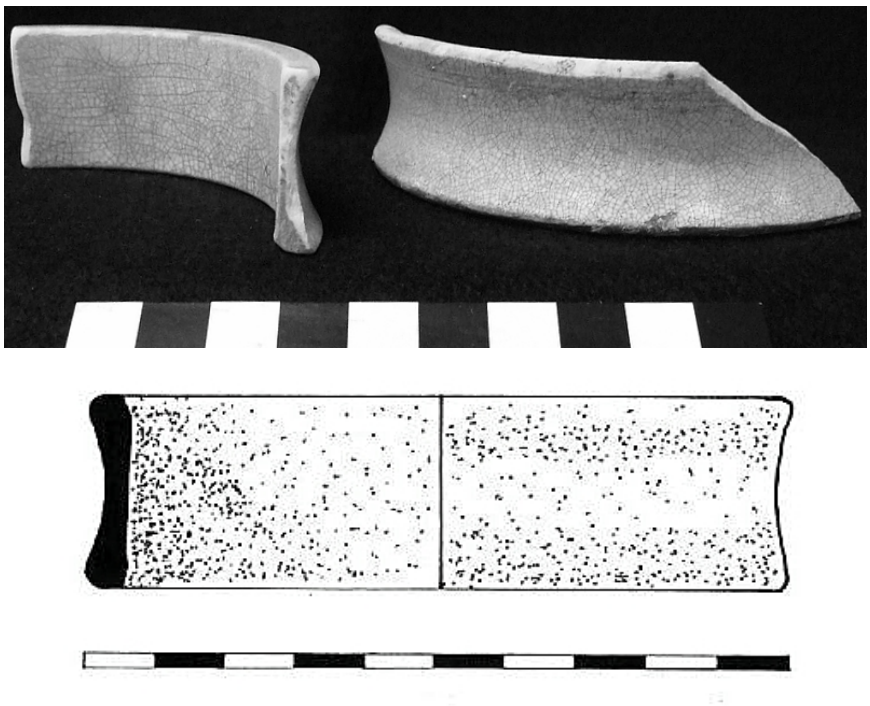
Accession Number	O/S Dia	I/S dia	Height	Width	Weight
MA 3202-0	100	83	27	10	138
MA 3285-0	98	77	34	10	151
MA 3516-0	97	79	25	9	96

Armband Fragments

Accession Number	O/S Dia	I/S Dia	Height	Width	Weight	Fraction
MA 3210-0	100	85	26	8	26	3\16
MA 3211-0	95	77	26	9	83	8\16
MA 3211-1	95	77	26	9	44	5\16
MA 3211-2	100	80	26	10	34	5\16
MA 3213-0	110	90	37	9	66	5\16
MA 3214	95	75	24	10	49	7\16
MA 3216	100	80	25	9	15	2\16
MA 3221-0	100	80	26	9	33	4\16
MA 3221-1	100	80	27	9	31	3\16
MA 3221-2	100	80	33	10	16	1\16
MA 3541	90	70	26	10	31	4\16

<u>Type IIIC</u> Small Concave/Narrow Width

There are no complete armbands of this type in the assemblage. These fragments are from a flat band with no motif. They have a concave outer surface and a flat inner surface. As illustrated, this has resulted in an armband with a cross section wider at the rims than in the centre.



Photograph and Drawing of a Type IIIC "Oval in Cross Section" Ceramic Armband

Photograph and drawing by author

Attribute	Maximum	Minimum	Average
O/S Dia	105 mm	100 mm	101 mm
I/S Dia	95 mm	90 mm	91 mm
Height	28 mm	22 mm	27 mm
Width at Rim	7 mm	6 mm	6 mm
Width at Centre	4 mm	2 mm	3 mm

Summary of the individual data for Type IIIC armbands

Attributes Table for Type IIIC Small Concave/ Narrow Width

All Dimensions in mm

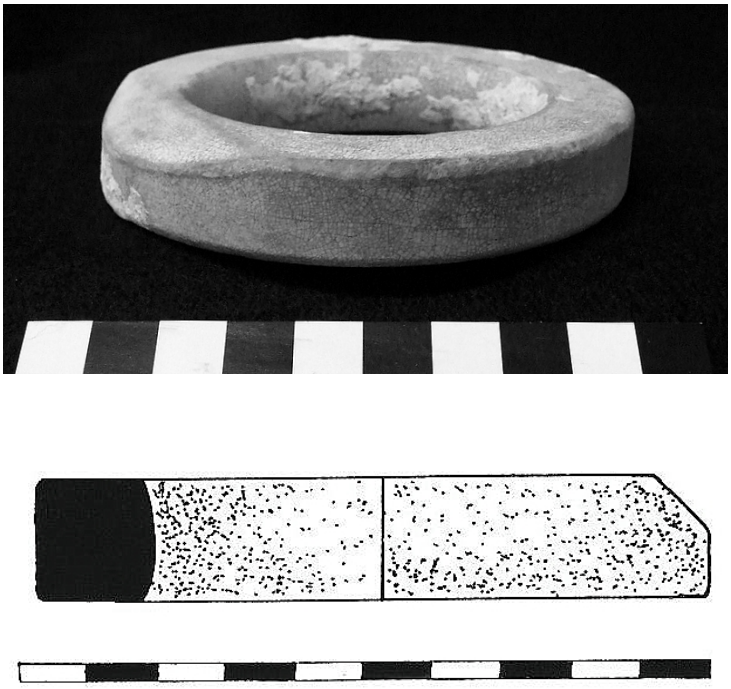
Armband Fragments All Weights in gm

Accession Number	O/S Dia	I/S Dia	Height	Width/Rim	Width/Ctr	Weight	Fraction
MA 3210-1	100	88	28	6	3	8	2\16
MA 3212-1	100	90	28	5	3	18	6\16
MA 3212-2	100	88	28	6	3	20	6\16
MA 3212-3	100	88	28	6	4	18	5\16
MA 3307-0	100	85	27	7	3	19	5\16
MA 3308	100	90	27	6	3	10	3\16
MA 3393-0	100	90	28	6	3	11	3\16
MA 3393-1	100	88	28	6	3	8	3\16
MA 3393-2	100	90	28	6	2	7	2\16
MA 3519	100	88	N/A	6	3	4	2\16

The O/S Dia and I/S Dia estimates were obtained using a concentric circle template.

Type IV Square in Cross Section

This type of armband is roughly square in cross section with a chamfered area on one part of the outer circumference. The outer surface is flat without motifs and the inner surface is slightly convex.



Photograph and Drawing of a Type IV "Square in Cross Section" Ceramic Armband

Photograph and drawing by author

Attribute	Maximum	Minimum	Average
O/S Dia	97	94	95
I/S Dia	69	61	65
Height	19	17	17
Width	17	12	15
Weight	127	106	117

Summary of the individual data for complete Type IV armbands

Attributes Table for Type IV Square in Cross Section

All Dimensions in mm

Complete Armbands All Weights in gm

Accession Number	O/S Dia	I/S dia	Height	Width	Weight
MA 3201	96	69	17	13	123
MA 3289-0	96	62	17	16	111
MA 3290-0	97	63	17	16	106
MA 3291-0	94	68	19	12	121
MA 3292-0	95	61	18	17	127
MA 3293-0	94	65	18	14	111

Armband Fragments

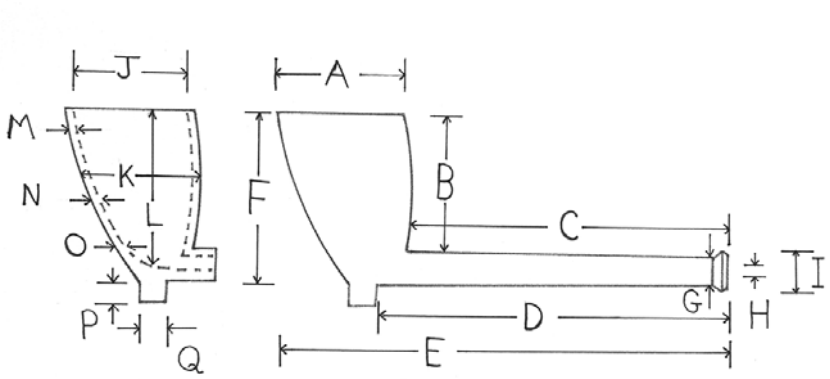
Accession Number	O/S Dia	I/S Dia	Height	Width	Weight	Fraction
MA 3210-2	100	67	18	16	25	3\16
MA 3215-0	96	63	17	16	59	8\16

Clay Pipes

Complete Pipes Dimensions in mm

Accession Number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
MA 3326	24	29	94	95	118	40	5	2	6	18	24	36	2	3	2	3	6
MA 3368	24	30	86	83	113	39	5	2	5	18	25	35	2	3	2	4	5
MA 3371	21	23	95	94	121	33	5	2	N/A	18	23	29	3	3	3	5	5
MA 3373	25	30	97	93	120	41	6	2	6	17	24	35	3	3	3	5	6
MA 3498	23	19	73	N/A	99	29	7	2	7	17	25	27	3	5	4	N/A	N/A
MA 3509	22	22	87	84	116	31	5	2	5	17	23	28	2	2	3	4	5
MA 3510	24	29	95	92	121	39	5	2	6	18	23	35	2	4	3	5	5
MA 3511	23	19	73	N/A	98	28	6	2	7	17	25	27	3	4	5	N/A	N/A
MA 3512	24	19	75	N/A	100	29	7	2	7	17	25	26	3	4	5	N/A	N/A
MA 3526	23	20	73	N/A	99	27	6	2	7	17	25	26	3	4	4	N/A	N/A

Accession Number	Weight in gm
MA 3326	18
MA 3368	14
MA 3371	14
MA 3373	14
MA 3498	13
MA 3509	19
MA 3510	18
MA 3511	8
MA 3512	15
MA 3526	18



Legend

A: Outside diameter of bowl at rim
B: Height of the back of the bowl from rim to stem
C: Length of the stem from the back of the bowl to the end of the mouth piece
D: Length of the stem from the back of the spur to the end of the mouth piece
E: Overall length of the pipe
F: Height of the front of the bowl from rim to base
G: Outside diameter of stem at mouth piece
H: Inside diameter of stem (bore)
I: Outside diameter of mouth piece
J: Inside diameter of bowl at rim
K: Outside diameter of bowl at midpoint
L: Internal depth of bowl
M: Thickness of bowl at rim
N: Thickness of bowl at midpoint
O: Thickness of bowl at base
P: Length of spur
Q: Width of spur

