USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
Archaeology, and the History of Port Essington

A Precis

F.J. Allen

This thesis is an investigation into the use of archaeology as a technique for widening the range of historical evidence in the recent past. It records the first professional excavations of a European site in Australia, Port Essington in the Northern Territory. Consequently chapters 2 - 5 are concerned with describing the excavations and architecture remaining at Port Essington, and the methods and results of the analysis of a body of artefacts of types which have not been adequately described (at least in archaeological terms) elsewhere. The main object of this protracted analysis is to take full advantage of the unique opportunities of the site which was occupied for only eleven years and which has remained largely undisturbed since, thus providing a closely dated context for the artefacts which were recovered.

A second major area of enquiry in this section is the analysis of an Aboriginal assemblage of implements made from bottle glass obtained from the European settlement.
The implications of this collection are several:

1. It is the archaeological reflection of the impact of the Europeans upon the indigenous people.

2. It supports a hypothesis that the reasons for the non-manufacture of stone implements in the coastal regions of Arnhem Land may simply be explained as one of environmental determinism rather than cultural preference.

3. It adds important new information for the discussion of glass artefacts found elsewhere in the world.

The second section is a brief history of the settlement. Chapter 6 examines the reasons for the establishment of Port Essington and suggests that the commercial reasons suggested by previous historians may be less important than the political considerations behind the establishment. Chapters 7 and 8 relate the history of the settlement, chapter 8 introducing the archaeological data as historical evidence. Chapter 9 suggests that following the discussion in chapter 6, Port Essington might well be regarded as a success rather than the failure it is generally considered to have been. The final chapter discusses the value of archaeology as a research tool for the recent historical past.
ARCHAEOLOGY, AND THE HISTORY OF PORT ESSINGTON

by

F.J. ALLEN

VOLUME I

This thesis was submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in The Australian National University

May 1969
This thesis is the product of field and library research by the author. Apart from the acknowledged assistance from specialists in various fields it is my own original work.

Jim Allen

F. J. Allen
2 May 1969.
"By mid-century the British had not yet solved the problem of settlement on the northern coast but they had securely established a pattern of failure that was to stand as a model for some years to come."

C. Hartley Grattan.
CONTENTS

VOLUME I Page

PREFACE v

PART 1

CHAPTER 1 Introduction 1
2 Excavations and Architecture 11
3 Pottery 145
4 Glass 213
5 Metal, Stone and Bone 266

PART 2

CHAPTER 6 The Establishment of Port Essington 290
7 The Political Background 326
8 Life at Port Essington 349
9 Denouement: Success or Failure? 404
10 The Use of Archaeology in Australian Colonial History: Some Conclusions 411

BIBLIOGRAPHY 420

VOLUME II

PLATES
PREFACE

Since this piece of work was begun in March 1966 I have had the pleasure of meeting many people who with their knowledge, experience, interest and humanity have made this journey into the past also a journey into the future. I offer my thanks to them all. In particular I would thank the following, and apologise to any whose names may have been inadvertently omitted.

Northern Territory:

Mr and Mrs D. Lindner, the Animal Industries Branch Ranger at Port Essington and his wife. Both David and Marjory assisted me beyond any official capacity and often to their own inconvenience. Without this assistance the project would not have been possible.

Mr E.P. Milliken, Mr G.A. Letts, Mr V. O'Brien, Mr N. Wilson, Mr J. Long, Mr P. Spillett, Mr G. Stocker, Mr C. Patterson, Mr and Mrs I. Walker, Mr and Mrs G. Kirby, Mr J. Morris.

Sydney:

Mr J.V.S. Megaw, Mr D. Moore, Mr R. Wright, Dr D. McMichael, Mr A. Thorn, Dr C. White, Dr J.P. White, Mr and Mrs J. Clegg, Mr F. Davidson, and the staffs of the Mitchell Library, the Australian Museum, and the Museum of Applied Arts and Sciences.
Canberra:

Mr J. Golson, Mr C.A. Key, Mr R. Jones, Mr C.C. Macknight, Mrs B. Hiatt, Mr I. Glover, Mr C. Smart, Mr J. Specht, Miss E. Crosby, Miss A. Bickford, Mr B. Egleff, Mrs L. White, Mrs L. Beattie, Mrs N. Phillips, Mr J.H. Calaby, Mr W. Bateman, Mr F.D. McCarthy, Miss C. Kiss, Dr N. Barnard, Dr D. Shineberg, Dr F.B. Smith, Mr and Mrs J. Edmonds, Mr P. Corris, Mr and Mrs A.C. Minson, Miss L. Ryan, Mr R.J. Lampert, and Miss M. Slater, Mr T. McMahon and the staff of the Visual Aids Unit. Also the staffs of the Menzies Library and the National Library of Australia.

In particular I would like to thank Mrs S. Wilkie, Mr W. Ambrose and Miss W. Mumford, who carried the burden of producing the plates and drawings.

In addition I would like to thank Mr R. Edwards, Mrs E. Watkin-Jones and Dr I. McBride.

Overseas:

My thanks are due to the staffs of the various universities, libraries and museums with whom I corresponded and visited. In particular I would like to thank Mrs M. Hughes, Captain I. Donald, Professor and Mrs A.C. Thomas, Miss S. Davis, Professor G.S. Graham, Mr and Mrs M.A. Hudson, Miss M. Mountain, Mr K. Hudson, Professor A. Steensberg, Mr and Mrs L. Bobb, Dr N.F. Barka, Mr I Noël Hume, Professor F. Quimby and Mr I.C. Walker.

Finally my especial thanks is given to my supervisor, Mr D.J. Mulvaney for this encouragement, guidance and assistance at all times.
USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
ARCHAEOLOGY, AND THE HISTORY OF PORT ESSINGTON

by

F.J. ALLEN

VOLUME I

This thesis was submitted in partial fulfilment of the requirements for
the degree of Doctor of Philosophy in
The Australian National University

May 1969
PART I
CHAPTER 1

INTRODUCTION

THE PROBLEM DEFINED

Prior to 1966 no professional enquiry had been made into the potential of archaeology as a technique for historical research in Australia. In that year the possibilities of excavating the remains of the British settlement at Port Essington in tropical northern Australia were investigated by myself and my supervisor, D.J. Mulvaney. This thesis presents the results of the project which grew from those investigations.

The work was begun in total ignorance of the amount of historical archaeology\(^1\) which had been carried on in the United States of America and also in Canada, and with only the vaguest ideas about industrial archaeology in Britain. The latter discipline proved to have less relevance to the Australian situation than the former, and many aspects of the organization and analysis of the present work reflect the influence of American historical archaeologists. The cultural affinities of the materials recovered were British, however, and research into these was necessarily directed towards Britain. Terminology in use has been maintained

---

\(^1\) Of a variety of terms in use this application appears to have the most popularity amongst professional archaeologists and although perhaps misleading has been adopted here.
wherever possible and reflects both American and British influences.

A number of themes presented themselves as potential lines of enquiry. The first and major objective was to assess the degree to which archaeology, both in fieldwork and laboratory analysis, might be of value in providing new insights and evidence for Australian colonial history. In the immediate situation this meant demonstrating that archaeology might be able to say something beyond the available documents for the history of Port Essington. These documents were known to be available, although in what quantities was still to be ascertained, and documentary research was assumed to be an integral part of the project from the beginning. This led to a further consideration, the degree to which two vastly different kinds of evidence might interact and be integrated into history. From the vantage point of hindsight this has emerged as the major problem confronting not only this project but historical archaeology in general.¹

The second aim of the thesis influenced and was influenced by the selection of the site. The settlement at Port Essington was made in 1838 and abandoned in 1849. From that time the area has remained almost totally free from contamination by later European occupation. The exception to this was in the 1870s when cattle ranchers occupied the area for a brief time, but as reference to the site map (plate I-3) shows, ¹

¹ More is said on this in the final chapter.
this was not in the settlement proper, nor was it of sufficient intensity to disturb the original occupation debris to any noticeable degree. Today the area is a flora and fauna reserve, superintended by a ranger living at Black Point, fifteen miles from the settlement. Access to the settlement by land requires a major expedition (see below) and the attendant difficulties of sea or air access limit visitors to the settlement to one or two per year.

Thus the site presented an almost unique opportunity for the future analysis of historic sites in Australia - the excavation of an uncontaminated site of single phase occupation whose occupation dates were known historically, and which was of sufficient duration to provide a meaningful collection of artefacts and architectural information. At the same time the duration of the settlement was not of an extended time range, and it was expected that the artefacts recovered might therefore constitute a type collection for this period of Australian history. This could then be used in the same manner as types anywhere in archaeology, for working from the known to the unknown. Following the first season's excavations an immediate example of this process was at hand. The Chinese porcelain excavated in the settlement showed similarity to that being excavated in historically undated Macassan (Malayan) trepanging campsites on the Arnhem Land coast, and a comparison of these wares is at present being conducted.¹

Two further areas of consideration presented themselves. The first of these was the possibility of exploring archaeologically for the first time in Australia the culture contact situation between Europeans and Aborigines, not only within the settlement itself, but also in Aboriginal sites in the general area.

The second consideration was that because of the unique possibilities of cross-checking archaeological evidence with historical documents it was thought that archaeology in the recent historical past might be well suited for examining concepts and techniques of fieldwork, analysis and interpretation current in prehistoric archaeological research.

Faced with a complete lack of theoretical writing in the particular field of historical archaeology, the work was begun with a single basic premise, that the final objective of the fieldwork and analysis was to produce history. In the particular and practical aspect this meant the history of Port Essington constructed from all the available sources. In a more general aspect this meant contributing to the general history of technology, again using both archaeological and historical data.

FIELDWORK

In June 1966 a preliminary survey, including some exploratory excavation was carried out by myself and Mulvaney. This had followed three months initial documentary research which yielded contemporary descriptions of the settlement, a large number of
contemporary sketches and paintings\(^1\), and the
descriptions of a few later visitors to the site. The
survey confirmed the wealth of deposit and architectural
remains and altogether more than forty site-units
(structures within the site) were located, the majority
of which could be identified from the illustrations
and descriptions available.

Six weeks in August and September of 1966 were
spent mapping, recording architecture and excavating
various site-units. Of the six members who comprised
the excavation team five were experienced excavators
and all were efficient workers. This field season was
so productive that the follow-up season in 1967 was
limited to three weeks extending the excavations and
checking results obtained in the previous year. In
addition, short visits were made to two slightly
earlier sites in the vicinity, Fort Dundas on Melville
Island and Raffles Bay on the Cobourg Peninsula (see
Chapter 6). Trial excavations at both these sites
proved disappointing and given also the paucity of
architectural remains at both, in comparison with Port
Essington, it was decided to concentrate on the latter.

A final visit to the site took place in August-
September 1968. This was conducted in conjunction with
a field exercise controlled by the Northern Command of
the Australian Army and the primary purpose of the visit
was to carry out conservation of the site. In addition,
however, it afforded the opportunity of locating

\(^1\) For examples, see plates 1-5,6,7,8.
several convalescent stations which had been occupied by the original garrison in various parts of Port Essington. As an example of the difficulty of land access, it took the seven vehicles in the unit six days to reach the settlement from Cenpelli Mission, a distance of less than 100 miles.

THE SITE (see plates I-1,2,3)

The Cobourg Peninsula is a small peninsula (approximately 900 square miles in area) jutting into the Arafura Sea at the western end of Arnhem Land. It is a relatively flat piece of land whose outstanding topographical feature is the number of harbours and inlets which indent its coastline. The largest of these is Port Essington, which has a mouth some seven miles wide and which extends approximately twenty miles to its head. The harbour is divided naturally into inner and outer harbours by a narrow spit of land, Record Point. The shoreline consists for the most part of dunes screened by mangrove mudflats or sandy beaches. In places a low red cliffline reveals the hinterland as open schlerophyll forest with pockets of monsoonal jungle. Being well into the tropical zone the climate of the area is hot and humid. It receives 50 inches of rain each year, all of which falls in the wet season, October to April.

The site of the settlement, which was named Victoria (but universally referred to here and elsewhere as Port Essington), was situated on the western shore of the inner harbour where the white cliff of Adam Head forms a conspicuous landmark, rising about fifty feet
above the sea, and being possibly the highest point on
the harbour shoreline. The settlement was placed on the
plateau which extends from Adam Head to Minto Head and
covered an area of some ninety acres. Since its
abandonment, the forest has regenerated strongly which
made the location and mapping of site-units a difficult
process. Between the initial survey and the first
season of excavation Mr P. Spillet of the Historical
Society of the Northern Territory supplied me with a
contemporary sketch map of the settlement¹, which in
general verified the identifications made during the
initial survey. This map (plate I-4) showed that the
town square was in fact hatchet-shaped and conformed
to the similarly shaped patch of monsoonal forest
located west of the jetty. There appeared to be no
reason why this area should have regenerated in
monsoonal growth unless it had been monsoonal originally,
but this proved not to be the case. Excavations in two
separate site-units within this vegetation revealed
under house floors a thin charcoal layer (see
stratigraphy in plates II-23,27) containing pieces of
charcoal identified as eucalypt², which demonstrated
that the area contained these trees prior to clearing
by fire. The regeneration of monsoonal rather than
eucalypt forest is seen as a result of the introduction

¹ This is the map referred to in McArthur to
16 October 1847. H.R.A., 1, xxvi, p.373.
of National Development, Darwin, Pers.comm. 12 January
1968.
of shell used as flooring in the huts which bordered
the square.¹

The area of the settlement proper is an undulating
plateau with the highest points being Adam Head and
Minto Head. To the west beyond the square the ground
falls gently terminating in a paper-bark swamp some
four hundred metres from the settlement, immediately
beyond the cemetery. The ground to the south of Adam
Head falls sharply to a fine sandy beach where the
remains of the 1870's cattle ranch were located.

EXCAVATIONS

Given the time and resources at my disposal it was
not possible to excavate the settlement completely. It
was determined as a conscious policy, therefore, not to
excavate any site-unit totally, but rather to sample as
many site-units as possible. There are of course
deficiencies in this approach. The excavations become,
as Dollar has pointed out², a statistical sample of a

¹ ibidem. Section 4 of Stocker's report reads. "The
broken shell material used for the flooring of the
houses may be important. Perhaps after the abandonment
of the settlement the ring of broken shell floors around
the square prevented fire penetration and enabled the
monsoon forest to become established. Another
possibility which cannot be discounted is that the
broken shell material inhibited growth of eucalypt
forest species without affecting those of the monsoon
forest. Monsoon forest is often on soils derived from
shell material but eucalypt forests rarely, if ever,
occur on these soils."

² Clyde Dollar, "Some Thoughts on Theory and Method in
Historical Archaeology", The Conference on Historic
statistical sample, with the attendant problems of generalising from misleading evidence. The alternative, excavating several site-units completely was, however, discarded for several reasons. Given the nature of these deposits, excavation techniques had necessarily to be developed in the field. As well it was immediately denying the possibilities of historical reconstruction not to investigate what potential the comparison of site-units might offer for documenting social class distinctions and technological functions. It was felt that since the potential importance of the site was so great, sections of original deposit of all site units should be maintained for future work when theoretical constructs of the discipline and techniques for exploring them were better understood.

A standard pattern of excavations was developed. The site-units were excavated in metre squares except where a closer horizontal check was thought necessary in which case the units were reduced. The standard technique was to excavate these squares with trowels until whatever stratigraphy present was recognised. In most site-units stratigraphy was of little importance, being single-phase occupation, but wherever an apparent stratigraphic division occurred the material was excavated separately, to be integrated or kept distinct at a later date in the laboratory. Once the deposition was understood, small spades were employed to hasten the excavations. In general excavations were made at right-angles to wall lines, so as to be able to identify builders' trenches etc.

All material was passed through $\frac{3}{16}$ inch mesh sieves
and immediately bagged for transportation to the laboratory where it was washed and labelled. All architectural sections were drawn in the field and measurements were independently taken for later cross-checking. The site map was drawn with less than a 2% error.

The major difficulty of documentary research has been the almost total lack in Australia of literature dealing in a specific fashion with the technology and products of nineteenth century England. By corresponding with a number of museums and libraries in England some information was gained and this correspondence also introduced me to historical archaeology in North America from whence I was able to acquire a number of site reports. These often were not of sufficient detail, nor based on a conscious methodology. However they were of great assistance in clarifying my own approach. In the latter part of 1967 I was fortunate in being able to spend four months in England, Canada and the United States, examining museum collections and talking to archaeologists interested in historical archaeology, and this proved highly beneficial. In addition, it enabled me to tap a number of documentary sources unavailable in Australia.
CHAPTER 2

EXCAVATIONS AND ARCHITECTURE

This chapter describes the excavations and architecture of each site-unit. Any relevant discussion is included at this juncture and the finds from each site-unit are recorded in tabulated form at the end of each section. General discussions of the artefacts follow in the subsequent chapters.

Each site-unit has been dealt with separately and has been given a code prefix listed at the beginning of each section. All weights are given in grams, and measurements in metres and centimetres. For an explanation of glass types see Chapter 4.

a) VICTORIA RUBBISH DUMP (Code Prefix VM) Plates II-1, 2

During the initial survey an area was located immediately to the south of the outhouse belonging to government house which subsequently proved to be the major rubbish dump for the settlement. The area was flat and heavily grassed, and was covered with two large clumps of an unidentified green bramble, about eight feet in height and particularly thorny. Between these two clumps an animal path had kept the grass down, and pieces of glass and pottery were noticed. Since it was almost impossible to delineate the area of rubbish distribution without a thorough clearing of the area, an area twenty metres by twenty-five metres was measured out, taking the animal path as roughly the centre, and
this area was completely cleared to allow a complete surface collection to be made.

SURFACE COLLECTION

Twenty-five squares, lettered A - T, and each measuring five metres by five metres, were completely collected of all cultural material with the exception of a few bricks, and pieces of iron-stone which may have been roughly hewn for building materials. The ground plan shows the numbers of pieces of glass and pottery found in each square. As elsewhere, glass was by far the most common artefact recovered and its distribution gives a good indication of the density of cultural deposit. As can be seen, most of the area of the heaviest deposit is that covered by the bramble.

The results obtained indicated that the grid had been set perhaps too far to the east. An examination to the west of the grid suggested more deposit, but few actual finds were visible on the surface and it was judged unimportant to extend the grid in that direction. Instead four more squares (U-X) were added to the southern side where a fair concentration of material was located.

This collection proved to be the most concentrated one found at the settlement, and 2231 pieces of glass and 263 pieces of pottery were recovered, as well as fragments of metal, and an Aboriginal stone "core" implement in creamy quartzite, a material foreign to the area. As the collection continued it became apparent that even allowing for accidental fracture
some of the glass must represent deliberate utilization by the Aboriginals.

Since one of the fundamental aims of the project was to set up a type collection of artefacts it was determined to excavate this site-unit during the first season.

EXCAVATIONS

An examination of the density of distribution of the surface material suggested that the main concentration was lying roughly along the east-west diagonal of the surface grid and it was decided to excavate along this line at the point where the slightly raised ground level promised the maximum depth of deposit. At the same time the trench was situated so as to avoid the bramble areas where the roots would interfere with the excavations.

An initial trench, VM/1, measuring two metres by one metre was excavated in two spits, the first to a uniform depth of 10 centimetres, the second to sterile soil, at an average depth of sixteen centimetres. This trench produced an inordinate amount of cultural material, particularly glass. Since no difference could be ascertained between the upper and lower spits, and since the main object of the excavation was to obtain as large a sample of artefacts as possible, it was decided to abandon the stratigraphic differentiation to increase the speed of the excavation, but at the same time to maintain some horizontal control by excavating metre squares.

The excavations were continued towards the west
in a line of adjoining metre squares. Squares VM/10, and VM/11 took the excavations beyond the surface grid to demonstrate that the area rich in cultural material extended further than had at first been estimated, although VM/11 showed a rapid decrease in finds to the west. Three additional squares were dug to the north of VM/8 to increase the sample.

As the main trench moved to the west, the deposit became deeper, reaching a maximum depth of thirty centimetres in squares VM/7, VM/8, and VM/9, and lessening to eighteen centimetres on the western side of VM/11. Thus less than five cubic metres of deposit produced 6275 pieces of glass and 475 pieces of pottery. In addition eleven metal buttons, a free standing Crown and Anchor insignia, several percussion caps and other metal objects, mainly nails, were recovered. One gunflint, in bluish-grey flint was recovered.

The surface collection had indicated the possibility of some of the glass having been utilized by the Aboriginals. Of the glass excavated 827 pieces were isolated as possible implements. In addition three fragments of chert and another unworked flake of quartzite were excavated. Finally the number of shells in the deposit suggested that this European rubbish dump had been frequented by the Aborigines, and that the glass had represented a source of raw material for them.

Note: For the purposes of analysis VM/1/2 was incorporated with VM/1/1
A general surface collection was made at the end of the 1966 season, and again in 1967. The totals of these collections are listed under VM/S/GENERAL SURFACE, and are included in the overall totals for glass and pottery.
<table>
<thead>
<tr>
<th>Area</th>
<th>Total Number</th>
<th>Total Weight</th>
<th>Average Weight</th>
<th>Type A Number</th>
<th>Weight</th>
<th>Average</th>
<th>Type B Number</th>
<th>Weight</th>
<th>Average</th>
<th>Type C Number</th>
<th>Weight</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>VN/3/0</td>
<td>362</td>
<td>5133</td>
<td>4.01</td>
<td>42</td>
<td>603</td>
<td>12.31</td>
<td>16</td>
<td>875</td>
<td>54.69</td>
<td>133</td>
<td>2130</td>
<td>2.79</td>
</tr>
<tr>
<td>VN/3</td>
<td>209</td>
<td>3510</td>
<td>13.33</td>
<td>47</td>
<td>1175</td>
<td>25.00</td>
<td>20</td>
<td>720</td>
<td>36.00</td>
<td>166</td>
<td>1410</td>
<td>8.80</td>
</tr>
<tr>
<td>VN/2</td>
<td>200</td>
<td>2554</td>
<td>12.77</td>
<td>21</td>
<td>482</td>
<td>22.95</td>
<td>10</td>
<td>130</td>
<td>12.00</td>
<td>124</td>
<td>609</td>
<td>4.91</td>
</tr>
<tr>
<td>VN/1</td>
<td>188</td>
<td>835</td>
<td>4.56</td>
<td>24</td>
<td>226</td>
<td>9.42</td>
<td>14</td>
<td>233</td>
<td>15.93</td>
<td>360</td>
<td>251</td>
<td>1.69</td>
</tr>
<tr>
<td>VN/2</td>
<td>182</td>
<td>642</td>
<td>5.18</td>
<td>46</td>
<td>336</td>
<td>9.88</td>
<td>10</td>
<td>130</td>
<td>12.00</td>
<td>126</td>
<td>376</td>
<td>3.08</td>
</tr>
<tr>
<td>VN/1</td>
<td>194</td>
<td>1943</td>
<td>4.48</td>
<td>100</td>
<td>1779</td>
<td>11.79</td>
<td>14</td>
<td>233</td>
<td>15.93</td>
<td>360</td>
<td>251</td>
<td>1.69</td>
</tr>
<tr>
<td>VN/0</td>
<td>256</td>
<td>2719</td>
<td>10.62</td>
<td>57</td>
<td>1056</td>
<td>18.53</td>
<td>18</td>
<td>889</td>
<td>27.04</td>
<td>175</td>
<td>774</td>
<td>4.25</td>
</tr>
<tr>
<td>VN/0</td>
<td>69</td>
<td>509</td>
<td>7.26</td>
<td>10</td>
<td>115</td>
<td>11.50</td>
<td>11</td>
<td>121</td>
<td>15.00</td>
<td>58</td>
<td>263</td>
<td>4.53</td>
</tr>
<tr>
<td>VN/0</td>
<td>130</td>
<td>778</td>
<td>6.15</td>
<td>15</td>
<td>235</td>
<td>15.67</td>
<td>11</td>
<td>83</td>
<td>83.00</td>
<td>104</td>
<td>456</td>
<td>4.28</td>
</tr>
<tr>
<td>VN/0</td>
<td>10</td>
<td>78</td>
<td>7.80</td>
<td>2</td>
<td>25</td>
<td>12.50</td>
<td>8</td>
<td>120</td>
<td>3.67</td>
<td>8</td>
<td>55</td>
<td>6.62</td>
</tr>
<tr>
<td>VN/0</td>
<td>60</td>
<td>231</td>
<td>5.52</td>
<td>29</td>
<td>211</td>
<td>7.28</td>
<td>8</td>
<td>120</td>
<td>3.67</td>
<td>8</td>
<td>55</td>
<td>6.62</td>
</tr>
<tr>
<td>VN/0</td>
<td>14</td>
<td>280</td>
<td>20.00</td>
<td>5</td>
<td>233</td>
<td>46.61</td>
<td>8</td>
<td>120</td>
<td>3.67</td>
<td>8</td>
<td>55</td>
<td>6.62</td>
</tr>
<tr>
<td>VN/0</td>
<td>8</td>
<td>42</td>
<td>5.25</td>
<td>1</td>
<td>13</td>
<td>13.00</td>
<td>1</td>
<td>13</td>
<td>13.00</td>
<td>1</td>
<td>4</td>
<td>4.00</td>
</tr>
<tr>
<td>VN/0</td>
<td>1</td>
<td>12</td>
<td>12.00</td>
<td>1</td>
<td>12</td>
<td>12.00</td>
<td>1</td>
<td>12</td>
<td>12.00</td>
<td>1</td>
<td>7</td>
<td>7.00</td>
</tr>
<tr>
<td>VN/0</td>
<td>1</td>
<td>14</td>
<td>4.00</td>
<td>1</td>
<td>7</td>
<td>7.00</td>
<td>1</td>
<td>14</td>
<td>14.00</td>
<td>12</td>
<td>235</td>
<td>19.29</td>
</tr>
<tr>
<td>VN/0</td>
<td>21</td>
<td>259</td>
<td>10.91</td>
<td>7</td>
<td>85</td>
<td>12.14</td>
<td>2</td>
<td>89</td>
<td>44.50</td>
<td>81</td>
<td>235</td>
<td>11.19</td>
</tr>
<tr>
<td>VN/0</td>
<td>36</td>
<td>573</td>
<td>15.97</td>
<td>13</td>
<td>251</td>
<td>19.31</td>
<td>2</td>
<td>89</td>
<td>44.50</td>
<td>81</td>
<td>235</td>
<td>11.19</td>
</tr>
<tr>
<td>VN/0</td>
<td>34</td>
<td>493</td>
<td>9.13</td>
<td>13</td>
<td>162</td>
<td>12.86</td>
<td>2</td>
<td>89</td>
<td>44.50</td>
<td>81</td>
<td>331</td>
<td>8.07</td>
</tr>
<tr>
<td>VN/0</td>
<td>5</td>
<td>27</td>
<td>5.40</td>
<td>1</td>
<td>8</td>
<td>8.00</td>
<td>1</td>
<td>8</td>
<td>8.00</td>
<td>1</td>
<td>19</td>
<td>4.75</td>
</tr>
<tr>
<td>SUB TOTAL</td>
<td>2831</td>
<td>17283</td>
<td>7.79</td>
<td>439</td>
<td>6979</td>
<td>14.76</td>
<td>88</td>
<td>3188</td>
<td>35.55</td>
<td>1794</td>
<td>7776</td>
<td>4.56</td>
</tr>
<tr>
<td>VN/3/SURFACE</td>
<td>94</td>
<td>294</td>
<td>5.44</td>
<td>9</td>
<td>25</td>
<td>2.77</td>
<td>4</td>
<td>109</td>
<td>27.25</td>
<td>41</td>
<td>160</td>
<td>3.90</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2285</td>
<td>17677</td>
<td>7.74</td>
<td>448</td>
<td>6684</td>
<td>14.28</td>
<td>92</td>
<td>2837</td>
<td>35.19</td>
<td>1995</td>
<td>7936</td>
<td>4.55</td>
</tr>
<tr>
<td>Area</td>
<td>Total Number</td>
<td>Total Weight</td>
<td>Average Weight</td>
<td>Type A</td>
<td>Type B</td>
<td>Type C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>--------------</td>
<td>--------------</td>
<td>----------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Number</td>
<td>Weight</td>
<td>Average</td>
<td>Number</td>
<td>Weight</td>
<td>Average</td>
<td>Number</td>
<td>Weight</td>
<td>Average</td>
</tr>
<tr>
<td>VV/1/1</td>
<td>657</td>
<td>2151</td>
<td>3.27</td>
<td>54</td>
<td>346</td>
<td>6.41</td>
<td>17</td>
<td>250</td>
<td>15.29</td>
<td>586</td>
<td>1545</td>
<td>2.64</td>
</tr>
<tr>
<td>VV/2/1</td>
<td>225</td>
<td>1522</td>
<td>6.83</td>
<td>24</td>
<td>312</td>
<td>9.18</td>
<td>11</td>
<td>714</td>
<td>64.91</td>
<td>178</td>
<td>496</td>
<td>2.79</td>
</tr>
<tr>
<td>VV/3/1</td>
<td>189</td>
<td>254</td>
<td>1.37</td>
<td>21</td>
<td>108</td>
<td>5.14</td>
<td>2</td>
<td>121</td>
<td>60.5</td>
<td>168</td>
<td>246</td>
<td>1.46</td>
</tr>
<tr>
<td>VV/4/1</td>
<td>160</td>
<td>653</td>
<td>4.08</td>
<td>27</td>
<td>227</td>
<td>8.41</td>
<td>2</td>
<td>185</td>
<td>60.5</td>
<td>131</td>
<td>303</td>
<td>2.33</td>
</tr>
<tr>
<td>VV/5/1</td>
<td>256</td>
<td>760</td>
<td>2.99</td>
<td>101</td>
<td>326</td>
<td>3.28</td>
<td>8</td>
<td>585</td>
<td>73.13</td>
<td>152</td>
<td>448</td>
<td>2.80</td>
</tr>
<tr>
<td>VV/6/1</td>
<td>265</td>
<td>2303</td>
<td>9.43</td>
<td>20</td>
<td>838</td>
<td>16.76</td>
<td>8</td>
<td>585</td>
<td>73.13</td>
<td>207</td>
<td>1080</td>
<td>5.22</td>
</tr>
<tr>
<td>VV/7/1</td>
<td>1906</td>
<td>7895</td>
<td>4.15</td>
<td>122</td>
<td>1255</td>
<td>10.39</td>
<td>17</td>
<td>1329</td>
<td>79.94</td>
<td>1365</td>
<td>4681</td>
<td>3.47</td>
</tr>
<tr>
<td>VV/8/1</td>
<td>361</td>
<td>2886</td>
<td>7.14</td>
<td>65</td>
<td>685</td>
<td>10.54</td>
<td>3</td>
<td>681</td>
<td>17.20</td>
<td>162</td>
<td>1760</td>
<td>3.57</td>
</tr>
<tr>
<td>VV/9/1</td>
<td>196</td>
<td>2967</td>
<td>14.63</td>
<td>24</td>
<td>899</td>
<td>38.15</td>
<td>12</td>
<td>1073</td>
<td>89.42</td>
<td>150</td>
<td>905</td>
<td>6.93</td>
</tr>
<tr>
<td>VV/10/1</td>
<td>932</td>
<td>4352</td>
<td>4.67</td>
<td>104</td>
<td>1055</td>
<td>6.43</td>
<td>10</td>
<td>672</td>
<td>67.20</td>
<td>758</td>
<td>2845</td>
<td>3.70</td>
</tr>
<tr>
<td>VV/11/1</td>
<td>246</td>
<td>1107</td>
<td>4.51</td>
<td>43</td>
<td>326</td>
<td>7.48</td>
<td>13</td>
<td>265</td>
<td>18.85</td>
<td>190</td>
<td>336</td>
<td>2.18</td>
</tr>
<tr>
<td>VV/12/1</td>
<td>275</td>
<td>3889</td>
<td>9.75</td>
<td>71</td>
<td>1099</td>
<td>14.81</td>
<td>22</td>
<td>1132</td>
<td>51.45</td>
<td>280</td>
<td>1345</td>
<td>4.81</td>
</tr>
<tr>
<td>VV/13/1</td>
<td>317</td>
<td>4482</td>
<td>14.14</td>
<td>18</td>
<td>199</td>
<td>11.06</td>
<td>18</td>
<td>2577</td>
<td>143.17</td>
<td>281</td>
<td>1796</td>
<td>6.07</td>
</tr>
<tr>
<td>VV/14/1</td>
<td>398</td>
<td>2530</td>
<td>6.36</td>
<td>23</td>
<td>220</td>
<td>9.57</td>
<td>14</td>
<td>1222</td>
<td>87.29</td>
<td>361</td>
<td>1090</td>
<td>3.52</td>
</tr>
<tr>
<td><strong>SUB TOTAL</strong></td>
<td><strong>6925</strong></td>
<td><strong>36953</strong></td>
<td><strong>5.20</strong></td>
<td><strong>827</strong></td>
<td><strong>7801</strong></td>
<td><strong>9.45</strong></td>
<td><strong>147</strong></td>
<td><strong>10201</strong></td>
<td><strong>69.40</strong></td>
<td><strong>5301</strong></td>
<td><strong>18951</strong></td>
<td><strong>3.58</strong></td>
</tr>
<tr>
<td><strong>CONTROLLED SURFACE COLLECTION</strong></td>
<td>2231</td>
<td>17390</td>
<td>7.79</td>
<td>429</td>
<td>6199</td>
<td>14.76</td>
<td>88</td>
<td>3188</td>
<td>35.55</td>
<td>1704</td>
<td>7776</td>
<td>4.36</td>
</tr>
<tr>
<td><strong>SUB TOTAL</strong></td>
<td>8506</td>
<td>34356</td>
<td>6.39</td>
<td>1266</td>
<td>14280</td>
<td>11.28</td>
<td>235</td>
<td>12209</td>
<td>56.78</td>
<td>7005</td>
<td>26787</td>
<td>3.82</td>
</tr>
<tr>
<td><strong>VV/4/GENERAL SURFACE</strong></td>
<td>55</td>
<td>824</td>
<td>3.44</td>
<td>9</td>
<td>25</td>
<td>2.87</td>
<td>4</td>
<td>109</td>
<td>27.5</td>
<td>41</td>
<td>160</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>6560</td>
<td>54530</td>
<td>6.58</td>
<td>1275</td>
<td>14305</td>
<td>11.28</td>
<td>229</td>
<td>13638</td>
<td>56.83</td>
<td>7046</td>
<td>26887</td>
<td>3.82</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>TRANSFER PRINTED</td>
<td>9</td>
<td>3</td>
<td>13</td>
<td>7</td>
<td>18</td>
<td>21</td>
<td>49</td>
<td>11</td>
<td>11</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>INCORPORATED</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>17</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>WHITE GLACE</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>FEATHERED (BEADS)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>FEATHERED (OVALS)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td></td>
<td>1</td>
<td>3</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>MOSA</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>HAND PAINTED</td>
<td>1</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>BALD GLAZED</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STONEWARE</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>ENAMELED</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>VESSELWARE</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>CLAY PIPE STEM</td>
<td>2</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>CLAY PIPE BOWLS</td>
<td>1</td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>BASE ON WILT</td>
<td>1</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>PORCELAIN</td>
<td>1</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>ANTHROPOMORPH</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>PORCELAIN</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>UNIDENTIFIABLE</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

TOTAL 12          20    36    43    40    53    58    16    19    5    3    2    103    90    397
**TABLE II-5**

<table>
<thead>
<tr>
<th>VK/5/1</th>
<th>VK/6/1</th>
<th>VK/7/1</th>
<th>VK/8/1</th>
<th>VK/9/1</th>
<th>VK/10/1</th>
<th>VK/11/1</th>
<th>VK/12/1</th>
<th>VK/13/1</th>
<th>VK/14/1</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>wt</td>
<td>No</td>
<td>wt</td>
<td>No</td>
<td>wt</td>
<td>No</td>
<td>wt</td>
<td>No</td>
<td>wt</td>
<td>No</td>
</tr>
<tr>
<td>BRASS KINGS &amp; UNIFORMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIFORMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INSIGNIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIFORM BOTTLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLAIN BUTTONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERCUSSION CAPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HARMONICA REED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FRAMES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3 cm</td>
<td>16.2</td>
<td>11.6</td>
<td>13.4</td>
<td>12.7</td>
<td>8</td>
<td>7.5</td>
<td>7.6</td>
<td>8</td>
<td>13.3</td>
<td>6</td>
</tr>
<tr>
<td>3-6 cm</td>
<td>11.8</td>
<td>10.2</td>
<td>10.7</td>
<td>10.7</td>
<td>8.2</td>
<td>7.8</td>
<td>5.5</td>
<td>6</td>
<td>4.5</td>
<td>2</td>
</tr>
<tr>
<td>&gt; 6 cm</td>
<td>11.6</td>
<td>10.2</td>
<td>10.7</td>
<td>10.7</td>
<td>8.2</td>
<td>7.8</td>
<td>5.5</td>
<td>6</td>
<td>4.5</td>
<td>2</td>
</tr>
<tr>
<td><strong>BOOKS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ringen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screws</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nails</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soothisa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unidentified</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>107.6</td>
<td>51.6</td>
<td>76.7</td>
<td>39.0</td>
<td>5.9</td>
<td>128.6</td>
<td>333.5</td>
<td>735.5</td>
<td>1</td>
<td>22.5</td>
<td>302.4</td>
</tr>
<tr>
<td><strong>COPIER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nails</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3 cm</td>
<td>12.1</td>
<td>10.3</td>
<td>2</td>
<td>4.0</td>
<td>5</td>
<td>0.9</td>
<td>1</td>
<td>4.6</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>3-5 cm</td>
<td>12.1</td>
<td>10.3</td>
<td>2</td>
<td>4.0</td>
<td>5</td>
<td>0.9</td>
<td>1</td>
<td>4.6</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screws</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unidentified</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BRASS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FURNITURE KNOBS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unidentified</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.1</td>
<td>1.4</td>
<td>1.2</td>
<td>1.2</td>
<td>2.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
</tr>
</tbody>
</table>

*Because of an error in processing VK/7/1 and VK/8/1 were inadvertently mixed prior to labelling. For that reason they have been dealt with here as a single group, VK/7/1.*

20
TABLE II-6

VM STONE REGISTER

<table>
<thead>
<tr>
<th></th>
<th>VM/5/1 No</th>
<th>VM/4/1 No</th>
<th>VM/8/1 No</th>
<th>VM/14/1 No</th>
<th>Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wt</td>
<td>Wt</td>
<td>Wt</td>
<td>Wt</td>
<td></td>
</tr>
<tr>
<td>A) ABORIGINAL CORE</td>
<td>1 54.1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>UNWORKED STRUCK FLAKES</td>
<td>2 3.2</td>
<td>1 2.0</td>
<td>1 0.8</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>B) EUROPEAN GUNFLINTS</td>
<td></td>
<td></td>
<td>1 10.6</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

VM BONE REGISTER

480 gms of bone representing food remains were recovered from the excavations. Of the identifiable bones the following animals were represented: cow/buffalo, sheep/goat, pig, wallaby, fish.

b) VICTORIA RUBBISH DUMP NO.2 (Code Prefix VMII)

A second area of concentrated refuse was located 10 metres west of a shell floor (VSFII) and was assumed
to be associated with it. In the course of the initial survey two square metres were excavated and produced quantities of glass, pottery, metal, and some bone and stone. The total depth of deposit was twenty centimetres and no further excavations were undertaken at this site-unit.

In general the finds parallel those from VM, illustrating that the dump was associated with the nearby houses, but indications of Aboriginal activity on the site-unit are apparent also.

**TABLE II-7**

**VMII GLASS REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Wt</td>
<td>No Wt</td>
<td>No Wt</td>
<td>No Wt</td>
</tr>
<tr>
<td>VMII/1/1</td>
<td>22 183.8</td>
<td>8 183.0</td>
<td>192 553.4</td>
<td>222 920.2</td>
</tr>
<tr>
<td>VMII/2/1</td>
<td>10 228.5</td>
<td>6 186.4</td>
<td>80 428.1</td>
<td>96 843.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>32 412.3</td>
<td>14 369.4</td>
<td>272 981.5</td>
<td>318 1763.2</td>
</tr>
</tbody>
</table>
TABLE II-8

VMII POTTERY REGISTER

<table>
<thead>
<tr>
<th></th>
<th>VMII/1/1</th>
<th>VMII/2/1</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSFER PRINTED</td>
<td>36</td>
<td>3</td>
<td>39</td>
</tr>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>FEATHEREDGE (GREEN)</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>HAND PAINTED</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>SALT GLAZE STONEWARE</td>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>POLYCHROME PORCELAIN</td>
<td>27</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>BLUE ON WHITE PORCELAIN</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>MACASSAN</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>PIPE STEMS</td>
<td>7</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>PIPE BOWLS</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>81</td>
<td>21</td>
<td>102</td>
</tr>
</tbody>
</table>
### TABLE II-9

**VMII METAL REGISTER**

<table>
<thead>
<tr>
<th>Item</th>
<th>VMII/1/1</th>
<th>VMII/2/1</th>
<th>Total No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong></td>
<td><strong>Wt</strong></td>
<td><strong>No</strong></td>
<td><strong>Wt</strong></td>
</tr>
<tr>
<td>UNIFORM INSIGNIA</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIFORM BUTTONS</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLAIN BUTTONS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLLAR STUDS</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAD MUSKET BALLS</td>
<td>4</td>
<td>25.2</td>
<td></td>
</tr>
<tr>
<td>IRON NAILS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>5.4</td>
<td>1</td>
</tr>
<tr>
<td>3-5</td>
<td>12</td>
<td>27.2</td>
<td>1</td>
</tr>
<tr>
<td>5-8</td>
<td>19</td>
<td>51.3</td>
<td>1</td>
</tr>
<tr>
<td>&gt;8</td>
<td>8</td>
<td>101.4</td>
<td>1</td>
</tr>
<tr>
<td>UNIDENTIFIED IRON</td>
<td></td>
<td></td>
<td>52.8</td>
</tr>
<tr>
<td>COPPER NAILS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td>5</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED COPPER</td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>BRASS HINGE</td>
<td>1</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED LEAD</td>
<td></td>
<td></td>
<td>28.1</td>
</tr>
</tbody>
</table>

**VMII STONE REGISTER**

One unworked struck flake of grey chert was recovered from VMII/1/1.
VMII BONE REGISTER

991 gms of bone were recovered from the excavations, from which the following animals were identified: cow/buffalo, sheep/goat, pig, kangaroo, fish and crab.

c) THE HOSPITAL COMPLEX Plate II-3

The remains of a group of three buildings were located at the northern end of the settlement. These could be immediately identified from the historical record as forming the hospital complex. The hospital itself, a wooden building had been brought from Sydney in prefabricated form and the stone foundations are now all that remain. An area of approximately 30 x 20 metres had been excavated to provide a level surface on which to erect the building. On the rise behind the hospital, the remains of the hospital kitchen were located, heavily overgrown with vines and trees, but with the stone walls still standing to roof height. In the northwestern corner of the levelled area the collapsed stone wall of a smaller building was noted, and nearby, the top of a stone-lined pit suggested some form of drainage. The whole area had regenerated to monsoonal forest containing, as well, eucalypt species. The hospital had been set back about twenty metres from the top of the cliff. As a number of pieces of glass were noticed in the intervening area, it was decided to make a surface collection.

THE SURFACE COLLECTION (Code Prefix WH/S/ ) Plate II-3

A grid of twenty four 5-metre squares lettered A
to X was laid down and all surface material was collected (see plate II-3). The collection yielded 1084 pieces of glass, 84 pieces of pottery, an iron nail, an unidentified piece of lead, an iron bootheel and a single fragment of flaked slate. As can be seen from the distribution of the material the finds divide into two areas, the squares immediately adjacent to the hospital building and the squares along the cliff line. (Much more debris was visible down the cliff face and a general collection was made of this material, which is described under the section on the general surface collection.) There appears to be no apparent reason why 47.1% of the glass and 35.7% of the pottery should have been located in VH/S/D, unless the room immediately behind was the source of most breakages and empty bottles. In general however it would seem that the rubbish was merely thrown immediately outside, or towards and over the cliff.

As with the rubbish dump behind the government house, a large proportion (20.6%) of the glass appears to have been utilized by the Aborigines, and two pieces of a large flat base, heavily retouched along one edge to form a "scraper", were found, which fitted together (plate IV-4). These pieces were found in squares VH/S/0 and VH/S/1 and were therefore separated by at least seven metres. This suggests that the implement was either manufactured or used on the site, and was discarded when broken. Given the amount of glass in this collection, few bases of bottles were recovered, which would also support the idea of Aboriginal exploitation of the source of this "raw material",
since this portion of the bottle provided the thickest glass and therefore the best for making implements.

A number of pieces of glass from the squares adjacent to the hospital were vitrified, suggesting that on its final abandonment the hospital was destroyed by fire.

**TABLE II-10**

**VH/S GLASS REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>Type A</th>
<th></th>
<th>Type B</th>
<th></th>
<th>Type C</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Wt</td>
<td>No</td>
<td>Wt</td>
<td>No</td>
<td>Wt</td>
<td>No</td>
</tr>
<tr>
<td>VH/S/A</td>
<td>6</td>
<td>116.4</td>
<td>19</td>
<td>86.5</td>
<td>25</td>
<td>202.9</td>
<td></td>
</tr>
<tr>
<td>VH/S/B</td>
<td>20</td>
<td>477.7</td>
<td>39</td>
<td>117.9</td>
<td>59</td>
<td>595.6</td>
<td></td>
</tr>
<tr>
<td>VH/S/C</td>
<td>7</td>
<td>88.2</td>
<td>23</td>
<td>401.6</td>
<td>30</td>
<td>489.8</td>
<td></td>
</tr>
<tr>
<td>VH/S/D</td>
<td>83</td>
<td>873.8</td>
<td>428</td>
<td>868.9</td>
<td>519</td>
<td>1380.5</td>
<td></td>
</tr>
<tr>
<td>VH/S/E</td>
<td>12</td>
<td>127.8</td>
<td>3</td>
<td>117.7</td>
<td>126</td>
<td>593.0</td>
<td></td>
</tr>
<tr>
<td>VH/S/F</td>
<td>2</td>
<td>39.0</td>
<td>6</td>
<td>14.0</td>
<td>8</td>
<td>53.0</td>
<td></td>
</tr>
<tr>
<td>VH/S/G</td>
<td>4</td>
<td>118.0</td>
<td>4</td>
<td>9.7</td>
<td>8</td>
<td>127.7</td>
<td></td>
</tr>
<tr>
<td>VH/S/H</td>
<td>7</td>
<td>47.9</td>
<td>31</td>
<td>82.3</td>
<td>38</td>
<td>130.2</td>
<td></td>
</tr>
<tr>
<td>VH/S/I</td>
<td>1</td>
<td>5.0</td>
<td>6</td>
<td>73.3</td>
<td>7</td>
<td>78.3</td>
<td></td>
</tr>
<tr>
<td>VH/S/J</td>
<td>1</td>
<td>72.3</td>
<td>-</td>
<td></td>
<td>1</td>
<td>72.3</td>
<td></td>
</tr>
<tr>
<td>VH/S/K</td>
<td>-</td>
<td></td>
<td>1</td>
<td>0.8</td>
<td>1</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>VH/S/L</td>
<td>-</td>
<td></td>
<td>1</td>
<td>0.8</td>
<td>1</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>VH/S/M</td>
<td>3</td>
<td>2.7</td>
<td>4</td>
<td>5.4</td>
<td>7</td>
<td>8.1</td>
<td></td>
</tr>
<tr>
<td>VH/S/N</td>
<td>1</td>
<td>95.8</td>
<td>-</td>
<td></td>
<td>1</td>
<td>95.8</td>
<td></td>
</tr>
<tr>
<td>VH/S/O</td>
<td>7</td>
<td>75.1</td>
<td>3</td>
<td>12.2</td>
<td>10</td>
<td>87.3</td>
<td></td>
</tr>
<tr>
<td>VH/S/P</td>
<td>-</td>
<td></td>
<td>3</td>
<td>34.4</td>
<td>3</td>
<td>34.4</td>
<td></td>
</tr>
<tr>
<td>VH/S/Q</td>
<td>6</td>
<td>296.1</td>
<td>3</td>
<td>7.3</td>
<td>9</td>
<td>303.4</td>
<td></td>
</tr>
<tr>
<td>VH/S/R</td>
<td>15</td>
<td>273.5</td>
<td>7</td>
<td>29.2</td>
<td>22</td>
<td>302.7</td>
<td></td>
</tr>
<tr>
<td>VH/S/S</td>
<td>34</td>
<td>476.9</td>
<td>5</td>
<td>429.7</td>
<td>23</td>
<td>125.5</td>
<td>62</td>
</tr>
<tr>
<td>VH/S/T</td>
<td>24</td>
<td>266.8</td>
<td>10</td>
<td>100.8</td>
<td>34</td>
<td>367.6</td>
<td></td>
</tr>
<tr>
<td>VH/S/U</td>
<td>3</td>
<td>14.2</td>
<td>23</td>
<td>39.4</td>
<td>27</td>
<td>63.3</td>
<td></td>
</tr>
<tr>
<td>VH/S/V</td>
<td>7</td>
<td>24.8</td>
<td>18</td>
<td>50.0</td>
<td>25</td>
<td>74.8</td>
<td></td>
</tr>
<tr>
<td>VH/S/W</td>
<td>10</td>
<td>36.8</td>
<td>14</td>
<td>43.5</td>
<td>24</td>
<td>80.3</td>
<td></td>
</tr>
<tr>
<td>VH/S/X</td>
<td>10</td>
<td>90.9</td>
<td>7</td>
<td>9.2</td>
<td>18</td>
<td>238.2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>263</td>
<td>3619.7</td>
<td>18</td>
<td>783.0</td>
<td>803</td>
<td>2459.4</td>
<td>1084</td>
</tr>
</tbody>
</table>
THE HOSPITAL (Code Prefix VH) Plates II-3,4,5.

ARCHITECTURE:

As stated above, all that remains of the hospital building are the stone foundations on which it stood. The foundations were made of a double wall of rough-hewn ironstone with rubble fill standing to an average height of 40 centimetres, and varying between 45 and 50 centimetres wide. There is no reason to suppose these walls ever stood higher, and it seems that the wooden frame was erected on them. The foundation walls provide an exact ground-plan of the building which was divided into four rectangular rooms with a narrow "entrance" in each of the connecting and external walls. These appear to be rather narrow for doorways, and were probably for ventilation.

From a contemporary painting used by John Sweatman it was learnt that the hospital was bounded on two sides (the south and east) by a verandah and this was confirmed in the archaeological record by the presence of three squared stone post supports set in the ground at each of the four corners of the building, demonstrating that the verandah extended around the entire perimeter of the building, being slightly wider on the north and south side than on the east and west. From the painting it was noted that each of the corners was enclosed to provide an additional room. Along the western and northern sides a narrow, open, stone-lined drain or

1 "Journal of a Voyage to North East Australia" MS Mitchell Library A1725, plate XLVI.
gutter was constructed to carry off the water which must otherwise have accumulated in this excavated area. Unfortunately, time did not permit excavations to determine whether this gutter extended along the southern side; at some point along the northern edge the drain was apparently taken underground for the outlet was located in the cliff approximately one metre below the top, and there is no evidence that there has been any natural soil deposition above it since its construction.

EXCAVATIONS

Traces of shell flooring were apparent at the southern end of the eastern face, but not elsewhere around the building. A metre square (VH/1/1) was begun outside the entrance to the northern room on the eastern side to see if this shell flooring extended around the perimeter, but after passing through 12 centimetres of dark grey topsoil the deposit immediately gave way to small ironstone pebbles overlying sterile sand and clay. Finds consisted of fragments of glass, and nails.

A second metre square (VH/2/1) was begun two metres to the east, taking the square outside the line of the verandah. Here the stratigraphy was identical but many more glass fragments were recovered. Two more squares (VH/5/1), (VH/4/1) were excavated on the eastern side. The first of these was dug in a similar position to VH/1/1, but 5.5 metres to the south, so as to encounter the shell flooring noticed on the surface. Here the shell ran through the deposit layer (although never thick) until the sterile layer was encountered at
a depth of 8 centimetres. Finds in this square were similar to those in VH/1/1, with the addition of a worn gunflint. VH/4/1 was excavated opposite VH/2/1 and 5.5 metres to the south. The stratigraphy was the same as the earlier squares but contained few finds, even glass, apart from a pewter button.

Two more metre squares were excavated within the northern room of the hospital. In both cases, after passing through the topsoil layer, the same sterile layer was encountered at a depth of 6 centimetres. This presumably was the floor when the building was occupied. Finds again were few, consisting mainly of nails and several pieces of glass. Ideas of further excavation in this area were abandoned because of the paucity of material remains. Instead the stone lined pit (designated VH/7/1) was cleared out to a depth of 62 centimetres, where a clay floor was encountered. At the base of the western wall of this pit, an opening 39 centimetres high and 20 centimetres wide was located. The pit is constructed of rough hewn masonry cemented with a mixture of lime and clay.

Immediately to the north of the pit several of the gutter stones were visible and an area 1 x 1.5 metres was excavated to reveal the gutter (see plate II-5). A large stone block was uncovered which proved to be the corner of the verandah of the hospital. The gutter on the western side meets the gutter on the northern side at this corner, and is unconnected with the pit, flowing between it and the verandah line. The gutter proved to be 15 centimetres deep at this point, lined on the bottom and both sides by uncemented stones. At
this point the sterile layer outside the gutter is higher than inside (in the north-western corner room) and possibly this room had a loose stone flooring. Several flat stones were removed from this area before this possibility was realized. Finds consisted of several nails and some glass. (See pp. 33-34 for tabulated finds.)

HOSPITAL DISPENSARY (Code prefix VHD) Plates II-4, 6, 7

ARCHITECTURE:

In the extreme north-western corner of the levelled area the single (western) stone wall of a building was located. From the area of rubble the building appeared to be small, and from the standing wall certain observations could be made. The wall appeared to have originally had two windows, between which a vertical row of bricks standing from the wall suggested a dividing wall across the east-west axis of the building. Apart from this row of bricks the wall was constructed of rough-hewn ironstone. In the northern and southern faces of the central pillar two square holes suggested where beams had been placed to form the tops of the windows.

EXCAVATIONS

A two-metre square (VHD/1) was excavated adjacent to the standing wall on the eastern side. After passing through 50 centimetres of rubble (mainly bricks), shell flooring was encountered, divided by a single row of bricks which coincided with the line of bricks tied into the upright wall. The horizontal row of bricks did not extend right to the wall however, stopping 58
### TABLE II-12

**VH GLASS REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>VH/1/1</td>
<td>6</td>
<td>158.0</td>
<td>1</td>
<td>18.2</td>
</tr>
<tr>
<td>VH/2/1</td>
<td>11</td>
<td>104.7</td>
<td>6</td>
<td>94.1</td>
</tr>
<tr>
<td>VH/3/1</td>
<td>3</td>
<td>4.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VH/4/1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VH/5/1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VH/6/1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VH/7/1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VH/8/1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>266.8</td>
<td>14</td>
<td>250.1</td>
</tr>
</tbody>
</table>

### TABLE II-13

**VH POTTERY REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>VH/1/1</th>
<th>VH/2/1</th>
<th>VH/3/1</th>
<th>VH/4/1</th>
<th>VH/8/1</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALT GLAZE STONEWARE</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIPE STEM</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIPE BOWLS</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>VH/1/1</td>
<td>VH/2/1</td>
<td>VH/3/1</td>
<td>VH/4/1</td>
<td>VH/5/1</td>
<td>VH/6/1</td>
</tr>
<tr>
<td>------------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>UNIFORM BUTTONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRON NAILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>32.3</td>
<td>6</td>
<td>8.0</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>3-5</td>
<td>7</td>
<td>19.8</td>
<td>1</td>
<td>4.5</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>3-8</td>
<td>1</td>
<td>7.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED IRON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRON NAIL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EYE NAIL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPPER NAILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td>1</td>
<td>1.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

34
centimetres from it, where it coincided with a row of square stones running parallel to the standing wall. Between this row of stones and the wall the shell flooring gave way to dark grey soil, and this area was interpreted as a drain. At the eastern end of the row of bricks another line of squared stones was uncovered, running parallel to the first, and this marked the eastern side of the building. Adjacent to the easternmost brick in the row, a 4-centimetre square post hole had been carved into the stone block on which the brick stood.

The square was extended (VHD/2) fifty centimetres towards the south, and the southern wall of the building again of roughly shaped stone, uncovered. Outside the wall line the excavations were taken down 25 centimetres at which point the rubble footings were encountered, extending out 25 centimetres beyond the perimeter of the building. The finds in this square were of a similar nature to those from VHD/1/1, nails and glass, but immediately beyond the building line the glass immediately increased in quantity.

Finally excavations were commenced to clear out the drain (VHD/Drain) at the southern end. This proved much deeper than anticipated and the nature of the deposit (decayd bricks and mortar which had solidified, probably through water action) hindered progress, and the drain clearance was continued only to a point immediately beyond the line of bricks, demonstrating that this dividing wall did not continue below the floor line. At a depth of 89 centimetres a clay floor was encountered with an opening at the
southern end 32 x 25 centimetres, apparently connecting this drain with the stone-lined pit (VH/7/1) described above. The walls of this drain were constructed of well cut ironstone blocks cemented in courses, and of considerably better workmanship than the same wall above ground level. (See plate II-7)

As anticipated the only finds came at the very bottom of this drain - many nails, glass, a complete but broken clay pipe and the pieces of a small ceramic palette.

Immediately above the floor an inch layer of dark soil and many pieces of charcoal suggested the destruction of the building by fire.

The excavations gave no indication as to the construction of the southern, eastern and northern walls of the building. These were certainly not made of stone, and the number of bricks recovered from the excavation could be accounted for by the central dividing wall. Even if these three outer walls were of brick, and had been completely dismantled one might well assume traces of mortar on the stone perimeter. Alternatively no indications of post supports, except for that in the centre of the eastern wall, were located. One or more of these walls may well have been open. The second point of interest is the function of this building. Given its size, either "room" could not have had more than one occupant at any one time. Two beam holes in the eastern face of the standing wall suggest some form of table or stand above the drain in each compartment. One suggestion is that the building was a primitive
ablution block. Alternatively there is one brief historical reference to the hospital dispensary\(^1\) and the broken palette excavated in VHD/Drain tends to confirm the interpretation of this building as the dispensary.

**TABLE II-15**

**VHD GLASS REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>Type A</th>
<th></th>
<th></th>
<th>Type B</th>
<th></th>
<th></th>
<th>Type C</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHD/1/1</td>
<td>3</td>
<td>21.5</td>
<td>6</td>
<td>953.0</td>
<td>12</td>
<td>162.4</td>
<td>21</td>
<td>1136.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VHD/2/1</td>
<td>2</td>
<td>12.0</td>
<td>15</td>
<td>1090.0</td>
<td>228</td>
<td>1123.0</td>
<td>245</td>
<td>2225.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VHD/Drain</td>
<td>2</td>
<td>603.4</td>
<td>12</td>
<td>204.3</td>
<td>14</td>
<td>807.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>5</td>
<td>33.5</td>
<td>23</td>
<td>2646.4</td>
<td>252</td>
<td>1489.7</td>
<td>280</td>
<td>4169.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE II-16**

**VHD POTTERY REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>VHD/Drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>3</td>
</tr>
<tr>
<td>PIPE STEMS</td>
<td>1</td>
</tr>
<tr>
<td>PIPE BOWLS</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6</td>
</tr>
</tbody>
</table>

\(^1\) John Sweatman, op. cit., p.257.
<table>
<thead>
<tr>
<th></th>
<th>VHD/1/1</th>
<th>VHD/2/1</th>
<th>VHD/Drain</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MUSKET BALLS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h3</td>
<td>7</td>
<td>11.5</td>
<td>6</td>
<td>13.3</td>
</tr>
<tr>
<td>3-5</td>
<td>54</td>
<td>130.4</td>
<td>123</td>
<td>316.1</td>
</tr>
<tr>
<td>5-8</td>
<td>13</td>
<td>56.5</td>
<td>24</td>
<td>141.9</td>
</tr>
<tr>
<td>&gt;8</td>
<td>1</td>
<td>11.2</td>
<td>2</td>
<td>28.0</td>
</tr>
<tr>
<td><strong>IRON NAILS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>UNIDENTIFIED IRON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COPPER NAILS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h3</td>
<td>22.9</td>
<td>65.0</td>
<td></td>
<td>124.9</td>
</tr>
<tr>
<td><strong>COPPER WIRE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>COPPER RING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table II-17*

**VHD METAL REGISTER**

*Note: The table contains data on various metallic objects found in VHD, including musket balls, iron nails, unidentified iron, copper nails, copper wire, and copper rings. Each entry lists the number and weight of each object, with additional columns for their total numbers and weights.*
THE HOSPITAL KITCHEN. (Code prefix VHKL)
Plates II - 3, 8, 9, 10, 11.

ARCHITECTURE:

This building is the best constructed and one of the better preserved buildings in the settlement. Built entirely of the local ironstone, all the corners, entrances, windows and the chimney are quoin'd in excellent masonry and the building is to be attributed to the convict masons stationed at Port Essington in 1845-6\(^1\). The walls are of a double row of stones, whose external faces are rough-hewn, with the gaps between being filled with rubble and cement. These stones are laid approximately in courses, with the joints rendered in cement to provide a reasonably smooth surface.

With the exception of the fireplace wall on the western side, the building is perfectly symmetrical, and presumably follows a stock design of the period.\(^2\) It consists of a two rooms divided by a free-standing wall (i.e. not tied into the western wall) connected by an internal doorway. The floor level is raised above the outside ground level, using stone doorsteps and an internal flooring of shell. On the insides of the door uprights the remains of timber jambs measuring 6 x 10 centimetres, are reflected in the cement, and slots were cut to receive them in the stone door steps. Cuttings in the stone also reflect the use of wooden lintels and window sills, which averaged 10 centimetres in thickness (see plate II-lla).

---

1. See Chapter 8.
2. ibidem.
In the western wall of each room is a fireplace, that in the northern room being larger than that in the southern room, which, however, also contains a baking oven. In groundplan the oven is oval, with an arched dome and a solid fill floor. This oven apparently worked on the same principle as that described for the bake-house (below), with additional heat being supplied from the adjacent fireplace. The opening into the oven is recessed, and above the recess an air vent has been built leading into the southern chimney in order to draw off smoke during the firing. Although combined externally, the chimneys from each room have separate angled exits, with the internal faces parged.

From a close examination of the western wall it is apparent that the chimneys and oven were built separately and the thick section of the wall above the oven was added after (see western external and internal elevations and southern elevation plate II-9), presumably for added insulation. This section was built of solid rubble fill, and from the impressions remaining in the cement it had been roofed in a similar manner to the bakery, that is presumably with wooden tiles, since no traces of slate or clay tile were found near either example. This section of the roof is pitched at an angle of 15°, but it is reasonable to suppose that the shingle or thatch roof over the main part of the building was pitched more steeply than this. That the main roof was pitched along the long axis of the building is suggested by the presence of a row of projecting stones in the eastern
face of the chimney\textsuperscript{1} under which the roofing material was butted (plate II-11b). If the purpose of these stones was to prevent rainwater running between the thatch and the face of the chimney into the top of the wall some form of guttering must have been placed below the drip line and above the thatch. No indication of this remains.

The only use of brick in this building is the lining in the top of each of the chimneys.

\textbf{EXCAVATIONS}

Some glass and pottery fragments had been noticed near the north-eastern corner of the kitchen, and it was conjectured that this was a rubbish disposal area for the kitchen. A metre square (VHK/1/1) was excavated in what appeared to be the centre of this deposit. After passing through a dark soil layer for 20 centimetres the deposit gave way to a sterile layer similar to that encountered in the previous excavations. The deposit produced quantities of oyster shells (but not other varieties), glass, pottery, metal, and bone food remains. Despite the fact that some of the pieces of glass appeared to be Aboriginal artefacts the nature of the finds tended to confirm the deposit as a European rubbish dump. The excavations were extended one metre to the north (VHK/2/1) and one metre to the south

\textsuperscript{1} This technique is reminiscent of similar rows of sloping projected stones on the towers of late medieval churches in England, where the object was to carry rain water off the face of the building to preserve the stonework.
(VHK/3/1). Similar stratigraphy to VHK/1/1 was recorded for both squares, with the depth of deposit lessening at the northern end of VHD/2/1 and the southern end of VHK/3/1. Similar finds were also recorded, with the addition of a copper coin in VHK/2/1. Unmilled, circular and with a square hole in the centre, the coin was identified by Dr Noel Barnard of the Department of Far Eastern History, A.N.U., as a supika, and Indo-Chinese imitation of a Chinese coin, of small value, common in such commercial centres as Singapore at this period. This coin is identical to two others excavated in other parts of the site.

