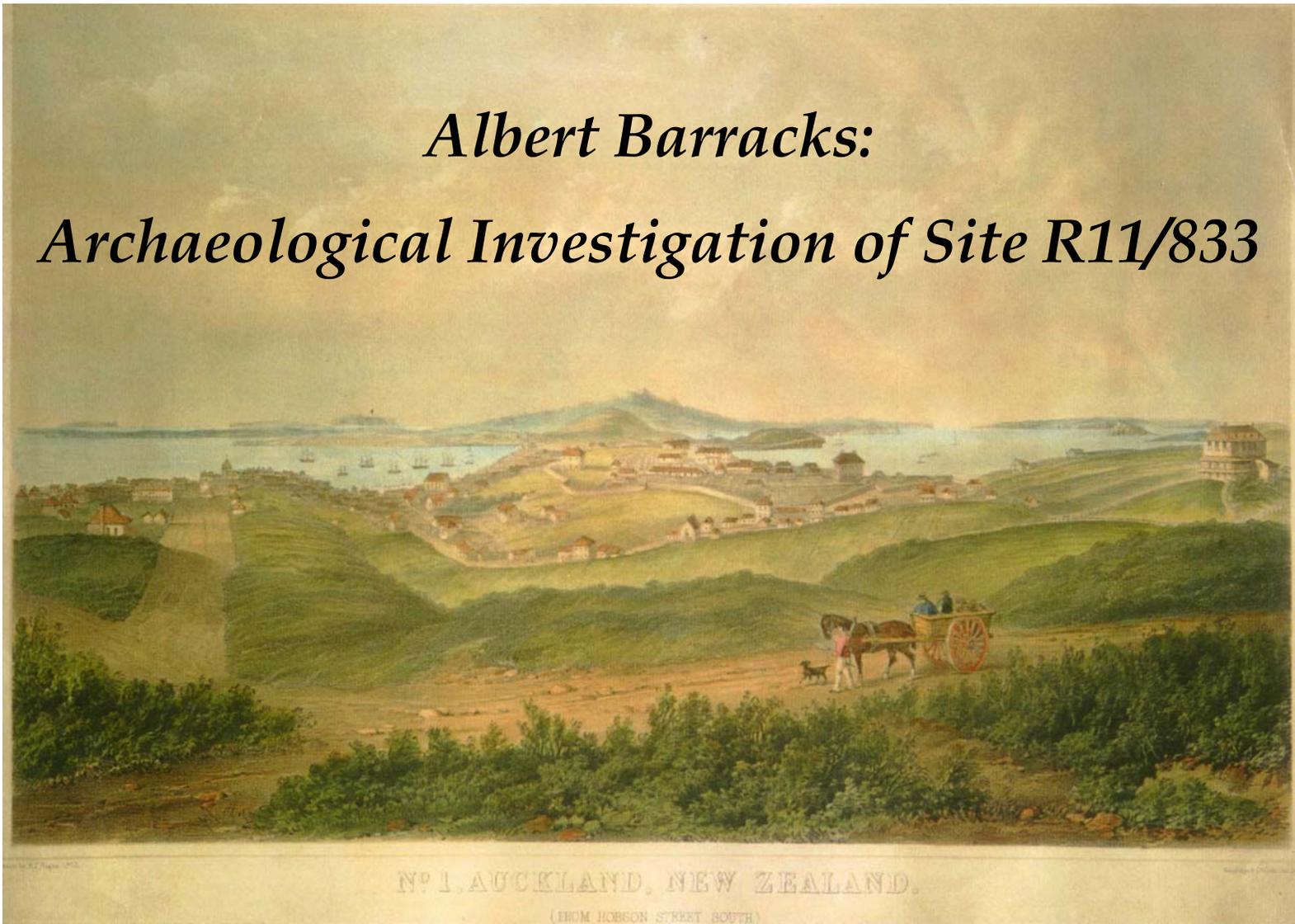


*Albert Barracks:
Archaeological Investigation of Site R11/833*



**EXCAVATION OF THE ALBERT
BARRACKS (R11/833):**

**UNIVERSITY OF AUCKLAND
STUDENT AMENITIES PROJECT**

Prepared for

The University of Auckland

by

Clough & Associates Ltd

in association with

Geometria Ltd

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Cover View of Auckland and the Barracks: Patrick Hogan 1852

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CONTENTS

PART 1. HISTORY AND EXCAVATIONS..... 1

ABSTRACT 1

INTRODUCTION 1

Background.....	1
Contributors.....	2
Public Day.....	3

HISTORICAL CONTEXT 4

Early Auckland.....	4
Defending Auckland.....	4
Barrack Design.....	7
Albert Barracks.....	9
The Role of the Military in the Social Life of Auckland.....	20
The Demise of the Albert Barracks.....	25
Land at the Corner of Alfred and Symonds Streets.....	29

EXCAVATIONS 35

Excavation Methodology.....	35
Features.....	40
Stratigraphy.....	51

DISCUSSION 59

Dating of Features.....	59
Interpretation of Features.....	61
Artefacts and Faunal Material.....	66

CONCLUSION 69

PART 2. ARTEFACTS AND FAUNAL MATERIAL..... 70

CERAMIC ANALYSIS 70

Methodology.....	70
Results.....	71
Distribution.....	100
Comparison with Other Assemblages.....	108

Conclusion	118
STONEWARE 120	
Vessel Types	120
Manufacturers' Marks.....	121
Conclusion	125
CLAY PIPES 126	
Manufacturers and their Marks.....	126
Pipe Styles.....	130
Dating of Features.....	135
Conclusion	138
GLASS 139	
Methodology	139
Results.....	140
Distribution	174
Conclusion	176
MILITARIA 178	
Introduction.....	178
Munitions	178
Shakos	180
Belt Buckles	181
Miscellaneous	182
Buttons	184
Coins	190
Distribution	191
Conclusions.....	193
IRONWORK 194	
Introduction.....	194
Results.....	194
The Workshop – Forge	198
Building Materials	199
FAUNAL ANALYSIS 202	
Introduction.....	202
Methodology	202

Summary of Results	203
Barracks Assemblage	204
General Barracks Area Assemblage	213
Post Barracks Dog Burial.....	213
Discussion.....	214
LEATHER AND ORGANIC ITEMS	216
WOOD, COAL AND CHARCOAL	219
REFERENCES	221
Primary Sources	221
Secondary Sources	223
APPENDIX 1. HISTORY OF OWNERSHIP AFTER THE BARRACKS	229
9 Symonds Street	229
11 Symonds Street	229
2 Alfred Street.....	230
4 Alfred Street.....	230
ACKNOWLEDGEMENTS	232

FIGURES

Figure 1. Site location map	2
Figure 2. Members of the 65th Regiment Re-enactment Group at the public day	3
Figure 3. Location of Albert Barracks, Fort Britomart, 1840 shoreline and other sites referred to	5
Figure 4. Fort Britomart as it existed in 1866, by Henry Wrigg	11
Figure 5. View of Albert Barracks wall and part of the Barracks 1869, looking south from Barracks Hill	12
Figure 6. Albert Barracks 1851, showing men of the 58th regiment under Colonel Wynyard parading in the barracks	13
Figure 7. Detail of Vercoe and Harding 1866 map showing Albert Barracks.....	17
Figure 8. 1871 Frissell map of the Albert Barracks, following the closing of the barracks and removal of some of the buildings	19
Figure 9. Auckland citizens presenting a farewell address to General Sir Duncan Cameron in the square of Albert Barracks, 1 August 1865	22
Figure 10. ‘Waiting for the General’ at Albert Barracks, 1860s	23
Figure 11. The Auckland Grammar School in one of the former Albert Barracks buildings (May 1871 to June 1878), looking south from the corner of Princes and O’Rorke streets	28
Figure 12. Auckland Improvement Commission Plan 1873.....	29
Figure 13. Auckland Improvement Commission Plan 1875 (detail), showing lots for sale and the line of the remaining section of the barracks wall behind the Choral Hall.....	30
Figure 14. Detail of 1866 plan showing area at corner of Symonds and Alfred streets overlaid on 1875 Improvement Commission Plan.....	31
Figure 15. Detail from 1882 Hickson map showing area at the corner of Symonds and Alfred Streets	32
Figure 16. Detail from 1886 ‘bird’s eye view’ map by George Tracey Stevens showing area at the corner of Symonds and Alfred streets.....	32
Figure 17. Detail from 1908 map showing the corner of Alfred and Symonds streets	33
Figure 18. Student Amenities development site prior to the removal of the 19th century buildings, showing their location.....	34
Figure 19. Resistivity meter RM15 in front of the fluxgate magnetometer FM9.....	35
Figure 20. Layout of trenches	37
Figure 21. Clearing the demolition debris with the help of a digger	38
Figure 22. Eastern end of trenches 7 and 9	38
Figure 23. Excavation drawings using drawing frame	39

Figure 24. Excavation area showing trenches and complex numbers	42
Figure 25. Excavation area showing location of features (postholes with concrete footings shown in green).....	43
Figure 26. Aerial view of the excavation area after machine clearing to expose all features.....	45
Figure 27. Remnant of Barracks Wall in Trench 2	45
Figure 28. Wall foundation and Barrel A, looking west, Trench 8	46
Figure 29. Pit A.....	46
Figure 30. Big Pit, north section, Trench 10.....	47
Figure 31. Big Pit North Baulk Trench 9.....	47
Figure 32. Big Pit, north section, Trench 9.....	48
Figure 33. Layer b of Big Pit, Trench 10, looking south	48
Figure 34. Dog burial at bottom of Big Pit.....	49
Figure 35. Later dog burial, complex 156, post barracks period	49
Figure 36. Percussion caps in general barracks layer at N13/E16.....	50
Figure 37. Trench 7 Sections	52
Figure 38. Trench 7 Sections	53
Figure 39. Trench 7 sections.....	54
Figure 40. Trench 9 sections.....	55
Figure 41. Trench 9 sections.....	56
Figure 42. Trench 9 sections.....	57
Figure 43. Trench 10 sections and south section of Northern Extension, showing the Big Pit.....	58
Figure 44. Surviving remnant of barracks wall	62
Figure 45. Excavation area with 1866 and 1908 maps overlaid.....	64
Figure 46. Overlay of excavation area and 1866 map outline on 1908 City Plan which shows the detail of the merchant's house (building outline, paths, steps and fences).	65
Figure 47. Ceramics.....	74
Figure 48. Ceramics.....	77
Figure 49. Ceramics.....	78
Figure 50. Identified transfer-printed patterns	86
Figure 51. Identified transfer-printed patterns.....	87
Figure 52. Examples of unidentified transfer-printed patterns.....	88
Figure 53. Examples of unidentified transfer-printed patterns.....	89
Figure 54. Maker's marks.....	96
Figure 55. Maker's marks.....	97
Figure 56. Stoneware ink containers.....	122
Figure 57. Stoneware	123
Figure 58. Stoneware	124

Figure 59. Manufacturers' marks on stoneware ginger beer bottles.....	125
Figure 60. Frequency of makers' marks	126
Figure 61. Clay pipes	131
Figure 62. Clay pipes	132
Figure 63. Clay pipes	133
Figure 64. Date ranges of clay pipe manufacturers in the fill of the Big Pit	138
Figure 65. Summary of glassware composition.....	142
Figure 66. Large Squat Quart 'Black Beers'	145
Figure 67. 'Capped' bottles (with rim deliberately broken off).....	146
Figure 68. Tall Slender Pint 'Black Beers'	146
Figure 69. Tall Slender Quart 'Black Beers'	147
Figure 70. 'Black Beer' Rims	149
Figure 71. 'Black Beer' and Case Gin Rims.....	150
Figure 72. 'Black beer' bottle bases	151
Figure 73. 'Black beer' bottle bases	152
Figure 74. Case gin bottle bases	155
Figure 75. Case gin bottle bases and whisky bottle top.....	156
Figure 76. Wine, Ring Seal Champagne and Brandy/Cognac	158
Figure 77. Food Products	159
Figure 78. Pickle, salad oil and vinegar bottles	162
Figure 79. Registration marks on pickle and salad oil bottles	163
Figure 80. Salad oil necks and stoppers.....	164
Figure 81. Sauce, vinegar and salad oil bottles.....	165
Figure 82. Aerated water bottles	167
Figure 83. Pharmaceutical bottles	169
Figure 84. Miscellaneous items	171
Figure 85. Miscellaneous items	172
Figure 86. Ammunition.....	180
Figure 87. Shakos.....	181
Figure 88. Belt buckles	182
Figure 89. Buttons, hooks and other implements	184
Figure 90. Knives, handles, spoons, etc.....	185
Figure 91. Military buttons frequency	186
Figure 92. Buttons, showing regimental insignia and numbers.....	187
Figure 93. Armstrong gun.....	190
Figure 94. Distribution of militaria	191
Figure 95. Militaria dating Pit A	192
Figure 96. Datable militaria items and coins in the Big Pit a/b	193
Figure 97. Ironwork	195
Figure 98. Ironwork	196

Figure 99. Ironwork	197
Figure 100. Ironwork	198
Figure 101. Leather and organic items	217
Figure 102. Leather Shoes	218

TABLES

Table 1. Correlation of features and complex numbers	40
Table 2. Ceramic type (entire assemblage).....	71
Table 3. Decorative technique (entire assemblage)	72
Table 4. Ceramic colour (entire assemblage)	75
Table 5. Vessel form (entire assemblage).....	80
Table 6. Unidentified vessel form by colour (entire assemblage)	81
Table 7. Unidentified vessel form by decorative technique (entire assemblage)	81
Table 8. Unidentified vessel form by decorative technique and colour (entire assemblage).....	82
Table 9. Identified patterns (entire assemblage).....	83
Table 10. Vessel form by identified pattern (entire assemblage)	93
Table 11. Dated manufacturer's marks	99
Table 12. Manufacturers' dates of production.....	100
Table 13. Vessel forms by context.....	101
Table 14. Site comparison - total identified vessels	110
Table 15. Site comparison - vessel form as percentage of identified vessels	111
Table 16. Site comparison – percentage of identified patterns	115
Table 17. Site comparison – vessel form by identified pattern (percentages).....	118
Table 18. Minimum numbers of stoneware vessels.....	120
Table 19. Summary of non-diagnostic glass remains	139
Table 20. Minimum numbers of glass items.....	140
Table 21. Frequency of base diameters for Large Squat Quarts.....	143
Table 22. Frequency of base diameters for Tall Slender Quarts.....	147
Table 23. Rim type by excavation area.....	148
Table 24. Distribution of glassware	174
Table 25. Iron artefacts by provenance and number	200
Table 26. Iron artefacts by provenance and weight (kg)	201
Table 27. Mammal remains by provenance	205
Table 28. Minimum numbers of butchery cuts (MNBC) on cattle by provenance ..	209
Table 29. Sheep MNBC by provenance	210
Table 30. Pig MNBC by provenance	212
Table 31. Identification of wood, coal and charcoal samples.....	219

PART 1. HISTORY AND EXCAVATIONS

ABSTRACT

An archaeological excavation was carried out in October/November 2001 at the corner of Alfred and Symonds St prior to the construction of the new Student Amenities Block. Excavation exposed deposits and features relating to the historic Albert Barracks, which occupied this site from 1845 to 1870. The foundations of the original barracks wall, rubbish pits and a large rubbish filled trench aligned to the wall were excavated. An extensive assemblage of artefacts and faunal material was recovered, which provided insights into both military and family life at the barracks and has greatly increased our knowledge of 19th century Auckland. It included some items that have not previously been identified from archaeological sites in New Zealand.