Appendix 13

Clay Pipe: Bowl and Stem

Dimensions in mm, Weight (WT) in gm

Acc Number	Spur	A	C	E	F	J	WT	Description
MA 3208	Yes	28	17	46	44	21	27	Full bowl, short stem, roulette on rim, surface concretion
MA 3208-1		23	N/A	23	33	N/A	31	Full bowl only, anchor/ship motif, full concretion in bowl
MA 3208-2	Yes	23	34	57	32	18	31	Two bowls, short stems, in concretion, anchor/ship motif on both
MA 3208-7	Yes	N/A	N/A	22	35	N/A	5	Half vertical bowl, no stem with spur, anchor motif
MA 3323-0	Yes		18	47	42	20	16	Full bowl, short stem, part rim missing, eroded
MA 3323-1	Yes		44	70	32	17	9	Half bowl vertical and stem, rim eroded, slight concretion
MA 3323-2	Yes		17	37	32	19	11	Full bowl, short stem, part rim missing, eroded, slight concretion
MA 3323-3	Yes	16	N/A	20	37	N/A	6	Half bowl only, rim eroded and concreted
MA 3323-4		27	N/A	27	41	19	15	Bowl only, rim eroded
MA 3323-5	Yes	21	35	61	33	N/A	9	Half bowl vertical, rim eroded, slight concretion
MA 3323-6		23	19	43	44	N/A	13	Bowl fragment and stem, most of bowl missing
MA 3323-7		25	44	75	37	19	36	Bowl & stem segment, rim missing, heavy concretion
MA 3323-8		25	73	104	35	18	15	Half bowl vertical, long stem, eroded and slight concretion
MA 3323-9		23	61	88	28	17	8	Half bowl vertical, long stem, eroded and slight concretion
MA 3323-10	Yes	26	44	68	41	17	16	Full bowl and short stem, slight erosion and concretion
MA 3323-11	Yes	24	67	93	33	17	11	Half bowl and long stem, eroded and concreted
MA 3323-12		24	50	72	30	17	11	Half bowl vertical, long stem, eroded and concreted
MA 3323-13	Yes	23	19	42	37	16	9	Full bowl and short stem, rim eroded and concreted all over
MA 3323-14		28	N/A	32	42	20	17	Bowl only, rim eroded, hole in base, slight concretion all over
MA 3323-15	Yes	23	41	65	28	15	10	Small bowl and long stem, rim eroded, concretion in bowl
MA 3323-16	Yes	23	42	65	30	16	8	Small bowl & long stem, rim and half stem eroded, concreted
MA 3323-17	Yes	24	6	29	31	17	10	Bowl & short stem, rim eroded
MA 3323-18	Yes	24	46	71	30	17	11	Bowl & long stem, part bowl missing, rim eroded, concretion
MA 3323-19		22	N/A	22	34	15	6	Bowl only, rim eroded and part missing, concretion on surface
MA 3323-20		23	17	45	41	18	23	Bowl & short thick stem, part rim missing, "Black Watch" motif
MA 3324		23	58	83	36	19	16	Full bowl, long stem, rim eroded
MA 3325-0		23	45	75	41	18	27	Full bowl, long thick stem, eroded & slight concretion
MA 3325-1	Yes	25	67	92	40	18	16	Full bowl, long stem, eroded & slight concretion

Clay Pipe: Bowl and Stem (cont)

Acc Number	Spur	A	C	E	F	J	WT	Description
MA 3325-2	Yes	25	N/A	29	43	21	22	Bowl only, eroded and slight concretion
MA 3325-3		24	73	98	20	17	19	Full "Cutty" pipe bowl, long stem, tan concretion
MA 3370	Yes	23	59	84	30	18	8	Half vertical Bowl, long stem, rim eroded, surface concretion
MA 3372	Yes	22	5	31	31	17	5	Half vertical bowl, rim eroded, surface eroded
MA 3372-1	Yes	N/A	56	71	44	N/A	**?**	Bowl fragment and stem, surface erosion, imprint on stem
MA 3374	Yes	26	44	73	39	21	12	
MA 3375	Yes	28	41	64	39	18	10	
MA 3376	Yes	23	33	57	34	17	7	
MA 3377	Yes	28	8	35	43	21	19	Very short stem section
MA 3378	Yes	26	**?**	29	41	20	9	Half bowl vertical, short stem
MA 3379	Yes	28	**?**	35	42	21	11	
MA 3380	Yes	27	**?**	32	43	20	23	
MA 3381		23	11	32	31	17	11	
MA 3382		24	**?**	27	26	18	8	
MA 3383		23	25	49	37	N/A	8	Half bowl vertical, short stem,
MA 3385	Yes	14	55	69	30	?	4	Half bowl and half stem top missing
MA 3386	Yes	23	12	32	34	18	8	Half bowl, short stem, rim missing
MA 3387	Yes	26	23	48	43	21	8	Half bowl and rim missing, short stem
MA 3388	Yes	25	N/A	26	41	18	12	Bowl only, rim missing
MA 3389	Yes	28	24	51	42	21	25	Full bowl, short stem, rim eroded, surface concretion
MA 3390	Yes	26	N/A	27	42	21	15	Full bowl only, rim eroded, surface pitted
MA 3391		23	51	76	32	19	10	Full bowl, long stem, rim eroded, surface concretion
MA 3513	Yes	23	34	57	32	18	12	Full bowl, short stem, anchor/ship motif
MA 3518	Yes	24	26	51	41	19	9	Full bowl, half eroded short stem, hole in base, surface eroded
MA 3527	Yes	25	19	44	34	17	13	Full bowl, short stem, rim eroded, surface erosion
MA 3528	Yes	24	26	50	34	7	11	Full bowl, short stem, rim eroded, surface erosion
MA 3529	Yes	22	21	45	31	N/A	9	Half vertical bowl, short stem, concretion and surface erosion
MA 3530	Yes	24	29	55	31	16	10	Half vertical Bowl, short stem, rim eroded, surface concretion
MA 3537	Yes	N/A	24	36	30	N/A	3	Half vertical bowl, half eroded short stem, surface concretion

Clay Pipes: Stems Only

Dimensions in mm, Weight (WT) in gm

Acc Number	Length	O/S Dia	WT	Description
MA 3208-18	43	13	3	Mid section, no motif
MA 3208-19	38	10	3	Mid section, no motif
MA 3208-20	46	8	3	Mid section, no motif
MA 3208-21	20	9	2	Mid section, no motif
MA 3208-22	21	8	1	Mid section, no motif
MA 3208-23	25	7	2	Mid section, no motif
MA 3323-21	64	9	6	Mouth piece end, eroded and concreted
MA 3323-22	47	10	5	Mouth piece end, eroded and concreted
MA 3323-23	49	7	3	Mouth piece end, eroded and slight concretion
MA 3325-4	59	7	4	Mouth piece end, eroded
MA 3325-5	48	8	4	Mouth piece end, eroded and concreted
MA 3325-6	32	7	1	Mid section, eroded
MA 3325-7	30	6	1	Mouth piece end, eroded and concreted
MA 3384-0	52	7	3	Mid section, no motifs
MA 3384-1	49	6	2	Mouth piece end
MA 3522	28	12	4	Mouth piece end
MA 3532	91	10	6	Mouth piece end
MA 3533	43	7	2	
MA 3534	63	8	4	Mouth piece end, no motifs, surface concretion
MA 3535	48	7	3	Mouth piece end, no motifs, surface concretion

Clay Pipes: Fragments

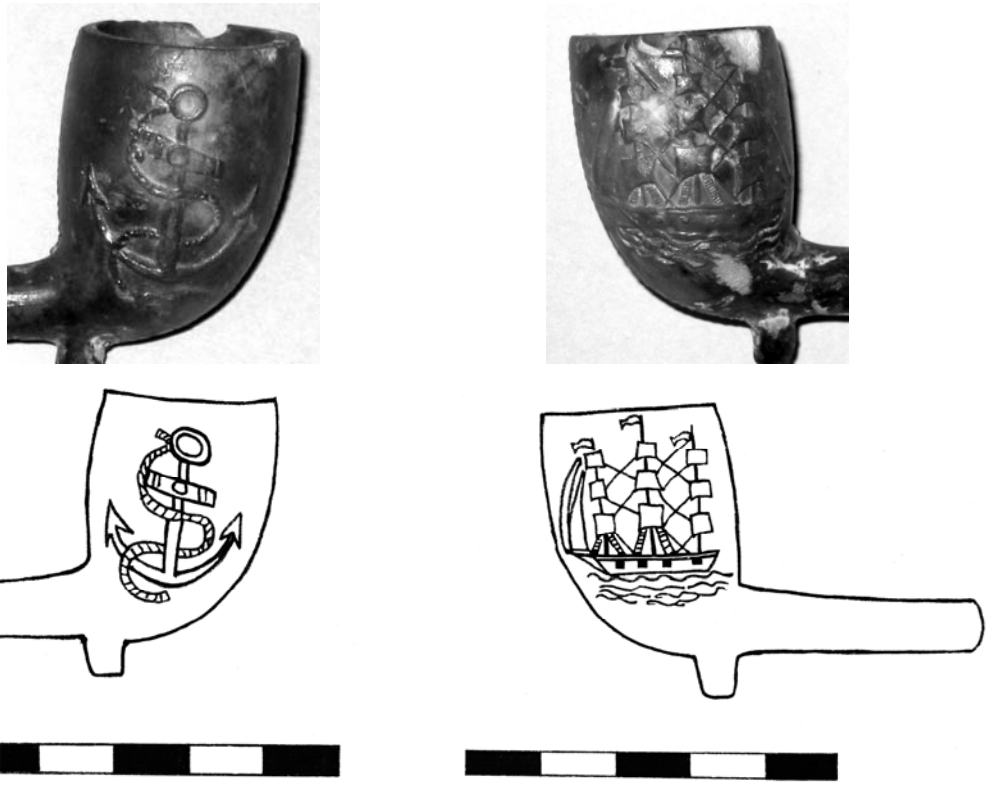
Dimensions in mm, Weight (WT) in gm

Acc Number	Length	Width	WT	Description
MA 3208-3	66	29	21	Bowl fragment in concretion
MA 3208-4	30	22	4	Bowl fragment, remains of ship motif
MA 3208-5	68	43	46	Stem fragment in concretion
MA 3208-6	86	50	55	Pipe stem fragments in concretion
MA 3208-8	30	20	8	Bowl fragment with concretion in bowl
MA 3208-9	28	27	5	Bowl fragment, concretion on outside
MA 3208-10	27	23	2	Bowl fragment
MA 3208-11	28	17	2	Bowl fragment
MA 3208-12	23	14	1	Bowl fragment
MA 3208-13	28	10	1	Bowl fragment
MA 3208-14	24	14	2	Bowl fragment with concretion
MA 3208-15	15	11	0	Pipe fragment
MA 3208-16	17	10	1	Pipe fragment
MA 3208-17	16	8	1	Stem fragment with concretion
MA 3208-24	32	7	1	Stem fragment with concretion
MA 3536	30	19	2	Bowl fragment

Examples of Clay Pipes Recovered from the *Foam*

CM

Second Grade Pipes MA3509, MA3511 and MA3512

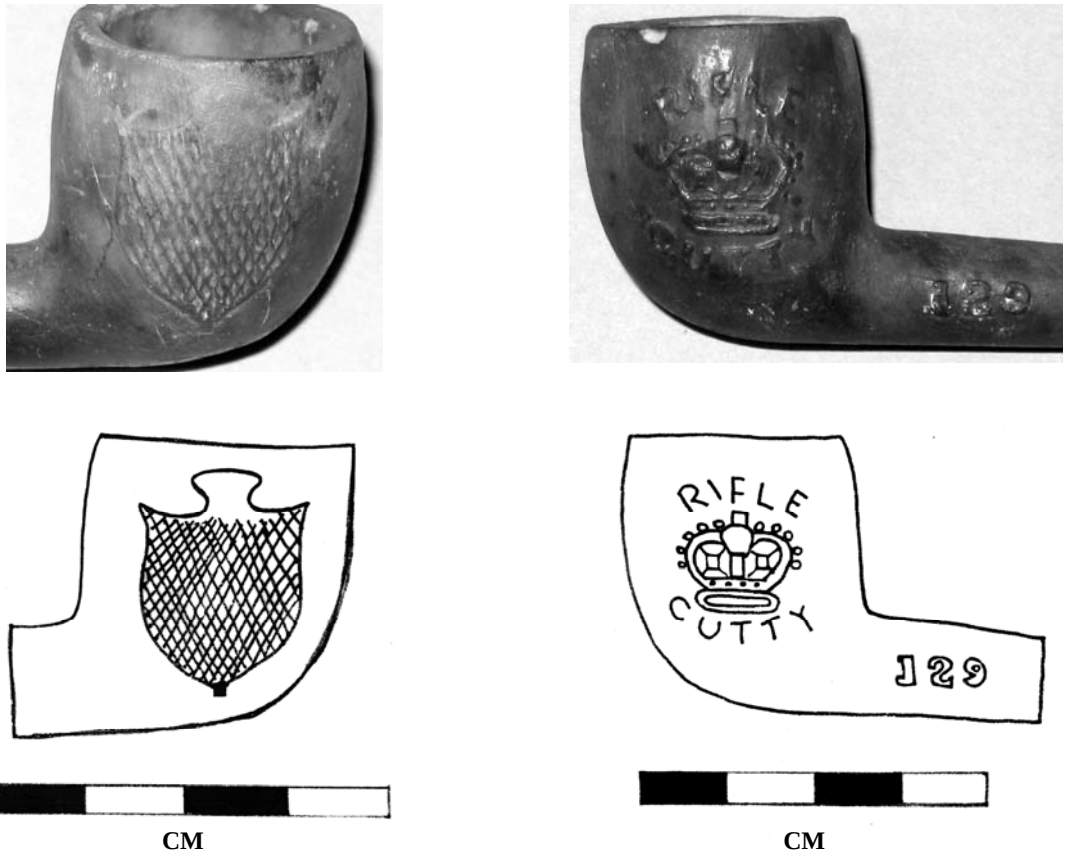


CM **CM**

Anchor and Sailing Ship Motif MA3515

Source: Museum of Tropical Queensland, *Foam* Collection
Photographs and Drawings by author