In order to examine the wall foundations and flooring of the kitchen an area 2 metres x 1 metre was excavated immediately below the window in the northern room of the hospital. The flooring proved to be the shell flooring traditional in the settlement. This was laid to a depth of 15 centimetres over sterile sand. Approximately 90 centimetres from the wall this sand changed to grey soil demarcating the line of the foundation trench. The footings, of ironstone, were set in cement to a depth of 50 centimetres and on the internal side, 15 centimetres wider than the wall. The trench had been back filled with rubble and soil. Finds were extremely limited in this area, and it was decided not to extend the excavation.
### TABLE II-18

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>Wt.</th>
<th>Type</th>
<th>No.</th>
<th>Wt.</th>
<th>Type</th>
<th>No.</th>
<th>Wt.</th>
<th>Total</th>
<th>Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>14</td>
<td>160.5</td>
<td>B</td>
<td>2</td>
<td>30.0</td>
<td>C</td>
<td>189</td>
<td>504.8</td>
<td>205</td>
<td>695.3</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>134.1</td>
<td></td>
<td>3</td>
<td>187.4</td>
<td></td>
<td>230</td>
<td>722.3</td>
<td>252</td>
<td>1043.8</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>113.8</td>
<td></td>
<td>1</td>
<td>105.4</td>
<td></td>
<td>85</td>
<td>226.4</td>
<td>96</td>
<td>445.6</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>24.9</td>
<td></td>
<td>1</td>
<td>18.5</td>
<td></td>
<td>3</td>
<td>18.5</td>
<td>7</td>
<td>43.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>47</td>
<td>433.3</td>
<td></td>
<td>6</td>
<td>322.8</td>
<td></td>
<td>507</td>
<td>1472.0</td>
<td>560</td>
<td>2228.1</td>
</tr>
</tbody>
</table>

### TABLE II-19

<table>
<thead>
<tr>
<th>Type</th>
<th>VHK/1/1</th>
<th>VHK/2/1</th>
<th>VHK/3/1</th>
<th>VHK/4/1</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSFER PRINTED</td>
<td>4</td>
<td>5</td>
<td>23</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>20</td>
<td>18</td>
<td>23</td>
<td></td>
<td>61</td>
</tr>
<tr>
<td>SALT GLAZE STONEWARE</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>HAND PAINTED</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>FEATHEREDGE (BLUE)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>LINE DECORATED WARE</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>PIPE STEMS</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>PIPE BOWLS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BLUE ON WHITE PORCELAIN</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>POLYCHROME PORCELAIN</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>40</td>
<td>49</td>
<td>7</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>VHK/1/1</td>
<td>VHK/2/1</td>
<td>VHK/3/1</td>
<td>VHK/4/1</td>
<td>Total</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>COIN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRASS KEYHOLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>1.6</td>
<td>2</td>
<td>3.1</td>
<td>11</td>
</tr>
<tr>
<td>3-5</td>
<td>3</td>
<td>13.8</td>
<td>3</td>
<td>13.6</td>
<td>32</td>
</tr>
<tr>
<td>5-8</td>
<td>1</td>
<td>7.4</td>
<td>3</td>
<td>23.0</td>
<td>1</td>
</tr>
<tr>
<td>IRON NAILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED IRON</td>
<td>85.1</td>
<td>61.5</td>
<td>82.9</td>
<td>63.2</td>
<td>292.7</td>
</tr>
<tr>
<td>UNIDENTIFIED LEAD</td>
<td>30.3</td>
<td>38.4</td>
<td>5.9</td>
<td>5.9</td>
<td>74.6</td>
</tr>
<tr>
<td>COPPER NAILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>13</td>
<td>30.0</td>
<td>7</td>
<td>14.5</td>
<td>19</td>
</tr>
<tr>
<td>3-5</td>
<td>1</td>
<td>2.0</td>
<td>19</td>
<td>5.0</td>
<td>2.2</td>
</tr>
<tr>
<td>5-8</td>
<td>19.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED COPPER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VHK BONE REGISTER

615 gms of animal bones were recovered from the excavations of which the identifiable animals represented were as follows: two cow/buffalo, sheep/goat, two pigs, wallaby, bird, fish, crab, reptile.

d) MARRIED QUARTERS (Code prefix VMQ)

ARCHITECTURE: Plates II-12,13,14,15,16,17,18,19.

North of Adam Head five semi-circular butress stone chimneys set into the southern walls of the cottages which they served, were identified from the McArthur map1 (plate I-4) as the settlement's married quarters. These houses were orientated in a rough north-south line running parallel to the line of the cliff, and about twenty metres from it.

For convenience the structures have been numbered 1 to 5, from north to south. The chimney of no. 1 has been almost destroyed by falling trees, but a portion of the wall and chimney is still standing; the chimney of no. 5 has suffered similar damage, but still stands to an overall height of 2.5 metres, so that the recording of many architectural features was possible. The remaining three structures are intact. The general dimensions of these chimneys and the design and size

1. The map has only four cottages represented, but this appears to be simply a mistake on the part of the map-maker. Several other discrepancies in this map were discovered in the field.
of the cottages are sufficiently similar to allow a single general description. However sufficient differences in detail and building technique existed to require some elaboration.

Preliminary appearances of the cottage floor mounds suggested that the dimensions of the cottages were similar. Excavation of the floor of no. 2 was carried out and is described below. It was found that this cottage had a clay floor, and possessed a stone doorstep in the western wall. However, no doorstep was visible in the floor mounds of the other cottages. No. 3 had visible indications that the floor had been concreted (at least in part) and no. 4 apparently possessed a shell floor, but no time was available to test these differences by excavation. Measurement of the five floors established the internal dimensions as 5.3 metres long and 3.5 metres wide.

In each instance, the shape of the stone walls presupposes a simple pitched roof, although this might have been hipped at the northern end. The materials used in the construction of the roof and the remaining three walls have disappeared completely. Fortunately, these particular cottages were described by a visitor to the settlement in 1848 as having grass thatched roofs and walls of bark or rushes. In the latter case the rushes were secured internally to a light framework of wood, and were held in place externally by thin strips of bamboo. The cottages had "little square holes for light and air with little raised shutters
like the ports of a Vessel. This technique of shutters hinged at the top and propped outwards to open was used extensively in the settlement, as is evidenced by many of the contemporary sketches which have survived.

The southern walls and chimneys were built with ironstone blocks quarried within the settlement and cemented with lime mortar. In the cottage excavated the foundations were carried down two courses into the earth (43 centimetres) and were not set into wider footings, the dimensions paralleling those above ground-level. The stone was rough-hewn into blocks, rectangular but varying in size, although rarely exceeding 30 cms x 20 cms x 15 cms. Only the external faces were shaped, and the gap between the facings was filled with rubble and cement. In all the examples, the internal walls were coated with lime plaster. Bricks were used to construct the arch above the fireplace, which was in the shape of a basket arch.

Despite the general conformity of design, significant variations do occur between chimneys, both in dimensions and in methods of construction. Plate II-12 for example, illustrates the differences in size and shape of the chimneys of no. 2 and no. 4. Whereas no. 2 projects 1.15 metres behind the wall into which it is built, no. 4 projects only 75 centimetres, despite the fact that they are of equal

width across the base. A second variation in dimensions which should be noted is the difference in the thickness of the walls of each structure:

No. 1  No. 2  No. 3  No. 4  No. 5
33 cms  29 cms  31 cms  37 cms  41 cms

Variations in construction techniques have proved more interesting. Despite the disappearance of timbers, their original positions are indicated by holes in the stonework. On no. 1, no. 2 and no. 3 large circular posts were used at each end of the stone wall, and as the imprint of the mortar shows, the ends were abutted against these posts. It is reasonable to assume that these were intended by the builders to possess a structural purpose and not simply as an upright on which to batten the side walls. At the point at which the walls begin to slope inwards a horizontal beam was laid along the entire length of the wall. In no. 4 and no. 5 this beam is visible on the internal face; on no. 3 it is visible on the external face; on no. 2 it is concealed, passing through the centre of the wall. On no. 3, no. 4 and no. 5, a principal rafter is set into the top of the upper, sloping, section of the wall. It is difficult to define this feature on no. 2 because one side of the wall has fallen, but some indications do exist on the remaining side. Apparently it was not set into the chimney as in the other cottages. Instead, a vertical beam had been set into the front of the chimney which presumably carried the ridge beam. As plate II-12 shows the chimney of no. 2 slopes back from the vertical. Thus the principal rafter could also have been tied into
this vertical beam. A rafter was set into the internal face of the chimney of no. 2 and no. 3 sloping to the ridge beam at approximately 45°, but this feature was absent on no. 4 and impossible to define on no. 1 and no. 5 because of their incomplete nature. On no. 4 and no. 5 the upper part of the wall was recessed 1/4 centimetres on the internal face.

Some of these variations are the product of the major constructional difference. On no. 1 and no. 2, the walls are not tied into the chimney. On no. 3 the wall and chimney are tied in up to the height of the horizontal beam. On no. 4 and no. 5 the wall and chimney are tied in from the bottom to the top. In the case of nos. 1-3 the triangular sloping sections were added after the completion of the chimneys. In the case of no. 4 and no. 5 the chimney and wall were built as a single unit. The evidence from no. 1 is uncertain because of its dilapidated condition. It is clear that in the case of no. 2, with its chimney sloping back from the vertical, and its ridge beam supported by a vertical beam set in the face of the chimney, that this posed the problem of keeping out the rain. The construction of no. 3, building the chimney with a vertical flat surface on the northern side was a better solution, and this was elaborated further with no. 4 and no. 5 by building the entire wall and chimney as a single unit.

After returning from the field in 1966, the distribution of these differences was tabulated in the form of a sorted matrix. When represented diagrammatically in this fashion indications were
that the structures fell into two groups, nos. 1-3 and nos. 4-5 with no. 3 being transitional. In other words, the chimneys could be seriated. With this idea in mind, a further examination was carried out during the 1967 season, and the number of constructional traits was more closely scrutinized and increased. The tabulation of the traits in 1966 had been clumsy because no differentiation was made between the simple presence and absence of traits and the fact that some traits were mutually exclusive. With the 1967 elaboration it became necessary to divide these traits into two tables. In table II-21 the simple presence and absence of some of the traits is represented. Table II-22 shows the distribution of mutually exclusive traits. Chimney no. 1 has been excluded from these tables because of its delapidation and is discussed separately below. With no. 5, where a question mark has been inserted there is no direct evidence of the trait in question, however the probability of its existence is high.

KEY TO TRAITS

1: Vertical wall posts abutted to each end of standing wall. 2: Rafter hole at 45° set into internal face of chimney. 3: Vertical beam set in internal face of chimney. 4: Ridge beam hole set in internal face of chimney. 5: Sloping hearth stone at rear of fireplace. 6: Internal face of chimney vertical to height of

---

ridge beam. 7: Upper section of wall recessed above horizontal beam. 8A: Chimney constructed before wall. 8B: Chimney constructed simultaneously with upper wall. 9A: Chimney at rear angled inwards from ground level. 9B: Chimney at rear vertical to height of horizontal beam then angled inwards. 10A: Chimney not tied into wall at any point. 10B: Chimney tied into wall to height of horizontal beam. 10C: Chimney tied into wall to the total height. 11A: Horizontal beam concealed. 11B: Horizontal beam visible on external face. 11C: Horizontal beam visible on internal face. 12A: Principal rafter in centre of top of wall. Not tied into chimney. 12B: Principal rafter in centre of top of wall. Tied into chimney. 12C: Principal rafter in centre of wall. Tied into chimney. Raised internal edge. 12D: Principal rafter at rear of wall. Tied into chimney.

**TABLE II-21**

**PRESENCE OF TRAITS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>no. 2</th>
<th>no. 3</th>
<th>no. 4</th>
<th>no. 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X?</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
TABLE II-22

DISTRIBUTION OF MUTUALLY EXCLUSIVE TRAITS

<table>
<thead>
<tr>
<th>Trait</th>
<th>no. 2</th>
<th>no. 3</th>
<th>no. 4</th>
<th>no. 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>8A</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>8B</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9A</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9B</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>10A</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10B</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>10C</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>11A</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11B</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>11C</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>12A</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12B</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12C</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>12D</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

CHIMNEY NO. 1

Although this structure had been virtually demolished by a falling tree, certain characteristics could be distinguished. As with no. 2 and no. 3, no.1 was constructed with vertical wall posts; as with no. 2 the chimney was not tied into the wall. An apparent difference between no. 1 and all the other examples is that the chimney does not slope in at the rear. (Its present height, exceeds the height at which the horizontal beam would have been employed). This variation, with the buttress chimney remaining vertical at the rear, while differing from the other examples is not atypical, as both types are recorded in Cornwall.
There is evidently a correlation in the positioning of the horizontal beam and the vertical side posts. On no. 2 the side post is in the centre, and the horizontal beam passes through the centre of the wall; on no. 3 the side post is set at the rear edge of the wall while the horizontal beam is visible on the external face; on no. 4 and no. 5 the horizontal beam is visible on the internal face and no evidence of side posts remains. Certainly they did not abut the wall as in the case of no. 1, no. 2 and no. 3.

The function of the horizontal beam is uncertain. However, in cottages no. 2 and no. 3 it may have helped stabilize the walls while the construction of the chimneys was completed. The beams projecting forward in no. 4 and no. 5 may have served as mantelpieces.

CONCLUSION

Represented diagrammatically in the form of a sorted matrix, the observed differences permit the division of the chimneys into two groups; nos. 1-3 and nos. 4-5. No. 3 appears to be a transitional example sharing the traits of both groups, but being more closely aligned with no. 1 and no. 2. Only two traits are universal, the horizontal beam and the principal rafter, which was needed to secure the purlins rigidly. However, this trait suggests a continual improvement in technique from no. 2 to no. 5.

---

1 It should be noted that on no. 1 the side post is also set at the rear of the wall, but any traces of the horizontal beam, if it existed, have been obliterated.
No. 3 has been grouped with no. 1 and no. 2 because its chimney was built before the upper walls, and this constitutes the most significant constructional difference. Yet no. 3 also stands somewhat apart from this group, because its builder had the foresight to insert the principal rafter into the wall of the chimney. The internal face of the chimney was kept vertical and the ridge beam was inserted into the chimney. The upper wall sections were added more efficiently and neatly in no. 3 than in no. 2, and in general the former structure is more regular and neatly built, and in this respect more closely resembles no. 4 and no. 5.

Several assumptions can be made on the basis of these observations. An obvious grading in constructional techniques and efficiency of building is demonstrated between nos. 1-2, no. 3, and nos. 4-5. While three different builders could have been responsible for these groups, the settlement consisted at most of seventy marines, and as the building of these cottages would form part of official duties, it seems probable that if the project was a single enterprise, it would have been directed by one person rather than three (much less five people). Thus the differences are best seen as a function of increasing expertise through time.

Even accepting this seriation it is impossible to demonstrate with certainty the priority of chimney construction. Since the settlement lasted only eleven years it is tempting to consider as unlikely a degeneration rather than an improvement in the efficiency of building techniques and construction. Given further
that all the chimneys are apparently the work of a single builder, it is doubtful that he would become increasingly less efficient, although if he was inexperienced to begin with, the converse is probable. One alternative is that an experienced builder built no. 4 and no. 5 and that after he had left the settlement nos. 1-3 were constructed as less efficient imitations. This explanation is perhaps improbable on the grounds that someone without skill is likely to produce a close imitation rather than an adaptation.

So far only one other example of this semi-circular buttress chimney has been located in Australia,¹ although more might exist still in those areas which were extensively settled by Cornishmen in the nineteenth century. One pictorial representation of a round chimney at Glenelg in South Australia can be dated 1836-38². However this chimney and the Port Essington examples may be ascribed to a common origin, for some of the marines used to establish Port Essington were previously stationed in South Australia³. These cottages are mentioned by d'Urville who visited the settlement in April 1839, but no specific number or description is recorded. The use of bricks indicates an earliest date of 1840 (see Chapter 8). However on the evidence

¹ On Willminnie Station in South Australia. I am grateful to Mr. R. Edwards, South Australian Museum, for this information.


³ Crawford Pascoe, A Roving Commission (Melb. 1897) p.89.
available, both historical and archaeological, it seems likely that all these chimneys were completed before the first garrison was relieved in 1844.

EXCAVATIONS Plate II-13

Excavations were begun in the house floor of chimney no. 2 to determine the structure of the floor and its precise measurements by locating post holes, and delineating the extent and composition of the flooring material. It was hoped further to contrast the finds from this type of dwelling with other house floors in the settlement. This particular floor was chosen because the chimney and the hearth were intact and because two squared stones, interpreted as a doorstep were visible in the line of the western wall; this floor also appeared to be free of major tree root disturbance.

An area measuring 1x2 metres was excavated at the north western corner, and was so located that the visible mound of the corner of floor fell within it. This square was designated VMQ/1. Two further areas VMQ/2 and VMQ/3 were also opened (see plate II-13). In VMQ/1 and VMQ/2 a hard clay floor, sloping upwards towards the south was encountered 50 centimetres from the north edge of the excavations. Some small glass flakes had been located on the western side of VMQ/1 (as far as had been excavated) and similar flakes had appeared in the western extreme of VMQ/3, so it was decided to divide the remaining square metre of VMQ/1 and excavate the section on the western extreme, which appeared to be outside the building line, in smaller
units\(^1\), in two spits, and contrast this with the remaining section of VMQ/1 also excavated in two spits. These areas were designated VMQ/1A, /1B, /1C and /1D as shown on the ground plan. Table II-23 shows the relative glass finds for these areas.

**TABLE II-23**

<table>
<thead>
<tr>
<th>Spit</th>
<th>VMQ/1A</th>
<th>VMQ/1B</th>
<th>VMQ/1C</th>
<th>VMQ/1D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spit 1</td>
<td>-</td>
<td>33</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Spit 2</td>
<td>4</td>
<td>10</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>43</td>
<td>36</td>
<td>22</td>
</tr>
</tbody>
</table>

It should be noted that the combined area of /1B, /1C and /1D is less than half that of /1A, and even so the ratio of the two concentrations is greater than 1:25.

While the northern edge of the clay was quite distinct, the western edge, both in VMQ/1 and VMQ/3, was more indistinct, grading in colour from the red clay on the eastern side, to black soil on the western side. No definite post holes were discernible in the areas uncovered, with the possible exception of a discontinuity in the horizontal section of VMQ/1 at the western extreme of the northern floor line (that is, what probably constitutes the north-west corner of the building). However as this was associated with major root disturbance it could not positively be identified as a post-hole. From the combined evidence, however, it was reasonable to assume that the heavy

\(^1\) /8 is 40x30 centimetres, /1C & /1D 30 centimetres square.
concentration of glass occurred outside the building line.

An examination of the glass from VMQ/1B, /1C and /1D indicated that much of it could be classified as probably having been utilized by Aborigines. (The subsequent initial sorting of the material put 57.4% of the glass from this area in this category.) This immediately posed a new possibility that the area outside the building represented a "chipping floor" - an area for the manufacture of glass implements by the Aborigines. In order to test this hypothesis an area 2 x 1 metres was excavated to the west of VMQ/1 and separated from it by a 30 centimetre baulk. To gain maximum control of the material this area was excavated in 50-centimetre squares\(^1\), and in two spits down to sterile sand. The maximum depth of deposit above the sterile sand in these squares was 21 centimetres, the minimum, 14 centimetres; cultural material was recovered throughout the deposit. A total of 256 pieces of glass was recovered from these eight squares, of which 52.8% was initially sorted as probably utilized by Aborigines. A further area of eight 50 centimetre squares was excavated (VMQ/12 - VMQ/19) and produced significantly less glass (87 pieces) of which 56.3% was classified as probably utilized by Aborigines. In addition two pieces of ground ochre, three stone flakes, and one stone implement were recovered from these areas. The stone implement was reconstructed from five pieces of slate

\(^1\) VMQ/4 - VMQ/11.
and appears to be the heavily step-flaked butt of a broken spear point. This type has not been recorded before in excavations or collections from Arnhem Land, where the predominant form of stone spear head is the Lelliira blade. The only parallels are two similar implements in the Port Essington collection, described below (Chapter 5).

Following this diversion it was decided to excavate series of trenches across the hearth area in front of the standing southern wall of the building. The first of these squares, VMQ/20 was begun outside the supposed line of the building and was extended to the foot of the western end of this wall where traces of plaster and tooled stones indicated the presence of a post. Again however, no indications of a post-hole were discernible from colour change in the soil, although from traces of wall plaster below ground level, it was apparent that the post had been set in the ground. Twenty-two pieces of glass were recovered at the western end of this square. Inside the line of the house the clay floor proved to be much better defined, covered by a thin charcoal layer presumed to be the reflection of the destruction of the house at the time the settlement was abandoned. The floor in this area consisted of packed clay with criss-cross wear lines running through it, and this continued through VMQ/21 and VMQ/22. The nature of the topsoil in VMQ/20 had changed from the northern end of the building and here contained shells amongst the loose black soil. A 30 centimetre baulk was left between VMQ/20 and VMQ/21. Here again a loose black
deposit containing shell, iron, glass and pottery was found above the clay floor, being deeper at the southern end and extending into the fireplace. A similar deposit, but decreasing in depth, was found in VMQ/22 above the clay floor, and also in VMQ/23, the fireplace, above the hearth-stones. VMQ/24 extended the excavation beyond the building line and was extended to investigate the eastern end of the stone wall, but again no colour change indicated where the post had stood. Finds in this area were few.

The stratigraphic evidence in the hearth area established that almost all the finds related to occupation by Aborigines after the European evacuation. Because of the sharp division of finds of glass on the western side of the building it is reasonable to infer however, that this latter deposit was laid down at a time when the western wall was still standing, i.e. while the settlement was occupied by Europeans. Apparently the Aborigines began to use the remaining southern stone wall and chimney as a form of rock shelter after the abandonment and destruction of the house, and at this time the midden deposit grew in front of it.

Six 50-centimetre squares (VMQ/25-VMQ/30) were excavated to join the western end of VMQ/3 and VMQ/20 in order to investigate further the relationship of the areas within and without the supposed line of the building. Results in terms of finds and stratigraphy paralleled the earlier results.

VMQ/31 was excavated to investigate the
foundations of the standing wall. These extended 43 centimetres (two courses of cemented stone) below present ground-level and were of the same width as the wall above ground-level. The only find in this area was a single nail.

Finally the baulk separating VMQ/1 and VMQ/4 - VMQ/11 was excavated in the hope of increasing the sample of glass. Indeed, the area proved extremely rich, producing 100 pieces of glass, 25 pieces of pottery, and one European gun-flint.

Finds which definitely could be associated stratigraphically with the European occupation of the house were extremely rare and perhaps this reflects the tidiness of the woman who lived there. The use of a broom appears to be the best explanation of the criss-cross lines which were found in the area of the hearth. The recovery of the metal frame of a cameo was however the only feminine artefact excavated. The recovery of pottery and glass from the cliff-top and slope opposite these houses suggests that most of the refuse from these houses was dumped in this area. No suggestion of internal partitions was located in the archaeological record.
<table>
<thead>
<tr>
<th>Type A No.</th>
<th>Type B No.</th>
<th>Type C No.</th>
<th>Total No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIG/1/1</td>
<td>20</td>
<td>214.0</td>
<td>17</td>
</tr>
<tr>
<td>VIG/1A/2</td>
<td>4</td>
<td>7.3</td>
<td>2</td>
</tr>
<tr>
<td>VIG/1B/1</td>
<td>12</td>
<td>35.1</td>
<td>12</td>
</tr>
<tr>
<td>VIG/1C/1</td>
<td>3</td>
<td>5.0</td>
<td>2</td>
</tr>
<tr>
<td>VIG/1D/1</td>
<td>18</td>
<td>20.0</td>
<td>18</td>
</tr>
<tr>
<td>VIG/1E/1</td>
<td>2</td>
<td>2.1</td>
<td>2</td>
</tr>
<tr>
<td>VIG/1F/1</td>
<td>22</td>
<td>30.1</td>
<td>22</td>
</tr>
<tr>
<td>VIG/2A/1</td>
<td>4</td>
<td>13.9</td>
<td>7</td>
</tr>
<tr>
<td>VIG/2B/2</td>
<td>4</td>
<td>28.8</td>
<td>13</td>
</tr>
<tr>
<td>VIG/2C/3</td>
<td>4</td>
<td>5.5</td>
<td>4</td>
</tr>
<tr>
<td>VIG/2D/4</td>
<td>1</td>
<td>1.0</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2E/5</td>
<td>2</td>
<td>3.2</td>
<td>7</td>
</tr>
<tr>
<td>VIG/2F/6</td>
<td>1</td>
<td>1.0</td>
<td>4</td>
</tr>
<tr>
<td>VIG/2G/7</td>
<td>4</td>
<td>9.8</td>
<td>4</td>
</tr>
<tr>
<td>VIG/2H/8</td>
<td>1</td>
<td>1.0</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2I/9</td>
<td>2</td>
<td>3.2</td>
<td>3</td>
</tr>
<tr>
<td>VIG/2J/10</td>
<td>4</td>
<td>11.6</td>
<td>2</td>
</tr>
<tr>
<td>VIG/2K/11</td>
<td>2</td>
<td>1.0</td>
<td>5</td>
</tr>
<tr>
<td>VIG/2L/12</td>
<td>1</td>
<td>1.0</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2M/13</td>
<td>1</td>
<td>2.0</td>
<td>2</td>
</tr>
<tr>
<td>VIG/2N/14</td>
<td>15</td>
<td>126.5</td>
<td>6</td>
</tr>
<tr>
<td>VIG/2O/15</td>
<td>14</td>
<td>146.7</td>
<td>8</td>
</tr>
<tr>
<td>VIG/2P/16</td>
<td>10</td>
<td>121.3</td>
<td>60</td>
</tr>
<tr>
<td>VIG/2Q/17</td>
<td>9</td>
<td>31.3</td>
<td>13</td>
</tr>
<tr>
<td>VIG/2R/18</td>
<td>2</td>
<td>11.2</td>
<td>2</td>
</tr>
<tr>
<td>VIG/2S/19</td>
<td>1</td>
<td>3.0</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2T/20</td>
<td>2</td>
<td>3.8</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2U/21</td>
<td>2</td>
<td>14.2</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2V/22</td>
<td>4</td>
<td>58.6</td>
<td>6</td>
</tr>
<tr>
<td>VIG/2W/23</td>
<td>1</td>
<td>10.7</td>
<td>2</td>
</tr>
<tr>
<td>VIG/2X/24</td>
<td>2</td>
<td>9.8</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2Y/25</td>
<td>3</td>
<td>25.4</td>
<td>2</td>
</tr>
<tr>
<td>VIG/2Z/26</td>
<td>1</td>
<td>7.8</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2A/27</td>
<td>3</td>
<td>31.3</td>
<td>1</td>
</tr>
<tr>
<td>VIG/2B/28</td>
<td>16</td>
<td>43.7</td>
<td>1</td>
</tr>
</tbody>
</table>

Surface: 388 1957.8 149.9 386 1130.8 788 3197.5
<p>|                | 1/1 | 1A/1 | 1B/1 | 1C/2 | 2/1 | 2A/1 | 2B/1 | 3/1 | 3A/1 | 3B/1 | 3C/1 | 3D/1 | 3E/1 | 3F/1 | 3G/1 | 3H/1 | 3I/1 | 3J/1 | 3K/1 | 3L/1 | Total |
|----------------|-----|------|------|------|-----|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|-------|
| Transfer Printed | 2   | 2    | 1    | 1    | 1   | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1     | 6     |
| Unidentified     | 1   | 1    | 2    | 1    | 1   | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1     | 6     |
| Salt Glaze        | 2   | 2    | 1    | 1    | 1   | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1     | 6     |
| Unleaded ceramics | 1   | 1    | 1    | 1    | 1   | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1     | 6     |
| Pipe stones       | 1   | 1    | 2    | 1    | 1   | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1     | 6     |
| Pipe bowls        |     | 1    | 1    | 2    | 1    | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1     | 6     |
| Blue or white porcelain |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 1     | 1     |
| Total             | 6   | 1    | 1    | 2    | 2    | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1     | 89    |</p>
<table>
<thead>
<tr>
<th>Table 18-20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VMS ча-ча</strong></td>
</tr>
<tr>
<td><strong>10/2</strong></td>
</tr>
<tr>
<td><strong>UINON INIENIA</strong></td>
</tr>
<tr>
<td><strong>Camo Holder</strong></td>
</tr>
<tr>
<td><strong>Percussion Cap</strong></td>
</tr>
<tr>
<td><strong>Plaza Button</strong></td>
</tr>
<tr>
<td><strong>Brass Washers</strong></td>
</tr>
<tr>
<td><strong>Copper Nails</strong></td>
</tr>
<tr>
<td><strong>Scrap Copper</strong></td>
</tr>
<tr>
<td><strong>Copper Nut &amp; Bolt + Washer</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>VMS ча-ча</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1/2</strong></td>
</tr>
<tr>
<td><strong>UINON INIENIA</strong></td>
</tr>
<tr>
<td><strong>Camo Holder</strong></td>
</tr>
<tr>
<td><strong>Percussion Cap</strong></td>
</tr>
<tr>
<td><strong>Plaza Button</strong></td>
</tr>
<tr>
<td><strong>Brass Washers</strong></td>
</tr>
<tr>
<td><strong>Copper Nails</strong></td>
</tr>
<tr>
<td><strong>Scrap Copper</strong></td>
</tr>
<tr>
<td><strong>Copper Nut &amp; Bolt + Washer</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>8/1</td>
</tr>
</tbody>
</table>
c) **QUARTERMASTER'S STORE** (Code prefix VQS)
   Plates II-20, 21, 22.

**ARCHITECTURE**

At the northern end of the square, which had regenerated into a forest of monsoon vegetation the remains of the quartermaster's store were located. These consisted of the stone walls, standing to window height (approximately 1.2 metres), built in a rectangular shape with entrances in the centre of each wall.

From contemporary paintings this building was identified as one of the prefabricated buildings which had been brought from Sydney. Originally it had been constructed on eight feet high wooden piles, which were afterwards enclosed in the stone foundations which now remain. When the enclosure took place, the wall, consisting of a double thickness of rough-hewn blocks with rubble and cement fill, was built around the existing wooden piles, and although these have long since disappeared, the gaps in the stonework which they filled show their positioning and their variation in size. Except for the four corner posts, a gap was deliberately left on the internal face of the wall adjacent to each wooden pile, but the reason for this is obscure.

Excavations revealed a stone post-support in the centre of the floor and it is supposed that this is the centre of the long axis of the building. In this respect this building is similar to Store D (see below). Also the external corners were buttressed as in Store D.
and the flooring was again of layers of shell, although in places these were separated from the sterile sand by a layer of red clay. The excavations through the southern doorway revealed a stone doorstep.

Access to the upper storey was external, consisting of wooden steps at the eastern end; no evidence of internal stairs was revealed, although this may be the result of insufficient excavation.

In each of the long walls of the lower storey the remains of four windows were discernible. These were of an intricate shape (see plate II-20) and were probably provided with wooden sills.

EXCAVATIONS

An area measuring two metres by four metres was excavated in metre squares (VQS/1-VQS/8) in order to reveal the doorway in the southern wall and to examine the deposit inside and outside the building (see plate II-20). Excavations in VQS/1 revealed the edge of a stone block in the centre of the house floor, and an additional metre square, VQS/9 was excavated to uncover this block. The excavations in VQS/1 were divided into two spits, but since it appeared that no differentiation could be made in the deposit within the house, the remaining internal squares were excavated as single units with the exception of VQS/7 where a post hole in the wall was taken out as a separate spit. The squared stone in VQS/9 proved to be an internal post support similar to those found in Store D, measuring 60x40 centimetres with a 10 centimetre square notch cut in the
top to a depth of 4 centimetres.

The stratigraphy within the building was constant and consisted, as in other buildings in the settlement, of a basal deposit of sterile sand over which red clay was lain down, followed by successive layers of fine beach shell. The post hole in the wall was excavated to a depth of 30 centimetres into the sterile basal deposit at which point no more deposit could be removed because of the difficulty of excavation, although sterile sand had not been reached.

Excavations in VQS/3 and VQS/6 uncovered a stone doorstep made of hewn stone blocks cemented in two courses. Beyond this, in VQS/3, after passing through the topsoil deposit, a rough floor of small broken stones was encountered, which extended a metre from the building line. VQS/5 and VQS/6 were then excavated in two spits, the top spit uncovering the deposit above the "floor" and the second spit passing through the floor down to the sterile sand.

After passing through the "floor" deposit, which was sterile, it was found that the level underneath contained European cultural deposit for a further 15–20 centimetres before the basal sterile layer was encountered. Section VQS/5-VQS/6 west wall (plate II-21B) indicates the stratigraphy, showing the base of a bottle, and burnt timbers in situ. Whether this constitutes an earlier building or an earlier phase of the present building is impossible to demonstrate archaeologically, but it might be associated with the period before the lower section of the building was
encased in stone. The stone doorstep appears to have been built with little or no excavation, and the interior filled with clay and shell flooring. At the same time, perhaps, the immediate surrounds of the building were levelled with this stone "path".

As in the case of other buildings in the settlement, rather more glass and pottery was recovered from the immediate exterior of the building than from within it. Metal was found throughout the excavation, but VQS/7 yielded the greatest amount of "exotic" metal - uniform insignia, several buttons, a large brass spike and a brass knob. In VQS/8 a brass and iron doorlock and the chin-strap terminal of an officer's shako were recovered.

13.6% of the glass recovered was sorted primarily as possibly utilized by Aborigines, and the distribution of this material was found throughout the deposit. In other areas this material was located predominantly outside houses. Its presence inside the quartermaster's store might indicate that the Aborigines occupied the building while the settlement was still in existence, since it is known that the building fell into such disrepair that it was unoccupied by the garrison before the settlement was abandoned\(^1\). Alternatively the area could have been used by the Aborigines before the lower section was enclosed.

\(^1\) O. Brierly, op. cit.
## Table II-28

**VQS Glass Register**

<table>
<thead>
<tr>
<th>Area</th>
<th>TYPE A</th>
<th>TYPE B</th>
<th>TYPE C</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQS/1/1</td>
<td>1</td>
<td>2.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VQS/2/1</td>
<td>4</td>
<td>20.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VQS/3/1</td>
<td>16</td>
<td>85.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VQS/4/1</td>
<td>21</td>
<td>82.1</td>
<td>1</td>
<td>13.2</td>
</tr>
<tr>
<td>VQS/5/1</td>
<td>10</td>
<td>57.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VQS/5/2</td>
<td>4</td>
<td>19.0</td>
<td>1</td>
<td>457.5</td>
</tr>
<tr>
<td>VQS/6/1</td>
<td>9</td>
<td>52.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VQS/6/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VQS/7/1</td>
<td>25</td>
<td>214.0</td>
<td>2</td>
<td>28.0</td>
</tr>
<tr>
<td>VQS/7/2</td>
<td>12</td>
<td>56.8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VQS/8/1</td>
<td>2</td>
<td>3.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VQS/9/1</td>
<td>3</td>
<td>3.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>567.1</td>
<td>4</td>
<td>500.7</td>
</tr>
<tr>
<td>Item</td>
<td>Qtr 1/1</td>
<td>Qtr 2/1</td>
<td>Qtr 3/1</td>
<td>Qtr 4/1</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Iron Hinge</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Brass/Iron Lock</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Monkey Ball</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Bootsheel</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Iron Noodle</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Uniform button</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Brass Spike</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Iron Nails</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1/2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Brass Nails</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Copper Plates</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Copper Screw</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Copper Knob</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Copper Studs</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Copper Fitting</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Copper Lead</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Notes:**
- The table appears to be documenting findings or measurements for various items, possibly related to metal objects.
- The quantities and weights are listed for each category across different dates or periods (Qtr 1/1 to Qtr 4/3).
- The total column sums up the quantities for each category.
- The specific details of the items are not clear from the image alone.
f) SHELL FLOOR NO 1 (Code prefix VSFI)
Plates II-23,24

Within the pocket of monsoonal vegetation which
marks the area of the town square, six mounds were
located. These were usually rectangular or square in
plan, and standing to a height of only a few
centimetres above the surrounding ground level.
Because of the dense vegetation, which reduced
visibility to several yards, no detailed plan of the
locality of these house floors was possible without
major clearing.

The floor selected for excavation was located
12.6 metres south of the bakery. This floor was chosen
because it was free of major tree root disturbance and
because in the centre of the mound, four squared stone
blocks were visible on the surface. This feature was
not apparent in any of the other floors located,
although similar arrangements of stones may occur below
the present ground level of these other examples. In
all examples the mounds are flecked with small pieces
of shell.

EXCAVATIONS

Fourteen square metres were excavated as shown on
the ground plan (plate II-23). Originally it had been
hoped to uncover the total area to obtain a complete
ground plan of post holes, but time did not permit the
completion of this proposal.

VSF/1 was excavated in an attempt to define the
western edge of the building at the eastern end of this
square. After passing through a layer of topsoil and shell above a layer of shell flooring, a stratum of red clay was encountered at a depth of eighteen centimetres. The material so far excavated was bagged as spit 1, and the remaining deposit excavated to sterile sand as spit 2. The remaining thirteen square metres were excavated in a similar two-spit system. On the western side the exact delineation of the clay was unclear at the bottom of spit 1, merging into a grey shelly matrix, but with the removal of spit 2, the edge of the clay became more definite.

After the removal of the upper spit of VSF/2, a possible post hole was revealed in the north-east corner. Because of the nature of the shell matrix it was impossible to determine post holes in this and subsequent squares in spit 1, but in the red clay deposit, or when contrasted with the sterile yellow sand these holes became obvious.

After leaving a thirty centimetre baulk, two further squares were excavated to the east to define the eastern edge of the clay, which was located in VSF/4. VSF/5 and VSF/6 were excavated to delineate the northern extreme of the clay, which was found to follow almost exactly the northern face of VSF/1 – VSF/4.

Excavations in VSF/7 revealed two further post holes immediately outside the line of red clay and fifty centimetres apart. Additional post holes were located in VSF/8, VSF/9 and VSF/10 (see plate II-24). In addition, in VSF/8 and VSF/9, and later in VSF/11,
three of the four central stone blocks were uncovered and were found to be sitting on the sterile basal deposit, while the subsequent occupation deposit had built up around them. In VSF/11 a section of the quadrilateral area contained by the stones was excavated, where although the stratigraphy was identical to the other areas uncovered more whole shells were excavated.

In VSF/14, the seventh and final post hole was located exactly at the junction of the southern and eastern limits of the red clay stratum. Immediately outside the line of the clay, resting on the sterile sand, a rough circle of small stones was uncovered.

FINDS

A variety of ceramic, glass and metal objects was recovered throughout the excavations, both within and without the suggested area of the building floor. Cultural material was present in both the shell and clay deposits throughout the excavations, indicating that the red clay was not merely a base on which the shell was deposited. Among the more exotic finds recorded were two three pronged metal forks, a brass reed from a harmonica, and in VSF/9 an iron foot, possibly from some sort of brazier. Beneath the red clay in VSF/10 a stone, similar in shape to the conical pounder of McCarthy's classification, was excavated. This object

is made of granite, a material foreign to the region, and there is no reason to doubt that it is an Aboriginal artefact. Of the glass 13.7% was initially sorted as possibly having been utilized by Aborigines, but almost half of this came from the lower spit.

DISCUSSION

The general correlation of post holes and the red clay distribution suggests that the boundaries of the building have been well defined by excavation. That no post hole was discernible at the north-eastern corner is puzzling, and there appears to be no satisfactory explanation for this gap. That the indications were missed during excavation is possible, but in view of the distinctive appearance of the other post holes, this seems unlikely. The two post holes in the western wall may be interpreted as an entrance.

The burnt layer between the sterile sand and the red clay may be equated with a similar layer in the officers mess, and interpreted to represent the initial clearing of the area by fire (plate II-23, stratigraphy). This interpretation was thus strengthened by the present excavations: immediately following the burning off, the clay floor was laid down, sealing the burnt layer. Beyond the area of the clay the remains of the burning subsequently dispersed. If the burning had taken place any considerable time before the introduction of the clay, the stratigraphy could be expected to be the same outside the area of the clay.

The function of the four stones is uncertain, but they were possibly used as a firm base on which to stand
some object. It is tempting to associate the iron leg excavated adjacent to these stones with this object. A brazier is perhaps the best suggestion\(^1\), and although the excavations within the area of the stones did not recover any evidence of charcoal pieces, the shell here was largely unbroken, suggesting that this area was not walked upon.

The presence of the Aboriginal artefact beneath the red clay and the pieces of utilized glass in the lower spits suggests the possibility that Aborigines were in this area prior to the construction of the building, and it is tempting in this light to associate the circle of stones excavated in VSP/14 with a hearth. However the suggestion is necessarily conjectural.

---

\(^1\) See Chapter 8.
<table>
<thead>
<tr>
<th></th>
<th>Type A No</th>
<th>Type A Wt</th>
<th>Type B No</th>
<th>Type B Wt</th>
<th>Type C No</th>
<th>Type C Wt</th>
<th>Total No</th>
<th>Total Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSFT-1/1</td>
<td>4</td>
<td>86.1</td>
<td>-</td>
<td>-</td>
<td>13</td>
<td>24.4</td>
<td>17</td>
<td>110.5</td>
</tr>
<tr>
<td>1/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>10.6</td>
<td>7</td>
<td>10.6</td>
</tr>
<tr>
<td>2/1</td>
<td>3</td>
<td>42.3</td>
<td>-</td>
<td>-</td>
<td>17</td>
<td>34.2</td>
<td>19</td>
<td>76.5</td>
</tr>
<tr>
<td>2/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3/1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>15</td>
<td>10.9</td>
<td>15</td>
<td>10.9</td>
</tr>
<tr>
<td>3/2</td>
<td>4</td>
<td>4.4</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>20.5</td>
<td>14</td>
<td>24.9</td>
</tr>
<tr>
<td>4/1</td>
<td>2</td>
<td>9.2</td>
<td>-</td>
<td>-</td>
<td>25</td>
<td>48.1</td>
<td>27</td>
<td>57.3</td>
</tr>
<tr>
<td>4/2</td>
<td>3</td>
<td>1.3</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>2.5</td>
<td>5</td>
<td>3.8</td>
</tr>
<tr>
<td>5/1</td>
<td>4</td>
<td>17.2</td>
<td>-</td>
<td>-</td>
<td>12</td>
<td>16.4</td>
<td>16</td>
<td>33.6</td>
</tr>
<tr>
<td>5/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>1.6</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>6/1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>12</td>
<td>43.0</td>
<td>12</td>
<td>43.0</td>
</tr>
<tr>
<td>6/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>6.5</td>
<td>4</td>
<td>6.5</td>
</tr>
<tr>
<td>7/1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>8.5</td>
<td>5</td>
<td>8.5</td>
</tr>
<tr>
<td>7/2</td>
<td>1</td>
<td>0.4</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>9.5</td>
<td>3</td>
<td>9.9</td>
</tr>
<tr>
<td>8/1</td>
<td>1</td>
<td>3.2</td>
<td>-</td>
<td>-</td>
<td>21</td>
<td>24.3</td>
<td>22</td>
<td>27.5</td>
</tr>
<tr>
<td>8/2</td>
<td>1</td>
<td>1.4</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>11.5</td>
<td>9</td>
<td>12.9</td>
</tr>
<tr>
<td>9/1</td>
<td>3</td>
<td>9.9</td>
<td>-</td>
<td>-</td>
<td>40</td>
<td>57.3</td>
<td>43</td>
<td>67.2</td>
</tr>
<tr>
<td>9/2</td>
<td>7</td>
<td>12.5</td>
<td>-</td>
<td>-</td>
<td>20</td>
<td>41.9</td>
<td>27</td>
<td>54.4</td>
</tr>
<tr>
<td>10/1</td>
<td>3</td>
<td>2.0</td>
<td>-</td>
<td>-</td>
<td>27</td>
<td>39.8</td>
<td>30</td>
<td>41.8</td>
</tr>
<tr>
<td>10/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>11.7</td>
<td>2</td>
<td>11.7</td>
</tr>
<tr>
<td>11/1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>8.2</td>
<td>5</td>
<td>8.2</td>
</tr>
<tr>
<td>11/2</td>
<td>7</td>
<td>27.9</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>9.5</td>
<td>14</td>
<td>32.4</td>
</tr>
<tr>
<td>12/1</td>
<td>2</td>
<td>7.9</td>
<td>-</td>
<td>-</td>
<td>15</td>
<td>24.2</td>
<td>18</td>
<td>32.1</td>
</tr>
<tr>
<td>12/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>13/1</td>
<td>6</td>
<td>89.2</td>
<td>2</td>
<td>58.5</td>
<td>13</td>
<td>50.5</td>
<td>21</td>
<td>198.2</td>
</tr>
<tr>
<td>13/2</td>
<td>1</td>
<td>0.3</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>113.8</td>
<td>8</td>
<td>113.8</td>
</tr>
<tr>
<td>14/1</td>
<td>4</td>
<td>10.3</td>
<td>2</td>
<td>52.5</td>
<td>63</td>
<td>58.4</td>
<td>69</td>
<td>121.2</td>
</tr>
<tr>
<td>14/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>1.0</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>57</td>
<td>325.5</td>
<td>4</td>
<td>111.0</td>
<td>355</td>
<td>688.5</td>
<td>416</td>
<td>1125.0</td>
</tr>
<tr>
<td>DATE</td>
<td>TRANSFER PRINTED</td>
<td>IMPREGNATED WHITE GLASS</td>
<td>SALT GLASS STAMPED</td>
<td>PUFF-DOWN</td>
<td>BLUE ON WHITE PORCELAIN</td>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------------------</td>
<td>--------------------------</td>
<td>---------------------</td>
<td>-----------</td>
<td>--------------------------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/14/61</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/2/61</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/7/61</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/5/61</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/12/61</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/20/61</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/12/61</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL: 88
<table>
<thead>
<tr>
<th>Material</th>
<th>1/1</th>
<th>1/2</th>
<th>2/1</th>
<th>2/2</th>
<th>3/1</th>
<th>3/2</th>
<th>4/1</th>
<th>4/2</th>
<th>5/1</th>
<th>5/2</th>
<th>6/1</th>
<th>6/2</th>
<th>7/1</th>
<th>7/2</th>
<th>8/1</th>
<th>8/2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewing Buttons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Fork</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hammers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Stove Foot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Nails</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unidentified Iron</td>
<td>9.7</td>
<td>19.6</td>
<td>39.9</td>
<td>39.7</td>
<td>10.7</td>
<td>35.5</td>
<td>39.7</td>
<td>35.3</td>
<td>50.5</td>
<td>13.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrap Lead</td>
<td>82.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper Nails</td>
<td></td>
<td>0.7</td>
<td>6.1</td>
<td>1.5</td>
<td>2.0</td>
<td>1.8</td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>9/1</th>
<th>9/2</th>
<th>10/1</th>
<th>10/2</th>
<th>11/1</th>
<th>11/2</th>
<th>12/1</th>
<th>12/2</th>
<th>13/1</th>
<th>13/2</th>
<th>14/1</th>
<th>14/2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewing Buttons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Fork</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hammers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Stove Foot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Nails</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unidentified Iron</td>
<td>18.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrap Lead</td>
<td>9.9</td>
<td>21.2</td>
<td>72.7</td>
<td>32.7</td>
<td>3.2</td>
<td>28.0</td>
<td>18.5</td>
<td>25.9</td>
<td>68.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper Nails</td>
<td></td>
<td>3.3</td>
<td>3.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VSFI BONE REGISTER

a) Artefact. One plain four-hole bone button was excavated from VSFI/1/1.

b) Faunal Remains. 55.6 gms of bone were recovered from the excavations. Identifiable animals represented include cow/buffalo, pig, kangaroo, bird, fish and crab.

g) SHELL FLOOR NO 2 (Code prefix VSFII)
Plates II-25,26

During the initial survey a trial trench was dug through a shell floor similar to the one described above. This was located at the northern end of the square approximately six metres west of the quartermaster's store and the shell mound covered an area of approximately five metres by seven metres, orientated roughly east-west along the long axis.

The mound had suffered extensive damage from the regrowth of the vegetation in the area, but an area four metres by one metre was excavated across the mound, and the results obtained were substantially the same as were to be obtained on the more extensive excavations of VSFI.

After passing through the topsoil layer two strata of shell flooring were encountered, the lower one being heavily calcined, and thus indicative of burning (plate II-26). This shell flooring rested on a stratum of red clay which overlaid the basal sand. Along the western edge, three post holes were uncovered which passed through the shelly and clay strata into
the sand. These posts were not as substantial as those later excavated in the other shell floor, having a diameter of about 5 centimetres, but were in a straight line and perhaps indicate the western limit of the building. At the western end of the eastern edge a brick was uncovered in the section and this coincided with the southern extent of the red clay, which marks the southern edge of the building, although at this end it was eroded and irregular in outline.

FINDS

Finds occurred throughout the shell and clay deposits and were plentiful, consisting of pottery, glass and metal. In general, the stratigraphy and finds from this site can be equated with those from the other excavated shell floor.

TABLE II-34

VSPII GLASS REGISTER

<table>
<thead>
<tr>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>85.3</td>
<td>2</td>
<td>13.1</td>
</tr>
</tbody>
</table>
### TABLE II-35

**VSPII POTTERY REGISTER**

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer Printed</td>
<td>16</td>
</tr>
<tr>
<td>Saltglaze Stoneware</td>
<td>13</td>
</tr>
<tr>
<td>Blue on White Porcelain</td>
<td>1</td>
</tr>
<tr>
<td>Pipe Stems</td>
<td>3</td>
</tr>
<tr>
<td>Pipe Bowls</td>
<td>1</td>
</tr>
<tr>
<td>Unglazed Wheelmade</td>
<td>1</td>
</tr>
<tr>
<td>Macassan</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
</tr>
</tbody>
</table>

### TABLE II-36

**VSPII METAL REGISTER**

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniform Buttons</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Plain Buttons</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Uniform Insignia</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Percussion Cap</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Iron Nails</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td>6</td>
<td>14.4</td>
</tr>
<tr>
<td>3-5</td>
<td>32</td>
<td>94.9</td>
</tr>
<tr>
<td>5-8</td>
<td>6</td>
<td>52.3</td>
</tr>
<tr>
<td>(8)</td>
<td>4</td>
<td>109.1</td>
</tr>
<tr>
<td>Unidentified Iron</td>
<td></td>
<td>251.1</td>
</tr>
<tr>
<td>Unidentified Lead</td>
<td></td>
<td>103.0</td>
</tr>
<tr>
<td>Unidentified Copper</td>
<td></td>
<td>13.1</td>
</tr>
</tbody>
</table>
VSFII BONE REGISTER

7 gms of bone fragments were recovered from the excavation, of which only the lower left molar of a large dog was recognisable.

h) OFFICERS' MESS (Code prefix VOM) Plate II-27

ARCHITECTURE

At the south western extreme of the settlement proper, and at the southern end of the town square the remains of a stone-walled building were located and identified as the officers' mess.

The walls, constructed of a double thickness of cemented rough-hewn ironstone blocks, had suffered extensive damage from falling trees, and although the ground plan could be recorded accurately no entrance could be positively identified. Certainly no entrance had existed in either the eastern or western walls and it seems most likely that access had been through a single entrance in the southern wall. From contemporary paintings, the officers' mess had consisted of a two storey building similar in design to the quartermaster's store, and thus probably had been one of the prefabricated buildings shipped from Sydney.

Excavations revealed the use of shell for flooring as in other areas of the settlement. Three post holes were uncovered (see plate II-27) but no structural significance could be attached to them. No indication of the central post supports found in VQS and VSD were located, but since this building was rather smaller
than the two other buildings this structural support was probably not needed. Finally the excavations revealed that the foundations, as with the round chimneys, were not set on wider footings and extended to a depth of approximately 40 centimetres below present ground level.

From McArthurs painting it is possible to demonstrate that this building was constructed in 1839. The quality of the masonry is poor, and is most reminiscent of the chimneys of the married quarters. On this basis there is no reason to suppose that the stone foundations which remain were not built at the same period.

EXCAVATIONS

Six square metres of the floor area were excavated (VOM/1-VOM/6). VOM/1 was begun against the centre of the western wall to investigate the wall foundations. After passing through the top level of black soil and shell deposit, the familiar shell flooring was encountered which continued to a depth of 15 centimetres where a red clay deposit was found. The material so far excavated was designated spit 1, and the red clay was excavated down to sterile sand as spit 2, to determine whether the clay contained cultural material. Cultural material was recovered from this deposit, which eventually gave way to the normal sterile sand. Dividing the clay from the sterile sand, however, was a thin stratum of burnt sand and charcoal (see section plate II-27). A post hole in the south-west corner of the square was found to pass through the red clay.
Because of the shortage of time it was decided to extend the excavations from a square adjacent to VOM/1 towards the south in an area free of major tree disturbance, firstly to uncover the red clay deposit, then to complete the excavations if time allowed. Consequently spits 1 in VOM/2-VOM/5 were excavated. In VOM/4 the edge of a squared block was encountered and a further four blocks were uncovered in VOM/5. Although these presented a level surface, their size and distribution were irregular and it seems that rather than paving, they possibly constituted a firm foundation on which a heavy object was placed. This interpretation is aided by the finding of a considerable number of pieces of iron in the area, unfortunately too fragmentary for identification. The red clay surface was quite level, except for two shallow depressions; a further post hole was uncovered in VOM/4.

As there was insufficient time to excavate the second spit in each of these four squares it was decided to excavate spit 1 in VOM/6. This was excavated in the hope of recovering the missing fragment of the shako plate which had been found in pieces in VOM/2 and VOM/3. This square revealed a third post hole similar in size and shape to the earlier two, the three forming a straight line.

Glass, pottery and metal were recovered throughout the excavations. The most significant find was the insignia from the officer's shako mentioned above. Again, a high proportion of the glass (33.3%) appears to have been possibly utilized by the Aborigines and this is best explained by Aboriginal occupation of the
area subsequent to the abandonment of the settlement by Europeans.

DISCUSSION

These excavations raise a number of questions. The quantity of nails associated with the lower level of VOM/1 does not have any immediate explanation, nor the scarcity of them in the finds from the upper level if the structure was destroyed at the time of European abandonment. The stones in VOM/5 have no satisfactory explanation at present, although further excavation in the southern area of the building might reveal further information. Finally, the three post holes have no apparent structural significance for the building during its European phase. From the stratigraphy it is clear that they were made after the initial stages of European occupation, for they pass through the red clay stratum. It is possible that they were undetected although present in the shell stratum and may relate to a rudimentary structure built inside the walls by Aborigines after 1849. It might be inferred from the high proportion of glass which was possibly utilized by Aborigines and which was recovered from the upper spits inside the house that the area was occupied by these people subsequent to European abandonment.
<table>
<thead>
<tr>
<th>VOM/SURFACE</th>
<th>TYPE A</th>
<th>TYPE B</th>
<th>TYPE C</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOM/1/1</td>
<td>14</td>
<td>45.3</td>
<td>2</td>
<td>54.3</td>
</tr>
<tr>
<td>VOM/1/2</td>
<td>2</td>
<td>6.2</td>
<td>2</td>
<td>11.7</td>
</tr>
<tr>
<td>VOM/2/1</td>
<td>1</td>
<td>1.8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VOM/3/1</td>
<td>9</td>
<td>27.6</td>
<td>9</td>
<td>33.0</td>
</tr>
<tr>
<td>VOM/4/1</td>
<td>1</td>
<td>1.9</td>
<td>7</td>
<td>30.0</td>
</tr>
<tr>
<td>VOM/5/1</td>
<td>15</td>
<td>53.9</td>
<td>16</td>
<td>146.8</td>
</tr>
<tr>
<td>VOM/6/1</td>
<td>3</td>
<td>72.1</td>
<td>10</td>
<td>60.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>45</td>
<td>208.8</td>
<td>8</td>
<td>735.0</td>
</tr>
<tr>
<td>TRANSFER PRINTED</td>
<td>VOM/1/1</td>
<td>VOM/1/2</td>
<td>VOM/2/1</td>
<td>VOM/3/1</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>SALT GLAZE</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>STONEWARE</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PIPE STEMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIPE BOWLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>6</td>
<td>9</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>VOM/1/1 No. Wt</td>
<td>VOM/1/2 No. Wt</td>
<td>VOM/2/1 No. Wt</td>
<td>VOM/3/1 No. Wt</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>BELT BUCKLE</td>
<td></td>
<td></td>
<td>1</td>
<td>19.7</td>
</tr>
<tr>
<td>UNIFORM INSIGNIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRON RING</td>
<td>1</td>
<td>16.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANGLE IRON</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>IRON NAILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td>13</td>
<td>34.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-8</td>
<td>2</td>
<td>15.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED IRON</td>
<td>37.4</td>
<td>19.0</td>
<td>23.9</td>
<td>204.3</td>
</tr>
<tr>
<td>ITEM DESCRIPTION</td>
<td>NO.</td>
<td>WT.</td>
<td>NO.</td>
<td>WT.</td>
</tr>
<tr>
<td>------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>BOLT RODGEE</td>
<td>33</td>
<td>65.0</td>
<td>2</td>
<td>13.5</td>
</tr>
<tr>
<td>UNIFORM RING</td>
<td>2</td>
<td>13.5</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>ANGLE IRON</td>
<td>3</td>
<td>12.0</td>
<td>2</td>
<td>12.0</td>
</tr>
<tr>
<td>IRON NAILS</td>
<td>3</td>
<td>12.0</td>
<td>2</td>
<td>12.0</td>
</tr>
<tr>
<td>IRON STUDS</td>
<td>3</td>
<td>12.0</td>
<td>2</td>
<td>12.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>37.4</td>
<td>19.0</td>
<td>204.3</td>
<td>240.1</td>
</tr>
</tbody>
</table>
1) **STORE D** (Code prefix VSD) Plates II-28, 29, 30, 31, 32, 33, 34.

During the initial survey the site of a large building was noted to the north of the line of cottages which served as the married quarters. This was positively identified from the contemporary map (plate I-4) as a storehouse marked "D", and this designation was retained. A stone wall built into a bank on the western side marked one extremity. At the northeastern corner, the stone foundation of a wall was visible at ground-level and this marked the opposite extremity. The rubble of the building, consisting mainly of bricks, was visible in between these markers. No architectural feature, except the wall at the western end stood above ground. This wall, made of cemented, rough-hewn ironstone, was divided at the centre by a gap of 1.2 metres, flanked on either side by stone buttresses standing 52 centimetres out from the wall. It was assumed that steps had led down between these buttresses to the lower level, although the drainage problems that this would have created during the wet season, as the ground slopes upwards on the western side, were immediately apparent. The tops of these buttresses had been carved to receive some form of wooden post, in the shape of a letter "F". With the eastern extreme of the building already visible, it was decided to excavate at the western end to determine the relationship of the standing wall with the building, and to try and fix the position of the wall line on the southern side. An open cut drain on the eastern side led to the top of the cliff.
EXCAVATIONS

An area 1 x 2 metres (VSD/1) was begun on the southern side, two metres east of the standing wall. Many bricks covered the area and the spit was taken down to a depth of 22 centimetres. At the eastern end, the foundation wall of the southern side was located at a depth of 10 centimetres. The finds, mainly nails and glass, were plentiful. VSD/1 was then continued towards the north with the excavation of two further areas of similar dimensions (VSD/2, VSD/3). These were excavated in two spits, the first to an average depth of 20 centimetres, the second to the basal red clay. This second spit varied in depth between 12-15 centimetres, except where the foundation trench had been dug. Here the depth was greater. In both these squares, after passing through the black topsoil and bricks, a layer of bricks and rubble was encountered which gave way to compact and thin (2-3 cms) layers of shell and sand which constituted the flooring. Beneath this, sterile red clay was encountered which proved to be the natural base (see section, plate II-29A). In both VSD/2 and VSD/3 the great majority of finds was associated with the shell floor, i.e. spit 2.

Both VSD/2 and VSD/3 on the western side followed along what appeared to be the internal face of the western wall of the building. In addition, what appeared to be the side of a small cairn of cemented ironstone boulders was uncovered on the eastern side. At the eastern end of the building, where the depth of deposit was less, squared stone post-supports were
visible at surface level. As this cairn was in a direct line along the axis of the building, it was decided to excavate along this axis to examine the centre of the building, to uncover fully the cairn in VSD/3, and to excavate the area between the western wall uncovered in VSD/3 and the "steps". Consequently VSD/4, measuring 2 metres square was excavated, again in two spits. Fewer bricks were encountered, the topsoil deposit quickly yielding to the familiar shell flooring; spit 1 was taken to a depth of 20 centimetres. The deposit proved shallower than at the western end and the red basal clay was encountered when spit 2 was only 8 centimetres deep. Both VSD/4/1 and VSD/4/2 should be associated stratigraphically with VSD/2/2 and VSD/3/2. There appeared to be no purpose in excavating in smaller units in this area, so that VSD/5 and VSD/8 were taken out as single units. VSD/6 and VSD/7 were also taken out as single units.

VSD/4 and VSD/5 both yielded quantities of glass and iron, including several bottle seals (one G.R, the other W.R) and two cannon balls, probably half-pounders.

The excavation of VSD/6 uncovered the outer, stone edge of the foundations which gave no hint of a doorway, which in turn cast doubt on the idea of "steps" leading between the buttresses described above. One of my assistants excavating in this square had managed to "create" steps which proved a timely warning about excavating with preconceived ideas. Eventually the true interpretation was reached when excavation showed that the wall had been built between these two buttresses.
The buttresses formed the foundation for wooden steps leading to the upper storey. Finds from the square were predominantly nails which were recovered in considerable numbers. VSD/7 was excavated to reveal the corner of the foundations and taken to the basal clay. At this point VSD/1/2 was also excavated to the basal clay.

In the course of moving the spoil an entrance in the western wall had been revealed immediately below the surface. A trench 1 x 1.5 metres (VSD/9) was excavated to examine this entrance and spit 1 was taken to a depth of 20 centimetres, at which point the charred remains of a wooden beam, presumed to be a doorstep was encountered. Outside the building line rubble in a firm grey matrix was uncovered, while inside, the deposit was solid rubble of bricks and mortar, changing at the bottom to a grey level with pieces of shell. A second spit (VSD/9/2) was taken down to a maximum depth of 14 centimetres at the southern end. In this spit the excavation passed through occupation layers of shell similar to those described above; outside the building the rubble layer continued until at a depth of 10 centimetres below the level of the charred beam a packed layer of gravel and mortar was encountered representing a rudimentary pathway. Below this the deposit gave way to the familiar red clay.

VSD/10 was excavated to join VSD/9 and VSD/4 in the hope of explaining a discontinuity in the northern face of VSD/4. Spit 1 was taken down to remove the top layer of soil and debris, which in this area was
not as thick as in VSD/9. Spit 2 passed through several layers of shell and then gave way to the yellow beach sand which had been seen to stop abruptly in VSD/4. For purposes of comparison, this sand was removed down to the sterile layer as a separate spit (VSD/10/3). The disconformity proved to be the charred remains of a beam which projected through the eastern wall of VSD/10/3. Cultural material was recovered from all three spits. Spit depths for VSD/10 were VSD/10/1, 20 cms; VSD/10/2, 1½ cms; and VSD/10/3, 8 cms.

DISCUSSION

Certain general observations can be made on the excavations of Store D. As with the hospital, the ground had been levelled prior to building and the wall at the western end had been constructed to contain the soil which otherwise would have been washed around the building during each wet season. (This same action had been noted behind the excavated area for the hospital, where no effort was made to stabilize the bank there.) Into this levelled surface the foundation trenches were dug and the foundations of cemented rocks laid, being wider than the walls built on top of them (see section, plate II-29A). As the walls exist at present they comprise an outer facing of dressed masonry, varying in length, but all standing approximately 23 centimetres high and approximately 12 centimetres thick. With the possible exception of some of the work on the hospital kitchen, the standard of this stonework is the highest in the settlement.
Readings taken at seven random points around the foundations showed that the height of this stone varied less than 0.5 centimetres around the entire perimeter of the building. Inside this stone facing, a double row of bricks had been constructed to a height of three courses on the footings, bringing it level with the top of the stone facing.

What happened after this is less clear, for none of the walls stand above this point. That this is so may safely be interpreted as the result of deliberate destruction at the time of abandonment. However, traces of a whitewash line around the outer edge of the top of the stone facing (see plate II-34) were recorded, which suggests that the wall above this level was set back this distance from the edge of the facing. Also imprints in what mortar remained on the top of this foundation gave a clue as to how this wall was constructed, namely with the outer facing of bricks being set lengthways along the building line, and the internal facing being set at right angles to the outer facing, that is, across the building line. This hypothesis receives some corroboration from the fact that the length plus the breadth of a brick, plus the whitewashed margin almost exactly coincides with the width of the existing foundation.

From the hundreds of bricks recovered from the excavations at VSD, it is safe to say that the entire lower storey was constructed of this material, with a square buttress at each corner. The only entrance to this lower storey was a door in the northern wall. An upper storey of timber was reached by an external
stairway at the western end. If any internal stairway existed, no traces of it were located in the areas excavated.

In general, the finds reflect the nature of the building's use. Only twenty pieces of pottery were recovered, and the majority of these came from outside the building, nine pieces coming from VSD/1, three pieces from the external area of VSD/9, and one piece each in VSD/6 and VSD/7. Nails were recovered from all areas, however all the cannon balls came from the internal excavations. Glass was recovered both within and outside the confines of the building, with the heaviest concentration appearing in VSD/1. Much of the glass was vitrified, reflecting the destruction of the building by fire.

From the historical sources (more fully outlined in chapter 8) this building was originally constructed on piles and served as the first hospital in the settlement. It can reasonably be identified as the white building immediately to the left of the tent in the centre of plate I-5 (dated 1839). The second phase of the building has been dated (on the historical evidence) to 1840-41 when it was rebuilt on the same site, and the burnt timber beam excavated in VSD/10/3 may represent the meagre testimony of the earlier building, as it is difficult to associate this stratigraphically with the final destruction of the building in 1849. This deliberate destruction took the form of burning the wooden structure and destroying the brick walls of the lower storey, since none of the brick walls stand above foundation level. During its second
phase the building was used as a store for dry goods.