INTRODUCTION

Background

The University of Auckland Student Amenities Project on the corner of Albert and Symonds St (Figure 1) involved the removal of three 19th century houses and complete clearance of the development site. The site, at Nos. 9-11 Symonds St and 2 Alfred St, fell within the area occupied in the 19th century by the Albert Barracks (1845-1870), which extended over what is now Albert Park and the part of the university complex that lies to the northwest of Symonds Street.

As part of the planning process, the University commissioned an archaeological assessment (Clough and Mace 2000). Research into documentary evidence and analysis of early maps and plans confirmed that the site proposed for development included an area originally occupied by barrack buildings and part of the wall of the Albert Barracks. There was considered to be good potential for the survival of archaeological remains relating to the Barracks (and the 19th century houses), as numerous artefacts had been found during demolition of an adjacent historic building

at 13 Symonds St in the 1970s. Archaeological remains have also been recovered from Albert Park (Nichol 1979).

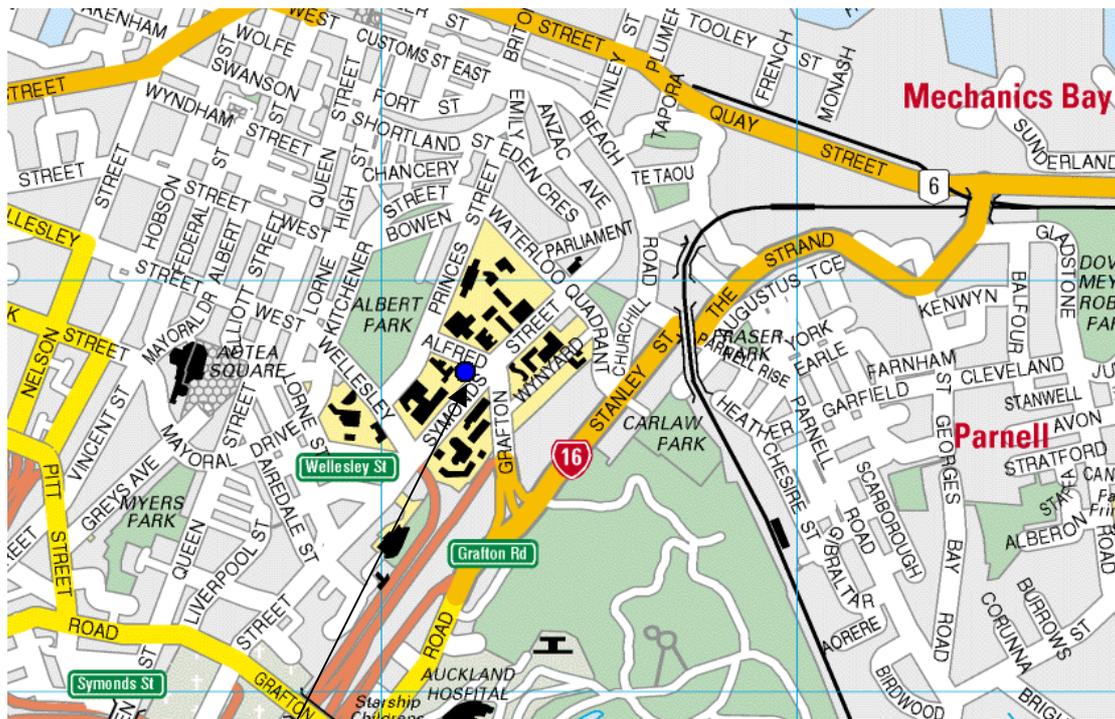


Figure 1. Site location map

Since the development would involve the destruction of any surviving remains of the Barracks, and any subsurface features associated with the three 19th century houses, an authority to modify the site (NZAA site number R11/833) was applied for from the NZ Historic Places Trust under section 11 of the Historic Places Act 1993. The Authority (2001-60) was granted conditional on a full archaeological investigation being carried out, and Clough & Associates Ltd was approved to carry out the work.

The excavation was carried out during October/November 2001.

Contributors

The excavation and post-excavation analysis have been a collaborative effort involving Clough & Associates Ltd, Geometria Ltd, and students from the University of Auckland. Rod Clough directed the project with the assistance of Simon Best and Hans-Dieter Bader as Field Directors. The rest of the excavation team comprised Barrie Bacquié, Don Prince, Charlotte Judge, Janice Fraser, Jonathan Carpenter (site photography), Jennifer Low (finds coordinator), Glen Farley, Adina Gleeson, Stuart

Hawkins, Leith MacDonald, Angela Middleton, Dave Rudd, Colin Sutherland, Ben Thorne, Frank Walsh and Greg Walter.

Contributions to the report were as follows: Hans-Dieter Bader (excavation section and leather analysis); Tania Mace, (historical context); Rod Clough (discussion, synthesis and ironwork analysis); Janice Fraser (ceramic analysis); Colin Sutherland (clay pipe analysis); Jennifer Low (glass analysis); David Rudd (analysis of militaria); Stuart Hawkins (faunal analysis); Sarah Macready (discussion, stoneware analysis and editing); and Rod Wallace (wood, charcoal and coal analysis).

Public Day

In response to the high level of public interest in the excavation, an open day was held with some of the finds on display. Members of the 65th Regiment re-enactment group joined the team for the day, wearing period clothing and equipment to help illustrate life in the barracks.



Figure 2. Members of the 65th regiment re-enactment group at the public day

HISTORICAL CONTEXT

Early Auckland

European settlement in Auckland began in 1840 after Captain William Hobson chose the isthmus as the site of the capital of the new colony. A group of Ngati Whatua chiefs had encouraged Hobson to choose the area they knew as Tamaki-Makau-Rau, or Tamaki of a hundred lovers. As the name suggests, the isthmus had been prized by Maori for centuries. It offered fertile land, abundant fishing grounds and a temperate climate (Stone 2001: 3). It also boasted a valuable portage at Otahuhu where canoes were dragged across a short distance of land separating the Tasman Sea and Pacific Ocean. The area also offered access to the hinterland through the Awaroa Creek leading into the mighty Waikato River (Stone 2001: 2).

Defending Auckland

Prior to European settlement in Auckland, local Maori had erected fortifications on Auckland's volcanic cones for use in times of trouble (Stone 2001: 9). After 1840 fortifications would be built near the centre of the new town by imperial troops and Auckland would become the headquarters of the imperial military forces in New Zealand.

The initial defence for the town of Auckland was provided by Fort Britomart, which overlooked the Waitemata Harbour above Commercial and Official Bays (Figure 3). The site chosen by Governor Hobson was not the first choice of all involved. Major Bunbury, commander of the 80th Regiment favoured a site further inland where the Albert Barracks would eventually be built. It was Bunbury's men who would provide the labour force for the construction of the fort (Stone 2001: 275-6). Bunbury described the fort:

‘The barrack formed two sides of a square, one side, containing two stories, was loop-holed, and was capable of containing two hundred men. The building was of stone, built on a tongue of land separated from the main-land by a broad, deep ditch and parapet. . . On one side of the interior was built an octagonal loop-holed guard room.’ (Bunbury 1861: 133)

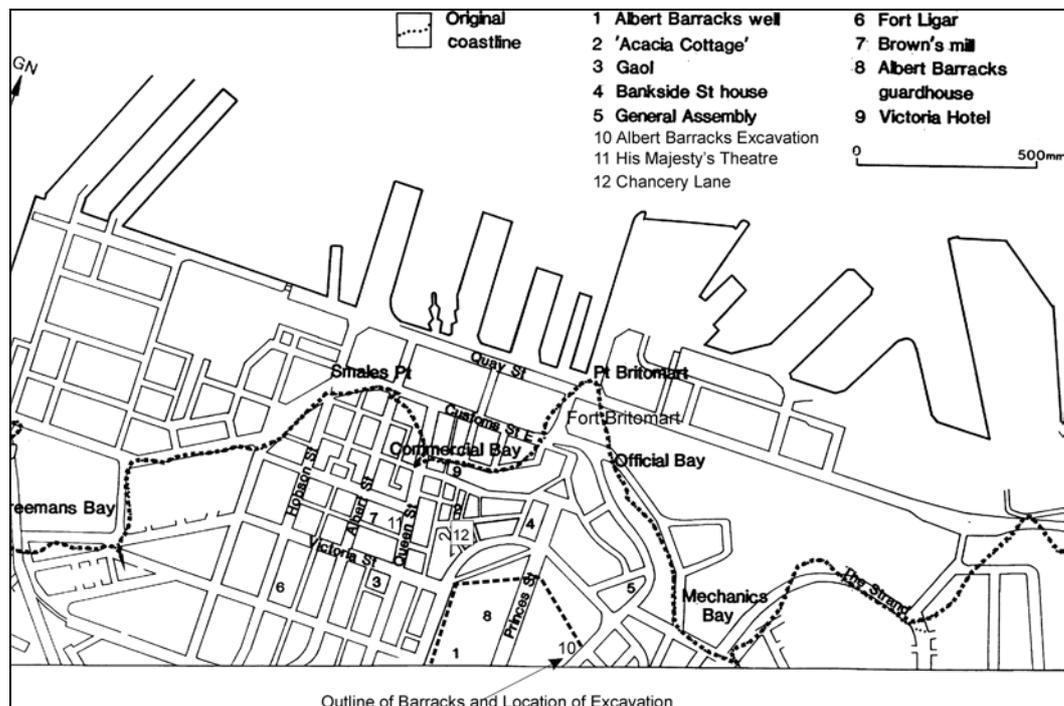


Figure 3. Location of Albert Barracks, Fort Britomart, 1840 shoreline and other sites referred to (after Macready and Robinson 1990: fig. 3)

Other military buildings were erected in nearby Princes Street. The Princes Street ridge was the prime location for official buildings and prestigious commercial premises. This was a fitting location for buildings associated with the headquarters of the military in the colony, and it was close to Fort Britomart. By 1845 Princes Street was graced with the commissariat and ordnance office, military offices and the military hospital. It was also home to government agencies, with the treasury office, survey office and colonial secretary's office also housed on Princes Street (McLean 1989: 53). Many of the military functions located in Princes Street would later be centralised at the Albert Barracks.

Bunbury served as Commander of the Forces in New Zealand from 1841 to 1844, defending a small population that in Auckland was less than 2000 at the start of his command, and barely more than 3000 at the end (McLean 1989). His grand title belied the fact that he had less than 100 troops under his command (Phillips 1966: 71). This small force would soon prove to be inadequate in size.

While the first years of the history of the colony had been relatively peaceful, early 1845 would witness the outbreak of war in the north. Trouble had been brewing in the Bay of Islands. The Ngapuhi chief Hone Heke had signed the Treaty of Waitangi and saw it as a document which guaranteed chiefly authority while also recognising

the Governor's authority. Thus when the British attempted to assert authority in Maori spheres, conflict arose (Belich 1988: 20-21).

Heke protested against government domination by cutting down the flagstaff which held the Union Jack aloft on Kororareka's Makiri Hill. His axe was put to work in July 1844 and twice in January 1845 (Moon 1000: 155, 165, 168). These were provocative acts which exposed the failure of British security in the largest settlement north of Auckland (Belich 1988: 20-21). Troubles were also brewing between settlers and Maori around Wellington (Moon 2000: 171).

Fearing an escalation in hostilities Governor Fitzroy pleaded for military support. In mid-January he wrote to Sir George Gipps, Governor of New South Wales: 'I cannot hope to prevent a desperately calamitous state of affairs in New Zealand, unless supported adequately by the adjacent colonies, and the Mother Country' (Moon 2000: 171). Fitzroy sent the 96th regiment, recently returned from the Wellington region, to Kororareka and the 58th were dispatched from Sydney. However, transport problems delayed the 58th regiment and they would arrive too late to save Kororareka (Moon 2000: 177, 210).

Early on the morning of 11 March 1845 a party of 200 Nga Puhi warriors raided the fortified settlement of Kororareka. The 140 soldiers, sailors and marines stationed at Kororareka, along with around 200 armed residents, failed to prevent the township being looted and burnt and the inhabitants fleeing for Auckland. What had been the fifth largest settlement in the colony was no more (Belich 1988: 36-7). News of the attack arrived in Auckland with the refugees and was met with shock and panic (Moon 2000: 212). Governor Fitzroy summed up the feelings of many when he wrote:

'The fatal destruction of Kororakeka,- a result so startling, so unthought of,- has showed every one in this part of New Zealand that the natives' skill and courage have been much under-rated, and their condition misrepresented.' (*BPPPNZ* no.377: 288)

Meanwhile rumours abounded that Heke was preparing to attack Auckland at the next full moon, which fell on 21 April (*BPPPNZ* no.337: 288).

St Paul's Church at the end of Princes Street was quickly turned into a place of shelter for the women and children of Auckland (Platts 1971: 123). Blockhouses were rapidly erected and an earthwork named Fort Ligar was thrown up on the Hobson St ridge (Platts 1971: 125-6; Thomson 1974: 106).