Examples of Clay Pipes Recovered from the *Foam*



Rifle Cutty Pipe MA3326

Source: Museum of Tropical Queensland, *Foam* Collection
Photographs and Drawings by author

Trade Beads

Complete Beads

Dimensions in mm, Weight (WT) in gm

Acc Number	Width	Height	Hole	WT	Description
			Dia		
MA3354	11	9	3	1	Black circular glass
MA 3355	15	11	4	2	Black circular glass, heavy erosion of surface
MA3507-0	12	9	4	2	Black circular glass
MA3507-1	11	9	5	1	Black circular glass
MA3507-2	12	10	5	1	Bright Blue, circular glass, eroded & pitted surface
MA3507-3	10	7	4	1	Light Blue, circular, glass, eroded surface, crack from top to bottom on outer surface
MA3507-4	10	7	2	1	Red, oval, glass, red glass around a white core
MA3507-5	9	9	3	1	Red, oval, glass, red glass around a white core
MA3507-6	8	6	4	0	Dark blue, circular, glass, slight pitting on surface
MA3507-7	14	11	4	2	Dark brown, circular, glass, surface eroded and exfoliating
MA3507-8	10	7	3	1	Light brown, circular, glass, eroded surface, surface cracks
MA3507-9	8	6	2	0	Red, circular, glass, heavy surface erosion

Bead Fragments

Dimensions in mm, Weight (WT) in gm

Acc Number	Width	Height	Hole	WT	Description
MA3507-10	8	8	2	0	Red, half vertical, glass, red glass around a white core, eroded & pitted surface
MA3507-11	9	9	N/A	0	Red, half vertical, glass, red glass around a white core, eroded & pitted surface

Clothing

Dimensions in mm, Weight (WT) in gm

Acc Number	Dimensions	Qty	WT	Description
	in mm			
MA 3259	10 x 2	3	1	White 4 hole buttons
MA 3506	51 x 54	1	9	Leather Heal
MA 3356	11 x 3	2	1	White 4 hole buttons

Tools and Equipment Database

Dimensions in mm, Weight (WT) in gm

Accession Number	Dimensions	Qty	WT	Description
MA 3209	249 x 55 x 28	1	167	Wood Tomahawk Handle
MA 3332	62 x 16	1	29	Snider Cartridge
MA 3333	29 x 13	1	11	Pistol Cartridge and Projectile Fragment
MA 3334	29 x 13	2	14	Pistol Cartridge Fragments
MA 3337	29 x 13	1	19	Pistol Cartridge
MA 3340	11.5 x 6.8	1	1	Terracotta Base from Cartridge
MA 3342	29 x 12	1	11	Pistol Cartridge and Projectile Fragment
MA 3343	11.7 x 13	1	3	Pistol Cartridge Base Fragment
MA 3345	26 x 14	1	28	Rifle Projectile
MA 3346	26 x 14	2	57	Rifle Projectiles
MA 3347	12 x 5	2	6	Snider Cartridge Base
MA 3349	26 x 14	4	120	Rifle Projectiles
MA 3350	26 x 14	7	190	Rifle Projectiles
MA 3517	26 x 13	2	46	Rifle Projectiles
MA 3524	11Ø	5	36	Lead Ball Shot Projectiles
MA 3540	167x 93 x 20	1	N/A	Resin Cast of Axe Head

Composite Concretion Database

Dimensions in mm, Weight (WT) in gm

Accession Number	Dimensions	WT	Description
MA 3200	330 x 200 x 185	5550	Composite concretion containing three axe heads and two pipe and stem fragments.
MA 3206	210 x 130 x 90	1256	Concretion of clay pipe bowls and fragments.
MA 3312	320 x 165 x 110	857	Composite concretion of wood, clay pipe stem and a fragment of a Type I ceramic armband.
MA 3502	225 x 200	1915	Composite concretion containing four complete and two fragments of Type I ceramic armbands, the base of a bottle and two fragments of bottle glass
MA 3523	270 x 130 x 85	557	Concretion containing complete clay pipes, bowls and stems, and fragments. The pipes have the “Black Watch Highlanders” impressed on the back of the bowl. The base of the concretion is wood.

Ammunition Recovered from the *Foam*

CM
.577 Snider Rifle Cartridge MA3332

CM
.573 Snider Rifle Projectiles MA3350

CM
.450 Pistol Cartridge MA3342

Source: Museum of Tropical Queensland, *Foam* Collection
Photographs by author

Armband Composition Analysis

General Area Detector Diffraction System (GADDS) Report

Fragment Type and Accession Number	**Minerals**
Type I *Oval in Cross Section*	
MA 3220-0	Quartz SiO2 Mullite A16Si2O13 Sodium feldspar Na(AlSi308) (plagioclase)
Type I *Oval in Cross Section*	
MA 3220-4	Quartz SiO2 Cristobalite SiO2 Hematite Fe2O3
Type IIA *Dots and Line Motif*	
MA 3227	Quartz SiO2 Mullite A16Si2O13 Akaganeite Fe8O8(OH)8CI1.35 Cristobalite SiO2
Type IIB *Rope and Line Motif*	
MA 3222	Quartz SiO2 Mullite A16Si2O13 Potassium feldspar KA1SiO8 Cristobalite SiO2
Type IIB *Rope and Line Motif*	
MA 3310	Quartz SiO2 Mullite A16Si2O13 Cristobalite SiO2 Akaganeite Fe8O8(OH)8CI1.35
Type IIIA *Large Concave*	
MA 3217	Quartz SiO2 Mullite A16Si2O13 Sodium feldspar Na(AlSi308) (plagioclase) Akaganeite Fe8O8(OH)8CI1.35

GADDS (cont)

Fragment Type and Accession Number	**Minerals**
Type IIIB *Small Concave*	
MA 3211	Quartz SiO2 Mullite A16Si2O13 Potassium feldspar KA1SiO8
Type IIIC *Small Concave / Narrow Width*	
MA 3210	Quartz SiO2 Mullite A16Si2O13 Cristobalite SiO2
Type IV *Square in Cross Section*	
MA 3215	Quartz SiO2 Mullite A16Si2O13 Sodium calcium feldspar (NaCa)Al(SiAl)308 (Plagioclase)

Source: Beck (1999:59-60)

Semi-Quantitative Analysis XRD Report

Advanced Analytical Centre, James Cook University.
Job No: 6169-04
Date: 06/11/2004

Sample prepared by Mr Phillip McGuire of Northern Petrographics Pty Ltd.

Type IIIB *Small Concave*:

MA 3541

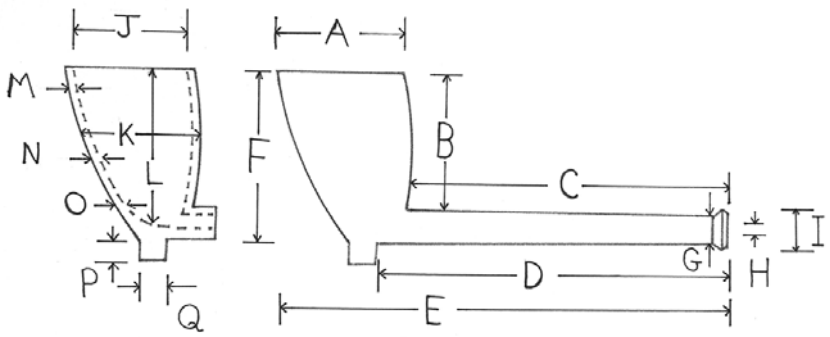
Quartz SiO2
Hematite Fe2O3 (small amount)
Potassium feldspar KA1SiO8
Sodium plagioclase Ma(AISi3O8)
Mullite A16Si2O13 (poorly crystalline)

Results are expressed as weight % and should only be used as an indication of concentration

O	Oxygen	54.2	Ni	Nickel	0.004
Na	Sodium	0.623	Cu	Copper	0.005
Mg	Magnesium	0.783	Zn	Zinc	0.005
Al	Aluminium	10.5	Ga	Gallium	0.003
Si	Silicon	30.9	As	Arsenic	0.007
P	Phosphorus	0.065	Br	Bromine	0.001
S	Sulphur	0.075	Rb	Rubidium	0.015
Cl	Chlorine	0.015	Sr	Strontium	0.009
K	Potassium	1.38	Y	Yttrium	0.001
Ca	Calcium	0.827	Zr	Zirconium	0.022
Sc	Scandium	0.003	Nb	Niobium	0.001
Ti	Titanium	0.146	Ba	Barium	0.017
V	Vanadium	0.006	La	Lanthanum	0.009
Cr	Chromium	0.003	Hf	Hafnium	0.002
Mn	Manganese	0.005	Pb	Lead	0.021
Fe	Iron	0.336	Th	Thorium	0.001
Co	Cobalt	0.020			

European and South Sea Islander Clay Pipe Comparative Data

This Appendix presents the attributes and displays photographs of the South Sea Islander clay pipes examined in the Queensland Museum and the Australian Museum. The following legend identifies the 17 parameters used to record the physical attributes of the pipes. The South Sea Islander pipes were compared with the European clay pipes recovered from the *Foam* and the results are listed in the Comparative table at the end of this appendix. The discussion on these pipes can be found in chapter seven.



Legend

A: Outside diameter of bowl at rim
B: Height of the back of the bowl from rim to stem
C: Length of the stem from the back of the bowl to the end of the mouth piece
D: Length of the stem from the back of the spur to the end of the mouth piece
E: Overall length of the pipe
F: Height of the front of the bowl from rim to base
G: Outside diameter of stem at mouth piece
H: Inside diameter of stem (bore)
I: Outside diameter of mouth piece
J: Inside diameter of bowl at rim
K: Outside diameter of bowl at midpoint
L: Internal depth of bowl
M: Thickness of bowl at rim
N: Thickness of bowl at midpoint
O: Thickness of bowl at base
P: Length of spur
Q: Width of spur

Native Clay Pipes in the Queensland Museum

Accession Number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
E 5709A	30	46	110	109	145	57	7	2	9	27	33	53	2	4	5	7	7
E 5709B	32	45	132	130	171	56	7	2	9	28	34	50	2	3	4	9	7
E 5709C	31	51	83	81	116	64	8	2	9	27	35	58	2	5	5	N/A	N/A
E 5170A	30	50	87	86	123	59	8	2	10	26	34	52	2	5	5	7	6
E 5170B	30	60	N/A	N/A	N/A	68	N/A	2	N/A	27	33	63	2	3	3	N/A	N/A
E 12\57	32	54	84	81	117	65	8	2	9	28	35	57	3	3	5	8	6

Accession Number	Weight in gm
E 5709A	40
E 5709B	32
E 5709C	32
E 5170A	40
E 5170B	39
E 12\57	19

E5709A

E5709B

E5709C

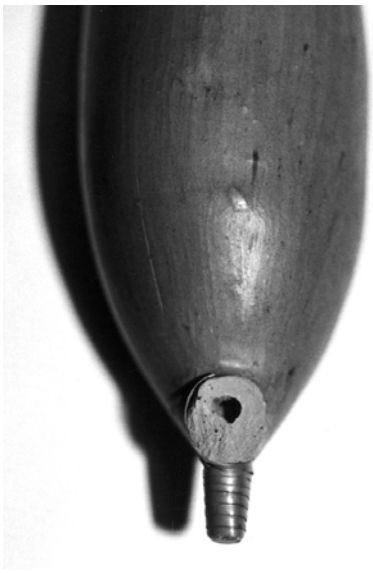
Close up of the Internal Surface of the Bowl of E5709C

Native Clay Pipes in the Queensland Museum (cont)

E5170A

E5170B

E12/57



Close up of the decorative binding on the spur of E12/57

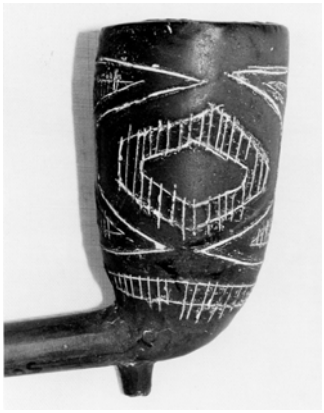
Source: Queensland Museum
Photographs by Author

Native Clay pipes in the Australian Museum

Accession Number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
E 12560	36	67	78	76	112	80	9	2	11	29	39	75	3	5	7	12	7
E 38539	35	52	96	98	125	62	10	4	13	30	35	60	3	0	3	9	5
E 38541	35	50	84	83	115	61	8	2	12	28	35	56	3	3	6	7	6

No weights available due to a lack of scales in the museum.