One hundred bricks taken from the excavations were measured and none show more than fractional variance from a standard size: length 24.4 cms, breadth 12.1 cms, depth 7.2 cms.

Only 2.3% of the glass could be classified as possibly utilized by Aborigines, and this tends to verify the classifications of the glass that were employed, since the high proportions of type A glass in other instances come from concentrations of deposit located outside buildings. Of the nineteen pieces of glass in type A from this site-unit, only four came from within the building, and stratigraphically can be regarded as having been deposited after European abandonment.
<table>
<thead>
<tr>
<th></th>
<th>TYPE A</th>
<th>TYPE B</th>
<th>TYPE C</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Wt</td>
<td>No</td>
<td>Wt</td>
</tr>
<tr>
<td>VSD/1/1</td>
<td>4</td>
<td>123.8</td>
<td>101</td>
<td>158.1</td>
</tr>
<tr>
<td>VSD/1/2</td>
<td>2</td>
<td>14.4</td>
<td>94</td>
<td>185.8</td>
</tr>
<tr>
<td>VSD/2/1</td>
<td>1</td>
<td>1.1</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>VSD/2/2</td>
<td>24</td>
<td>59.3</td>
<td>24</td>
<td>59.3</td>
</tr>
<tr>
<td>VSD/3/1</td>
<td>3</td>
<td>34.9</td>
<td>3</td>
<td>34.9</td>
</tr>
<tr>
<td>VSD/3/2</td>
<td>17</td>
<td>65.6</td>
<td>17</td>
<td>65.6</td>
</tr>
<tr>
<td>VSD/4/1</td>
<td>1</td>
<td>1.5</td>
<td>3</td>
<td>28.7</td>
</tr>
<tr>
<td>VSD/4/2</td>
<td>10.1</td>
<td>1</td>
<td>10.0</td>
<td>165</td>
</tr>
<tr>
<td>VSD/5/1</td>
<td>2</td>
<td>8.5</td>
<td>14</td>
<td>151.9</td>
</tr>
<tr>
<td>VSD/6/1</td>
<td>4</td>
<td>71.4</td>
<td>5</td>
<td>80.5</td>
</tr>
<tr>
<td>VSD/7/1</td>
<td>1</td>
<td>9.9</td>
<td>25</td>
<td>54.0</td>
</tr>
<tr>
<td>VSD/8/1</td>
<td>1</td>
<td>5.9</td>
<td>46</td>
<td>121.5</td>
</tr>
<tr>
<td>VSD/9/1</td>
<td>3</td>
<td>12.9</td>
<td>45</td>
<td>116.5</td>
</tr>
<tr>
<td>VSD/9/2</td>
<td>2</td>
<td>31.6</td>
<td>31</td>
<td>105.2</td>
</tr>
<tr>
<td>VSD/10/1</td>
<td>1</td>
<td>86.8</td>
<td>26</td>
<td>36.5</td>
</tr>
<tr>
<td>VSD/10/2</td>
<td>1</td>
<td>1.5</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19</td>
<td>273.6</td>
<td>11</td>
<td>419.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>817</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## TABLE II-50

<table>
<thead>
<tr>
<th>VSD Glass Register</th>
<th>TYPE A No</th>
<th>TYPE B No</th>
<th>TYPE C No</th>
<th>TOTAL No</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSD/1/1</td>
<td>4</td>
<td>101</td>
<td>105</td>
<td>281.9</td>
</tr>
<tr>
<td>VSD/1/2</td>
<td>2</td>
<td>94</td>
<td>96</td>
<td>200.2</td>
</tr>
<tr>
<td>VSD/2/1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4.1</td>
</tr>
<tr>
<td>VSD/2/2</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>53.3</td>
</tr>
<tr>
<td>VSD/3/1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>34.9</td>
</tr>
<tr>
<td>VSD/3/2</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>62.6</td>
</tr>
<tr>
<td>VSD/4/1</td>
<td>1</td>
<td>126</td>
<td>130</td>
<td>418.3</td>
</tr>
<tr>
<td>VSD/4/2</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>82.8</td>
</tr>
<tr>
<td>VSD/5/1</td>
<td>10.1</td>
<td>194.5</td>
<td>167</td>
<td>478.6</td>
</tr>
<tr>
<td>VSD/6/1</td>
<td>2.0</td>
<td>26</td>
<td>16</td>
<td>162.4</td>
</tr>
<tr>
<td>VSD/7/1</td>
<td>4</td>
<td>65</td>
<td>60</td>
<td>375.9</td>
</tr>
<tr>
<td>VSD/8/1</td>
<td>1</td>
<td>45</td>
<td>49</td>
<td>234.8</td>
</tr>
<tr>
<td>VSD/9/1</td>
<td>5.9</td>
<td>107.4</td>
<td>48</td>
<td>139.4</td>
</tr>
<tr>
<td>VSD/9/2</td>
<td>3</td>
<td>45</td>
<td>48</td>
<td>139.4</td>
</tr>
<tr>
<td>VSD/10/1</td>
<td>2</td>
<td>31.6</td>
<td>34</td>
<td>180.9</td>
</tr>
<tr>
<td>VSD/10/2</td>
<td>1</td>
<td>26</td>
<td>27</td>
<td>123.3</td>
</tr>
<tr>
<td>VSD/10/3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>19</strong></td>
<td><strong>419.4</strong></td>
<td><strong>817</strong></td>
<td><strong>2891.8</strong></td>
</tr>
<tr>
<td></td>
<td>VSD/1/2</td>
<td>VSD/2/2</td>
<td>VSD/3/2</td>
<td>VSD/6/1</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>TRANSFER PRINTED</td>
<td></td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEATHEREDGE (BLUE)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SALTGLAZE STONE WARE</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIPE STEM</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE ON WHITE PORCELAIN</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RIM GLAZED STONEWARE</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
j) **BAKE-HOUSE** (Code Prefix VB) Plates II-35,36,37,38

Within the area of the town square were the remains of what appeared to be a collapsed stone cottage overgrown with vegetation. The loose debris was carefully removed and the remains of a baking oven were revealed. Apparently the western wall had collapsed outwards and the roof had fallen in, however a sufficient amount of the structure remained to interpret the technology of the building. It had been poorly constructed in cemented, rough-hewn masonry with walls 40 centimetres thick, and with whitewashed exterior. At the southeastern and south-western corners vertical timber posts had been emplaced.

The interior had been completely filled with clay and rubble to a height of 90 centimetres, then a platform of squared stone blocks was laid down, and the oven constructed within the area of the walls above this. Its sides were of squared stone blocks and the arched barrel-vaulted roof was brick. Above and around the oven smaller rubble was cemented to form a pitched
roof. On the eastern side a section of the roof remains and imprints in the cement suggest that tiles (probably wooden, since no ceramic tiles were recovered) were affixed as additional protection against the rain (plate II-38).

The design of the oven was particularly simple and is a technique which is still employed in some peasant communities. A fire is made inside the oven which heats the entire structure. When sufficiently hot, the fire is raked out, the bread placed inside and the entrance blocked until the baking is completed.

In clearing the building apart from some glass and pottery fragments, various finds were made, some of which substantiate this interpretation. In front of the entrance a hard clay "floor" had been formed, associated with deposits of charcoal. A large sheet of copper, whose shape approximated the shape of the opening in the southern wall, was found nearby. To judge from the nailholes in this sheet and the manner in which the edges were curled over, this sheeting was probably used to fireproof a wooden oven door.

**TABLE II-44**

<table>
<thead>
<tr>
<th>VB GLASS REGISTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE A</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>
TABLE II-45

VB POTTERY REGISTER

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSFER PRINTED</td>
<td>2</td>
</tr>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>16</td>
</tr>
<tr>
<td>SALT GLAZE</td>
<td>1</td>
</tr>
<tr>
<td>STONEWARE</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

TABLE II-46

VB METAL REGISTER

<table>
<thead>
<tr>
<th>Item</th>
<th>No.</th>
<th>Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRON BELT BUCKLE</td>
<td>1</td>
<td>13.0</td>
</tr>
<tr>
<td>IRON NAILS 5-8</td>
<td>5</td>
<td>42.8</td>
</tr>
<tr>
<td>COPPER SHEET</td>
<td>1</td>
<td>1047.0</td>
</tr>
</tbody>
</table>

k) THE SMITHY (Code prefix VS) Plates II-39, 40, 41.

Immediately to the south of the road leading to the jetty, and approximately twenty metres from the cliff top, the stone remains of the smithy were located. A visitor to the site in 1957 had photographed this structure with the square stone chimney standing to a
height of about six metres\(^1\) but by 1966 this had been
demolished by a falling tree. Fortunately, when the
rubble was removed sufficient remained of the structure
to infer the probable technology of the forge (see
plates II-39,40).

The forge was constructed of dressed masonry,
bricks for the chimney, and rubble. Most of the
masonry blocks had been hewn from the quarries in the
settlement, but the structure incorporated a yellow
friable sandstone whose nearest known source is at the
mouth of Port Essington, about seventeen miles away.
A ships' beacon had been built at the mouth of the
harbour with this material in 1845 (see below), and
since it is known that the forge was not completed
until some time in 1846\(^2\), it is possible that stone,
cut for the beacon, but not used, was taken back to
the settlement and eventually incorporated into the
forge. It is the only instance of non-local stone
being used in the settlement.

**EXCAVATIONS**

A single metre trench (VS/1) was excavated
abutting the western end of the northern side to
examine the foundations. The first spit (VS/1/1) was
taken to a depth of eight centimetres. Below the

---

1 I am grateful to Mr W. Bateman of the Forestry
Department for a photograph of this structure still
standing.

2 *McArthur to*, 16 October, 1847, *H.R.A.*, I,
xxvi, p.374.
black topsoil was a reddish pebbly matrix, which gave way to a stratum of red ironstone rock fragments. Quantities of metal were taken from this spit. The second spit examined the possibility that this rock stratum represented a "floor". The "floor" proved to be 10–12 centimetres thick and consisted of small hard packed, angular pieces of rubble. On the northern side of this spit, the excavation passed into yellow sand and quantities of flat-topped iron nails began appearing in the sieves. The remainder of the spit was excavated without passing into the interface between the rubble and the sand and confirmed the impression that the rubble was completely sterile.

VS/1/3 carried the excavation into the yellow sand to a depth of 28 centimetres, and quantities of nails were recovered. The final spit VS/1/4 was taken into sterile sand to a depth of 52 centimetres, where the bottom of the foundations was reached. Nails were present again in the upper part of this spit, and two were found beneath a lump of cement adhering to the side of the foundations and protruding 15 centimetres from it.

**DISCUSSION**

Although the excavation was over too small an area to produce conclusive evidence, the stratigraphy clearly separates into two periods of European occupation, divided by the sterile rubble stratum. Whether this rubble does represent a floor would require substantiation by further excavation. A satisfactory alternate explanation is that the rubble represents the
initial construction of the forge in 1846. If this is so, the earlier material must indicate an earlier structure and as blacksmith facilities must have been required in the settlement before this time, they also may have been at this spot. Possibly, a ship's forge sited here served these early needs.

The remains of the forge, indicate some idea of the technology involved. Referring to the simplified ground plan (plate II-39), A represents the stokehole, through which the fire was fed, B is the ash box over which a metal grille was probably placed, fitting into the slot visible in plate II-40. The sloped stones, C, contained the fire, and the smith worked from the northern side at the point of the sloped stone, D. E represents a channel, which however might have been fortuitously created in the destruction of the structure. Even if it was enclosed, this channel appears too wide for bellows to have been operated along it from the south. However, along the eastern edge of this channel the absence of mortar suggests a narrower channel which may have been used as a passage for air pumped into the base of the fire.

No general reconstruction of this building is possible on the present evidence, although the stone post support outside the structure (plate II-41) suggests that the stoker was protected from the sun by some form of verandah.
### TABLE II-47

**VS GLASS REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>TYPE C</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS/SURFACE</td>
<td>5 24.4</td>
</tr>
<tr>
<td>VS/1/1</td>
<td>32 94.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>37 128.9</td>
</tr>
</tbody>
</table>

### TABLE II-48

**VS POTTERY REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>SURFACE</th>
<th>1/1</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALT GLAZE PIPE STEM</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
1) **COWRIE HOUSE** (Code prefix VCH) Plates II-42,43

North of the quartermaster's store, and south-west of the hospital complex the rubble remains of a wall were noted. In the process of clearing this single wall for recording, a curious structure was revealed. The standing southern wall of a building, roughly square in plan was cleared of surrounding rubble. On its western side the wall continued for almost one metre, and an internal buttress in the centre of the wall formed a recess in the south-western corner which initially was thought to be a fireplace. Adjoining this buttress an additional wall had been constructed, which appeared to form a narrow entrance way.

The western section, which formed a possible fireplace, was constructed of small rough-hewn ironstone boulders bonded with clay and mud, while the eastern or "entrance" section was an incongruous mixture of well-formed masonry blocks and rough-hewn boulders. When the floor level was reached, it was found that the floor also consisted of these masonry blocks. When the thin layer of topsoil was removed it was found that the entire floor area, was a stone pavement.

During these clearing operations, quantities of glass and some pottery were recovered, and many pieces of hoop iron were found in the entrance area. Some objects were also found outside the building. These finds were kept separate and the three areas were designated as follows:
VCH/1: the south-eastern corner
VCH/2: the area outside the building
VCH/3: the south-western corner

No finds were made in the remaining floor area.

As the floor area was reached in the south-western recess, large numbers of cowrie shells were uncovered. They were located in two piles, one in each corner of the recess. In all, 142 cowries were recovered from this area, and a further six were found in VCH/2. Since this structure does not appear on the McArthur map, the building was called the cowrie house.

DISCUSSION

This structure presents a number of problems. Although on the perimeter, the building is within the confines of the settlement, yet it was not recorded by McArthur. In style it differs from the other buildings in the settlement, particularly in the use of a paved stone floor which was unique. The masonry blocks almost certainly came from elsewhere in the settlement, and their re-use in conjunction with roughly-shaped boulders differs from the rest of the settlement, as does the use of mud cement for bonding the stones.

There appears some doubt also as to the initial interpretations of "fireplace" and "entrance". The south-western recess contained neither hearth stones nor evidence of fires. The shells there were found in piles apparently as they had been left. The majority of the glass and pottery also came from this area. Two squared stones blocked the entrance in the
south-eastern corner, and although it was thought at first that these might have fallen from above, it seems more likely that they were in situ. The quantities of hoop iron from this area have no explanation unless they may have been used to form some sort of brazier.

The finds also are unhelpful. Most of the pottery with the exception of the sherds of a glazed, wheelmade pot, would not be out of place elsewhere in the settlement. The coin, a "supika", is similar to two others excavated in the settlement, and the identifiable glass is similar to the numerous examples excavated elsewhere. But most puzzling are the cowrie shells. Their very number precludes the possibility of their use as house decorations. Even though the six varieties present could all have been collected in Port Essington (and probably were) they appear to have some form of commercial significance rather than to be the product of idle collection. Although shell money was used extensively in Melanesia it was predominantly of a different form to the use of cowries as monetary exchange¹. However Paul Einzig reports the use of cowries as money in New Guinea and New Caledonia, as well as Indo-China, China, India and Africa². However, there is no record of cowrie shells having particular

value amongst the Australian Aborigines. Cowries were not found in the excavations of the Aboriginal middens associated with the settlement, nor were any of the present collection broken, so that their use as a food source can be discounted.

Two species C. annulus and C. moneta are the ones popularly accepted as having currency value and these species comprise 37.8% of the present collection.

From the archaeological evidence, the earliest this building could have been constructed is towards the end of the European settlement at Victoria, when some of the masonry blocks could have been obtained for its construction. The evidence of the finds, although inconclusive, suggests that the occupancy of this building might be equated with the settlement. If the house was built after the European abandonment, it might be asked why it was built at all. Within the settlement the site has no particular advantages, and even today the addition of doors and a roof would convert the hospital kitchen into a functional two-roomed house. The available evidence suggests that the cowrie house should be dated to the period of European occupation. However the differences in architectural techniques and the presence of the cowries set it somewhat apart. One explanation is possible. It is known that while the settlement was in existence a European trepanger named Rae (or Ray) had a camp about four miles from the settlement in Knocker Bay.

---

1 Sweatman, op. cit., p. 273.
and it may be presumed that some intercourse took place between him and the settlement. Rae had previously worked for Captain Mackenzie of the Heroine, who traded around Australia and the Indian Archipelago, and on one occasion Rae, accompanied by thirteen Malays, is recorded having been landed by Mackenzie at Turtle Island in order to collect trepang.

Since ships arriving in Port Essington anchored at Victoria, Rae may well have had some sort of residence or store room at the settlement, for storing his trepang, turtle shell, and perhaps cowries to be used for trading elsewhere.

**TABLE II-50**

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>Wt.</th>
<th>Type</th>
<th>No.</th>
<th>Wt.</th>
<th>Type</th>
<th>No.</th>
<th>Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCH/1</td>
<td>9</td>
<td>100.9</td>
<td>VCH/2</td>
<td>2</td>
<td>332.3</td>
<td>VCH/3</td>
<td>69</td>
<td>338.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>771.5</td>
<td></td>
<td>12</td>
<td>41.4</td>
<td>TOTAL</td>
<td>12</td>
<td>41.4</td>
</tr>
</tbody>
</table>

TABLE II-51
VCH POTTERY REGISTER

<table>
<thead>
<tr>
<th></th>
<th>VCH/1</th>
<th>VCH/2</th>
<th>VCH/3</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSFER PRINTED</td>
<td>6</td>
<td></td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>8</td>
<td>1</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>UNGLAZED WHEELMADE</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PIPE STEMS</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>POLYCHROME PORCELAIN</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>RIM GLAZED STONEWARE</td>
<td>4</td>
<td>2</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>UNIDENTIFIED</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>25</td>
<td>2</td>
<td>1</td>
<td>28</td>
</tr>
</tbody>
</table>

TABLE II-52
VCH METAL REGISTER

<table>
<thead>
<tr>
<th></th>
<th>VCH/1</th>
<th>VCH/2</th>
<th>VCH/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>COIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRON NAILS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td>2</td>
<td>11.1</td>
<td>1</td>
</tr>
<tr>
<td>5-8</td>
<td>1</td>
<td>17.4</td>
<td>1</td>
</tr>
<tr>
<td>)8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED IRON</td>
<td>193.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPPER NAILS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td>1</td>
<td>5.4</td>
<td>1</td>
</tr>
</tbody>
</table>
### TABLE II-53

**VCH SHELL REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>VCH/1</th>
<th>VCH/2</th>
<th>VCH/3</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYPRAEA LYNX</td>
<td></td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>CYPRAEA ANNULUS</td>
<td></td>
<td>11</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>CYPRAEA MONETA</td>
<td></td>
<td>45</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>CYPRAEA ARABICA</td>
<td>4</td>
<td>46</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>CYPRAEA ERRONES</td>
<td></td>
<td>19</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>CYPRAEA EGLANTINA</td>
<td></td>
<td>8</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>UNIDENTIFIED</td>
<td></td>
<td>4</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>6</td>
<td>142</td>
<td></td>
<td>148</td>
</tr>
</tbody>
</table>

### m) ABORIGINAL MIDDEN No. 1 (Code prefix VAM)

Plate II-44

During the initial survey, a number of low open shell middens were noticed along the foreshores of Port Essington. Two were recorded in close proximity to Victoria, one above the cliff line on the western side of Minto Head, the second behind the beach to the south of the settlement. Glass was noticed on the surface of both. At its highest point the midden on Minto Head appeared to have a possible depth of sixty centimetres and during the survey a trial trench was excavated on the eastern side of the tree which was growing in the centre of the curved midden (see plate II-44).
EXCAVATIONS

The trial trench measuring 2 x 1 metres was excavated in two spits, the first to an average depth of 5 centimetres, the second to sterile sand which was reached at a depth of 15 centimetres. Glass was recovered in both spits although the majority came from the upper spit. This area was designated VAM/1.

During the first full season VAM/2 and VAM/3 were begun in the centre of the midden and taken down in 5 centimetre spits in order to increase the sample of stratified glass. In VAM/2 glass was found in the first three spits, the greatest quantity being recovered in spit 1. At the same time similar results were obtained in VAM/3, where, however, the glass did not extend beyond the second spit. By spit 4 in both squares the excavation had passed into compacted shell which was devoid of implements. Since neither square had produced glass in the quantity located in the trial trench, VAM/2 was abandoned, VAM/3 was quickly excavated in 15 centimetre spits until sterile sand was reached, and the excavation was concentrated in the area of the trial trench, VAM/1. Here two further squares (VAM/4 and VAM/5) were excavated immediately to the east of VAM/1 and separated from it by a 30 centimetre baulk. Finds of glass were again plentiful, being concentrated in the top 10 centimetres of the deposit. VAM/6 was dug to the north of VAM/4 to increase the sample, and this square proved equally rich in glass. The total depth of midden in this area was 15 centimetres. Following these excavations a surface collection was made to increase the sample.

As a result of examination of the material in the
laboratory and an age determination by radiocarbon analysis for the earliest occupation of the site, an interpretation of a change in function of the midden was postulated (see discussion below) which led in the 1967 season to a further small excavation being made in an area just off the midden. An area 2 x 1 metres was cleared of its grass cover and excavated. The area, completely devoid of shell, yielded 86 flakes of glass in the top few centimetres of the deposit.

FINDS

Apart from the glass very few finds were made. On the surface, five pieces of pottery, and a piece of copper sheeting were recovered, and a piece of iron was excavated in VAM/5/1. Three pieces of stone were recovered, one on the surface, one in VAM/5/1 and the third, a fragment of slate, was found in spit 2 of the shell sample which was collected. The other pieces of stone were of a creamy quartzite, a stone foreign to the area, but plentiful in White's plateau excavations in the Gempelli area, seventy miles to the south. The piece found on the surface showed some evidence of retouch. The only other cultural material recovered was ochre, both red and yellow, which occurred throughout the deposit, and some of which bore rubbing scratches. Traces of ochre were noticed in one half of a bivalve shell which may have been used as a palette, which was also paralleled in White's excavations¹. Because of the chalky, friable nature

of much of the shell, the positive identification of shell artefacts by the method used by White (presence of use polish) was impossible. However several halves of bivalves were noticed with smooth semi-circular indentations in their edges which may have been caused by their use as scraping tools. One shell was recovered with a hole bored through its centre and Dr D.F. McMichael suggests that this was probably man-made. In the absence of suitable stone in the area, it is reasonable to suppose that shell was used as an effective substitute.

Of the 540 pieces of glass recovered from the excavations and surface collection, 362 pieces (67.0%) were initially sorted as possibly having been utilized by Aborigines. Only one piece could be placed in category B (i.e. pieces recognizable by form, such as bases or necks), although a number of utilized base fragments had been sorted into the former category. The implication of these results is that selected pieces were being carried onto the midden from elsewhere.

**SHELL SAMPLE**

A column sample measuring 30 centimetres by 30 centimetres was taken from the southern corner of the east wall of VAN/3 in 5 centimetre spits, screened

---

1 Then Curator of Molluscs, Australian Museum, Sydney. I am grateful to Dr McMichael for the majority of shell identifications.
through 16 inch mesh sieves to reduce the bulk, bagged brought to the laboratory where each spit was passed through a set of square mesh sieves. Five sieves were used, having the following mesh measurements; 1.5 in., 1.0 in., 0.750 in., 0.500 in., 0.375 in. Initially four categories were established, A being the material retained in the largest sieve, B the material retained in the next two sieves, and C and D being the material retained in the fourth and fifth sieves. A preliminary indication suggested that categories A and B might be combined as category A+B.

The column sample consisted almost entirely of shell, but in addition pieces of charcoal and coral were recovered in all levels, glass was recovered in the top 3 spits and ochre was present in spits 4 and 10. No bone, and a single flake of stone (in spit 2) was recovered. A fragment of crab claw in spit 7 was the only indication of food remains apart from the shell. The density of shell is high throughout the midden. A comparison with the most dense sample taken by White (Malangangerr, column sample 1)\(^1\) gives a total volume weight of shell from the present site 4.3 times as great as that at Malangangerr, although the samples were exactly equal in size. The density of shell at the Minto Head site is as follows:

\(^{1}\) White, op. cit., p.146.
The immediate problem concerned with the examination of the shells in this sample was to investigate the varieties of shellfish which were exploited, and to determine any change in species exploitation through time. Twenty different species were isolated in the collection, all of which may be collected in the immediate environment today. The shells represent two principal types, those collected from the shallow sandy-mudflat bay to the west of Minto Head and the rock-coral reef types which are available on the shoreline of Minto Head itself. The following table illustrates that the former group constitutes the majority of the shell-types.

<table>
<thead>
<tr>
<th>Spit Weight (gms)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2071.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1904.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1650.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2976.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3117.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2286.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3015.7</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>TOTAL</td>
</tr>
<tr>
<td>3047.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2819.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>987.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>153.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24028.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spit Sandy-Mudflat Types (%)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>95.1</td>
<td>77.6</td>
<td>87.0</td>
<td>90.8</td>
<td>97.8</td>
<td>94.1</td>
<td>90.6</td>
<td></td>
</tr>
<tr>
<td>95.4</td>
<td>92.5</td>
<td>85.8</td>
<td>89.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The composition of shell types in each spit was calculated in terms of grams weight of each species represented. Here it must be remembered that *Anadara maculosa*, which represents the largest proportion of each spit, is also a much heavier shell than the other species. The average weight of whole shells was calculated for this species and for *Tapes watlingi* and *Septifer bilocularis* (the other two most common species represented) and found to be 17.7 gms., 4.3 gms., and 2.2 gms. respectively, so that, for example, in spit 7, *Tapes watlingi* is more prevalent than *Anadara maculosa*, despite the weight content being less than half. Both shells are roughly the same size, so that the food content of each would be roughly equal.

After category A (+B) had been analysed, two spits of the C category were sorted and although some differential breakage was apparent this was not significant for the present project, so that categories C and D were merely weighed, and the analysis rested on the A (+B) category. The results were as follows:

**Shell Species Represented in Column Sample**

<table>
<thead>
<tr>
<th>Family</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arcidae</td>
<td>(a) <em>Anadara maculosa</em> Reeve</td>
</tr>
<tr>
<td></td>
<td>(b) <em>Anadara (Jegilarca) granosa</em> Linné</td>
</tr>
<tr>
<td></td>
<td>(c) <em>Imparilarca hubbardi</em></td>
</tr>
<tr>
<td></td>
<td>(d) <em>Barbatia sp?</em> (possibly <em>ustularca renuta</em>)</td>
</tr>
<tr>
<td></td>
<td>(e) <em>Trisidos youngei</em></td>
</tr>
<tr>
<td>Veneridae</td>
<td>(f) <em>Tapes watlingi</em> Iredale</td>
</tr>
<tr>
<td>Mytilidae</td>
<td>(g) <em>Septifer bilocularis</em> Linné</td>
</tr>
<tr>
<td>Ostreidae</td>
<td>(h) <em>Cassostrea commercialis</em> Iredale and Roughley</td>
</tr>
<tr>
<td>Family</td>
<td>Species</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Caridae</td>
<td>(i) <em>Asaphis deflorata</em> Linné</td>
</tr>
<tr>
<td>Muricidae</td>
<td>(j) <em>Chicoreus rosarius</em> Perry</td>
</tr>
<tr>
<td>Thaididae</td>
<td>(k) Various genera</td>
</tr>
<tr>
<td>Pteriidae</td>
<td>(l) <em>Pinctada sp.?</em> (possibly <em>maculata</em> Gould)</td>
</tr>
<tr>
<td>Carditidae</td>
<td>(m) <em>Cardita crassicostata</em></td>
</tr>
<tr>
<td>Volutidae</td>
<td>(n) <em>Cymbium umbililatus</em></td>
</tr>
<tr>
<td>Chamaeleae</td>
<td>(o) <em>Chama jukesii</em></td>
</tr>
<tr>
<td>Placunidae</td>
<td>(p) <em>Placuna placenta</em> Linné</td>
</tr>
<tr>
<td>Galeodidae</td>
<td>(q) <em>Syrinx arvanus</em></td>
</tr>
<tr>
<td>Lardiidae</td>
<td>(r) <em>Regozara flava</em></td>
</tr>
<tr>
<td>Fissurellidae</td>
<td>(s) <em>Fissuredea jukesii</em></td>
</tr>
<tr>
<td>Turbinidae</td>
<td>(t) <em>Turbo porcata</em> Reeve</td>
</tr>
<tr>
<td>Part</td>
<td>a</td>
</tr>
<tr>
<td>------</td>
<td>---</td>
</tr>
<tr>
<td>1</td>
<td>97.9</td>
</tr>
<tr>
<td>2</td>
<td>64.9</td>
</tr>
<tr>
<td>3</td>
<td>61.0</td>
</tr>
<tr>
<td>4</td>
<td>60.5</td>
</tr>
<tr>
<td>5</td>
<td>69.2</td>
</tr>
<tr>
<td>6</td>
<td>65.5</td>
</tr>
<tr>
<td>7</td>
<td>65.5</td>
</tr>
<tr>
<td>8</td>
<td>65.5</td>
</tr>
<tr>
<td>9</td>
<td>65.5</td>
</tr>
<tr>
<td>10</td>
<td>55.4</td>
</tr>
<tr>
<td>11</td>
<td>48.2</td>
</tr>
</tbody>
</table>

**Table:** Table of data representing in column samples of A4 and C5.
RADIOCARBON 14 ESTIMATION

A quantity of charcoal pieces was submitted to the Department of Geophysics and Geochemistry, A.N.U., for radiocarbon age determination. This sample was collected from VAM/SS/10, and may be taken to represent the first period of concentrated occupation of the site. The result, ANU-62, was $550 \pm 37$ B.P. (c. A.D. 1400).

DISCUSSION

The most important aspect of the excavation of this midden is that it provided a quantity of stratified glass on which to base the analysis of possible Aboriginal glass artefacts from other areas in the settlement (see chapter 4). However it also provided sufficient additional information to attempt some interpretation of the midden itself.

The midden began to form about 500 years ago with the exploitation of the pearl oyster *Pinctada* sp., supplemented by the common rock oyster and the mudflat species *Anadara maculosa*. In spit 9 *Pinctada* became less important, although it continued to be collected throughout the entire life of the site. Another mudflat species *Tapes ?watlingi*, absent in the lowest levels, together with *A. maculosa* later provided the bulk of the shell food represented in the midden. In spit 3 the representation of the sandy bay-mudflat types falls below 90% for the first time since the two early layers. The common rock oyster, although present in small quantities in spits 9 to 4, reasserts itself, and in spit 2 represents 19.5% of the total weight of shell and the mudflat shells fall to 77.6%, but in
the latest occupation the latter group again became predominant.

It is tempting to correlate the change in shell type percentage with the introduction of glass in spit 3, which can be reasonably dated to c. 1838 A.D., the beginning of the European settlement. There is one historical reference to the Aborigines being employed in collecting oysters for the settlement\(^1\) and this industry may be reflected also in the Aborigines' own diet.

Although the evidence is slight, there also appears to be a change in function of the midden itself. The absence of bone and any implements in the lower levels suggest that the site was used only as a place for eating shellfish. The arrival of the Europeans was associated with two changes. Glass implements were carried onto the midden, and the midden itself expanded in the direction of the settlement. The main body of the midden runs parallel with the cliff and comparable middens in a similar orientation were noticed elsewhere in Port Essington. The inference is that a larger group, or perhaps a more permanent one occupied the site which spread towards the settlement. Glass was employed on the site, while the three pieces of stone recovered in the excavations, together with the bored shell, were all in the upper layers. Significantly the volume of shell in spits 2 and 3 was markedly less than in the earlier ones. During the 1967 season, a

---
trench VAM/7 was excavated outside the area of the midden to test the possibility of this expansion, and quantities of glass were recovered in the first few centimetres. The top spit of the midden possibly represents post-European occupation; at least the proportions of shell return to those found in the middle occupation of the midden.

**TABLE II-55**

<table>
<thead>
<tr>
<th>VAM</th>
<th>GLASS REGISTER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TYPE A</td>
</tr>
<tr>
<td>SURFACE</td>
<td>145</td>
</tr>
<tr>
<td>VAM/1/1</td>
<td>39</td>
</tr>
<tr>
<td>VAM/1/2</td>
<td>12</td>
</tr>
<tr>
<td>VAM/2/1</td>
<td>11</td>
</tr>
<tr>
<td>VAM/2/2</td>
<td>2</td>
</tr>
<tr>
<td>VAM/2/3</td>
<td>1</td>
</tr>
<tr>
<td>VAM/3/1</td>
<td>5</td>
</tr>
<tr>
<td>VAM/3/2</td>
<td>1</td>
</tr>
<tr>
<td>VAM/4/1</td>
<td>33</td>
</tr>
<tr>
<td>VAM/5/1</td>
<td>26</td>
</tr>
<tr>
<td>VAM/6/1</td>
<td>28</td>
</tr>
<tr>
<td>VAM/7/1</td>
<td>50</td>
</tr>
<tr>
<td>VAM/SS/1</td>
<td>1</td>
</tr>
<tr>
<td>VAM/SS/2</td>
<td>7</td>
</tr>
<tr>
<td>VAM/SS/3</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>362</td>
</tr>
</tbody>
</table>
### TABLE II-56

**VAM POTTERY REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSFER PRINTED</td>
<td>3</td>
</tr>
<tr>
<td>UNDECORATED WHITE</td>
<td>1</td>
</tr>
<tr>
<td>GLAZE</td>
<td></td>
</tr>
<tr>
<td>PIPE STEM</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>5</td>
</tr>
</tbody>
</table>

### TABLE II-57

**VAM METAL REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>Surface</th>
<th>VAM/5/1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wt.</td>
<td>Wt.</td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED IRON</td>
<td></td>
<td>17.2</td>
</tr>
<tr>
<td>UNIDENTIFIED COPPER</td>
<td>42.1</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE II-58

**VAM STONE REGISTER**

<table>
<thead>
<tr>
<th></th>
<th>VAM/Surface</th>
<th>VAM/5/1</th>
<th>VAM/SS/2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUARTZITE</td>
<td>1</td>
<td>21.9</td>
<td>1</td>
<td>24.7</td>
</tr>
<tr>
<td>SLATE</td>
<td>1</td>
<td>0.8</td>
<td>1</td>
<td>0.8</td>
</tr>
</tbody>
</table>
n) **ABORIGINAL MIDDEN No. 2** (Code prefix VAMII)

The second Aboriginal midden was located immediately behind the northern end of the beach to the south of the settlement, and just to the north of the building remains identified as belonging to the cattle ranchers who began living there during the 1870's. Because glass was present on the surface a test pit of two square metres (VAMII/1, and VAMII/2) was opened up during the 1966 season.

Both squares were excavated in 5 centimetre spits down to sterile sand. The deposit throughout was shelly in a black soil matrix, and no stratigraphy was discernible.

**FINDS**

Glass occurred in all spits in both squares so that the earliest occupation of the site may be dated to the beginning of the settlement. Because of the close proximity of the 1875 establishment the finds were treated with caution and two of the clay pipe stems were subsequently identified to be manufactured by McDougall of Glasgow whose factory was founded in 1846. The firm does not appear in the Glasgow trade directories until 1852\(^1\) so that it is unlikely that this firm exported to Australia during the occupation of Victoria and it seems reasonable to associate these pipes with the latter occupation of the cattle ranchers.

\(^1\) Iain Walker, pers. comm.
However, a glass bottle seal, marked "John Alberty Bordeaux Vieux Cognac 1815" can more readily be associated with the Château Margeaux seals excavated in the settlement proper, where they were introduced by Dumont d'Urville in 1839. The metal, and the remainder of the pottery excavated in this midden provides no positive dating information, but it bears superficial resemblance to that excavated in the settlement, and there is no reason to doubt that the Aborigines occupied this site at the time of the settlement of Victoria.

Although the shell species in this midden are similar to those in the midden on Minto Head, with the exception that Tapes watlingi was absent, the rock oyster is much more common, and probably reflects the difference in the immediate environment of the two sites. More important however is the structure of the midden itself. Whereas the Minto Head site can be regarded more in the nature of a shell refuse dump, the present site appears more likely to have been a living site, because shell is much less dense and bone food remains are present which reflect the fact that Aborigines continued to hunt traditional foods, at the same time as they ate some meat which they probably obtained from the Europeans.
# TABLE II-79

**VAMII Glass Register**

<table>
<thead>
<tr>
<th></th>
<th>TYPE A</th>
<th>TYPE B</th>
<th>TYPE C</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURFACE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAMII/1/1</td>
<td>14</td>
<td>108.2</td>
<td>4</td>
<td>264.7</td>
</tr>
<tr>
<td>VAMII/1/2</td>
<td>3</td>
<td>6.8</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>VAMII/1/3</td>
<td>13</td>
<td>77.8</td>
<td>18</td>
<td>45.0</td>
</tr>
<tr>
<td>VAMII/2/1</td>
<td>9</td>
<td>53.8</td>
<td>18</td>
<td>52.8</td>
</tr>
<tr>
<td>VAMII/2/2</td>
<td>6</td>
<td>37.1</td>
<td>6</td>
<td>17.4</td>
</tr>
<tr>
<td>VAMII/2/3</td>
<td>15</td>
<td>66.3</td>
<td>21</td>
<td>65.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>64</td>
<td>372.0</td>
<td>5</td>
<td>280.1</td>
</tr>
</tbody>
</table>

# TABLE II-60

**VAMII Pottery Register**

<table>
<thead>
<tr>
<th></th>
<th>VAMII/1/2</th>
<th>VAMII/1/3</th>
<th>VAMII/2/2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALT GLAZE STONEWARE PIPE STEMS</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>
TABLE II-61

VAMII METAL REGISTER

<table>
<thead>
<tr>
<th></th>
<th>VAMII/1/2</th>
<th>VAMII/1/3</th>
<th>VAMII/2/2</th>
<th>VAMII/2/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRASS FERRULE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRON NAILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td></td>
<td></td>
<td>1</td>
<td>11.5</td>
</tr>
<tr>
<td>(8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIED IRON</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.1</td>
<td>4</td>
<td>9.5</td>
<td>1</td>
<td>11.5</td>
</tr>
<tr>
<td>UNIDENTIFIED LEAD</td>
<td></td>
<td></td>
<td>23.2</td>
<td>104.7</td>
</tr>
<tr>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VAMII BONE REGISTER

144 grams of bone were recovered from the excavations, of which the following animals were recognised as being represented: cow/buffalo, fish, dugong, bandicoot (*Isodon macrourus*), kangaroo (*Macropus antilopinus*), and lizard (probably *Amphibolurus barbatus*).

0) GENERAL SURFACE COLLECTIONS (Code prefix V/GEN SUR)

Because of the undisturbed nature of the site it was accepted that little contamination of surface deposits could have taken place. Thus artefacts collected on the surface have been included in the collections for analysis. If these were found in association with
a site-unit, they have been analysed in conjunction with that site-unit.

However concentrations of deposit were subjected to collection in some general areas and these have been analysed separately. Four main areas within the settlement were noticed where surface collections were made, 1) the beach area near the jetty, 2) the town square, 3) the cliff-slope in front of the hospital, and 4) the cliff adjacent to the married quarters. This last area produced a large number of artefacts and these were given the code prefix VCC.

A fifth area to the west of the settlement produced a scatter of glass and stone in conjunction with Aboriginal deposit. This area was designated VWM.

The following tables list the finds from these surface collections.
<table>
<thead>
<tr>
<th>V/GEN SUR</th>
<th>TYPE A</th>
<th>TYPE B</th>
<th>TYPE C</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Wt</td>
<td>Wt</td>
<td>Wt</td>
<td>Wt</td>
</tr>
<tr>
<td>V/GEN SUR</td>
<td>8</td>
<td>10</td>
<td>18</td>
<td>531.9</td>
</tr>
<tr>
<td>COTTAGE CLIFF (VCC)</td>
<td>317.1</td>
<td>214.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOSPITAL SLOPE</td>
<td>25</td>
<td>68</td>
<td>93</td>
<td>2745.8</td>
</tr>
<tr>
<td>BEACH (NEAR JETTY)</td>
<td>4</td>
<td>11</td>
<td>82</td>
<td>1584.0</td>
</tr>
<tr>
<td>WESTERN MUDFLAT (VWM)</td>
<td>536.6</td>
<td>2</td>
<td>12</td>
<td>696.9</td>
</tr>
<tr>
<td>TOWN SQUARE</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>23.2</td>
</tr>
<tr>
<td>LEWIS' BEACH (To the south)</td>
<td>187.8</td>
<td>11</td>
<td>11</td>
<td>937.8</td>
</tr>
<tr>
<td>GENERAL 1967</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>605.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>60</td>
<td>62</td>
<td>162</td>
<td>7125.5</td>
</tr>
<tr>
<td>V/GEN SUR POTTERY REGISTER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cottage Cliff VCC</td>
<td>Hosp/ slope</td>
<td>Beach near jetty</td>
<td>Town square</td>
<td>TOTAL</td>
</tr>
<tr>
<td>TRANSFER PRINTED</td>
<td>80</td>
<td>4</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>23</td>
<td>4</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>FEATHEREDGE (BLUE)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>FLOWING BLUE</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SALT GLAZE STONEWARE</td>
<td>17</td>
<td>2</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>UNGLAZED WHEELMADE</td>
<td>17</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIPE STEMS</td>
<td>3</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>PIPE BOWLS</td>
<td></td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BLUE ON WHITE PORCELAIN</td>
<td>27</td>
<td>1</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>POLYCHROME PORCELAIN</td>
<td>6</td>
<td></td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>UNDECORATED PORCELAIN</td>
<td>10</td>
<td></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>SPATTER WARE</td>
<td>9</td>
<td></td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>LINE DECORATED</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MACASSAN</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>UNIDENTIFIABLE</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>179</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Cottage Cliff No</td>
<td>Hosp/Slope No</td>
<td>Beach near Jetty No</td>
<td>Town Square No</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------</td>
<td>---------------</td>
<td>--------------------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>UNIFORM INSIGNIA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MUSKET BALL</strong></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>SHOT</strong></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COIN</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BELT BUCKLE</strong></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>COPPER NAILS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3</td>
<td>18</td>
<td>34</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>3-5</td>
<td>15</td>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>5-8</td>
<td>3</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td><strong>UNIDENTIFIABLE COPPER</strong></td>
<td></td>
<td></td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>
\textbf{TABLE II-65}

\begin{tabular}{|c|c|c|c|}
\hline
\textbf{GUNFLINTS} & \textbf{Cottage Cliff (VCC)} & \textbf{Western Mudflat (VWM)} \\
\hline
\textbf{No.} & \textbf{Wt.} & \textbf{No.} & \textbf{Wt.} \\
\hline
2 & 25.1 & 1 & 128.2 \\
1 & 1 & 38.7 & \\
\hline
\end{tabular}

\textbf{OTHER ARCHITECTURE}

In addition to the excavations described above, a number of other pieces of architecture were recorded. Descriptions of these follow.

**MAGAZINE** Plates II-45, 46, 47.

The magazine stands on Adam Head and is all that remains of the principal fortification of the settlement. From contemporary sketches, this consisted of a large, square, timber tower or blockhouse, and magazine defended on the land side with a ditch and palisade, and on the sea-side with a castellated timber breastwork. It was complete by 1841\(^1\).

The magazine was constructed of masonry with a pitched stone roof, and was sunk into the ground to minimise damage in the event of an explosion. The walls

\footnote{See also McArthur to Admiralty, 16 July 1840. Enclosed in Barrow to Stephen, 2 July 1841. C.O. 201/313.}
are 40 cms thick and at its highest point the building stands 2.5 m. high. Internally the walls are in the shape of a barrel vault (see plate II-47).

KILNS  Plates II-48,49,50,51,52

Three kilns were located within the settlement. The first of these (plate II-48) was behind the beach to the south of the settlement, and was constructed of ironstone pebbles bonded with clay in the shape of a truncated cone. At present it stands to a height of 1.8 m. and has an internal diameter at the base of 1.66 m. The front of this kiln has collapsed and it is assumed that it originally had an arch at this point. The kiln is free-standing with a stone floor and was perhaps used for charring timber (see chapter 8).

The second kiln (plate II-49) was located below the eastern cliff immediately to the north of the jetty. This was constructed of large ironstone blocks and stands at present 1.82 m. high with a base diameter of 1.85 m. It has an arched opening in the base and an earth bank behind. Remains of lime on the clay floor indicate its purpose and its technology must have been the same as that of the third kiln for which it may have been the prototype.

The third kiln (plates II-50,51,52) located to the west of the settlement is a classic example of an early nineteenth century lime-kiln1. Constructed of

---

rough-hewn stone in the shape of a truncated cone, the kiln was constructed by firstly excavating into a bank 3.5 m. high. The soil from this excavation was distributed onto the mudflat in front of the kiln to form a working area below. The kiln itself was then built, with the inner and outer faces of the walls of cemented rough-hewn stone filled with rubble and cement. A retaining wall was then constructed on either side and the space behind was filled with earth to enable loading from the top. The kiln stands 3.5 m. high, the internal diameter of the base is 2.8 m. The walls are 90 cm thick, which gives a hypothetical external diameter at the base of 4.6 m. The external diameter at the top is 2.2 m. and the diameter of the opening at the top is 60 cm. On the western side an arched opening 80 cm. high and 75 cm. wide gives easy access into the kiln. The floor is the natural clay and there is nothing to suggest that there was ever a grating in the kiln. On the eastern side a smaller blocked passage may have been used to introduce a cross-draught into the kiln, since the position is protected from the breeze. It would seem that the action of the kiln was intermittent rather than continuous, and that after each firing the kiln was cleaned out from within.

CEMETERY Plates II-53, 54

Apart from four stone vaults, no traces above the ground of the majority of graves in the cemetery were noticed, and no excavations were carried out in the area.
Of the four vaults, all are constructed of dressed masonry. Two are flat-topped, one has an arched top and the fourth is surmounted by an obelisk. This last vault (plate II-53A) can be positively identified as belonging to the wife of Lieutenant Lambrick, who died 12 October 1846. Lambrick also lost two children during the period of the settlement.

At about 1912 an attempt was made to restore the inscriptions on these four graves by inscribing them in wet cement. Apart from Mrs Lambrick’s vault no evidence has been found to substantiate these identifications, and that on vault D is positively incorrect. The information in the inscriptions listed below are also incorrect.

A. Plate II-53A
   "In memory of Mrs Lambrick and child, dearly be-love wife of Lieutnant Lambrick 47 R.G.M.T. Hobart, died Port Essington 1838-1848."

B. Plate II-53B
   "Sacred to the memory of Farther Von Anslowe German Missioner, Smith Point Port Essington 1845."

C. Plate II-53C
   "Sacred to the memory of Dr of the settlement, died Port Essington 1838-1848."

D. Plate II-53D
   "Sacred to the memory of Captin Crawford, 47 Regiment Hobart, died Port Essington 1838-1848."

1 Listed under Port Essington in the Archives of the Royal Marines Portsmouth.
JETTY Plate II-55

The jetty was constructed of dressed masonry blocks on the southern side, with rubble ironstone fill. It was badly damaged in the hurricane in 1839 (see chapter 8) and was never rebuilt in its original condition. Its dimensions at present are difficult to estimate, but it is approximately 50 m. long. A single squared block on the northern side suggests that originally the jetty was 6.25 m. wide. At the shore end of the northern side a line of closely spaced timber piles, now snapped off at ground level, show the position of the retaining wall for the roadway that ran from the jetty. Two ironwood piles, still in position, abut against the southern side.

GOVERNMENT HOUSE

This was a prefabricated wooden building, and its position is now only marked by a jumble of small stone pilings on which it stood. The masonry foundations of the outhouse behind it remain, however, and the groundplan of this structure can be seen on plate II-2.

WELLS

Five wells were recorded in the area of the settlement (see plate I-3). Of these the one near the beach to the south may not have been associated with the settlement but rather with the Macassans or the later European cattle ranch.

All the wells were dry and the deepest well is at present only seven metres deep. This is the well in
the area of the town square and timber planking about forty centimetres below the present ground level indicates the ground level at the time of occupation. No other superstructure is present on or around the other wells, and surprisingly no finds were recovered from within them.

SAWPIT

This pit was cut into the cliff immediately to the north of the small lime-kiln. At present the pit is 5 m. square in groundplan, and is 1.8 m. deep. No superstructure remains, and its function was corroborated by the McArthur map (plate I-4).

STONELINE

Immediately west of the hospital 69 stones in a line 24 m. long were recorded. From the McArthur map this represents the western extreme of the ordinance store.

EARTHWORKS

Indications of earthworks were recorded from four locations in the settlement: a) around the fortification on Adam Head (see Magazine), b) running between the site of government house and the eastern cliffline, c) a gun emplacement on Minto Head, and d) the earthwork behind Minto Head which can be equated with the site for a blockhouse on the McArthur map.

The ditch and bank near government house measures one hundred metres in length and is bounded on the
eastern side by two sets of stone blocks through which the road to the south must have passed. From the bottom of the ditch to the top of the bank measures 1 m. and the width of ditch and bank is 6 m.

The gun emplacement on Minto Head is illustrated in plate II-56, and the ditches here appear to be to keep the platform in the fork of the Y free from water. In places the ditch is stone-lined and at its deepest point is 1 m. deep.

The earthwork behind this approximately 25 m. square on the external dimensions and has a similar ditch and bank to that guarding the southern approach to the settlement. There was no indication that either of these fortifications were ever complemented with a palisade.

QUARRIES

Two stone quarries were located within the settlement as indicated in plate I-3. That to the west had a maximum depth of 7 m., that to the north, 3 m.

ARCHITECTURAL REMAINS OUTSIDE THE SETTLEMENT

CONVALESCENT STATIONS

The ironstone remains of architecture associated with the period of the settlement were located in three places in Port Essington. Two of these are known from historical sources as convalescent stations (see chapter 8) and were located at Coral Bay and Spear Point.
Lack of time did not permit clearing and recording.

**SMITH POINT BEACON**

This structure was built in 1845 (see chapter 8) from coral conglomerate quarried on the spot. Time did not allow extensive clearing but inspection suggested that a circular tower was built to an approximate height of 2.5 m. above the immediate ground level. This was of solid fill and made of blocks c. 35 x c. 20 cms on the face which was carefully cut so that the outside curvature of the structure was continuous. In the lower section these blocks were cemented with lime mortar. The approximate diameter of this section is 4.5 m.

Above this section a second curved and inward sloping tower was built, also of solid fill construction, leaving a parapet of 90 cms on the top of the lower story. This second section was dry-built and stands to an average height of 1.2 m.

The position of the beacon, on a rise at the tip of Smith Point gives the structure a total height of 7.4 m. above the HWM.

Amongst the dislodged masonry, one block was inscribed "E ORI".
USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
ARCHAEOLOGY, AND THE HISTORY OF PORT ESSINGTON

by

F.J. ALLEN

VOLUME I

This thesis was submitted in partial fulfilment of the requirements for
the degree of Doctor of Philosophy in
The Australian National University

May 1969
CHAPTER 3

POTTERY

In essence, pottery from the nineteenth century is no different to prehistoric pottery in regard to its archaeological potential. It is of little intrinsic value, it is fragile, it is subject to fashion, and because of its durable nature, it remains in the archaeological record.

Working from these premises it is therefore possible to use pottery from historic sites in much the same way as pottery is used in prehistoric sites. Classifications can be evolved in order to use pottery as space/time markers, for inferring basic economics, inferring standards of technical development, and so on up the inferential scale1.

In attempting a classification of the Port Essington pottery the purposes of such a classification should be understood. While the analysis was not needed to date the site or identify the inhabitants, the short life of the site provided a good situation for testing the accuracy of this technique. A second test of this kind was to examine the distribution of pottery within

1 See, for example James Deetz, "The Dynamics of Stylistic Change in Arikara Ceramics", Illinois Studies in Anthropology, No.4, 1965. In this paper, Deetz has attempted to show that changes in Arikara social organization is reflected in the ceramics, arguing that the pottery is the material reflection of culturally patterned behaviour.
the settlement to see what inferences might be made about the various house sites, whose nature was known from the historical record. The analysis was also designed to suggest the origins of manufacture of the ceramics, and the implications of these provide greater insight into the processes of daily life at Port Essington. For example, the large majority of wares are of English manufacture. Thus for everyday utensils, the settlement was dependent upon manufacture from the other side of the world, even if the pottery was consigned by merchants from Sydney. This in turn has implications for the level of technology of the marines at Port Essington (and also for the settlers at Sydney).

The pottery and other remains from Port Essington also serve as indicators of the rate and volume of diffusion of English manufactures into this area, and of the time lag of this diffusion.

The major difficulty in establishing an effective typology was the lack of comparative material with which to assess the present assemblage. While there are a number of works relating to the pottery industry in England at this period\(^1\), almost all are written from the point of view of the antique collector, and scant

---

1 Of these, Geoffrey A. Godden, *British Pottery and Porcelain 1750-1850* (London, 1963), is the most recent and by far the best historical account for the period under consideration. For additional works see his bibliography. In addition, Godden's *Encyclopaedia of British Pottery and Porcelain Marks* (London, 1964), has been used for identifying marked specimens.
attention is paid to the utilitarian pottery of which the present collection is comprised. The vast number of patterns and variety of styles have deterred any systematic study in this direction. As a result, authors freely admit the difficulty of identifying unstamped examples in more than a general way. During 1967 I visited potteries and specialist pottery museums in England to gather information relating to the Port Essington collection, but detailed work needs to be done over a number of years.

Archaeologists in America and Canada have worked on sites comparable in time to Port Essington but no reports have attempted detailed analyses of the ceramics. One detailed unpublished report has been used, and from other reports similar types have been identified from the illustrations and an attempt has been made to follow what terminology is already in use.


However, in many instances this has proved impossible.

**ARNOLD PILLING'S CLASSIFICATION**

Pilling has set up a taxonomic system which divides his ceramics initially into two *Classes*, porcelain and earthenware, on the basis of translucence. *Class* is subdivided into *Ware*. Neither of these divisions is meant to imply any historical unity, this being claimed for the next subdivision, labelled *Type*. Where specific wares can be isolated within a *type*, such as "Willow Pattern" within "Transfer Printed Type", this he terms a *Sub-Type*. A further division into *Item* or *Group* allows Pilling to discuss specific pieces. Finally, he uses *motif* to mean a specific design unit, and *pattern* is a combination of specific units.

This is a useful taxonomy which I have modified and adopted. With the present assemblage however, there appears to be as much confusion as validity in attempting to differentiate the collection on the basis of hardness of fabric, which is the criterion Pilling uses at the *Ware* level of his classification. The majority of the Port Essington collection consists of what is commonly called "china". The distinction between this and "stoneware" is technically one of firing temperature and it is more practical to describe differences in fabric at the *Type* level.

---

1 Pilling, op. cit., pp.2-6.
Finally, Pilling analysed his collection (which consisted of 185 sherds compared to 1561 from Port Essington) in terms of

1) Fabric, which he confusingly refers to as biscuit. Here he describes colour, hardness, fracture, presence of bubbles, and homogeneity; and

2) Glaze, again describing hardness, fracture, presence of bubbles, crackle, colour, and pattern colour. Some attention was also given to decoration pattern and vessel form.

THE PORT ESSINGTON CLASSIFICATION

While Pilling's analysis may point the way to significant factors in analysing nineteenth century ceramics in the future, it is felt that the factors he has chosen do not present ways for making meaningful divisions for an archaeological taxonomy at present. The significance of crackle, for example, which may be deliberate or accidental, and can occur during or after firing, needs to be validated by examination of numbers of comparative collections, so that it is understood just what the significance of different types of crackle is. Similarly the Mohs scale of hardness test, which he employs, is at best inexact\(^1\).

Given the present state of knowledge, decoration and vessel form suggest themselves as the best indicators of cultural and temporal change in nineteenth century ceramics. Pottery in this period was no longer

---

\(^1\) See A. Shepard, Ceramics for the Archaeologist (Washington, 1963), pp. 115-116.
a craft but rather a mass-produced manufacture, which resulted in a general conformity in shapes and standards of wares, as well as a great increase in individual designs which, nevertheless, fall into general broad categories of decoration. (This is particularly true of the transfer printed wares which make up almost half of this collection. The point is made at greater length in the discussion (below). Decoration colour appears to be a further valid indicator which has to be taken into account. It is on these factors that the present analysis is based.

The pottery is divided into two Classes, porcelain and earthenware. The earthenwares are divided into two Groups, the white clay wares and the coloured clay wares. Both classes are divided into Types, the first level at which any historical unity is implied. In the case of Transfer Printed Ware, this type is divided into Sub-Types. Within each type or sub-type specific Items are described. Ascending numbers are ascribed to each Item to facilitate cross-reference with the plates and text. Each Item is analysed according to form (the original total form of the object), thickness, base and rim diameter, decoration colour, and decoration. Rim and base diameters have been measured on a "ceramicule"¹ and the bracketed percentage indicates the amount of rim or base remaining. It was found that an accurate diameter could be estimated on 10% of the rim or base. To standardise the colours, the British

¹ "Ceramicule No.2", a set of concentric circles designed by C. Smart, Department of Anthropology, A.N.U.
Colour Council Dictionary of Colour Standards is used in the abbreviated form, BCC, plus the appropriate number. A key to the colours represented in the Port Essington collection precedes the catalogue.

This classification represents a first faltering step at presenting a workable taxonomy for archaeologists in this field, which will need greater definition as work progresses in historical archaeology. It has obvious shortcomings. In a number of instances sherds from a single vessel will fall into different types, where, for example, different design elements are represented. Thus, comparisons of the volumes of different types are suspect. Only where all the motifs of a design can be recognized and placed within a single type can this difficulty be overcome. This would require much fuller documentation of designs than exists at present. What the classification does attempt is to present ranges of decorative motifs which were employed in pottery making in this period. It was decided as a conscious policy to present as large and detailed a description as possible, hoping that this would prove of most value to future workers. An attribute analysis was considered as the best alternative, as this would have overcome some of the limitations discussed above. It was discarded for three reasons:

1) the motifs do not recur often enough to indicate quantitative trends at this close level;
2) the number of attributes was too great to analyse without extensive use of a computer; and 3) the final product would not have been as useful for future workers.
in this field. The significance and value of this collection is that it is the only extensive collection in Australia of utilitarian wares of this period from a closely dated context.

KEY TO BCC COLOURS PRESENT IN THE PORT ESSINGTON COLLECTION

CLASS 1  PORCELAIN

All porcelain represented in this collection is of the true hard paste variety. Difficulty was experienced in distinguishing between British and Asian porcelains in terms of fabric and glaze, and only the pieces decorated with the willow pattern can positively be identified as British. Of the others, the group represented by Items 4-5, below, are attributed to Asian manufacture in terms of shape rather than decoration, and the large remainder may be safely designated as Asian in origin.

TYPE A  UNDECORATED PORCELAIN. 39 sherds (Items 1-3)

Note: Although these items are listed here as a separate category they may only represent undecorated fragments of vessels which were originally decorated. Distribution: VM, VCC, VMQ. Forms: Footed bowls or cups. Of the six base sherds represented, the bottom of the foot is unglazed in each case. Thickness: 0.15 cms to 0.55 cms. Fabric colour: BCC 1. Glaze colour: Between BCC 1 and BCC 7.

Item 1  VM/5/1 (5) Plates III-1a,19h.
  Form: cup with handle. Thickness: 0.35 cms.
  Base diameter: 4 cms (50%)  

Item 2  VM/9/1 (37) Plate III-19o.
  Form: cup or bowl. Thickness: 0.3 cms to 0.55 cms.
  Base diameter: 6 cms (estimated).
Item 3  VM/5/1 (14) Plate III-191
Form: bowl. Thickness: 0.3 cms.
Base diameter: 15 cms (9%).

TYPE B OVERGLAZE POLYCHROME PORCELAIN 78 sherds
(Items 4-11)

Distribution: VM, VMII, VHK, VCC. Forms: Cups, straight-sided bowls, plates, lids. Thickness: 0.15 cms to 0.85 cms. Fabric colour: BCC 1 to BCC 7.
Glaze colour: BCC 1 to BCC 7. Decoration colour:
A wide range of which the following are most predominant: yellow (BCC 112), green (BCC 9, BCC 23, BCC 99), red (BCC 96, BCC 125, BCC 126, BCC 159), gilt (BCC 115), and blue (BCC 45, BCC 219).
Decoration: All motifs above the glaze are handpainted. The most predominant motif is a floral one. In addition some underglaze blue decoration is present. This takes the form of a double blue line running horizontally around either the interior or exterior of the rim, or around the foot of the vessel. In one instance a similar line runs internally around the base of a bowl.

Item 4  VM/GEN SUR (1) Plate III-1b
Form: curved lid with unglazed edge. Thickness:
0.45 cms. Rim diameter: 22 cms (10%).
Decoration colour: BCC 219, BCC 125, BCC 115.
Decoration: The border is decorated with a band of dark blue overlain with gilt asterisks. An additional line of dark blue dots lies within the border, joined with gilt and red. Remarks:
This piece, together with Item 5, represents
a group of 24 sherds with similar decoration. The decorative motif is unusual in this collection and within this type. However, in terms of shape it seems reasonable to ascribe this group to Asian manufacture.

Item 5  VM/9/1 (36) Plate III-19a

Item 6  VCC/GEN SUR (88) Plates III-1c,19c.
Form: straight-sided bowl with everted rim.
Thickness: 0.4 cms. Rim diameter: Approximately 16 cms (7%). Decoration colours: BCC 23, BCC 159.
Decoration: External side only, a floral motif.
Remarks: In contrast to the other items within this type, the glaze is dark (BCC 7) and heavily crackled.

Item 7  VMII/1/1 (5) Plates III-1d,19k.
Form: bowl. Thickness: 0.3 cms to 0.9 cms.
Decoration colours: BCC 9, BCC 45, BCC 156.
Decoration: Internal and external underglaze decoration with the double line motif, together with external floral decoration.

Item 8  VM/9/1 (35) Plates III-1e,15k,19l.
Form: bowl with small pedestal foot. Thickness: 0.25 cms (body) to 0.45 cms (base). Base diameter: 2.5 cms (50%). Decoration colours: BCC 9, BCC 126, BCC 115. Decoration: Decorated externally in blossom tree motif. Remarks: Painted on the underside of the base is a date
mark of the Emperor Tao Kuang (1821-1850).  

**Item 9** VM/9/1 (39) Plate III-19f.  
Form: bowl described in Item 8. Rim diameter: 10 cms (13%). Remarks: Interior of lip unglazed suggesting that the bowl was lidded (see Item 10).  

**Item 10** VM/9/1 (45) Plates III-1f, 19g.  
Form: flanged lid. Thickness: 0.25 cms. Rim diameter: (at flange) 10 cms (11%). Decoration colours: BCC 9, BCC 126, BCC 115. Decoration: External floral motif. Remarks: Despite the difference in decoration, this lid perhaps belongs to the vessel described in Items 8-9. Note that the rim diameters match.  

**Item 11** VMII/1/1 (11) Plates III-1g, 19e.  
Form: bowl. Thickness: 0.2 cms to 0.3 cms. Decoration colours: BCC 96, BCC 126. Decoration: Underglaze double line internally and externally at rim. Overglaze decoration externally in abstract motif.  

**TYPE C BLUE ON WHITE PORCELAIN. 100 sherds (Items 12-21)**  
Distribution: VM, VMII, VCC, VQS, VSD, VH, VHk, VMQ, VSF. Forms: Mainly footed bowls, some plates. Thickness: 0.2 cms to 1.0 cms. Fabric colour: BCC 1 to BCC 7. Glaze colour: BCC 7 to BCC 71. Decoration colour: Mainly blues (BCC 43, BCC 45, BCC 150) merging to green (BCC 78) and grey (nearest BCC 226).  

---

1 Identified for me by Dr Noel Barnard, Department of Far Eastern History, A.N.U.
Decoration: Consists of hand-painted underglaze designs of floral, geometric and figurative motifs. The double line motif used internally and externally at the rim is common and also occurs around the foot. Remarks: The foot is always unglazed on the bottom; in one item the base is unglazed; in two items a section of the internal wall is unglazed. Glaze crackle occurs frequently but not predominantly.

Item 12 VGC/GEN SUR (117) Plate III-2a.
Form: plate or dish with unglazed base. Thickness: 0.65 cms. Decoration colour: BCC 149. Decoration: Solid geometric pattern unusual in this collection.

Item 13 VQS/4/1 (26) Plates III-2b,19m.
Form: footed bowl with base and internal face of foot unglazed. Thickness: 0.5 cms (base) to 0.8 cms (lower body). Base diameter: Approximately 22 cms (3%). Decoration colour: BCC 149. Decoration: Double line motif on foot; on the interior similar lines running around the circumference of the bowl, together with registers of parallel short lines running at right-angles to the circumference of the vessel.

Item 14 VGC/GEN SUR (125) Plates III-2c,19n.
Form: footed bowl. Thickness: 0.45 cm to 0.65 cms. Base diameter: 14 cms (13%). Decoration colour: BCC 149. Decoration: externally around the foot with three parallel lines; internally in a free floral motif.

Item 15 VM/S/T (11) Plate III-2d.
Form: plate. Thickness: 0.6 cms. Decoration
colour: BCC 195. Decoration: a continuous fern motif around the border. Remarks: The internal face below the border is unglazed.