This did little to appease the fears of some Auckland residents, who were so frightened that they sold their houses for whatever money they could and packed up ready to leave on the next available ship (Platts 1971: 124, 126).

Governor Fitzroy clearly shared their concern. He wrote to Lord Stanley:

‘we shall have to defend all that we hold most dear, without a place of refuge for women and children except a brick church and an ill-fortified barrack-yard. If attacked by moderate numbers we shall beat them off; but if an extensive combination of tribes takes place, awful indeed will be the consequences. On our side we have the consciousness of right, the energy of despair, with every thing at stake, and no retreat.’ (*BPPPNZ* no.337: 288)

On 24 March 1845, the first troops of the 58th regiment from Sydney disembarked at Auckland (Best 1973: 10). They were soon joined by other regiments and together they would fight in New Zealand’s civil wars. Local militia, volunteers and military pensioners would add to the mix of available forces, but the imperial troops would retain a central role in defence through the 1840s, 1850s and 1860s (Belich 1988: 125-6; Rolfe 1999: 2).

Barrack Design

The British Ordnance Board was responsible for all barracks and military lands in the British Empire. Officers of the Royal Engineers were given the responsibility of designing barracks (Douet 1998: 106). They received their instruction at Woolwich and Brompton and in many respects were considered to be better trained than civilian engineers (Douet 1998: 106).

During the first half of the nineteenth century there had been a movement in Britain toward abandoning small barracks and constructing larger barracks surrounded by a protective wall (Douet 1998: 114). This was partially in response to the task which the military in Britain were expected to fulfil. Gone were the days when the enemy came from without. Internal order and control were threatened and the military was required to subdue local uprisings (Douet 1998: 109).

From the late 1830s the War Office became acutely aware of the high mortality rates amongst soldiers as statistics were now being collected. Attempts were made by the Royal Engineers to design barracks which took into account local conditions to provide a healthy environment. Barracks in the West Indies were designed with verandahs and improved ventilation to mitigate the effects of the hot climate (Douet

1998: 120). Colonial innovations in barrack design were also used in British barracks. The verandahs of the West Indies were incorporated into the design of Woolwich Marine Barracks where they served the dual purpose of corridors providing access to rooms and space for drill in bad weather (Douet 1998: 122).

While the buildings themselves might differ, the layout of British barracks followed a general pattern up until the 1870s:

‘The hierarchy of barracks were typically emphasised by linking officers’ quarters symmetrically about a major axis . . . and soldiers’ barracks and stables facing each other across a minor axis’. (Douet 1998: xvi)

The central space, which all the major accommodation buildings looked onto, was the parade ground (Douet 1998: xvi). Here drill was practised and punishments were inflicted on those who ran foul of military rules. In this latter role it served as a very public reminder of the consequences of misdemeanors (Douet 1998: 37). This standard layout appears not to have been followed in the design of the Albert Barracks.

While the layout of British barracks remained relatively constant, there was a new focus on accommodation during the 1850s. The Crimean War provided the impetus for a new examination of military quarters. Florence Nightingale drew public attention to the living conditions of soldiers. While there was no overnight improvement in British barracks during the mid 1850s, there was an examination of barrack planning. The *Barracks Accommodation Report* was released in July 1855. It recommended that dining rooms be provided for soldiers and that married soldiers be provided with separate accommodation. Prior to this the families of married soldiers lived in the barracks along side the rest of the troops with minimal privacy. Bars run by pensioned non-commissioned officers would also be provided to replace the overpriced canteens which had previously served alcoholic beverages within the barracks. It was hoped that these measures would improve the moral tone of the soldier (Douet 1998: 127-8, 139).

The necessity of these and other improvements in British barracks was underlined by a Royal Commission which inspected 162 barracks in England, Scotland, Wales and Ireland between 1858 and 1861. The commission found appalling conditions in many cases which more than explained the fact that the death rate in barrack dwellers was almost twice that of the general population. The public and the press were horrified (Douet 1998: 139-41).

While it is important to examine what was happening in barrack design in Britain the relationship between military architecture in Britain and barrack design in the colonies is not clear. There were some things that were constant. Military organisation was the same here as it was in Britain. However, in practical terms, building barracks in the well settled lands of Britain was a very different proposition from building them in a town that was barely five years old. James Douet in his book on British barracks laments that 63% of barracks in 1847 only had access to water pumped from a well (Douet 1998: 116). While this was a sign of primitive conditions in British barracks, the same could not be said for barracks in New Zealand. There simply was no alternative to well water at the time.

The period during which the Albert Barracks was constructed coincided with the examination and rethinking of barrack design in Britain. It is clear that at least some of the improvements in barrack facilities that were advocated in Britain, were carried out half the world away in the Albert Barracks.

Albert Barracks

The need for barracks on a new site was raised well before events in the north brought increased forces to Auckland. As early as 1842 Bunbury had warned W. Shortland, Colonial Secretary, of the shortcomings of the Fort Britomart site:

‘I beg leave to submit for your consideration the circumstance, that should her Majesty’s Government conceive it expedient to increase the force on this station, the site assigned by the late Governor Captain Hobson will be found insufficient in extent to erect the necessary buildings upon’. (BPPPNZ no.566: 163)

By July 1845 Fitzroy had allocated land on Albert Hill to the ordnance department and a start had been made on the erection of a new wooden barrack building. However, a storm halted progress:

‘New Barracks.- On Sunday last, the weather was exceedingly tempestuous, and towards evening the wind increased, until it became a complete hurricane. The new wooden structure, on the ground lately apportioned to the Ordnance department, for the erection of permanent barracks for a large military force, being but partially enclosed and roofed, and on a spot exposed to the whole fury of the tempest, was razed to the ground’. (*New Zealander* 5 July 1845: 3)

However, it appears that this building was not the first to be erected on the site. A letter to the editor of the *New Zealander* published in late July 1845 stated that:

‘Some few months back, when the cry was the “Maories [sic] are coming,” all hands were set to work with great haste to erect a fortification on Albert hill.’ (26 July 1845: 3)

This may well have been the blockhouse hastily erected ‘on the hill behind Government House’ (Platts 1971: 125-6). By late December the first barrack building had been completed and the *New Zealander* proudly reported:

‘This building is completed and is capable of receiving two hundred men, with most excellent accommodation. – The foundation walls are of scoria with square piers of the same to support the lower floors. The building is of wood, substantially constructed and lined. The external front is eighty-five feet in length, with two wings, each measuring fifty feet. The lower and upper front rooms are each seventy-six feet long, and twenty-two feet in length. – There is a staircase on the western wing, which reduces the lower and upper floors to forty-four feet in length, and twenty-two in width. Under both wings there are most excellent dry cellars, for stores, seven feet high. The kitchen is detached from the main building in the rear. The whole barrack is well planned, and from its situation, will be [a] most healthy residence for the troops.’ (27 December 1845: 2)

In January 1846 divisions of the 58th and 99th regiments arrived from the Bay of Islands and settled into the new barracks (*New Zealander* 24 January 1846: 3).

While the new barracks were put to good use, Fort Britomart continued to house troops (Figure 4). In April 1846 a new basalt building was erected at Britomart Point to house officers stationed at the fort (*New Zealander* 25 April 1846: 3).

In July 1846 tenders were called for paving the barrack yard with scoria and the erection of chimneys at the barracks (*New Zealander* 4 July 1846: 1; 25 July 1846: 1).

Construction of buildings at the barracks continued apace. By late September 1846 the magazine had been constructed by civilian labour under the direction of George Graham of the engineers department. It measured 50 feet by 15 feet (15.24 x 4.57m) and had walls 4 feet thick. A smaller ordnance store had also been built (*New Zealander* 4 July 1846: 3). Six temporary wooden barrack buildings were also under construction. They were large enough to house around 30 men and measured 50 feet in length and 22 feet in width (15.24 x 6.7m) (*New Zealander* 26 September 1846: 3). Construction of a two storey basalt hospital was also underway by the men of the 58th regiment ‘in a manner highly creditable to their industry and skill’ (*New Zealander* 4 July 1846: 3). By late July the following year the hospital was reported to be nearing

completion. It had accommodation for 40 patients and featured 3 wards each measuring 44 feet by 23 feet (13.4 x 7m), along with an eye ward, medicine store, surgery, kitchen and rooms for sergeants and nurses. The other essential feature of the hospital was ‘good Cellarage’ where the alcoholic ‘cures’ were no doubt housed. The hospital was completed with the assistance of the 65th regiment and Maori labour. The *Southern Cross* approvingly noted ‘the cost of erection will be under £1,300, a sum we think exceedingly small for such a building, evincing great economy and good management in the financial department’ (*Southern Cross* 31 July 1847: 3).

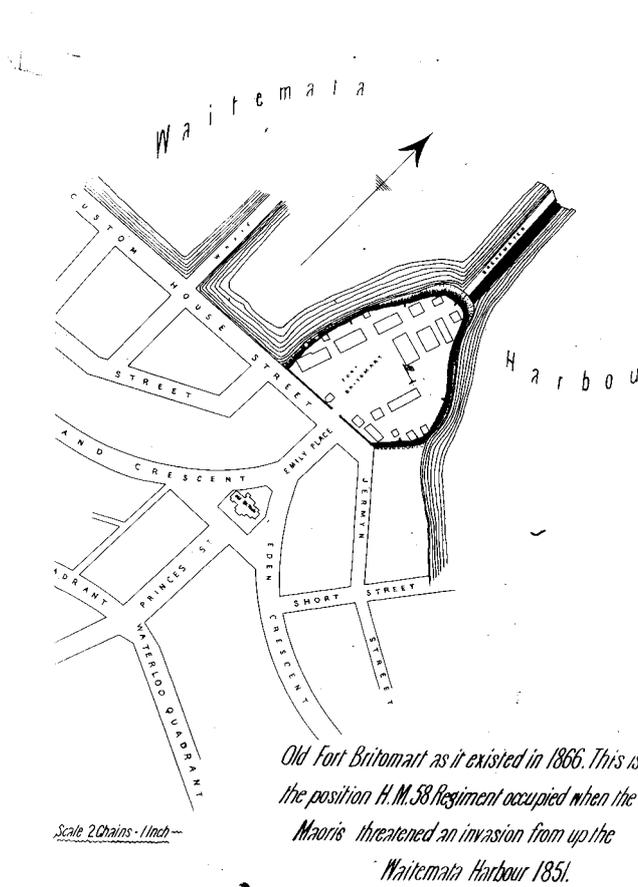


Figure 4. Fort Britomart as it existed in 1866, by Henry Wrigg (Auckland Public Library (APL) Special Collections, NZ Maps 105)

Late in 1846 tenders were called for ‘the performance of Mason’s Work in the Boundary Wall of Albert Barracks’ (*New Zealander* 19 December 1846: 1). This was to be the largest building project on the Albert Barracks site. The wall was constructed from basalt quarried from Mt Eden and formed a defensive barrier against attack (Figure 6). It featured loopholes from which soldiers could fire on attacking forces and enclosed an area of over 22 acres (Stone 2001: 276).



Figure 5. View of Albert Barracks wall and part of the Barracks 1869, looking south from Barracks Hill (photo by Mundy, Auckland Public Library A34b)

Maori would provide the labour for the erection of the wall. In November 1847 Major Marlow, commanding officer of the Royal Engineers, reported that:

‘in consequence of the scarcity of European mechanics and labourers in the colony, and the high rate of wages for the same, I was induced in November last . . . to employ a few of them [Maori] in the works in progress by the Royal Engineer Department. . . I had a party instructed in dressing stone, which, within a few weeks, they accomplished in a very superior manner. (BPPPNZ no.892, Despatch from Governor Grey to Earl Grey 4 May 1847: 52)

They worked from 6am to 6pm and performed a variety of tasks. Some worked in the quarry while others made the mortar and dressed the stones. In addition to erecting the barrack wall they were employed on the hospital and the barrack stores. Their work was highly praised and so were their habits:

‘They are all purchasing European clothing, and regularly meet the clerk of works every Sunday morning, to attend their respective places of worship; every morning and evening they have prayers among themselves.’ (ibid.)

Work continued on the barrack wall in 1847 with tenders being called in September for the cartage of stone for the wall (*New Zealander* 18 September 1847: 1). In 1848 the Maori workers were busy building a large basalt building measuring 45 feet (13.7m) square. This would be the new commissariat offices and stores. The *New Zealander* praised the work that the 130 Maori quarrymen, labourers, masons and

carpenters were doing under the supervision of Mr Graham. The newspaper reported Graham's achievement: 'Out of rough savages he has manufactured a set of civilised mechanics' (5 April 1848: 2).

In addition, the Maori workers also sank the wells for the magazine lightning conductors and three other wells at the barracks (*BPPPNZ* no. 892: 52).

In mid 1848 improvements were made to other buildings with tenders being invited for lining eight buildings at Albert Barracks (*New Zealander* 28 June 1848: 1).

The barracks wall was completed in 1852 with the addition of entrance gates and doors (*New Zealander* 11 September 1852: 1). The barracks now provided a secure place of refuge for the people of Auckland in times of emergency. One Auckland resident recalled that the inhabitants of the city were called by 'firebells, bugles, guns etc., causing a disposition to fly for refuge to the Albert Barracks' (Beale 1937: 39).