Top: E38541, Middle: E12560, Bottom: E 38539



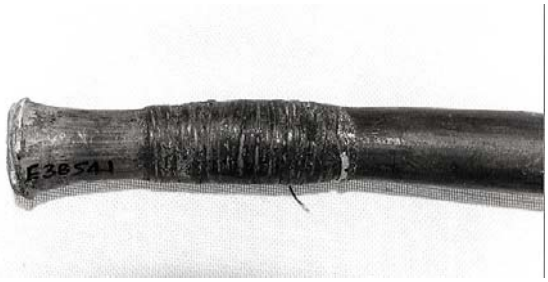
Close up of Motif on E38541

Close up of Motif on E12560

Source: Australian Museum
Photographs by Author

Native Clay pipes in the Australian Museum (cont)

Close up of the Bamboo Mouth Piece Attached to E 38539



Close up of the Bamboo Mouth Piece Attached to E38541

Source: Australian Museum
Photographs by Author

Comparative Data

Average dimensions in "mm" rounded

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
European Pipes from the *Foam*	23	24	84	89	109	34	6	2	6	17	24	30	3	3	3	4	4
SSI pipes in the Queensland Museum	30	51	98	98	134	62	8	2	9	27	34	56	2	4	5	8	8
SSI pipes in the Australian Museum	35	56	86	86	117	67	9	3	12	29	36	64	3	3	5	9	9

Goods at a Trading Station in the Florida Island Group (Solomon Islands) 1896

Blankets
Women's belts
Matches
Large knives
Small knives
Biscuits
Tinned meat
Flannel shirts
Fishing lines
Sugar
Rice
Sauce pans
Curry powder
Pepper
Towels
Umbrellas
Caps
Red necklaces
Blue necklaces
White necklaces
Sewing thread
Red Calico
Scissors
Metal files
Lamps
China arm rings
Pepper

Source: Woodford (1897:31)

List of Goods Recommended as Useful for Trade

American tobacco
Briar root pipes
Clay pipes
Wax vestas
Safety matches
American axes
Shingling axes
Plantation knives
Butcher knives
Pocket knives
Large oval boilers
White Venetian beads
Glass bead necklaces
Rice
Ships biscuits
Kerosene
White earthenware arm rings
Plane irons
Metal files
Frying pans
Cast iron cooking pots
Lamps and lanterns
White calico
Grey calico
Calico print
Turkey red
Blue dungaree
Trousers
Red Venetian beads
Elastic cricket belts
Sugar
Tinned beef
Goa powder*****

Source: Woodford (1897:13-14)

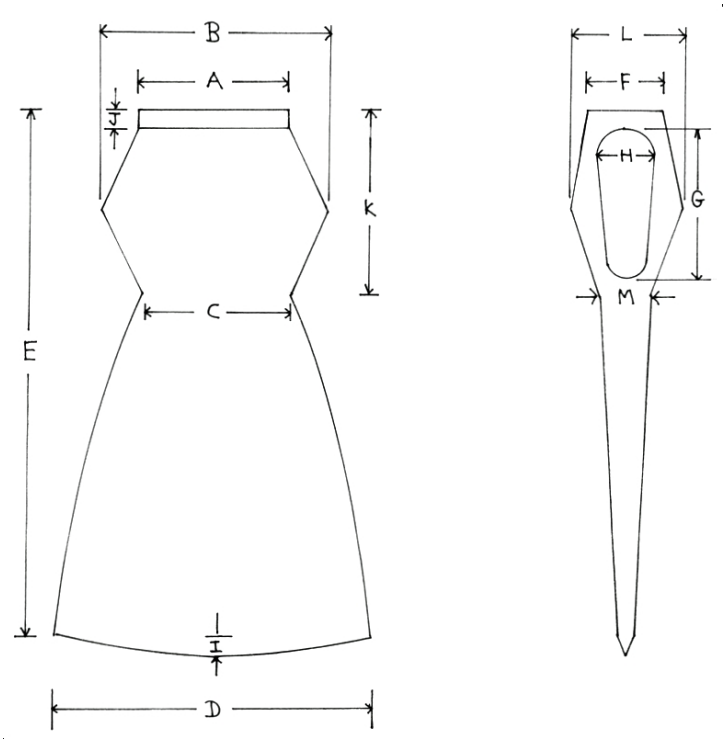
*****[Goa powder (chrysophanic acid), was used by the Islanders to cure skin disease].

Metal Trade Axe Attributes

Location: Queensland Museum

All Dimensions in mm

Accession Number	A	B	C	D	E	F	G	H	I	J	K	L	M	Type
E196	40	68	44	104	162	18	43	17	9	NA	56	24	16	Irish
E197	34	61	38	96	144	24	48	15	9	9	62	23	12	Kent
E198	35	56	38	99	166	17	42	20	10	NA	49	23	15	Irish
E201	42	59	40	107	137	23	44	16	8	7	50	23	12	Irish
E201-2	35	64	36	94	161	14	38	14	10	NA	52	20	13	Irish
E1063	35	57	34	103	149	17	44	15	11	NA	50	23	15	Irish
E3242	39	57	43	112	156	25	43	17	7	NA	51	26	13	Irish
E3319	33	57	37	105	144	15	40	14	0	NA	54	18	9	Irish
E5595	34	57	37	105	169	18	44	17	9	NA	56	26	11	Irish
E5596	38	55	35	91	130	20	42	18	8	NA	54	25	12	Kent
E5597	32	70	40	105	171	20	49	17	7	8	62	21	10	Irish
E10334	38	57	39	74	137	20	43	15	5	NA	52	21	11	Irish
E11417	38	64	36	92	154	24	40	18	7	14	60	23	13	Kent
E16966	31	58	36	112	166	22	43	15	7	NA	50	23	16	Irish



South Sea Island Labourers Diet Analysis

Introduction

This appendix provides a detailed stand alone analysis of the diets provided to the Islanders onboard ship and on the plantations. The appendix starts with a brief review of historic accounts of islanders' interactions with European diets onboard recruiting vessels and then moves into an analysis of the legislated diets required for labourers on plantations and onboard recruiting vessels. By analysing daily diets, it is possible to determine the level of sustenance Islanders received, how the diet affected them and how the diet changed over the period of the labour trade.

The traditional diet of the Islanders varied considerably throughout the region. According to Wawn (1893) the diet of the Mare people in the Loyalty Islands consisted mainly of fish, taro, yams, coconuts and occasionally pork and turtle. Ross (1973) in Moore (1985), states that the Baegu on Malaita had a dependence on starchy food particularly sweet potatoes and taro supplemented with fish and seafood. The changes brought about by the Islanders introduction to European food provides another insight into changes brought about by cross cultural interactions within the Queensland labour trade. Islanders were not introduced to European food as labourers on the plantations, but as recruits on labour vessels. It is, if you like, a "frontier of change on the deck" as opposed to the beach.

Diet Onboard

As stated in chapter eight, a major part of daily life on a recruiting vessel (or any vessel for that matter) was meal times. The following vignettes from various voyages offer insights into some of the mechanisms by which Islanders were introduced to a European diet.

While the *Helena* was waiting to depart for the islands, returns received three meals a day. The galley was divided into two sections, one for the Islanders, and another for crew, under the control of the cook/steward. The Islanders' section consisted of two large boilers in which sweet potato and meat were prepared by two of them.

Two islanders fulfilled the cook's role and were responsible for collecting the rations for the day and cooking all meals for the Islanders. They were paid for this work in tobacco and trade goods at the end of their voyage (*Argus* 1892b).

When it came time to serve the food, bags were spread on the deck as tablecloths. Cooked potatoes were placed in piles on the bags then meat was added. Loaves of bread were served, and the returns stepped forward to help themselves. No knives or forks were used so the meals were consumed hand to mouth. Potatoes and loaves were broken in half and the insides consumed. Potato skins and bread crusts were thrown overboard to feed the fish. Each Islander received as many biscuits as could be held in two hands and the whole lot was washed down with liberal amounts of tea. On those days rice was served, Islanders would sit around the pots scooping it out with their hands while others stood waiting their turn (*Argus* 1892b).

In 1884, when at sea, two meals a day were deemed sufficient for recruits on the *Lizzie*. Meals consisted of yams for breakfast with a meal of rice, biscuits and tea at 4-30 pm. The Government Agent supervised meals and handed out a biscuit to each recruit as they filed past. The *Argus* reported that on some vessels food was placed in tins on the deck and the recruits helped themselves from the tins. Yams were popular as were biscuits but a taste for tea and rice took a little longer (*Argus* 1884b). Morrison's (1882) account supports the routine of two meals a day when at sea. One meal was rice and molasses, the other was yams and similar food. Recruits/returns were allowed as much as they wanted.

On the *Lizzie*, the recruits were roasting yams the whole day and therefore had no need for the rice. The Government Agent insisted that they eat the rice so he banned boys from the galley and the cooking of yams between meals. The young recruits overcame this by lowering their yams down through the roof of the galley to the cook. One morning when rice was served instead of yams two recruits threw their rice away. The result was that the Government Agent vented his anger at them and handcuffed their ankles. The result was that the rice was consumed much to the amusement of the other recruits (Argus 1884b).

Hope (1872) provides earlier examples of diet onboard observing that the cook would prepare four buckets of rice, 13 buckets of water and a pig for breakfast in the large copper pots on deck. Islanders would line up with tin plates to receive their share and would even rejoin the back of the line with a clean plate to get a second serving. Recruits were not used to a diet of rice and pork and it had an adverse effect. The remedy was to put sick recruits on yams and coconuts for a week. Hope also relates that recruits were allowed to cook as they wanted.

Married couples kept to themselves most of the time and were served their food together on a separate dish (*Argus* 1892 m). According to Oliver (1989), a number of societies within the South Sea Islands placed restrictions on men and women eating together. Therefore, the European imposed requirement for married couples to eat together is another example of the way that contact with Europeans required a change the way Islanders lived their daily lives.

Drinking water was needed for all onboard. Regulations required a mandatory 3 quarts (3.4lt) of fresh water each day per Islander onboard, exclusive of water required for cooking. This water was normally held in metal tanks in the hold with the islanders and their trade boxes. This means that a vessel licensed to carry 100 islanders would need onboard water tanks capable of holding a minimum of 340 litres for each day of the voyage to the Islands. Morrison (1882) states that his vessel had six water tanks stored amidships.

Ussher (1892) reported that the *Helena* needed nine tanks of 200 gallons (909 litres) each and Macdonald (1884) reports that onboard the *Heath,* a vessel licensed to carry 156 Islanders, there were:

- Six, 4ft (1.2m) square tanks in the main hold
- One, 3 ft (0.9m) square tank in the main hold and
- Two tanks on the main deck

When recruiting in the islands, the shipboard diet was supplemented with locally available food. The crew of the *Helena* purchased yams and coconuts from Islanders

as a matter of course. Recruiting boats from the *Helena* returned with a "ton and a half" of native food. Added to this was food brought out to the *Helena* in canoes.