Item 16  VCC/GEN SUR (63) Plate III-2e.
Form: Indeterminant. Thickness: 0.5 cms.
Decoration colour: BCC 145. Decoration: On one side (external?) only, a complex figurative pattern.

Item 17  VM/10/1 (26) Plates III-2f,19b.
Form: straight-sided bowl with slightly everted rim. Thickness: 0.3 cms to 0.5 cms. Decoration colours: BCC 197, BCC 78. Decoration: Internal and external undefined figure pattern.

Item 18  VCC/GEN SUR (64) Plate III-2g.
Form: bowl. Thickness: 0.5 cms to 0.8 cms

Item 19  VCC/GEN SUR (36) Plate III-2h,19d.
Form: bowl with slightly sloping and everted rim. Thickness: 0.4 cms. Rim diameter: 16 cms (10%).
Decoration colour: BCC 149. Decoration: Continuous leaf motif internally on lip, and externally.

Item 20  VCC/GEN SUR (211) Plate III-2i.

Form: footed bowl. Thickness: 0.5 cms to 0.9 cms.

**TYPE D TRANSFER PRINTED PORCELAIN.** 3 sherds (Item 22)

Distribution: VCC. Form: plate. Thickness: 0.35 cms to 0.7 cms. Fabric colour: BCC 7. Glaze colour: BCC 7. Decoration colour: BCC 87. Decoration: Underglaze transfer decoration of the less common "mosquito" variation of the willow pattern. Remarks: All three items in this type can be attributed to a single plate.

**Item 22** VCC/GEN SUR (201) Plates III-2k,17e.
Form: plate with indented edge. Thickness: 0.7 cms. Rim diameter: 24 cms (11%). Base diameter: Approximately 13 cms (5%).

**CLASS 2 EARTHENWARE**

**GROUP 1 THE WHITE CLAY WARES**

All wares in this group are of the hard paste variety. Since hardness tests appear a dubious way to distinguish between the utilitarian wares of this period no scale of differentiation on this basis can be applied to distinguish and isolate what are called "stone china" wares from slightly softer white clay wares. Although some technical differences may occur, it is more useful to regard all the white clay wares of this period as "hard".
TYPE A TRANSFER PRINTED WARE.

46.7 percent of the total collection falls into this type and meaningful sub-types can be established. The divisions are made initially in terms of decoration colour, and secondly on the basis of decoration subject matter.

SUB-TYPE AA GREEN FLORAL TRANSFER WARE. 23 sherds (Items 23-27)

Distribution: VM, VMII, VQ, VQS. Thickness: 0.3 cms to 0.6 cms. Fabric colour: BCC 1, BCC 2. Glaze colour: BCC 1. Decoration colours: BCC 10, BCC 80, BCC 191, BCC 192. Decoration: 11 sherds are decorated with a similar pattern (see Item 23). The floral patterns are predominantly executed against an open background in this sub-type. Item 26 is the exception.

Item 23 VM/14/1 (3) Plates III-3a, 16k.

Item 24 VM/5/L (1) Plate III-3b.
Form: vessel described in Item 23.

Item 25 VM/GEN SUR (8) Plates III-3c, 15b.
Remarks: This sherd probably belongs to the vessel described in Items 23-24. Mark on the base is a flower decorated plaque inscribed "--OWERET"
(probably "FLOWERET"). Below is the letter "M". The initial "M" was used extensively by the Minton pottery, and its use is equated in time to the period c. 1822-361.

**Item 26** VMII/1/1 (35) Plate III-3d.
Form: indeterminant. Thickness: 0.4 cms. Decoration colours: BCC 191, BCC 192. Decoration: Floral motif set against a "closed" (stippled) background.

**Item 27** VCC/GEN SUR (28) Plate III-3e.

**SUB-TYPE AB GREEN SCENIC TRANSFER WARE**. 18 sherds (Items 28-31)

**Item 28** VMII/1/1 (8) + (15) Plate III-3f.
Form: deep plate. Thickness: 0.4 cms. Base diameter: 10 cms (19%). Decoration colour: BCC 191. Decoration: Eastern townscape with minarets and towers. Remarks: This scene is a common one in this collection, being also found on

the blue printed wares. Miss Davis of the London Museum identified it as part of the "Bosphorus" pattern, which enjoyed popularity during the relevant period, being made by several Staffordshire potteries¹.

**Item 29**  
VH/S/0 (1). Plate III-3g.  
Form: indeterminant. Thickness: 0.75 cms.  

**Item 30**  
VMII/1/1 (17) Plates III-3h,15c.  
Form: indeterminant. Thickness: 0.3 cms.  
Decoration colour: BCC 191. Decoration: Carriage drawn by two horses and driven by a bare-footed boy wearing a smock and cloak. Remarks: Impressed asterisk on base. Identified by Miss Davis as part of a pattern called "Venice", used by Copeland and Garrett 1833-1847².

**Item 31**  
VMII/1/1 (41) Plate III-3i.  
Form: indeterminant. Thickness: 0.3 cms.  
Decoration colour: Between BCC 22 and BCC 104.  
Decoration: A cock standing on a branch.  
Background "open". Remarks: A copy of this motif, in a similar colour was also noted on sherd VSD/6/1 (3). This example comes from a different vessel.

¹ e.g. Samuel Alcock of Burslem and Davenport of Longport. Miss Davis, pers. comm., 19 January 1967.  
² ibidem.
SUB-TYPE AC GREEN GEOMETRIC TRANSFER WARE 10 sherds

Distribution: VM, VMII, VCC, VOM. Thickness: 0.2 cms to 0.4 cms. Fabric colour: BCC 1. Glaze colour: BCC 1. Decoration colour: BCC 104, BCC 191. Decoration: The decoration on these items is generally sparse; the most common motifs being horizontal lines, vertical chevrons and dotted connecting arcs.

SUB-TYPE AD GREEN AND RED FLORAL TRANSFER WARE 1 sherd
(Item 31)

Item 31 VMII/1/1 (60)
Form: indeterminant. Thickness: 0.35 cms.
Decoration colours: BCC 160, BCC 201. Decoration: Internal, a small leaf pattern in green; external a floral motif in red, bounded by a scroll motif.

SUB-TYPE AE RED FLORAL TRANSFER WARE 20 sherds.
(Items 32-36)

Distribution: VM, VCC, VSF. Thickness: P.2 cms to 0.7 cms. Fabric colour: BCC 1. Glaze colours: BCC 1, BCC 61. Decoration colours: BCC 28, BCC 29, BCC 58. Decoration: Eleven sherds in this sub-type have an identical distinctive floral motif against an open background. The other floral examples employ both open and closed backgrounds.

Item 32 VM/10/1 (8) Plates III-4a,16f.
Form: thin-walled bowl. Thickness: 0.3 cms.
Item 33 VM/S/0 (4) Plate III-16a.
Form: bowl with everted rim. Thickness: 0.35 cms.
Rim diameter: Approximately 18 cms (7%).
Decoration colour and Decoration: See Item 32.

Item 34 VM/GEN SUR (25) Plate III-4b.
Form: bowl. Thickness: 0.35 cms. Rim diameter: Very approximately 14 cms (4%). Decoration colour: BCC 28, BCC 58. Decoration: Floral motif against open background, with scroll motif along border. The petals of one flower have been hand coloured beneath the glaze. Remarks: This is the single example of hand colouring a transfer in this collection.

Item 35 VM/S/L (15) Plate III-16a.
Form: cup. Thickness: 0.2 cms - 0.25 cms.
Decoration colour and Decoration: Identical to Item 34, but decorated internally and externally.

Item 36 VCC/GEN SUR (162) Plate III-4c.

SUB-TYPE AF RED SCENIC TRANSFER WARE 6 sherds (Item 37)
Note: The six sherds in this sub-type belong to a single item.

Item 37 VOM/5/1 & VOM/2/1 (8 & 9 & 10 & 11 & 12) Plate III-4d.
Form: wavy-rimmed bowl. Thickness: 0.5 cms (rim) to 0.7 cms (body). Rim diameter: 22 cms (15%).
Decoration colour: Between BCC 28 and BCC 29.
Decoration: External geometric motifs; internal border of combined floral and geometric motifs with an architectural motif of a towered building surrounded by trees.

**SUB-TYPE AG  BROWN FLORAL TRANSFER WARE** 6 sherds (Item 38)


**Item 38 VCC/GEN SUR (14 & 15 & 53) Plate III-4e,17h.**
Form: shallow bowl (total height 3 cms).
Thickness: 0.3 cms. Rim diameter: Approximately 16 cms (7%). Base diameter: 8 cms (17%).

**SUB-TYPE AH  BLUE SCENIC TRANSFER WARE** 104 sherds (Items 39-45)

Note: Although items decorated with the willow pattern belong to this sub-type, they are treated in a separate category below.

Distribution: VM, VMII, VCC, VMQ. Thickness: 0.25 cms to 1.0 cms. Fabric colour: BCC 1. Glaze colour: BCC 1. Decoration colours: BCC 89, BCC 145, BCC 146, BCC 149, BCC 150, BCC 194, BCC 197, BCC 218. Decoration: The scenes employed in this sub-type are most commonly architectural, pastoral and aquatic.
The "Bosphorus" pattern observed in green (above, Item 28) occurs on 15 sherds in this sub-type, which represents at least three and possibly five vessels. In addition 47 sherds have been isolated as belonging to a single large bowl or ewer (Item 39). Most patterns are bordered with either geometric or floral motifs, or a combination of both.

Item 39 VM/GEN SUR (8 & 99) & VM/9/1 (6) & VM/10/1 (55) together with VM/14/1 (1 & 14 & 29) Plates III-5a,b,15d,16q.

Form: large bowl or ewer. Thickness: 0.5 cms.

Rim diameter 32 cms (17%). Base diameter: 15 cms (45%). Decoration colour: BOC 197. Decoration: External stylized leaf motif, which is also used internally around upper walls. The internal base carries a monastery scene, with a monk sitting on steps leading up a hill. Crosses stand on either side of the steps. On other sherds of this piece (not illustrated, but see Item 40) can be seen a distant church or monastery. Remarks: On the base is a printed stamp of the firm Copeland and Garrett, similar to Godden's example no. 1092\(^1\). The pattern design is "CONVENT". The pattern appears to be a common one. It was also used by William Wridgway, Son and Co. of Hanley between 1838 and 1848\(^2\).

\(^1\) Encyclopaedia of British Pottery and Porcelain Marks, p.173.

\(^2\) Miss S. Davis, pers. comm.
**Item 40**  VM/9/1 (43) Plates III-5c,15e.
Form: plate. Thickness: 0.3 cms to 0.45 cms.
Decoration colour: BCC 145. Decoration: The same pattern as Item 39. This sherd shows the distant monastery. Remarks: This sherd bears an impressed stamp of the Copeland and Garrett firm, with the number "18" below it. Elsewhere on the base is an impressed "6" and a printed "D".

**Item 41**  VMQ/8/1 Plate III-5d.
Form: plate or dish. Thickness: 0.4 cms.
Decoration colour: BCC 150. Decoration: Oriental family group. Remarks: Apart from the willow pattern, this is the only sherd in the collection which illustrates directly the earlier Oriental influence on British blue decorated earthenwares.

**Item 42**  VM/8/W (1 & 9) Plates III-5e,16j.
Form: deep plate or dish. Thickness: 0.45 cms.
Decoration colour: BCC 218. Decoration: Part of the "Bosphorus" pattern discussed above, showing the domes and towers and part of the mounted horseman. The scene is surrounded by geometric motifs. Remarks: This pattern is repeated on a number of sherds in this sub-type.

**Item 43**  VM/9/1 (2) & VM/13/1 (9) Plate III-5f,15f.
Form: plate. Thickness: 0.4 cms. Base diameter: 11 cms (20%). Decoration colour: Between BCC 146 and BCC 218. Decoration: The scene is representative of the exotic nature of many of the scenes used; it shows three figures.
reclining in front of an elaborate canopy. A river, boats, mountains and trees form the background. Remarks: This item has the printed pattern name "PALESTINE" on the reverse. Of interest, on the extreme right of the present example, is the geometric motif and the feet of a horse and man, both of which are recurring motifs of the "Bosphorus" pattern. Thus it appears that some of the examples of this latter pattern in the present collection probably represent border motifs on other patterns.

Item 44 VM/S/K (3) Plates III-5g,17f.
Form: plate. Thickness: 0.5 cms. Decoration colour: Between BCC 89 and BCC 194. Decoration: River scene. Remarks: This sherd is the only plate base of this "china" ware which does not have a ring-foot. It is also unusual in decoration, which is less exotic and more realistic, and presented in more intense colours.

Item 45 VGC/GEN SUR (61) Plate III-17g.
Form: straight-sided mug. Thickness: 0.2 cms (base) to 0.45 cms (wall). Base diameter: 8 cms (40%). Decoration colour: BCC 145. Decoration: External pastoral scene.

SUB-TYPE AT BLUE SCENIC TRANSFER WARE (WILLOW PATTERN) 306 sherds (Items 46-54)

Note: While the willow pattern belongs essentially to sub-type AH, it is extremely common in this collection, and since its component motifs are sufficiently distinct for all
elements to be related to a single category, it is of more value to treat it separately.

Distribution: VM, VMII, VCO, VQS, VH, VHK, VMQ, VSD, VOM, VSP, VSPII, VCH, VB. Thickness: 0.3 cms to 0.65 cms. Fabric colour: BCC 1. Glaze colour: BCC 1. Decoration colours: BCC 89, BCC 145, BCC 146, BCC 195, BCC 218. Decoration: Because of the symbolic and stylistic nature of the pattern, it lends itself to an examination of individual motifs which recur on all examples, and usually in the same place within the pattern. On plates and dishes the decoration can be divided into three registers. The border patterns of plates made during this period are of two main types, the essentially floral border called the "mosquito" pattern, which was represented in the Port Essington collection on three porcelain sherds (see above, Porcelain Type D) and the less artistic and more common "Spode" form which is the only one used on the earthenwares in this collection. It is also known as the "wheel" or "wall" border, and consists of conventional geometric motifs, cross-hatching, dotted circles, formalized floral design, "wheels", and lines reminiscent of fortifications which give rise to the name "wall" border. Within this border is another register of conventional geometric motifs - cross hatching enclosing diamond shapes divided into quarter by more "fortification" patterns. Within these two borders, the legend of the willow pattern is

1 One version of this legend is available in The Story of the Willow Pattern Plate (anonymous, London 1963). Continued on p.170.
represented pictorially by a number of standard motifs - the mandarin's house, with his wealth represented by the ornate buildings and fruit trees, the fence which separates the lovers, the bridge over which they escape, the house where they hide, the boat on which they escape again, the island where they prosper, again surrounded by fruit trees, and finally after they are again discovered and die, the birds into which they are transformed. While the standardization of these motifs is extreme, minor differences in the rendition of them might allow future work to date changes in the patterns more effectively.

Item 46

VM/5/1 (2) & VM/5/1 (1 & 2 & 4 & 7 & 9 & 15) & VM/6/1 (3 & 11 & 20 & 26) & VM/7/1 (33 & 38) & VM/8/1 (7) Plates III-6,17c.

Form: plate. Thickness: 0.4 cms. Rim diameter: 15 cms (100%). Decoration colours: BCC 145,

Continued from p. 169.

Briefly the clerk of a rich mandarin falls in love with the mandarin's daughter. The father finds out and the clerk is banished, while the daughter is confined to the grounds of her father's house (the fence at the base of the picture). The daughter is betrothed to a rich nobleman, who arrives to begin the wedding preliminaries. But the lovers have communicated by sending messages across the river and the clerk arrives to abduct the daughter (and the nobleman's jewels) and they escape across the bridge pursued by the father. They are married and live in the austere house on the other side of the river, until found out, and are forced to flee in the boat to an island where they prosper. However they are located by the nobleman, the clerk is killed and the daughter commits suicide. Their eternal devotion to each other is represented in the birds at the top of the picture, in which form they are reunited.
BCC 218. Decoration: The conventional willow pattern, and the most common in the present collection. The item is unmarked on the underside except for a small circle of dots with a central dot. This piece, although unmarked, is identical in its representation of motifs to the Spode examples. A point which might be of significance is the relationship of the outer and inner registers of geometric patterns. On all the examples in this collection, the lined "fortification" motif in each register is adjacent. In an illustrated example of the pattern referred to as the "Spode" pattern, the floral shield device of the outer register is placed opposite the "fortification" motif of the inner register. On a later example examined by me the two registers have been placed on the plate apparently without regard to each other. In the period of production of the willow pattern at Port Essington, however, it is reasonable to assume that the alignment of the two geometric registers followed a conscious style.

Item 47   WHK/3/1·(1 & 2) Plate III-7a.
Form: plate. Thickness: 0.4 cms. Decoration colour: Between BCC 89 and BCC 195. Decoration: The motif of the escaping lovers, missing from Item 46. The three figures are the daughter, carrying a distaff, emblem of virginity, the clerk carrying the stolen jewels, and the mandarin who pursues them with a whip. This representation,
BCC 218. Decoration: The conventional willow pattern, and the most common in the present collection. The item is unmarked on the underside except for a small circle of dots with a central dot. This piece, although unmarked, is identical in its representation of motifs to the Spode examples. A point which might be of significance is the relationship of the outer and inner registers of geometric patterns. On all the examples in this collection, the lined "fortification" motif in each register is adjacent. In an illustrated example of the pattern referred to as the "Spode" pattern, the floral shield device of the outer register is placed opposite the "fortification" motif of the inner register. On a later example examined by me the two registers have been placed on the plate apparently without regard to each other. In the period of production of the willow pattern at Port Essington, however, it is reasonable to assume that the alignment of the two geometric registers followed a conscious style.

**Item 47** WIK/3/1. (1 & 2) Plate III-7a.
Form: plate. Thickness: 0.4 cms. Decoration colour: Between BCC 89 and BCC 195. Decoration: The motif of the escaping lovers, missing from Item 46. The three figures are the daughter, carrying a distaff, emblem of virginity, the clerk carrying the stolen jewels, and the mandarin who pursues them with a whip. This representation,

---

1 The Story of the Willow Pattern Plate, cover illustration.
with three figures on a three-arch stone bridge is the most usual representation, and is certainly the most common in the present collection (but see Items 49, 50). Note that while the design is a close imitation of Item 46, a comparison of the trees indicates that it comes from a different engraving.

Item 48 VQS/6/1 (9 & 10 & 11 & 12 & 15 & 16 & 17 & 18 & 19) Plates III-7a, 15g,17a.
Form: plate. Thickness: 0.3 cms. Rim diameter: 23 cms (50%). Decoration colours: Range between BCC 145 and BCC 218. Decoration: Conventional willow pattern which differs in detail from Item 46. The decoration lacks the delicacy of Item 46 both in representation (e.g. compare the bird and the fence) and in the colour of decoration. This is caused by more intense definition of outlines together with a simplification of the pattern, for example the four species of trees about the mandarin's house in Item 46 are here reduced to two. The peach blossom motif is reduced from a circle of radiating strokes around a central dot to a simple circle. Slight differences can be noted in the outer register of border decoration, where the floral elements are changed and the "wheels" slightly overlap. Remarks: This Item has a printed mark on the underside of the rim, being a pre-1837 version of the Royal arms with "Royal Stone China" printed below. The piece is unusual (see discussion below) but is best attributed to Hicks, Meigh and Johnson, whose pottery at Shelton is dated 1822 - 1835.
Item 49  VM/7/1 (72) & VM/9/1 (31) & VM/10/1 (18)  Plate III-7c.
Form: plate or platter. Thickness: 0.45 cms.  
Decoration colour: BCC 218. Decoration:  
Variation of bridge motif which shows bridge with 
four (or more probably, five) arches. The overall 
pattern is large and the expanded bridge may have 
been used to fill the area more successfully.

Item 50  VM/14/1 (30) Plates III-7d,15h. 
Form: plate. Thickness: 0.6 cms. Decoration 
colour: BCC 145 to BCC 146. Decoration: A 
variation unique in this collection. Many 
differences in the motifs are apparent. The 
bridge is a single arch, and the representation 
of it differs from the usual angular lines used to 
indicate the stones with which it is made. Only 
two figures are (apparently) represented on the 
bridge, but an additional figure (the faithful 
handmaid?) awaits in the lovers' retreat across the 
river. In the normal pattern this house is austere 
in design and has no fruit trees around it, which 
is a symbolic representation of the story, where 
the lovers are forced to live in poverty, in 
contrast to the ornate richness of the mandarin's 
house and garden on the opposite side of the river. 
In the present item however the house is 
architecturally complex and large and a fruit tree 
is nearby. In general the pattern indicates a 
significant variation from the traditional pattern, 
with an attendant loss of meaning. Remarks: This 
Item has a printed stamp on the reverse side with
the words "Semi China" inside a double lined, diamond shaped frame. In the top corner of the diamond is a small rectangle, and in the bottom corner what appears to be a lower case printed "1".

**Item 51** VM/7/1 (7) Plates III-7e,17d.
Form: bowl or deep plate. Thickness: 0.4 cms.
Decoration colour: BCC 145. Decoration: Variation of the conventional border motif. Remarks: This rim sherd possibly belongs with Item 50.

**Item 52** VM/S/J (18) Plate III-17k.
Form: bowl. Thickness: Between 0.45 cms (wall) and 0.6 cms (base). Base diameter: 8 cms (17%).

**Item 53** VM/8/1 (5) Plate III-161.
Form: large bowl with everted rim. Thickness: 0.55 cms. Decoration colour: BCC 218. Decoration: Internally with the conventional geometric borders, externally with an "open" (borderless) representation of the conventional pattern.

**Item 54** VM/S/L (3) Plate III-17p.
Form: flanged lid. Thickness: 0.35 cms. Rim diameter: Approximately 10 cms (8%). Decoration colour: BCC 44. Decoration: Conventional pattern. Remarks: The colour of decoration of this item is unusual and is the only example in this collection.
SUB TYPE A7  BLUE FLORAL TRANSFER WARE 169 sherds
(Items 53-55)

Distribution: VM, VMII, VHK, VSF, VSD, VOM, VCC.
Thickness: Ranges between 0.2 cms and 1.1 cms. Fabric
colour: BCC 1. Glaze colour: BCC 1. Decoration
colours: BCC 44, BCC 145, BCC 146, BCC 147, BCC 149,
BCC 194, BCC 196, BCC 197, BCC 218. Decoration:
Floral decoration includes so large a number of motifs
that it is only possible to analyse this broad
sub-type in terms of stylistic ranges. Several
naturalistic representations on a grand scale (trees
and flowering bushes) are possibly sherds from
naturalistic scenic decoration. A second small group
in the collection consists of the patterns which
attempt to reproduce realistic representations of
flowers and leaves, where the artist has not only
faithfully reproduced the structural nature of his
subjects but has also attempted to represent petal
and leaf texture. This range of decoration is in
every case associated with the "closed" background
technique and is in contrast with the largest range
of decoration which may be called "representational".
Here sufficient detail is used to be able to identify
the flower only on occasions. In this latter category
an "open" background is most often employed. The
result is that despite the lack of detail in this group
its overall appearance is one of lightness, whereas
the "realistic" representations are often heavy and
florid. This is accentuated by the use of darker
blues in the "realistic" group.

Finally, this abstraction gradually results in the
development of geometric shapes derived from floral inspiration; also such things as scroll leaf motifs are used as borders for more representational floral motifs, and these constitute a geometric/floral group.

As there appeared to be a pattern in the relationship between styles, intensity of colour, and open and infilled background techniques, the following table was calculated.

PERCENTAGE DISTRIBUTION OF BLUE FLORAL DECORATIVE STYLES IN TERMS OF TYPE OF BACKGROUND AND INTENSITY OF COLOUR DECORATION. (161 ITEMS)

<table>
<thead>
<tr>
<th>A) Open Background</th>
<th>Light (BCC 145)</th>
<th>Medium (BCC 146-BCC 193)</th>
<th>Dark (BCC 218)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naturalistic</td>
<td>1.86</td>
<td>3.73</td>
<td>-</td>
<td>5.59</td>
</tr>
<tr>
<td>Realistic</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Representational</td>
<td>22.36</td>
<td>22.98</td>
<td>2.48</td>
<td>47.82</td>
</tr>
<tr>
<td>Geometric/Floral</td>
<td>3.11</td>
<td>17.39</td>
<td>2.48</td>
<td>22.98</td>
</tr>
<tr>
<td>(Sub Total)</td>
<td>27.33</td>
<td>44.11</td>
<td>4.96</td>
<td>76.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B) Closed Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naturalistic</td>
</tr>
<tr>
<td>Realistic</td>
</tr>
<tr>
<td>Representational</td>
</tr>
<tr>
<td>Geometric/Floral</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

From these figures, the following percentages of the styles present were recorded.
development of geometric shapes derived from floral inspiration; also such things as scroll leaf motifs are used as borders for more representational floral motifs, and these constitute a geometric/floral group.

As there appeared to be a pattern in the relationship between styles, intensity of colour, and open and infilled background techniques, the following table was calculated.

**PERCENTAGE DISTRIBUTION OF BLUE FLORAL DECORATIVE STYLES IN TERMS OF TYPE OF BACKGROUND AND INTENSITY OF COLOUR DECORATION.** (161 ITEMS)

<table>
<thead>
<tr>
<th></th>
<th>Light (BCC 145)</th>
<th>Medium (BCC 146-BCC 195)</th>
<th>Dark (BCC 218)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naturalistic</td>
<td>1.86</td>
<td>3.73</td>
<td>-</td>
<td>5.59</td>
</tr>
<tr>
<td>Realistic</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Representational</td>
<td>22.36</td>
<td>22.98</td>
<td>2.48</td>
<td>47.83</td>
</tr>
<tr>
<td>Geometric/Floral</td>
<td>3.11</td>
<td>17.39</td>
<td>2.48</td>
<td>22.98</td>
</tr>
<tr>
<td>(Sub Total)</td>
<td>27.33</td>
<td>44.1</td>
<td>4.96</td>
<td>76.4</td>
</tr>
<tr>
<td>B) Closed Background</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naturalistic</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Realistic</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Representational</td>
<td>3.11</td>
<td>0.62</td>
<td>4.97</td>
<td>5.59</td>
</tr>
<tr>
<td>Geometric/Floral</td>
<td>0.62</td>
<td>1.86</td>
<td>8.70</td>
<td>13.67</td>
</tr>
<tr>
<td>TOTAL</td>
<td>31.06</td>
<td>47.2</td>
<td>21.74</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From these figures, the following percentages of the styles present were recorded.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Naturalistic</td>
<td>5.59</td>
</tr>
<tr>
<td>Realistic</td>
<td>5.59</td>
</tr>
<tr>
<td>Representational</td>
<td>61.5</td>
</tr>
<tr>
<td>Geometric/Floral</td>
<td>27.39</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.01</strong></td>
</tr>
</tbody>
</table>

**Item 55**  VGC/GEN SUR (100 & 106) Plates III-8a,16o.

Form: bowl. Thickness: Ranges between 0.35 cms (body) and 0.95 cms (rim). Rim diameter: 24 cms (11%). Decoration colours: BGC 146, BGC 218. Decoration: Externally in conjunction with probable scenic motif; internally on rim in a "realistic" motif against a closed background.

**Item 56**  VM/12/1 (4) Plates III-8b,16m.

Form: bowl. Thickness: 0.45 cms. Decoration colour: BGC 149. Decoration: Externally on wall, and internally on wall and lip with a continuous "representational" floral and leaf motif against a closed background. Remarks: This exact pattern is represented on at least two other vessels represented in the collection.

**Item 57**  VM/1/1 (3 & 39) Plate III-8c.

Form: plate or dish. Thickness: 0.4 cms. Decoration colours: BGC 145, BGC 146. Decoration: "Representational" thistle pattern against an open background.

**Item 58**  VM/6/1 (1) Plate III-8d.

Form: steep angular vessel, possibly cup. Thickness: 0.4 cms. Decoration colours: BGC 145, BGC 146. Decoration: Internal and external
"representational" flower and leaf pattern against an open background.

**Item 59**  
VCC/GEN SUR (109) Plates III-6e,16i.  
Form: deep plate or bowl. Thickness: Between 0.25 cms (body) and 0.55 cms (rim). Decoration colours: BCC 145, BCC 196. Decoration: "Representational" leaf pattern overlain by a geometric spiral of small oval dots, against an open background.

**Item 60**  
VM/13/1 (4) Plates III-8f,17i.  
Form: shallow bowl. Thickness: Between 0.35 cms (base) and 0.55 cms (wall). Decoration colour: BCC 194. Decoration: Negative floral design of the "representational" type against a closed background of hatched diamonds which diminish in size from the rim inwards.

**Item 61**  
VCC/GEN SUR (116) Plate III-8g.  
Form: deep plate or bowl. Thickness: 0.5 cms. Decoration colours: BCC 147, BCC 194. Decoration: "Representational" floral motif on an open background with some areas closed. Several flowers are abstracted to a degree where they are represented as circles with radiating ovals as petals. This style is not common in the collection.

**Item 62**  
VM/S/J (12) Plate III-8h.  
Form: shallow bowl. Thickness: 0.5 cms. Decoration colours: BCC 145, BCC 149. Decoration: "Geometric/floral" leaf motif against a closed background together with a regular pattern of
asterisks. Below this another register of the leaf motif begins. Remarks: This pattern is common in the present collection.

Item 63 VMII/1/1 (14 & 48) Plates III-8i,17j.
Form: bowl. Thickness: 0.25 cms. Decoration colour: BCC 44. Decoration: Internal and external geometric/floral motif against an open background.

Item 64 VM/9/1 Plate III-8j.
Form: cup. Thickness: 0.35 cms. Decoration colour: BCC 145. Decoration: Internal and external motif of clusters of fruit or blossom against an open background.

Item 65 VHK/3/1 (17 & 18) Plates III-8k,16e.
Form: steep-sided bowl. Thickness: Between 0.35 cms (rim) and 0.55 cms (body). Rim diameter: 16 cms (15%). Decoration colours: BCC 145, BCC 197. Decoration: Complex geometric/floral motifs. The floral motifs are against an open background and are both of standard representational form and also in some instances stylized. The geometric motifs range from complex forms with obvious floral inspirations to simple cross-hatched diamonds.

SUB-TYPE AK BLUE GEOMETRIC TRANSFER WARE 98 sherds (Items 66-71)

Distribution: VM, VMII, VQS, WOM, VCC. Thickness: 0.25 cms to 1.1 cms. Fabric colour: BCC 1. Glaze colour: BCC 1. Decoration colours: BCC 89, BCC 145,
BCC 149, BCC 195, BCC 218. Decoration: The use of pure geometric design as decoration in this collection is relatively rare, and although 98 sherds are included in this category some of these undoubtedly belong to patterns of which the geometric motifs are only subsidiary. Of the designs in which the geometric elements form the dominant motif all are covered by the items listed below.

**Item 66**  

**Item 67**  
VN/9/1 (13) Plate III-9b.  
Form: indeterminant. Thickness: 0.35 cms. Decoration colour: BCC 195. Decoration: Continuous curved lines with dotting and cross-hatching on the lip. A flower motif also occurs on this item, and others of similar decoration, which is common in this collection. However, the geometric motif makes this ware more easily recognizable.

**Item 68**  
VM/7/1 (69) & VM/9/1 (9) & VM/10/1 (46) & VM/12/1 (1) & VM/13/1 (14) & VM/14/1 (18 & 28 & 31) Plates III-9c,151,17W.  
Form: steep-sided bowl. Thickness: Between 0.35 cms (base) and 0.75 cms (wall). Base diameter: 8 cms (35%). Decoration colours: BCC 145, BCC 149. Decoration: Internally on base...
with complex star pattern, and on internal and
external walls with alternating vertical registers
of multiple chevrons and a simple geometric motif
of dotted circles and scrolls. Remarks: On
underside of base is a fragmentary printed mark
consisting of a crown above a scroll on which is
written "VIC..." (possibly "VICTORIA").

**Item 69** VMII/1/l (10) Plate III-9e.
Form: plate. Thickness: 0.55 cms. Decoration
colour: BCC 149. Decoration: Internally on rim,
solid bands of colouring and immediately below this
a register of dotted arches and crosses. Where the
rim curves into the body a single line runs around
the body.

**Item 70** VMII/1/l (19) Plates III-9f,16b.
Form: ? cup. Thickness: 0.25 cms. Decoration
colour: BCC 89. Decoration: Internally and
externally on the rim with a continuous geometric
leaf pattern.

**Item 71** VCC/GEN SUR (118) Plates III-9g,16p.
Form: bowl. Thickness: 0.8 cms (body) to 1.1 cms
(rim). Decoration colour: BCC 218. Decoration:
On top surface of rim and internally complex
generio/floral motif against a closed background.

**TYPE B GREEN FEATHEREDGE WARE** 11 sherds (Item 72)

Distribution: VM, VMII. Thickness: 0.4 cms.
colour and Decoration: Uniform for this type - see Item
72. Remarks: The only shapes represented are
wavy-edged plates.
Item 72  VM/10/1 Plate III-10a.
Form: plate. Thickness: 0.4 cms. Decoration colour: BCC 105. Decoration: Irregular incised lines running from rim towards centre for a distance of 1 cm to 1.5 cms. The colour is applied under the glaze and is caught in the incised grooves.

**TYPE C  BLUE FEATHEREDGE WARE** 8 sherds (Items 73-74)


Item 73  VM/S/H (2) Plate III-10b.

Item 74  VM/S/6 (2) Plate III-10c.
Form: plate. Thickness: 0.45 cms. Decoration colour: BCC 149. Decoration: Variant of Item 73. The wavy edge is less pronounced and the incised lines are finer.

**TYPE D  BLUE SPATTER WARE** 17 sherds (Item 75)

Distribution: VMQ, VQS, VCG. Thickness: 0.4 cm to 0.6 cms. Fabric colour: BCC 1. Glaze colour: BCC 1. Decoration colour: BCC 146. Decoration: A variant of the featheredge types, where the decoration is applied to the upper face of the rim only. No incision is used and the colour is "spattered"
or sponged on to the surface, producing a mottled effect. All items in this type are uniform. Remarks: As opposed to the featheredge wares, all items are straight-edged plates.

**Item 75**  VCC/GEN SUR (53) Plate III-10d.  
Form: plate. Thickness: 0.6 cms. Rim diameter: 24 cms (15%). Decoration colour and Decoration: As described above.

**TYPE E UNDECORATED WHITE GLAZE WARE** 380 sherds  
(Items 76-83)  

Distribution: VM, VMII, VH, VHD, VHK, VMQ, VQs, VSD, VSP, VCC, VB, VCH, VAM. Thickness: 0.2 cms to 0.6 cms. Fabric colour: BGC 1. Glaze colour: BGC 1, BGC 2.

**Item 76**  VHD/DRAIN (1 & 2 & 3) Plates III-11a,17q.  
Form: pestle or palette. Thickness: 0.2 cms (base). Diameter: 5.3 cms (100%). Remarks: Stands 1.0 cms high.

**Item 77**  VB/SUR (11 & 12 & 14 & 16 & 17 & 19 & 20 & 21) Plates III-11a,17b.  
Form: plate. Thickness: 0.45 cms (base) to 0.55 cms (rim). Rim diameter: 24 cms (54%). Base diameter: 14 cms (50%).

**Item 78**  VHK/2/1 (9)  
Form: indeterminant. Thickness: 0.4 cms. Remarks: Carries an impressed mark "HACKWOOD". Identified as William Hackwood of Hanley (1827-43). This is the only marked item in this category.
Item 79  VH/GEN SUR (1) Plates III-11o, 15j, 16g.
Form: square canister. Thickness: 0.45 cms (body). Remarks: Note internal flange to hold lid, and indentation at corner, apparently to facilitate holding the vessel. Height of flange above shoulder 1.65 cms. This is a large example of a number of similarly shaped canisters in this collection.

Item 80  VM/7/1 (35) Plate III-16h.
Form: vertical vessel, possibly cup or mug. Thickness: 0.4 cms. Rim diameter: Approximately 10 cms (5%).

Item 81  VGC/GEN SUR (111) Plate III-17g.
Form: dish or shallow bowl. Thickness: 0.4 cms.

Item 82  VGC/GEN SUR (11) Plate III-16w.
Form: bowl. Thickness: 0.3 cms (body) to 0.85 cms (rim).

Item 83  VMII/2/1 (4) Plate III-171.
Form: bowl. Thickness: 0.25 cms (base) to 0.4 cms (wall). Base diameter: 8 cms (15%).

TYPE F. LINE DECORATED WARE 6 sherds (Item 84)

Item 84  VHKA/2/1 Plate III-12a.
Form: indeterminant. Thickness: 0.4 cms. Decoration colour and Decoration: As above.
TYPE G HAND PAINTED WARE 12 sherds (Items 85-86)

Distribution: VM, VMII, VHK, VQS, VCC.
Thickness: 0.2 cms to 0.3 cms. Fabric colour: BCC 1.
Glaze colour: BCC 1. Decoration colours: BCC 24, BCC 38, BCC 46, BCC 103, BCC 149, BCC 220. Decoration: In all items a floral motif is used. Five items are painted in a single colour under the glaze, six items in two colours under the glaze, one item has three underglaze colours and the remaining item has one colour applied under the glaze, and a second above the glaze.

Item 85  VQS/4/1 (32) Plate III-12b.

Item 86  VMII/2/1 (10) Plate III-12c.

TYPE H FLOWING BLUE WARE 1 sherd (Item 87)

Item 87  VGC/GEN SUR (67) Plate III-12d.
Form: indeterminant. Thickness: 0.4 cms. Decoration colour: BCC 149. Decoration: Internal and external "tree" motif executed in a single dotted line. The colour of the decoration has "flowed" to the extent of discoloring the surrounding glaze.
GROUP 2  THE COLOURED CLAY WARES

This group includes all earthenwares represented in the collection not included in the white clay wares. Some, such as the saltglaze stoneware, are of a hard paste variety, others of a soft paste. Both British and Asian wares are included here.

TYPE A  MOCHA WARE  14 sherds (Items 88-89)

Distribution: VM. Thickness: 0.3 cms to 0.9 cms. Fabric colour: BCC 165. Glaze colours: BCC 1, BCC 233. Decoration colour: BCC 45. Decoration:

for a detailed description of the method see Godden; briefly, a tree-like effect is produced by the chemical reaction of an acid colourant on an alkaline slip.

Remarks: The 14 sherds of this type possibly belong to the same vessel. This ware, first produced in the eighteenth century, was in production at the Copeland Works in 1852, where it was noted by Charles Dickens.

Item 88  VM/GEN SUR (3 & 11) Plates III-12e,16d.

Form: bowl. Thickness: 0.5 cms (wall) to 0.9 cms (rim). Rim diameter: Approximately 26 cms (6%). Decoration colour: BCC 45. Decoration: External only. The decoration is contained in a register around the wall of the vessel.

Item 89  VM/GEN SUR (6) Plate III-17m.

Form: base sherd of Item 88. Thickness: 0.3 cms (base) to 0.75 cms (lower wall). Base diameter:

1 British Pottery & Porcelain 1780-1850, pp.142-144. see also London Times, 3.8.1963.

14 cms (18%). Decoration colour and decoration: See Item 88.

**TYPE A UNGLazed WHEELMADE WARE** 30 sherds (Items 90-91)

Distribution: VM, VMII, VH, VMQ. Thickness: 0.25 cms to 0.9 cms. Fabric colour: BCC55, BCC 133. Remarks: All the sherds in this group are wheelmade and all except three are of a dark, thin, hard-fired nature, quite unlike the unglazed S.E. Asian wares. The remaining three sherds are of extremely porous, soft fabric and possibly relate to what were known as "water monkeys" - containers through which the water could seep and evaporate on the external face thus keeping the water inside at a lower temperature. It is possible that this unglazed earthenware was not of English manufacture but no evidence exists to decide the point.

**Item 90** VM/S/E (8 & 13) Plate III-19p.

**Item 91** VH/S/R (3) Plate III-19q.
Form: indeterminate. Possibly dish or bowl. Thickness: 0.7 cms (base) to 0.9 cms (wall). Base diameter: approximately 22 cms (6%). Fabric colour: BCC 133.

**TYPE C SALTGLAZE STONEWARE** 170 sherds (Items 92-99).

Distribution: VM, VH, VSD, VMQ, VSF, VOM, VCC, VB, VAM II. Thickness: 0.5 cms to 1.55 cms. Fabric
colours: BCC 2, BCC 3, BCC 187. Glaze colours: BCC 29, BCC 60, BCC 61, BCC 64, BCC 66, BCC 67, BCC 72, BCC 73, BCC 76, BCC 136, BCC 138, BCC 204, BCC 205. Decoration: Found mainly on the jars and consists usually of one or more incised lines running horizontally around the shoulder of the pot, although similar lines can occur around the body, in the centre and towards the base. It is common for the mouth, neck and shoulder to be glazed a darker colour than the body. Of the jars, all examples are glazed on the internal face; examples of both glazed and unglazed interior surfaces of bottles are present. Remarks: Vessel shapes are confined to inkwells, bottles and open-mouthed jars.

Item 92     VM/S/E (4) & VM/8/1 (42) Plates III-13a, 18a.
Form: jar. Thickness: 0.75 cms (body) to 1.55 cms (neck). Glaze colour: External - BCC 73, BCC 136; Internal - BCC 66, BCC 76. Rim diameter: 15 cms (50%) (approximate body diameter: 25 cms). Decoration: Three incised rings on shoulder.

Item 93     VM/S/E (3) Plate III-18b.
Form: jar. Thickness: 0.6 cms. Rim diameter: 15 cms (26%). Glaze colours: External - BCC 60; Internal - BCC 204. Decoration: The shoulder line in this item is a distinct ridge.

Item 94     GENERAL SURFACE COLLECTION/67 (27)
Plates III-13b, 18c.
Remarks: Unglazed internally.
Item 95  VMII/2/2 (1) Plate III-13c.
Form: bottle. Thickness: 0.75 cms. Glaze colour: BCC 61. Remarks: This item has a high, even glaze. While it was in a sealed deposit in association with material associated with the 1840s settlement, the ware is much more similar to the salt glaze bottles of the later nineteenth century. Therefore the authenticity of this item must be regarded as doubtful.

Item 96  VMQ/1/1 (21 & 22) & VMQ/6/1 (11) & VMQ/32/1 (27) & VMQ/32/2 (4) Plates III-13d,18g.
Form: bottle. Thickness: 0.4 cms (base) to 0.8 cms (body). Base diameter: 9 cms (50%). Glaze colour: BCC 67. Remarks: The surface is extremely uneven, and is unglazed internally.

Item 97  VGC/GEN SUR (1) Plate III-18f.

Item 98  VGC/GEN SUR (3) Plates III-13e,18d.
Form: inkwell. Thickness: 0.4 cms (base) to 0.6 cms (body). Base diameter: 5.5 cms (50%). Height from base to shoulder 4.0 cms. Glaze colour: BCC 205. Remarks: Unglazed internally.

Item 99  VOM/6/1 (7) Plates III-13e,18c.
Form: inkwell. Thickness: 0.3 cms (base) to 1.0 cms (body). Base diameter: 4.5 cms (50%).
Glaze colour: BCC 67. Remarks: Unglazed internally. The body has been flaked to form an Aboriginal artefact.

**TYPE D MACASSAN WARE** 8 sherds (Items 100–101)

Distribution: VMII, VH, VQS, VGC. Thickness: 0.35 cms to 1.5 cms. Fabric colours: BCC 58, BCC 59, BCC 72, BCC 204. Decoration: Although formal decoration can occur in this pottery it is infrequent and is not present in this collection. Several items bear traces of slip, and one rim (Item 100) has thumb impressions on the underside, which may, or may not, represent formal decoration. Remarks: From work carried out on Macassan sites in north Australia by C.C. Macknight, the most common shape in this ware appears to be a large globular pot with everted rim. The only recognizable vessel shapes in the present collection came from such globular pots.

**Item 100** VGC/GEN SUR (202) Plates III, 14a, 19r.

**Item 101** VMII/3/1 (16)
Form: indeterminant. Thickness: 0.45 cms to 0.55 cms. Fabric colour: BCC 204. Remarks: Spectroscopic analysis of this item revealed

---

1 C.C. Macknight, pers.comm.

2 Carried out by Mr C. Key, Dept. of Anthropology, A.N.U.
that the filler consisted almost entirely of shell and coral particles. Although this particular type of ware occurs on Macassan sites in north Australia it is not common.

**TYPE E  RIM GLAZED STONEWARE** 7 sherds (Item 102)

**Item 102**  VSD/1/2 (3) Plates III-14b,19s.


**TYPE F  NGA-KWUN WARE** 1 sherd (Item 103).

**Item 103**  VSF/10/1 (5)

Form: indeterminant, but possibly open-mouthed jar. Thickness: 0.55 cms. Fabric colour: BGC 7. Glaze colour: BGC 140. Decoration: Glazed internally and externally. Remarks: This ware is identical to that of two squat, flat-based, open-mouthed jars in the possession of the author. One was collected at Yam Creek, a Northern Territory goldfield dating to the last quarter of the nineteenth century, the other on a deserted farm house site on the south coast of New South Wales, imprecisely dated from other finds to the beginning of this

---

1 C.C. Macknight. pers.comm.
century. These jars are a common household ware used mainly to contain salted vegetables and are still in use in China and Taiwan\(^1\). The name adopted here is from the Cantonese name for the ware.

**UNIDENTIFIED POTTERY** 25 sherds (Items 104-106)

Amongst the unidentified sherds, three items are worthy of note.

**Item 104** VM/7/1 (70) & VM/9/1 (47 & 58)

Plates III-14c, 19v.

Form: lid. Thickness: 0.2 cms (roof) to 0.85 cms. Fabric colour: BCC 165. Glaze colours: BCC 1, BCC 27. Decoration: Glazed on external surfaces only. The attempt to glaze has resulted in a thick, opaque surface coating which has not fused with the surface. Wheelmade.

**Item 105** VCC/GEN SUR (35) Plate III-14d.


Remarks: This item is unlike anything in the present collection, being of finer quality than the usual stonewares. The glaze is very "glassy", and is not unlike the so-called "Rockingham" ware of England, although it does not have the unevenness of the glaze of that ware.

\(^1\) Information from Dr N. Barnard, Dept. of Far Eastern History, A.N.U., to whom the author is indebted.
Item 106 VMQ/1A/1 (1) Plates III-14e,19t.

Form: dish or bowl. Thickness: 1.0 cms.

Fabric colour: BCC 204. Base diameter: 16 cms (15%). Spectrographic analysis of this item revealed the composition of the ware as fine grained purified clay, fused material (glass), some sand and quartz grains. The implication is that the technical level of manufacture precludes it from being labelled primitive pottery. However, the surface finish is very coarse. Remarks: The interior of the vessel has been badly discoloured by containing pitch, which has permeated the fabric to a distance of 0.4 cms.
## Table 14.4

### Distribution of Pottery Types at Victoria

<table>
<thead>
<tr>
<th>Location</th>
<th>VN</th>
<th>YN II</th>
<th>YK</th>
<th>YMD</th>
<th>YMK</th>
<th>YG</th>
<th>YSP</th>
<th>YSP II</th>
<th>VGG</th>
<th>VMO</th>
<th>VSO</th>
<th>VB</th>
<th>YAN</th>
<th>YAN II</th>
<th>YCH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undecorated Porcelain</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVERGLAZED POLYCHROME PORCELAIN</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE ON WHITE PORCELAIN</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSFER PRINTED PORCELAIN</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GREEN FLORAL TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GREEN SCENIC TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GREEN GEOMETRIC TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GREEN/RED TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RED FLORAL TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RED SCENIC TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BROWN FLORAL TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE SCENIC TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE SCENIC TRANSFER (WILLOW PATTERN)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE FLORAL TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE GEOMETRIC TRANSFER</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GREEN FEATHEREDGE</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE FEATHEREDGE</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE SHATTERWARE</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNDECORATED WHITE GLAZE</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LINE DECORATED</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>HAND PAINTED</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOCHA</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNGLAZED WHEEL MADE</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>SALT GLAZE STONEWARE</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>MACASSAN</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>RIM GLAZED STONEWARE</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>NOA-120</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DISCUSSION

Table III-1 shows the distribution of types throughout the settlement at Port Essington. As might be expected the areas where the greatest numbers of types are found together are also the areas which produced the greatest numbers of sherds. These are the three dump areas VM, VMII, and VCC. Apart from these areas the pottery appears to be distributed at random in the settlement and no valid inferences could be drawn from type distribution. Similarly, house function inferences drawn from pottery are possible only in terms of volume, and when taken in association with other artefacts.

Plate III-20a shows the relative proportions of types within the collection\(^1\). The white clay wares constitute 73.9% of the collection, the porcelain 14.1%, and the remainder 12%. Almost all of the porcelain, can be classed as being of mainland South East Asian and probably Chinese manufacture. Two sources of entry for Chinese wares into Port Essington were the Macassan trepangers and traders from Singapore or Canton/Hong Kong. The latter source is more probable on several grounds. Firstly, porcelain on Macassan sites in Australia makes up only a small portion of the total pottery assemblages, and amongst the porcelain found

\(^1\) These are calculated on the initial sherd count before mending. While this leads to possible errors the relative proportions would not be altered to the extent of significantly changing the proportions.
on these sites, the overglaze polychrome decorated type is extremely rare, the bulk consisting of blue on white ware. Of the porcelain in the present collection both types are present in almost equal proportions and together they represent 178 sherds (as well as 39 pieces of undecorated porcelain), compared with only 7 Macassan sherds. Secondly, brief mention is made in the historical records to traders coming from Asia. The relevance of the archaeology is vividly demonstrated here, for the percentage of these wares is quite significant, and these are the archaeological expression of this trade which formed a significant part of the economy of the settlement. This fact is not apparent in the historical record.

Of the white clay wares, 63.2% are the transfer printed wares which form the single largest group (46.7%) of the total collection. Excluding the undecorated white glaze ware, the remaining white clay wares constitute less than 5% of this group. Referring to Plate III-20b, it will be noted the blue transfer wares constitute 89.8% of this type and that a single pattern, the willow pattern, alone represents 40.9% of the transfer printed type. These appear to be the important type distribution patterns which emerge from the analysis.

---

1 See chapter 8, where it is also noted that the Macassans were responsible for at least some of this introduced pottery.
SHAPE

In addition to suggesting overall form, some attempt has been made in the classification to record both thickness ranges and shapes. Because of the complete lack of comparative literature this has been done in the hope of assisting future workers rather than contributing to the close analysis of the present collection. However, some general trends have been noted.

1) Thickness varies considerably on individual items. While the Chinese wares are often thickest at the base with body walls thinning towards the rim, the English wares are often thinnest at the base, having thicker walls and rims.

2) Amongst the English white clay wares, the various categories of shapes show generally a high conformity. Thus featheredge plates all have wavy rims, and spatterware plates have straight rims. However, in profile (plate III-17a-e) the plate shows a general standard form.

3) Of the English glazed wares, all plates, dishes and bowls have a ring foot with a single exception (Item 44, plate III-17f). On shallow dishes and plates this foot is small, on bowls it is larger and angled outwards. On the other hand, the ring foot on the Chinese bowls is more perpendicular. (Compare plates III-17a-n and III-19h-o).

4) Bowl rims are either straight, or more commonly everted. On large bowls the everted right-angle rim is the most common, and this rim is often thick in comparison to the vessel wall.
5) The saltglaze wares are restricted to open-mouthed jars, bottles and inkwells.

6) Angularity (plate III-17m) and distortion of shape is not a common characteristic of this collection.

**DATING THE POTTERY**

Several methods are available for prescribing date ranges for nineteenth century ceramics. Where specific marked items are present good information exists from trade directories giving the life spans of the manufacturers. In addition, potteries frequently altered their marks so that in some instances specific periods within a firm's life can be isolated on this basis. Certain designs enjoyed only relatively brief popularity and these ranges can be estimated, while technical innovations were sometimes noted in the historical record, so that a *terminus ante quem non* can be established. It can be expected that future research on the interaction of these aspects will result in the formulation of a closer chronology, which will necessarily result in changes to the basic classification attempted here. Pilling\(^1\) has already begun to explore along these lines.

**MARKED ITEMS** (Plate III-15)

Eleven marked items are present in the collection (Items 8, 25, 30, 39, 40, 43, 48, 50, 52, 68, 78) and general descriptions are contained in the catalogue.

---

\(^1\) op. cit., Table 1, p.63.
Of these, Items 30, 39 and 40 belong to the firm of Copeland and Garrett (c. 1833–47). The marks closely resemble two marks recorded in the Stoke-on-Trent Museum and are similar to Godden's nos. 1092 and 1093. Two patterns relating to this firm, "Venice" and "Convent" are recorded. In addition, items 50 and 52 possibly relate to this firm. A similar printed mark, "semi china" in a double-lines diamond is recorded at Stoke-on-Trent, and attributed to Spode and Copeland. It is possible that the use of this mark, with the additions recorded here, was carried on when Copeland and Garrett took over the factory.

Three other Staffordshire firms can be identified, William Hackwood of Hanley, 1827–43 (Item 78), Thomas Minton, 1822–36 (Item 25) and Hicks, Meigh and Johnson, 1822–35 (Item 48). The item relating to this latter firm bears a pre-Victorian Royal Arms mark with inescutcheon and crown (an indicator of the period 1814–1837) and is inscribed "Royal Stone China". Godden suggests that the use of the word "Royal" in the manufacturer's title usually indicates a date after 1850, which of course is impossible in conjunction

---

1 "Pottery Marks in Stoke-on-Trent Museum" (typescript) Nos. 1889, 1947, p.58.
2 Encyclopaedia of British Pottery and Porcelain Marks, p.173.
3 "Pottery Marks in Stoke-on-Trent Museum", No.272, p.41.
4 Encyclopaedia of British Pottery and Porcelain Marks, p. 11.
with this particular Royal Arms mark, and the terminal date for the settlement. Although no maker's name appears, it is best attributed to Hicks, Neigh and Johnson, who manufactured "stoneware china" under a Royal Arms Mark\(^1\).

Of the Chinese porcelains, Item 8 bears the date mark of the Emperor Tao Kuang (1821-50).

**TYPE RANGES**

In the present collection, the transfer printed wares offer the best possibilities for demonstrating the dating value of technical innovations.

Printing on pottery\(^2\) had been introduced in England in the 1750's, but the Staffordshire utilitarian transfer printed earthenwares did not become a major production until the period 1780-1820, during which patterns imitated the Chinese Nankin wares imported into Europe in this period. The Willow Pattern is an example (although its popularity has lasted long past 1820). From about 1810 Staffordshire manufacturers began producing English subjects, views and events, and even special patterns (as did the Chinese on their export porcelain) for export to America.

Writing in 1829, Simeon Shaw noted the recent introduction of red, brown, and green colours for

---

\(^1\) ibidem, No. 2022, p.323.

\(^2\) See appendix for a description of the process of printing with engraved copper plates.
printed decoration\(^1\), and multicoloured printing began in the late 1840's. Between 1820 and 1840 a whole range of romantic and exotic scenes was used as decoration, often bordered with floral, shell and geometric motifs, but these appear to have gone out of fashion during the 1840's, when floral motifs became popular\(^2\). Since only the major firms employed their own engravers, the smaller potters were mostly supplied with their engraved designs by the larger firms\(^3\). This fact provides perhaps the best reason for attempting to set up typologies in terms of patterns and motifs\(^4\).

In the first half of the nineteenth century many Staffordshire manufacturers continued to experiment at producing durable wares for these utilitarian manufactures, which would serve as a cross between earthenware and porcelain. Josiah Spode produced his variety of "stone-china" in 1805. An early famous ware of this type was Mason's "ironstone", patented in 1813. Numerous trade names of similar wares can be located such as "New Stone", "Semi China", "Semi Porcelain" etc. Except in general terms these labels have little specific dating value, unless directly associated with a particular manufacturer.

---


\(^{2}\) Godden, op.cit., p.152.

\(^{3}\) ibidem, p.151.

As mentioned above, the Willow pattern was created as an imitation of the Nankin wares. Honey credits "the young" Thomas Minton with this creation\(^1\), which if correct, would place its invention well into the eighteenth century, thus reducing its value as a datable type. However it is interesting to note that this type does not occur in the pottery collections from Fort Dundas or Raffles Bay, yet after a ten year interval between 1829 and 1839 it is the predominant type at Fort Essington. The implication that it may not have been an important export ware until after 1830 should be examined in future excavated collections. Information from American sites is too fragmentary to decide this point at present.

The proportional values of the scenic and floral types appear to support the historical trends suggested above.

The technical advances in coloured transfer printing appear to provide good dating evidence. Because cobalt was the surest colour to minimise firing failures in early mass produced pottery, this colour was predominant in transfer printing until 1840. This fact is reflected in the Fort Essington collection, where blue represents 89.9% of the colour distribution in the transfer printed wares. A further refinement of this idea for dating is that the earlier pottery was predominantly dark blue\(^2\). Reference to figures quoted

---

\(^1\) op.cit., p.190.

\(^2\) Pilling, op.cit., p.11.
in the discussion of blue floral transfer ware (above) shows that only 26.7% of that type was represented in the dark range of blues, and a similar figure is obtained for the total collection.

In the Fort Dundas and Raffles Bay collections, although the sample is considerably smaller, the darker blues do predominate, and no other colours are present in the transfer printed wares from those sites. Therefore, the introduction of lighter blues may be offered as a tentative date marker of the second quarter of the nineteenth century.

The non-blue colours in the present collection also support the historical dates suggested for their introduction. Multi-colour printing is totally absent, except for the single sherd decorated internally and externally in different colours (Item 31).

Amongst the other wares, several types appear to be of short duration and therefore of good dating value. Pilling suggests that spatterware (also called sponged ware by Godden), although made before 1800 was most common in the period 1825-1840. Godden says however, that this form of decoration continued into the twentieth century. Flowing blue ware, although only represented by a single sherd in this collection, is dated by Pilling 1825-1860. The featheredge ware, although not as yet a closely dated type is a common utilitarian ware

1 op. cit., p.39.
2 British Pottery and Porcelain 1780-1840, p.147.
3 op.cit., p.36.
found at Port Essington, Raffles Bay and Port Dundas in both blue and green. It is also common in a number of American sites of the mid-nineteenth century.

On the basis of the discussion above it is possible to construct a time range graph for the closely dated attributes associated with this pottery collection. From this graph (Plate III-24) it is possible to arrive at an archaeological date which closely approximates the actual date of the settlement at Port Essington. This suggests that the dating of sites without extant historical records can follow this approach with some confidence. While it is difficult to estimate the time lag for pottery to reach Port Essington this does not appear very great and is probably only of the order of several years, which is what one might expect from historical knowledge of the transportation methods of the period. Almost all of the pottery appears to fit into a manufacturing time range 1830-1845, and possibly a shorter period still.

The English wares appear to be a typical collection of utilitarian wares of the second quarter of the nineteenth century. Few, if any, appear to have been made outside the Staffordshire potteries area.

CLAY PIPES (Plate III-22)

Unlike other classes of artefacts from historical sites, the analysis of clay pipes has been given close attention by a number of workers since the early 1950's.

---

1 See for example L.M. Pierson, "Tabby Ruin Test Excavation", *The Florida Anthropologist*, vol. XVIII, no.2, p.130, Plate A, 1.
In England, Adrian Oswald approached the problem by classifying whole shapes with identifiable marks and relating them to dates from historical sources such as trade directories\(^1\). In America, with a view to making greater use of archaeological assemblages (where stem fragments naturally outnumber bowls and bowl fragments), research has taken a different emphasis. Harrington\(^2\) began investigating the dating potential of stem length which he saw as having a definite relationship to the period of manufacture, but this had little application to the sorts of excavated material being found. Thus Harrington began to work with stem hole diameters as a function of stem length, and constructed a stem hole diameter chart which demonstrated a general and regular reduction in hole diameters from 1620 to 1800. Working from Harrington’s figures, Binford\(^3\) calculated a straight line regression formula from which the mean date of the pipe stem sample, and hence the mean date of accumulation could be obtained. Experiments with

---


collections from well-dated sites provided strong evidence for the accuracy of the technique. However, the technique could not be applied to sites dated after c. 1780, where the correlation “fell to pieces”\(^1\).

**THE PORT ESSINGTON COLLECTION**

A total of 167 stem and bowl fragments were recovered from the excavations. They were initially sorted according to area and bore diameter size using the standard technique of measurement, the fitting of the blunt ends of drill bits into the bore holes. In addition the total length of stem for each category was calculated. Taking 11 cms as the standard average length of complete pipe stems in this period, the estimated minimum number of pipes in the collection was also calculated. The following table gives these results.

\(^1\) *ibidem*, p. 20.
<table>
<thead>
<tr>
<th>Area</th>
<th>Fragment Numbers</th>
<th>Not Measurable</th>
<th>Total Stem Length (cms)</th>
<th>Estimated Minimum Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3/64</td>
<td>4/64</td>
<td>5/6</td>
<td>3/64</td>
</tr>
<tr>
<td>VM</td>
<td>27</td>
<td>1</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>VM II</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>VIR</td>
<td>5</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>VHD</td>
<td>2</td>
<td></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>VHK</td>
<td>12</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>VSD</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>VMQ</td>
<td>1</td>
<td>17</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>VQS</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>VOM</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VCC</td>
<td>3</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>VSP</td>
<td>2</td>
<td>26</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>VCH</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>VAM I</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>VAM II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>6</td>
<td>116</td>
<td>27</td>
<td>18</td>
</tr>
</tbody>
</table>

1 Represents two separate items.
Amongst the collection fourteen marked specimens have been recorded as follows:

<table>
<thead>
<tr>
<th>Catalogue Number</th>
<th>Bore Diameter</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMQ/6/1(10)</td>
<td>5/64</td>
<td>On bowl &quot;H&quot; (see VOM/2/1(6)</td>
</tr>
<tr>
<td>VMQ/7/2(10)</td>
<td>4/64</td>
<td>Bowl with spur &quot;A (Possibly R) H&quot;</td>
</tr>
</tbody>
</table>
| VM/8/1(14)       | 4/64          | On spur sideways "I? (Possibly F)"
| VM/11/1(3)       | 4/64          | On spur sideways "T.B." Fluted bowl |
| VM/14/1(33)      | 4/64          | On spur sideways ? "(Possibly A) G" |
| VM/8/1(34)       | 4/64          | On spur sideways "I ? (Possibly F)"
| VM/8/1/38        | 4/64          | On spur sideways "(Possibly I)F" |
| VMII/1/1(31)     | 4/64          | Identical to VMII/1/1(33) |
| VMII/1/1(33)     | 4/64          | Sideways on stem above spur "9 N.G." |
| VHO/DRAIN(4+6)   | 4/64          | Sideways on spur "I.F." |
| VHK/1/1(28)      | 4/64          | On spur. Blank on R/H side. On L/H side partly obliterated, either "T" or "I" sideways |
| VOM/2/1(6)       | 5/64          | (See VMQ/6/1(10)) On bowl "H and G" |
| VAMII/1/2(1)     | -             | On stem "Slaꞌgow" |
| VAMII/1/2(2)     | -             | Moulding on stem similar to Tasmanian McDougall specimens in author's collection |
DATING THE CLAY PIPES

Although no significant result could be expected from the Harrington/Binford method of dating, the formula was applied during analysis of the pipes to assist the current research of Mr Iain C. Walker, of the University of Bath, who is undertaking a reappraisal of Binford's methods in an attempt to refine the graph before 1780 (the point at which the Binford formula breaks down) and also to see what happens to the graph in the nineteenth century.

Firstly the mean bore diameter for the total collection was calculated:

\[
\frac{(3\times6) + (4\times16) + (5\times27)}{149} = 4.14.\]

Then Binford's formula \(^2\) \(Y = 1931.85 - 38.26X\) was applied resulting in the date 1773.45. Taking 1844 as a mean date for Port Essington, this date is then 70 years too early. On the small sample from Port Dundas - Raffles Bay of 37 items a date was obtained of 1769.63, in this case approximately 57 years too early. These early dates from clay pipe dating in the nineteenth century are in accord with dates from other sites on which Walker is working. The picture which appears to be emerging from this work is that to plot the graph as a straight line is too coarse and that the curve increases exponentially, becoming much steeper in the nineteenth century. As Binford's original base date of 1931.85 represents the point in time where the bore hole

\(^1\) Iain C. Walker, pers. comm.

\(^2\) For an explanation of the formula see Binford, op. cit., p. 19.
disappears if the reduction in size continues at the set rate which Binford uses, such a result as the Port Essington collection represents is what one would logically expect.

The marked items are not helpful in dating the collection. The use of initials in general leads to confusion and many in the present collection are not represented in Oswald’s lists at the period of the occupation of Port Essington. The exceptions to this appear to be those pipes marked "I.F." Oswald gives James Fisher and John Ford as being listed in Pigot’s Directory for 1832\(^1\). John Ford, of Pentonville is listed as an exporter for the period 1826-1876; also Jesse and Thomas Ford who took over from their father, another John Ford, are listed 1836-1878 as exporters. They could have continued using their father’s moulds, or "I.F." could stand for Jesse Ford, or both things may have happened\(^2\). On this basis I have included "I.F." clay pipes in the pottery time range graph; however its entry is suspect. The marked items from V/AII are certainly McDougall pipes. However that firm was not founded until 1846\(^3\), and it seems that

---


\(^2\) Iain C. Walker, pers. comm. I am indebted to Mr Walker for his comments on the clay pipe collection from Port Essington.