By 1853 the town had grown but the Albert and Britomart barracks were still 'the most considerable buildings' in Auckland (Swainson 1853: 31). Albert Barracks was described by William Swainson in 1853:

'The Stores, Hospital, Magazine and Commissariat Offices, are built of scoria. The rest of the buildings are of wood, plain in style, and of a sombre colour. The various buildings, along with the parade-ground, occupy several acres, the whole of which is surrounded by a strong scoria wall'. (Swainson 1853: 31) (Figure 6)

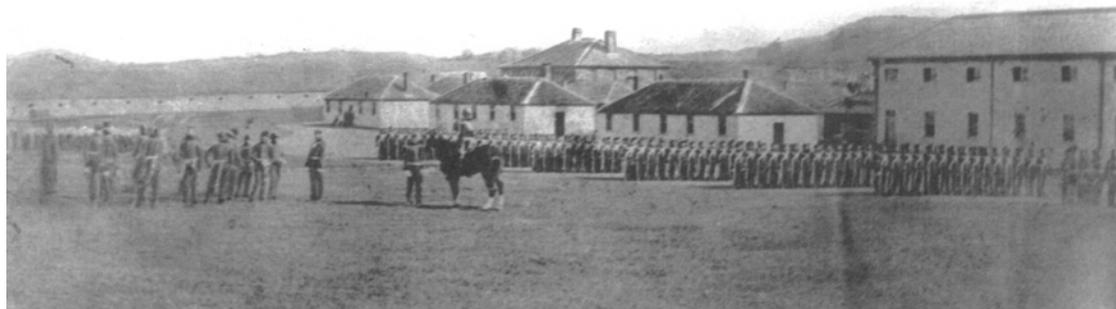


Figure 6. Albert Barracks 1851, showing men of the 58th regiment under Colonel Wynyard parading in the barracks (Auckland Public Library A4458)

The early 1850s saw around 520 imperial troops stationed at Auckland and most of these men would have been accommodated at Albert Barracks. More than 800 troops were stationed in other parts of the colony at the time (*BPPPNZ* no.2719: 17).

The grounds of the barracks were improved by the military cricket club in 1856. In preparation for the upcoming cricket season a section of the grounds was carefully leveled and manicured to form ‘a fine level sward, large enough for a full field, and admirably adapted to the manly sport for which it is designed’ (*Southern Cross* 29 July 1856: 2).

G.C. Beale recalls that the barrack grounds were ‘beautifully-kept’, but the grass was more for the pleasure of the Colonel’s cows than the soldiers (Beale 1937: 24).

Some of the vegetables which fed the troops were grown alongside the barracks on the slopes of Albert Hill. A sketch by P.J. Hogan dated 1852 shows extensive cultivations outside the barrack wall (Main 1884: 20).

In 1863 additional storerooms were built by local contractors. Militia stores were built in brick and additions were made to another storage building. The following year a gunshed was built along with a galvanised iron shed and latrine. Much of this work was undertaken by the firm Coombes & Son (*AJHR* 1865: D-7, 8).

In July 1859 the inadequacies of the magazine at the Albert Barracks were communicated to Governor Gore Browne. Colonel Gold of the 65th regiment wrote:

‘I deem it right to inform you, however, that the large and over-filled Magazine at the Albert Barracks, is not Bomb proof, but only Splinter proof’. (*AJHR* 1860: A-6, 14)

If the Magazine were fired upon, Colonel Gold feared that the result would be:

‘the annihilation of the greater portion of the City and the destruction of the Troops in the neighbouring Buildings.’ (*AJHR* 1860: A-6, 14)

It is not clear whether the magazine was improved and news of its inadequacies was no doubt unwelcome news to the colonial government. The British government had been wanting the colonies to take greater responsibility for the cost of defence. In 1858 the commanding Royal Engineer in New Zealand was advised that Her Majesty’s Government had:

'finally decided that the general charges for *Lodging Officers and Men*, including the maintenance and repair of Barracks, and the construction of additional Barracks as may be required, *shall* be borne by the Colonial Government'. (*AJHR* 1860: A-6, 3-4)

This was bad news indeed for the colonial government. With no barracks for officers except a small building at Fort Britomart, the cost of lodging these ranks was high. Furthermore, the existing barracks in the colony required significant maintenance works and improvements to bring them up to the desired standard (*AJHR* 1860: A-6, 11).

The country would soon witness renewed military activity. Since the end of the Northern War in 1846, New Zealand had experienced a period of relative peace. While there were small scale conflicts in Wanganui and the Wellington region in 1846 and 1847, the troops stationed in New Zealand did not see action again until the 1860s (Belich 1988: 73, 75).

But it was an uneasy peace. In September 1858 E.W. Stafford, Premier, wrote 'Without an adequate Military Force, peaceful relations could not, for any length of time be maintained between the different Races'(*AJHR* 1860: A-6, 5).

By the late 1850s the Colonial Government were becoming increasingly intolerant of Maori independence in the Waikato and Taranaki (Belich 1988: 79). In March 1860 war broke out in Taranaki and this was followed by the Waikato war and a plethora of other campaigns which would continue into the next decade (Belich 1988: 203, 286).

The strength of the imperial force was increased during the early 1860s. By June 1860 the colony had over 2000 imperial troops but because of the outbreak of war in Taranaki, only 181 remained at Auckland (*BPPPNZ* no.2798: 83). In 1864 numbers peaked with over 10,000 imperial troops in the colony (*AJHR* 1870: A-26a, 5).

Meanwhile, conditions at the Albert Barracks were far from satisfactory. In November 1863 the *New Zealand Herald* reported that, upon their arrival, 'the gallant 50th' were 'rushed from a fine comfortable ship to a half provided, half furnished, miserable barrack' (*NZ Herald* 16 November 1863: 2). This was the Albert Barracks.

During 1863 and 1864 the entire adult male population of Auckland was enlisted for compulsory service and received military training. John Barr notes that 'Some of the conscripts remained in the barracks both day and night' (Barr 1985: 100-01). It

appears that a scoria building in the Albert Barracks was used to house militia during the 1860s (Barr 1985: 129). Percy Smith, a volunteer, recalled attending drill each morning before breakfast in the Albert Barracks (Platts 1971: 206-7).

In 1863 the first electric telegraph in the Auckland province was in use. Soon afterwards the first telegraph office was established in a wooden hut just inside the Symonds Street face of the barrack wall. Around 1866 it was transferred to the post office in Princes Street (Barr 1985: 101-2).

Plans of the barracks are rare and the earliest surviving plan showing the layout of the buildings was drawn in 1866 (Figure 7). It shows a row of 29 small buildings located along the northern and eastern boundary of the barracks (two of these within the Student Amenities development site). Some of these may well have been family dwellings for married soldiers. Although marriage was discouraged by the military authorities, soldiers who had married with the permission of their commanding officer were eligible to take their wives and children with them when the regiment headed overseas. The number of wives who could accompany a regiment was limited to six per 100 infantrymen. The selection process was by lot (Burroughs 1996: 172).

Doctor Thomson, surgeon of the 58th regiment, noted in 1853 that there was ‘an aggregate strength of 455 married women attached to the military in New Zealand. Most of them lived in small places detached or away from the barracks with their husbands’ (*BPPPNZ* no.2719: 18).

The building of separate quarters for married soldiers was advocated in the *Barracks Accommodation Report* published in Britain in 1855. Before this they were generally accommodated in the barracks with the men, and often the only separation between the married couple and the rest of the soldiers was a curtain between the beds (Holmes 2001 cited in Fraser 2002). ‘Wives living in the barracks often worked by washing, cooking and nursing the sick, and many regiments saw women as an asset and a way of inducing better behaviour among the men’ (Holmes 2001 cited in Fraser 2002).

At Albert Barracks there is evidence of children living (and dying) at the barracks by 1856. In January the *New Zealander* reported the death of Elizabeth Haslam, infant daughter of Sergeant Patrick Haslam, at the Albert Barracks. Two years later Haslam’s eldest daughter also died at the barracks (*New Zealander* 30 January 1856: 2; 8 May 1858: 3). In May 1858 William Nunnington, only son of Sergeant Nunnington, died at the barracks (*New Zealander* 22 May 1858: 2). The year 1861 witnessed the death of two of the children of George Graham at Albert Barracks and

in 1863 and 1864 two more children are known to have died there (*New Zealander* 4 December 1861: 3; 14 December 1861: 3; *NZ Herald* 2 January 1864: 1, and 1 July 1864: 3). From this evidence it would appear that at least some soldiers' families were residing at the Albert Barracks from 1856.

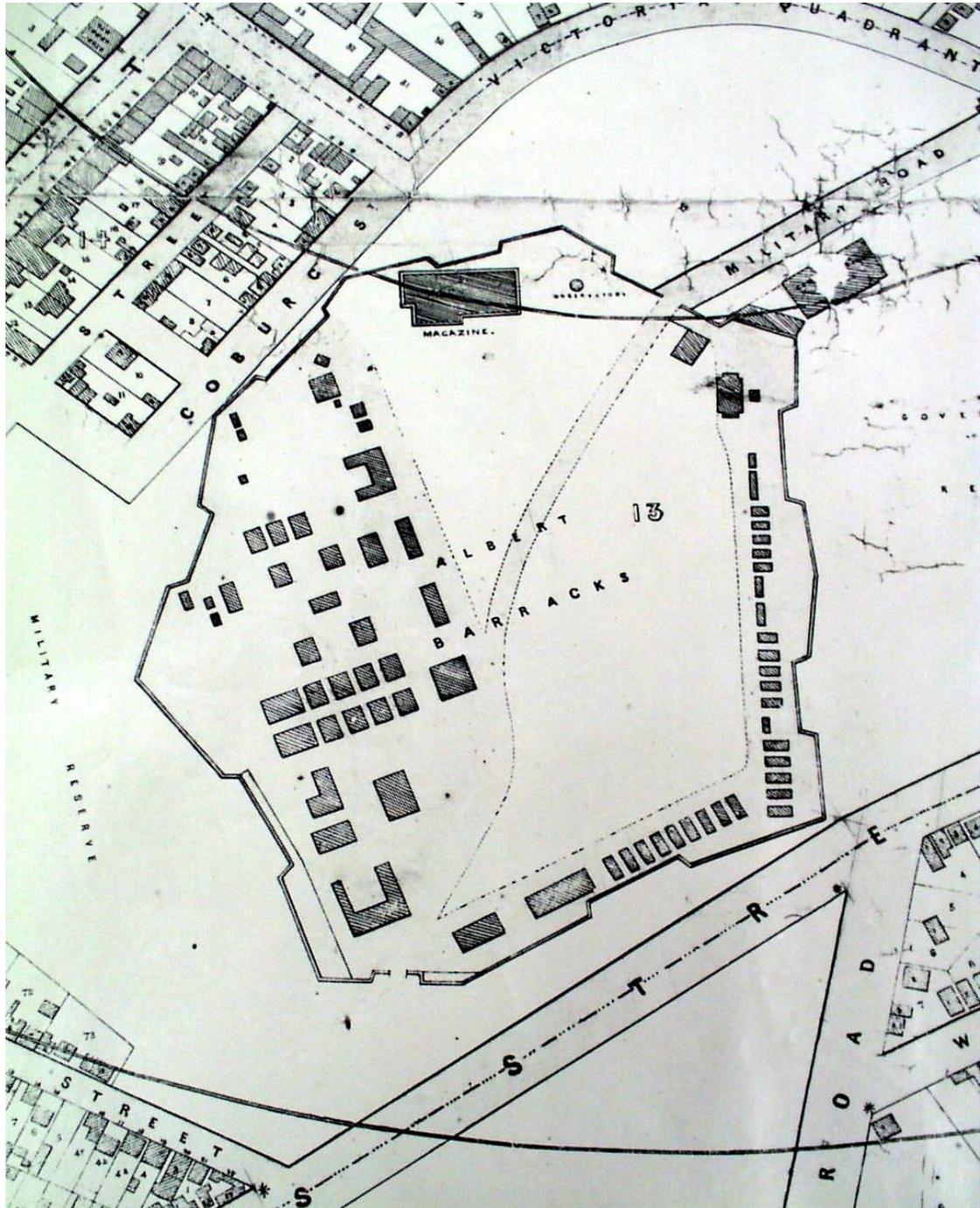


Figure 7. Detail of Vercoe and Harding 1866 map showing Albert Barracks

Some other names are known, including ‘Mrs Wintrup of the Royal Engineers Quarters, Albert Barracks, who was receiving clothing to distribute to soldiers’ families in need (*Southern Cross*, 31 March 1864). One of the soldiers of the 58th regiment who stayed in Auckland after discharge was Thomas Gibbons, Army Bandmaster, who had lived with his wife and eight children in the Albert Barracks (Vincent and Goyen 1986)... Another family listed as resident at the Albert Barracks was that of Band Serjeant [sic] Henry Warnecke, whose son Thomas Lowe Warnecke was baptised at St Pauls Anglican Church in Symonds Street in 1861 (St Paul’s Anglican Church, Symonds Street, Register of Baptisms 1841-1944, 1991). Mrs Wintrup’s residence in the Royal Engineers Quarters would indicate a lack of married quarters in the Albert Barracks, however, depending on the regiment, sometimes married couples and families were placed in rooms together (Trustram 1984).’ (Fraser 2002).

In 1846 regimental schools were established in Britain to cater for the children of the regiment but it is not known whether a school was established at the Albert Barracks.¹ However, the soldiers were provided with a facility for improving their minds when a library was established (by late 1863).² In Britain, many of the larger barracks were equipped with libraries from the late 1830s (Douet 1998: 118). While this benefited some soldiers, illiteracy remained high throughout the ordinary rank and file. Sixty percent of private soldiers in Britain were unable to read at the end of the nineteenth century (Douet 1998: 119). While no figures are available from New Zealand, it would appear that literacy was far from universal. In December 1850 three soldiers were called to give evidence at an inquest, and of the three, not one was able to sign his name (Gluckman 2000: 167).

The 1871 map of the barracks (Figure 8) features six substantial buildings which are described as dwelling houses. However, it appears that the descriptions shown on this map relate to use of the buildings in September 1871 when new immigrants were housed in the former barrack grounds (*Auckland Star* 8 January 1929: 6; *Southern Cross* 22 August 1871: 3). Five of these buildings also appear on the 1866 map and it is possible that they may have been occupied by the families of higher-ranking

¹ While the plan drawn by R.S. Fletcher from Frissell’s 1871 survey of the Albert Barracks shows a building marked ‘School’, this refers to the Auckland Grammar School which moved into the building in 1871. Douet 1998: 119.