Food lockers were soon full with excess yams, giant pumpkins, taro, bananas, coconuts and Indian corn lying on the deck. All native foods were purchased with pipes and tobacco (*Argus* 1892d, 1892j). This enabled recruiters to re-supply the vessels as needed and the exchange of tobacco and small trade goods in payment kept up the exchange process.

It was not only Islanders who had to be fed. At one stage onboard the *Helena*, the salted meat supply essential for the crew was very low. Unless the rotten meat thrown overboard could be replaced, the recruiting voyage would have to be cut short. The situation was resolved by sailing to the Florida Islands trading post where enough salted meat was purchased from the *Borough Belle* to enable the voyage to continue (*Argus* 1892k)

Diet Analysis

Prior to 1868 and, as established in chapter three, no regulations existed to govern the type or quantity of rations provided to labourers on plantations. The same situation existed for Islanders being transported on labour vessels. The *Polynesian Labourers Act of* 1868 detailed a separate diet for Islanders on recruiting vessels. As with its land based counterpart, the shipboard diet was revised by *The Pacific Island Labourers Act* of 1880 (see Table 1). The Captain and the Government Agent had a responsibility to provide the Islanders onboard with a minimum set quantity of food per day as detailed in the regulations.

Table 1
Comparative Table of Rations and Clothing on Board Queensland Labour Vessels 1868 - 1880

1868		**1880**			
Daily Ration		**Daily Ration**			
Item	**Quantity**	**Item**	**Quantity**		
Water	3 quarts (3.4 lt)	Water	3 quarts (3.4 lt)		
Yams	4 lb (1.8 kg)	Yams or			
(or) Rice	1 ½ lb (0.68 kg)	Potatoes	5 lb (2.25 kg)		
(or) Maize	1 ½ lb (0.68 kg)	(or) Rice	2 lb (0.9 kg)		
Meat		Tea	½ oz (14.1 g)		
(Pork or Beef)	1 lb (0.45 kg)	Sugar	2 oz (56.6 g)		
Tea	½ oz (14.1 g)				
Sugar	2 oz (56.6 g)				
Weekly Ration		**Weekly Ration**			
Tobacco	1 ½ oz (42.5 g)	Tobacco	1 ½ oz (42.5 g)		
(During periods of good behaviour)		Pipe	1		
Clothing on Embarkation		**Clothing on Embarkation**			
		Male		**Female**	
Shirt (flannel)	1	Shirt (flannel)	1	Dress	1
Trousers	1	Trousers	1	Petticoat	1
Blanket	1	Blanket	2	Blanket	2

Source: **1868**, Adapted from *The Polynesian Labourers Act* of 1868 (s.19 & 20).
1880, Adapted from *The Pacific Island Labourers Act* of 1880 (s. 12 (5) (6) & (7)).

Appendix 18

Research into the suitability of the original 1868 diet provided to South Sea Islanders working on the sugar plantations was initially carried out by Saunders (1974) and later by Moore (1985), with conflicting results. Saunders (1974) asserts that the plantation workers' diet, as stipulated by the regulations, was nutritionally unbalanced and provided only 2,500 (10500kJ) of the 3,000 (12600kJ) calories needed to sustain a man for 10 hours hard labour. The diet was high in carbohydrates, contained no dairy fats and there was insufficient protein to provide essential amino acids. Moreover, Saunders states that minerals and vitamins were lacking.

However Moore (1985), after having the diet analysed by the chief dietician of the Royal Brisbane Hospital, argued that in fact it was adequate for a male performing "reasonably strenuous labour". The chief dietician found that the protein level was more than twice that required by an adult male; the calcium level was above the daily requirement, as was iron. Vitamin B complex levels were also in excess of daily needs and provided the vegetables were fresh, the ascorbic acid levels would be adequate. The chief dietician reported that the regulation diet for plantation workers provided on average about 16, 000kj of energy which was in excess of the recommended daily level of 12, 000kj.

It is interesting to note that even after Moore's 1985 analysis of the diet, Graves in his 1995 publication continues to cite the earlier Saunders (1974) view of the plantation diet as being

> "both calorifically and nutritionally deficient for humans engaged in hard manual labour" (Graves 1995:87).

Moore (1985) and Saunders (1974) only examined the legislated 1868 plantation diet. Until now, no analysis or comparison has been carried out on the changes in subsequent plantation or ship board diets.

To resolve the issue of diet suitability and to help our understanding of the process of change, the separate diets were initially analysed by Melanie Hedrick and Anita Reeves from the Department of Dietetics and Nutrition (DDN) at the Townsville Hospital using Xyris software programme *Foodworks* Version 2.10.136, copyright 2000.

The diets were later re-calculated by Dr Madeleine Nowak of the School of Public Health and Tropical Medicine at James Cook University using *Foodworks Profesional 2005*.

For the purpose of this analysis, the diets have been divided between strenuous and less strenuous activity. The strenuous activity diets are those of the plantation workers and they are compared to the diet legislated for the sailors on the First Fleet. The *Foodworks* program sets a daily base line of 14,600 kJ for men and 10,400 kJ for women engaged in strenuous labour. The less strenuous activity diet is for the recruits / returns on board labour vessels. These diets will be compared with the legislated diets for 1788 First Fleet convicts (Polya 2001) and 1858 steerage class emigrants to Australia (Hains 2003). Life onboard was less strenuous for the returns and recruits. Therefore their daily energy requirement was less. Food works sets a minimum of 10,200 kJ for men and 8,100 kJ for women engaged in less strenuous work.

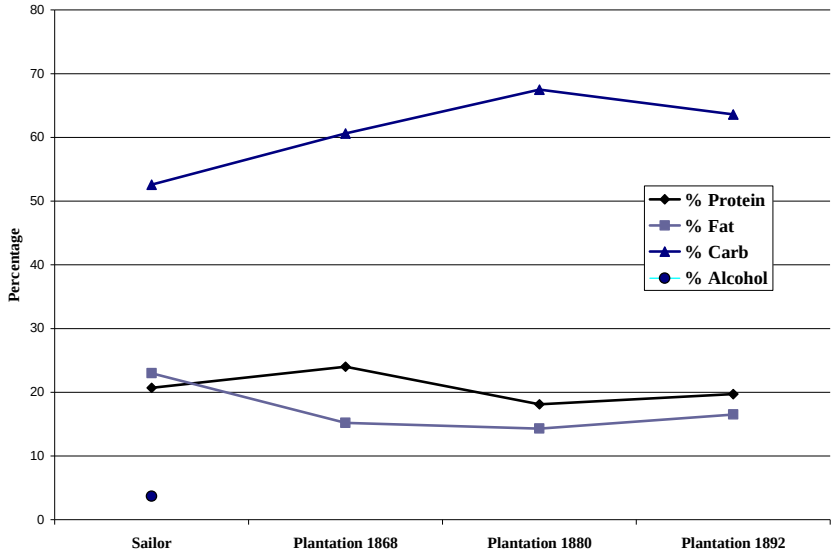
For ease of analysis and presentation of data the methodology used by Dr Nowak involved the construction of a single diet for situation by apportioning equal quantities to all options provided. Thus for the 1868 plantation diet: beef, mutton and fish were each assumed to provide the "protein food" for one third of the time (ie beef 0.15kg, mutton 0.15kg, fish 0.3kg daily). Similarly bread and flour were each assumed to be used 50% of the time (ie bread 0.225kg and flour 0.225kg daily); molasses and sugar 70.9g daily; vegetables, 0.3kg (using 50% vegetables non specified and 50% potatoes), rice 37.8g and maize75.6g daily. The other diets were treated similarly. All items in each diet were converted to quantity per day before processing. The coding used for the foods, together with any substitutions made is shown in Table 2.

Analysis of the Strenuous Activity Diets

The strenuous activity diets and the Foodworks analysis are shown in Tables 3 to 6. A graphical representation of the results is presented in Figure 1. The analysis revealed that the 1868 plantation diet would have provided insufficient daily energy (kJ) for men but excess for women, while protein was well above the daily requirement for both sexes.

However, although Vitamin C was sufficient, Vitamin A was below the recommended daily value. Carbohydrates provided 60% of daily energy (kJ) and fat 15%.

Comparison of Percentage of Protein, Fat, Carbohydrates and Alcohol



Comparison of Levels of Energy and Protein

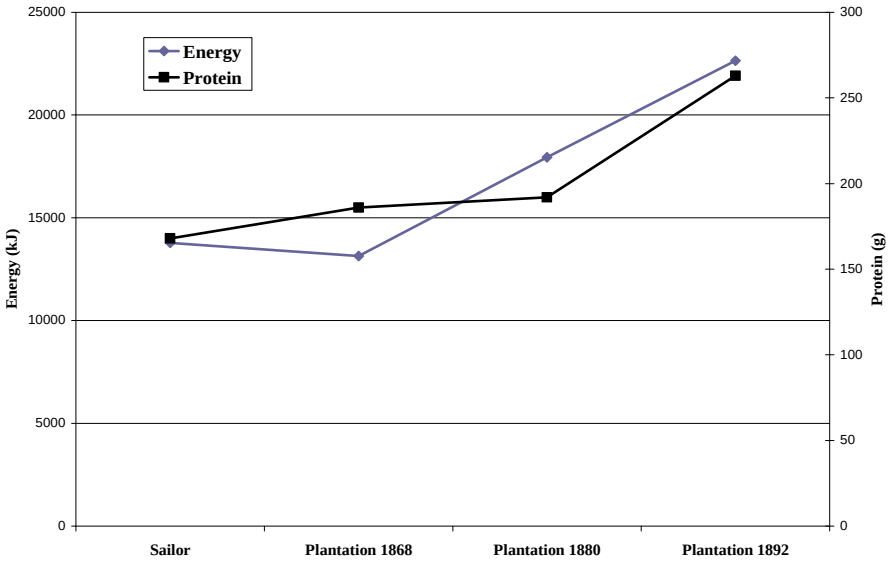


Figure 1 Analysis of Diets for Strenuous Activities

Changes in 1880 and 1892 resulted in a steady increase in daily energy and protein levels for both sexes to that well above minimum daily requirements.

Vitamin C increased but vitamin A levels decreased. Energy (kJ) derived from carbohydrates increased while levels of protein and fat decreased.

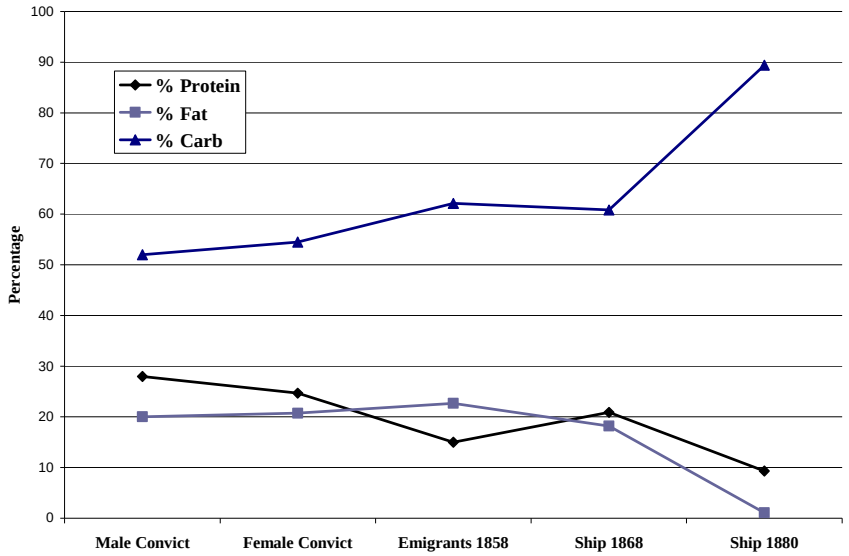
Graves (1995:88) reported that newspapers of the period advertised a cheap inferior grade of rice known as "plantation rice". This rice consisted mainly of broken or cracked grains and was, as the name indicates used as a cheap source of rice to feed labours on the plantations. As ship owners were also into increasing their profit margin, it would seem likely that the rice provided onboard the recruiting vessels may also have been the inferior grade plantation rice. However, broken/cracked rice contains the same dietary value as whole rice and would not have altered the dietary input.