\(^3\) ibidem.
although these pipe sherds were excavated in conjunction with material best associated with the marine settlement, they may have been introduced by the 1870 cattle ranchers. On this basis they are regarded as intrusive.

The shapes represented in the present collection appear to conform with Oswald's typology. The most common shape is closest to Oswald's type 11 b¹, although the profile of the rear of the bowl is not as straight and sharp as Oswald's example. The foot on all examples appears to sit a little further back than Oswald illustrates. One example without foot (VOM/6/1 (2) + VOM/2/1(6)) is present, most like Oswald's type 12c², although the rim in the Port Essington example appears to be horizontal rather than forward sloping. Large and small pipes are present. Most of the pipes are undecorated, although some fluted bowls occur. The other predominant decoration is a leaf pattern along the mould seam. On the basis of the typology Oswald presents, this collection would date to the nineteenth century, but further precise dating would not seem possible at present.

² ibidem.
APPENDIX TO CHAPTER III.

An appendix to The Potteries of Sunderland and District, by J.P. Shaw, a publication of the Sunderland, Durham Museum.

Instructions for printing pottery from copper engraved plates.

From a manuscript by W.R. Ball of Deptford Pottery.

First the copper plates are heated, then the colouring is smeared over the engraving with a palette-knife, after which it is scraped off; the plate then being rubbed with a pad made from corduroy so as to remove any surplus. Next, damp tissue paper is placed on the plate which is then run several times through a heavy metal rolling press (much the same in design as an old-fashioned mangle), the rollers being covered with two or three layers of very thick felt. Then the plate is again placed upon the hot stove. This dries the paper which is then removed, leaving the imprint from the copper plate on it, then placed on the pottery which is sometimes in the biscuit, but more often in the glazed state; next we require a rubber, this being made by rolling felt round and round until it is about 2½ inches in diameter, and 6 inches long, this being used to transfer the design from the paper to the pottery by rubbing, after which they (the pieces) are placed in a bath of water, to soften the paper which is then easy to remove. Next we have to place the ware in a kiln or oven so as to remove all traces of oil from the print, and at the same time make it adhere firmly to the articles, after which it is often painted by hand, then again placed in the kiln. In the case of articles such as a glass rolling-pin they are printed, - painted, then varnished.
APPENDIX TO CHAPTER III.

An appendix to The Potteries of Sunderland and District, by J.P. Shaw, a publication of the Sunderland, Durham Museum.

Instructions for printing pottery from copper engraved plates.

From a manuscript by W.R. Ball of Deptford Pottery.

First the copper plates are heated, then the colouring is smeared over the engraving with a palette-knife, after which it is scraped off; the plate then being rubbed with a pad made from corduroy so as to remove any surplus. Next, damp tissue paper is placed on the plate which is then run several times through a heavy metal rolling press (much the same in design as an old-fashioned mangle), the rollers being covered with two or three layers of very thick felt. Then the plate is again placed upon the hot stove. This dries the paper which is then removed, leaving the imprint from the copper plate on it, then placed on the pottery which is sometimes in the biscuit, but more often in the glazed state; next we require a rubber, this being made by rolling felt round and round until it is about 2½ inches in diameter, and 6 inches long, this being used to transfer the design from the paper to the pottery by rubbing, after which they (the pieces) are placed in a bath of water, to soften the paper which is then easy to remove. Next we have to place the ware in a kiln or oven so as to remove all traces of oil from the print, and at the same time make it adhere firmly to the articles, after which it is often painted by hand, then again placed in the kiln. In the case of articles such as a glass rolling-pin they are printed, - painted, then varnished.
CHAPTER 4

GLASS

Almost the total collection of glass from the Victoria excavations is comprised of the remains of so-called "black" liquor bottles. In addition, some fragments of clear glass tumblers and broken wine glasses were recovered. In all, 96.58 kilograms (212.92 lb) of glass was recovered from Victoria.

The glass was sorted initially into three categories, which are listed in each of the separate excavation reports. Type A includes all pieces thought to be possible Aboriginal artefacts, Type B includes all pieces of identifiable shape (bases, necks, rims etc.), and Type C includes all pieces of unidentifiable glass. Following the analysis of category A, 206 fragments of bases were reused in the analysis of category B. Table IV-1 shows the distribution of the total collection.
### Table IV-1

**TOTAL GLASS DISTRIBUTION**

<table>
<thead>
<tr>
<th>Location</th>
<th>No.</th>
<th>A %</th>
<th>Avg. Weight</th>
<th>No.</th>
<th>B %</th>
<th>Avg. Weight</th>
<th>No.</th>
<th>G %</th>
<th>Avg. Weight</th>
<th>No.</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM</td>
<td>1275</td>
<td>14.89</td>
<td>11.22</td>
<td>239</td>
<td>2.79</td>
<td>56.23</td>
<td>7046</td>
<td>82.31</td>
<td>2.82</td>
<td>8560</td>
<td>100.00</td>
</tr>
<tr>
<td>VMII</td>
<td>32</td>
<td>10.06</td>
<td>12.88</td>
<td>14</td>
<td>4.40</td>
<td>26.29</td>
<td>272</td>
<td>85.53</td>
<td>3.61</td>
<td>318</td>
<td>100.00</td>
</tr>
<tr>
<td>VHS</td>
<td>335</td>
<td>15.05</td>
<td>12.39</td>
<td>61</td>
<td>2.74</td>
<td>65.61</td>
<td>1850</td>
<td>82.21</td>
<td>3.44</td>
<td>2256</td>
<td>100.00</td>
</tr>
<tr>
<td>VMQ</td>
<td>368</td>
<td>49.24</td>
<td>5.05</td>
<td>14</td>
<td>1.78</td>
<td>7.06</td>
<td>386</td>
<td>48.98</td>
<td>2.93</td>
<td>788</td>
<td>100.00</td>
</tr>
<tr>
<td>VQS</td>
<td>107</td>
<td>16.88</td>
<td>5.51</td>
<td>4</td>
<td>0.63</td>
<td>125.18</td>
<td>523</td>
<td>82.49</td>
<td>3.20</td>
<td>634</td>
<td>100.00</td>
</tr>
<tr>
<td>VQM</td>
<td>45</td>
<td>33.33</td>
<td>4.64</td>
<td>6</td>
<td>5.93</td>
<td>91.88</td>
<td>82</td>
<td>60.74</td>
<td>5.72</td>
<td>135</td>
<td>100.00</td>
</tr>
<tr>
<td>VSD</td>
<td>19</td>
<td>2.33</td>
<td>14.10</td>
<td>11</td>
<td>1.35</td>
<td>38.13</td>
<td>787</td>
<td>96.33</td>
<td>2.79</td>
<td>817</td>
<td>100.00</td>
</tr>
<tr>
<td>VSP</td>
<td>27</td>
<td>13.70</td>
<td>5.71</td>
<td>11</td>
<td>0.96</td>
<td>27.75</td>
<td>355</td>
<td>15.34</td>
<td>1.91</td>
<td>416</td>
<td>100.00</td>
</tr>
<tr>
<td>VSPII</td>
<td>17</td>
<td>10.83</td>
<td>5.02</td>
<td>2</td>
<td>1.27</td>
<td>6.55</td>
<td>138</td>
<td>87.90</td>
<td>4.76</td>
<td>127</td>
<td>100.00</td>
</tr>
<tr>
<td>VSB</td>
<td>4</td>
<td>4.04</td>
<td>9.03</td>
<td>6</td>
<td>6.06</td>
<td>48.82</td>
<td>89</td>
<td>89.90</td>
<td>5.8</td>
<td>99</td>
<td>100.00</td>
</tr>
<tr>
<td>VS</td>
<td>-</td>
<td>0.00</td>
<td>-</td>
<td>-</td>
<td>0.00</td>
<td>-</td>
<td>37</td>
<td>100.00</td>
<td>3.48</td>
<td>37</td>
<td>100.00</td>
</tr>
<tr>
<td>VAM</td>
<td>262</td>
<td>67.04</td>
<td>8.00</td>
<td>1</td>
<td>0.19</td>
<td>19.8</td>
<td>177</td>
<td>22.78</td>
<td>4.43</td>
<td>540</td>
<td>100.00</td>
</tr>
<tr>
<td>YAM</td>
<td>64</td>
<td>37.83</td>
<td>5.81</td>
<td>5</td>
<td>2.98</td>
<td>56.02</td>
<td>102</td>
<td>59.65</td>
<td>3.40</td>
<td>171</td>
<td>100.00</td>
</tr>
<tr>
<td>VHA</td>
<td>9</td>
<td>9.68</td>
<td>11.21</td>
<td>2</td>
<td>2.15</td>
<td>166.15</td>
<td>82</td>
<td>88.17</td>
<td>4.66</td>
<td>93</td>
<td>100.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2714</td>
<td>28.10</td>
<td>9.54</td>
<td>371</td>
<td>2.48</td>
<td>55.56</td>
<td>11906</td>
<td>79.42</td>
<td>3.62</td>
<td>14991</td>
<td>100.00</td>
</tr>
<tr>
<td>GENERAL SURFACE COLLECTIONS&lt;sup&gt;2&lt;/sup&gt;</td>
<td>60</td>
<td>62</td>
<td>62</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>15273</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>2774</td>
<td>18.16</td>
<td>4.03</td>
<td>12068</td>
<td>79.00</td>
<td>4.03</td>
<td>15273</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> The three areas of the hospital complex, VM, VHS, VHS, are included here as a single group.

<sup>2</sup> These are selective collections, and therefore they have been isolated from the main body of material.
In addition the average weight of the samples in each unit (squares of surface collection and excavation) has been calculated. The largest collection, from VM, which constitutes more than half the total glass collection, was subjected to an analysis of variance\(^1\) according to weight. The analysis demonstrated a significant difference at the 1% probability level between the three categories both of the surface collection and the excavated material. However, there was no significant difference between the surface and excavated material in any of the three categories.

Such a result appeared self-evident between Types B and C in terms of their initial selection, because those items readily identifiable by shape were almost always larger. However, the importance of this result is a) that there was little difference in the average weight between excavated and surface items in any category, suggesting that the breakage factor was similar whether the object was buried or exposed to natural agencies on the surface; and b) that there was a significant difference between Type A and each of the other two categories in both the surface and excavated material.

---

\(^1\) This analysis is set out in O.N. Bishop, *Statistics for Biology* (London 1966), pp. 57–61. In essence, an analysis of variance is employed in the case of three or more samples to be compared, to avoid using multiple t-tests. I wish to acknowledge the assistance and expertise of Mrs Elizabeth Minson, Dept. of Genetics, ANU, who carried out the calculations on my behalf, and who discussed the problems and interpretations with me.
Type A items were heavier than Type C items but lighter than Type B items. In cultural terms this suggests that a deliberate selection of the raw material (the discarded bottles) was being effected by the Aborigines, who chose the heavier pieces of glass as being more suitable for modification as artefacts. In practice this usually meant a preference for the bases of bottles which were considerably thicker than the walls and necks. The process of modification normally resulted in these bases or "cores" being broken, and these pieces, together with the flakes detached from them and the retouched items, which compose Type A, are therefore of less average weight than Type B.

**TYPE A GLASS. THE ABORIGINAL ARTEFACTS**

A total of 2774 (18.16%) pieces of glass were isolated in the initial sorting as possible Aboriginal artefacts. In general, the assemblage is not a well defined one in terms of exact types which might be isolated in a comparable stone assemblage. This is probably because broken glass provides a larger number of random edges ready for use than does stone. Thus, in this pre-selected group only 7.07% of the pieces bear definite secondary retouch.

As mentioned above, however, the Aborigines appear to have made special use of the heavy base portion of the bottle, and by examining the ways in which this raw material has been used, the following classification of the glass artefacts has been established. Because of their broad nature it seems likely that these types
may coincide with types in the original situation, so that certain functional inferences can be drawn.

Because of the way in which these bottles were manufactured, the glass begins to thicken about two thirds of the way down the body wall. The bases in the Port Essington collection are formed predominantly with high conical omphaloi, i.e. much the same shape as modern champagne bottles. In glass terminology this is referred to as a "kick". In the Port Essington bottles this base can be up to 3 cms thick, providing a solid block of glass not unlike obsidian. The process appears to have been to flake the thickened part of the wall, downwards to the base, detaching flakes with similar attributes to stone flakes – a bulb of percussion, stress lines etc. Thus the base can be regarded as a "core", which if broken in half, can also be flaked on the kick; it can also be utilized as a tool.

Two methods of flaking the wall of the bottle appear to have been used in this collection. If the blow is directed at the broken edge of the glass, that is, the broken edge is used as the striking platform, the detached flake assumes the form of an ordinary stone flake. However, if the inside surface of the bottle wall is struck, a complete semicircular section of the inside wall detaches so that a flange of glass is produced on the outer wall of the detached flake, whose circumference is greater than the inside wall section.¹

¹ The author has produced both sorts of flakes in the laboratory.
may coincide with types in the original situation, so that certain functional inferences can be drawn.

Because of the way in which these bottles were manufactured, the glass begins to thicken about two thirds of the way down the body wall. The bases in the Port Essington collection are formed predominantly with high conical omphaloi, i.e. much the same shape as modern champagne bottles. In glass terminology this is referred to a "kick". In the Port Essington bottles this base can be up to 3 cms thick, providing a solid block of glass not unlike obsidian. The process appears to have been to flake the thickened part of the wall, downwards to the base, detaching flakes with similar attributes to stone flakes - a bulb of percussion, stress lines etc. Thus the base can be regarded as a "core", which if broken in half, can also be flaked on the kick; it can also be utilized as a tool.

Two methods of flaking the wall of the bottle appear to have been used in this collection. If the blow is directed at the broken edge of the glass, that is, the broken edge is used as the striking platform, the detached flake assumes the form of an ordinary stone flake. However, if the inside surface of the bottle wall is struck, a complete semicircular section of the inside wall detaches so that a flange of glass is produced on the outer wall of the detached flake, whose circumference is greater than the inside wall section.1

1 The author has produced both sorts of flakes in the laboratory.
Figure IV-1a illustrates this point. Both sorts of flake were produced at Port Essington, and they are treated as a single group in the present analysis, with the presence of the internal face being taken as the equivalent of the bulb of percussion. The important point is that both flakes produce a sharp cutting edge without the necessity of retouch. These two types, base cores and flakes, form the basic types of glass implements found at Port Essington. The retouched implements are mainly scrapers, although some "cutting flakes" bear secondary retouch as well as usewear. An additional category of utilized "flakes" is included where usewear occurs on pieces of glass which are not true flakes. In this secondary analysis a large percentage of pieces originally included in Type A have been excluded and are treated as waste flakes. These are pieces which either have a bulb of percussion but lack usewear, or pieces on which the usewear flaking was probably accidentally produced. The percentage type distribution is as follows:
<table>
<thead>
<tr>
<th>Location</th>
<th>Sample</th>
<th>Base Cores</th>
<th>Cutting Flakes</th>
<th>Retouched Implements</th>
<th>Utilized Flakes</th>
<th>Waste Flakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM</td>
<td>1275</td>
<td>6.98</td>
<td>9.41</td>
<td>8.7</td>
<td>22.58</td>
<td>52.31</td>
</tr>
<tr>
<td>VMII</td>
<td>32</td>
<td>6.25</td>
<td>3.13</td>
<td>15.63</td>
<td>30.00</td>
<td>42.99</td>
</tr>
<tr>
<td>VH</td>
<td>335</td>
<td>9.85</td>
<td>12.54</td>
<td>5.37</td>
<td>29.25</td>
<td>60.05</td>
</tr>
<tr>
<td>VMQ</td>
<td>388</td>
<td>4.12</td>
<td>17.01</td>
<td>2.06</td>
<td>16.75</td>
<td>50.47</td>
</tr>
<tr>
<td>VQS</td>
<td>107</td>
<td>1.87</td>
<td>16.82</td>
<td>7.48</td>
<td>23.36</td>
<td>33.33</td>
</tr>
<tr>
<td>VOM</td>
<td>45</td>
<td>4.44</td>
<td>26.67</td>
<td>4.44</td>
<td>11.11</td>
<td>21.05</td>
</tr>
<tr>
<td>VSD</td>
<td>19</td>
<td>10.53</td>
<td>13.79</td>
<td>10.53</td>
<td>42.11</td>
<td>63.16</td>
</tr>
<tr>
<td>VSF</td>
<td>57</td>
<td>8.77</td>
<td>7.02</td>
<td>5.26</td>
<td>15.79</td>
<td>70.59</td>
</tr>
<tr>
<td>VSFII</td>
<td>17</td>
<td>17.65</td>
<td>11.76</td>
<td>-</td>
<td>-</td>
<td>30.00</td>
</tr>
<tr>
<td>VB</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>25.00</td>
<td>44.75</td>
</tr>
<tr>
<td>YAM</td>
<td>362</td>
<td>8.01</td>
<td>16.85</td>
<td>8.56</td>
<td>21.82</td>
<td>53.13</td>
</tr>
<tr>
<td>YAMII</td>
<td>64</td>
<td>4.69</td>
<td>12.50</td>
<td>3.13</td>
<td>26.56</td>
<td>33.33</td>
</tr>
<tr>
<td>VCH</td>
<td>9</td>
<td>22.22</td>
<td>11.11</td>
<td>8.33</td>
<td>28.33</td>
<td>10.00</td>
</tr>
<tr>
<td>V/GEN SUR</td>
<td>60</td>
<td>33.33</td>
<td>20.00</td>
<td>7.07</td>
<td>22.75</td>
<td>50.11</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2774</td>
<td>7.43</td>
<td>12.65</td>
<td>7.07</td>
<td>22.75</td>
<td>50.11</td>
</tr>
</tbody>
</table>
In table IV-2 the surface and excavated materials have been included together. Plate IV-5a,b gives two histograms, showing the relationship between the excavated and surface material for the two areas in which large quantities of glass were present on the surface. In the case of VM a definite pattern is discernible. The excavated material contains a far greater number of waste flakes and consistently fewer base cores and implements than the surface material. A reasonable explanation is that during the British occupation, VM provided an area of raw material for the manufacture of artefacts which were taken elsewhere. Subsequent to the British abandonment, VM was occupied by the Aborigines in a more general and perhaps spasmodic fashion.

The histogram of the VH complex shows no such clear trend. One reason may be that the excavated sample is too small, but it seems more likely that there is no significant differentiation between the surface and excavated materials. The other areas have much less surface material, and histograms calculated for these areas show no significant differentiation between the surface and excavated glass.

**BASE CORES**Plate IV-3

Two hundred and six items (7.43% of Type A glass) were classified as cores. As outlined above, all the cores in this collection are bases of bottles. A number of metrical calculations were made on these base cores in order to describe them more fully and to delineate the modifications made on them by the Aborigines.
1) Percentage of remaining base

Of the 206 items with flakes removed from the wall, only 4 were whole bases. On the other hand, of the collection of bases with no flakes removed, more than 60% were whole. Two reasons may explain why this breakage was deliberate rather than completely fortuitous, or even a probable by-product of flaking the walls. Firstly the kick could then be flaked, and because of its convenient curved shape also used as a tool; and secondly, the flaked wall became a convenient scraper, which would be less efficient of the base were whole.

Five ranges of the percentage of remaining base were set up and the collection was sorted into these groups. The following percentages were obtained

<table>
<thead>
<tr>
<th>Percentage</th>
<th>25–49%</th>
<th>50–74%</th>
<th>75–99%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>70.87%</td>
<td>24.76%</td>
<td>2.43%</td>
<td>-</td>
<td>1.94%</td>
</tr>
</tbody>
</table>

2) Wall Height

The maximum height of the remaining wall above base was measured for each item and correlated with the percentage of remaining base. If the collection was fortuitous no correlation could be expected. However if the bases had been flaked, the wall height should be smaller where less of the base remained, and greater where more of the base remained. The following results were obtained.
<table>
<thead>
<tr>
<th>% Base Remaining</th>
<th>25 items</th>
<th>25-49 items</th>
<th>50-74 items</th>
<th>75-99 items</th>
<th>100 items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average maximum</td>
<td>2.75</td>
<td>3.25</td>
<td>4.00</td>
<td>-</td>
<td>5.03</td>
</tr>
<tr>
<td>wall height (cms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>0.7</td>
<td>0.9</td>
<td>0.7</td>
<td>-</td>
<td>1.9</td>
</tr>
<tr>
<td>Deviation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While this result is not conclusive, since the samples are disproportionate and the range of each category overlaps the next, yet the progression is evident. It suggests that a real correlation exists, which relates to the deliberate utilization of the glass as a raw material.

3) **Flaking**

The most general methods of flaking the walls of bottles have been described above. However a more detailed analysis of the base cores showed that both unifacial flaking in either direction, and bifacial flaking occurs. Flaking in this context means only primary flaking, although some secondary flaking may occur. Deliberate secondary retouch is difficult to identify on this material, and secondary retouch has been included as an aspect of usewear, dealt with below. On average, the flake scars on these base cores are 0.5 cms square, or larger. The use of the internal wall as the striking platform is the most common technique, and here the flake scars appear on the outer surface. This has been called **external unifacial flaking**. The opposite process, producing flake scars
on the inner surface has been labelled internal unifacial flaking. The following table gives the percentage occurrences for these flaking techniques.

<table>
<thead>
<tr>
<th>External Unifacial</th>
<th>Bifacial</th>
<th>Internal Unifacial</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.24</td>
<td>21.85</td>
<td>2.91</td>
</tr>
</tbody>
</table>

4) Percentage of flaked wall

A large majority of the collection is completely flaked around the wall which remains. A set of ranges was set up and the following table gives the percentage of the collection within each range. This figure is independent of the amount of wall remaining.

<table>
<thead>
<tr>
<th>% Range of Flaked Edge</th>
<th>25</th>
<th>25-49</th>
<th>50-74</th>
<th>75-99</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Occurrence</td>
<td>1.47</td>
<td>7.28</td>
<td>8.23</td>
<td>2.43</td>
<td>80.58</td>
</tr>
</tbody>
</table>

No significant correlation was noted between the percentage of flaked edge, flaking, wall height, or percentage of remaining base. However it was noted that none of the four examples where 100% of the base remained was flaked along more than 50% of the edge.

5) Presence of flaking on kick

On a number of items the amount of remaining kick was so small as to be virtually absent. On these examples, as on the whole items, flaking was regarded as not present. However, of the total collection 48.5% had been flaked.
6) **Useware**

Two common forms of useware were noted. Bruising of the glass occurred along the flaked edges and sometimes the base, while in many cases, small unifacial and bifacial flakes had been removed from the primarily flaked edges. Similar flakes were occasionally detached from unworked edges of the kick, particularly where the natural curve of the glass would facilitate its use for scraping purposes. The percentage occurrences for useware on the walls and kicks were calculated to be as follows.

<table>
<thead>
<tr>
<th>% Occurrence</th>
<th>Useware on Wall</th>
<th>Useware on Kick</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68.93</td>
<td>64.08</td>
</tr>
</tbody>
</table>

**THE VM SAMPLE**

Following the trends noted for the surface and excavated material from VM for the total Type A glass range (see plate IV-5a), the respective figures for VM surface and VM excavated base cores were tabulated in table IV-3. In addition the comparative figures for the Aboriginal midden, VAM, and the total collection are given.

The technique of bifacial flaking in the excavated VM sample is proportionally higher than in the surface collection, suggesting that it became less important through time. However the important trend, which is consistent throughout the other metrical analyses, is the less intense exploitation made of the VM excavated...
material. Only 54.05% of this sample of base cores has less than 25% of the base remaining, compared with over 70% for the VM surface material, the VAM material, and the total collection. Again only 64.87% of this collection has the total wall flaked, compared to 80+% in each of the other three groups; only 35.14% of the kicks are flaked, compared with 69.23% of the VM surface collection, and 48% of the other two groups. There is also slightly less useware on the base cores from the VM excavated sample.

These results are consistent with the results of the histogram. During British occupation VM provided a source of raw material, when it was equivalent to a normal Aboriginal quarry site. After the British abandonment, Aboriginal occupation could become more general, while the cessation of supplies of raw material occasioned more intense usage of what remained.
<table>
<thead>
<tr>
<th>% BASE REMAINING (%)</th>
<th>VM Excavated</th>
<th>VM Surface</th>
<th>VAM</th>
<th>Total Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25</td>
<td>37 items</td>
<td>52 items</td>
<td>29 items</td>
<td>2774 items</td>
</tr>
<tr>
<td>25-49</td>
<td>54.1%</td>
<td>71.2%</td>
<td>75.9%</td>
<td>70.87%</td>
</tr>
<tr>
<td>50-74</td>
<td>35.2%</td>
<td>28.9%</td>
<td>20.7%</td>
<td>24.76%</td>
</tr>
<tr>
<td>75-99</td>
<td>2.7%</td>
<td>-</td>
<td>3.5%</td>
<td>2.43%</td>
</tr>
<tr>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.94%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% FLAKED WALL (%)</th>
<th>VM Excavated</th>
<th>VM Surface</th>
<th>VAM</th>
<th>Total Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25</td>
<td>2.7%</td>
<td>1.9%</td>
<td>3.5%</td>
<td>1.47%</td>
</tr>
<tr>
<td>25-49</td>
<td>16.2%</td>
<td>3.9%</td>
<td>3.5%</td>
<td>7.28%</td>
</tr>
<tr>
<td>50-74</td>
<td>13.5%</td>
<td>9.6%</td>
<td>10.3%</td>
<td>8.25%</td>
</tr>
<tr>
<td>75-99</td>
<td>2.7%</td>
<td>3.9%</td>
<td>-</td>
<td>2.43%</td>
</tr>
<tr>
<td>100</td>
<td>64.9%</td>
<td>80.8%</td>
<td>82.8%</td>
<td>80.58%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FLAKING TECHNIQUE (%)</th>
<th>VM Excavated</th>
<th>VM Surface</th>
<th>VAM</th>
<th>Total Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Unifacial</td>
<td>64.9%</td>
<td>78.8%</td>
<td>72.4%</td>
<td>75.24%</td>
</tr>
<tr>
<td>Bifacial</td>
<td>35.1%</td>
<td>19.2%</td>
<td>24.1%</td>
<td>21.85%</td>
</tr>
<tr>
<td>Internal Unifacial</td>
<td>35.1%</td>
<td>19.2%</td>
<td>24.1%</td>
<td>21.85%</td>
</tr>
<tr>
<td>Flaked Kick (%)</td>
<td>69.2%</td>
<td>48.3%</td>
<td>48.3%</td>
<td>48.34%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USEWARE (%)</th>
<th>VM Excavated</th>
<th>VM Surface</th>
<th>VAM</th>
<th>Total Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>On wall</td>
<td>64.9%</td>
<td>82.7%</td>
<td>86.2%</td>
<td>68.93%</td>
</tr>
<tr>
<td>On kick</td>
<td>62.2%</td>
<td>69.2%</td>
<td>93.1%</td>
<td>64.08%</td>
</tr>
</tbody>
</table>

TABLE IV-3
ANALYSIS OF VM BASE CORES COMPARED WITH VAM AND TOTAL COLLECTION (%).
CUTTING FLAKES Plates IV-1, 2.

Three hundred and fifty struck flakes from the Type A collection bore traces of utilization on the sharp cutting edge. In each case this usewear continued along the edge for more than 50% of its length, and in the majority of cases for almost 100%.

The most common form of usewear found on these flakes is what White termed "snap-break" usewear, where an elliptical flake is snapped off the thin edge so that a square profile is left on that edge. In addition, minute, irregular unifacial and bifacial flaking does occur.

It is extremely difficult to demonstrate that such flaking could not have occurred naturally, and therefore no detailed analysis of usewear was carried out. What seemed important during the analysis was that such usewear did not occur on all struck flakes, being absent particularly on the smaller flakes. In order to test this observation the VM excavated material was chosen as a sample. From the 504 items designated waste flakes, those with bulbs of percussion present (i.e. those which could certainly be regarded as struck flakes) were isolated. This group numbered 148 items (29.37% of the waste flakes). Weight was chosen as an indication of size and the average weight of this group was calculated at 1.73 gms per item. Of the VM excavated material sorted as utilized cutting flakes the average weight per

---

item was 4.23 gms. Thus the struck flakes with utilization are on average significantly heavier than the struck flakes without utilization.

On the basis of this observation two metrical calculations were made in order to indicate the shape and size ranges of these cutting flakes. Two measurements were taken on each flake: length, being the maximum length of the flake at right angles to the striking platform, and breadth, being the maximum breadth at right angles to the length measurement. By dividing length by breadth a shape range was obtained. For example, 0.5 indicates that the length is equal to twice the breadth; 1.0 indicates that length equals breadth; 2.0 indicates that the length is equal to half the breadth. Plate IV-5c shows the percentage distribution of the cutting flakes according to shape. From this histogram it will be seen that 68.9% of the collection falls into the range of 0.5 to 1.0; that is, the majority of the collection falls into the category of "sidestripped" flakes, which ranges from flakes which are twice as broad as they are long, to flakes which are approximately square. Also of interest are the few examples of flakes which are much longer than they are broad (see discussion below). In general, however, the shape range is seen as reasonably limited.

By multiplying the length and breadth measurements, a size range was obtained; plate IV-5d gives the percentage distribution. 84% of the collection falls within the range 3 - 9 sq cms and 50.2% of the collection is within the range 3 - 5 sq cms. Again the collection contains a few large struck flakes, but the
majority of the cutting flakes falls within a limited range. The significance of size is discussed below.

A significant aspect of these cutting flakes was the presence of primary flake scars. These were noted on 87.7% of the flakes and they occurred always on the dorsal surface of the flake, in the region of the striking platform. Thus they represent flakes taken from higher up the bottle wall, as it was worked towards the base.

RETOUCHED IMPLEMENTS Plate IV-4

A total of 196 items appeared to have been deliberately retouched for use as implements. Of these 17 (8.7%) were cutting flakes which differed from the category of cutting flakes described above only in that they appeared to be deliberately retouched. All the remaining items fell into the generic category "scraper". Very few of these had been made on struck flakes, and could be sorted on morphological grounds into "side" and "end" scrapers, but the division is perhaps more apparent than real. The "side" variety occurs on 142 examples, while the end variety occurs less frequently on 44 examples.¹

Each of these categories was analysed in respect to manner of flaking, presence of useware and primary flaking, weight, and presence of percussion bulb. In addition, the number of retouched edges on the scrapers and the general shape of these edges were recorded.

¹ Both occur together occasionally, which accounts for the discrepancy in the numbers in table IV-4.
RETOUCHED CUTTING FLAKES

In shape and size these cutting flakes fall within the range of the utilized cutting flakes described above. However most are at the large end of the scale. Of the 17 items with retouched edges, 8 are retouched bifacially, 9 unifacially; 16 items have a definite bulb of percussion; 16 bear traces of usewear, again predominantly "snap-break" fracture; and 12 items have primary flaking on the dorsal surface about the striking platform. The average weight of these items is 8.89 gms, with a standard deviation of 4.9.

SIDE SCRAPERS

Despite the apparent presence of deliberate retouch on these scrapers, their authenticity as Aboriginal artefacts is difficult to verify. Random pieces of glass were used, and although the average weight for the 142 classified items is 13.9 gms, the standard deviation for the collection is 13.4. (The weight range extends from 1.1 gms to a single item weighing 109.3 gms). Nevertheless the average weight indicates that heavy pieces were selected. Flaking is common on more than one edge, and a total of 211 flaked edges is represented on the 142 items, as follows.

<table>
<thead>
<tr>
<th>No. of flaked edges</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of items</td>
<td>87</td>
<td>39</td>
<td>14</td>
<td>1</td>
<td>142</td>
</tr>
</tbody>
</table>

Nine scrapers are made on struck flakes. The flaking is predominantly unifacial, this type of flaking
occuring on 138 items, while bifacial flaking occurs on only eight items. The flaked edges are predominantly straight, this occurring on 112 items, while convex edges occur on 11, and concave edges on 28 items.

Perhaps the most convincing aspect of these scrapers is that primary flaking occurs on 79 items, and usewear is present on 137 items.

END SCRAPERS

In general, the reservations held for the side scrapers are also true for the "end" scrapers. While there is an average weight of 11.8 gms for this category, the standard deviation of 10.0 is still large. Only two struck flakes have been used, and bifacial flaking occurs only once. Unifacial flaking occurs on 44 items. Again, however, there are 56 flaked edges on the 44 items, and usewear occurs on 39 items, while primary flaking occurs on 17 items. Also of interest is that on these end scrapers the edge is convex on 25 items, concave on 5 items and straight on only 14 items.

UTILIZED FLAKES

631 items in the collection were classified as utilized flakes. These are most usually random pieces of glass which have had various sharp edges utilized, presumably for cutting. Again there is little form in the pieces utilized, which range in weight from 1.0 gms to 96.1 gms. However the average weight is again high, 14.07 gms, with a standard deviation of 9.7, again suggesting that the tendency is towards the heavier
pieces of glass. The useware is the same as that described for the cutting flakes, which really form a specialized group within this category.

A summary of the retouched implements is contained in Table IV-4.
## TABLE IV-5
ANALYSIS OF RETOUCHEO IMPLEMENTS

<table>
<thead>
<tr>
<th></th>
<th>No. of Items</th>
<th>Bifacial</th>
<th>Unifacial</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Av.</th>
<th>Standard Deviation</th>
<th>Struck Places</th>
<th>Use Wears</th>
<th>Primary Flaking</th>
<th>Straight</th>
<th>Concave</th>
<th>Convex</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CUTTING FLAKES</strong></td>
<td>17</td>
<td>8</td>
<td>9</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8.89</td>
<td>4.9</td>
<td>16</td>
<td>16</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>17</td>
</tr>
<tr>
<td><strong>SIDE SCRAPERS</strong></td>
<td>142</td>
<td>8</td>
<td>138</td>
<td>87</td>
<td>39</td>
<td>14</td>
<td>-</td>
<td>13.94</td>
<td>13.4</td>
<td>9</td>
<td>137</td>
<td>79</td>
<td>112</td>
<td>28</td>
<td>11</td>
</tr>
<tr>
<td><strong>END SCRAPERS</strong></td>
<td>44</td>
<td>1</td>
<td>44</td>
<td>30</td>
<td>6</td>
<td>4</td>
<td>-</td>
<td>11.8</td>
<td>10.0</td>
<td>2</td>
<td>39</td>
<td>17</td>
<td>14</td>
<td>5</td>
<td>25</td>
</tr>
</tbody>
</table>

**NOTE:** Total no. of items here exceeds the total of 196 items because side and end scrapers can occur together on a single item.
WASTE FLAKES

The remainder of the glass initially sorted as Type A upon re-examination was placed in the category of waste flakes. These represent struck flakes which have no useware, or pieces on which the flaking and/or useware is random and therefore dubious. This group numbers 1382 items. It is of interest that amongst the 233 items in this category from VMQ, 167 (71.6%) are in fact struck flakes without useware. This is the highest percentage for any area and accords well with the interpretation of this area representing a "working floor". From the other areas, the percentage is normally about 20% for struck flakes in this category.

Also of interest is that the average weight of the waste flakes, 2.9 gms, is considerably lower than all other categories of Type A glass, confirming the general impression gained throughout the analysis that only the heavy, thick pieces of glass were utilized by the Aborigines.

DISCUSSION

The ease with which broken bottle glass can be accidentally fractured along the margins is self-evident and this casts doubt on all pieces claimed as implements, except where, as in the case of Kimberley points (bifacial points with serrated edges), the form is so refined that authenticity cannot be doubted.

The present analysis has therefore been directed to show that the Type A glass from Port Essington does
possess formal attributes within the broad categories suggested. Little stress has been placed on the nature of the flaking, striking angles, use ware, etc., and this has been done deliberately. Until detailed studies can be made on natural fracture, and upon deliberate fracture produced in the laboratory, and the results compared with authenticated Aboriginal collections, little can be said on these fine points of technology. The aim of the present analysis has been to authenticate the Port Essington collection on other grounds.

Before dealing with the results of the present analysis, it is relevant to discuss a number of factors relating to glass artefacts in general. It is apparent that in most countries where stone using societies came into abrupt contact with European colonists, glass was often used as a substitute for stone. In Australia this has been noticed specifically in relationship to the pressure-flaked bifaces points from the Kimberley area, where the transition from stone to glass was made without apparent alteration in technique or finished product. The technique for manufacturing this implement type from both stone and glass has been described by Mahony\(^1\) and Elkin\(^2\). While the implement type in glass

---

\(^1\) D.J. Mahony, "Note on Making Stone Spear Heads in the Kimberley District, Western Australia", Report of the Australasian Association for the Advancement of Science, vol. 17, 1924, pp.474-475.

has been reported as far south as Rottnest Island, near Fremantle in Western Australia, and is present in the upper levels of Ingaladdi to the east, its northern distribution does not apparently reach the Oenpelli area, although bifacial points do occur without serrated edges. No points of any description have been recovered at Port Essington.

Australian ethnographic literature contains a number of references to the use of glass by Aborigines. Backhouse illustrated a spear barbed with glass which he saw on the south coast of New South Wales.

R.L. Dawson noted that bottle glass scrapers were used in the Clarence River area to sharpen spears and W. Scott and R. Dawson also mention Aborigines using glass. Jukes makes reference to the Torres

---

2 D.J. Mulvaney, pers. comm.
3 James Backhouse, A Narrative of a Visit to the Australian Colonies, (London, 1843), p.433, fig. 4.
5 W. Scott, "Notes on Aborigines - Port Stephens", MS Mitchell Library, p.44.
6 R. Dawson, The Present State of Australia (London, 1890), p.135. I am indebted to Miss Helen Brayshaw for these last three references.
Strait Islanders' keen demand for bottles, which he suggests were broken and the fragments used for shaving and cutting hair.

Apart from Kimberley points, references to existing glass implements in Australia are less common. Tindale¹ has published a "scraper" from Kempton, Tasmania fashioned from the base of a glass bottle, which conforms to the shape of stone notched scrapers "of well-defined Tasmanian type". I have examined three hafted glass "knives", two from the Queensland Museum and one from the Australian Museum, Sydney (discussed below in relation to "cutting flakes"). The only large collection of glass implements, so-called, was published by McCarthy and Davidson in 1943² from Singleton, N.S.W., and comprises "a large series" of side, end, concave and nosed "scrapers" and "piercers". I examined this collection in the Australian Museum and found it impossible to question the authenticity of the form and flaking of these implements. However,

¹ N.B. Tindale "A Tasmanian Stone Implement made from Bottle Glass", Papers and Proceedings of the Royal Society of Tasmania, 1941 (15 June 1942) pp.1-3. Tindale remarks that no date can be ascribed to the glass, however from the illustration the bottle is apparently of English manufacture and dated definitely to post-1820. The terminal date could reach to 1870 for this specimen.
bearing in mind Van Hoopen's conclusions\(^1\) that
trimming, identical in every respect to stone implements
may be produced fortuitously on broken glass, and the
dubious nature of the area in which the Singleton
collection was made, I visited the area accompanied by
Mr Davidson in March 1967.

269 pieces of glass and 82 pieces of pottery were
collected in the general area indicated by Davidson.
These were recovered from the eroding terrace along the
river, immediately to the north of the railway bridge.
The pottery included 63 pieces of "china", all
decorated by the transfer printed technique, in
predominantly floral patterns. Blue was the most common
colour, but greens and browns were also present. Four
clay pipe fragments bearing two makers names "Burns
Cutty Pipe" and "McDougall of Glasgow" were recovered.
The glass was mainly "black" glass, but opaque green,
royal blue, light blue and purple glass also occurs as
well as modern beer bottle glass.

Only eight of the 269 pieces could be considered
implements in terms of flaking. In McCarthy's
terminology one of these would be termed an "end-scraper"
and three "side-scarpers". Of the others, three are
of indeterminate form, and the eighth item is the
flaked base of a bottle (plate IV-6). Unfortunately

---

\(^1\) Van Hoopen "Die Sogenaamde Glaswerktuie van Vroeëre
Kultuur-Periodes", quoted in P. Beaumont, "The Problem
of glass implements", Bulletin of the South African
it is the base of a beer bottle with the moulded date underneath, 1938. Thus the flaking is presumably the result of accidental breakage.

This collection was made in a cleared field which must in the past have been heavily ploughed. The types of glass in this collection are the same as those in the Australian Museum and were collected in sufficient proximity to those of the 1943 collection to throw doubt on that collection. Although both collections were found in close association with Aboriginal stone artefacts, this connection could be spatial and not cultural. For some miles along the Hunter River stone implements can be found eroding out of the gravel layer a few inches below the topsoil. In the immediate area of this collection, although no houses exist at present, indications of early European structures (sandstock bricks and foundations) are visible and may have provided the source of this glass.

While it is possible, in view of the ethnographic evidence, that some of the 1943 Singleton collection is authentic, the demonstration that some of it is not must cast doubt on the entire collection. The discussion here is to demonstrate that the immediate environment offers an alternative explanation. It may be possible to regard the high degree of specialization of this glass industry which contains only "scrapers" and "piercers" with doubt also, since these "implements" are the easiest types to produce fortuitously. In contrast to the Port Essington collection, neither the 1943 collection nor my own collection from Singleton contain any struck flakes.
Unlike the environment at Singleton, the environment at Port Essington provides few natural agencies to explain the flaked glass. The area has been virtually deserted since 1849; no clearing or ploughing has occurred since then, there are no roads in the area. Cattle, together with damage caused during the initial dumping of the glass are the most likely natural explanations, yet these seem implausible in view of the large number of items in the collection.

Also of significance is the percentage distribution of Type A glass around the settlement (Table IV-1), where it can be seen that the three areas with the highest proportion of Type A glass are the two Aboriginal middens and VMQ, where it has been demonstrated as probable that Aborigines sat outside the structure during British occupancy and made implements. The authenticity of implements found stratified in an undisturbed Aboriginal midden can hardly be doubted.

A recurring theme noted in the analysis of the material has been the tendency to utilize the heavier sections of the bottles for the manufacture of artefacts. This tendency has been noted elsewhere in the world, by Sir Bartle Frere\(^1\) amongst the Bushmen, who purchased cheap German scent because the bottles, "thickened towards the lower part...could, by a blow in a particular direction, be splintered so as to form

excellent arrow-heads". E.H. Man writing on the Andaman Islanders also noted their use of glass "chips" and stated, "the method by which they are obtained is the same [as flint], the thick lump of glass forming the bottom of beer and wine bottles being selected for the purpose, and never the thinner portions".

Against this background the typological analysis has demonstrated the most significant trends. Amongst the base cores several formal patterns were noted. Firstly the base itself is almost always broken where apparent utilization of the edge has taken place, whereas bases are less seldom broken when flaking is absent. Secondly there appears to be some relationship between wall height and the amount of base remaining on apparently utilized items. Thirdly, if this flaking was fortuitous it would be reasonable to expect internal unifacial flaking to occur at least as often, if not more often, than external unifacial flaking, since the blow to produce the latter has to be made on the internal wall surface. In fact, external unifacial flaking is more common. Lastly, where flaking does occur, it most commonly appears along the total remaining wall edge, and this is unlikely to occur fortuitously.

Although bifacial flaking occurs only 63 times in the total collection of Type A glass, the fact that it is present is proof of deliberate fracture. I carried out a series of experiments by smashing glass

on a concrete path, treading on glass, hitting pieces of glass together, etc., and found it impossible to produce bifacial flaking of the size and regularity that occurs in the Port Essington material.

The analysis of the cutting flakes reflects a significant piece of evidence for the authenticity of the collection. That is the size of the utilized struck flakes. In the experiments of breaking glass it was found that flakes with bulbs of percussion could be manufactured accidentally, but never of the size of the Port Essington cutting flakes, unless a deliberate striking technique was employed. Some flakes were demonstrated to be much longer than they are broad, and on a base core from VM/8/1 two flake scars measuring 4.3 cms x 1.6 cms and 4.1 cms x 1.5 cms were noted. On a base core from VM/9/1 a flake scar measuring 5.2 cms x 1.2 cms was recorded, and part of the flake taken from this base was fitted back onto the core. In all these examples, the detached flake was extremely thin and it seems likely that these flakes could only have been produced by using some sort of pressure technique.

In the course of examining museum collections three glass "knives" were examined. Specimen no. E.54602 in the Australian Museum collection, has as its provenience "Central Australia" and has a struck flake of glass which measures 3.2 cms in length mounted sideways onto a handle with gum. Two hafted glass implements from north west Queensland are in the collection of the Queensland Museum (catalogue nos.
Q.E.588, Q.E.2291). X-ray photographs\(^1\) show that these two knives were made by inserting struck flakes of glass into split wooden handles, compacted with string and gum (plate IV-7). One flake measured 5.9 cms \(\times\) 2.0 cms, and another 4.3 cms \(\times\) 2.8 cms. The important point about each of these three specimens is that none has retouched edges, although all bear signs of use ware similar to those from Port Essington. On the basis of a single cutting flake from Port Essington (VAMII/1/1(1)) with traces of gum on the surface, no claim of direct evidence for hafting of the Port Essington cutting flakes should be made. However the relevance of the evidence of the use of unretouched flakes in ethnographic specimens is that it lends support to the authenticity of the Port Essington cutting flakes and their classification as a distinctive glass tool type.

The analysis of the retouched implements points up the difficulty of verifying the authenticity of these as Aboriginal artefacts. Any section of bottle glass placed on a hard surface and with pressure applied against the natural curve of the glass will produce "scrapers". But taking into consideration the average weight of the samples, together with the presence of some bifacial working, and the difference in edge shapes between "side" and "end" scrapers, and also the presence of retouch on some cutting flakes, their authenticity at Port Essington is not open to serious doubt. There appears to be no way of verifying any

---
\(^1\) Taken by Mr T. Leaney of the Canberra Community Hospital, whose assistance is gratefully acknowledged.
single item at present, but commonsense should suggest the probable validity in terms of the above discussion.

At Port Essington, then, we may safely assume that in an area lacking suitable stone, the Aborigines quickly utilized this new material. The implications of the archaeology are that this material was collected from the European rubbish dump and often modified there, and then taken onto the Aboriginal midden for utilization for cutting and scraping activities. This analysis reflects some degree of specialized usage of the bottles available but the technology is not as refined as Kimberley bifacial point production. It is best seen as a transference of stone techniques to glass, in an area where, from the present archaeological evidence, stone played a minor role in the technology and economy of the Aborigines, and what stone used was imported (see Chapter V).

**TYPE B GLASS**

239 pieces of glass were initially sorted as items which would assist in the closer identification of the glass from Port Essington. The majority of these pieces are fragments of dark green (generally referred to as "black") bottle glass, and consist of base, neck and rim fragments. In addition, 15 prunts, or glass seals, were recovered, and a number of other items made of glass.

Two whole bottles (Plate IV-8) and a third with the lip missing were recovered from the excavations and these appear to reflect the main types in the collection
as a whole. Plate IV-9 illustrates the measurements taken on both the whole bottles and the fragments where possible. The key to this illustration is as follows; TH: Total Height. SNH: Shoulder and Neck Height. NH: Neck Height Below Rim. OH: Kick Height. MD: Maximum Diameter. BD: Base Diameter. ERD: External Rim Diameter. IRD: Internal Rim Diameter.

In all, measurements were taken from 85 bases and 134 rims and necks. No measurement was taken unless more than 50% of the base or rim was present so that these figures represent minimum numbers. In view of the utilization of bases by the Aborigines it is not surprising that almost twice as many rims as bases are represented in the present category. While the collection can be regarded as representing at least 134 bottles, an upper limit is difficult to calculate. The mean average weight of the two whole bottles is 726.6 gms. The calculated weight of 134 bottles would then be 97364.4 gms, which is in excess of the total weight of glass recovered (96580 gms). However, from the rim fragments not included in the analysis, perhaps an additional thirty bottles are represented, which suggests that calculations on weight are not accurate.

A large majority of the bottles in the collection are of English manufacture. There appear to be no glass bottle manufacturers in Australia until the last quarter of the nineteenth century. Trade directories list manufacturers in Sydney and Melbourne in 1879, but large scale production of bottles in Australia did not
take place until the twentieth century. There is some evidence that Dutch bottles (square case bottles, presumably but not certainly containing gin) and French wine bottles in a lighter green glass, are also in the collection.

The best account of English bottle manufacture has been written by Ivor Noël Hume, where he presented a general typology to illustrate the development of English bottle shapes from about 1650 to 1850. Of immediate interest here are nos. 21-23 of Hume's classification (plate IV-10). No. 21 represents the evolved cylindrical form with tall body and short neck. Of importance in this item, where the string-rim had previously been a single glass strip around the neck, it now becomes a thickened mouth tooled downwards over the string-rim. This variation increases in no. 22 which is a squat cylindrical form with short convex neck. Hume dates no. 22 to about 1790-1820, and this example is closely related to one of the whole bottles from Port Essington (V/GEN SUR/HOSPITAL (39)) (plate IV-8b). No. 23 in Hume's typology is a machine-made bottle made by Ricketts of Bristol and dated by Hume to about 1814-1859.

The invention of machine-made bottles was important,

---

3 pp.102-105, figs. 3-5.
not only because of improved manufacture, but also because size could be standardised. According to Hume\(^1\) the technique was perfected in 1811 by Jacob Ricketts and his son Henry, and the latter enrolled a patent for this bottle in 1822\(^2\). By this method, the body of the bottle was formed by blowing the glass into the mould, and the shoulder and lower neck was formed by the opening top section of the mould. This is apparent from the illustration attached to Ricketts' patent, which shows that the top section of the neck was free-blown, and that the string-rim must have been attached later, not as Hume suggests\(^3\), in a single operation.

Of the two whole examples in the present collection, one is a blown bottle, the other bears the mould marks at the junction of the shoulder and body wall, and running vertically up opposite sides of the shoulder and lower neck. A large number of examples of this technique are found in the Port Essington collection. However, no instance of a moulded string-rim was present in the collection, all rims having been attached after the bottle was made. Olsen noticed a similar technique on a collection of

---

\(^1\) ibidem, p.94.

\(^2\) Henry Ricketts, "An Improvement in the Art or Method of Making or Manufacturing Glass Bottles, such as are used for Wine, Porter, Beer, or Cyder" Patent No. 4623 (A.D. 1821). Enrolled Jan. 23, 1822.

\(^3\) Hume, op. cit., p.94.
bottles from Florida\textsuperscript{1} which included Ricketts bottles, and were dated to the period 1835-1842.

The form of the kick on the Ricketts bottles appears fairly standard, being relatively shallow, and having the name of the maker moulded on the base. This practice was in use in the Ricketts factory from 1822 at least, since it is illustrated in Ricketts' patent. This base appears to have a central nipple on some examples but not on others. This form of base appears to be almost completely absent in the Port Essington bottles, where the high conical kick is the form employed, usually with the central indentation of the pontil present. Thus it would appear reasonable to assume that specific Ricketts bottles are not present in this collection, but that the majority of the collection represents an early form of machine-made bottle made essentially in the technique patented by Ricketts, and using a simpler form of "pricker-up" which continued to produce the high conical kick found on earlier blown examples. Plates IV-11 and 12 present a classification of rim shapes present in the Port Essington collection. However, Hume's warning\textsuperscript{2} that bottles are often far from regular and that

\textsuperscript{1} S.J. Olsen "Liquor Bottles from Florida Military Sites", \textit{American Antiquity}, vol. 31 (1965), no. 1, pp.105-107. Olsen attributes this to the uneven appearance of the rim which "fuses with the mold seam". From his illustration, 2c, it is clear that here he confuses the mould seam with a striation on the bottle neck often found on these bottles.

\textsuperscript{2} op. cit., p.102 En. 56.
profiles may alter depending on which side a bottle is viewed must be emphasised. While such discrepancies were overcome to some extent by machine manufacture, variation still occurs. However, with machine made bottles, large collections may afford reasonable information from metrical analysis, as the Port Essington bottle fragments demonstrate. While no two are exactly alike, the bottles from this collection possess the same sort of relationships as pieces of primitive pottery from a similar tradition.

The rims in the present classification have been arbitrarily arranged on morphological grounds. The A series (plate IV-11) illustrates the variation in simple strip string-rims which are normally associated with free-blown bottles, although the items in this category are too fragmentary to determine whether any come from machine made bottles. Klein\(^1\) illustrates three examples to demonstrate the difference between English and Continental strip string-rims. In the Continental type, the rim is carelessly applied, the end often overlapping the beginning, and this occurs in the present collection, particularly in example A1, but this alone appears flimsy evidence on which to ascribe Continental origin to the items in this category. More distinctive are the Continental bottles with long necks, narrow at the bottom and bulbous at the "top"\(^2\).

\(^1\) W.H.A. Klein "Antieke Gebruiksflessen in Suriname", Nieuwe West-Indische Gids; Jrg. 45, p.128, fig. 3.

\(^2\) ibidem, figs. 21, 29.
which bear this type of Continental rim. This type is
certainly present at Fort Dundas on Melville Island, and some of the A1 series from Port Essington are
indistinguishable from these in terms of the string-rim. Thus the possibility of Continental, probably Dutch,
manufacture should not be overlooked for these items, and Hume believes that all the A series string-rims
from Port Essington are from bottles of non-English origin.

Series B and C (Plate IV-11) form the bulk of the
collection and illustrate the wide range of variation
in bottle rims in the collection. Unless whole
examples are present it is impossible to relate these
rims to free-blown or moulded bottles. Of the two
whole bottles in this collection, the free-blown
example has rim shape C1; the moulded example has rim
shape C7. The size of the rims differ greatly but
there is nothing to suggest that this relates to methods
of manufacture.

As discussed above all these rims appear to have
been applied after the bottle was made, presumably by
using a hot rolling technique. None of the examples
use the method described by Hume, of rolling the lip

---

1 Specimen 11-3633 from the Pilling Collection in the
R.H. Lowe Museum of Anthropology, Berkeley, California; two items collected by myself at Fort Dundas in 1967.
2 Pers. comm., 3 December 1968. I am extremely grateful for Mr Hume's comments on the Port Essington bottles.
3 op. cit., item 22, p.105.
of the neck down over the string-rim while the glass is still hot, although one example of this technique was collected at Fort Dundas.

Series D represents rims from case bottles. One seal in the collection marked "AH" can be identified as a Dutch manufacture and this presumably came from a case bottle, so that this collection may be comprised of Continental bottles, or both Continental and English types. In general the group is reasonably homogeneous, except for D4 which possesses a longer neck than the other examples. I have located no parallels for this long variety.

Types E-I illustrate all the other variations of "black" bottle rims in the collection and represent single items except for E, in which category there are four examples.

Types J, K and L are all manufactured in light green glass. J and L are bottle rims, K is a narrow jar mouth, Type M is a bottle rim in clear glass.

---

Collected by Mr J. Morris of Darwin, who has kindly donated his entire collection for study.
The numerical division of the collection of 134 rims into these categories is as follows:

<table>
<thead>
<tr>
<th></th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>B1</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>B2</td>
<td>14</td>
<td>8</td>
<td>2</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>B3</td>
<td>10</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>B4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>134</td>
</tr>
</tbody>
</table>

Two measurements (plate IV-9, ERD and IRD) were made on this collection. This was done initially for each type, but the results were so similar within series that it appeared reasonable to group the series. The following tables give the results, giving the maximum and minimum values, mean average, and standard deviation.
### External Rim Diameters (cms)

<table>
<thead>
<tr>
<th>Series</th>
<th>No</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>10</td>
<td>4.3</td>
<td>3.0</td>
<td>3.25</td>
<td>0.37</td>
</tr>
<tr>
<td>B</td>
<td>28</td>
<td>3.6</td>
<td>2.7</td>
<td>3.23</td>
<td>0.16</td>
</tr>
<tr>
<td>C</td>
<td>63</td>
<td>3.6</td>
<td>2.8</td>
<td>3.20</td>
<td>0.16</td>
</tr>
<tr>
<td>D</td>
<td>21</td>
<td>4.5</td>
<td>3.8</td>
<td>4.15</td>
<td>0.17</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
<td>3.4</td>
<td>2.8</td>
<td>3.18</td>
<td>0.23</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>1</td>
<td>3.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>1</td>
<td>3.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>1</td>
<td>3.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>1</td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>1</td>
<td>4.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>1</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>1</td>
<td>1.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Internal Rim Diameters (cms)

<table>
<thead>
<tr>
<th>Series</th>
<th>No</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>10</td>
<td>2.4</td>
<td>1.9</td>
<td>1.99</td>
<td>0.24</td>
</tr>
<tr>
<td>B</td>
<td>28</td>
<td>2.3</td>
<td>1.6</td>
<td>2.05</td>
<td>0.15</td>
</tr>
<tr>
<td>C</td>
<td>63</td>
<td>2.4</td>
<td>1.6</td>
<td>2.02</td>
<td>0.15</td>
</tr>
<tr>
<td>D</td>
<td>21</td>
<td>2.3</td>
<td>1.4</td>
<td>1.79</td>
<td>0.21</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
<td>2.0</td>
<td>1.8</td>
<td>1.93</td>
<td>0.08</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>1.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>1</td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>1</td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>1</td>
<td>1.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>1</td>
<td>0.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>1</td>
<td>3.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>1</td>
<td>1.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>1</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Excluding the single items from these tables, it appears that while exact measurements may mean very little, each group is sufficiently homogeneous to suggest meaningful ranges for bottle rims in this period. Series B and C are almost identical, and selecting the larger types out of these two groups, there is little difference in the ERD and IRD measurements for the larger and smaller types. The A series shows the greatest variation, but if the single item in type A4 (already discussed as large and atypical) is removed the ERD measurements form a closer group, with the following results.

<table>
<thead>
<tr>
<th>No</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>3.4</td>
<td>3.0</td>
<td>3.13</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Where the necks were intact two further measurements were made on this group, neck height (NH) and neck height below rim (NHB). The following results were obtained.

**Neck Height (cms)**

<table>
<thead>
<tr>
<th>Series</th>
<th>No</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>7</td>
<td>9.2</td>
<td>7.6</td>
<td>8.7</td>
<td>0.52</td>
</tr>
<tr>
<td>C</td>
<td>15</td>
<td>9.7</td>
<td>7.4</td>
<td>8.65</td>
<td>0.50</td>
</tr>
<tr>
<td>D</td>
<td>16</td>
<td>4.5</td>
<td>1.7</td>
<td>2.99</td>
<td>1.20</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>12.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>1</td>
<td>8.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Neck Height Below Rim (cms)

<table>
<thead>
<tr>
<th>Series</th>
<th>No</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>7</td>
<td>7.4</td>
<td>5.7</td>
<td>6.86</td>
<td>0.56</td>
</tr>
<tr>
<td>C</td>
<td>15</td>
<td>8.0</td>
<td>5.7</td>
<td>6.87</td>
<td>0.54</td>
</tr>
<tr>
<td>D</td>
<td>16</td>
<td>3.8</td>
<td>1.0</td>
<td>2.29</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>10.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>1</td>
<td>5.8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These tables indicate a fairly wide variation in neck height, which apparently cannot be explained by the varying heights of rims. That is to say, that no closer standardization of neck heights could be obtained for the individual types in any series by grouping the larger and smaller rim types together. The figures do, however, provide measurement ranges for future comparative study.

BASES

Of the 85 "black" glass bottle bases in the collection, 2 are moulded, 8 are square case bottle bases and 75 have the conical kick, usually associated with free blown bottles, but which in the present collection must be associated in fairly large numbers with the moulded bottle technique. As previously stated, many of these bases have a pontil indentation in the centre of the kick, which in the case of the moulded examples is presumably made by the pricker-up described in Ricketts' patent.
Two measurements were made on the bases in the collection, the diameter at the base (BD) and the maximum height of the kick (OH). It was found that both measurements produced a series of repeated measurements. These were seldom as exact as reported here; for example a second BD measurement taken at right-angles to the first might give a difference of 0.2 cms. Nevertheless, the series reported here did appear to be significant. The following table summarises the results.

### Distribution of Circular Bases according to Base Diameter and Kick Height

<table>
<thead>
<tr>
<th>Base Diameter (cms)</th>
<th>No</th>
<th>Kick Heights (cms)</th>
<th>Not Measureable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>7.0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.8</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.2</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.0</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.6</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>75</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

From this analysis, it can be seen that there is little apparent correlation between the base diameter and the height of the kick except that 17 examples of the 36 with a base diameter of 7.8 cms have a kick height of
either 2.1 cms or 2.5 cms, while only 1 example of 23 items with a base diameter of 8.2 has a kick height less than 3.0 cms. Together these two groups comprise almost 80% of the collection and indicate the normal base diameter of the bottles of this period.

Of the five examples with a base diameter of 7.3 cms, four have a particularly high kick (5.3 cms). These items are in a lighter green glass than the majority of the collection and all came from a single area, VM. In this area a number of French wine bottle seals were recovered in similar coloured glass, and it is reasonable to assume that these bases belong to French wine bottles.

Of the eight examples of case bottle bases all are square. One example is 6.9 cms along each side and has a single line diamond-shaped mark moulded on the base. The other seven all measure 7.4 cms along each side and four moulded base marks are present; two examples of a single-lined cross, one "asterisk" mark, and a single-lined square. One example with a high (2.0 cms) kick and bearing a pontil mark is present. Such moulded base marks as described here are of little value for identification and were used from the late eighteenth century.1

In view of the introduction of the Ricketts' moulding technique so early in the nineteenth century, and the undoubted presence of bottles made in a similar manner at Port Essington, it is surprising to

1 Hume, op. cit., p.93, f.n. 17.
have an almost total lack of "black" glass moulded bottle bases in the collection. Only two examples are present, both having a base diameter of 8.0 cms (a size not found in the collection of bases with conical kicks); one has a kick height of 0.8 cms, the other of 1.8 cms. The example with the lower kick has a central nipple, a feature missing on the other example. In view of the absence of conventional moulded bases in this collection it is reasonable to conclude that the moulded bottles present at Port Essington almost always possessed bases with conical kicks. The two whole examples in the collection certainly possess this sort of base. Apart from these "black" bottle bases, however, five moulded bases were recovered, manufactured in a light green glass. Two examples are cylindrical with a diameter of 7.8 cms and a kick height of 1.3 cms. The remaining three examples are square with sides measuring 6.8 cms, but with the corners cut (making the cross-section an uneven octagon). Each has a round kick 1.7 cms high.

**THE COMPLETE BOTTLES**

As mentioned above two whole bottles and a third with the rim missing were recovered from the excavations.

1) **V/GEN SUB/HOSPITAL (39)** Plate IV-8a.

This item is a free blown bottle, with the rim shape type Cl. Its weight is 691.8 gms and has a volume of 700 ml., measured to the base of the neck. The measurements delineated in plate IV-4 are as follows.
TH: 23.7 cms. BH: 12.4 cms. SNH: 11.3 cms.
NH: 8.1 cms. NHB: 6.3 cms. OH: 4.4 cms. BD:

In general this bottle is very uneven; it rocks on its base and is not symmetrical. It is typical of Hume's type No. 22, to which that author ascribes a date 1790-1820.\footnote{I.N. Hume, op. cit., p.105.}

2) \textit{VM/14/1 (37)} Plate IV-8b

- This bottle is moulded in the Ricketts' method, but with a high conical kick. The shape of the rim is type C7; weight 762.0 gms; volume 710 ml., again measured to the base of the neck. Other measurements are, TH: 28.8 cms. BH: 15.9 cms. SNH: 12.9 cms.
NH: 9.0 cms. NHB: 6.5 cms. OH: 3.0 cms. BD: 7.8
cms. D: 8.5 cms. ERD: 3.0 cms. IRD: 2.0 cms.

At present no firm date can be ascribed to bottles of this type. A \textit{terminus ante quem} non of 1811 might be applied but this is of little value in determining a close date of manufacture.

3) \textit{VM/13/1 (37)}

This bottle is complete except that the rim has been broken off. It has been made by the same technique employed for \textit{VM/14/1 (37)} but the glass is amber rather than black. Its weight is 646 gms; volume 730 ml. Other measurements are TH: 30.4 ± 0.5 cms. BH: 16.3

\footnote{I.N. Hume, op. cit., p.105.}
This bottle is slightly larger than VM/14/1 (37).

GLASS BOTTLE SEALS

From the middle of the seventeenth century until about the 1870s bottles sometimes bore on the shoulder a glass prunt or seal which served the purpose of a label. These were inscribed with a crest, a name or initials, sometimes a date, or an address. Ruggles-Brise has divided these seals into two groups, propriety seals and factory seals. In the later nineteenth century the use of these seals dies out, presumably because of the introduction of moulded lettering on bottles; many liquor bottles still bear moulded versions of these seals as decoration.

Fifteen seals were recovered from the Port Essington excavations, six from VM, four from VSD, two from VH, one from VAMI, and one in the general surface collection. These fall into three distinct groups.

1) The Chateau Margaux Seals Plate IV-13

Five seals bear various inscriptions of this Bordeaux vineyard. Three are stamped "CHATEAU MARGAU", a fourth "CHATEAU MARGAUX" and the fifth "CHATEAU MARGAUX" beneath a grape cluster. The last example is in "black" glass, all the others being light green. The 1855 classification placed this vineyard in the Premiers Crus and it still produces excellent vintage wine today.

1 Sheelah Ruggles-Brise, Sealed Bottles, p.15.
2 Hume reports a sealed bottle made in France in 1905. Pers. comm. 3 December 1968.
However no records exist to give a closer dating to these seals, than can be arrived at archaeologically. One other seal in the collection may be regarded as being related to these French wine bottle seals. This is inscribed "JOHN ALBERTY BORDEAUX VIEUX COGNAC 1815" (plate IV-13).