² Eight month old Theodore Morgan Troy died at the library in Albert Barracks in December 1863 (NZ Herald 2 January 1864: 1).

soldiers during the military occupation of the site. It is clear that there was no officer accommodation at the Albert Barracks prior to the late 1850s. In December 1847 it was noted that:

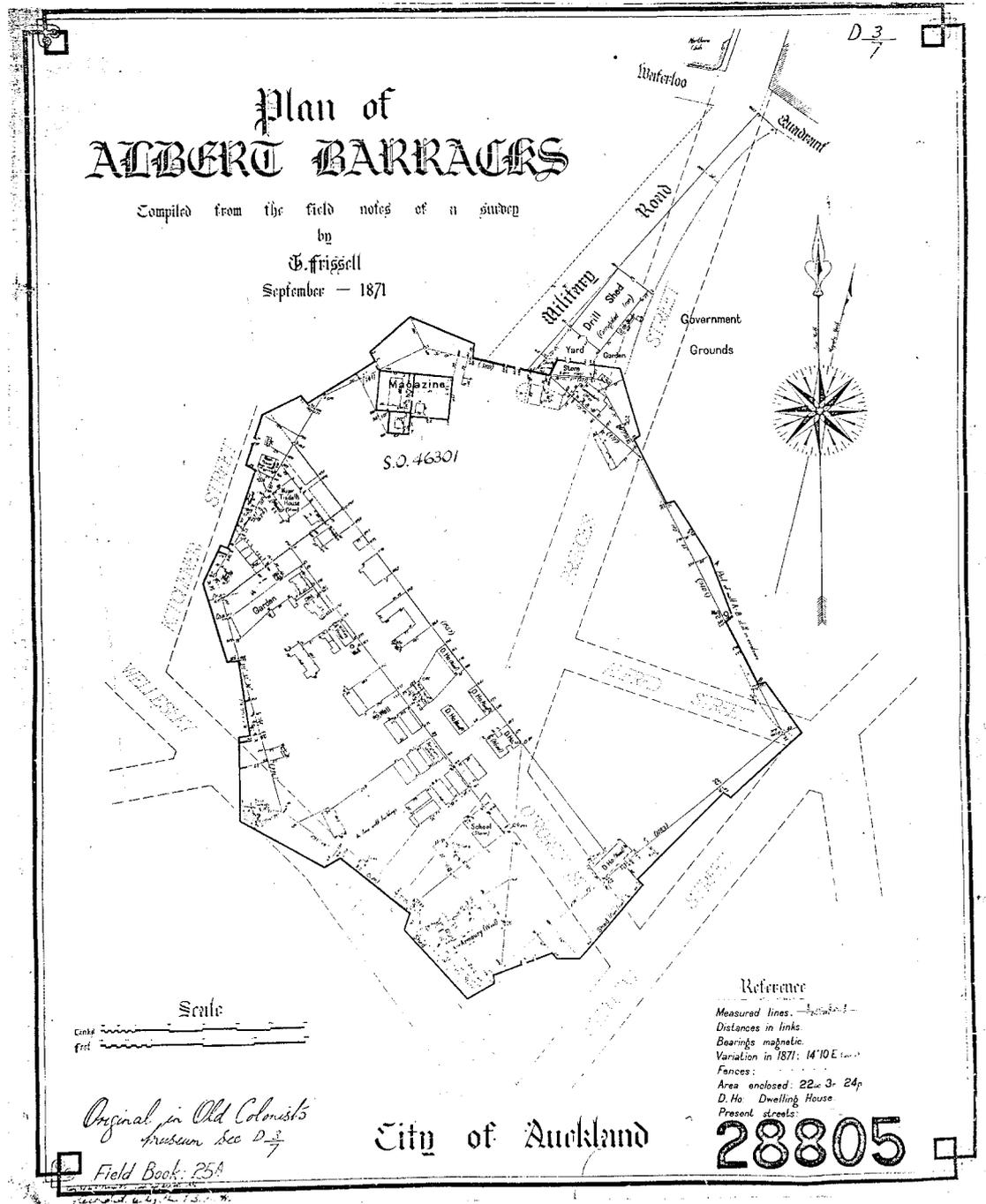


Figure 8. 1871 Frissell map of the Albert Barracks, following the closing of the barracks and removal of some of the buildings

‘the officers live, here and there, in numerous small cottages, some of them prettily situated and romantic with roses and woodbines.’ (Mundy 1852: 73)

A report of 1858 stated that ‘although Barracks have been provided for the Men, no Quarters have been erected for the Officers’ (*AJHR* 1860: A-6, 4). Certainly many officers continued to live outside the barracks in the following decade. A resident of Grafton Road noted that during the 1860s Grafton Road was a favorite residential area of officers (Beale 1937: 39).

The Role of the Military in the Social Life of Auckland

From 1845 Auckland took on a strong military flavour which added considerably to the social scene in the town. From small beginnings the forces stationed at Auckland grew and by 1851 regular soldiers and military pensioners accounted for 30% of the population (Phillips 1966: 71). During the early years troops flowed up and down the country as well as across the Tasman. In June 1847 the *New Zealander* reported the current troop movements:

‘The [58th] regiment is under orders to proceed to Auckland in two divisions. . . on their arrival there, the division of the 65th at present stationed at Auckland, will be conveyed to Port Nicholson, to relieve the detachment of the 99th now lying there, which will be brought to Sydney, when the second division of the 58th will be sent on to New Zealand.’ (16 June 1846: 3)

In 1846 the officers were welcomed by the gentlemen of Auckland at a public ball held at the Royal Hotel. The event was evidently a success with ‘His Excellency and Mrs. Grey . . . much delighted with the gay scene to which so many uniforms, not a little contributed’ (*New Zealander* 7 February 1846: 3). This event was particularly enjoyed by Lieutenant H.F. McKillop who wrote:

‘The band of the 58th Regiment attended and afforded a good opportunity . . . of renewing their acquaintance with the almost forgotten accomplishment of dancing. There was a plentiful supply of everything but ladies, who were very scarce, there being at least twenty gentlemen to one lady. Our entertainers, however, endeavoured by every means in their power to atone for this unfortunate deficiency, by supplying abundance of champagne and every other luxury’ (McKillop 1849: 153).

The band of the 58th regiment played at this event and also performed regularly for the public from 1846. Their playing was evidently much appreciated:

‘In so small a community, much amusement cannot of course be expected. Once a week, during the summer, a regimental band plays for a couple of hours on the well-kept lawn in the government grounds; and with the lovers of music, and those who are fond of “seeing and being seen,” the band is a favourite lounge.’ (Swainson 1853: 68)

The military bands were kept busy in the fledgling settlement. Newspaper reports of balls and other social events frequently noted a musical military presence. During the 1860s the 50th and 18th regimental bands ‘contributed greatly to the eclat of these oft-recurring functions, social or ceremonial’ (Beale 1937: 43).

The officers of the various regiments stationed in Auckland were a constant presence at events in Auckland’s social calendar. After government house burnt down in 1848 the Albert Barracks also served as a venue for balls. In May 1850 the ‘Birth-Day Ball’ was held in the artillery barracks with the commissariat stores serving as a supper room. The makeshift ballroom was decorated with ‘a large mirror, with the colours of the 58th on either side’ (*New Zealander* 29 May: 1850: 3). The evening was reported to be a success with dancing carrying on until four or five the next morning.

In 1846 Lieutenant H.F. McKillop had noted that ‘The distinctions of society, so respected in England, are treated with truly republican contempt in New Zealand’ (Platts 1971: 149). However, the distinctions of society were not so loose as to allow common soldiers an invitation to the balls and soirees of Auckland’s high society. While settlers might elevate themselves in society, there was little opportunity for social advancement for soldiers. Class largely equated with rank, and rank branded the various branches of the military. It was the officer class who were included in Auckland’s elite social circles.

Some of the entertainments provided by the men were also rank specific. In September 1847 the non-commissioned officers of the 58th and 65th regiments entertained the non-commissioned officers of the departing 99th regiment at a dinner held at the Freemason’s Hotel (*New Zealander* 4 September 1847: 3). In September 1850 a fancy dress ball was held at the Masonic Hotel by Captain Oliver and the officers of the HMS *Fly*. It was noted that the ball was ‘attended by the *elite* of our military and civil circles’ (*New Zealander* 7 September 1850: 3). Captain Kenny recalled that each year on 11 January, the officers would hold a ball in the evening while the sergeants held a dance (Kenny 1912: 48).

The public were invited to watch the events of the military calendar such as the half yearly inspection (Figures 9 and 10). At the inspection of November 1847 the barrack grounds were ‘thronged with well dressed persons of both sexes’. The spectators observed the various troop movements and then were entertained by the band of the 58th regiment (*New Zealander* 10 November 1847: 2). Even in the mid 1860s when Aucklanders could enjoy a wider range of social events, military occasions were still well attended. In January 1865 the *Auckland Weekly Argus* reported that the previous Saturday had seen a ceremony to award the Victoria Cross to two men of the Royal Artillery. At around half past four ‘numerous civilians, principally ladies, came trooping in by both gates, and waited in anxious expectation for the arrival of Sir Duncan Cameron, who was to present the medals.’ After the presentation of the medals ‘the civilians strolled about, and listened to the band of the 14th’ (*Auckland Weekly News Argus* 7 January 1865: 7).



Figure 9. Auckland citizens presenting a farewell address to General Sir Duncan Cameron in the square of Albert Barracks, 1 August 1865 (APL A640)



Figure 10. 'Waiting for the General' at Albert Barracks, 1860s (APL 422)

Military funerals were also attended by the public. In 1863 the remains of Lieutenant William Murphy of the 12th regiment and Mr Watkins, midshipman of the HMS *Curacoa* were laid to rest. Such funerals were evidently becoming a regular event. The *New Zealand Herald* reported that:

‘at a time like this . . . when our best and bravest are sacrificing life and limb in our defence, -when our graveyards are, week by week, receiving their mutilated remains, the last sad rites cannot fail to convey a deep impression to ever sensitive heart.’ (*NZ Herald* 25 November 1863: 3)

The funeral of Murphy and Watkins was attended by ‘a dense mass of our fellow townsmen’ (*NZ Herald* 25 November 1863: 3).

Sporting events held at the barracks also provided entertainment for the public. In April 1847 Lieutenant Colonel Gold arranged a day of sporting amusement for his men. There were hurdle races, wheelbarrow races, quoits and wrestling matches. The day’s events were also enjoyed by the numerous spectators. The *New Zealander* noted that ‘a goodly number’ of ladies attended along with Governor and Mrs Grey (*New Zealander* 10 April 1847: 2).

In March the following year a cricket match was held at the barracks between the 58th Regimental Club and the Auckland Club. Play was witnessed by ‘many of the elite of

our Community’ and the results were printed in full in the following day’s newspaper (*New Zealander* 11 March 1848: 3).

The public were also invited to attend dramatic performances at the ‘remarkably neat’ theatre in the Albert Barracks which opened in 1848. April 1850 saw well attended performances of “Fidelio” and “The Two Mrs Whites”. The *Southern Cross* reported approvingly that ‘shouts of approving laughter were heard’ and that the performances were welcome ‘in a town where nothing in the shape of public amusement is to be found’ (*Southern Cross* 9 April 1850: 3; 14 January 1853: 3) In 1853 “The Fire Raiser” was performed for the benefit of a soldier’s widow. It was the fifth such fundraising performance within a year and it was evidently well supported by the public and the military (*Southern Cross* 14 January 1853: 2, 3).

While the military had a significant role in many of the organised social events of Auckland, they also contributed to disorder in the fledgling settlement. In January 1846 the *New Zealander* warned that:

‘The recent arrival of so many troops in Auckland, and the certainty of still greater force being stationed here, renders it necessary, in our opinion, that some prudent measures should be adopted, in order to preserve order in the town. . . In the present state of Auckland, without enclosed barracks, it is impossible to prevent the soldiers from being in the town, at all times, and hence, the probability of occasional nightly disturbances.’ (24 January 1846: 3)

The *New Zealander* suggested that a Town Major be appointed to keep the soldiers in order, including preventing ‘the troops from frequenting such public houses, as are conducted in a disorderly manner’ (24 January 1846: 3). While it appears that the military authorities did not appoint a town major, there was certainly some policing of soldiers’ activities outside the barracks. In March 1846 Michael Drinnan, sergeant of the 58th regiment, accompanied Chief Constable Smith to various hotels looking for two men who were absent. They were later found drunk on the beach (Auckland Depositions Book Police/Resident Magistrate 1845-1847, BADW 5989 2a: 94).

Such measures failed to discourage soldiers from drinking to excess. In September 1845 a soldier of the 96th regiment drank so much that he died in one of the upper rooms of the Victoria Hotel (*New Zealander* 13 September 1845: 3). In 1847 Moses Walsh was brought ‘very drunk’ to the Albert Barracks where he was conveyed to a ‘cell in which there were four or five other drunken men.’ Half an hour later he died of ‘apoplexy caused by excessive drinking of ardent spirits’ (Gluckman 2000: 224).

In 1860 private John Drake of the 65th regiment died after being put to bed drunk with a tight military stock around his neck (Gluckman 2000: 264). Many other soldiers evidently drowned while drunk. Doctor A.S. Thomson, surgeon of the 58th regiment, noted that:

‘Intemperance was the direct and indirect cause of so many suicides, and the frequency of deaths from the soldiers shows that the early settlers had some grounds for reckoning drowning among the natural modes of death in the colony.’ (Thomson 1974: 47)

There were also many instances of soldiers vandalising property and fighting in the streets. In 1847 the *Southern Cross* reported that: ‘the ordinary quietude of Queen-street was disturbed by a serious quarrel between some soldiers and sailors’ (*Southern Cross* 24 July 1847: 2). Three years later a band of ‘wild young men’ of the 58th regiment were entertaining themselves by ‘wrenching off knockers, obliterating door plates, tearing down gates, carrying away steps’ (quoted in Phillips 1966: 280).

While the military presence in Auckland was the cause of some social disturbances, they were also used to remedy unrest. On at least one occasion a body of troops was called out to quell a disturbance in which some of their comrades were involved (Best 1973: 34). However, more commonly they were required to support the small police force in their efforts to keep the peace. The 58th regiment helped provide security at the jail, the courthouse, government house and public gatherings (Best 1973: 34).

The military presence in Auckland had many other effects. The economy was buoyed by their presence as they required supplies for everyday living as well as materials and labour for defence works (Palmer 1978: 27). They also had an impact on local politics. In 1853 Colonel R.H. Wynyard was elected Superintendent of Auckland Province by a slim majority. Some of the Wynyard votes came from soldiers who were ‘taken to the orderly room and the voting paper . . . with their Colonel’s name on it was put into their hands [and] they were marched down to the polling booth’ (James George, quoted in Best 1973: 41).