By way of comparison, the legislated diet for sailors in the First Fleet provided more daily energy (kJ) than the 1868 plantation diet. However, it was still below the daily recommended level. This situation continued for 12 years until the introduction of the 1880 Act, when the daily energy (kJ) level increased to well above the recommended level. The 1892 Act increased energy (kJ) levels even further. Protein for plantation diets was always higher than levels provided by the First Fleet sailors' diet. Post 1892, the plantation diet was providing more daily energy (kJ) and protein than the sailors' diet. The percentage of energy derived from carbohydrates had increased to 63% while the level of fat had fallen to 16.5%.

Analysis of the Less Strenuous Activity Diets

The less strenuous activity diets and the Foodworks analysis are shown in Tables 7 to 11. A graphical representation of the results is presented in Figure 2. The analysis revealed that the 1868 shipboard diet provided insufficient daily energy (kJ) for males but more than the minimum requirement for females. Protein levels were well above the minimum for both sexes. Both Vitamins A and C were above minimum requirements, and carbohydrates provided 60% of the daily energy. The introduction of the 1880 diet removed meat from the diet and an increased the quantity of potatoes. This resulted in a further decrease in daily energy and a substantial decrease in protein; however the level of Vitamins A and C increased. The percentage of daily energy (kJ) provided by fat decreased to just over 1%, while the carbohydrate level rose to 89%.

Comparison of Percentage of Protein, Fat and Carbohydrates



Comparison of Levels of Energy and Protein

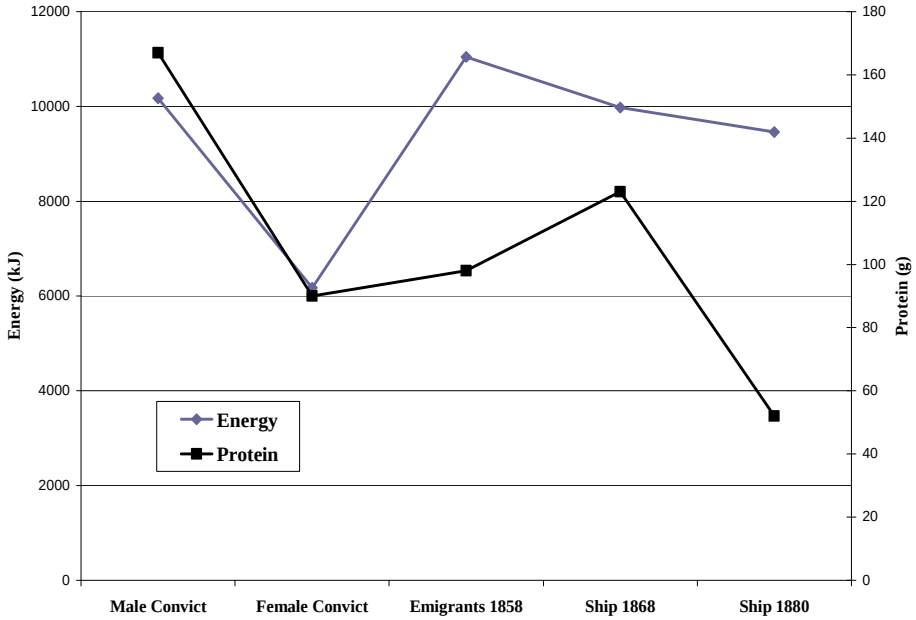


Figure 2 Analysis of Diets for Less Strenuous Activities

According to Melanie Hedrick from DDN, a diet low in fat deprives the body of fatty acids which can result in itchy and flaky skin, poor wound healing and diarrhoea. A diet low in protein in combination with a low kJ intake can cause oedema (accumulation of excess fluid in the lungs and abdominal cavity) and increase susceptibility to infections. In addition, if rice was the main component of the diet provided onboard recruiting vessels, the South Sea Islanders may have also suffered from riboflavin deficiency with symptoms including seborrheic dermatitis (flaking of the skin), cracking of the tissue around the corners of the mouth, inflammation of the mouth and tongue and possibly confusion (Hedrick 2004 pers.com)

The diet legislated for the First Fleet convicts (Tables 9and 10) provided inadequate daily energy for both sexes, however protein levels were good. Vitamin A was insufficient but Vitamin C was adequate and carbohydrates provided just over 50% of the daily energy (kJ). The diet for steerage emigrants (Table 11) provided abundant daily energy and protein levels however both Vitamins A and C were insufficient. Carbohydrates provided just over 60% of the daily energy intake.

By way of comparison, the legislated diet for male recruits /returns on labour vessels in 1868 would have provided less daily energy than received by male convicts in 1788, with the situation worsening after 1880. Female recruits / returns would have received sufficient daily energy and protein. Of all the diets, the shipboard diet post 1880 was the highest in carbohydrate levels (89.4%).

In summary, the original 1868 plantation diet for males provided inadequate daily energy but good protein. Changes in 1880 and 1892 improved the daily energy and protein levels. Likewise, the 1868 shipboard diet provided inadequate daily energy but good protein. However, unlike its land-based counterpart, the 1880 changes decreased the already inadequate daily energy level and drastically reduced the protein levels to the extent that male convicts on the First Fleet were receiving higher levels of daily energy and protein. Both female plantation workers and female recruits / returns would have received sufficient energy and protein from 1868 onwards. The data for the comparison of all the daily diets is shown in Table 12

Table 2 Coding used for Analysis with Foodworks Professional 2005

FOOD	CODING USED
Beef	Beef, steak, stewing cuts, stewed/braised, lean & fat
Beer	Beer, regular alcohol, NS type
Biscuit	Flour wholemeal plain
Bread	Bread, wholemeal, homemade without added salt
Butter	Butter, NFS
Cheese	Cheese, NFS
Fish	Fish NS type, raw
Flour	Flour, wheat, wholemeal, plain
Maize	Corn, raw
Mustard	Mustard, made with dry powder, with added water only
Mutton	Lamb NS cut, raw, lean & fat
Oatmeal	Oats, raw
Peas	Peas green, raw
Pickles	Pickles, mixed, in brine, NFS
Pork	Pork, chops, all cuts, raw, lean & fat
Potatoes	Potato, raw, NS, skin
Preserved meat	Beef corned , NFS
Preserved potatoes	Potatoes, boiled, salted, with skin
Rice	Rice, white, raw
Sugar	Sugar NFS
Yams	Sweet potato NS colour, raw
Vegetables	Vegetables NS type, raw (50%)
	Potatoes, raw NS skin (50%)

Table 3

Plantation diet 1868

FOODS

Beef,Steak,Stewing Cuts,Raw,Lean&Fat	150g
Lamb,NS Cut,Raw,Lean&Fat	150g
Fish,NS Type,Raw	300g
Vegetable,NS Type,Raw	150g
Potato,Raw,NS Skin	150g
Rice,White,Raw	37.8g
Corn,Raw	75.6g
Flour,Wheat,Wholemeal,Plain	450g
Molasses	70.9g
Sugar,NFS	70.9g
Salt	8.1g

ANALYSES

	Avg/Day	Status
Weight	1613.30g	
Energy	13140.00kJ	
Protein	185.97g	
Total Fat	54.27g	
- Saturated Fat	20.21g	
- Poly-unsaturated Fat	8.33g	
- Monounsaturated Fat	18.60g	
Cholesterol	378.00mg	
Carbohydrate	469.34g	
Sugars	127.57g	
Starch	340.59g	
Water	814.10g	
Alcohol	0.00g	
Dietary Fibre	59.32g	
Thiamin	2.76mg	
Riboflavin	1.48mg	
Niacin	55.77mg	
Niacin Equivalents	90.95mg	
Vitamin C	67.54mg	
Total Folate	474.36ug	
Total Vitamin A Equivalents	250.01ug	
Retinol	43.50ug	
B-Carotene Equivalents	1237.56ug	
Sodium	3666.21mg	
Potassium	6059.88mg	
Magnesium	848.34mg	
Calcium	432.20mg	
Phosphorus	2551.28mg	
Iron	27.85mg	

Table 3 (cont)

	Avg/Day	Status
Zinc	21.19mg	
Kj from Protein	24.05%	
Kj from Fat	15.27%	
Kj from Carbohydrate	60.68%	
Kj from Alcohol	0.00%	
Kj from Others	?%	
Fat as Poly	17.67%	
Fat as Mono	39.46%	
Fat as Saturated	42.87%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	100.00%	
Assigned Carbohydrate	0.00g	
Glycemic Index (Assigned Carb)	?	
Glycemic Load (Assigned Carb)	0.00	

FOOD LIST

Ingredient	Weight(%)
Flour	27.9
Fish	18.6
Beef	9.3
Lamb	9.3
Vegetable	9.3
Potato	9.3
Corn	4.69
Molasses	4.39
Sugar	4.39
Rice	2.34
Salt	0.50

Source: **Diet***:The Polynesian Labourers Act* of 1868
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table 4

Plantation diet 1880

FOODS

Beef,Steak,Stewing Cuts,Raw,Lean&Fat	225g
Lamb,NS Cut,Raw,Lean&Fat	225g
Potato,Raw,NS Skin	650g
Rice,White,Raw	85.1g
Salt	8.1g
Sugar,NFS	141.7g
Flour,Wheat,Wholemeal,Plain	680.4g

ANALYSES

	Avg/Day	Status
Weight	2015.30g	
Energy	17943.26kJ	
Protein	191.52g	
Total Fat	69.36g	
- Saturated Fat	26.88g	
- Poly-unsaturated Fat	9.00g	
- Monounsaturated Fat	23.81g	
Cholesterol	301.50mg	
Carbohydrate	713.66g	
Sugars	150.14g	
Starch	562.78g	
Water	919.93g	
Alcohol	0.00g	
Dietary Fibre	87.29g	
Thiamin	3.92mg	
Riboflavin	1.82mg	
Niacin	66.92mg	
Niacin Equivalents	104.28mg	
Vitamin C	151.75mg	
Total Folate	699.21ug	
Total Vitamin A Equivalents	33.75ug	
Retinol	20.25ug	
B-Carotene Equivalents	83.25ug	
Sodium	3488.01mg	
Potassium	6530.86mg	
Magnesium	939.36mg	
Calcium	279.19mg	
Phosphorus	2753.01mg	
Iron	33.54mg	
Zinc	29.26mg	
Kj from Protein	18.14%	
Kj from Fat	14.30%	

Table 4 (cont)

	Avg/Day	Status
Kj from Carbohydrate	67.57%	
Kj from Alcohol	0.00%	
Kj from Others	?%	
Fat as Poly	15.08%	
Fat as Mono	39.89%	
Fat as Saturated	45.03%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	100.00%	
Assigned Carbohydrate	0.00g	
Glycemic Index (Assigned Carb)	?	
Glycemic Load (Assigned Carb)	0.00	

FOOD LIST

Ingredient	Weight(%)
Flour	33.8
Potato	32.3
Beef	11.2
Lamb	11.2
Sugar	7.0
Rice	4.22
Salt	0.40

Source: **Diet***: The Pacific Island Labourers Act* of 1880
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table5

Plantation diet 1892

FOODS

Beef,Steak,Stewing Cuts,Raw,Lean&Fat	340.2g
Lamb,NS Cut,Raw,Lean&Fat	340.2g
Flour,Wheat,Wholemeal,Plain	900g
Sugar,NFS	141.7g
Potato,Raw,NS Skin	650g
Rice,White,Raw	85.1g
Salt	8.1g