It seems doubtful that the British government would supply outposts such as Port Essington with vintage French wine, nor is there any obvious trade source to account for this commodity. The answer is found in the French account of the visit of the Astrolabe and Zélée to Port Essington in April 1839. One of the Frenchmen related that on April 7th:

A cinq heures nous étions tous réunis à la table de M. Bremer; il avait mis toute la colonie à contribution pour nous traiter splendidelemcnt. Si nous avions été réduits à cela, nous lussions couru risque de faire pitise chère, mais grâce à de bonne viande de buffle, un superb dindon, et d'excellentes volailles provenant de Timor, le tout assaisonné de vieux vin de Sauternes et de Bordeaux, nous fûmes un charmant diner.¹

On this basis it is reasonable to see these seals as the archaeological expression of this single meal. The recovery of these seals in the rubbish dump adjacent to the government house site adds weight to the argument.

2) The "Royal" Seals Plate IV-14.

This group of eight seals comprises four items inscribed "VR"; two seals inscribed "WR"; one seal inscribed "GR"; and one seal inscribed "D". These are seen as referring to Queen Victoria, William IV, and George IV, and presumably the bottles to which they were attached were government issue of some sort. The present insignia of the Dept. of Defence in Australia, "DID", provides an interesting parallel to the "D" seal.

3) The "AH" Seal Plate IV-14.

One seal bearing the initials "AH" can be identified as belonging to A. van Hoboken. A merchant and shipowner of this name lived between 1756 and 1850 and owned a distillery in Delft under the name of van Hoboken en Rogge.

The firm of A. van Hoboken en Zonen had 23 ships in 1842\(^1\), and the connection between the "AH" seal in the present collection and Hoboken cannot be doubted. I collected a similar seal at Raffles Bay, where the association could be either with the British settlement there, or with a Macassan trepang site in the immediate vicinity, and C.C. Macknight has also collected similar seals from a Macassan site\(^2\). In Darwin I examined three case bottles collected in the Pine Creek area of the Northern Territory. One bore an "AH" seal similar to

---

1 W.H. Klein, pers. comm., 18 December 1967.
2 C.C. Macknight, pers. comm.
those collected and mentioned above. The other two bore a similar seal on the shoulder and the moulded inscription on the side "A. VAN HOBOKEN ROTTERDAM". A fourth case bottle, also from Pine Creek, bears the same moulded inscription on the side and a moulded "AH" seal on the shoulder.

**OTHER GLASS ITEMS** Plate IV-15

1) **VM/14/1 (28)** Plate IV-15c

Glass phial sometimes referred to as an opium phial, although such a phial might well have contained other things.

2) **VM/5/6** Plate IV-15c

Glass stopper in translucent white glass, oval in cross-section, but this is possibly due to damage by fire.

3) **VGS/7/1 (28)** Plate IV-15a

Circular glass stopper.

4) **VGS/7/1 (29)** Plate IV-15b

Circular glass stopper similar to item 3 (above), but slightly smaller.

5) **VM/11/1 (29)** Plate IV-15d

Green glass circular stopper, with heart-shaped top. The top has moulded lettering, reading "BREVET E" on one side and "E EYQUEM" on the other, thus identifying it as French, but no other information has been obtained to give closer dating or identification.

---

1 In the possession of Dr Carmel White, Sydney.
In addition a number of base fragments of wine glasses and tumblers were recovered. Of the wine glass bases two had a diameter of 6.2 cms, and one of 7.4 cms and were of plain design. The most common form of tumbler appeared to have vertical fluted sides. Unfortunately all the wine glasses and tumblers were very fragmented and had apparently been flaked by Aborigines, so that no other detailed measurements could be obtained.

DISCUSSION

The analysis of the bottles from Port Essington has thrown up a number of points of interest. It is clear that the manufacture of moulded bottles in the first half of the nineteenth century in Britain produced bottles which vary from the typical Ricketts bottles, but which were made by the same technique. It is not possible so far to illustrate correlations between such things as base diameters and kick heights to differentiate between the last period of free-blown bottles and the early moulded types, but it is suggested that if measurements could be obtained from a large collection of whole examples, patterns of ranges might emerge to enable archaeologists to differentiate base and rim fragments of the two types found in archaeological deposits.

Dating the bottles in the present collection is at best inexact. Just how long bottles stay in circulation is unclear, but from the present collection one whole example, and perhaps many more fragments of free-blown bottles are represented in a site which did not begin.
until 1838. Thus the terminal date of the manufacture of free-blown bottles may have to be extended beyond the accepted date of 1820. Certainly the free-blown example from Port Essington has a more evolved string-rim than Hume's example No. 22. Alternatively, the life of any single bottle can be quite long. The evidence of what I have termed "Royal" seals indicates a date of before 1830 for one seal in the collection and a date of before 1837 for two seals. These seals in the present collection (one G R, two W R, four V R) do suggest as archaeological evidence at least a starting date for the settlement which is reasonably close to the historical date. It is of interest that Ruggles-Brise makes almost no mention of this type of seal except to say that the City Museum in Winchester has one seal "with a rather crude anchor and the letters G.R. which opens up speculation".

At first sight, the apparent volume of bottle glass from Port Essington recalled Margaret Kiddle's suggestion that drunkenness in early Australia could hardly be overestimated. However, allowing that this collection contains the remnants of 200 bottles and represents perhaps 20% of all the bottle remains in the settlement, and that an average of fifty men were

---

1 S. Ruggles-Brise, op. cit., p.51. However, in the lists of seals, p.137, reference is made to this seal as "G.R. with arrow between the letters". Reference here is also made to a VR seal and a WR seal. Hume (pers. comm.) also has sighted a VR seal from British Columbia.

2 Men of Yesterday (Melbourne 1961).
stationed at Port Essington over the eleven years of the settlement, this represents only 0.035 bottles per man per week, or about two bottles per man per year. The best assumption that can be drawn from this evidence is that bottled liquor was a supplementary form of the supply and that the majority of liquor at Port Essington was casked.

**TYPE C GLASS**

Table IV-1 gives the details of the unidentifiable glass in the collection in terms of number and percentage. A further breakdown of this table can be obtained from the individual site reports above. No further analysis was made of the Type C glass.
CHAPTER 5

METAL, STONE AND BONE

METAL

A wide range of metal artefacts were recovered from the excavations and these are presented in tables V-1, 2 and 3, according to the nature of the metal. In addition to these tables, a large quantity of unidentified iron, mainly hoop-iron, and unidentified scrap lead and copper, was recovered. This has been presented in the individual reports in terms of weight.

a) Iron

Apart from the hoop-iron, nails are the most predominant iron artefacts in the deposit. In general they are badly decayed and fragile and the exact measurement of all but a few is impossible. Instead, they have been grouped into ranges and as table V-1 indicates, of the 1954 iron nails in the collection, 81.68% are less than 5 cms (2 inches) in length.

The application of machinery to nail manufacture was first made in the United States at the end of the eighteenth century, and 120 American patents were taken out on machines that cut nails between 1790 and 1825.¹

On the other hand, machine made nails in England appear not to have been made until their production was begun in Birmingham in 1811. Fontana and Greenleaf present a number of useful criteria based on technological improvements in the industry which help to date the nails in question. All the nails from the Port Essington collection are cut nails, and may be most easily recognised by the manner in which two edges of the shank run parallel while the two opposite edges taper away from the head. In the early American and English machines this taper was achieved by turning the nail plate upside down at each stroke so as to continue the taper by reversing the cut. This produced nails with a peculiar cross-section. Between 1810 and 1825 machinery was developed which obviated the need to reverse the plate and which produced a nail with a different cross-section. Martineau, however, still describes this turning operation in use at about the mid-1850's in England, so that this dating criteria may not be effective in Australia (where imported English nails were used), at least in time equatable to the American situation. Because of the eroded nature of the nails in the present collection, it is impossible

2 Fontana and Greenleaf, op. cit., fig. 11q.
3 ibidem, fig. 11r.
4 Martineau, op. cit., p.614.
to record the cross-section of these nails.

Although a large number of nail shapes and sizes were in existence in the nineteenth century, the nails from Port Essington are almost all "common cut nails" with a square crowned head (plate V-1a-d), similar to the fencing nails illustrated in an 1876 catalogue published by Fontana. The major exceptions are nails less than 3 cms in length excavated in large numbers from VS, which have large mushroom heads and are called tufting nails in the 1876 catalogue. These are illustrated in plate V-1e. Chapter 8 refers to the fact that some nails were produced at Port Essington.

A number of the other iron artefacts from the collection fall into a general architectural category. Iron screws appear not to have been in general use in the settlement and those in the collection probably were used in furniture. Two iron forks were excavated in the shell floor of VSFI (plate V-2,b). Each of these forks has three prongs, an iron shank, and a tang which was probably set into a bone handle. A similar piece of cutlery from Raffles Bay still has the bone handle intact. A number of iron boot heels were also recovered (plate V-2c). Seven pieces of canister shot were recovered from the floor of VSD where they had

2 ibidem, p. 93.
3 In the collection of the Historical Society of the Northern Territory.
presumably been stored. All are of a similar size (see plate V-2g) and give an average weight of 217 gms, that is, they are almost exactly half-pounders. In addition two larger cannon balls were collected in 1965^1. These items weigh 2583 gms (5.69 lb) (see plate V-2f) and 2375 gms (5.24 lb) respectively and are interpreted as being originally six-pounders. Of the lead recovered at Fort Essington, the only recognizable objects are nine musket balls, which weigh 30.6 gms each (see plate V-2e, d).

One four hole iron button was recovered. Its diameter is 1.9 cms. An iron belt buckle (plate V-3c) was also recovered near the bakery.

b) Copper

Apart from pieces of scrap copper, the only artefacts of this metal are three coins, two items of uniform insignia and nails, which are, as one might expect, less predominant than iron nails. Again these have been placed in size ranges. The main type is the square-shanked cut nail with large counter-sunk flat head which is found in a number of sizes (plate V-1g, h, i). The second major type is a form of copper rivet with small flattened head and square blunt shank with diamond-shaped washer (plate V-1f). Most of these were collected behind the beach, and presumably come from a broken-up boat. However the forty copper nails less than 3 cms in length, from the hospital kitchen are of

^1 By Mr J. Calaby, C.S.I.R.O. Division of Wildlife Research. Mr Calaby has generously given the objects to be included in the present collection.
this variety. Their use in the construction of this building is obscure, unless they were used to attach the shingles in the absence of shingle clouts. This seems a laborious method of attaching shingles, but no other explanation of these rivets presents itself.

Two small copper "scales" (plate V-5a, b) each with three holes in the "top" straight edge of the "scale" were recovered and seem almost certain to be scales from either an epaulette or a shako chin-strap. The two examples here are of different size, the smaller measuring 2.0 cms along the straight edge; the larger, 3.0 cms.

**Coins:**

Three almost identical coins of South-East Asian origin were recovered. These were identified for me by Dr N. Barnard, Department of Far Eastern History, A.N.U., as "supikas". According to Dr Barnard they are probably counterfeit coins of which many similar examples flooded into entrepots such as Singapore during the nineteenth century. Schjøth has illustrated similar coins\(^1\), from which it is possible to make identifications as follows:

\[\text{V/Gen Sur/Town square (37)}\]
\[\text{(Plate V-5a)}\]

Obverse: Schjøth No 146b, Plate 89
Reverse: Schjøth No 1480, Plate 89

\(^1\) F. Schjøth, *Chinese Currency* (2nd ed.), plate 89.
VCH/2 (40) (Plate V-4b)

Obverse: Schjöth No 1463, Plate 89
Reverse: Schjöth No 1484, Plate 89

VHK/2/1 (63) (Plate V-4d)

Obverse: Schjöth No 1489, Plate 90
Reverse: Schjöth No 1501, Plate 90

The first two coins relate to the reign of Ch'ien Lung (1736-95), and the third to the reign of Chia-ch'ing (1796-1820). The various obverse designs relate to provincial mints. Schjöth No 1480 refers to Yünnan province; No 1484 to Szechuan province; No 1501 to the Chihli mint.

c) Brass

A number of different brass artefacts were recovered from the excavations which can be grouped as follows.

1) Uniform Insignia.

From the floor of the Officers' Mess four pieces of an officer's shako plate (plate V-6) were recovered during the excavations. This consists of an irregular shaped shield of radiating lines, topped by a crown and bearing in the centre an anchor. Above the anchor is the legend "GIBRALTER" and below, the motto of the Royal Marines "PER MARE [PER TERRAM]."²

From the excavations in VQS, a medallion bearing

---

¹ ibidem, p. 57.
² The fragment bearing the second part of this motto was not recovered.
the "Royal Crest" (crowned lion standing astride a crown) was recovered (plate V-5d). This measured 4.5 cms in diameter, and has been identified as a shako chinstrap terminal, although it is similar to a harness ornament in the collection of Professor A.C. Thomas of the University of Leicester\(^1\). Professor Thomas' example comes from the Military Train in the Crimea (1859-1865). My identification is based on an example examined in the museum at the Royal Marines Barracks, Portsmouth.

Two brass wreaths (plate V-5e, f) were recovered from VMQ and VQS. Each has two eye hooks on the back. They are part of the insignia worn by other ranks of the Royal Marines on the glengarry, the "pork-pie" or "pill-box" cap. Complete, these wreaths enclosed a small brass half-hemisphere of the globe, separated from the wreath, and with a separate bugle above.

A free-standing crown and anchor (plate V-5c) was excavated from VM/9/1, measuring 6.2 cms in length. One fluke of the anchor was missing, but this was recovered from the adjoining square, VM/10/1. There appears no way of indicating whether this was a marine or naval insignia. (But see uniform buttons below).

All these insignia would originally have been gilded.

2) Uniform Buttons.
   An extensive typology of naval buttons has been

---

\(^1\) Pers. comm. 11.11.1966. I am grateful to Professor Thomas for information on military insignia and uniform buttons, on which I have drawn heavily.
set up by Michael Lewis\(^1\), where he lists a number of
datable innovations in the evolution of these buttons.
Four brass buttons were excavated, all from VM (plate
V-7a-d). All are identical in design, which consists
of a raised anchor and cable, with crown above,
against a lined background; the whole surrounded by a
raised circle, with the outer rim decorated with large
indentations, which is the precursor of the true
"rope-rim" which appears on naval buttons at the end
of the nineteenth century. In shape, these buttons
have a flat base and a convex face. They are made in
two pieces, with a single eye hook. Of the present
eamples, one has a diameter of 1.7 cms, the others
diameters of 1.5 cms. Gilt is still present on the
larger example, and it may be assumed that all were
gilt buttons.

All four buttons are inscribed on the reverse side.
The large example (VM/8/1 (43))(plate V-7a) is stamped
"TREBLE GILT STANDARD"; two of the smaller buttons
(VM/14/1 (39) and VM/10/1 (56)) are identical and are
stamped "EXTRA STANDARD"; and the third small example
(plate V-7d) is stamped "& S FIRM", i.e. Firmin and
Son(s), button makers.

Referring to Lewis' classification the buttons are
almost identical to that author's type D.2\(^2\), which came
into use in 1827 and was worn by commissioned officers,

\(^1\) "Naval Buttons" (in two parts), The Mariner's Mirror,
\(^2\) ibidem, plate 3.
master's mates, and midshipmen. The slight difference which occurs is that on the present buttons the cable ring lies to the right of the shank instead of on the shank as in Lewis' example. However, on Lewis' type D.1 the ring lies to the right, although this button has the addition of a laurel wreath and was worn only by flag-officers.

On the Firmin button, and VM/8/1 (43) the anchor stock slopes down on the right. On the other two examples it is horizontal.

It is reasonable to identify these buttons as naval rather than marine in origin, and may well have come from a discarded garment which also may have been the source of the free-standing crown and anchor described above. According to Parkyn¹, the precise designation "FIRMIN & SONS" was used only in the period 1824-1826. However, specimens in Professor Thomas' collection make it reasonably certain that this designation can occur up until about 1850.

At this point it is expedient to include uniform buttons made of pewter (plate V-7a-g). Altogether nine of these buttons were recovered, four from VSF, and one each from VM, VH, VMQ, VQS and VSFII. All are convex shaped with a single iron eye hook set in the back. Eight are identical in design, bearing a raised crown and anchor, surrounded by a laurel wreath, with the legend "ROYAL MARTINES" above. Each of these bear the

¹ Shoulder-Breast Plates and Buttons, p.4. Cited to me by Professor Thomas.
maker's name on the reverse. Seven are inscribed "NUTTING LONDON", the eighth "M GOWAN LONDON". The ninth button in this group has a crown above "59" and has been identified as the other ranks button of the 59th Foot (2nd Battalion, East Lancashire Regiment) of the type worn between 1840 and 1859. No maker's name is discernible. The marine buttons are a normal early pattern of other ranks coatee button. Professor Thomas states that these pewter buttons went out of use in 1855, and that an example of a similar button in his collection is dated to 1830. Little is known of the makers recorded here although Nutting is an early nineteenth century manufacturer. As the Royal Marines contracted for the manufacture of their buttons to a number of firms no very close date can be obtained from this source of information. However taking into account the buttons and insignia, Professor Thomas was able to conclude, without knowing the date of the settlement: "I would guess that none of these items are earlier than c. 1830 and probably refer to military occupation between 1830 and 1860. If one had to pin it down, the earlier half of this period might be preferred."

Fourteen plain brass buttons were recovered from the excavations (see plate V-7h-o). Nine have a diameter of 1.6 cms, the others a diameter of 1.3 cms. The smaller ones are only slightly concave, with four holes, and bear traces of black enamel. None are

1 pers. comm. 11.11.1966.
inscribed. Of the larger ones, all have four holes, and have flat rims with concave centres. Four are unmarked and bear traces of gilt. Of the others three are identical, and are inscribed on the front "GUARANTEED NOT TO CUT". These examples also have traces of gilt. Another is inscribed "IMPROVED FOUR HOLES". The final example is inscribed "A. LINNEY & SON. 23 REGENCY ST." All the buttons in this group can be regarded as shirt, coat, or fly buttons typical of the period.

Other brass items recovered from the excavations include 9 percussion caps, several belt buckles (plate V-3a,b) two harmonica reeds (plate V-3e) and a cameo frame from VMQ (plate V-3d) together with items as listed in table V-3.

The metal collection as a whole reflects a number of aspects of life at Port Essington. The military nature of the settlement is reflected not only in the uniform insignia and buttons, but also in the various sorts of ammunition. Further aspects of the architecture have also been recorded in the nails recovered, and the finds in all cases support archaeologically the historical identifications of the various structures. For example the one feminine artefact, the cameo holder, was excavated from the floor of one of the married quarters; the officers shako plate came from the floor of the officers' mess; the four other ranks' coatee buttons were recovered from the floor of one of the single men's houses. Nothing in the collection suggests a date other than that which is
known historically. Apart from Professor Thomas' extremely accurate assessment of the date of the buttons and insignia, the presence of the percussion caps (discussed below in relation to gunflints), machine cut nails and harmonica reeds¹, all point to a mid-nineteenth century date for the settlement.

¹ The mouth organ, or harmonica was invented in Berlin in 1821 by Friedrich Buschmann, who also invented the accordion in the following year. The reeds in this collection may come from either instrument. Curt Sachs, *The History of Musical Instruments*, (New York 1940), p.406.
<table>
<thead>
<tr>
<th>TABLE V-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRON</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NAILS (cma)</th>
<th>VH</th>
<th>VHI</th>
<th>VHD</th>
<th>VHH</th>
<th>VHQ</th>
<th>VQS</th>
<th>VOM</th>
<th>VSD</th>
<th>VSF</th>
<th>VSFII</th>
<th>VS</th>
<th>VAMII</th>
<th>VCH</th>
<th>V/GEN</th>
<th>SUR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3</td>
<td>28</td>
<td>4</td>
<td>37</td>
<td>21</td>
<td>16</td>
<td>4</td>
<td>66</td>
<td>2</td>
<td>123</td>
<td>3</td>
<td>6</td>
<td>190</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>500</td>
</tr>
<tr>
<td>3-5</td>
<td>122</td>
<td>12</td>
<td>34</td>
<td>339</td>
<td>40</td>
<td>27</td>
<td>97</td>
<td>20</td>
<td>346</td>
<td>20</td>
<td>32</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1096</td>
</tr>
<tr>
<td>5-8</td>
<td>58</td>
<td>19</td>
<td>9</td>
<td>89</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>81</td>
<td>13</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>314</td>
</tr>
<tr>
<td>&lt; 8</td>
<td>10</td>
<td>8</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>44</td>
</tr>
<tr>
<td>BELT BUCKLES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>RINGS</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>SCREWS</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HOOKS</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HINGES</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>LOCKS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>NUTS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BOLTS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ANGLE IRON</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PINS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>FORKS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BOOTEELS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STOVE FEET</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SHOT</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CANNON BALLS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>LEAD</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MUSKET BALLS</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>
### TABLE V-2

**COPPER**

<table>
<thead>
<tr>
<th></th>
<th>VM</th>
<th>VMII</th>
<th>VH</th>
<th>VHD</th>
<th>VHK</th>
<th>VMQ</th>
<th>VQS</th>
<th>VSD</th>
<th>VSF</th>
<th>VCH</th>
<th>V/GEN SUR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NAILS (cms)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3</td>
<td>10</td>
<td></td>
<td>1</td>
<td>40</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>18</td>
<td>81</td>
<td>44</td>
</tr>
<tr>
<td>3-5</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>5</td>
<td>2</td>
<td>15</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>5-8</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>SCREWS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NUTS AND BOLTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COINS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>VN</td>
<td>VNH1</td>
<td>VH</td>
<td>VHD</td>
<td>VHK</td>
<td>VNOQ</td>
<td>VQS</td>
<td>VON</td>
<td>VSD</td>
<td>VSF1</td>
<td>VSFII</td>
<td>VB</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----</td>
<td>------</td>
<td>----</td>
<td>-----</td>
<td>-----</td>
<td>------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>------</td>
<td>-------</td>
<td>----</td>
</tr>
<tr>
<td>Uniform Insignia</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uniform Buttons</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain Buttons</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percussion Caps</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmonica Reeds</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collar Studs</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belt Buckles</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Furniture Knobs</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keyhole</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cameo Frames</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferrule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spike</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hinge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pewter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uniform Buttons</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
STONE

1) Aboriginal Stone

Twenty seven pieces of stone which could be associated with the Aboriginal occupation of the area were recovered from the excavations and surface collections. The artefacts are of a number of materials; creamy quartzite, hornblende gneis, chert, porphyritic dolerite and slate, none of which stone types occur naturally in the Port Essington region. Table V-4 gives the distribution of artefacts.

TABLE V-4

<table>
<thead>
<tr>
<th></th>
<th>VM</th>
<th>VMII</th>
<th>VHK</th>
<th>VMQ</th>
<th>VSD</th>
<th>VOM</th>
<th>VSF</th>
<th>VAM</th>
<th>V/GEN</th>
<th>SUR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>EDGE-GROUND AXES</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>FOUNDERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>HAMMERSTONES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SPEAR POINTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SCRAPERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>UTILIZED FLAKES</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WASTE FLAKES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>OCHRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The single core in the collection (VM/S/I (55)) is of creamy quartz and appears to have been a leilira blade which had previously been broken. From this piece indiscriminant flakes had been detached. One
flake, possibly from this core, was recovered (VM/8/1 (143)) and bears snap-break useware along the thin edge. It is reminiscent of the glass cutting flakes described in chapter 4. The hammerstone (plate V-8c) is a small waterworn pebble with pecking on one end. The pounder (plate V-8a) conforms in shape to the conical pounder of McCarthy's classification, although it is a small example standing only 7.7 cms high. Stratigraphically it is earlier than the house site VSFT, under which it was found. The scraper is of black chert with heavy step flaking along one edge, which is concave in shape.

Amongst the implements the three spear points (plate V-8d-f) appear to be of some interest in that they have no parallels in the literature. Five fragments of one were excavated in the area immediately outside VMQ where evidence of glass flaking was also recorded. When reconstructed the implement was a heavily step-flaked square butt of what was probably a spear point (plate V-8f). The step-flaking is bifacial and continues around the entire perimeter. A second flaked piece of slate (plate V-8e) was collected by me from a sandbank behind the mudflat to the west of the settlement (VWM), where it was found in association with a midden scatter containing shell and some glass artefacts. The third example (plate V-8d), from the beach to the south of the settlement was collected by the ranger's Aboriginal assistant, Sam. When Sam

---

handed me the implement I asked him what it was, and he replied that it was a shovel-nosed spear. I commented that such spears were made only of metal but Sam shook his head and said that this was a shovel-nosed spear of "the old people". If this identification is correct these implements represent a type not previously recorded. The source of the slate is unknown but an anonymous observer in the 1840's noted that slate implements were being traded in from the interior. From extensive excavations in the settlement no suggestion of slate for roofing has been uncovered, and writing slates can be discounted by the thickness of these implements.

Also from VMQ, a piece of ground ochre was recovered. This piece, has striations across the surface and the edges are ground (see plate V-Sb).

The general lack of stone implements conforms to the wide range of ethnographic and archaeological evidence for the non-use of stone artefacts by people living on the Arnhem Land coast. White has used this as evidence for the principal theme of her thesis, the dichotomy of the "plateau" and "plain" peoples in the Oenpelli region. I have argued elsewhere that the explanation may be more simple than White suggests. At

---

2. C. White, "Plateau and Plain", passim.
Reef Point, on the eastern shore of Port Essington an axe factory site has been located which cannot be explained except as exploitation of a source of stone by people living in the immediate area, and the conclusion I draw is that the use of stone by the coastal people depends on the availability of the material in the immediate environment. However the people living in the Victoria area of Port Essington do not appear to have used stone artefacts except those traded or carried into the area.

11) European Stone

The six stone artefacts of European origin recovered from the site are five gunflints and a fragment of slate pencil. The latter artefact was excavated from outside the confines of VSD and is 3.6 cms in length.

The distribution of the gunflints is VM, VH, VMQ and two items surface collected along the cliff line near the married quarters. Four of the items are bluish-grey to almost black in colour and possibly are Brandon flints. The fifth example is honeycomb in colour and translucent.

The manufacture of English gunflints has been adequately described by Rainbird Clarke1 and Knowles and Barnes2. Plate V-9a shows the standard shape and

gives the nomenclature used for gunflints. The bulb, called more correctly demi-cone of percussion by Knowles and Barnes makes the identification of gunflints simple, even on extremely worn pieces, or pieces which may have been re-used by Aborigines.

The gunflints from Port Essington fall into two groups. The four flints of similar material (plate V-9b-e) are approximately the same size, ranging in heel width between 2.5 and 2.8 cms, that is, very close to one inch. In size they are comparable to Clarke's illustration which is a musket size gunflint. The edge on each example is extremely worn and one example appears to have been re-flaked to form a concave scraper.

The fifth example (plate V-9f), in honeycomb flint, differs in both size and manufacture as well as material. It is larger than the other examples, measuring 3.3 cms across the heel. The rib flake scar is wider and the heel is less square than the other examples. It is also thinner than the other examples. The heel and sides of this example has been flaked completely so that the two diagonal ridges running from the heel to the rib flake scar are no longer definite. Both Clarke and Knowles and Barnes refer

---

1 Rainbird Clarke, op. cit., p.55, fig. 2. See also H.L. Peterson, Arms and Armour in Colonial America 1526-1783, pp.228-9.
2 ibidem, p.51.
3 op. cit., p.207.
to French gunflints of this period having "gnawed heels" so that this item is perhaps of French origin.

The presence of both gunflints and percussion caps in a military settlement provides yet another avenue for dating the settlement by archaeological means. Clarke dates the introduction of percussion caps to 1832 and notes that the sale of the last consignment of gunflints to the British Government took place in 1838. It might be expected that the changeover took place rapidly, so that the presence of both types of firearm at Port Essington offers a time range which does in fact coincide quite closely with the known historical dates.

**BONE**

Table V-5 gives the distribution of minimum numbers of identifiable animals from the bones excavated about the settlement.

In general bone was not plentiful in the excavations and only two points of interest emerged from the analysis. Firstly the distribution of bone remains does to some extent reflect the functions of the structures excavated. The only habitation site—unit from which bones were recovered in numbers was VSFI, the shell floor of one of the enlisted men's huts. The bones from the hospital kitchen were excavated outside the building in what was essentially a dump area, and the other two concentrations of bone came from rubbish dumps.

Secondly the archaeology confirms the documentary
record (see chapter 8) of the sorts of animals being exploited for food by the garrison; it illustrates that hunting the native animals, birds and fish was perhaps not as important for supplementing the diet, as was the importation of domestic animals for food from outside the settlement.

Finally the evidence from the Aboriginal midden (VAM II) indicates that the Aborigines still caught and ate traditional food, and with the exception of the one cow/buffalo represented in the collection, they appear not to have eaten meat from animals imported for the European garrison. However this evidence is at best inconclusive.
### Table V-5

**Bone Distribution at Victoria (Minimum Numbers)**

<table>
<thead>
<tr>
<th>ANIMALS</th>
<th>VM</th>
<th>VMII</th>
<th>VHK</th>
<th>VSFI</th>
<th>VSFI1</th>
<th>VNI</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a) Domesticated Animals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cow/Buffalo</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Sheep/Goat</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Pig</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Dog</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>b) Native Animals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kangaroo (Macropus Antilopinus)</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Wallaby (Wallabia Agilis)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Bandicoot (Isodon Macroourus)</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Lizard († Amphibolurus Barabatus)</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Reptile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Bird</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Fish</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Dugong</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Crab</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>
USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
ARCHAEOLOGY, AND THE HISTORY OF PORT ESSINGTON

by

F.J. ALLEN

VOLUME I

This thesis was submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in
The Australian National University

May 1969
PART II
CHAPTER 6

THE ESTABLISHMENT OF PORT ESSINGTON

For many Australian historians the history of the northern parts of Australia has largely remained *terra incognita*, the poor relation of the political and economic growth which began and flourished in the south-east and which in many respects has not yet managed to conquer the vast spaces of the north and north-west. Between 1824 and the foundation of Darwin in 1869, abortive attempts were made to settle Melville Island, Raffles Bay, Port Essington, Escape Cliffs, Camden Harbour, and Somerset near Cape York, as well as some minor settlements.1 Of these, Port Essington is remembered, not so much because it was the longest-lived of these attempts nor because it bore witness to extreme privation, and mismanagement on the part of a distant government, but rather because the settlement was the destination of Ludwig Leichhardt on his epic journey across the continent from Moreton Bay in 1844-5.

Port Essington, however, forms an important chapter in Great Britain’s attempts to control this "fifth quarter of the globe", both politically and physically.

Historians have outlined a number of reasons for this settlement, Briefly, these include the opening up

---

1 For a survey of these settlements in the north during this period see C.C. Macknight, *The Farthest Coast*, (forthcoming), pp.12-21.
of trade between the north coast and the East Indies; to develop tropical agriculture on a commercial scale; to prevent piracy in the Eastern Archipelago; to prevent a rumoured French expedition to the area from taking possession; to establish a haven for ships wrecked in Torres Strait; and as a base for surveying voyages in the area. The present chapter attempts to assess these reasons.

When the Alligator sailed into Port Essington in October 1838, all eyes must have been turned to the silent shore which was to become their home for some time. But for the commander of the expedition, Sir James John Gordon Bremer, the experience must also have recalled his first arrival at Port Essington fourteen years before.

---


3 This reason later became a convenient focus for attacking the general failure of Port Essington. Before 1838, however, it was not stressed, being suggested only by Earl (see below) and being briefly reiterated in Bremer's instructions, Adam and Parker to Stanley, 30 January, 1838. Adm. 2/1695.

4 Prior to 1838, only by Major Campbell, "Geographical Memoir of Melville Island and Port Essington, on the Cobourg Peninsula, Northern Australia; with some observations in the Settlements which have been established on the North Coast of New Holland", Journal of the Royal Geographical Society of London, vol. IV, 1834, p.180.
years before, when he attempted to make the first British settlement, which he eventually established on Melville Island. In many respects this new attempt was a continuation of Melville Island and its sister colony of Raffles Bay, and it is necessary to turn firstly to these earlier failures.

The background history to the foundation of settlements at Melville Island and Raffles Bay is long and detailed and has been effectively covered elsewhere by Howard. Briefly, the movement of the English East India Company into the eastern section of the Indian Archipelago, with the settlement at Balambangan in 1774, threw the British into close commercial rivalry with the Dutch and led to a series of essentially commercial treaties between the two nations. The first of these, in 1784 opened up trade to the British and resulted in the purchase of Penang.

During the Napoleonic Wars the British began a conquest of the Dutch East Indies, ostensibly to counteract Napoleon's conquest of the Netherlands. Between 1811 and 1816 Java and its dependencies came under the governorship of Sir Stamford Raffles, whose

---

1 Dora Howard, "The English Activities on the North Coast of Australia in the First Half of the Nineteenth Century", Proceedings of the Royal Geographical Society of Australasia (South Australian Branch), vol. XXXIII, 1973, passim, esp., Chs. II and III. This work is hereafter referred to as Howard.

rule quickly fostered British commercial interests in the area. But such interests were dealt a severe blow by the restoration of these territories in 1816, under the terms of the Treaty of 1814 between Great Britain and Holland. The Dutch quickly re-established themselves in Borneo, the Celebes, Sumatra and the Moluccas, and by a system of selective tariffs proceeded to exclude as far as possible British commerce in the Eastern Archipelago. One successful British answer came with the establishment of Singapore by Raffles in 1819, and following upon its early success, arose the plan for a similar commercial emporium on the north coast of Australia.

As might be expected, this new focus for British commerce was the suggestion of a private trader, William Barnes¹, who had originally been in the employ of the East India Company and subsequently had spent the four years prior to 1823 trading between the Moluccas and New South Wales². Despite Darling's later assertion that Barnes was a man without principle and totally unworthy of notice³, the comparison drawn between him and James Matra is fair comment on Barnes and the originality of his idea⁴. His initial communication

¹ Spelt variously "Barnes" and "Barns".
² East India Trade Committee to Bathurst, 21 January 1824. C.O. 201/153.
with the Colonial Office was a calculated endeavour to attract attention to his scheme on two fronts, firstly the commercial advantages to be derived from a settlement on the northern coast and secondly the aggressive expansion of the Dutch in the general area.

"I have to state", he added as incentive, "a disgraceful abuse of the British flag on the part of the Dutch Government against the natives of the Molucca Islands." 1

As Howard has pointed out, Barnes' early career in the Eastern Archipelago had been in the halcyon years of Raffles' rule in Java and he had witnessed the subsequent restrictions on British trade in the region upon the return of the Dutch. Thus this point was re-emphasised in Barnes' second communication on the subject which the Colonial Office requested upon receipt of the first 2. Pointing out that the British had no possession in the "valuable Eastern Islands", and that the Dutch seemed bent on the total exclusion of their rivals in the advantages of the trade in the area, Barnes suggested a settlement in the Gulf of Carpentaria, with the aim of establishing contact with the trepang fishermen from Macassar 3.

More will be said in the ensuing pages about these Macassans, who arrived on the Australian coast each year with the north-west monsoon, collected and cured the

1 Barnes to Bathurst, 23 July 1823. C.O. 201/146.
2 Horton to Barnes, 28 August 1823. C.O. 202/11.
3 Barnes to Horton, 15 September 1823. C.O. 201/146.
trepang and returned to the Celebes at the end of each season on the south-east trade wind. In addition to trepang and other luxury items which were destined for the Chinese market, a large internal trade, carried on by the Bugis resulted in about 30,000 tons of junk shipping entering ports in the Indian Archipelago each year. Batavia, Manila, Macassar and Singapore formed the major entrepots for this trade, and Barnes’ scheme was designed to intercept a proportion of it before it reached these ports. Both the internal and Chinese market trades involved a large number of items, and Barnes claimed that the trepang trade alone was worth an annual value of between £180,000 and £240,000, although this appears a gross over-estimate.

2 J. Crawfurd, A History of the Indian Archipelago (3 vols. Edinburgh 1820), vol. III, p.184 lists the following items, a) for the internal trade: cotton cloth, gold dust, nutmegs, Spanish dollars, bird nests, camphor, frankincense, shell, European cloth, European and Indian cotton, iron, steel, and tobacco; and b) for the Chinese trade: birds’ nests, trepang, pepper, cloves, mace, nutmegs, camphor, sharks’ fins, tortoise shell, ebony, sandalwood, ivory, tin rattan, beeswax, betel nut, seaweed, gold dust, silver coins, European woollens and cottons. Imports from China were tea, porcelain, culinary vessels, raw and wrought silk, brassware, paper, shoes, fans, umbrellas and toys.
3 Barnes to Horton, 15 September 1823. C.O. 201/146.
4 Bach, op. cit., p.224. Calculating the value of trepang at forty Spanish dollars per picul, and the average cargo at 3 tons per prau, one hundred praus in one season could only net £68,000. All these figures (Continued on p.296)
letter closed urging the establishment of an immediate settlement, "especially as the Dutch are most anxious to form one themselves in the hope of shutting us out from the trade of the Eastern World and totally excluding us from all their ports."

Barnes' proposal had also come to the attention of the East India Trade Committee, an organization of traders existing apparently to consider the interests of British merchants in the East. In a letter signed by the Chairman of the Committee to Horton, Barnes' scheme was reiterated in some detail, and its implementation strongly recommended. One significant alteration was suggested, however, that having consulted Captain Philip Parker King, the Committee felt that Port Essington should be the site for such a settlement. King had recently returned to England after completing an initial survey along the north coast, extending that done by Flinders in 1803. King had

(Continued from p.295)

are high and the actual average return from the Australian part of the trade would almost certainly be less than half this figure. The most exact figures available show that the total amount of trepang exported from Macassar in 1824 was valued at £28,000. See C.G. Macknight, Ph.D. thesis A.N.U. (forthcoming).

1 Barnes to Horton, 15 September 1823. C.O. 201/146.

2 Howard, p.76. The members of this committee are listed in Howard, Appendix A, p.163.

3 Begbie to Horton, 13 December 1823. C.O. 201/144.
names the Cobourg Peninsula, and the large harbour that it contained, Port Essington, of which he wrote in glowing terms. Fearing the Dutch might precipitate their proposed settlement once the results of King's surveys became known, the Committee urged prompt action. Bathurst therefore sought the opinion of the Admiralty, and the reply from John Barrow, at that time Second Secretary, decided the point. Barrow had spoken already to King and stated his acceptance of the commercial arguments in favour of the proposal. His main argument, however, was that the Dutch might be justified in establishing themselves in northern Australia despite any British claims to prior "discovery" in the same manner as they themselves had taken possession of the east coast and Tasmania, while not disputing that the Dutch had made the original discovery, and that in this matter the conduct of the British might be quoted against themselves. Thirteen years later, he was again to use this argument in favour of the resettling of Port Essington. In February 1824, Bathurst wrote to Governor Brisbane issuing the necessary instructions and on 24 August 1824, the Tamar and the Countess of Harcourt under the command of Bremer, and accompanied by the colonial

1 After Prince Leopold of Saxe-Coburg. The mis-spelling occurred in the published account of the voyage, A Narrative of a Survey of the Intertropical and Western Coasts of Australia performed between the years 1818 and 1822 (2 vols. London, 1827), vol. 1, p.98.


vessel *Lady Nelson* sailed from Sydney. Arriving at Fort Essington, Bremer was unable to locate sufficient water, and after taking formal possession moved to Melville Island. Nevertheless, he wrote of the Port as one of the most noble and beautiful pieces of water imaginable, capable of "containing a whole Navy in perfect security". On 30 September the site of Fort Dundas was established. When Bremer departed in November, the detachment consisted of 112 men, including the crew of the *Lady Nelson*.

The history of the Melville Island settlement, and the sister settlement of Fort Wellington at Raffles Bay on the Cobourg Peninsula can be quickly passed over here. Melville Island proved an unqualified failure and the settlement was removed in 1829 to Raffles Bay, where Fort Wellington had been established in 1827. However by the end of 1829 orders arrived for the abandonment of this second settlement also.

A number of reasons can be put forward to explain these failures. Bremer's passionate praise for Melville Island and its potential, in a despatch written barely six weeks after their arrival, caused Barrow

2 Howard, p.83.
3 For fuller accounts see Howard; Graham, op. cit.; McIntosh, op. cit.; Bach, op. cit.; "Fort Wellington Expedition August 1966", *Historical Society of the Northern Territory*, Roneo, 1967.
4 Bremer to Bathurst, 12 November 1824. C.O. 201/155.
to state that there never was so promising a spot in a naval, commercial and agricultural point of view. Despite this, Bremer's choice of a site was in every respect disastrous. Situated in Apsley Strait, Fort Dundas was removed from the sea-lanes, and the strait itself proved difficult to navigate. The monotony of everyday life was emphasised by the inhospitable nature of the country and by 1826 both the Lady Nelson and the brig Stedcombe, sent as a trading vessel to the settlement by the East India Trade Committee, and captained by Barnes, had been lost to pirates. The gloom of the despatches arriving in England during 1826 was strongly felt, but rather than abandon the plan completely it was determined to try again at Raffles Bay. The basis for this second attempt appears to have been the failure to establish contact with the Macassans who by-passed Melville Island completely on their voyages to the Australian mainland. This contact did take place at Raffles Bay, but late in 1829, when prospects of trade appeared

---

1 Barrow to Horton, 30 April 1825. C.O. 201/164.
3 Barnes himself was not on board at the time.
4 Howard, p.86.
5 Several sherds of Macassan pottery have been collected in the Fort Dundas area by myself, but these do not necessarily suggest direct contact. They may, for example, have been introduced by traders via Timor.
most likely, the settlement was abandoned.

This situation underlines the thesis of the difficulty of communications which has been stressed elsewhere by Blainey\(^1\), who points out that Fort Dundas was as marooned "as a beetle in a bottle". However, other events had taken place which lessened the opportunities for successful trade. The treaty between Great Britain and Holland signed in London in 1824 had ensured the security of Singapore and, at least on paper, had given access to British traders in the eastern ports of the archipelago controlled by the Dutch\(^2\). Thus, after the loss of the Stedcombe, the London merchants who had asked for the north Australian settlements failed to make use of them, so that when, in the season of 1828-29, thirty-four Macassan praus visited Raffles Bay there was little to be traded with them in what was essentially a military establishment\(^3\).

With one exception, the successive commandants of the two settlements appear to have been singularly inept at their tasks. Captain Laws reported that the governorship fell to whoever's "turn it was for detached duty" without reference to the man's habits, interest or inclination. One commandant at Melville Island had

---

\(^{1}\) op. cit., p.88.
\(^{2}\) See Howard, pp.60-63.
\(^{3}\) Blainey, op. cit., pp.87-88; Graham op. cit., p.419. See also list of arrivals maintained by Barker, uncatalogued MS in the archives of the Royal Geographical Society, London.
almost resigned his commission rather than take such a posting, and following his arrival he had never ventured more than half a mile from his house.\textsuperscript{1}

Captain Smyth, the first commanding officer at Raffles Bay, also accepted his post unwillingly, and following the first wet season during which almost the whole garrison fell ill, he gained his recall on the grounds of ill-health\textsuperscript{2}. But from the first his despatches were depressing, denying any value in the settlement and their subsequent arrival in England sealed the fate of Raffles Bay\textsuperscript{3}.

Smyth, however, did make contact with the Macassan trepangers and set in motion efforts at establishing that trade which had planted the first British settlement in the area more than three years before. He wrote to the Governor of Macassar\textsuperscript{4} and to an English merchant reported to be living there. However the reply, received from the Dutch Governor by the later commandant, Captain Collet Barker was not encouraging\textsuperscript{5}.

With Barker's arrival in September 1828 came the

\textsuperscript{1} Report dated 25 October 1828, enclosed in Barrow and Beaufort to Glenclog, 10 April 1837. C.O. 201/264.
\textsuperscript{2} Howard, p.87.
\textsuperscript{3} See for example Smyth to Darling, 30 October 1827. C.O. 201/191.
\textsuperscript{5} Le Clecq to Smyth, 6 October 1828. H.R.A., III, vi, p.821.
first conscientious leadership seen in either of the two settlements. Sturt compared Barker's character with that of Captain Cook\(^1\), and his career marked him as a zealous and honest soldier. To Raffles Bay he brought an energetic approach which guided the settlement through the rigours of the 1828-29 wet season. He quickly improved the housing of his garrison and extended the supply of fresh vegetables with close attendance to the gardens. Barker appreciated the need for discipline and curbed drunkenness with drilling and theft with the lash\(^2\). He did not merely adhere blindly to regulations however, and with a regard for the climate, allowed some relaxation in the dress of his men\(^3\). This was an important consideration in the oppressive climate.

Barker's greatest success was with the Aborigines. Both settlements had been witness to bloody skirmishes with loss of life on both sides, and these encounters had culminated in December 1827 with Smyth offering £5 per head for any Aborigines brought into the settlement for the purpose of attempting to pacify them. A party of six men located a group of some sixty Aborigines, and without warning opened fire upon them. In the ensuing

\(^1\) Australian Dictionary of Biography, vol. 1, p.57.
\(^2\) "Journal of Captain Collet Barker at Raffles Bay", entry for 20 April 1829. (MS in Mitchell Library. A2002).
\(^3\) ibidem, entry for 29 October 1828.
struggle a man and woman were bayoneted and some of the wounded took refuge in the sea where they were slaughtered. The bounty-hunters returned to the settlement with a wounded girl who was promptly renamed Mary Waterloo Raffles.¹

Barker set out to rectify the animosity which had grown between the two groups and he records that on sighting some Aborigines on 2 December he left the boat and advanced alone and unarmed until he was able to exchange gifts with one of them. Barker was later to effect a similar conciliation with hostile Aborigines at King George's Sound, and it is ironical that he was speared to death at the mouth of the Murray in 1831 in similar circumstances.

The honesty of Barker's dealings with the Macassans is also evident from his journal. While forbidding them the right to make a punitive expedition against the Aborigines of Raffles Bay for an alleged offence elsewhere on the coast², Barker went to great lengths to welcome and encourage the Macassans and discussed the sorts of goods they might expect to exchange. The Macassans desired cotton cloth and handkerchiefs, scissors, knives, razors, saws, files, chisels, needles and thread, and particularly opium.

² Barker, op. cit., entry for 2 December 1828.
³ ibidem, entry for 2 April, 1829.
While they themselves did not want powder and muskets they thought there might be a market for such goods in Macassar. In exchange they could bring gold dust, spices, nutmeg and cinnamon, tortoise shell, rice and tobacco\(^1\). One captain informed Barker that there were sixty or seventy praus on the coast that year and there was a general enthusiasm for the possibilities of trade\(^2\).

Only speculation is possible on how successful this trade might have been. Trepang had been the linch-pin of Barnes’ original scheme, and Smyth had discovered the previous season that the trepangers would not sell this commodity, stating that their proprietors in Macassar were already committed to Chinese merchants in that port\(^3\). A similar situation was to occur throughout the lifetime of Port Essington, and it seems unlikely that an economic market could have been set up with the Macassans without trepang as the major commodity\(^4\). With the settlement flourishing however, the disappointment of having to abandon it caused Barker to hesitate, until he recollected that "obedience was better than sacrifice", whereupon he

---

\(^1\) ibidem, entry for 24 March, 1829.

\(^2\) ibidem, entry for 1 April 1829.

\(^3\) See Bach, op. cit., p.229 and especially f.n. 36.

\(^4\) For a similar situation at Port Essington see Stokes to Gipps, 20 December 1841, enclosed in Gipps to Stanley, 5 May 1842. G.O. 201/320.
carried out the orders\(^1\). It was typical of his thoughtfulness, that he wrote to Admiral Gage asking that the Governor of Macassar be notified that the British had left Raffles Bay so that traders would not be inconvenienced the following year\(^2\). According to later account praus did arrive to trade and settle and were disappointed to find the British gone\(^3\).

These early failures underlined a number of difficulties peculiar to the settlement of tropical north Australia — its remoteness and the difficulty of communications, the lack of experience of the men who tried to establish them, the sorts of privation and sickness such garrisons were to endure — scurvy, dysentery, malaria and other minor ailments being common. While subsistence gardens could be made productive, the hope of any real agricultural successes was gone, apart from such commodities as lignum vitae\(^4\). The real nature and difficulty of trying to tap the trade of the Eastern Archipelago via the Macassans should have been realized, but this lesson was still

2 Wilson, *op. cit.*, p.172.
4 A timber prized for ship building and repairing.
to be learnt. Finally and significantly, Europeans attempting to settle a tropical environment, for the first time had been thrown together with an indigenous race of hunters and gatherers who were still Palaeolithic, and who even if friendly could not provide the plentiful labour source so necessary to European colonization of the tropics, and who could not regularly supply food beyond their own needs with which any European settlement might sustain itself. What lessons the Aborigines, who had lived in the area for the last twenty or thirty thousand years might have to teach, perished on the intellects of those who saw them, like Dampier, as the “miserablest People in the World”\(^1\).

Thus with scarcely a whimper came the end of the first two settlements on Australia’s northern shores and a somewhat chastened government gratefully accepted the announcement from the Secretary for War and the Colonies that the abandonment of Melville Island and Raffles Bay had saved the government £761 per annum, exclusive of the costs of communicating with the settlements\(^2\). But while the idea was effectively dead


it would not lie down and less than four months after Goderich's announcement, Hay was writing to Governor Bourke blaming Darling for acting precipitously in recommending the abandonment, and advocating a further attempt at settling Port Essington.\(^1\)

In 1834 Major Campbell, a former commandant of Melville Island delivered a long address to the Royal Geographical Society on his experiences in North Australia and the natural resources of the area.\(^2\)

Despite the unfavourable nature of his despatches when he was there in an official capacity, he argued strongly for the commercial capabilities of the Cobourg Peninsula. "Port Essington" he said, "is as the friendly hand of Australia, stretched out towards the north, openly inviting the scattered islanders of the Javanese, Malay, Celebes, and Chinese seas, to take shelter and rest in its secure, extensive and placid harbour; where they may deposit the productions of their native inter-tropical isles, and receive in exchange the more improved manufactures of the natives of the temperate zone."\(^3\) Campbell also stressed the military importance

\(^1\) Hay to Bourke, 21 January 1832, Despatches of the Secretary of State, Mitchell Library A1269. See also Bell, op. cit., p.232.

\(^2\) Major Campbell, "Geographical Memoir of Melville Island and Port Essington, on the Cobourg Peninsula, Northern Australia; with some observations on the Settlements which have been established on the North Coast of New Holland", Journal of the Royal Geographical Society of London, vol. IV, 1834, pp.129-181.

\(^3\) ibidem, p.177.
of the area, and its value as a base for surveying work.

In 1836 the Colonist made several references to the probable settlement of the north coast, suggesting that in the first instance it would be a depot for convicts, and this latter idea was more fully propounded in 1837 by John Dunmore Lang in *Transportation and Colonization*, who argued that if it was necessary to settle Port Essington then it was "surely fitting and reasonable that these hardships, difficulties and diseases should be encountered and surmounted by transported felons, rather than by a free emigrant population". In the same year, came an eloquent rebuttal of the idea of using convicts for settling Port Essington. Wrote George Windsor Earl "sufficient sin and misery have already been created by Britain vomiting forth her outcasts to people a country well deserving of a better system of colonization".

The appearance of Earl introduces a major figure in the history of Port Essington, and one whose subsequent non-appearance in the pages of Australian history is not altogether justified. Born in England around 1805, nothing is known of his early life,

---

1 *The Colonist*, 3 January and 26 May 1836.
3 G. Windsor Earl, *The Eastern Seas or Voyages and Adventures in the Indian Archipelago in 1832-33-34* (London, 1837), appendix no.2, p.461. This work is hereafter referred to as *The Eastern Seas*. 
although it is apparent from his writings that Earl must have been well-educated, particularly in languages. During his life he translated articles from French, Dutch and Spanish, and appeared to be conversant with German. In addition he spoke several Malayan languages. Earl was a prolific writer and Gibson-Hill lists nine books or pamphlets in addition to twenty-four articles in learned journals, in a bibliography of Earl's work which is incomplete. His subjects ranged from the physical geography of the Indian archipelago and trade in the Arafura sea region to the ethnology of the Papuan races, the first paper on a prehistoric site in Malaya, and the colonization of north Australia. Earl was also a cartographer of some ability and the first chart of the Arafura Sea prepared by the Hydrographic Department bears his name.

From the end of 1829 Earl was at Swan River and

3 For example see the pamphlet Coast and Convoy Signals for Use During Night and Day, (Sydney, 1855); Gibson-Hill omits sections of Earl's letters which were printed in part in the Journal of the Royal Geographical Society. See for example Earl to Washington 6 November 1841, printed in part in Vol. 12, pt. 2, p. 262. Several unpublished Earl MSS are held in the archives of the Society.
4 Chart 1088, Arafura Sea, Atlas 1/150,000,000. 1838.
Port Augusta¹, and in August of 1832 he shipped on a Dutch schooner to Sourabaya. Following his arrival in the archipelago Earl worked on a number of trading ships, finally commanding a profitable trading voyage in 1834 from Singapore to Borneo, aboard the British schooner *Stamford*. After a second voyage in this vessel he returned to England, arriving in the early part of 1835. This phase of his life is recorded in Earl's best and best-known work, *The Eastern Seas*, and it provided him with much factual material for his agitation for a commercial emporium on the north coast of Australia.

A considerable number of documents are available to trace Earl's campaign in this matter and the reflect both the man's enthusiasm for his scheme and the depth of first hand information which he possessed to argue his case. However his singlemindedness shows through to a degree which sometimes borders upon the dishonest and which makes understandable the varying opinions of his character. Bremer pressed strongly for the inclusion of Earl in the subsequent expedition, arguing for "so able and scientific a person"². An anonymous visitor to Port Essington described him as a highly intelligent young man, "most warm and sanguine

---

¹ Not the Port Augusta in South Australia, but a settlement near Cape Leuwin. See Earl to Washington, 3 February 1837, and 21 July 1838, Archives of the Royal Geographical Society.

in the well-doing of the colony\footnote{1}. Sir Thomas Mitchell however disliked his "pragmatical notions", and carried no opinion of him as an authority on anything other than the resources and population of the Indian Archipelago\footnote{2}.

A subsequent event which cast Earl in a bad light was that upon his return to Sydney from England in 1846, to resume his post at Port Essington, instead of waiting for a certain passage on a vessel to that Port from Sydney he travelled to Singapore via China in an attempt to get to Port Essington that way. In Singapore he was stranded for all of 1847 and 1848, during which time he drew Bills of Exchange on the Government for half-pay, a procedure totally contrary to regulations and which the Government seriously considered not honouring\footnote{3}. The situation was overcome shortly after by the abandonment of Port Essington and Earl was allowed his half-pay to the end of 1849 in lieu of any compensation for the loss of his post\footnote{4}. As Elliot tersely remarked however, "I do not know that a clearer condemnation could be pronounced on Port Essington, than that one of its warmest Advocates, well
acquainted with the Eastern Seas, would have consumed more than two years in a fruitless attempt to find an opportunity of reaching the place". Such was the elusive nature of Earl's character.

According to Gibson-Hill, Earl was accepted in English society at about the same level as James Brooke. Upon his return to England in 1835 he became a member of the Royal Asiatic Society and later became one of the first Corresponding Members of the Ethnological Society. Gibson-Hill questioned why Earl never joined the Royal Geographical Society despite a close association — he addressed two meetings of that Society early in 1837 and again in 1845 and published a number of times in their journal. From correspondence now at hand it would appear that Earl did not have the most cordial relations with all members of that Society. In 1852 he had printed an open letter to Lord Colchester complaining of errors in a paper published by the Society, which failed to notice the address delivered by himself in 1845. Speaking further of this matter in a letter to Beaufort, Earl complained that "it was bad enough to be snubbed by the geologists, and to have my labours for years pronounced worthless by a set of quacks who had only a smattering of the science which

1 Elliot to Merivale, minute on Earl to Treasury, 19 March 1849. C.O. 201/424.
3 Earl to Colchester, 10 April 1852. Archives of the Royal Geographical Society.
they professed to lead, but to find them coolly
appropriating the very theory they combined to upset,
is more than even my patient nature can bear. And the
worst feature of the case is, that Mr Murchison, who
accepted the proof sheets of Count Strzelecki's work,
must have been in possession of Mr Morris' notes, which
establish the correctness of my results, at the time
he went out of his way to show that I was all in the
wrong. Earl still felt this slight when he wrote to
Dr Norton Shaw in 1859.

Thus one sees Earl in 1835 as a young intelligent
and capable man, dogmatic, and with a singleness of
purpose which enabled him to make enemies as well as
friends. Above all, however, he alone possessed the
experience and first-hand knowledge to pursue the
venture to which he now turned, the establishment of a
third British emporium on the north coast of Australia.

On the 23 April 1836, Earl wrote to the Colonial
Office enquiring whether the Government had any
intention of forming a settlement on the north coast. The
answer informed him that no such settlement was
contemplated, and upon receipt of this, Earl forwarded

1 Earl to Beaufort, 24 April 1852. Hydrographic Dept.,
In Letters E.72.
2 Earl to Shaw, 6 May 1859. Archives of the Royal
Geographical Society.
3 Earl to Under Secretary of State, 23 April 1836.
C.O. 201/257.
4 Grey to Earl, 27 April 1836. C.O. 202/35.
his plan. This took the form of his first published work, a 47 page pamphlet entitled Observations on the Commercial and Agricultural Capabilities of the North Coast of New Holland and the Advantages to be Derived from the Establishment of a Settlement in the Vicinity of Raffles Bay. The first part of this pamphlet is given over to an examination of the earlier settlements and the reasons for their failure, and Earl came to the conclusion that the hasty departure from Raffles Bay had eclipsed a successful venture. The author then argued the value of a new settlement. It would be a place of refuge for ships lost in Torres Strait, and a resort for English whalers in the area, which at that time were using the Dutch port of Kupang in Timor. In addition Earl touched on the strategic value of the area. But the bulk of his argument rested on the commercial potential of such a settlement. He claimed that trepang, tortoise shell, sago and timber could be procured there. But whereas Barnes' original plan had been to intercept the trepang collected by the Macassans, Earl emphasised instead the commercial potential of the neighbouring islands, Bali, Lombok, Java, and also the Kai and Aru Islands and New Guinea to the north. In addition a direct trade to the China markets could be anticipated. Labour could be procured cheaply from the islands, and independent Chinese and

1 Earl to Glenelg, 27 May 1836. C.O. 201/257.
2 ibidem, enclosure.
3 ibidem, pp.12-14.
Buginese traders might be expected to settle\(^1\).

Earl undoubtedly felt that such a scheme could succeed and marshalled a large amount of statistics to substantiate his arguments. However, he seems to have seriously underestimated the power of the Dutch over the native producers and he certainly played down the difficulties of procuring native labour, of which he was aware\(^2\). The reply from the Colonial Office merely thanked him\(^3\), and a less resourceful person may have been inclined to pursue the matter no further.

However, events favoured Earl. For the remainder of 1836 he appears to have been working on his book *The Eastern Seas*, but at the end of that year the Royal Geographical Society became involved in promoting an expedition to the north west of Australia. It should be recalled that the amount of influence societies of this nature possessed at this time was extreme, and recommendations which they made very often received more attention than the amount of knowledge behind them warranted. In the possession of such influence, the Royal Geographical Society was no exception, and although it had come into being only in 1830 it numbered many influential men among its members. Its first president had been Viscount Goderich, the then Secretary of State for War and the Colonies. An

---

1 ibidem.
3 Grey to Earl, 30 May 1836. C.O. 202/35.
instigator of the Society, and an enthusiastic supporter of it was John Barrow, who throughout the period under review was Second Secretary to the Admiralty, and was a man who had favoured the first attempts to settle north Australia.

At the end of November 1836 the Society wrote to the Colonial Office with the proposal for an expedition to the area\(^1\), and it is a mark of their influence that not only was the plan found acceptable but that the Treasury agreed to obtain a vote of £1000 from Parliament for it, to be handed to the Society to allocate\(^2\). The subsequent expedition was led by Lieutenant (later Sir George) Grey\(^3\).

It is doubtful that Earl did not hear of the expedition, and shortly after he sent John Washington, the secretary of the Royal Geographical Society, two long communications. The first of these, dated 3 February 1837, was a 33 page document entitled "Remarks on the Fittest Season for Examining the Coasts of Australia"\(^4\), and it gave a number of sources of ships and the weather they had experienced at various places and at various times. It stressed also the suitability

---

3. See G. Grey, Journals of Two Expeditions of Discovery in North-West and Western Australia, During the years 1837, 1838 and 1839 (London, 1841).
of the Aru Islands as a potential source of supplies. The second communication, sent only four days later was entitled "Observations on the Colonization of North Australia."¹ In general it reiterated the points Earl had made previously to the Colonial Office, but it is notable that Earl's general knowledge of the area had already led him to believe that Bowen Strait might provide a better site than Port Essington.

Having communicated with Captain Laws, he now felt that Barker's Bay opposite Croker Island held a number of advantages as a commercial site. With uncannily prophetic insight Earl listed the disadvantages of Port Essington which were to be underlined in the following years².

His farsightedness in this matter was later borne out by the fact that a revenue station was established in the 1880's to intercept the Macassans at the very spot in Bowen Strait which Earl had recommended.

On 24 April Earl again wrote to the Colonial Office, this time including the proofs of "Observations on the Commercial Resources of the Indian Archipelago", the appendix to The Eastern Seas³. Although the answer merely said that Glenelg could not, "with propriety" comment on the interesting suggestions it

¹ Earl to Washington, 7 February 1837. Archives of the Royal Geographical Society.
² ibidem.
³ Earl to Glenelg, 24 April 1837. C.O. 201/266.
contained\textsuperscript{1}, the reply can be construed as more favourable than those that Earl had received in 1836. As Howard has pointed out\textsuperscript{2}, the difference between Earl's letters of 1836 and 1837 is that the former made almost no reference to Dutch antagonism towards English commerce, while the latter went to some lengths to underline it and the specific ways in which it was carried on\textsuperscript{3}.

However, by the time of Earl's 1837 communication another factor had entered upon the scene. A fortnight before, Beaufort, hydrographer at the Admiralty and a member of the Council of the Royal Geographical Society, had written to the Colonial Office, together with Barrow, apparently in answer to an enquiry from Glenelg on the necessity of re-establishing the north coast settlements\textsuperscript{4}. This letter introduced a new aspect of the question, that of maintaining British sovereignty over all the Australian continent, and Barrow and Beaufort based their arguments for resettlement on the necessity of preventing both Dutch and French occupation. Barrow particularly seems to have feared French intervention in northern Australia, and it is possible that Glenelg's initial enquiry arose from a letter addressed to him from Barrow in December 1836.

\textsuperscript{1} Grey to Earl, 18 May 1837. C.O. 202/36.
\textsuperscript{2} Howard, p.93.
\textsuperscript{3} See The Eastern Seas, f.n., p.424.
\textsuperscript{4} Barrow and Beaufort to Glenelg, 10 April 1837. C.O. 201/264.
in support of the proposed Grey expedition. Here Barrow spoke of two likely expeditions to the Pacific, one American, the other French, and wrote that "it would be a most humiliating mortification, to witness the tricoloured flag, or that of the Stripes and Stars waving on Dampier's Land". Later Barrow was to re-emphasise the need "to draw a ring-fence" around the whole of the Australian coast. James Stephen, the Colonial Secretary, although he was to excuse himself several years later, also shared this opinion and wrote of the "paramount importance of retaining permanent possession of the entire coasts of Australia". In writing to Glenelg, Barrow and Beaufort stressed the need to take actual possession, rather than merely planting the flag, repeating almost word for word the exact argument Barrow had used to support the

---

1 Barrow to Glenelg, 13 December 1836. C.O. 201/236. See also G.W. Earl, The Eastern Seas, p.461, for reference to the proposed French voyage.


3 "Sir John Barrow and Lord Glenelg and Mr Spring Rice, as I understand arranged at personal interviews the plan of taking possession of Port Essington, which was regarded at the Admiralty as a place of great importance as a Naval Station". Stephen to Vernon Smith, minute on Barrow to Vernon Smith, 26 December 1840. C.O. 201/302. See also Bremer to Stephen, 11 January 1842. C.O. 201/329.

4 Stephen to Wood Eyre, 16 May 1837. C.O. 201/264.
settlement of Melville Island\(^1\).

The important point of this interdepartmental correspondence is that it was all based on the need to maintain political sovereignty of the Australian coast. Lip-service only was paid to the commercial arguments laboriously put forward by Earl. Throughout these and subsequent letters, once the general plan had been accepted, phrases repeatedly appeared such as "no time should be lost in considering what measures it may be most expedient to adopt"\(^2\), or "I am afraid the plan will not bear much more delay, or we shall be forestalled"\(^3\) or "the Dutch have already got the start on us"\(^4\).

The Dutch certainly did have a start, possessing at least eight settlements between Singapore and New Guinea. Following the British settlement of Melville Island, a Dutch settlement had been made on the south west coast of New Guinea in order to "check-mate" the British\(^5\), and it appeared that such expansion was to anticipate any development of northern Australia\(^6\).

It is difficult to estimate how real or imaginary

---

\(^1\) Barrow and Beaufort to Glenelg, 10 April 1837. C.O. 201/264. Compare Barrow to Horton, 22 January 1824. C.O. 201/153.

\(^2\) Stephen to Wood Eyre, 16 May 1837. C.O. 201/264.

\(^3\) Barrow to Stephen, 17 July 1837. C.O. 201/264.

\(^4\) Barrow to Stephen, 11 September 1837. C.O. 201/264.