The Demise of the Albert Barracks

By the mid 1860s Auckland had grown substantially and the central site of the Albert Barracks was felt to be inappropriate. It was suggested that if a new and suitable barracks site was provided by the colonial government, then the imperial government

would gift the Albert Barracks site in exchange. Lieutenant-General D.A. Cameron wrote:

‘in consideration of the inconvenience which the present site entails on the inhabitants of Auckland, and also in consideration of the benefit resulting to the Imperial Government, from the provision of new and suitable Barrack accommodation (including officers’ quarters), I will avail myself of the first opportunity of inspecting any site that may be suggested’. (*AJHR* 1865: D-4, 3)

However, the imperial troops were destined to remain a presence in central Auckland until their final departure.

By 1867 there were so few troops at the Albert Barracks that there were no guards for the gates and magazine. In consequence the public, who had been used to free access to the barrack grounds during the day, were locked out (*Southern Cross* 21 August 1867: 4).

The late 1860s saw a withdrawal of many of the imperial troops as the colonial government was unwilling to pay for their continued presence. Colonial forces in the form of volunteers, militia and the armed constabulary continued to fight in the various battles of the era (Rolfe 1999: 2).

In February 1870 the last of the fourteen British regiments that served in New Zealand marched out of the Albert Barracks (Rolfe 1999: 2; *Southern Cross* 21 February 1870: 4). The familiar sound of bugle call summoning the imperial soldiers to drill would no longer be heard. The *Southern Cross* noted that ‘the departure of the regiment was looked upon as the sudden snapping of another link that bound this colony to the mother country’ (21 February 1870: 4). Defence was left in the hands of the armed constabulary (King 1981: 49).

In January 1870 the military authorities prepared to sell sections in the middle of the Albert Barracks site including a small cottage. The colonial government intervened. Governor Donald McLean wrote:

‘The public interest requires that the whole of the land within the barrack wall should come into the hands of the Colonial Government.’ (*AJHR* 1870: D-41, 4)

The Albert barracks land was subsequently secured by the Auckland Improvement Commission which was constituted under the Auckland Improvement Act, 1872. Under the Act the commissioners were required to reserve 15 acres of the barracks

site for recreation and amusement. The remainder would be laid out with streets and once these were formed, the remaining land would be leased at auction. The commissioners were given the power to remove any walls or buildings on the land with the exception of the former militia barracks (*Statutes of New Zealand* 1872, Auckland Improvement (Albert Barrack Reserves) Act: 331).

Some buildings at the barracks were demolished prior to land being handed to the Auckland Improvement Commission. In April 1870 ‘a number of people were engaged in taking to pieces some of the huts recently sold’ (*Southern Cross* 23 April 1870: 3). It appears that these huts were located on the northern and eastern boundary of the grounds (Frissel 1871 plan, Figure 8). In February 1871 the *Southern Cross* reported that:

‘In the Albert Barracks the old buildings are fast disappearing, and new and substantial ones being erected. Already five edifices, strong and commodious, are on the eve of completion, and the sound of the carpenters hammers can be heard all day throughout the barracks.’ (18 February 1871: 2)

It is not clear which buildings were alluded to but they were probably quarters for new immigrants. The immigration barracks, as they were known, were in use early in the 1870s and were demolished in 1883 (*Southern Cross* 22 August 1871: 3; *Auckland Star* 8 January 1929: 6). The following month a rather different picture of the barracks was revealed in letter to the editor:

‘As the Albert Barracks becomes stripped of buildings it presents a very mournful appearance, and it must be a source of regret that such a large and central piece of ground should so long remain in the state it is – a garden for a crop of weeds, and pasturage for a favoured few whose horses are allowed to feed there’. (*Southern Cross* 22 March 1871: 3)

During the 1870s the former barrack grounds and buildings were used for a variety of purposes. The grounds were used in 1871 for the Easter Athletic Sports (*Southern Cross* 1 April 1871: 1; 8 April 1871: 2). That same year the Auckland Grammar School took up residence in the former militia barracks where it remained until mid 1878 (Figure 11). It was subsequently used as a police barracks (Barr 1985: 129).

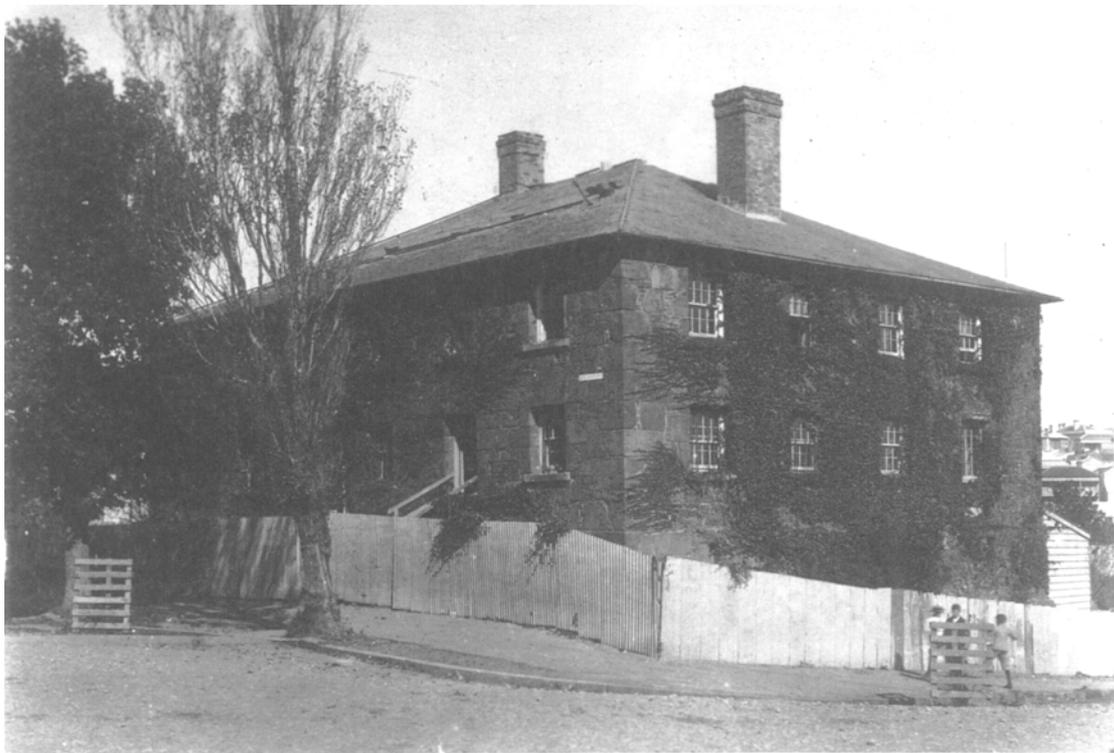


Figure 11. The Auckland Grammar School in one of the former Albert Barracks buildings (May 1871 to June 1878), looking south from the corner of Princes and O'Rorke streets (APL 2841)

In 1873 the Auckland Improvement Commission began demolishing the barracks wall. In March the *New Zealand Herald* reported:

‘The old Barrack wall is being demolished with such rapidity that it is believed that a month hence nothing of it will be left standing but the gate pillars, which are to be held sacred from the pick and crowbar of the labourer, and preserved as a relic of the past.’ (22 March 1873: 2)

The Auckland Improvement Commissioners had turned down an offer by the volunteer artillery to blow up the wall within the space of three days on condition that the gunpowder was provided (*NZ Herald* 22 February 1873: 2).

The planned laying out of streets and leasing of allotments was carried out (Figure 12). The reserved land was subsequently formed into an attractive park bearing the name of the barracks which had formerly occupied the site (Figure 16, below) (Bush 1971: 167). Today the site of Albert Barracks is occupied by Albert Park and Auckland University.

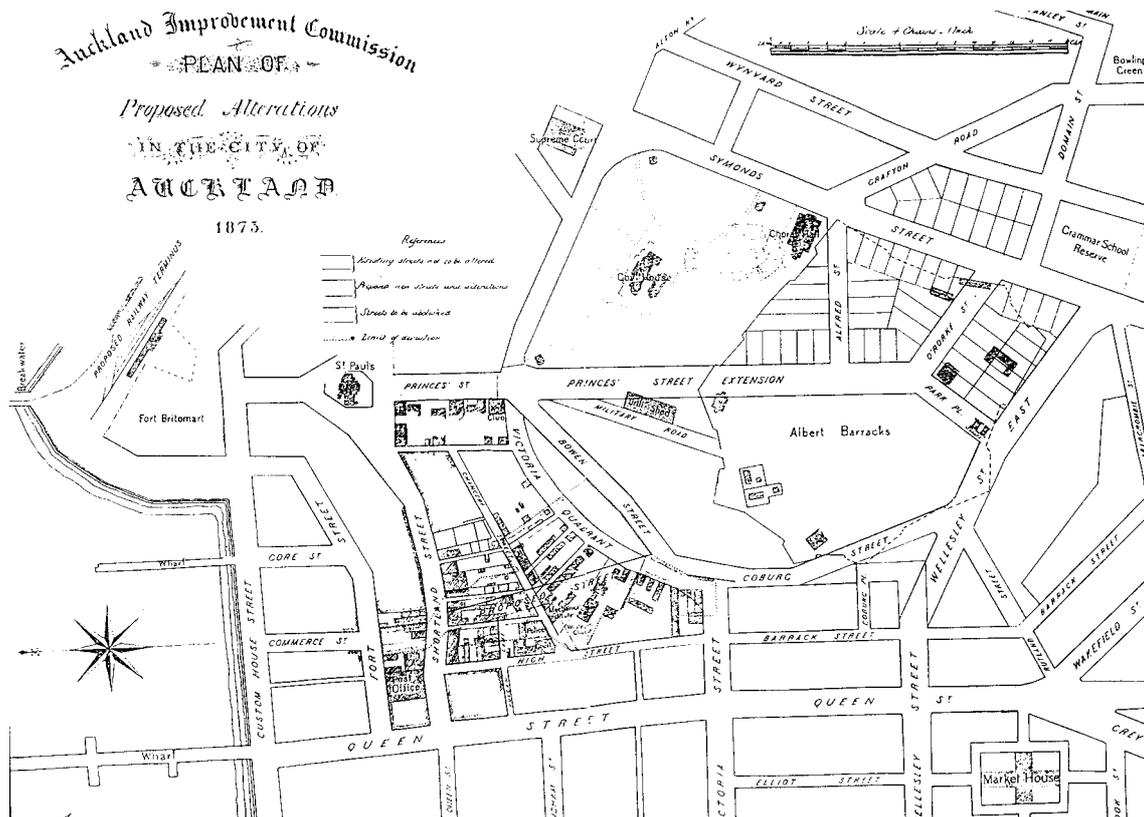


Figure 12. Auckland Improvement Commission Plan 1873

Land at the Corner of Alfred and Symonds Streets

The Student Amenities development site was once the location of the southeast corner of the Albert Barracks. The wall, completed in 1852, crossed the site and the 1866 map shows that a few of the small rectangular barracks buildings were located here (see overlay Figure 14). Plans of 1851 and 1871 reveal that these structures were built sometime after 1851 and were demolished prior to September 1871.³ These buildings may well have been some of the huts which had been sold and were in the process of being taken to pieces and removed in April 1870 (*Southern Cross* 23 April 1870: 3).

The Auckland Improvement Commission's plans for this area involved removing the barracks wall along the Symonds Street frontage and leasing six sections running

³Survey of Barrack wall and adjacent land by Charles Heaphy, 1851, Auckland Public Library, Special Collections, C 995.1101hkc 1851 NZ Maps 99 and Land Information New Zealand, Auckland, SO28805.

south along Symonds Street from the corner of Alfred Street for 99 years (Figure 13). The Student Amenities development site includes Lots 1, 2, 3 and 19 of Section 3, at the corner of Symonds and Alfred streets. The 1875 plan shows that the barracks wall had been removed with the exception of a small section running diagonally from Alfred Street, near the Symonds Street intersection, through to Princes Street (Figure 13). The lots, however were soon rearranged, with lot 1 and part of lot 2 being leased together, and the remainder of lot 2 being leased with lot 3 (see Appendix 1). By 1878 there were three dwellings on the development site at numbers 9 and 11 Symonds St and 2 Alfred St based on valuation lists (see Appendix 1). These are shown on a map of 1882 (Figure 15) and George Tracey Stevens bird's view map of 1886 (Figure 16). A later city plan, completed in 1908, shows that the small building at no. 9 Symonds St on the corner had been considerably enlarged by that date (Figure 17).