ANALYSES

	Avg/Day	Status
Weight	2465.30g	
Energy	22649.27kJ	
Protein	263.13g	
Total Fat	101.62g	
- Saturated Fat	40.21g	
- Poly-unsaturated Fat	12.23g	
- Monounsaturated Fat	35.65g	
Cholesterol	455.87mg	
Carbohydrate	848.93g	
Sugars	151.90g	
Starch	696.30g	
Water	1100.10g	
Alcohol	0.00g	
Dietary Fibre	111.88g	
Thiamin	5.05mg	
Riboflavin	2.49mg	
Niacin	88.91mg	
Niacin Equivalents	140.20mg	
Vitamin C	152.90mg	
Total Folate	876.00ug	
Total Vitamin A Equivalents	51.03ug	
Retinol	30.62ug	
B-Carotene Equivalents	125.87ug	
Sodium	3646.44mg	
Potassium	7934.54mg	
Magnesium	1209.43mg	
Calcium	358.90mg	
Phosphorus	3646.24mg	
Iron	44.39mg	
Zinc	40.76mg	
Kj from Protein	19.74%	
Kj from Fat	16.59%	

Table 5 (cont)

	Avg/Day	Status
Kj from Carbohydrate	63.67%	
Kj from Alcohol	0.00%	
Kj from Others	?%	
Fat as Poly	13.89%	
Fat as Mono	40.47%	
Fat as Saturated	45.64%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	100.00%	
Assigned Carbohydrate	0.00g	
Glycemic Index (Assigned Carb)	?	
Glycemic Load (Assigned Carb)	0.00	

FOOD LIST

Ingredient	Weight(%)
Flour	36.5
Potato	26.4
Beef	13.8
Lamb	13.8
Sugar	5.7
Rice	3.45
Salt	0.33

Source: **Diet***: The Pacific Island Labourers (Extension) Act* of 1892
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table 6

First Fleet seaman's diet

FOODS

Bread,Wholemeal,Homemade,Without Added Salt	226.5g
Flour,Wheat,Wholemeal,Plain	226.5g
Beef,Steak,Stewing Cuts,Raw,Lean&Fat	258.6g
Pork,Chop,All Cuts,Raw,Lean&Fat	128.6g
Pea,Green,Raw	171.4g
Oats,Raw	257g
Butter,NFS	18.3g
Cheese,NFS	27.4g
Beer,Regular Alcohol NS Type	454.3 mL

ANALYSES

	Avg/Day	Status
Weight	1773.14g	
Energy	13778.71kJ	
Protein	168.23g	
Total Fat	85.77g	
- Saturated Fat	33.06g	
- Poly-unsaturated Fat	15.37g	
- Monounsaturated Fat	29.75g	
Cholesterol	302.66mg	
Carbohydrate	426.01g	
Sugars	11.78g	
Starch	411.48g	
Water	985.84g	
Alcohol	17.44g	
Dietary Fibre	66.29g	
Thiamin	4.38mg	
Riboflavin	1.64mg	
Niacin	44.36mg	
Niacin Equivalents	77.88mg	
Vitamin C	66.61mg	
Total Folate	574.65ug	
Total Vitamin A Equivalents	425.65ug	
Retinol	261.28ug	
B-Carotene Equivalents	992.74ug	
Sodium	571.71mg	
Potassium	3787.66mg	
Magnesium	861.69mg	
Calcium	570.22mg	
Phosphorus	2882.84mg	
Iron	29.65mg	
Zinc	26.40mg	
Kj from Protein	20.75%	

Table 6 (cont)

	Avg/Day	Status
Kj from Fat	23.03%	
Kj from Carbohydrate	52.55%	
Kj from Alcohol	3.67%	
Kj from Others	?%	
Fat as Poly	19.66%	
Fat as Mono	38.05%	
Fat as Saturated	42.29%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	100.00%	
Assigned Carbohydrate	0.00g	
Glycemic Index (Assigned Carb)	?	
Glycemic Load (Assigned Carb)	0.00	

FOOD LIST

Ingredient	Weight(%)
Beer	25.9
Beef	14.6
Oats	14.5
Bread	12.8
Flour	12.8
Pea	9.7
Pork	7.3
Cheese	1.55
Butter	1.03

Seaman's Diet per Week

7 lb (3.17kg) Bread/biscuit
4 lb (1.81kg) Beef
2 lb (0.90kg) Pork
2 Pints (1.2lt) Peas
3 pints (1.8lt) Oatmeal
8 oz (128grams) Butter
12 oz (192 grams) Cheese
7 gallons (31.8lt) Beer

Source: **Diet**: Polya (2000)
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table 7

Shipboard diet 1868

FOODS

Sweet Potato,NS Colour,Raw	600g
Rice,White,Raw	226.8g
Corn,Raw	226.7g
Beef,Steak,Stewing Cuts,Raw,Lean&Fat	225g
Pork,Chop,All Cuts,Raw,Lean&Fat	225g
Sugar,NFS	56.6g

ANALYSES

	Avg/Day	Status
Weight	1560.10g	
Energy	9977.30kJ	
Protein	122.74g	
Total Fat	49.23g	
- Saturated Fat	18.23g	
- Poly-unsaturated Fat	7.21g	
- Monounsaturated Fat	19.81g	
Cholesterol	276.75mg	
Carbohydrate	357.66g	
Sugars	93.43g	
Starch	262.87g	
Water	969.58g	
Alcohol	0.00g	
Dietary Fibre	22.82g	
Thiamin	2.41mg	
Riboflavin	1.20mg	
Niacin	31.69mg	
Niacin Equivalents	57.01mg	
Vitamin C	201.85mg	
Total Folate	346.21ug	
Total Vitamin A Equivalents	6911.23ug	
Retinol	20.25ug	
B-Carotene Equivalents	41292.67ug	
Sodium	362.02mg	
Potassium	4354.53mg	
Magnesium	288.47mg	
Calcium	280.66mg	
Phosphorus	1468.96mg	
Iron	15.31mg	
Zinc	21.71mg	
Kj from Protein	20.90%	
Kj from Fat	18.24%	
Kj from Carbohydrate	60.86%	

Table 7 (cont)

	Avg/Day	Status
Kj from Alcohol	0.00%	
Kj from Others	?%	
Fat as Poly	15.94%	
Fat as Mono	43.78%	
Fat as Saturated	40.28%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	100.00%	
Assigned Carbohydrate	0.00g	
Glycemic Index (Assigned Carb)	?	
Glycemic Load (Assigned Carb)	0.00	

FOOD LIST

Ingredient	Weight(%)
Sweet Potato	38.5
Rice	14.5
Corn	14.5
Beef	14.4
Pork	14.4
Sugar	3.63

Source: **Diet***:The Polynesian Labourers Act* of 1868
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table 8

shipboard diet 1880

FOODS

Sweet Potato,NS Colour,Raw	750g
Potato,Raw,NS Skin	750g
Rice,White,Raw	300g
Sugar,NFS	56.4g

ANALYSES

	Avg/Day	Status
Weight	1856.40g	
Energy	9462.18kJ	
Protein	52.05g	
Total Fat	3.00g	
- Saturated Fat	0.30g	
- Poly-unsaturated Fat	0.60g	
- Monounsaturated Fat	0.60g	
Cholesterol	0.00mg	
Carbohydrate	498.34g	
Sugars	102.58g	
Starch	394.71g	
Water	1236.81g	
Alcohol	0.00g	
Dietary Fibre	27.90g	
Thiamin	1.14mg	
Riboflavin	0.66mg	
Niacin	23.25mg	
Niacin Equivalents	35.55mg	
Vitamin C	405.00mg	
Total Folate	405.00ug	
Total Vitamin A Equivalents	8475.00ug	
Retinol	0.00ug	
B-Carotene Equivalents	50775.00ug	
Sodium	121.13mg	
Potassium	5408.84mg	
Magnesium	350.63mg	
Calcium	259.14mg	
Phosphorus	1035.00mg	
Iron	10.46mg	
Zinc	10.05mg	
Kj from Protein	9.35%	
Kj from Fat	1.17%	
Kj from Carbohydrate	89.48%	
Kj from Alcohol	0.00%	
Kj from Others	?%	

Table 8 (cont)

	Avg/Day	Status
Fat as Poly	40.00%	
Fat as Mono	40.00%	
Fat as Saturated	20.00%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	100.00%	
Assigned Carbohydrate	0.00g	
Glycemic Index (Assigned Carb)	?	
Glycemic Load (Assigned Carb)	0.00	

FOOD LIST

Ingredient	Weight(%)
Sweet Potato	40.4
Potato	40.4
Rice	16.2
Sugar	3.04

Source: **Diet***:The Polynesian Labourers Act* of 1880
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table 9

Male convict's diet, First Fleet

FOODS

Bread,Wholemeal,Homemade,Without Added Salt	226.5g
Flour,Wheat,Wholemeal,Plain	226.5g
Beef,Steak,Stewing Cuts,Stewed/Braised,Fat Trimmed	226.5g
Pork,Chop,All Cuts,Raw,Lean&Fat	129.3g
Pea,Green,Raw	257.1g
Butter,NFS	13.7g
Flour,Wheat,Wholemeal,Plain	32.2g
Rice,White,Raw	31.4g

ANALYSES

	Avg/Day	Status
Weight	1143.20g	
Energy	10172.32kJ	
Protein	167.05g	
Total Fat	55.10g	
- Saturated Fat	22.74g	
- Poly-unsaturated Fat	7.68g	
- Monounsaturated Fat	18.34g	
Cholesterol	284.90mg	
Carbohydrate	310.93g	
Sugars	14.55g	
Starch	292.23g	
Water	543.35g	
Alcohol	0.00g	
Dietary Fibre	57.21g	
Thiamin	3.37mg	
Riboflavin	1.54mg	
Niacin	44.87mg	
Niacin Equivalents	78.15mg	
Vitamin C	82.27mg	
Total Folate	386.10ug	
Total Vitamin A Equivalents	357.40ug	
Retinol	144.62ug	
B-Carotene Equivalents	1290.13ug	
Sodium	300.68mg	
Potassium	2879.02mg	
Magnesium	551.25mg	
Calcium	238.00mg	
Phosphorus	1789.96mg	
Iron	25.86mg	
Zinc	31.17mg	
Kj from Protein	27.94%	
Kj from Fat	20.06%	

Table 9 (cont)

	Avg/Day	Status
Kj from Carbohydrate	52.00%	
Kj from Alcohol	0.00%	
Kj from Others	0.08%	
Fat as Poly	15.75%	
Fat as Mono	37.62%	
Fat as Saturated	46.63%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	100.00%	
Assigned Carbohydrate	0.00g	
Glycemic Index (Assigned Carb)	?	
Glycemic Load (Assigned Carb)	0.00	

FOOD LIST

Ingredient	Weight(%)
Flour	22.6
Pea	22.5
Bread	19.8
Beef	19.8
Pork	11.3
Rice	2.75
Butter	1.20

Male Convict's Diet per Week

7 lb (3.17kg) Bread/Flour
7 lb (3.17kg) Beef
(or)
4 lb (1.81kg) Pork
3 Pints (1.8lt) Peas
6 oz (96 grams) Butter
1lb (0.45kg) Flour
(or)
½ lb (0.22kg) Rice

Source: **Diet**: Polya (2000)
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table 10

Female convict's diet, First Fleet

FOODS

Bread,Wholemeal,Homemade,Without Added Salt	150g
Flour,Wheat,Wholemeal,Plain	150g
Beef,Steak,Stewing Cuts,Raw,Lean&Fat	150g
Pork,Chop,All Cuts,Raw,Lean&Fat	85.7g
Pea,Green,Raw	171.4g
Butter,NFS	9.1g
Flour,Wheat,Wholemeal,Plain	21.5g
Rice,White,Raw	10.7g