\(^5\) Earl to Washington, 16 August 1838. Archives of the Royal Geographical Society.

the French threat was at this time. Earlier in the
century Westernport and Swan River had been established
to forestall the French\(^1\), but most historians have not
carried the examination beyond about 1830. Two pieces
of evidence exist to support the reality of French
intentions on north Australia at this time. Firstly
the rumoured French expedition did take place under
Commodore Dumont d'Urville in command of the Astrolabe
and the Zélée. Of course there can be no suggestion
that this voyage was anything other than of a
scientific nature. However, after passing into the
Pacific around Cape Horn, d'Urville did sail through
Torres Strait, making eventually for Raffles Bay.
Throughout their eight days stay there during which
time the British informed them that the British
settlement was merely around the corner, the time was
spent making detailed surveys of both the Bay and the
nearby Bowen Strait. On this evidence it seems
possible that d'Urville had been ordered to investigate
the area with a view to future occupation. The second
piece of evidence is more tenuous. In 1875, Lord John
Russell recounted that during his time at the Colonial
Office (1839-1841) he was visited by "a gentleman
attached to the French Government". "He asked me how
much of Australia was claimed as the dominion of Great
Britain. I answered "the whole", and with that answer
he went away.\(^2\)

\(^1\) E. Scott, *Terre Napoléon. A History of French
\(^2\) *Recollections and Suggestions 1811-1873*, (London,
1875), p.203.
Whether real or imaginary the fear of the French was a factor of extreme importance in the British moves to re-establish the north coast settlements, and it was only when application was made to the Treasury that the commercial arguments again came to the fore, with Stephen stressing the "expediency of forming some commercial settlements on the Northern Coast of New Holland". Because of the commercial nature of such settlements they could be established at a modest cost, but again because of the imminent danger of the French, Americans and Dutch no delay should be made in maturing plans for occupying such important positions. The letter suggested the employment of a small body of marines and convicts, and a small civil establishment, the salaries of which would total £1465 per annum.

The first major set-back to the plans of Glenelg and Barrow came with the refusal of the Chancellor of the Exchequer to go to Parliament with the estimates for the proposed settlement. He argued that all that was contemplated was a naval survey and whatever occupation which might be necessary to secure the post, that is to say, little more than a naval exercise. Undeterred, Glenelg and Barrow pushed on without Treasury approval and created a situation which was...

---

1 Stephen to Spearman, 28 July 1837. C.O. 202/36.
2 ibidem.
3 ibidem.
4 Unsigned minute on Barrow to Stephen 18 January 1840. C.O. 201/302.
largely to determine the eventual downfall of the settlement. Stephen was later to write, "The fact is that this was a favourite scheme of Sir John Barrow's, and that in the original eagerness to accomplish it all financial difficulties were set aside, although they were fully perceived at the outset".

Barrow, of course had expected Port Essington to become a flourishing colony, but it remained officially under the control of the Admiralty and all claims were sent to that department. The Admiralty forwarded them to the Colonial Office, who, having no funds to meet them replied accordingly. After lengthy discussions between these two departments and the Treasury in 1841, it was finally decided to include the costs in the Colonial Estimates for the following year. This method of meeting the finances of Port Essington continued throughout its existence. Claims were made initially upon the Admiralty, who forwarded them to the Colonial Office and thence to the Treasury to be included in the Colonial Estimates for the ensuing year.

In December the plans for the expedition were put

---

1 Stephen's minute on Barrow to Stephen, 6 June 1840. C.O. 201/302.
2 Stephen to Vernon Smith, minute on Barrow to Vernon Smith, 26 December 1840. C.O. 201/302.
3 Stephen to Gordon, 19 June 1841. C.O. 202/42.
4 See Howard, pp.154-156.
into effect\(^1\), and on 19 February the *Alligator* under the command of Bremer, together with the *Britomart* commanded by Captain Owen Stanley R.N., sailed from England bound for Sydney and the north coast.

From the existing evidence it is reasonable to conclude that the establishment of Port Essington was made as a political manoeuvre to preserve the British sovereignty of Australia, even though it was hung upon the facade of commercial enterprise. The Treasury certainly did view it as a trading colony nor did several contemporary writers, who stated that it was to forestall the French\(^2\). Indeed if it was solely a commercial enterprise, a number of points go unexplained. In 1838 the marines left England under secret orders\(^3\), and Bremer's instructions expressly forbade him to encourage permanent settlers\(^4\).

---

1 Barrow to Savage, 8 December, 15 December, 16 December, 1837. Archives of the Royal Marines, Portsmouth. Catalogued under Port Essington.


3 Royal Marines Office to J.J. Dyer, 4 March (possibly 1840). Archives of the Royal Marines, Portsmouth.

4 Adam and Parker to Stanley, 30 January 1838. Adm. 2/1695.
Throughout the history of the settlement, repeated requests to increase the garrison, and encourage land sales and occupation on favourable terms were refused. Finally Bremer's selection of the site was a classically defensive one\(^1\), situated seventeen miles from the mouth of the Port on the highest ground and commanding the narrow entrance to the inner harbour. His choice again was to prove disastrous, not only to the encouragement of trade, since many ships would not spend the several days required to work in and out of the harbour, but also to the health of the garrison because of the climatic effects of the immediate area.

---

1 Earl appears the only one to have recognised this point: "The inner harbour was selected on account of its superior capabilities for the erection of defensive works, the establishment having been formed as a naval station", "A Handbook for Colonists in Tropical Australia", Journal of the Indian Archipelago and Eastern Asia, new series, vol. 4, part 1, 1863, p.33.
CHAPTER 7

THE POLITICAL BACKGROUND

The Alligator sailed from England on 19 February 1838 arriving in South Australia on 10 July. After embarking additional marines\(^1\), the expedition arrived in Sydney on 21 July. The Governor of New South Wales had been instructed to render the party every assistance and Gipps readily complied, and throughout the subsequent history of the settlement remained convinced of its potential and the necessity for maintaining it. The transport Orontes was hired in August and the business of purchasing stores was begun\(^2\). In addition six frame houses were prefabricated for use in the settlement. The Society for Promoting Christian Knowledge donated a church in prefabricated form\(^3\), but the punt loading it in Sydney harbour sank, delaying departure until 17 September\(^4\).

To judge from the Sydney newspapers, the expedition created little excitement in Sydney. The


\(^2\) A complete list of these stores can be found in the log of the Alligator (see f.n.1). They comprise hard rations, clothing and equipment, and trade goods.

\(^3\) Bremer to Stanley, 2 January 1842. Printed in Copies or Extracts, pp.22-23.

\(^4\) The Sydney Monitor, 7 September 1838.
Monitor reprinted a general article on the commercial aspects of the settlement which had appeared in the South Australian Gazette\(^1\), and Barnes wrote to the same paper wishing the expedition success\(^2\), but no other papers reported the expedition. However, Bremer’s long report to the Admiralty suggested that there was intense interest, and that under the terms of his instructions he had been forced to dissuade "several respectable persons" from accompanying him. He stated that fifty tradesmen would have gone with him had he been able to make small grants of land, and he pressed the government to permit the occupation of land at Port Essington by grant or sale at a reasonable price. If such a move was adopted Bremer intimated that he himself would be a candidate for land there\(^3\). Leading Sydney merchants, while publicly wishing the expedition success\(^4\), appear never to have strenuously supported the settlement, although the trading schooner Essington accompanied the expedition to begin trading with the islands from the new post. However, the idea had had the support of

\(^1\) ibidem, 30 July 1838.
\(^2\) ibidem, 3 September 1838.
\(^3\) Bremer to Admiralty, 16 September 1838. Enclosed in Gipps to Normanby, 27 May 1839. C.O. 201/286.
\(^4\) Undated letter from a group of Sydney merchants to Bremer. Riley Papers, Documents 1817-1856, pp.113-114. (Ms in Mitchell Library, A109).
Monitor reprinted a general article on the commercial aspects of the settlement which had appeared in the South Australian Gazette, and Barnes wrote to the same paper wishing the expedition success, but no other papers reported the expedition. However, Bremer's long report to the Admiralty suggested that there was intense interest, and that under the terms of his instructions he had been forced to dissuade "several respectable persons" from accompanying him. He stated that fifty tradesmen would have gone with him had he been able to make small grants of land, and he pressed the government to permit the occupation of land at Port Essington by grant or sale at a reasonable price. If such a move was adopted Bremer intimated that he himself would be a candidate for land there. Leading Sydney merchants, while publicly wishing the expedition success, appear never to have strenuously supported the settlement, although the trading schooner Essington accompanied the expedition to begin trading with the islands from the new post. However, the idea had had the support of

1 ibidem, 30 July 1838.
2 ibidem, 3 September 1838.
3 Bremer to Admiralty, 16 September 1838. Enclosed in Gipps to Normanby, 27 May 1839. C.O. 201/286.
4 Undated letter from a group of Sydney merchants to Bremer. Riley Papers, Documents 1817-1856, pp.113-114. (Ms in Mitchell Library, A109).
several merchants in England and general interest had been aroused amongst Europeans in Rio De Janeiro on the voyage to Sydney. Thus despite Earl's remark that not a soul amongst the men appeared to care whether the expedition succeeded or not, their general reception in Sydney caused both Bremer and Earl to begin in high hopes.

After taking formal possession of Cape York on 20 October, the *Alligator* arrived at Port Essington on the 27th of that month. Despite Earl's suggestion of Bowen Strait as a possible site, Bremer seems to have made up his mind as to the suitability of Port Essington and sailed there directly. Although Earl was later to suggest that Bremer's instructions gave him no latitude in selecting the position for the settlement, in fact he was instructed to go to the neighbourhood of Port Essington and Raffles Bay "and cause both of these Places (as well as any others) to be thoroughly examined before you determine on either, and you may perhaps in the course of the examination find some other spot not far distant to which you may give a preference." The spot chosen was to have "a good and safe Anchorage, an easy communication of

---

1 Barrow to Stephen, 11 September 1837. C.O. 201/264. See also Howard, p.101.
4 Adam and Parker to Stanley, 30 January 1838. Adm. 2/1695.
Shipping with the Shore, an abundant supply of fresh water, and a good soil; a Spot which is likewise easily defensible as well on the Sea as the Land side\(^1\). After several days examination of the Port, Bremer chose an area on the western side deep in the inner harbour. This choice suggests that Bremer paid attention more to the defensive side of his instructions than any other. There the settlement of Victoria, named in honour of the new monarch rose on the plateau behind Adam Head on the highest large area of land on the shores of Port Essington. No water was in the immediate area, and the soil was no better than in a dozen other places in the harbour. But both Adam Head and Minto Head commanded the narrow entrance into the inner harbour, and behind the settlement the land sloped to the south and west so that any adversary might have to attack from a disadvantageous position. But the site was seventeen miles from the harbour mouth, unrelieved by the coastal breezes and difficult for quick access by ships under sail. In many respects it was to prove as disastrous a choice by Bremer as had been his initial choice of Melville Island fourteen years before.

The subsequent history of Port Essington falls naturally into two distinct avenues of enquiry. Firstly, the internal history of the settlement illustrates the difficulties facing the men who tried to tame this strange, remote, tropical environment and the ways which they tried to do it. Superimposed upon this drama are

\(^1\) ibidem.
the political manoeuvres of the statesmen who held the puppet-strings of Port Essington in another world. The former history is the focus of the present enquiry, and the latter has been dealt with elsewhere, but to understand the basic problems besetting the success of the settlement it is necessary to reiterate the outlines of the political background during the lifetime of Port Essington.

Bremer remained at Port Essington for six months, sailing from there to Sydney on 3 June 1839. During that period all things prospered. The land parties set to work clearing, building and laying out gardens. Earl had departed aboard the Essington almost immediately for the Serwatty Islands to procure fresh food with which they returned to Port Essington on 15 December. The Essington then sailed again for Dili. Bremer himself sailed to Dili in February, and the Britomart under the command of Captain Owen Stanley, sailed on 18 March for Timor Laut and the Kai and Aru.

---

1 The most admirable and extensive treatment of this period is given by Howard, pp.106-161; see also G.S. Graham, op. cit., pp.428-443.
2 See extracts of Bremer's early despatches printed in Copies or Extracts pp.8-12. See also Bremer to Beaufort, 5 April 1839. Hydrographic Department In Letters B.803.
3 For an account of this voyage see Enterprise in Tropical Australia, pp.47-52.
4 Howard, pp.115-116.
Islands, returning on 15 April\(^1\). All these voyages assisted in publicising the new settlement as well as supplying it with fresh provisions, and each account speaks optimistically of the possibilities of trade. But both Earl and Stanley had encountered the Dutch already in the islands, and Earl at least was aware of this threat to British commerce in the area. In a letter to Washington in the following year, Earl complained bitterly of the Dutch, who, he reported, had attacked Sandalwood Island (Sumba) possibly prompted by the settlement of Port Essington\(^2\). Although tempered for publication by a more reserved editor, Earl's prose left no doubt of his own opinion, referring to the Dutch as "the great enemy of our commerce" (altered to "our commercial rival") who, he said were behaving with their "usual cunning" ("ability")\(^3\).

If Bremer anticipated that orders would await him

\(^1\) An account of this voyage is contained in J. Lort Stokes, Discoveries in Australia, with an account of the Coasts and Rivers explored and surveyed during the voyage of H.M.S. Beagle in the years 1827-42 (2 vols. London, 1846), vol. 1, pp. 438-479.


\(^3\) Although the Society published some of Earl's observations on Sumba, all references to Dutch aggression were completely omitted. Personal details of the settlement were also edited out so that information which was being sent to England often did not reach public attention. This can be seen now only as a reflection of nineteenth century "good taste" against which Earl seems often to have offended.
in Sydney for the opening up of Port Essington to colonization\(^1\), he was disappointed in this respect. However, he reported that interest was still high in Sydney, and upon receipt of an application to permit a Mr James Jones to go to Port Essington to cultivate sugar cane, Bremer wrote to Gipps enquiring whether he would be departing from the essence of his instructions to offer permissive occupancy at Port Essington\(^2\). While Gipps could not accede to Jones' application\(^3\), he was persuaded of the necessity to open the settlement if it was to have any chance of success, and on 11 September Bremer issued a notice to the effect that persons of respectability wishing to resort to Port Essington for the purposes of trade might apply to lease land at five shillings per half acre\(^4\). The conditions limited such grants to a period not exceeding seven years, with all improvements to be at the expense and risk of the lessee.

The conditions offered were not attractive, since they promised no government protection or permanency, and the rental was high, being only slightly less than the upset price of land in New South Wales at the time (12/- per acre). Bremer was forced to report that

---

1. G.S. Graham, op. cit., p.430.
although the notice caused "considerable enquiry" he was disappointed to find nobody willing to speculate under such conditions. He urged that Port Essington lands be thrown open for sale, and that the garrison be increased.

The sale of lands at Port Essington became a central problem throughout the lifetime of the settlement. From the Australian end it quickly became obvious that unless Port Essington could expand and attract the trade for which it had ostensibly been established it could not become economically self-sufficient. Thus Bremer, and his successor Captain John McArthur, repeatedly pressed for this action, and Gipps added his support to their requests.

By the time the first despatches from Port Essington reached England, Glenelg had been succeeded by Russell, who therefore viewed the question of the settlement in a more detached state than his predecessor as one of the instigators of the plan, could have done. The "Wakefield System" of colonization being to the fore, Russell referred the matter to the Colonial Land and Emigration Commissioners, asking them to assess whether the settlement might be sustained by the sale of lands in the area. Thus in

---

1 Bremer to Admiralty, 30 October 1839, enclosed in Barrow to Stephens, 18 May 1841. C.O. 201/313.
3 Stephen to Colonial Land And Emigration Commissioners, 28 January 1840. C.O. 385/19.
1840 and in subsequent years this body issued reports on the progress and prospects of Port Essington. The first report was exceedingly long and detailed. The Commissioners believed the port to be a good one as a refuge for shipwrecked sailors and quoted the large increases in shipping through Torres Strait that Bremer had reported in 1838. They also believed in the trading potential of the settlement, although they noted that the Macassans might not sell their cargoes of trepang because of Dutch controls at Macassar. On this point, however, they agreed that should this happen then the Chinese merchants would be likely to settle at Port Essington. The Commissioners viewed the strategic importance of the settlement as "an object worthy of the attention of the British Government, even at some cost to the country". Finally they felt that not enough evidence was at hand to comment on the agricultural potential of the area. Thus they could not recommend that investors should be sought to finance agricultural development.

However, by comparing the sale of lands at Port Phillip and Adelaide, the Commissioners concluded that since the prospects for trade were so great at Port Essington, the land at this latter place could be valued at £1 per acre, and thus the disposal of lands there would net the Crown between £200,000 and £300,000. On

1 Elliot and Vickers to Russell, 18 April 1840, P.P., 1840, xxxiii, 613, pp.45-50.
2 In 1832 there had been 15 vessels, in 1838, 41 vessels. Bremer to Admiralty, 18 September 1838. C.O. 201/286.
this basis they recommended a Government advance of £25,000 to defray the preliminary expenses of setting out a town, the basic features of which they proceeded to outline in a most unrealistic manner. For example they suggested the sale of "town lands" at £100 per acre, to be increased to £150 in the following year, and "rural lands" in 80 acre lots at £1 per acre, to be increased after one year to £1.10.0., at a time when fertile land in temperate New South Wales was being sold at an upset price of 12/- per acre. It was not surprising that Russell declined to direct the Treasury to sanction this advance. However he agreed that survey work should be commenced on the township and proposed the appointment of an officer of engineers and men for the task.

While such suggestions could be made with ease, their implementation was a different matter and Stephen in a long minute attached to the Treasury's directive to him to implement the proposed survey gave vent to his anger over the affair and his opposition to the Wakefield System in general. The Treasury had agreed to Russell's proposal on the basis that the costs would be repaid out of the subsequent sale of lands. Somewhat hysterically, Stephen asked where the money was to come from since the men would have to be paid and have their passages paid from Civil

---

1 Stephen to Colonial Land and Emigration Commissioners, 6 May 1840, P.P., 1840, xxxiii; 613, p.50.
2 Trevelyan to Stephen, 17 June 1840, C.O. 201/303.
funds. Neither the British nor the New South Wales Treasuries had any money for such purposes, and only several days before no engineer could be found to send to Canada for a similar task. Stephen followed this with a blistering attack on those theorists who had given "Currency and fashion to a most fallacious notion that what they call a self-supporting colony may be established by a Sale of Lands on a certain plan". Stephen argued that Port Essington could be made to support itself in this way, if there were people simple enough to lend money for its support. But, Stephen claimed, this would be neither practical nor honest and that infant colonies had to be nursed and supported by the parent state. 'It seems to me', he later wrote, "that the occupation and colonization of New Holland and the other islands of Australia is one of those vast schemes of national policy into which Great Britain has been drawn by the current of events and with little human foresight to direct us, but which like the peopling of North America and the conquest of India must be regarded as amongst the most impressive movements of divine providence in the government of this world". In this scheme of things it was necessary to draw a belt of colonies around the Australian coast "to give us the absolute and undisputed possession of the interior... I am for planting out

1 Stephen to Gairdner, 26 June 1840, minute on Trevelyan to Stephen, 17 June 1840. C.O. 201/303.
2 Minute of 11 January 1842, on Bremer to Stephen, 2 January 1842. C.O. 301/329.
the French, the Dutch, the Americans and the Germans, and for keeping to ourselves a source of commercial and maritime greatness". Thus the political considerations which had established the British in north Australia continued to keep them there and as, one by one, the hopes for the success of the settlement diminished and died the assumed political necessity of the settlement caused the post to linger. This is reflected in the succeeding reports of the Colonial Land and Emigration Commissioners. Their report in 1843 reversed almost all their earlier opinions of Port Essington. The climate was unsuitable, only one shipwrecked crew had reached the port, no trade could be fostered with the Macassans, the place was out of the track of ships sailing between Sydney and Asia. Nevertheless they concluded, "we are aware that there are reasons of quite a different nature which have been urged for maintaining a post at Port Essington." In 1847 the Commissioners wrote, "notwithstanding that our inquiries had confirmed our impression that the settlement had failed to accomplish the direct ends for which it was projected, the place ought, nevertheless, not at present to be abandoned."

Russell was succeeded as Colonial Secretary in September 1841 by Lord Stanley. Despatches from Australia continued to suggest that Port Essington

1 ibidem.
2 P.P., 1843, xxix, 621, p.12.
3 P.P., 1847, xxxiii, 809, p.10.
might yet prosper if traders could be attracted to the place, and Stanley asked the Colonial Land and Emigration Board to enquire to what extent the mercantile interests in England would be willing to support the settlement should it be placed on a permanent footing. Three months later the Commissioners were forced to report a total lack of interest\(^1\), so that the question of a permanent settlement languished until the following November when the Parliamentary Under-Secretary, George Hope, suggested that emigration from the neighbouring islands might be encouraged\(^2\). The question was referred to the Colonial Land and Emigration Commission and their report came almost twelve months after Hope's original suggestion\(^3\). Meanwhile, and again at the suggestion of Hope, the papers relating to Port Essington had been presented in Parliament as a last resort to publicise the settlement, and these had elicited some response from traders in England\(^4\), so that interest seemed sufficient to cause Stanley to review the question of permanent settlement.

The Colonial Land and Emigration Commissioners had seen that the Land Sales Act of 1842, which required that waste lands could only be sold at the minimum

---

1 Elliot and Villiers to Stephen, 7 June 1842, P.P., 1842, xxv, 567, p.8.
2 Minute of 30 November 1842 on Gipps to Stanley, 5 May 1842. C.O. 201/320.
3 Elliot to Lefevre to Stephen, 14 November 1843. C.O. 386/61.
4 Cummins to Stanley, 5 April 1843. C.O. 201/340.
upset price of £1 per acre might well preclude the introduction of coloured settlers since they could not afford to buy the land. Instead they proposed that Port Essington might be constituted as a new colony and therefore outside of the statute governing the sale of lands in New South Wales.

Stanley decided that the settlement should continue on its impermanent basis and that it must remain an outpost of New South Wales, and hence subject to the Land Sales Act of 1842. Since the act provided for permissive occupancy on yearly leases, Stanley saw this as the way around the problem of immigration from the neighbouring islands and instructed Gipps to inform McArthur of his decision.¹

By the time the decision to try and sell lands at Port Essington reached McArthur, the tiny settlement had been in existence almost six years, during which time none of the benefits suggested by Earl and others had been reaped. According to Graham the bloom had departed from the settlement by 1842, and the wet season at the end of that year had brought a severe epidemic of malaria which resulted in the detachment having to be relieved by fresh marines. The struggle to stay alive in such a hostile environment depressed even the spirits of the staunch McArthur, who by this time felt himself neglected and ill-treated, isolated from his wife and children and surrounded by

² G.S. Graham, op. cit., p.434.
difficulties. "May God grant us both", he wrote to James McArthur in Sydney, "hearts to understand His ways".

Although McArthur received some enquiries from European settlers nothing came of them. He could not have been surprised at this since two years earlier he stated that unless favourable terms could be offered no speculators would take lands at Port Essington in preference to the temperate lands to the south. However, McArthur still entertained hopes that the Macassans might be persuaded to settle and during the early part of 1845 he made particular efforts to attract them, showing them the inland areas most suitable for cultivation and discussed the rents with them, stating that they thought the terms most reasonable.

In addition McArthur notified Singapore of the opening up of the settlement to a "limited number of Chinese and Malays". The conditions of occupation were liberal in the extreme, the rental for "country allotments", those outside the immediate limits of the town, being one shilling per acre for the second year.

---

2 McArthur to Hope, 28 November 1844, enclosed in Gipps to Stanley, 1 September 1845. C.O. 201/359.
4 McArthur to Thomson, 23 April 1845, enclosed in Gipps to Stanley, 1 September 1845. C.O. 201/359.
following twelve months occupation gratuit, and increasing to a maximum of three shillings after four years\(^1\). But again this move failed utterly to induce any settlers.

Howard has outlined a number of reasons for this lack of response: that the early history of the settlement had made would-be speculators dubious about the permanency of the post; that the poorer Malays could not reach Port Essington; that the Dutch policy in the Archipelago was becoming less stringent\(^2\). McArthur’s disappointment was reflected in his letters. To Colonel Owen he wrote “I am perfectly disappointed in the objects of this settlement. The Malays renew annually their payment of promises to come and settle here, but the same parties do not reappear at all. I am not very much surprized at this. They are nothing doing in a mercantile way, and therefore are ignorant of any method of providing for themselves, everything connected with them, customs, habits, manners, knowledge has been with them like the laws of the Medes and Persians from the date perhaps that they were promulgated”\(^3\).

From 1838 a ship of war was always stationed at Port Essington. This duty fell in turn to the Britomart, the Chameleon and the Royalist but in the

\(^1\) ibidem.

\(^2\) Howard, pp.132-133.

\(^3\) McArthur to Owen, 23 May 1846. Archives of the Royal Marines, Portsmouth.
beginning of 1844 orders were received for the reduction of the Squadron in the Indian and China Seas\(^1\), to which the Port Essington vessels had been attached. In April of that year Vice Admiral Parker ordered the Royalist to Hong Kong for a refit\(^2\), and thereafter Port Essington was left without a ship. Even at this late stage, confusion existed as to who had authority over Port Essington, and Parker's successor as Commander-in-Chief of the East India Squadron, Sir Francis Cochrane, in August 1844 and again in July 1845, wrote to the Admiralty seeking information as to his responsibilities towards that Station\(^3\). A minute on this letter directed that Cochrane be informed that Port Essington was altogether distinct from his command, the settlement being "under the Authority of the local Governor of Australia - that it is in all respects a Colony; subject to Colonial government; under the directions of H.M. Secretary of State for the Colonies"\(^4\).

Thus without a ship the settlement languished even more than before, dependent upon the Colonial transport which made an annual journey with supplies, and upon the traders who still occasionally visited the settlement. During the years 1846-1849, the Acting Pay and Quartermaster drew Bills of Exchange in

\(^1\) Parker to Admiralty, 10 April 1844. Adm. 1/5539.
\(^2\) ibidem.
\(^3\) Cochrane to Admiralty, 21 July 1845. Adm. 1/5548.
\(^4\) ibidem. Minute dated 17 November 1845.
favour of six traders, one from Singapore, two from Hong Kong, one from Dili, one from Sourabaya, and one from Bali. All these transactions were made for food supplies (as far as they were recorded\textsuperscript{1}), and the Quartermaster noted in June 1848 that in the previous ten months there had only been a "few days" supplies of fresh meat\textsuperscript{2}.

In England the problem of what to do with Port Essington passed into the hands of Gladstone upon his succession to the Colonial Office in December 1845. At this time the last hopes of attracting Macassan settlers had not passed, and Gladstone sought the advice of Bremer as to the settlement's capabilities. In a detailed reply Bremer defended Port Essington strongly and maintained, as he had from the beginning, that the garrison should be increased if it was to attract anybody. Ships sailing from Sydney towards India could not be expected to delay their voyages to trade with a garrison of sixty men\textsuperscript{3}.

Visitors to the settlement in its later years however were almost universal in their condemnation of the place. MacGillivray visited Port Essington in 1848, having been there three years before and was appalled by the "non-progressive nature of the system which had been established there" stating that there was probably

\textsuperscript{1} Lambrick Letter Books. Out Letters, Archives Office of N.S.W. 4784.

\textsuperscript{2} ibidem, Lambrick to Thomas Ramsey, 15 June 1848.

\textsuperscript{3} Bremer to Gladstone, 17 February 1846. C.O. 201/372.
no vessel in Her Majesty's navy in which the men were not better supplied with the necessaries and comforts of life than at Port Essington. Owen Stanley, Stokes, and Blackwood, all engaged in survey work on the coast, all condemned the settlement, and even McArthur was led to admit the faults of the place while still maintaining that it ought not to be abandoned.

Opposition to the settlement as it existed also came from an unexpected quarter, the Admiralty itself. Barrow had retired in 1845, and the following year the First Lord of the Admiralty, the Earl of Ellenborough wrote to Gladstone demanding that the marines be withdrawn from Port Essington. Gladstone's reply carried an edge of hostility to this volte face on the part of the Admiralty. "As far as I can ascertain", he wrote, "the Settlement was originally projected by Sir J. Barrow and Capt. Beaufort, whose authority at the Admiralty seems to have led to the placing (of) a detachment of Marines on shore". Although Gladstone admitted that there seemed little reason for maintaining the post if not as a naval base, he

2 Howard, p.134.
3 McArthur to Thomson, 25 April 1845, enclosed in Gipps to Stanley, 1 September 1845. C.O. 201/359.
4 Ellenborough to Gladstone, 2 April 1846. C.O. 201/370.
5 Gladstone to Ellenborough, 2 May 1846. C.O. 202/52.
expressed the opinion that convicts might be placed there in the future, and felt himself not disposed to make a decision until he received a report from the Colonial Land and Emigration Commissioners. Ellenborough again wrote to Gladstone demanding the withdrawal of the marines, stating the irregularity of stationing these men in permanent garrisons in Australia. Gladstone replied asking Ellenborough not to press the matter, since withdrawal of the marines would inevitably destroy the settlement. Gladstone agreed however that the question of the provisional nature of the settlement must be settled, and waited for the report of the Colonial Land and Emigration Commissioners, who began a full enquiry, taking evidence from Stokes, Blackwood, Crawfurd and Gipps. Their report, eventually received in 1847 by Grey, who had succeeded Gladstone, reiterated the areas in which Port Essington had failed; Victoria was situated too far from the sea, and ships would not go out of their way to visit a port "where neither cargo nor intelligence is to be obtained"; as a place for shipwrecked crews the settlement was too far from Torres Strait; the expected trade with the Macassans had not transpired; tropical agriculture such as cotton

1 Ellenborough to Gladstone, 6 June 1846. C.O. 201/370.
2 Gladstone to Ellenborough, 12 June 1846. C.O. 202/52.
3 Howard, p.138.
could be grown more easily in other parts of the Empire\(^1\).

While all these disadvantages were patently true, they were merely the superficial reasons for the failure of the settlement. Earl's scheme had been to establish a commercial emporium, a focus for European and local traders to bring their goods. Because of the manner in which the settlement was begun and administered in England speculators were precluded from going to Port Essington on terms which might have encouraged them. As Stephen had pointed out, this was the responsibility of the government, and in this the government had failed.

The Commissioners saw only two reasons for the continued maintenance of the post. Firstly it might be useful as a coaling station for steamships between Singapore and Sydney. Secondly, there was the possibility that if the coast were abandoned, foreign powers might be tempted to settle it\(^2\). Thus the political considerations from which Port Essington had been born continued to breathe life into the ailing body.

However, the fear of foreign intervention in Australia had diminished over the decade of Port Essington's existence. There was no evidence that the Dutch had any intention of colonizing north Australia,

\(^1\) Colonial Land and Emigration Commissioners to Stephen, 22 January 1847, PP., 1847, xxxiii, 809, Appendix 10, p.48.
\(^2\) ibidem.
and in 1843 Barrow had written to Stephen that the French were "quartering themselves on a different part of the Globe and may be satisfied with the large scope which the Pacific will afford them".  

On receipt of the Commissioners' findings James Stephen quickly dealt the coup de grace to the argument of foreign intervention should the British withdraw. In a minute he wrote that no foreign Power could take possession of the area "without a manifest infringement of the rights of the British Crown, for the mere withdrawal of the marines would not be a repudiation of our rights of dominion". Thus Stephen directly refuted the argument which Barrow had presented in favour of settling Melville Island and, later, Port Essington. If this was Stephen's opinion one wonders why he remained silent to Barrow's argument nine years before, and in view of Stephen's own statements on planting out the Dutch and French, it would seem likely he was aware of the diminished likelihood of any such thing happening by this time.

For the remainder of 1847 and 1848, Grey allowed the settlement to linger, until in February 1849 an enquiry was sent to the India and Australia Steam Packet Company as to whether they intended to utilize Port Essington as a port of call or a coaling station.

---

1 Barrow to Stephen, 19 September 1843. C.O. 201/337.
The negative reply\textsuperscript{1} sealed the fate of the settlement and in June 1849 Grey communicated to Fitzroy, the Governor of New South Wales, his decision to abandon Port Essington\textsuperscript{2}.

No evidence exists of McArthur's feelings as he quit Port Essington after eleven years of futile work to try and make the place the success that King had envisioned thirty years before. If the settlement had failed, he at least had made it stick, and the methods of his endeavour form the subject of the following chapter.

\textsuperscript{1} Yates to Hawes, 21 February 1849. C.O. 201/420.
\textsuperscript{2} Grey to Fitzroy, 10 June 1849. C.O. 202/56.
CHAPTER 8

LIFE AT PORT ESSINGTON

Archaeologists have established that the Aborigines had occupied the immediate area of the Cobourg Peninsula upwards of twenty-four thousand years before the British first tried to settle there. During that time they had come to terms with their environment, modifying it to some degree by the use of fire, but probably not altering the face of the country as much as hunters and gatherers in more temperate climates may have. The region appears to have provided plentifully for the subsistence needs of its human occupants, who in turn bowed gracefully to the will of the seasons, perhaps moving with the wet and the dry seasons to places best able to support their semi-sedentary existence. Then perhaps for the last thousand years, the north coast became the scene of a new activity, the seasonal visits

1 For this chapter, whenever a statement is made on the basis of the archaeological evidence reference is made by the insertion of an asterisk (*). The reader is thus directed to the relevant section in Part 1 of the work.


4 Radiocarbon dates recently obtained from three Macassan sites are in the vicinity of 800 years. C. C. Macknight, pers. comm.
USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
ARCHAEOLOGY, AND THE HISTORY OF PORT ESSINGTON

by

F.J. ALLEN

VOLUME I

This thesis was submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in The Australian National University

May 1969
CHAPTER 8

LIFE AT PORT ESSINGTON¹

Archaeologists have established that the Aborigines had occupied the immediate area of the Cobourg Peninsula upwards of twenty-four thousand years before the British first tried to settle there². During that time they had come to terms with their environment, modifying it to some degree by the use of fire, but probably not altering the face of the country as much as hunters and gatherers in more temperate climates may have³. The region appears to have provided plentifully for the subsistence needs of its human occupants, who in turn bowed gracefully to the will of the seasons, perhaps moving with the wet and the dry seasons to places best able to support their semi-sedentary existence. Then perhaps for the last thousand years⁴, the north coast became the scene of a new activity, the seasonal visits

¹ For this chapter, whenever a statement is made on the basis of the archaeological evidence reference is made by the insertion of an asterisk (*). The reader is thus directed to the relevant section in Part 1 of the work.
⁴ Radiocarbon dates recently obtained from three Macassan sites are in the vicinity of 800 years. C.C. Macknight, pers. comm.
of the Macassans. These people also were in tune with
nature, utilizing the monsoons for travel, and the
natural resources for profit.

The British however brought with them a mentality
based on the lush meadows of England and the genteel
society of London, and with an arrogance backed by an
empire which spanned the world, met the problems of
planting the flag in north Australia head on. The pomp
and circumstance of the parade ground might have little
application in Port Essington but since it was
considered necessary for discipline, the marines
paraded\(^1\), while the white ants unceremoniously attacked
the sofa in Sir Gordon Bremer's tent, although he caused
it to be moved every day\(^2\).

The marines who disembarked to form the garrison
numbered forty, a captain, a lieutenant, and thirty-eight
enlisted men\(^3\). While Earl reported that the men had
little interest in the success of the venture, their own
despondency at such a posting can be imagined. They were
a motley group whose trades ill-fitted the challenges
they were to face\(^4\). From the five married quarters*,

\(^1\) The red serge uniforms stand out clearly in McArthur's
painting of the settlement. See plate I-5.

\(^2\) Bremer to Beaufort, 7 December 1838. Hydrographic
Department, In Letters, B; 798.

\(^3\) Personnel list held in the Archives of the Royal
Marines, Portsmouth.

\(^4\) ibidem. 18 labourers, 4 carpenters, 2 wheelwrights, 2
shoemakers, and 1 carter, gardener, clerk, blacksmith,
whitesmith, tailor, brassfounder, stonemason, cabinet-
maker, miner, and butcher. The fifer was listed as
having no trade, and was probably still a boy.
of the Macassans. These people also were in tune with nature, utilizing the monsoons for travel, and the natural resources for profit.

The British however brought with them a mentality based on the lush meadows of England and the genteel society of London, and with an arrogance backed by an empire which spanned the world, met the problems of planting the flag in north Australia head on. The pomp and circumstance of the parade ground might have little application in Port Essington but since it was considered necessary for discipline, the marines paraded\(^1\), while the white ants unceremoniously attacked the sofa in Sir Gordon Bremer's tent, although he caused it to be moved every day\(^2\).

The marines who disembarked to form the garrison numbered forty, a captain, a lieutenant, and thirty-eight enlisted men\(^3\). While Earl reported that the men had little interest in the success of the venture, their own despondency at such a posting can be imagined. They were a motley group whose trades ill-fitted the challenges they were to face. From the five married quarters\(^4\),

---

\(^1\) The red serge uniforms stand out clearly in McArthur's painting of the settlement. See plate I-5.
\(^2\) Bremer to Beaufort, 7 December 1838. Hydrographic Department, In Letters, B: 798.
\(^3\) Personnel list held in the Archives of the Royal Marines, Portsmouth.
\(^4\) ibidem. 18 labourers, 4 carpenters, 2 wheelwrights, 2 shoemakers, and 1 carter, gardener, clerk, blacksmith, whitesmith, tailor, brassfounder, stonemason, cabinetmaker, miner, and butcher. The fifer was listed as having no trade, and was probably still a boy.
dated to the beginning of the settlement it can be inferred that five men brought their wives with them although these are not listed, nor the number of children in the settlement.

With the Britomart, the Alligator and the Orontes in port, the sailors were employed to assist the garrison and the beginnings of the settlement progressed at a favourable pace. Bremer had been instructed to erect such defensive earthworks as might be necessary\(^1\) and this appears to have been done, from the remains of a square area enclosed by a ditch and bank, on the high ground on Minto Head (see plate I-3). Any fear of Aboriginal hostility was short-lived however, and the intelligent handling of the situation by Barker at Raffles Bay was rewarded by the amicable relations of the Europeans and Aborigines throughout the lifetime of Port Essington.

A gardener had been employed for the settlement\(^2\), and gardens were begun, land cleared and the erection of the prefabricated buildings was commenced. Bremer's complaint that the timber of the country defied the saws and tools which they had brought\(^3\) was reminiscent of the beginnings of Port Jackson fifty years before, and indeed the tiny settlement must have emulated the first few

---

1 Adam and Parker to Stanley, 30 January 1838. Adm. 2/1965.
2 ibidem.
3 Letter dated 4 April 1839. Printed in Copies or Extracts, pp.9-10.
months in Sydney as improvisation and invention were employed to exploit the local resources. The successful early voyages of the Essington and Britomart heightened the general optimism, and Bremer wrote of the beauty of the place in ecstatic terms. He felt assured of the fertility of the soil for growing spices, pepper, cotton and rice; stated that the harbour might contain the whole navy in perfect security; and noted that the country was providing kangaroos, geese, ducks, curlews, snipe, partridges, quail and pigeons, as well as plentiful supplies of fish when time permitted the hauling of the seine. Permanent water was found several miles to the west, and in May 1839, after completing the jetty, Lieutenant Stewart of the Alligator spent seven days exploring the Cobourg Peninsula. He reported an abundance of water on the peninsula, with fine fertile land on the southern side, and good building timber. He encountered the buffaloes which had already strayed

1 On its second voyage to Timor the Essington effected the recovery of Joseph Forbes, the sole survivor of the Stedcombe, which had been lost from Melville Island fourteen years before.

2 Bremer to Beaufort, 7 December 1838. Hydrographic Department, In Letters, B.798.


below the neck of the peninsula after having been released from Raffles Bay and which formed the nucleus of the large herds at present in the 'top end' of the Northern Territory.

At the beginning of April the Aborigines reported a European vessel in Raffles Bay and soon after the arrival of five Macassar praus confirmed the information. Stewart was dispatched to investigate and found the Astrolabe and Zélée commanded by Dumont d'Urville at anchor, with the "French tricolour flying over two or three tents upon the shore". Bremer expressed his "great mortification", but sent Stewart to invite the French to visit them before they left the coast. On 6 April the French vessels anchored in Port Essington where they remained for three days. The visit was extremely cordial and one officer related that they were invited to dine on shore and supplemented the meagre British fare with, amongst other things, Bordeaux wine. The conviviality of that dinner was made strikingly real during excavations by the recovery of the seals of bottles of Château Margaux claret from the rubbish area behind where Government House had stood, together with the seal of a bottle of vintage French brandy which has been attributed to the same source.

1 G. Windsor Earl, op. cit., p.56.
During the first six months of the settlement considerable progress was made and the optimism of Bremer's despatches was not unfounded. By April he was able to report the completion of the pier, the hospital and the officers' quarters together with progress on the batteries and a victualling store-house, in addition to "24 cottages and gardens, all comfortable". In point of fact these cottages can hardly have been anything but uncomfortable. The excavation of the floor mound VSFI, identified from its position and the evidence recovered, as a single men's hut, shows a floor plan size of three metres square. This building and presumably all the single men's quarters, was either completely bark covered, or had reed walls with a thatched roof.

McArthur records that these huts lasted two to three years, by which time the framework would be completely destroyed by white ants, and the evidence from the excavation of VSFI (a similar hut) suggests they were probably burnt and new ones rebuilt on the same sites. Red clay appears to have been first employed for floors, but possibly after the first wet season fine beach shell was used and the stratigraphy of these mounds reflects the successive layers of this flooring which became traditional in the settlement. During the wet seasons these huts were supplied with fire baskets for burning

---

1 Letter dated 4 April 1839 (misprinted as 1840), in Copies of Extracts, p.11.
3 ibidem.
charcoal\textsuperscript{1}, and in the case of VSFI, this basket apparently stood on the floor stones located in the centre of that structure\textsuperscript{2}. In 1848, Brierly noted ten such huts for the use of the men which suggests that each hut must have housed at least three men\textsuperscript{3}. The married quarters were of similar materials with the addition of a stone fireplace at the southern end. From Brierly's description\textsuperscript{4}, these houses were constructed of rushes attached to a light wooden frame by bamboo strips on the outside; "they had little square holes for light and air, with little raised shutters like the ports of a vessel". Today only the chimneys remain as a testimonial to the ingenuity of the Cornish marine who must have volunteered his knowledge in the absence of any more accomplished builder. His own work was not accomplished, as the detailed analysis of these structures has demonstrated, but he unwittingly left evidence not only to the improvisation which took place at Port Essington, but also provide, with his handiwork there and in South Australia\textsuperscript{5}, the closest dating for this type of chimney

\textsuperscript{1} O.W. Brierly, "Journal with Sketches 1846-1849", (Mitchell Library MS., A501-3, entry for 14 November 1848.

\textsuperscript{2} John Sweatman, "Journal of a Surveying Voyage to the N.E. Coast of Australia and Torres Strait, in Her Maj. Schooner, Bramble, Lieut. C.B. Yule, Commander, 1842-7", (MS. in Mitchell Library A1725), vol.II, p.256, lists the number as four per hut.

\textsuperscript{3} Brierly, op. cit.

\textsuperscript{4} A round chimney of this type is visible in a water-colour in James Wallace, "Journal Kept on Board H.M.S. Alligator", (MS. 179 in National Library of Australia).
in western Cornwall, where so far some sixty similar chimneys have been recorded by archaeologists¹.

When Bremer left Port Essington in June 1839, Captain John McArthur² was appointed Acting-Commandant, a position he held until 1844 when he was made Commandant³. McArthur was a nephew of John Macarthur of Camden, being the ninth child and third son of James and Catherine⁴. Born 16 March 1791, McArthur joined the Royal Marines in 1809 and appears to have had an undistinguished career before his arrival at Port Essington, attaining the rank of captain in 1837 at the age of forty-six, although he eventually became a major-general in 1857, the year in which he appears to have retired⁵.

No journal and few personal letters are extant which might give information as to McArthur's personality. Brieferly described him as a tall thin old man⁶. Leichhardt said that he was proud to count McArthur as

---

² I have adopted the spelling used by McArthur on his despatches.
³ Admiralty to McArthur, 7 March 1844. Lambrick Letterbook, In Letters, No.29 (Archives Office of N.S.W. Ms. 4783).
⁵ He is omitted in the New Annual Army List for 1858.
⁶ Brieferly, op. cit.
one of his friends; "A man of so various knowledge and of so sound information is rare anywhere, but uniting it with such an amiable disposition, such willingness of communication, and if I could use the term, of conversational bartering (ready to give and to take) becomes a rara avis than most". Added to this he was a good and careful observer of nature 1.

McArthur's ability as a watercolour artist can be judged from Plate 1-3, and this, together with some musical ability 2, reflects the cultural side of his character. Several of his personal letters indicate that he felt his destiny was guided by his Maker and in prayer he gained solace for the depression of his long banishment. More than Barker, he was guided by the Book of Regulations, and less than Barker did he possess the instinctual flair for seeing around problems in an environment which called for the direct-line approach of improvisation. This led to conflict with a number of his men (see below). Earl, who spoke warmly of McArthur on a number of occasions, observed nevertheless that the settlement was retarded by the fact that he was "disinclined to do anything of consequence out of the routine" 3. One can appreciate the clash of personalities

2 "Mcauthurs of Port Essington", Melbourne Argus, 16 May 1931.
which caused the young, brilliant, but unhappy T.H. Huxley to write that "the respected Captain MacArthur is with all reverence one of the most pragmatical old fowgs I ever met with", adding that "the commandant is very economical and unless some ship is there to divide the spoil he won't have a cow killed because it is too much and a good deal spoils!! - so the oxen live and the men die". Elsewhere he observed that Port Essington was "about the most useless, miserable, ill-managed hole in Her Majesty's dominions". Thus for want of any greater vision MacArthur ruled by strict authority. He put down those who sought temporal relief in gambling and rum. He opposed settling the men's accounts at a pay-table, which was instituted by the acting pay-and quartermaster on his arrival in 1844, on the grounds that this was offering incentive and temptation to these "desperate and ungovernable vices". "I need not observe", he wrote, "that after the working hours the time must be spent in much listlessness, there are few external circumstances of excitement, as in a camp, or a garrison with an enemy in front, which of itself demands and ever induces voluntary and free action - yet if these occupied men may be seen still strong in purpose to obtain liquor and will even find means to accomplish that purpose (I believe this is not overcharged) what shall we suppose may not be done in a position like this. Surely the reply is unnecessary - it is not the hours of occupation,

---
2 ibidem, f.n.1.
but those of idleness which are difficult to regulate
and I feel that every means which can be placed in my
hands as preventives, will but barely suffice"1.

But while McArthurs might strive to control his men,
all were controlled by the environment which they tried
to tame. During 1840 the maximum temperatures ranged
between 89° and 97° and the minimums between 63° and
79°2. From more complete records maintained on board
the Alligator between October 1838 and May 1839 the
lowest minimum temperature recorded was 77° and the
highest maximum temperature 95°3. In general it appears
that the shore temperatures were usually five degrees
hotter and that any breezes on the water were quickly
dissipated by the tree cover on shore. No records of
humidity are extant but for much of the year this would
have been high. During this early period there was no
major sickness in the garrison, and the various
despatches reflect a general optimism on this point. "I
am extremely glad", wrote Earl, "to find that Europeans
do not lose their energies here, as I scarcely dared to
expect otherwise"4.

In June 1840, and again in May 1841, earth tremors

1 McArthurs to Owen, undated letter (1844) in Archives of
the Royal Marines, Portsmouth.
2 McArthurs to Admiralty, 16 July 1840, contained in
Barrow to Stephen, 2 July 1841, C.O. 201/313.
3 C.J. Tyers, "Meteorological Journal kept on board H.M.S.
Alligator". (Public Library of Victoria MS. H16559).
4 Earl to Washington, 17 March 1840. Archives of the
Royal Geographical Society, London.
were experienced in the settlement\(^1\), but these did little
damage and were inconsequential compared with the
hurricane which had struck the settlement on 25 November
1839. The settlement had experienced unsettled weather
on the previous day, and gradually as the evening
progressed the winds increased and the rain fell until
at 11 p.m. the full fury of the storm unleashed itself
upon the frail settlement. With the daylight came calm,
but the scenes of devastation which greeted the garrison
must have awed even the staunch McArthur. Trees and
gardens were completely uprooted. The hospital, officers' 
mes and one store house had survived, but the improvised
huts of the men were laid waste, Government house had
been hurled from the stone piles on which it stood, the
church destroyed, the jetty and storehouses on the beach
washed away\(^2\). The work of twelve months had been
nullified in twelve hours.

The Britomart and the Pelorus had been at anchor
some distance east of the jetty. While the anchors of
the former had held, the Pelorus was less fortunate. At
10 p.m. she began to ship heavy seas and an hour later
she broke from her moorings. In desperation the crew
fired distress guns and rockets, as they worked to keep

\(^1\) See McArthur to Admiralty, 16 July 1840. Enclosed in
Barrow to Stephen, 2 July 1841. C.O. 201/313; and
McArthur to Gipps, 3 September 1841. Enclosed in Gipps
to Stanley, 3 September 1842, C.O. 201/323.

\(^2\) Sydney Gazette, 2 May 1840. Owen Stanley sketched
many scenes of the disaster, see "Sketch Book of a
Voyage of H.M.S. Britomart", (Mitchell Library MS.
C279-80).
the ship from running aground, but to no avail. At midnight she went aground on the eastern side of Minto Head where she was battered by the huge waves (plate I-8). When daylight came the Britomart sent a boat to help take off the crew, and it was found that eight men had drowned¹. The ship was not refloated until the following February and was eventually sold out of the Service. It thus became the second shipping disaster at Port Essington, the Orontes having been wrecked on an unchartered reef at the harbour mouth in December 1838.

North Australia possessed no large animals which the garrison might fear. Although several species of poisonous snakes inhabit the region there is no record of anyone from the settlement being bitten, and only one story of an encounter with a crocodile, which was shot after having carried off Sir Gordon Bremer's favourite dog². Nonetheless those creatures which did inhabit the region proved formidable opponents for the Europeans. Rats and other animals attacked the gardens and cockroaches and flies continuously spoiled stores and food. The ever-present sandflies and mosquitoes were sufficiently irritating to cause Bremer to mention them and the painful ulcers they induced in an official despatch³, and amongst the mosquito population, the

² Bremer to Beaufort, 7 December 1838. Hydrographic Department In Letters B.798.
³ Bremer to _______ 13 December 1838. Printed in Copies or Extracts, p.9.
Anopheles was present to spread malaria whenever a carrier came into the settlement. The green tree ants in their millions made clearing a slow and often painful business.

It was however, the white ants which provided the most concerted opposition to the British settling Port Essington, and even in the lifetime of the garrison they were victorious.

In 1848 Brierly observed that both the blockhouse and the storehouse (VQS) which Lieutenant Lambrick, the acting pay-and quartermaster had occupied on his arrival in 1844, were both so decrepit because of the depredations of the white ants that neither could be used any longer, and had been abandoned. McArthur had reported that the men's huts had to be replaced every two to three years for the same reason; Bremer had noted early success against these predators by using coal-tar, but the lack of lasting success was reflected by Owen Stanley who in a report on the settlement in 1849 to the Colonial Secretary, recommended that should the Government decide to retain Port Essington, "iron frame-work should be sent out, as it has been found impossible to guard against the inroads of the white ants by any means that experience could suggest or ingenuity devise".

This was not quite true, however. Accidentally,

1 O.W. Brierly, op. cit., entry for 14 November 1848.
2 Stanley to Deas Thomson, 17 April 1849. Hydrographic Department, SL.15f.
the garrison had discovered a technique which aided the fight against the termites, and which, when rediscovered, was to become the most distinctive hallmark of tropical architecture in Australia - the use of piling. Including the church, seven prefabricated buildings were shipped to the settlement from Sydney, and rather than excavate level areas it was found more convenient to set these buildings on piles.

The largest of these prefabricated buildings was Government House\(^1\), described by Earl as being eighteen feet by forty feet, with a roof of split shingles\(^2\). This, together with the ordnance store, was set on dwarf piles several feet from the ground, but the remaining prefabricated buildings were raised eight feet from the ground on wooden piles\(^3\). Whether or not this was done deliberately to increase storage space is unclear, but its effectiveness for controlling the white ants soon became apparent. McArthur observed that "this temporary method of piling in order to raise the buildings has proved very useful. Had they been fixed on the ground in the usual manner, they must have been

\(^1\) McArthur to ______, 16 October 1847, H.R.A., I, xxvi, p.373. The hospital, a much larger building, was as yet unbuilt. The first hospital was a prefabricated building which later became a store house (WSID).

\(^2\) G. Windsor Earl. op. cit., p.88.


\(^4\) ibidem, p.374.
destroyed long since by vermin. The technique was later rediscovered and employed in Queensland.

The archaeological evidence, where it can be defined, suggests that after the hurricane, houses were rebuilt on the sites that they had previously occupied and that certain alterations and adaptations were made to them. The church however was never rebuilt, and the timber was reused in other buildings.

Throughout the whole period the housing of the men remained the same and has been described above. Projected barracks were never built. During the earlier period the prefabricated buildings were erected on temporary piling and huts were thrown up from materials at hand. The local ironstone was quarried on the spot into rough blocks and mortar was made by burning shells for lime and mixing it with clay. The only remaining structural evidence of the earliest period are the chimneys of the married men's quarters and the few stone pillars which mark the site of Government House. Roofing materials appear always to have been split shingles probably made from the casuarina trees, bark, or thatch made from rushes.

In general, the technology of the architecture at Port Essington reflects the traditions of the men who built the buildings and adapted them to a strange

\[1\] ibidem, p.374.  
\[3\] McArthur to ______, 16 October 1847, op. cit., p.373.
environment. Apart from the prefabricated buildings which had timber floors, the use of beach shell flooring reflects the common use of mixed sand and lime ashes for this purpose in Britain at this time. The shells from which lime was made were burnt in kilns, of which three were recorded on the site. All three are of similar design, and are built of stone in the shape of a beehive. The kiln to the south of the settlement is freestanding and may have been used for charring timber for charcoal. The example immediately north of the jetty is badly deteriorated, but could not have stood higher than two metres. An earth platform was built behind it and from the excavation of the structure it has been demonstrated that it was used to produce lime. However it appears to have been only a prototype for the third kiln, also used to produce lime, built into the cliff-face to the west of the settlement and standing to a height of four metres. Both these kilns functioned in the same way. The third kiln had no flue, only an opening at the base and in the top. It was loaded from the top with successive layers of shell and a burning material, probably brush, and fired from beneath. When the firing had taken place the lime was shovelled out from below.


2 See McArthur to Gipps, 3 September 1841. Enclosed in Gipps to Stanley, 3 September 1842. C.O. 201/323.

This kiln remains a classic example of a pre-1850 British lime-kiln and its building reflects an excellence of construction which would suggest that it was probably the work of the convict masons who were at Port Essington in 1845 (see below).

The wreck of the Pelorus in many ways proved a blessing for the settlement, for it remained there through all of 1840, and its crew provided an important additional labour supply. One of its crew was a brickmaker by trade and was able to fill an important gap in the skills of the garrison. McArthur had reported the discovery of a fine bed of clay at the head of Wanji-Wanji Cove to the south of the settlement, but experiments had failed to produce suitable bricks for want of an experienced man to burn them. Private Handy, a marine serving on board the Pelorus, was called upon and with the help of one of the garrison, produced bricks of reasonable quality to be employed in enclosing the area beneath the first hospital (VSD).

Handy produced bricks in the manner in which they had been traditionally made in England and Europe for several hundred years, and essentially as they were made in Australia until about 1870. The pug was pushed into an open topped wooden mould with a removable base. When formed the brick would be slipped from the mould and

---

2 McArthur to Admiralty, 3 November 1840. Enclosed in Barrow to Stephen, 10 May 1841. C.O.201/313.
dried for several days before firing. The Port Essington bricks were, by modern standards, of extremely poor quality. They were comprised of 20 per cent clay and 80 per cent sand, bonded with ironstone modules. They were not highly fired and consequently porous and soft. They were not frogged and of irregular size, but were a technological achievement in the tiny settlement and McArthur was elated with their possibilities. However, Captain Chambers of the Pelorus when he sailed from Port Essington in March 1841, would not allow the brickmaker to stay, despite the fact that the man volunteered, and although McArthur reported that Private Handy's assistant from the garrison was attempting to continue production, the archaeological evidence suggests that he failed, since no other buildings apart from VSD were constructed in this material.

During the period 1840-1841 the settlement was the scene of much activity, restoring the damage of the hurricane and developing the settlement. A primitive saw-pit was excavated in the cliff to the north of the jetty and wanting any experienced Sawyer, the garrison learnt to produce planking and battens for the buildings. The blacksmiths made nails, pointed the mason's tools,

---

1 For a detailed description of the process see J.M. Freeland, op. cit., pp.13-14. An extensive search for the brick-kiln was made without success.

2 McArthur to Bremer, 3 September 1841. Printed in Copies or Extracts, p.29.

3 McArthur to Admiralty, 15 May 1841. Printed in Copies or Extracts, p.21.
and constructed iron-work for the buildings, which McArthur deemed necessary following the destruction caused by the hurricane. It was probably the memory of that experience which determined a change in style of the buildings constructed in this period. The old hospital was dismantled and the ground excavated to provide a level surface into which solid stone and brick foundations were sunk. The ground floor was then constructed of bricks and the prefabricated wooden structure replaced to form a second storey above, entered by external stairs from the western end. The store which was later to house Lieutenant Lambrick and his family (VQS) was also enclosed below with rough-hewn masonry which was built directly around the wooden piles. These were eventually eaten away by the white ants leaving gaps in the masonry. McArthur noted that much additional storage space was thus achieved, but the walls aided the progress of the white ants and Earl Grey remarked that the later destruction of the buildings was probably thus accelerated a good deal for the sake of some additional accommodation. The progress of Port Essington had taken one pace forward and two paces back.

The largest building complex of the settlement, the

\[^{1}\] McArthur to Bremer, 3 September 1841. Printed in Copies or Extracts, p.29.
\[^{3}\] Grey to Fitzroy, 14 April 1848. H.R.A., I, xxvi, p.373.
hospital, dispensary and hospital kitchen was begun in this period. An area 20 metres by 35 metres was excavated on the eastern side of Minto Head by the seamen on board the Pelorus. At its deepest point this excavation was metres deep and in the rocky soil the task must have been laborious with the inefficient tools at their disposal. In this level area the hospital was built upon ironstone footings only 40 centimetres above the ground. Upon this was erected the prefabricated wooden structure which had been sent from Sydney in 1840. The stone foundations were divided into four compartments and it is reasonable to assume that the four wards in the building followed the pattern of these foundations. From a watercolour of the hospital it appears that the building was surrounded by a verandah and that the four corners were enclosed to form additional rooms. Since the doctor lived at the hospital it is reasonable to suppose he occupied one of these rooms.

In external appearance the hospital had the classic features of the primitive Australian farmhouse of which the earliest example, Elizabeth Farm at Parramatta in

1 McArthur to Admiralty, 26 February 1841. Printed in Copies or Extracts, p.20.
3 John Sweatman, op. cit., p.257.
4 ibidem. From the style of this painting I have attributed it to Oswald Brierly.
5 ibidem.
New South Wales, had been built in 1793. The enclosed rooms at each corner were a distinctive feature, and because of the verandah, the roof line which began at the normal pitch necessarily became shallower to allow head-room, resulting in the broken-backed appearance of the roof, which was also hipped at both ends. The verandah seems certainly to have been intended to provide external access rather than shade, and in this it again echoed the earliest use of the verandah in Australian architecture. From the illustration by Brierly the hospital appears to have been roofed with thatch.

Although only one brief mention occurs of the hospital dispensary, this has been recorded archaeologically and was situated adjacent to the hospital in the north-west corner of the excavated area. It was a small building with the western wall built of rough masonry. The remaining walls were probably of thatch and the structure was divided into two compartments by a brick wall, where the few bricks remaining from the storehouse were utilized, thus equating it in time with the building of the hospital proper, which was reported almost complete in September 1841.

By this time also work was almost complete on the magazine and blockhouse on Adam Head. The magazine was

---

1 J.M. Freeland, op. cit., pp. 22, 45-47.
2 Sweatman, op. cit.
3 McArthur to Bremer, 3 September 1841. Printed in Copies or Extracts, p. 29.
built completely with masonry and set 1.5 metres into the
ground to minimise damage from an accidental explosion.
The blockhouse, breastworks, and 9 feet high palisades
were all of timber and have disappeared without trace,
but from Owen Stanley's sketch the blockhouse must have
stood about nine metres high. It was probably at this
time that the ditch and bank fortification to the south-
west of Adam Head was constructed.

The jetty had been completed in April 1839 under the
direction of Lieutenant Stewart of the Alligator and he
recorded that it was 100 yards long and 24 feet wide and
10 feet high at its outer end, built entirely of stone.
"I flatter myself", he wrote, "that it is the best job
in the Coloney ..., it will answer for this port for
some years to come"\(^1\). Less than seven months later it
had been completely wrecked by the hurricane. It was
rebuilt by the men of the Pelorus but McArthur recorded
that it was not as strong as before\(^2\).

By the end of 1841 the settlement had developed
sufficiently to meet the needs of the tiny garrison.
Until a decision could be reached on the opening up of
Port Essington little could, or needed to be done in
expanding the post. All the public buildings had been
erected, the men were housed, and the modest technological
needs of the garrison catered for. There were sufficient
storehouses, and kilns, a smithy and a primitive but

\(^1\) Lieut. P.B. Stewart, op. cit.

\(^2\) McArthur to Gipps, 16 July 1840. Printed in Copies of
effective bakehouse for baking bread.

The second phase of architectural expansion was brief but recognisable from the structures which arose. In January 1844 twenty picked convicts, masons and quarrymen sailed from Sydney to construct a beacon at Raine Island in the Barrier Reef. Completing the work there in September they embarked in the Fly for Port Essington, where Captain Blackwood deposited the convicts while he went to Sourabaya. Their arrival at the settlement was opportune, for a week earlier McArthur had reported the recommencement of work on the beacon at Smith Point at the mouth of the port. The work had been begun by the ship's crew of the Chameleon. However the work of the masons was unsatisfactory and what they had constructed in the first week had been condemned and removed. From the remains at Smith Point it would appear that the newly arrived convict masons took over the work and the beacon became a solid round tower of blocks of coral conglomerate quarried on the spot. One dislodged block is inscribed "E CRI" and one ingenious suggestion is that this is part of "LUCE CRISTI" and thus probably associated with a Catholic missionary who lived in the area several years later. However the fine gothic lettering would suggest that it was the work of a

---

3 McArthur to Owen, 20 September 1845. *Archives of the Royal Marines, Portsmouth.*
qualified tradesman. The beacon was finished at the end of 1845.

The finest piece of architecture in the settlement, the hospital kitchen has to be associated with the four months the convict masons spent at Port Essington. In striking contrast to the other architecture in the settlement, this building has all the aspects of professionalism. The Georgian symmetry, reflected in the ground-plan, is apparent, and the design was almost certainly a stock pattern. In the detailing of the building professional expertise is also quite striking. Wide footings were sunk into the ground and the floor level raised above the surrounding ground level. The doorways and windows were rebated to take timber frames and sills, all corners were quoined with finely chiselled blocks, and the elaborate chimney, since it served two fireplaces, was constructed with two flues which were parged.

The large lime-kiln to the west of the settlement reflects similar expertise, and lacking any documentary evidence can be attributed to the same period on this basis. Finally, the smithy was rebuilt at this time and had a fine stone chimney standing approximately six metres in height, which has fallen in the last twelve years. The base remains, however, to suggest the technology of the structure*, and because it contains

1 Brierly, op. cit.
2 G. Smith, op. cit., gives a number of standard designs, of which number 1 (p. 38) is very similar to the Port Essington hospital kitchen.
some blocks of coral conglomerate which were presumably brought back to the settlement from Smith Point, can be dated to 1846. This date is in accordance with a brief reference to the smithy by McArthur\(^1\).

No further building took place in the remaining years of the settlement, with the exception of several vaults in the cemetery, and the obscure structure named during field work as the Cowrie House. On archaeological grounds this can be dated late in the life of the settlement because of the re-use of stone blocks from other parts of the site. The cowries found in the deposit can best be explained as having some commercial value and may be associated with a man named Rae (or Ray) who is incidentally recorded as having established a trepangning camp in Knocker Bay\(^2\), and who may well have had some sort of storehouse at the settlement to facilitate the shipment of his goods.

The archaeological survey of the site recorded four wells around the settlement, although Brierly noted that only two were functioning in 1848\(^3\). The first of these was the well in the town square, which seems to have been able to maintain the settlement at all times. The second was some distance to the west, and presumably served the garden there.

The gardens consumed much of the garrison's time.

---


\(^2\) Sweatman, op. cit., p.273

\(^3\) Brierly, op. cit.
and many despatches and descriptions of the settlement were taken up with this aspect of life at Port Essington. Apart from the small private gardens which were planted around each hut two main gardens were established, one to the south of the settlement behind the beach, the other to the west in the vicinity of the cemetery.

From the outset, Bremer's despatches were full of optimism on the potential of the soil of the Cobourg Peninsula. In December 1838 he declared that every description of spice, together with sugar, rice and excellent cotton might be grown. In February 1839, despite light rains in the wet season, he reported the orange, lemon, banana, plantain and cocoa-nut trees in excellent order; and again in April he wrote, "The soils are exceedingly rich; plantains, bananas, orange, lemon and tamarind trees are flourishing." In addition, sugar cane and cotton were succeeding and strong hopes were held for the potential of rice. Notwithstanding this, Bremer reported the want of vegetables as the major source of deprivation in the settlement.