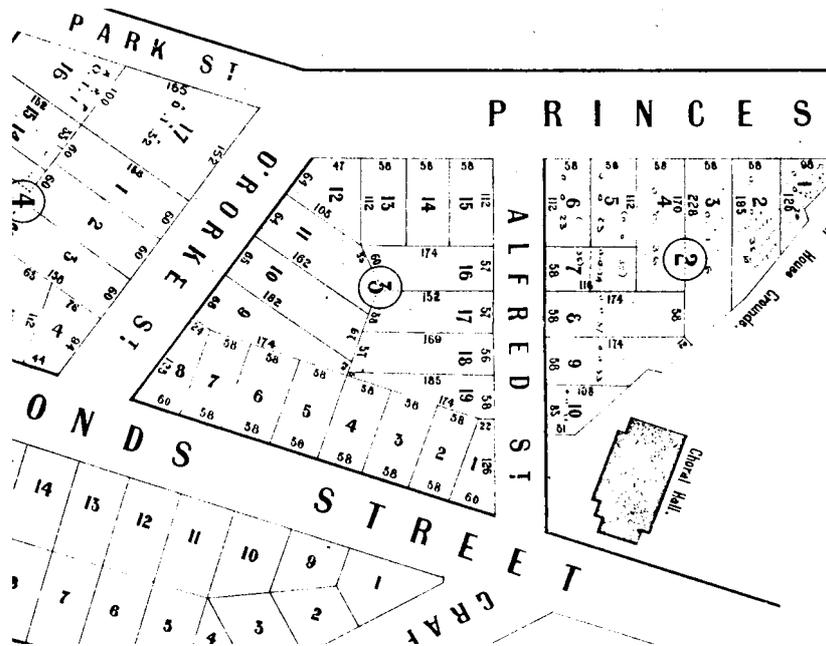


Figure 13. Auckland Improvement Commission Plan 1875 (detail), showing lots for sale and the line of the remaining section of the barracks wall behind the Choral Hall

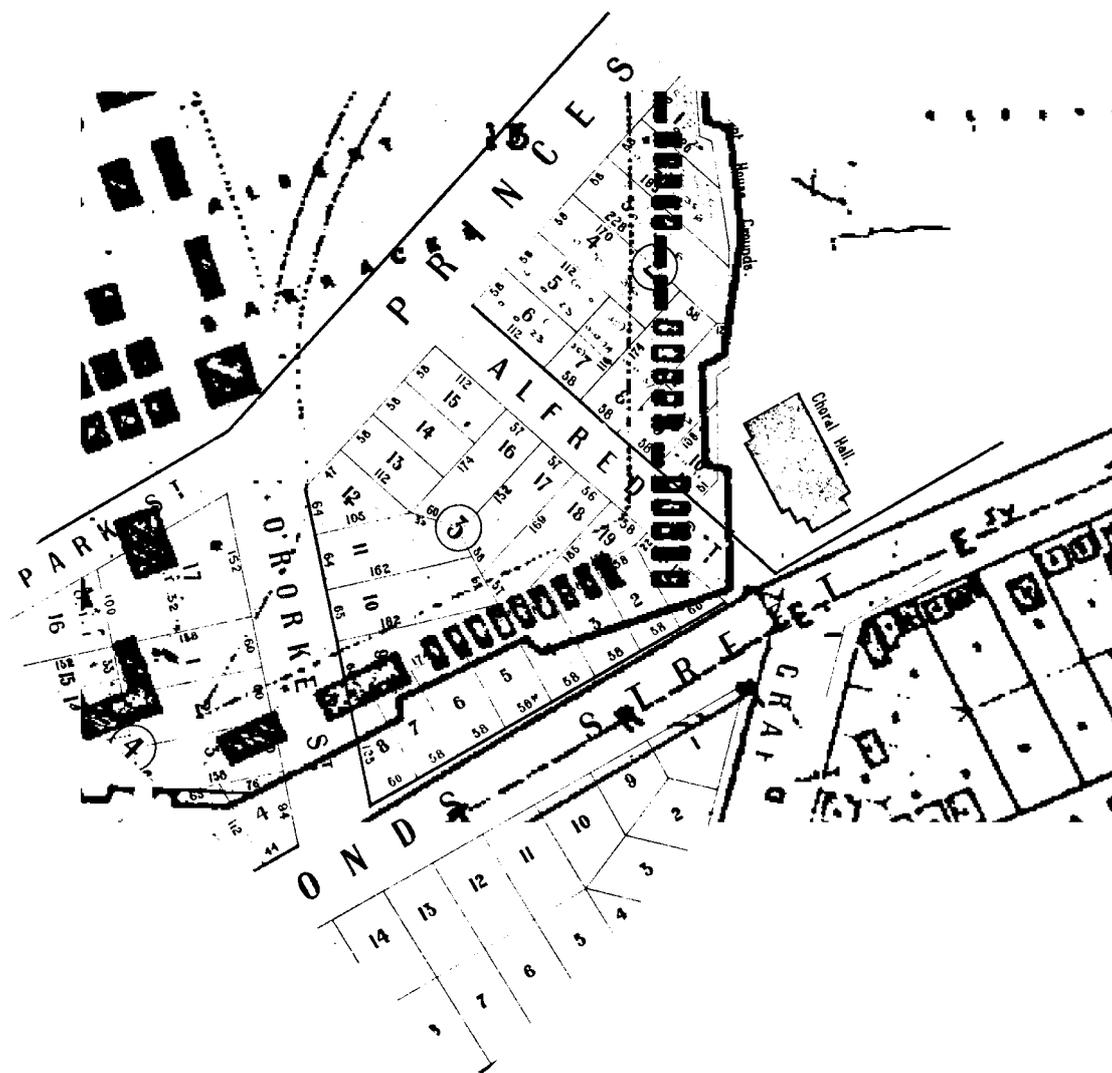


Figure 14. Detail of 1866 plan showing area at corner of Symonds and Alfred streets overlaid on 1875 Improvement Commission Plan



Figure 15. Detail from 1882 Hickson map showing area at the corner of Symonds and Alfred Streets

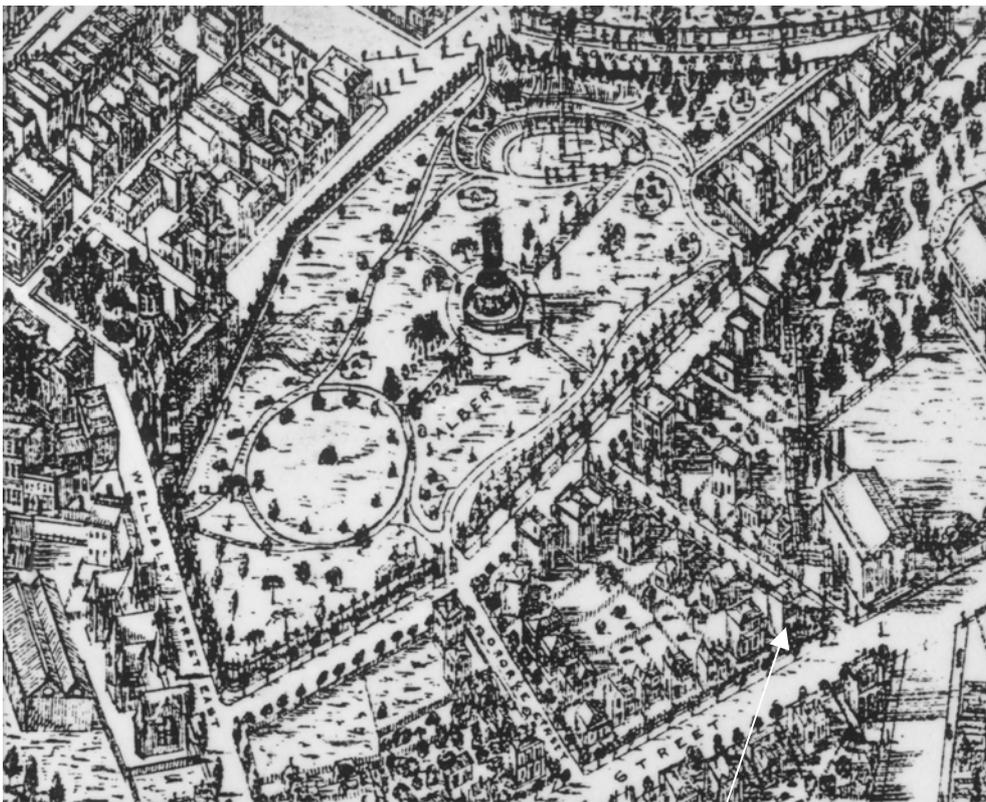


Figure 16. Detail from 1886 'bird's eye view' map by George Tracey Stevens showing area at the corner of Symonds and Alfred streets

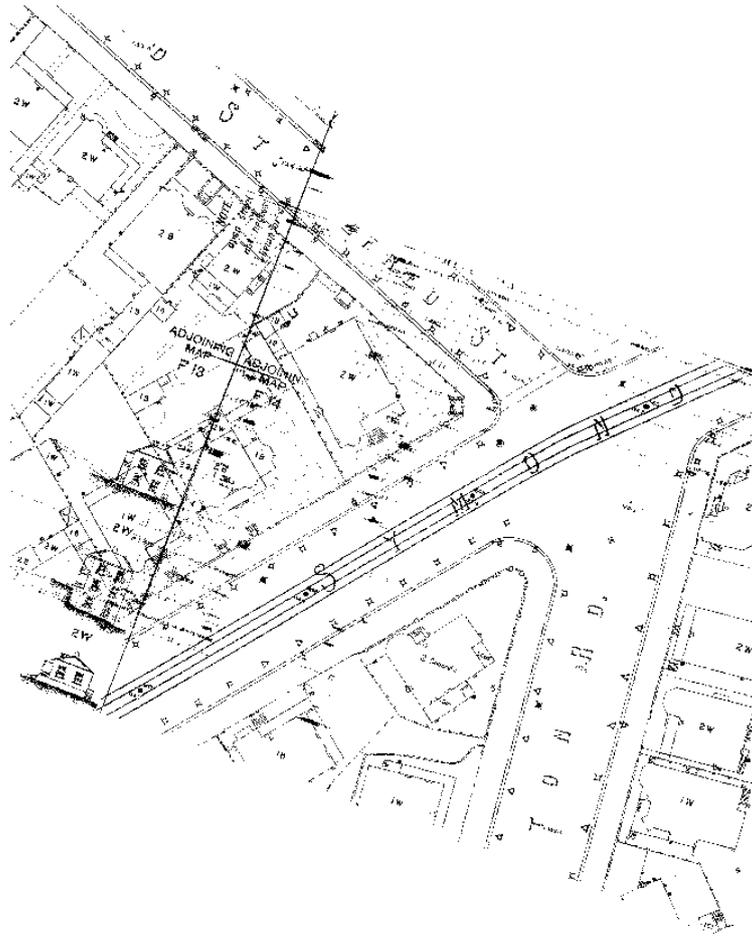


Figure 17. Detail from 1908 map showing the corner of Alfred and Symonds streets

The houses that graced the area around the corner of Alfred and Symonds Streets were substantial two-storied structures befitting the status of their wealthy merchant owners. Inside one would find successful businessmen such as Henry Brett, owner of the *Evening Star* (later the *Auckland Star*), whose home occupied lot 3 on Symonds Street.⁴ His neighbours included the educationalist and photographer Josiah Martin, sawmill manager James McLennan, timber merchant James Ansenne.⁵ The ridge was a respectable address for the elite of Auckland society.

⁴Land Information New Zealand, Provisional Register 5 folio 29 and *Dictionary of New Zealand Biography*, Volume II 1870-1900, Wellington, 1993, p.56, B39.

⁵Land Information New Zealand, Provisional Register 5 folio 25, 26 and 30 and *Dictionary of New Zealand Biography*, Volume II 1870-1900, Wellington, 1993, p.313, M36.

However, by 1910 things had begun to change. The neighbourhood became more socially diverse with the conversion of some family homes to boarding houses. While the neighbourhood was home to medical practitioners and businessmen, the boarding houses brought bank clerks, draughtsmen and accountants into their midst (*Wises NZ Post Office Directory* 1910: 30, 128). No longer was the neighbourhood solely the reserve of merchants and their families. By 1930 boarding houses and private hotels had become as numerous as family homes (*Wises NZ Post Office Directory* 1930: 25, 164). In 1940 family homes had almost disappeared and the area at the corner of Alfred and Symonds Streets was now the preserve of boarding houses, private hotels and medical consulting rooms (*Wises NZ Post Office Directory* 1940: 26, 183). In the next two decades the area would see further changes. In the late 1950s and early 1960s the University expanded, taking in the houses on the corner of Alfred and Symonds Streets (Figure 18).

Details of changes in ownership at 9-11 Symonds St and 2-4 Alfred St can be found in Appendix 1.

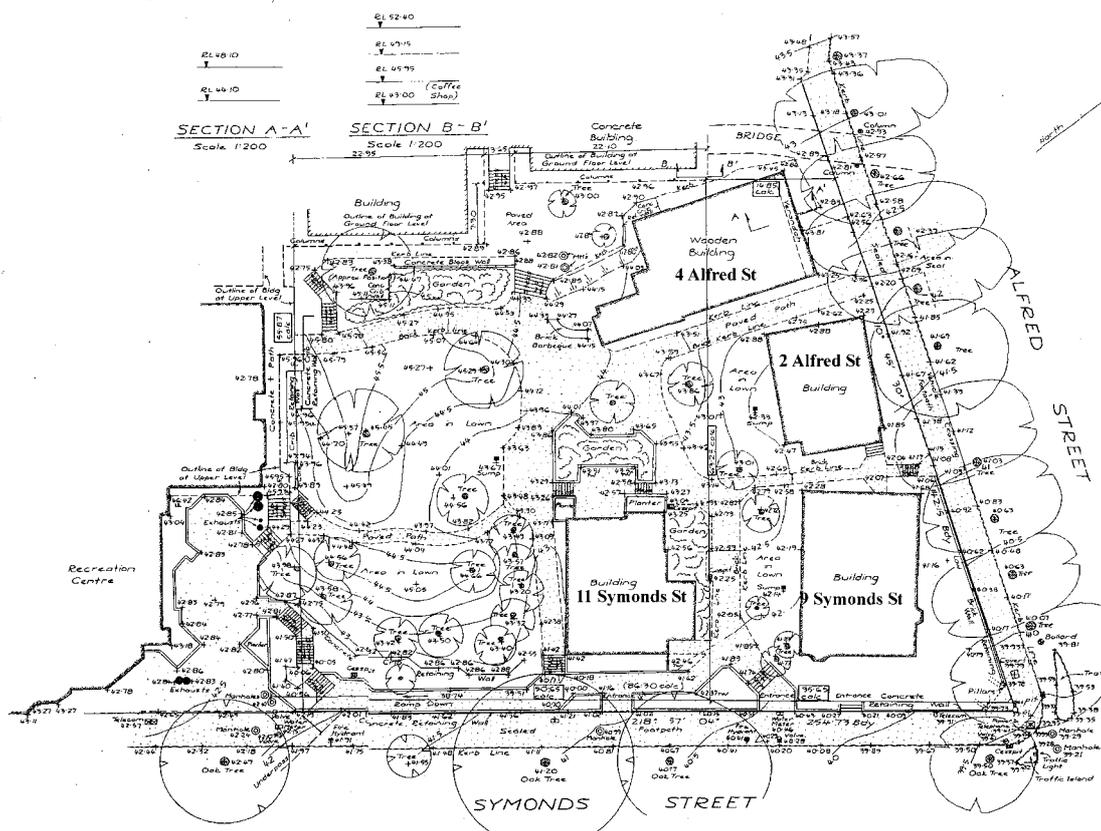


Figure 18. Student Amenities development site prior to the removal of the 19th century buildings, showing their location

EXCAVATIONS

Excavation Methodology

Site clearance following demolition of the merchants houses was monitored by members of the excavation team to establish whether any subsurface remains relating to the occupation of the barracks (or of the merchants houses) had survived. However, the only area that proved to be sufficiently unmodified was in the vicinity of 9 Symonds St, and this area became the focus of the excavations.