ANALYSES

	Avg/Day	Status
Weight	748.40g	
Energy	6171.74kJ	
Protein	89.82g	
Total Fat	34.53g	
- Saturated Fat	14.16g	
- Poly-unsaturated Fat	5.07g	
- Monounsaturated Fat	11.39g	
Cholesterol	166.29mg	
Carbohydrate	198.15g	
Sugars	9.66g	
Starch	185.73g	
Water	379.33g	
Alcohol	0.00g	
Dietary Fibre	37.89g	
Thiamin	2.26mg	
Riboflavin	0.90mg	
Niacin	28.20mg	
Niacin Equivalents	45.90mg	
Vitamin C	56.35mg	
Total Folate	294.88ug	
Total Vitamin A Equivalents	237.79ug	
Retinol	97.54ug	
B-Carotene Equivalents	848.94ug	
Sodium	218.37mg	
Potassium	2047.84mg	
Magnesium	363.67mg	
Calcium	157.33mg	
Phosphorus	1155.90mg	
Iron	14.68mg	
Zinc	13.50mg	
Kj from Protein	24.74%	
Kj from Fat	20.70%	

Table 10 (cont)

	Avg/Day	Status
Kj from Carbohydrate	54.57%	
Kj from Alcohol	0.00%	
Kj from Others	?%	
Fat as Poly	16.55%	
Fat as Mono	37.18%	
Fat as Saturated	46.26%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	100.00%	
Assigned Carbohydrate	0.00g	
Glycemic Index (Assigned Carb)	?	
Glycemic Load (Assigned Carb)	0.00	

FOOD LIST

Ingredient	Weight(%)
Flour	22.9
Pea	22.9
Bread	20.0
Beef	20.0
Pork	11.5
Rice	1.43
Butter	1.22

Female Convict's Diet per Week (2/3 of Male Diet)

4.6 lb (2.1kg) Bread/Flour
4.6 lb (2.1kg) Beef
(or)
2.7 lb (1.2kg) Pork
2 Pints (1.2lt) Peas
4 oz (64 grams) Butter
0.6lb (0.3kg) Flour
(or)
0.3 lb (0.15kg) Rice

Source: **Diet**: Polya (2000)
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table 11

Emigrant diet 1854

FOODS

Flour,Wheat,Wholemeal,Plain	224.3g
Beef,Steak,Stewing Cuts,Raw,Lean&Fat	24.3g
Pork,Chop,All Cuts,Raw,Lean&Fat	72.3g
Beef,Corned,NFS	96.9g
Flour,Wheat,Wholemeal,Plain	170g
Oats,Raw	85g
Raisin	32.6g
Butter,NFS	16.3g
Suet	24.6g
Pea,Green,Raw	60g
Potato,Boiled,Without Added Salt,With Skin(Unpeeled),Fat Not Added	32.3g
Sugar,NFS	48.4g
Treacle	32.3g
Pickle,Mixed,In Brine,NFS	21 mL
Salt	8.1g
Mustard,Made With Dry Powder,With Added Water Only	2.0g
Pepper,Black/White	2.0g

ANALYSES

	Avg/Day	Status
Weight	945.18g	
Energy	11050.87kJ	
Protein	97.93g	
Total Fat	67.94g	
- Saturated Fat	30.24g	
- Poly-unsaturated Fat	9.01g	
- Monounsaturated Fat	22.37g	
Cholesterol	148.33mg	
Carbohydrate	404.37g	
Sugars	101.23g	
Starch	302.18g	
Water	290.69g	
Alcohol	0.00g	
Dietary Fibre	56.63g	
Thiamin	2.89mg	
Riboflavin	0.98mg	
Niacin	31.60mg	
Niacin Equivalents	50.39mg	
Vitamin C	28.02mg	
Total Folate	345.71ug	
Total Vitamin A Equivalents	250.03ug	
Retinol	179.01ug	
B-Carotene Equivalents	425.93ug	
Sodium	4634.43mg	

Table 11 (cont)

	Avg/Day	Status
Potassium	3313.17mg	
Magnesium	647.24mg	
Calcium	410.22mg	
Phosphorus	1725.13mg	
Iron	27.67mg	
Zinc	12.86mg	
Kj from Protein	15.06%	
Kj from Fat	22.74%	
Kj from Carbohydrate	62.19%	
Kj from Alcohol	0.00%	
Kj from Others	?%	
Fat as Poly	14.63%	
Fat as Mono	36.30%	
Fat as Saturated	49.07%	
Glycemic Index	?	
Glycemic Index Level (Diet)	?	
Glycemic Index Level (Food)	?	
Glycemic Load	?	
Unassigned Carbohydrate (no GI)	88.04%	
Assigned Carbohydrate	48.37g	
Glycemic Index (Assigned Carb)	66.94	
Glycemic Load (Assigned Carb)	32.38	

FOOD LIST

Ingredient	Weight(%)
Flour	41.7
Beef	12.8
Oats	9.0
Pork	7.6
Pea	6.3
Sugar	5.1
Raisin	3.45
Potato	3.42
Treacle	3.42
Suet	2.60
Butter	1.72
Pickle	1.46
Salt	0.86
Mustard	0.21
Pepper	0.21

Source: **Diet**: Hains (2003)
Analysis: Dr M. Nowak, School of Public Health and Tropical Medicine, James Cook University

Table 11 (cont)

Male and Female Steerage Emigrants Diet, 1854

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Biscuit	8 oz 226 gm	8 oz 226 gm	8 oz 226 gm	8 oz 226 gm	8 oz 226 gm	8 oz 226 gm	8 oz 226 gm
Beef						6 oz 170 gm	
Pork	6 oz 170 gm		6 oz 170 gm		6 oz 170 gm		
Preserved Meat		8 oz 226 gm		8 oz 226 gm			8 oz 226 gm
Flour	6 oz 170 gm	6 oz 170 gm	6 oz 170 gm	6 oz 170 gm	6 oz 170 gm	6 oz 170 gm	6 oz 170 gm
Oatmeal	3 oz 85 gm	3 oz 85 gm	3 oz 85 gm	3 oz 85 gm	3 oz 85 gm	3 oz 85 gm	3 oz 85 gm
Raisins		2 oz 57 gm		2 oz 57 gm		2 oz 57 gm	2 oz 57 gm
Suet		1.5 oz 43 gm		1.5 oz 43 gm		1.5 oz 43 gm	1.5 oz 43 gm
Peas	¼ pint 0.14 L		¼ pint 0.14 L		¼ pint 0.14 L		
Rice		4 oz 113 gm				4 oz 113 gm	
Preserved Potatoes				4 oz 113 gm			4 oz 113 gm
Tea		¼ oz 7 gm		¼ oz 7 gm		¼ oz 7 gm	¼ oz 7 gm
Ground Coffee	½ oz 14 gm		½ oz 14 gm		½ oz 14 gm		
Sugar	4 oz 113 gm		4 oz 113 gm		4 oz 113 gm		
Treacle		2 oz 57 gm		2 oz 57 gm		2 oz 57 gm	2 oz 57 gm
Butter	2 oz 57 gm				2 oz 57 gm		
Water	3 quarts 3.4 L	3 quarts 3.4 L	3 quarts 3.4 L	3 quarts 3.4 L	3 quarts 3.4 L	3 quarts 3.4 L	3 quarts 3.4 L

Source: Adapted from British Parliamentary Papers 1854 Vol XIII in Hains (2003:203)

Table 11 (cont)

Weekly Totals:

Biscuit: 56 oz / 1.58 kg
Beef: 6 oz / 170 gm
Pork: 18 oz / 510 gm
Preserved Meat: 24 oz / 678 gm
Flour: 42 oz / 1.19 kg
Oatmeal: 21 oz / 595 gm
Raisins: 8 oz / 228 gm
Butter: 4 oz / 114 gm
Suet: 6 oz / 172 gm
Peas: ¾ Pint / 0.42 L
Preserved Potatoes: 8 oz / 226 gm
Tea: 1 oz / 28 gm
Ground Coffee: 1 ½ oz / 42 gm
Sugar: 12 oz / 339 gm
Treacle: 8 oz / 226 gm
Water: 21 quarts / 23.8 L

Plus:
Mixed Pickles, One Gill/5 fl oz/ 147 ml,
Salt 2 oz/57 gm,
Mustard ½ oz/14.1 gm
Pepper ½ oz/14.1 gm

Source: Adapted from British Parliamentary Papers 1854 Vol XIII in Hains (2003:203)

Table 12
Comparative Data for Daily Diets

Recommended Value	First Fleet 1788			Emigrant 1858
	Sailor	**Male Convict**	**Female Convict**	**Male & Female**
Energy (kJ) "Strenuous Work"				
Men **14600**	***13,778***			
Women **10400**				
Energy (kJ) "Less Strenuous"				
Men **10200**		***10,172***		11,050
Women **8100**			***6,171***	11,050
Protein (g)				
Men **56-70**	168	167	90	98
Women **48-60**	168	167	90	98
Vitamin A equivalents (µg)				
Men and Women **750**	***426***	***357***	***238***	***250***
Vitamin C (mg)				
Men **40**	67	82		***28***
Women **30**			56	***28***
% of kJ from Protein	20.7	28.0	24.74	15.06
% of kJ from Fat	23.0	20.0	20.70	22.74
% of kJ from Carbohydrate	52.6	52.0	54.57	62.19
% of kJ from Alcohol	3.7			

Recommended Value	Queensland Labour Trade Shipboard		Queensland Labour Trade Plantation		
	1868	**1880**	**1868**	**1880**	**1892**
Energy (kJ) "Strenuous Work"					
Men **14600**			***13,140***	17,940	22,649
Women **10400**			13,140	17,940	22,649
Energy (kJ) "Less Strenuous"					
Men **10200**	***9,977***	***9,462***			
Women **8100**	9,977	9,462			
Protein (g)					
Men **56-70**	123	***52***	186	192	263
Women **48-60**	123	52	186	192	263
Vitamin A equivalents (µg)					
Men and Women **750**	6911	8475	250	***34***	***51***
Vitamin C (mg)					
Men **40**	202	405	68	152	153
Women **30**	202	405	68	152	153
% of kJ from Protein	20.90	9.35	24.05	18.14	19.74
% of kJ from Fat	18.24	1.17	15.27	14.30	16.59
% of kJ from Carbohydrate	60.86	89.48	60.68	67.57	63.67

Note: ***Bold Italic*** figures indicate a level below the recommended value

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Required Contents of a Nautical Medicine Chest 1876

Common Name	Quantity	Common name	Quantity
Alum	1 oz (28.3g)	Blue Stone	2 oz (56.7g)
Carbolate of Lime	6 lb (2.7kg)	Castor Oil	16 oz (0.4L)
Cream of tartar	2 lb (0.9kg)	Epsom Salts	2 lb (0.9kg)
Essence of Peppermint	½ oz (14.1g)	Essence of Ginger	1 oz (28.3g)
Goulard's Extract	1 oz (28.3g)	Laudanum	1 oz (28.3g)
Linseed Meal	3 lb (1.3kg)	Lunar Caustic	¼ oz (7.0g)
Ointment, Basilicon	4 oz (113.3g)	Ointment, Mercurial	3 oz (85.0g)
Ointment, Simple	6 oz (170.1g)	Opodeldoc	2 oz(56.7g)
Paregoric	2 oz (56.7g)	Pills, Blue	24
Pills, Purging	24	Pills, Mild	24
Nitrate of Potash	2 oz (56.7g)	Powder, Rhubarb	2 oz (56.7g)
Powder, Diarrhoea	2 oz (56.7g)	Powder, Drovers	½ oz (14.1g)
Powder, Ipecacuanha	2 oz (57.6g)	Quinine	1 oz (28.3g)
Sprits of Nitric Ether	2 oz (56.7g)	Sulphate of Zinc	1 oz (28.3g)
Friar's Balsam	2 oz (57.6g)	Tincture of Rhubarb	4 oz (113.3g)
Tincture of Arnica	2 oz (56.7g)	Turpentine Liniment	2 oz (56.7g)
Adhesive Plaster on Calico	1 yd (0.9m)	Lint	4 oz (113.3g)
Set of Scales & Weights	1	Spatula Knife	1
8oz (0.2L) Pewter Syringe	1	Lancet	1
Bandages, Leg	4	Bandages, Arm	4

Medical Stores Required on Vessels with 10 or more adults onboard

Adapted from: *The Navigation Act of* 1876, Schedule F.