In this, as in other aspects of the settlement, Bremer appears to have been swayed by success to the point of not acknowledging the difficulties involved.

---

1 Report printed in Copies or Extracts, p.9.
2 ibidem.
3 ibidem.
The seasons and climate were not understood, and although Armstrong had been appointed as official gardener, his practical ability appears to have been in doubt in such foreign an environment. In July 1840 McArthur reported that the winds had adversely affected the gardens. The pumpkin and maize crops had failed to produce to the extent anticipated, although the experience had led to the replanting of maize in the western garden where it improved. By the end of the year the gardens had produced 1800 pounds of vegetables, mainly pumpkins, and the melons and sweet potato were also thriving.

This was in essence subsistence gardening. Of the agricultural potential of the area McArthur was more reticent noting that a few people who professed some expertise were unanimous in saying that sugar, coffee, cotton, indigo and rice might all be grown successfully. Armstrong had failed with sugar cane, although McArthur thought that perhaps this was due to his inexperience. McArthur noted that any success would require 'skillful practical men', whereas in his own garrison there were not enough men to maintain the gardens in sufficient quantity to sustain themselves all the year around.

Gradually the settlement learnt by experience. In September 1841 McArthur's report reflected the general successes and failures of the crops, together with the

2 McArthur to Gipps, 2 November 1840. Printed in Copies or Extracts, pp.16-18.
3 ibidem.
increasing dependence on the tropical crops with which they were slowly becoming acquainted. It is of value to quote this despatch at length:

"The gardens have produced well; we have cut nine very fine pines; fifty-five bunches of bananas, some of them containing six dozen each, of excellent flavour. The cocoa-nuts do not seem to thrive. The orange has not yet bloomed; two lemons, of large size and well-flavoured, have been gathered, and there are many coming forward on two of the trees.

Melons decidedly degenerate, but having received some new seed from Sydney, I hope to improve them by giving some attention in selecting and reserving the fruit intended for seed. But I am told that this is an universal complaint of this plant.

Sugar-cane will doubtless answer well here; all visitors, who appear acquainted with its properties, speaking well of our grown specimens, and they have not been at all attended to.

Indigo, and the cotton, though totally neglected, have attracted much attention.

The soil appears to be peculiarly favourable to arrowroot. I have made some, and it proves to be of an admirable quality. We have more than sufficient, I hope, to supply our hospital, and the next year's crop will be (if as successful), at least, tenfold more.

Two bread-fruit plants were brought here from the islands about 12 months since, and I have given much attention; but am very doubtful if they will spring. We have also two mango plants; but they do not grow, and the loquat has failed. I must remark that it has been a considerable disadvantage to the pursuits of gardening that I have not had time to devote, or the hands requisite to apply to it. There are too many objects to be effected with so limited a detachment."
A few seeds of the Amboyna pea, discovered amongst some maize landed from a vessel, succeeded beyond all expectation. When served at table we generally deemed it quite equal to the common kinds of green peas; since its introduction all the species of island beans and calavances have been discarded, and only valued on account of their beautiful foliage and splendid appearance when in blossom, producing a large cone of flowers, in colour and form resembling the well-known may-duke. It is curious that none of the live stock will eat any of these productions, not even when intermixed with other food that is acceptable to them.

We have now, by supplying the ship's crews, exhausted our stock of potatoes; it would have served the garrison very well until the next rains. This is decidedly our most profitable vegetable; it will always be cultivated with the least labour. We have not had a satisfactory trial of the yams, but are fully prepared for it on the approach of rains.

I regret having miserably failed with the potatoe onion, introduced also from the islands. I purchased and planted 80 pounds, and only saved a few for the sick, with about one pound reserved for seed. They were put (by advice) in the ground in December, and the continuous wet weather completely destroyed them.

I purpose this season to extend the potatoe plantations. Indian corn and Amboyna peas will also merit attention.

I have only employed two men for the last three months as gardeners; their attention is now directed exclusively to watering the plants, and watching against depredations.¹

¹ McArthur to Bremer, 3 September 1841. Printed in Copies or Extracts, p.30.
The processes of learning by experience were thus often painful and slow. Earl reported, for example, that under cultivation the yam, sweet potato, and other root crops flourished too luxuriantly to produce\(^1\), and Leichhardt noticed that melons and pumpkins although large, were quite tasteless\(^2\). Leichhardt noted the introduction of the cactus opuntia for the cultivation of cochineal insects, which had been suggested in his report by Captain Everard Home\(^3\). The cactus is one of the few introductions of this period which still thrives at Port Essington.

In 1849 Owen Stanley reported that the first garden (that to the south) had been a complete failure, although the second was still supplying cocoa-nuts, pineapples, bananas, jack fruit, and oranges\(^4\). However Stanley viewed the settlement with disfavour throughout its existence and in summary it would be fair to say that McArthur's diligent application to the problem resulted in reasonable success in keeping the garrison supplied with fresh vegetables.

Earl noted that these efforts were supported by information and gifts of plants and seeds from the

---

2 L. Leichhardt, op. cit., p.433.
4 Stanley to Deas Thomson, 17 April 1849. Hydrographic Department. SL.15f.
governors of Amboyna and Dili and especially from the consul-general of Portugal at Singapore. Earl’s remarks on the gardens substantiate what has already been said. It is interesting to note however, that he maintained his belief in the agricultural potential of the region. Although admitting the failure of coffee, he claimed success for sugar cane and spices, and in particular for cotton. The first variety grown was the type common to the Archipelago, which, although it succeeded, was not of high quality. In April 1842 seeds of Bourbon and Pernambuco cotton were planted and Earl submitted the product to an English cotton broker who pronounced it of good quality. Since all such experiments were carried out on a limited scale, Earl felt that the potential of agriculture was not shown to be worthless. The history of Northern Territory agriculture since suggests however that Earl’s optimism was unfounded.

Amongst the land fauna the kangaroo and wallaby appear to have been the only species utilized for food by the Europeans, and fresh meat seems to have come mainly from livestock introduced into the settlement from the adjacent islands. Pigs, timor ponies, buffalo

---

1 G. Windsor Earl, op. cit., pp.105-114.
2 G. Windsor Earl, "A Handbook for Colonists in Tropical Australia", *Journal of the Indian Archipelago and Eastern Asia*, new series, vol.4, part 1, p.7 notes that this hunting was a specific task in the garrison. The excavated food remains of the Europeans include kangaroo bones.
and island cattle (bantang) had been released at Raffles Bay at the abandonment of that settlement. The buffalo had strayed off the peninsula by 1839 and had greatly increased in numbers. Earl noted that herds of forty or fifty could be found at the neck of the peninsula and the introduction of the buffalo fly (Siphona exigua), the cattle tick (Boophilus microplus) and the cattle disease onchocerciasis have been associated with these introduced animals.

These livestock introductions continued throughout the lifetime of Port Essington and included, in addition to pigs, ponies, bantang and buffalo, sheep, goats, English cattle from Sydney, poultry purchased from the Macassans, and dogs to assist in the pursuit of the kangaroo. The livestock however required more handling than McArthur had men available to perform and they constantly strayed and became wild.

Again, the lack of knowledge of the environment was apparent. Campbell had noted that the sheep taken to Melville Island never became fat or fit for food, but these animals continued to be imported into the settlement. Earl recorded that of more than one hundred

1 G.W. Earl, Enterprise in Tropical Australia, op. cit., p.103.
3 McArthor to Bremer, 3 September 1841. Printed in Copies or Extracts, p.30.
4 Letts, op. cit., p.25.
sheep purchased by the Essington during her first voyage in 1838, nearly one half died before reaching Port Essington. Stock losses from Sydney were equally great, and McArthur reported that of forty-five buffaloes embarked on the schooner Lulworth only fourteen were landed, of which two had died before he sent the despatch.

Once arrived at Port Essington the stock had to be hand-fed, since some of the indigenous flora proved poisonous and many sheep and goats and to a lesser extent the cattle died from the effects of this. Sheep particularly seemed to have suffered in the tropical climate, but their importation was continued until Port Essington was abandoned.

Not only the animals but also the men gradually succumbed to the strange environment. For the first four years the garrison remained free of widespread sickness and in April 1839 Bremer had written to his wife that there had been no medical cases in the garrison and that the two men who had so far been buried in "the calm and peaceful spot" chosen as a cemetery had been from

1 G. Windsor Earl, Enterprise in Tropical Australia, p.52.
2 McArthur to Gipps, 2 November 1840. Printed in Copies or Extracts, p.15.
3 McArthur to Bremer, 3 September 1841. Printed in Copies or Extracts, pp.30-31.
4 Sydney Commissariat to Lambrick, 3 April 1849. "Lambrick Letterbooks", In Letters No.126. This letter lists 51 sheep sent to the settlement.
amongst the ships' crews\textsuperscript{1}. But gradually the signs asserted themselves. In September 1841 McArthur reported two cases of intermittent fever, and four cases of diarrhoea\textsuperscript{2}, and twelve months later the assistant surgeon furnished a medical report for the period July-September 1842 which listed 19 cases of which five were of intermittent fever\textsuperscript{3}. However the health was still generally good, and Whipple attributed this to the good position of the settlement, the regular habits of the men, and their temperate way of life, noting the strict prohibition of liquor to any improper extent.

The wet season of 1842-1943, was prolonged and severe, and with this came the first widespread outbreak of malaria. When the \textit{Fly} visited the settlement in August 1843 Jukes found that all there had been attacked by the disease and that there had been several deaths\textsuperscript{4}. Many were still hospitalized, and they had become a garrison of "yellow skeletons"\textsuperscript{5}. Without a labour force the little settlement was immediately paralysed and steps were hastily undertaken for the

\textsuperscript{1} Lady Bremer to Mrs Edward Stanley, 6 November 1839. (Owen Stanley Letters, National Library of Australia, microfilm G.743).
\textsuperscript{2} McArthur to Bremer, 3 September 1841. Printed in \textit{Copies or Extracts}, p.29.
\textsuperscript{3} Whipple to McArthur, undated. Printed in \textit{Copies or Extracts}, p.47.
\textsuperscript{5} C.A. Browne (ed.), \textit{Letters and Extracts from the Addresses and Occasional Writing of J. Beete Jukes} (London, 1871), p.199.
amongst the ships' crew. But gradually the signs asserted themselves. In September 1841 McArthur reported two cases of intermittent fever, and four cases of diarrhœas, and twelve months later the assistant surgeon furnished a medical report for the period July-September 1842 which listed 19 cases of which five were of intermittent fever. However the health was still generally good, and Whipple attributed this to the good position of the settlement, the regular habits of the men, and their temperate way of life, noting the strict prohibition of liquor to any improper extent.

The wet season of 1842-1843, was prolonged and severe, and with this came the first widespread outbreak of malaria. When the Fly visited the settlement in August 1843 Jukes found that all there had been attacked by the disease and that there had been several deaths. Many were still hospitalized, and they had become a garrison of "yellow skeletons." Without a labour force the little settlement was immediately paralysed and steps were hastily undertaken for the

---

1 Lady Bremer to Mrs Edward Stanley, 6 November 1839. (Owen Stanley Letters, National Library of Australia, microfilm G.743).
2 McArthur to Bremer, 3 September 1841. Printed in Copies or Extracts, p.29.
3 Whipple to McArthur, undated. Printed in Copies or Extracts, p.47.
relief of the garrison. Home and McArthur both wrote to Parker, the commander-in-chief of the East India Station, who wrote to the Admiralty\(^1\), and the formation of a relief detachment was begun. It was not until November 1844, seventeen months after Parker's communication, that the relief party reached Port Essington. The second detachment consisted of two lieutenants, an assistant surgeon, three sergeants, three corporals, a fifer and forty-seven privates\(^2\), men as ill-equipped to maintain the settlement as the first detachment had been to begin it. Although the details are incomplete, the majority of men had their civilian occupations listed as labourers, and the detachment contained no masons, brickmakers or bricklayers\(^3\).

By now the malaria was established in the settlement and within twelve months every man in the new garrison had suffered from it, and in 1845 and 1846 there were nine deaths in the garrison, as well as the wife of Lieutenant Lambick and her two children\(^4\). In May 1846 McArthur requested an additional medical officer and in October 1847 Surgeon Crawford, together with an additional

\(^1\) All correspondence contained in Parker to Admiralty, 18 June 1843. Archives of the Royal Marines, Portsmouth.

\(^2\) Detachment list held in the Archives of the Royal Marines, Portsmouth.

\(^3\) ibidem. See also Lawrence to Owen, 5 March 1844. Archives of the Royal Marines, Portsmouth.

\(^4\) One child had died before reaching Port Essington, the second died in the settlement. Detachment list. Archives of the Royal Marines, Portsmouth.
lieutenant, corporal and five privates, arrived at the settlement. During 1847 there appears to have been some improvement in the health of the men, but again in the wet season of 1848-1849, malaria laid waste to the garrison in the worst epidemic experienced in the settlement. Crawford later recalled the situation in writing to Lambbrick: "I cannot think of Port Essington without a shudder, what a fearful state we were in in 1849 when all but yourself and two others were attacked by fever. I believe but for your immunity from fever and your great exertions and intelligence on behalf of the sick, we should have lost many more men. Do you recollect during my lucid intervals your visits to my bedside for instructions how to treat the sick? The care of the sick and dying lasted six weeks."

The cause and transmission of the disease was, of course, unknown at this time. Earl discussed it at some length, and came to the conclusion that throughout the Indian Archipelago it was always the land-locked harbours which were affected most by malaria and thus he attributed the cause to the mangrove swamps and mudbanks which were uncovered at low tides together with the effluvia produced by the effects of the hot sun on stagnant salt-water. In support of his case he referred

---

1 McArthur to Owen, 13 October 1847. Archives of the Royal Marines, Portsmouth.
2 Extract from typescript entitled "Services of General George Lambbrick, Royal Marines, Kt. S.F. Late A.D.C. to the Queen 1864-70". Archives of the Royal Marines, Portsmouth.
3 G. Windsor Earl, Enterprise in Tropical Australia, pp. 90-98.
to the early period of the settlement stating that the hurricane had sufficiently agitated the waters of the inner harbour to purify the shoreline, and thus there was little malaria in this period. Earl reflected the popular ideas on the disease at this time, and it is of interest to note that Leichhardt discussed the problem in an analytical fashion which says much about the man. Firstly he dispelled the ideas that after rain malaria rose into the atmosphere. "After heavy rain the air smells fresh and pure; no nasty offensive exhalation rises from standing pools filled with decomposed plants or from morasses in which either... gas, or sulphuretted hydrogen or the unknown agent which we call malaria might be engendered... I should therefore say that the air and the country have nothing whatsoever to do with the fever of Pt. Essington". Leichhardt recorded that he was told by two members of the garrison that the fever ceased when the country around the settlement was on fire, and that the Aborigines had told them that they used fire to keep down disease", as well as to facilitate travel around the country.

Leichhardt felt that the diet of the men was sufficiently good to eliminate this as a cause, and he and McArthur, in discussing the problem noted the coincidence of outbreaks of malaria with the arrival of trading ships from Timor which had happened on several occasions. Tantalising half-clues were at their disposal

2 This is the only example known to me of this reason being given for deliberate firing by Aborigines.
but the association of these conditions with the bite of the anopheles mosquito was not to be discovered for another fifty years\(^1\).

Leichhardt noted that the disease was treated with mercury until salivation took place, when the patient was considered safe. Quinine might also have been used as this was listed in medical supplies from Sydney\(^2\). McArthur, believing that the settlement was not sufficiently exposed to the sea breezes, accidently hit upon the best practical solution available to him, and sent patients to convalescent stations established at various places in the area (and thus away from the established malarial habitat\(^3\)). These stations included Croker Island\(^4\), Smith Point\(^5\), Coral Bay\(^6\), Observation

---

\(^1\) During the construction of the Panama Canal in 1898.


\(^3\) See for a discussion of malaria in Melanesia G.C. Parsonson, "Artificial Islands in Melanesia: The Role of Malaria in the Settlement of the Southwest Pacific", *New Zealand Geographer*, vol. 22 No. 1, 1965, pp. 1-21. Parsonson demonstrates that the anopheline mosquito lives under strict environmental conditions and that a fresh sea breeze of 7 to 8 m.p.h. is sufficient to inhibit activity altogether. The average feeding flight of the female anopheles is placed by this author at about 200 yards. By removing convalescent patients to other areas, McArthur unwittingly took them from the habitat zone where the malaria might be reinforced by additional infections.

\(^4\) Leichhardt, op. cit., p. 432.

\(^5\) Earl, op. cit., p. 91.

\(^6\) Brierly, op. cit.
Cliff\textsuperscript{1}, and Spear Point\textsuperscript{2}. The remains of the stations at Coral Bay and Spear Point were located during fieldwork but were not excavated.

Apart from malaria the garrison suffered continuously from a number of other ailments. Ophthalmia caused perpetual distress, and scurvy and diarrhoea occurred frequently. One case of cholera was recorded, and a number of other diseases reported. When the settlement was finally abandoned one return showed that of an original garrison of sixty-four, only thirty-seven men were evacuated. Of the others, fourteen had previously been relieved because of ill-health and thirteen had died\textsuperscript{3}.

* * * * * * *

In a garrison so small, personality conflicts were inevitable and often grew out of all proportion to their causes. Nevertheless they had a disruptive effect on the administration of the settlement and occasionally impeded its progress.

In the first few months of the settlement hostilities flared between Bremer and John Armstrong, who had been appointed as botanist and gardener at Port

\textsuperscript{1} Earl, op. cit.
\textsuperscript{2} McArthur to Admiralty, 22 June 1842. Printed in Copies or Extracts, p.37.
\textsuperscript{3} A.M. McIntosh, "Early Settlement in Northern Australia, Part II", Medical Journal of Australia, April 5, 1958, p.17.
Essington. Armstrong wished to pursue the scientific side of his appointment, but Bremer, naturally concerned with the immediate wants of his garrison denied any knowledge of the botanical collecting aspect of Armstrong's position (although it had been specifically stated in Bremer's instructions). After Bremer left the settlement Armstrong's dissatisfaction continued with McArthur, and in July 1840 he refused to continue working in the gardens, and eventually left the settlement in November 1840, going to Timor from whence he wrote complaining bitterly of the selfishness, pride and ignorance which were the predominating rules by which Port Essington was governed.

When Bremer returned to Sydney in July 1839 the Sydney Morning Herald and the Australian printed long and flattering accounts of the settlement and its progress. In May the following year the Monitor printed a five thousand word letter purporting to come from residents at Port Essington who signed themselves Paul Pry and Quite Correct and who launched a bitter attack upon these earlier reports. "We cannot of course

3 Armstrong to Aiton, 7 December 1840. Armstrong Papers 1837-40, op. cit.
4 Sydney Morning Herald, 10 July 1839; Australian, 20 July 1839.
judge”, they wrote, “of the appearance Victoria presented to the admiring eyes of the Alligator’s [crew] as they were about quitting these “delightful shores”; but on a closer view we can safely answer that the idea of a village, and especially a considerable one, would not, by many be easily conceived - “twenty four cottages!” (kennels) “with gardens!” and “all comfortable”; excessively so! particularly during the late hurricane, when they all came tumbling about the ears of their occupants”.

From here the dispute passed into the pages of the Nautical Magazine which published an anonymous refutation of the adverse newspaper report which the writer attributed to officers of the Britomart. Owen Stanley, the captain of the Britomart, privately accused John Gilbert, the naturalist, who was at Port Essington at this time, of writing this article, which said Stanley, imputed neglect of duty on the part of himself and his officers. In consequence, Stanley wrote to the Nautical Magazine, not denying that his officers had been responsible for the original letter, but giving total support for the sentiments expressed in it and reiterating them at some length, concluding that should the government wish to retain Port Essington then they should make it a penal settlement, if severity

1 Sydney Monitor and Commercial Advertiser, 4 May 1840.
of punishment were to be the object in view\textsuperscript{1}.

Such publicity of course did the settlement considerable harm at a time when the government was attempting to open land leases there, and Bremer\textsuperscript{1}, considerably upset, wrote to Chambers, captain of the *Pelorus* which was still at Port Essington, demanding that he swear that he had no knowledge of the letter\textsuperscript{2}. As has been seen, Chambers was apparently innocent of the charge, but the basis for Bremer's suspicions was another long feud which took place throughout the period the *Pelorus* was at Port Essington (late 1839 to March 1841).

When Bremer had been unable to return to Port Essington in 1839 he had ordered the *Pelorus* to resort there with the supplies which were urgently required by the garrison, and that ship had been subsequently wrecked in the hurricane. This, reported Earl, was the cause of much discontent, as the ship had been about to return to England, and the officers held Bremer responsible for their misfortune\textsuperscript{3}. In another letter, Earl complained of the want of fixed government, stating that since Bremer's departure, Kuper, Bremer's son-in-law

\textsuperscript{1} Nautical Magazine and Naval Chronicle, 1843, pp.662-665. The letter is signed "An Officer in H.M. Navy", but can be ascribed to Stanley with reasonable certainty.

\textsuperscript{2} Bremer to Chambers, 2 December 1840. Recorded in "Journal of the Proceedings of Commodore Sir J.J. Bremer, Commander in Chief, East India Station 17 January 1840 - 30 June 1841". Adm. 50/262.

\textsuperscript{3} Earl to Washington, 13 July 1840. Archives of the Royal Geographical Society, London.
and captain of the Pelorus had "taken the reins out of McArthur's hands on the plea of being senior officer".  

In January 1840, Bremer despatched Captain Chambers in the Alligator to Port Essington from Trincomalee with orders to take command of the Pelorus after handing over his ship to Kuper, and to take his further orders from Kuper. These orders were quite explicit, instructing him that although the garrison was placed on the books of the Pelorus for purposes of victualling, he was not to interfere with the garrison under McArthur's command, and was to offer every assistance to the settlement. This Chambers did not do, claiming that as senior officer at Port Essington he was the first authority in the place, and authority vested in McArthur by Gipps gave McArthur no authority over Chambers, nor the naval marines in the settlement. The long correspondence between the two reflects this basic conflict over a number of extremely minor issues. But Chamber's destructionist policy in conjunction with McArthur's blind adherence to regulations seriously impeded the progress of the settlement and the repercussions of the tension between the two unsettled the whole garrison.

3 Kuper to Chambers, 18 March 1840. Chambers Papers, op. cit.
4 Chambers Papers CHR/23, CHR/24, op. cit. passim.
Eventually the dispute was laid before Sir Gordon Bremer, who in December 1840 wrote to Chambers reiterating the instructions he had been given and stating that McArthur was in complete command of the garrison "and must not be interfered with, but assisted in every way". It is possible that Chambers did not receive this letter, for on 17 March 1841 he sailed from Port Essington, refusing to leave behind the brickmaker, and also refusing to disclose his destination to McArthur.

Although Chambers appears to have been in the wrong in this instance, McArthur's untractable personality seems to have been unsuitable for the post he commanded. Nor was this instance isolated. In 1848 he called on Owen Stanley to adjudicate in a dispute between himself and Lambrick, and Huxley wrote that although there were only five officers in the settlement "there is as much petty intrigue, caballing and mutual hatred as if it were the court of the Great Khan".

Such passions were not the sole prerogative of the officers however. Leichhardt recorded that on reaching Port Essington, and announcing that Gilbert had been speared to death on the journey, an unnamed marine broke

---

1 Bremer to Chambers, 2 December 1840. "Journal of the Proceedings of Commodore Sir J.J. Bremer..." Adm.50/262. It was at this point that Bremer taxed Chambers with his part in the Monitor letter.
2 McArthur to Gipps, 3 September 1841. Enclosed in Gipps to Stanley, 3 September 1842. C.O.201/323.
3 Stanley to McArthur, 13, 14, 15 November 1848. Hydrographic Department. SL 15F.
4 J. Huxley (ed.), op. cit., p.149.
down in despair, for he had volunteered to go to Port Essington with the explicit intention of killing Gilbert when the latter arrived there for having seduced the marine's sister\(^1\).

If the man survived the rigors of the following years he must surely have expiated his guilt. The loneliness of the isolated settlement meant long hours of boredom, and Port Essington can be seen as a microcosmic example of the situation which was repeated a hundred times in the early history of Australia - those artificial societies that gave rise to the Australian legends of hard-drinking and mateship. McArthur tried to curb drunkenness in the settlement, and felt no compunction at sentencing marines to seven days in irons on bread and water for being drunk and fighting\(^2\), but the substitutes he offered for entertainment and relaxation - a theatrical performance\(^3\), a regatta, athletics\(^4\), were perhaps poor substitutes for those who wished to escape their banishment in a bottle of rum. The harmonica reeds

\(^{1}\) Leichhardt, op. cit., p.431.


\(^{3}\) "Cheap Living" was performed by the garrison on 24 August 1839. "The Journals of B.F. Helpman", (ed. E.M. Christie) Public Library of Victoria, typescript, MS. 6171, entry for 24 August 1839.

\(^{4}\) "One man, only three weeks ago, undertook the pedestrian feat of gathering one hundred stones placed a yard apart in an hour. He accomplished it in 54 minutes". McArthur to Gipps, 3 September, 1841. Enclosed in Gipps to Stanley, 3 September 1842, C.O.201/323.
recovered in the excavations bear testimony to the simple entertainments to be had living in the Australian bush, and the growth of Australian bush ballads from the traditional songs of England are readily understood in conditions such as those at Port Essington. There can have been little relevance in the news that the Bishop of York had been thrown from a horse, but was feeling better, or even that in France Ledru Rollin had been removed from office and that other members of the Republic were "tittering"¹, in a settlement which years before, had been so short of supplies that all the men were barefooted², and dressed "almost entirely" in cotton cloth purchased from the Macassans³.

Any fears that the Aborigines might be hostile towards the garrison were quickly dispelled and the two races lived harmoniously throughout the lifetime of the settlement. This can be attributed to the work that Barker did at Raffles Bay, to the fact that the Aborigines were accustomed to the visiting Macassans and the effects which that contact had had upon them⁴, and by the deliberate policy of pacification which was adopted by the British at Port Essington. Although the garrison hunted the kangaroo and wallaby, fished and ate shellfish⁵,

¹ Brierly, op. cit. Entry for 16 November 1848.
² McArthur to Gipps, 2 November 1840. Printed in Copies or Extracts, p.16.
they were never of sufficient numbers to threaten the economic basis of Aboriginal life. Indeed, to some extent the Aborigines appear to have supplied the settlement with foodstuffs, collecting shellfish, turtle and the hearts of the cabbage tree palm for the garrison, although they could never be induced to work in the settlement for more than several days at a time.

However the Aborigines were eager for the goods that the British brought with them, particularly metal, cloth and tobacco. Sweatman recorded that 'every child that can walk has a pipe in his gills and I have seen men get absolutely intoxicated on smoke alone'. Sweatman felt, however, that they had not adopted the European vices as much as might have been expected, and were not very fond of liquor. The prevailing attitude of those who wrote about the Aborigines at Port Essington was that they were naive, fun-loving curiosities, and even McArthur, who was well-disposed towards them, on several occasions expressed amusement when they exhibited the human emotions of kindness, sympathy or humour.

McArthur's policy towards the Aborigines, as in other things, was governed by his instructions and regulations. A good deal of petty pilfering took place throughout the lifetime of the settlement and whenever offenders were located they were punished. Usually this took the form

---

1 Sydney Morning Herald, 21 June 1840.
2 Sweatman, op. cit., p.272.
3 See, for example, McArthur to Bremer, 3 September 1841. Printed in Copies or Extracts, p.31.
of solitary confinement for a night, which seems to have been considered greater punishment than flogging by the Aborigines. One point in McArthur's conflict with Chambers was when the latter had an Aborigine flogged without first informing McArthur, who was distressed not by the act, but rather because it undermined the idea of authority vested in himself alone, by which the concepts of British justice might be inculcated in the indigenous people. To some degree McArthur succeeded in this policy and he recorded an incident where a wronged man came to him demanding justice. The clearest example of McArthur's attitude to the task of bringing European law to the Aborigines came in 1847, when the single occurrence of bloodshed between the races took place. Two native men and a boy had stolen from the settlement, and Sergeant Masland was sent across the harbour in a boat to arrest them. The arrests were made, and the goods recovered, but returning to the settlement in the evening the prisoners freed their bonds and dived overboard. The boy was recaptured, but after vainly attempting to recapture the other two, and calling upon them to "halt in the name of the Queen" one of the men was shot dead. McArthur sent Masland to Sydney to stand trial for murder, where he was exonerated.

2 ibidem.
3 Brierly, op. cit. Entry for 4 November 1848.
4 ibidem.
appears to have been less concerned with the loss of life than with his own personal record, and noted "It is to myself peculiarly painful as I have been want to look back with satisfaction on the years during which it has been my gratification to say 'No blood has been shed'.

The influences of each group upon the other remained superficial. Clothes were distributed to cover the nakedness of the Aborigines but McArthur reported that these always disappeared immediately, presumably traded into the interior together with iron, in exchange for stone weapons and implements for which no local materials were available on the coast. In this they were continuing a practice begun with goods obtained from the Macassans.

From the archaeological evidence recovered from the excavation of the two Aboriginal middens near the settlement there is some evidence that the immediate region became a focus for the local tribe and that they became perhaps more sedentary than they were already. The analysis of glass implements illustrates the degree to which they became conversant with this new and ideal raw material for making implements, and a mention is

---

1 McArthur to Owen, 13 October 1847. Archives of the Royal Marines, Portsmouth.
2 McArthur to Gipps, 2 November 1840. Printed in Copies or Extracts, p.19.
3 Stewart recorded Malay and European metal objects in a bark shelter in the interior of the Cobourg Peninsula in 1839.
4 Nautical Magazine and Naval Chronicle, 1842, p.88.
made of the blacksmith making iron spikes with which to
tip their fishing spears', replacing, presumably, wooden
prototypes. The lasting legacy of European contact,
however, was as in other places, disease. Although no
records are extant, it is reasonable to suppose that
the Aborigines did not escape the malaria epidemics
which beset the garrison. Previously both the habit of
burning, and a semi-nomadic life must have reduced to a
minimum any malaria introduced by Macassans. There is
some evidence of venereal disease, and it was also
recorded in the garrison, so that it was almost
certainly transmitted from this source to the Aborigines.
Small-pox was known to them when the Europeans arrived
in 1838 and was probably a result of Macassan contact,
and later in the century this disease reduced an
estimated two hundred Aborigines on the peninsula to
twenty-eight. McArthur reported in 1841 that the
Aborigines had suffered severely from catarrh, chest
complaints and ophthalmia.

As might have been foreseen by the experience of

1 McArthur to Chambers, 29 October 1840. Chambers Papers,
CHR/23, op. cit.

2 J. MacGillivray, Narrative of the Voyage of H.M.S.

3 Bremer to Beaufort, 7 December 1838. Hydrographic
Department. In Letters, B.798.

4 S.R. Robinson to A.W. Howitt, 8 June 1880.
Correspondence in possession of Mrs N.H. Walker, Lakes
Entrance, Victoria.

5 McArthur to Bremer, 3 September 1841. Printed in
Copies or Extracts, p.31.
Raffles Bay, any intended interception of the Malay
trepang industry never took place. McArthur referred
to this in 1842, by which time any real hope of
establishing a commercial port via this avenue was gone.
However the Macassans visited the settlement each year,
partly for protection from the Aborigines, with whom
there was occasional bloodshed and partly to carry on
minor trading with the garrison. This consisted of
some poultry, cloth, salted fish, rice, sugar, mats,
baskets and Chinese earthenware. From the amounts of
this last item recovered in the excavations it is
doubtful if all the Chinese pottery in the settlement
came from this source, and it is preferable to see it as
the archaeological expression of a reasonably large
(given the size of the garrison) trade carried on with
the settlement by private traders with their bases either
in the Dutch ports of the Archipelago or from Singapore
or Hong Kong. Few precise details of these traders are
extant and there appears to have been only one
continuous visiting trader, Earl’s friend d’Almeida who
visited the settlement annually from Singapore, from

---

1 McArthur to Stephen, 20 September, 1842. Printed in Copies or Extracts, p.38.
2 See for example McArthur to Gipps, 12 May 1840. Printed in Copies or Extracts, p.13.
3 Brierly, op.cit.
4 Stokes to Gipps, 20 December 1841, in Barrow to Stephen, 7 December 1842 (Enclosure A). Printed in Copies or
   Extracts, p.27, p.32.
5 G. Windsor Earl, Enterprise in Tropical Australia, p.67.
1842 to 1848.

Throughout the period of his tenure as Governor of N.S.W. Gipps remained strongly in favour of the retention of Port Essington, and as early as 1840 he put forward a proposal for exploration for a land route to the place. The explorers Edward Eyre and Charles Sturt were interested in undertaking such an expedition and put forward a proposed scheme for the journey, but since the estimated costs were £5,000 the proposal was not adopted. The idea was not forgotten, however, and in September 1843, the Legislative Council of N.S.W. set up a select committee to enquire into the feasibility of an expedition to find an overland route. Evidence was taken from a number of people, including Sir Thomas Mitchell and Earl, who was in Sydney at this time. Earl convinced the committee that Port Essington might yet become a flourishing entrepot, and the Sydney Morning Herald came out in strong support for the scheme during the proceedings. The advantages to be derived from an overland route, said this newspaper, included obviating the dangerous sea passage through Torres Strait, opening up a ready supply of cheap labour from the north, and providing the means of exporting horses, cattle and possibly even sheep to India, particularly if the England-India steam route were to be extended to Port Essington.

1 Gipps to Darling, 28 September 1840. C.O.201/299.
2 Gipps to Stanley, 7 December 1843. H.R.A.1, xxiii, pp.245-247.
3 Sydney Morning Herald, 12 September 1843.
The findings of the select committee were favourable to an attempt being made, and the Legislative Council asked for a vote of £1000 to put the plan into effect. However the depression of the early 1840's allowed no money for such expeditions, and Gipps reluctantly refused, but immediately wrote to the Colonial Office asking their advice. The reply was that the project might be approved when sufficient funds were available.

In October 1844, Gipps wrote to Stanley enclosing a second proposal for an expedition to Port Essington from Eyre, which created some conflict with Sir Thomas Mitchell, who had already offered (and virtually claimed the right) to lead any official expedition. In passing, Gipps noted that a gentleman named Leichhardt was preparing to lead a small private expedition from Moreton Bay to Port Essington. The story of that epic of Australian exploration must be passed over here, but the party left Moreton Bay in September 1844 and had been given up for lost when in December 1845 McArthur was surprised by the arrival of "a thin, spare, weatherbeaten and bent down man, wearing a long beard and well worn habitments". Leichhardt wrote, "I was deeply moved at finding myself again in a civilized

1 Gipps to Stanley, 7 December 1843. H.R.A.1, xxiii, pp.245-247.
2 Gipps to Stanley, 24 October 1844. H.R.A.1, xxiii, pp.50-51.
3 McArthur to Owen, 26 November 1845. Archives of the Royal Marines, Portsmouth.
society, and could scarcely speak, the words growing big with tears and emotion. And even now, thinking that I have been enabled by a kind providence to perform such a journey with so small means, my heart sobs with gratitude within me"\(^1\).

\(^1\) Leichhardt, op. cit., p. 429.
CHAPTER 9.

DENOUEMENT: SUCCESS OR FAILURE?

On 10 June 1849, Grey wrote to Fitzroy informing him that Port Essington was to be abandoned, since it had failed to realize the advantages expected from its formation. On 12 November the news reached the forlorn garrison when the Maecander arrived to expedite the relief, and was met with much rejoicing. The settlement was destroyed by fire, as the archaeological evidence has demonstrated, and Captain Keppel related that this was done on orders to prevent any re-use of the buildings. On 1 December 1849, led by the band, the garrison marched to the jetty for the last time and embarked for Sydney. Unimpressed by the pomp and circumstance, the Aborigines scavenged among the ruins, while McArthur turned his back on eleven years in the Australian tropics.

The earlier chapters have outlined the reasons given for the formation of the settlement at Port Essington and the ways in which these failed to come to fruition, and need not be elaborated here. Similarly, speculations on whether Port Essington could ever have

1 Grey to Fitzroy, 10 June 1849. C.O. 202/56.
3 ibidem, pp.492-3.
succeeded are historically futile. If Port Essington had had another Raffles, if the administration and finance of the settlement had been more efficient, if the Anglo-Dutch treaties had been better implemented in practice, are all questions which are not the true domain of the historian. One fact remains. In the terms outlined in the previous chapters, of the overriding political considerations given to drawing a ring-fence about the Australian coastline, then Port Essington was a total success. The question is not whether other powers had designs on Australia by the late 1830's, although there are indications that the French at least were interested, but rather that the British government thought they did.

Port Essington, then, can be seen as a successful political manoeuvre which extends Blainey's concept of the limpet ports of the 1820's well into the 1840's. That it lingered beyond 1845, by which time the French threat had diminished with France transferring its interests to the Pacific, is best explained by the problems of communication which plagued the settlement from the beginning. A second reason was the lingering importance of a northern land base for the surveying voyages which were carried on in northern Australian waters between 1837 and 1849. This fact was recognized before the expedition left England in

1 G. Blainey, The Tyranny of Distance, ch. 4, and esp. pp.82-96.
1838\(^1\), and was alluded to throughout the lifetime of the settlement\(^2\). In addition, Port Essington did prove a haven for some shipwrecked crews. In 1841 the crew of the Montreal reached the settlement\(^3\), and in 1843 the survivors of the Hyderabad and Coringa Packet arrived in Port Essington\(^4\). In April 1846 the Heroine struck a reef and foundered on a voyage to Port Essington. The survivors were carried to Port Essington in the Enchantress and Sapphire\(^5\). In general, however, the settlement was too far from the Barrier Reef, the cause of most disasters.

Amongst the survivors of the Heroine who reached Port Essington was a Roman Catholic Priest, Father Angelo Conflationieri, who had embarked with two lay brothers to being missionary work amongst the Aborigines of northern Australia. Despite the loss of

---

1 Barrow to Bremer, 30 January 1838. Adm. 2/1695.
3 Stanley to Beaufort, 1 November 1844. Hydrographic Dept. SL.15F.
both assistants and all his belongings Don Angelo
determined to continue his work, and given every
assistance by McArthur and the garrison he quickly
learnt the Aboriginal dialect in the area and went to
live at Black Point where he became the first
missionary in the north. Despite his devotion he seems
to have had little success with the Aborigines and two
years later died, presumably of malaria. The pathos of
his hardships at Port Essington was reflected in the
account of his death given by MacGillivray who
recounted how in his final delirium he died denying
the existence of God.

During his brief time at Port Essington Father
Confalonieri travelled over much of the Cobourg
Peninsula, mapping and recording Aboriginal tribal
distributions and compiling a vocabulary of the local
dialects. He also translated parts of the New
Testament and prayers into the language of the people
with whom he lived. The vault in the cemetery at
present inscribed with the name of the German missionary
is thought to contain his remains (see chapter 2).

For McArthur, the perfunctory note of thanks which

---

1 Pottery and glass fragments located approximately
100 metres south-east of the present Ranger's house,
presumably mark the site of his house.
2 John MacGillivray, Narrative of the Voyage of H.M.S.
3 Father John Flynn, Northern Gateway (Sydney 1963),
p.48.
he received from the Admiralty could have been but small consolation for the apparently wasted years he spent at Port Essington. Yet under his guidance the tiny outpost continued to exist within, if not with, the hostile environment in which it was placed. The difficulties of his command were ones of distance, discipline and disinterest. These he faced with the only weapons at his disposal, the Books of Regulation and Revelation. If his view was limited, nevertheless by painful trial and error he helped demonstrate the problems of colonial expansion in tropical Australia, and some of the ways to overcome them.

This settlement together with its predecessor at Raffles Bay was responsible for introducing the buffalo which formed the nucleus of the large herds now in the Northern Territory, as well as the Bantang cattle which range over the Cobourg Peninsula. With its experiments in horticulture it pointed up the limited potential of the area for any agricultural development, which even with a hundred years of technological improvement remains largely true today.

Perhaps the most lasting monument to the endeavour of the first Europeans at Port Essington lies in the fact that the settlement provided a base for investigations and observations into a number of fields of natural science, so much so that the Cobourg Peninsula is at present a flora and fauna reserve. Many residents and visitors wrote detailed accounts of

---

the language, customs and habits of the Aborigines so that the port is perhaps the best ethnologically documented area in north Australia¹.

Within the settlement a number of people collected specimens of all forms of natural history from both the land and the sea. Despite Armstrong's protestations about being unable to collect while at the settlement he did manage to send many specimens back to the Royal Botanic Gardens at Kew².

An early visitor to the settlement was John Gilbert, one of Gould's collectors who arrived at Port Essington in July 1840 on board the Gilmore and remained there until the following March. During this time he collected more than two hundred specimens of birds representing ninety species, as well as insects, plants, reptiles, fish and mammals. While at the settlement he demonstrated that the huge mounds in the region (often fifteen feet high and sixty feet in circumference at the base) were, as the Aborigines said, the nest-mounds of the jungle fowl, and not, as King and others had suggested, Aboriginal tumuli. The greatest prize, however, was the discovery of the Gouldian or painted finch (Pheophila gouldiae) which was to become "the most prized example of its group in

¹ Among many others see Keppel, Sweatman, Leichhardt, Jukes, MacGillivray.
the world".

The zoologist John MacGillivray made several visits to Port Essington on board the Fly and the Rattlesnake. While on board the former vessel MacGillivray, and another member of the ship's company Lieutenant Ince, spent four months in the settlement and MacGillivray published an account of a collecting trip undertaken at this time. In addition, the publication of the voyage of the Rattlesnake, undertaken by MacGillivray contained a number of appendices on vocabularies, birds and mollusca collected on the voyage, including specimens from Port Essington. T.H. Huxley was assistant surgeon on the Rattlesnake at this time, but apparently did little collecting at Port Essington. Jukes' account of the voyage of the Fly contained similar appendices. Members of Dumont d'Urville's expedition, as well as Leichhardt also collected in the vicinity of Port Essington. It has thus become a type area for both aquatic and land animals, birds, and insects in northern Australia.

---


2 "Ornithological Excursion to the North Coast of New Holland", *The Zoologist*, vol. 4, 1846.
USE OF THESSES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
ARCHAEOLOGY, AND THE HISTORY OF PORT ESSINGTON

by

F.J. ALLEN

VOLUME I

This thesis was submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in The Australian National University

May 1969
CHAPTER 10

THE USE OF ARCHAEOLOGY IN AUSTRALIAN COLONIAL HISTORY:

SOME CONCLUSIONS

Like any other aspect of the discipline, historical archaeology can justify itself as an intellectual pursuit in the techniques it will develop for the analysis of the artefacts recovered by excavation. For any sense of lasting value, however, it must widen our perspectives of the past. Almost fifteen years ago Harrington observed that excavations on historic sites contributed historical data in considerable quantities but resulted in little history\textsuperscript{1}. The same is true of a considerable amount of historical research dealing only with documentary evidence, and the solution to this lies in the interpretation of the evidence, be it a governor's despatch or a gunflint. The differences in research techniques and aims in archaeology and documentary history are highlighted in this particular field, where both sources of evidence are often abundant but usually meet only on the periphery of each sphere. The differences are apparent: for example, because of the nature of the evidence the documentary historian usually deals with the individual and the particular event, while the archaeologist examines

\textsuperscript{1} J.C. Harrington, "Archaeology as an Auxiliary Science to American History", American Anthropologist, vol. 57, no. 6, pt.1, p.1124.
general trends and "culture". To pursue these sorts of differences can be done ad nauseam and need not concern us here. By now trying to define any archaeology as history or science or anthropology is by and large flogging a dead horse, and archaeologists who limit themselves by a rigid point of view on such matters are denying the fundamental scope of the discipline. The fantastic development of scientific techniques in a dozen disciplines which border archaeology, the socio-cultural emphasis of anthropology, and the written words of those who have lived before us, all demand that the archaeologist will adopt an integrated approach to his subject, modifying his research techniques to any given situation. The prehistoric archaeologist in Australia must use the information of the geologists and palaeobotanists but equally he must attend to the wealth of ethnographic data in a country which less than two hundred years ago was populated exclusively by hunters and gatherers.

In carrying archaeological research into the recent historical past archaeologists have created a new driving force to add impetus to both anthropology and history. Somewhat pathetically, in most instances the cogwheel is spinning but is aimlessly detached from the shafts of either history or anthropology. Of course this is not universally true. Watkins' and

---

1 This is not to say these differences should not be understood. An excellent discussion of these problems can be found in F.T. Wainwright, Archaeology and Place-Names and History (London 1962). See also C.J. Atkinson, Archaeology, Science and History. (Cardiff 1960).
Hume's work on Yorktown's "poor potter"\(^2\) is an excellent example of not only of archaeology widening the perspectives of American colonial history but also correcting the misleading evidence of the documents. The work of Dethlefsen and Deetz\(^2\) on gravestones indicates the contribution historic archaeology can make in an anthropological direction.

In short while one might agree that archaeology per se is not an historic subject which reconstructs history from objects\(^3\), unless the end product of the research is historical (or anthropological) interpretation then the subject is of no value. The use of archaeology as an historical research technique requires the archaeologist's understanding of problems inherent in documentary research, no less than it requires the historian's awareness of the sort of evidence (and its limitations) which archaeology produces. Inferences drawn from archaeological evidence are too often met with horror by those historians whose view is 'if it was not written down then it did not happen'.

The use of documentary sources in archaeology is not new. Walker\(^1\) has discussed their use in Classical and Near Eastern archaeology, as well as in medieval sites\(^2\). What is new is the sort of documentary evidence available and the wealth of this material. In Australian history, for example, there are (as the preceding pages have demonstrated) at least fragmentary references to the social and technological aspects of the settlement at Port Essington. The archaeology of the site has emerged as a different plane of enquiry, used to complement these sources and enlarge the blurred documentary evidence, adding detail to some aspects such as architecture, and presenting a broad picture in other aspects, such as the undocumented technological competence of the garrison. Ideally, then, the archaeologist will not only borrow from the documentary sources but will carry out both the documentary and archaeological research himself. As this work has demonstrated, the use of documentary sources before, during and after fieldwork has assisted and been assisted by the archaeology and chapter 8 has attempted to unify the evidence. For the historical archaeologist to merely excavate, analyse and then hand

---

1 Iain C. Walker, "Historic Archaeology - Methods and Principles", *Historical Archaeology*, 1967, pp.23-34.

2 The subject as well is not new. In 1878 Mr Isaac Fletcher, F.R.C., published in the *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, a paper entitled "The Archaeology of the West Cumberland Coal Trade". Cited by K. Hudson, *Industrial Archaeology*. 
over his material to the historian, who has never been involved with the site or its problems, is the same as a prehistoric archaeologist handing over fieldnotes and finds to another archaeologist to interpret for him - not impossible but entirely unsatisfactory. At its worst in historical archaeology this results in the archaeology and history of a site being written up totally independent of the relationship of one upon the other, and a number of North American sites could be quoted as examples of this practice. This can be seen as the result of conservation and restoration being the basis for much of the work carried out so far. If tourism is to remain the raison d'être of historical archaeology then the result will often be a half-way house to Disneyland, leading not only to the situation where often there is a "desire by some to improve upon history"¹ but also to the total neglect of artefact study and often even the non-publication of the excavated artefacts. Without the self-generation of information within the discipline it cannot develop.

* * * * *

The results of the present enquiry have demonstrated that while the methodological problems confronting nineteenth century archaeology are not inherently different from archaeology in general,

nevertheless the problems of the normal use of established
techniques become intensified after the industrial
revolution. Despite Dollar's doubts on the value of
typological analysis and dating techniques adapted from
other fields of archaeology\(^1\), typology and seriation
of ceramic and glass and metal artefacts from nineteenth
century sites still appear to offer good prospects for
dating unknown sites.

As an example of this it is an interesting
exercise to attempt to ascribe dates to the Port
Essington occupation on the basis of the archaeological
evidence alone. As seen above (chapter 5) one expert
ascribed a date 1830-1860 for the uniform buttons and
insignia. The evidence of the glass seals suggested
the early part of Victoria's reign, and the other
bottle evidence (less conclusive) intimated perhaps the
second quarter of the nineteenth century. The
identifiable ceramics also suggested the period 1830-
1850. Significantly the collection lacked any positive
suggestion of a date outside the period 1820-1865.
On this evidence it would certainly be reasonable
archaeologically to suggest a commencement date for the
settlement of c. 1835. A terminal date appears much
more difficult to establish since this has to be
arrived at on negative evidence, i.e. the non-appearance
of positively late artefacts. However it would again
seem archaeologically reasonable to put this date at
c. 1855-1860. Therefore the excavations at Port

\(^1\) Dollar, op. cit., pp.13-21, 61-62.
Essington do lend authenticity to the use of these dating methods on undocumented sites. They would be precise enough for example to positively identify Port Essington from Fort Dundas (1824-1829) and Fort Wellington (1827-1829) if the geographical locations of these three sites were unknown historically.

One factor not taken into account in this test was the time lag for the diffusion of these English artefacts to Port Essington. Given the historical knowledge of the settlement it is possible to say that in the case of this settlement the diffusion lag was very small, probably of the order of 2-4 years. Additional work on other nineteenth century sites in Australia should clarify whether this is the sort of time lag that might be anticipated as a general principle on Australian sites. Certainly on the historical knowledge of nineteenth century communications this is the sort of time gap that might be expected.

This brief discussion of the archaeological dating of the Port Essington artefacts underlines a point made originally by Walker, that apart from some of the ceramic evidence, the dating of the collection was done on the basis of no real typology at all, but rather from the reasonably precise historical dating of specific examples. The point of this is that the historical archaeologist has at his disposal an excellent technique for off-setting the disadvantages

---

of working with mass-produced artefacts, and provided the information is fed back into any constructed typology (as was attempted with the ceramic analysis, above) it will help refine and verify that typology, in a manner which is denied other branches of archaeological research. Then, for undated sites a reasonably refined method (archaeologically speaking) for dating will be available.

The archaeology of historical sites, used in conjunction with historical evidence does appear to be providing a basis for testing the validity of general archaeological techniques. For example it underlines the potential danger of site sampling techniques widely used in all prehistoric sites. The French wine bottle seals from Port Essington provide a case in point. Given no other evidence it would have seemed reasonable to have interpreted the number of these seals (5 out of a total of 15) as the archaeological expression of trade, or some other significant contact between the French and English. As the historical evidence has shown, however, this is best explained as a single brief encounter, and the excavations by mischance happened to recover perhaps all the French seals to be found at Port Essington.

As Dollar has stressed, interpretations are likely to be made on distorted evidence. Few would deny that archaeology in the recent historical past is

---

1 Dollar, op. cit., passim.
at best a clumsy and costly research technique, but it is one that with diligence can at least be made less clumsy. If Dollar is worried that archaeology at present cannot provide absolute history, then the same holds true for prehistoric archaeology, and perhaps also for documentary history. If the past exists only in the minds of those who are thinking about it in the present and therefore in the interpretations which are put upon it, it must be accepted that we shall never say everything. But this does not mean that we should not say anything.

The potential information which only historical archaeology can provide for the European colonization of Australia is as yet but half realized. It is hoped that in some measure the present work has taken a step towards leaving "those dreary wastes of Colonial Records" to pay some attention to the "humbler sources".

---

1 John Barth, The End of the Road, p.109.
BIBLIOGRAPHY

PRIMARY SOURCES

Historical Records of Australia

Series I, vol. xiii
   xxiii
   xxiv
   xxv
   xxvi

Series III, vol. v
   vi

Parliamentary Papers

1.  Great Britain. Reports of the Colonial Land and
    Emigration Commissioners.
    1840, xxxiii, 613
    1842, xxv, 567
    1842-43, xliii, 3
    1843, xxix, 621
    1847, xxxiii, 809

2.  New South Wales.
    V. & P., Legislative Council, 1843, vol. II.
    Report of the Select Committee of the Legislative
    Council appointed to ascertain the practicability of
    an Overland Route to Port Essington.

CONTEMPORARY NEWSPAPERS

The Australian, 1824-1848.

Colonist, New South Wales, 1834-1840.

Port Phillip Patriot, 1840-1846.

Sydney Gazette, 1824-1848.
Sydney Morning Herald, 1831-1849.

Monitor, New South Wales, 1836-1840.

Nautical Magazine and Naval Chronicle, 1842-1847.

DEPOSITS OF UNPUBLISHED PRIMARY SOURCES

Archives Office of New South Wales


Hydrographic Department, London

B. 1. Miscellaneous Letters. "Remarks on the Most Eligible Routes from Port Jackson to Various Places at Different Seasons".


OD.100 Australia, North West Coast.

Directions by Commander Wickham to Lieut. J.L. Stokes, H.M.S. Beagle, 1841-2.

Description of the N.W.Coast, from Port Essington to Victoria River, with an account of tides etc.


SL. 15g. Miscellaneous Correspondence of Captain C.B. Yule.

Uncat. MS. Letters of Captain G. Wickham of H.M.S. Beagle.

Mitchell Library, Sydney

A109 Alexander Riley, Papers and Documents 1817-1856.

A1269 Despatches of the Secretary of State for the Colonies.
A1438 Midshipman O'Reilly's Log of H.M. Sloop, Pelorus.
A1531-3 Papers of Edward Deas Thomson.
A2002 Journal of Captain Collet Barker.
A2160 Typescript memoirs of Emmeline de Falbe (nee Macarthur).
A3599 Letters and Papers Chiefly from the Correspondence of P.P. King. Lethbridge Collection.
A501-4 O.W. Brierly, "Journal with Sketches, 1846-1849".
B212 C.J. Tyers, Field Book 1838.
B756 W. Scott, "Notes on Aborigines-Port Stephens".
C155 L. Leichhardt, "Journal 1845".
C158 L. Leichhardt, "Expedition to Port Essington 1844-45, Field Book".
C165 William Phillips, "Journal of Expedition with Leichhardt 1844-45".
C292 O.W. Brierly, Watercolour Drawings in M.J. Scott's, "Album of Watercolour Drawings..."
F3/49 B.D.L., "Rough Plan of the course, distance, etc. of the proposed migration of livestock from N.S.W. to Swan River and Port Essington".

National Library of Australia, Canberra

MS.71 Archer Papers.
MS.179 James Wallace, "Journal Kept on Board H.M.S. Alligator".
G743 Microfilm Letters of Owen Stanley 1837-1850.
National Maritime Museum, Greenwich

MS 69/017 CHR/4 Log of H.M.S. Pelorus, 4 March 1840 to 1 April 1841.

CHR/6-25. Papers and Correspondence of Captain Chambers, H.M.S. Pelorus, Port Essington, 1840-41.

NS 60/049 STK/5 Log of H.M.S. Beagle, 25 March 1841-29 December 1841
STK/11 Correspondence of J. Lort Stokes 1841.

Public Library of Victoria

H.16559 C.J. Tyers, "Meteorological Record Kept on Board H.M.S. Alligator, 27th Oct. 1838-25th May 1839".

Public Records Office, London

1. Admiralty

1/72 Commodore C.M. Schomberg to J.W. Croker, 8 September 1829.

1/192 James Brisbane to Croker, 30 November 1829.

1/194 Owen to Croker, 1 October 1829.
Laws to Gage, 30 May 1829.
Darling to Laws, 30 May 1829.
Laws to Gage, 10 July 1829.
Laws to Gage, 6 August 1829.
Barker to Laws, 3 August 1829.
Laws to Barker, 3 August 1829.
Barker to Gage, 12 August 1829.

1/195 Owen to Croker, 30 November 1829.

1/216 Capel to Dawson, 18 July 1835.

1/5339 Vice Admiral Parker to the Admiralty, 10 April 1844.

1/5544 Hope to Barrow, 23 February 1844.

1/5548 Cochrane to the Admiralty, undated.

2/1695 Parker to Stanley, 30 January 1838.
Barrow to Admiralty, 30 January 1838.
Barrow to Bremer, 30 January 1838.
Barrow to Bremer, ditto
Parker to Bremer, ditto
Barrow to Maitland, ditto


53/972 Masters Log of H.M. Sloop Pelorus, 7 April 1837-6 July 1841.

53/1613 Log of H.M.S. Bramble, 1 April 1843-11 Nov. 1843.

53/2859 Masters Log of H.M.S. North Star, 3 March 1843-10 September 1843.

2. Colonial Office

N.S.W.

201/13 201/288 201/359 202/10
144 290 361 11
146 302 370 35
153 303 372 36
155 313 389 42
164 320 420 52
191 323 421 56
256 329 424
257 330 434
264 337 445
266 340
286 351

385/19
386/61

Royal Botanical Gardens, Kew
John Armstrong, Papers 1837-1840. Relating to Armstrong's position as Botanist and Gardener at Port Essington.

Royal Geographical Society Archives, London
Correspondence of G. Windsor Earl to the Society, 1837-1859. Including:
"Specimens of the Language of the Natives of Adelaide, South Australia". Collected 1838.
"Remarks on the fittest Season for Examining the Coasts of Australia", Hampstead, 3 February 1837.


"Notes Respecting Torres Straits, Cape York", Sydney, 17 July 1839.

"Extracts of a Letter from, containing an account of the Proceedings of the Dutch at Timor and Sandal Islands etc.", Port Essington, 9 June 1841.


"Notes to accompany a map of Cambodia," Singapore, 2 May 1851.

"Program of Discovery in the Western Half of New Guinea from 1828 to the present time." delivered to the British Association in 1853.

Letters of Owen Stanley to Captain Washington, 1841.

Lieutenant Owen Stanley, "Sailing Instructions for Timor Laut".

Lieutenant Augustus L. Kuper, "Journal of a Voyage to Timor Laut, the Arru Islands etc. in Her Majesty's Brig, Britomart, March 1839".

Lieutenant P.E. Stewart, "Journal of an Expedition into the interior of the Cobourg Peninsula in May 1839".

Royal Marines Archives, Portsmouth


Port Essington Correspondence, Details of First and Second Detachments.

Typescript, "Services of General George Lambrick, Royal Marines, Kt. S.F. Late A.D.C. To The Queen, 1864-1870".

Admiralty Orders, 1837-1849.
Private Collections

A.W. Howitt  Correspondence between E.R. Robinson and A.W. Howitt (In possession of Mrs N.H. Walker, Lakes Entrance, Victoria).

CONTEMPORARY PUBLICATIONS

Allen, C. Bruce,  Cottage Building: Or Hints for Improving the Dwellings of the Labouring Classes (London, 1849-50).


Anon.,  Copies or Extracts of any Correspondence Relative to the Establishment at Port Essington (London, 1843).


Anon.,  (By a Lady Long Resident in N.S.W.), A Mother's Offering to Her Children (Sydney, c.1841).

Anon.,  A Passage from Sydney Through Torres Straits to Port Essington and Madras (Sydney, 1842).

Anon.,  "Port Essington, Climate and Colonization &c., &c.", South Australian Record, vols. ii and iii, 1840-41.

Anon., "Review of G. Grey's 'Journals of Two Expeditions of Discovery in North-West and Western Australia, during the years 1837, 1838, and 1839'". The Dublin Review, vol. xiii, August 1842.

Anon., "The Straits Settlements, And the Indian Archipelago", De Bou's Southern and Western Review, April 1852.

Backhouse, James, A Narrative of a Visit to the Australian Colonies (London, 1843).

Bennett, S., The History of Australian discovery and colonization (Sydney, 1885).


Daly, Harriet W., Digging, squatting and pioneering life in the Northern Territory of South Australia (London, 1887).

Dampier, William, A New Voyage Around the World (London, 1927, (1697)).


Earl, G. Windsor, *Coast and Convoy Signals for Use During Night or Day* (Sydney, 1855).

The Eastern Seas, or Voyages and Adventures in the Indian Archipelago in 1832-33-34 (London, 1837).


Observations on the Commercial and Agricultural Capabilities of the North Coast of New Holland (London, 1836).


"Notes on Northern Australia and Neighbouring Seas", *Journal of the Royal Geographical Society*, vol. xii, 1842.

The Native Races of the Indian Archipelago (London, 1853).
Ennis, H., "Remarks on board His Majesty's Ship Tamar", Monthly Magazine, August 1825, September 1825, October 1825, November 1825.

Essenhigh, Richard, Article in The Nautical Magazine and Naval Chronicle, October 1846.


Grey, George, Journals of Two Expeditions of Discovery in North-West and Western Australia, during the Years 1837, 1838, and 1839 (London, 1841).

Hodgkinson, Clement, Australia, from Port Macquarie to Moreton Bay; with Descriptions of the Natives, Their Manners and Customs, the Geology, Natural Productions, Fertility, and Resources of that Region; first explored and surveyed by order of the Colonial Government (London, 1845).


James, T. Horton, Six Months in South Australia (London, 1838).


King, Phillip P., Narrative of a Survey of the Intertropical and Western Coasts of Australia, performed between the years 1818 and 1822 (2 vols. London, 1827).

Lang, J.D., Transportation and Colonization (London, 1837).


"Ornithological Excursion to the North Coast of New Holland", The Zoologist, vol. 4, 1846.

McKenzie, Captain, "Observations on making the Passage to the Eastward Through Torres Strait, and the Monsoons in the Timour Sea", Nautical Magazine and Naval Chronicle, March and April 1847.

Mudie, R., The Picture of Australia: exhibiting New Holland, Van Diemen's Land, and all the settlements, from the first at Sydney to the last at Swan River (London, 1829).

Smith, George, Essay on the Construction of Cottages Suited for the Dwellings of the Labouring Classes (Glasgow, 1834).


Weaver, Henry, Hints on Cottage Architecture, being a selection of Designs for labourers' cottages (Bath, 1848).


SECONDARY SOURCES


"The Cornish Round Chimney in Australia", *Cornish Archaeology*, no.6, 1967.


Barrett, C.L., "Ruins of the Far North", Walkabout, 1 September 1940.

Barth, John, Coast of Adventure (Melbourne, 1941).


Beurdeley, M., Chinese Trade Porcelain (Portland, Vermont, 1963).


Campbell, A.J., "Notes on Birds from the Gouldian-Gilbert type-locality", Emu, no.18, 1918.


Christie, E.M., Strange New World: the adventures of John Gilbert and Ludwig Leichhardt (Sydney, 1941).

"Angelo Confalonieri" (typescript, 1943, State Public Library of Victoria).

"Journal of B.F. Helpman, July 1837-May 1840" (State Public Library of Victoria).


Clune, Frank, To the Isles of Spice (Sydney, 1939).


Craig, W.W., Moreton Bay Settlement (Brisbane, 1925).

Curr, E.M., The Australian Race, (Melbourne, 1886-7).


Dawson, R.L., Australian Aboriginal Words and Names (Sydney, 1935).


Elkin, A.P., "Pressure Flaking in the Northern Kimberley, Australia", Man, 1948, no. 130.


Martineau, R.F., "Cut Nails", Birmingham and Midland Hardware District, Reports.


Musgrave, A., Bibliography of Australian entomology 1775-1930 with bibliographical notes on authors and collections (Sydney, 1932).


Pascoe, Crawford, "A Roving Commission" (Melbourne, 1897).


Schafer, C., "La Monarchie de Juillet et l'Expansion Coloniale", Revue des Deux Mondes, 5e Ser., T.II.


Scott, W., "Notes on Aborigines-Port Stephens" (MS. B 756 (Mitchell Library, Sydney).
Searcy A., By Flood and Field (London, 1912).


"Aboriginal Artefacts at Rottnest Island", West Australian Naturalist, vol. 10, no. 5, 1907.


Shenkell, J.R. and Westbury, W., "The Marine Hospital at Fort Saint Marks", Notes in Anthropology, No. 12 (Florida State University, 1965).


Smith, H.G., "El Morro", Notes in Anthropology, No. 6 (Florida State University, 1962).

"Roque 226", Notes in Anthropology, No. 9 (Florida State University, 1963).


Tarling, P.N., Anglo-Dutch Rivalry in the Malay World 1780-1824 (Sydney, 1962).

Searcy A., "By Flood and Field" (London, 1912).


Shaw, J.P., "The Potteries of Sunderland and District, an Appendix", *Sunderland, Durham Museum*.

Shenkell, J.R. and Westbury, W., "The Marine Hospital at Fort Saint Marks", *Notes in Anthropology*, No. 12 (Florida State University, 1965).


Smith, H.G., "El Morro", *Notes in Anthropology*, No. 6 (Florida State University, 1962).

"Roque 226", *Notes in Anthropology*, No. 9 (Florida State University, 1963).


"Historic Archaeology-Methods and Principles" *Historical Archaeology*, 1967.


Wildey, William Brackly, Australasia and the Oceanic Region (Melbourne, 1876).


Additional

Ricketts, Henry, "An Improvement in the Art or Method of Making or Manufacturing Glass Bottles, such as are used for Wine, Porter, Beer, or Cyder" Patent No. 4623 (A.D. 1821). Enrolled Jan. 23, 1822.


Additional

Ricketts, Henry "An Improvement in the Art or Method of Making or Manufacturing Glass Bottles, such as are used for Wine, Porter, Beer, or Cyder" Patent No. 4629 (A.D. 1821). Enrolled Jan. 23, 1822.
ARCHAEOLOGY, AND THE HISTORY OF PORT ESSINGTON

by

F.J. ALLEN

VOLUME II

This thesis was submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in The Australian National University

May 1969