The area was first examined with a fluxgate magnetometer FM9 and a soil resistivity meter RM15 (Geoscan Research Ltd) in a triple di-pole arrangement. Data was taken in a 0.5 m x 0.5 m grid (Figure 19).



Figure 19. Resistivity meter RM15 in front of the fluxgate magnetometer FM9

The results showed one clear anomaly, but demolition debris on the surface made interpretation difficult. To investigate the anomaly a small test trench (T1) was opened up (Figure 20). The anomaly was identified as one of the chimney foundations of the merchant houses built in the 1870s. On excavating the foundation, a distinct layer of gravel containing material of the Barracks period was encountered (Figures 37-42 below). This indicated that in this corner between Alfred and Symonds Street,

the original surface of the Barracks buildings was probably still intact and that features from this time period would have survived.

The demolition debris of the merchant houses was cleared with the help of a digger (Figure 21). A machine excavated test trench (T2) showing the upper part of the stratigraphy of the site helped to keep the level of the clearing work above the barracks layer. The test trench was laid out perpendicular to the estimated course of the barracks wall.

Two trenches over 20m long and 2m wide were then excavated by hand (T7+9) parallel to the test trench (Figure 20). These trenches provided a clear understanding of the stratigraphy through the length of the site, giving four uninterrupted sections. Two similar trenches were planned in the northern part of the excavation (T3+4), but it was found that this part of the excavation area had lost most of the barracks occupation layer as a result of later modifications. Another trench (T5), to the south of this area, was also abandoned as the area had been too modified. The remnants of the barracks wall were encountered in the eastern part of trenches 7 and 9 (Figure 22), and two further trenches were therefore opened in the northern and southern end of the excavation area following the line of the barracks wall (T6+8) (Figure 24, below). A 2m wide trench (T10) was excavated parallel to T9, since Trenches 7 and 9 had revealed a large pit feature extending into this area and containing numerous artefacts. This provided another two sections in the area that had the most complex stratigraphy.

The rest of the big pit was excavated as a whole in a trench called the Northern Extension, with a standard baulk (1m wide) between this area and the adjoining trench (T10).

All trenches were set out on a local grid system so that each excavated metre square and its contents could be identified by East and North grid coordinates. In addition to this grid system a total station was used to survey trenches, some of the finds and excavation features.

After clarifying the stratigraphy all features related to the use of the barracks were exposed and excavated. The entire area was machine cleared down to the beginning of the undisturbed, natural clay layer (Figure 26, below). Postholes and other features dug into the natural layer were recorded. Postholes were photographed with surveyed points in the photo so that the photos could be geo-rectified. The barracks wall was followed for the entire excavation area.

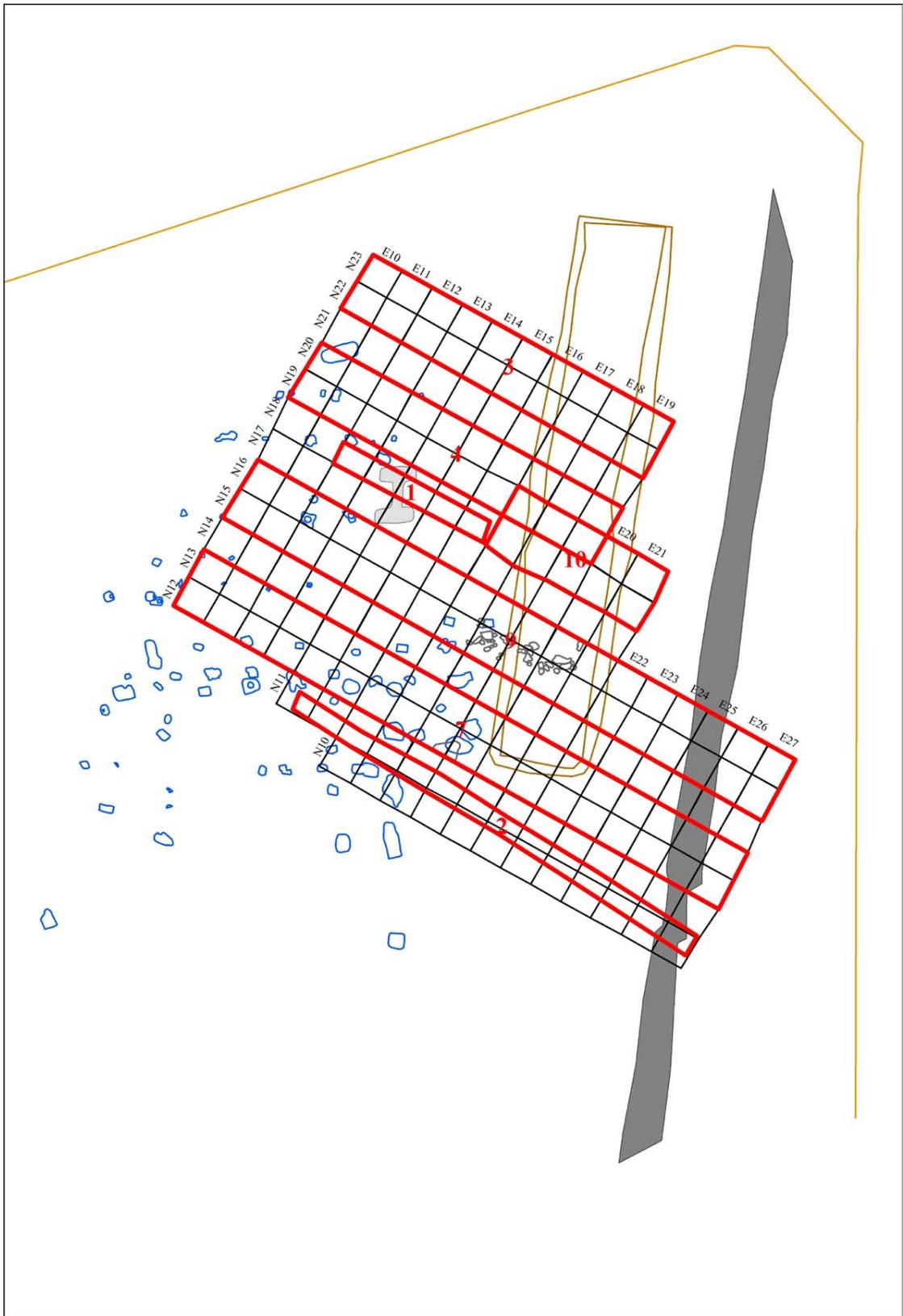


Figure 20. Layout of trenches



Figure 21. Clearing the demolition debris with the help of a digger



Figure 22. Eastern end of trenches 7 and 9

Recording

All sections and plans were drawn in colour at 1:20 scale (Figures 23). Additional photos were taken over each 4 square metres on the plans and every 2m along the sections. Features outside the trenches were photographed with three or four survey points so that they could be geo-corrected later. Important finds, all features and the excavation area were documented with survey points collected with a laser theodolite set up in a local coordinate system. The whole excavation area was divided into metre squares and all finds were allocated either to one of the metre squares or to a feature if found within one. All features, or parts of features where they appeared in different trenches or where the relationship to the feature was unclear, were given an individual complex (i.e. context) number and description. When individual complexes were recognised to be part of a larger feature, the larger feature was given a new description.



Figure 23. Excavation drawings using drawing frame

Recovery of Artefacts

All ceramic sherds, most of the glass fragments and a large number of the bones and corroded iron objects were recovered. All other finds, such as non-ferrous iron objects, were recovered. The contents of all artefact-rich layers and all features, other than postholes, were sieved, usually with a 5 mm sieve.

Features

During the excavation every feature encountered was given a complex number. The same archaeological feature encountered in different trenches was given separate complex numbers. Every change in the archaeological features encountered during the course of the excavation was given a new complex number to document the changes. The southern end of the feature referred to as the Big Pit, for example, was given three different complex numbers before the nature of the archaeological feature became obvious. This was a cautious approach to prevent mixing material that might derive from different archaeological features.

The following table shows the features and complexes observed during the excavation and their interpretation. Often several complexes proved during the course of the excavation to relate to a single feature. Figures 24 and 25 show the excavated features and complex numbers.

Table 1. Correlation of features and complex numbers

Feature	Complex No	Description
Big Pit a/b	40	big pit
Big Pit a	54	big pit/northern extension/upper layer
Big Pit a	39	firescoop/top of big pit
Big Pit a	13	mortar/overlay over rubbish pit
Big Pit a	14	overlay big pit
Big Pit a	43	posthole/big pit
Big Pit a	26	rubbish hole/upper part of big pit
Big Pit a	19	top of big pit
Big Pit a	22	top of big pit
Big Pit a	41	top of big pit
Big Pit a/b	44	baulk between T7-9/big pit
Big Pit a/b	52	big pit/northern extension
Big Pit b	50	big pit
Big Pit b	182	big pit/northern extension
Big Pit b	184	big pit/northern extension
Big Pit b	51	dog/big pit
Big Pit b	42	lower part of big pit
Barrel A	8	barrel

Feature	Complex No	Description
Barrel B	46	barrel
Barrel C	47	barrel
Barrel D	48	barrel
Barrel E	49	barrel/possible
Forge Spoil	17	forge/adjacent to C14
Pit B	55	rubbish pit/small square
Sheep/Goat Pit	53	rubbish/sheep/goat
Pit A	23	square deep pit
Barracks Wall	1	wall
Pit C	6	rubbish pit?
Post Barracks	174	bones
Post Barracks	2	chimney
Post Barracks	10	clay pipe
Post Barracks	156	dog no.2/merchant
Post Barracks	3	fireplace
Post Barracks	20	merchant foundations
Post Barracks	21	merchant foundations
Post Barracks	56	merchant garden feature
Posthole	4,5,9,11,12,15	posthole
Posthole	24-25	posthole
Posthole	27-38	posthole
Posthole	58-155	posthole
Posthole	157-173	posthole
Posthole	175-181	posthole
Posthole	183	posthole
Posthole	185-187	posthole
No feature	18	surface T9
No feature	57	test trench
No feature	7	?
No feature	16	?
No feature	45	digger scrape along inside wall

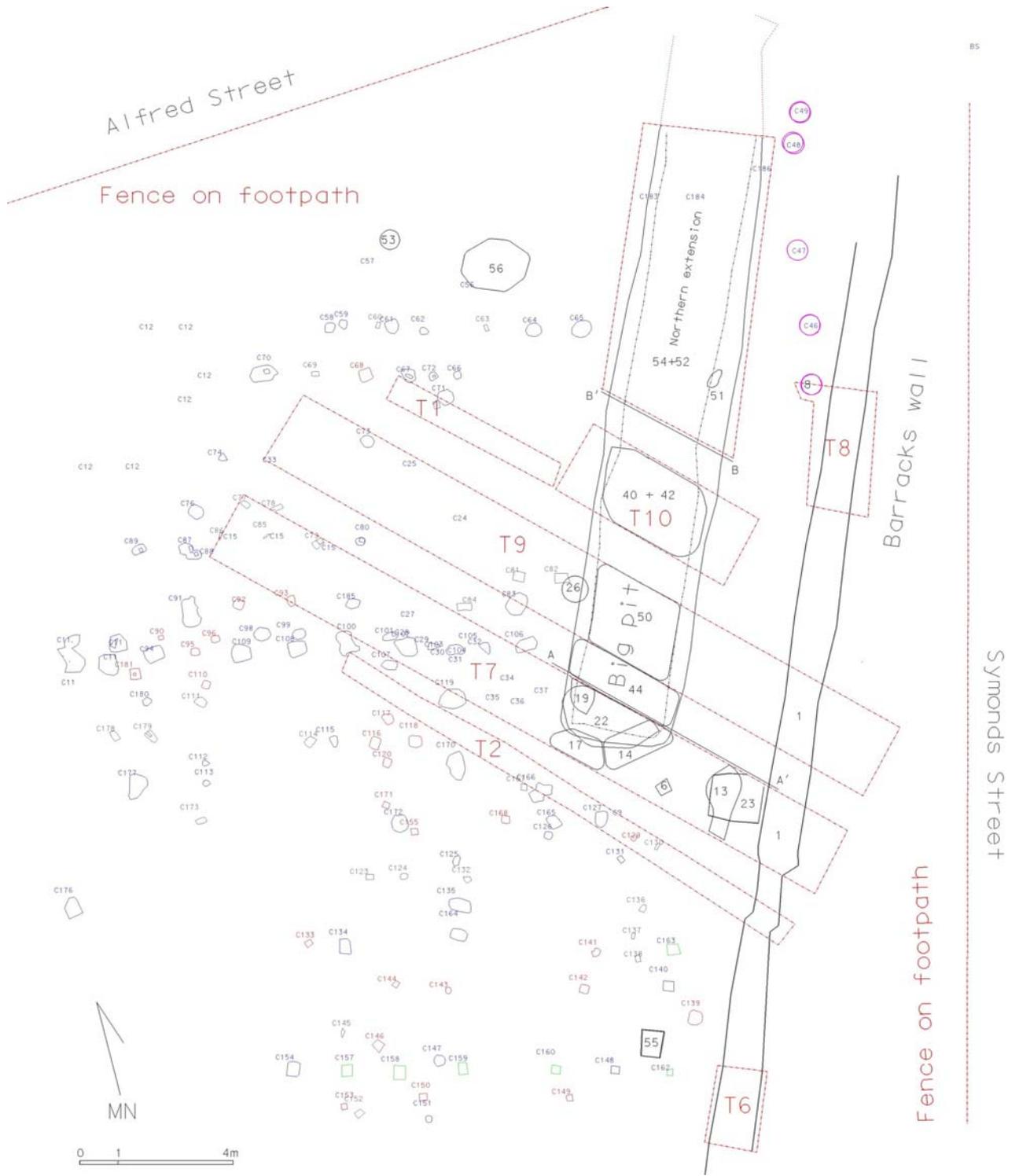


Figure 24. Excavation area showing trenches and complex numbers

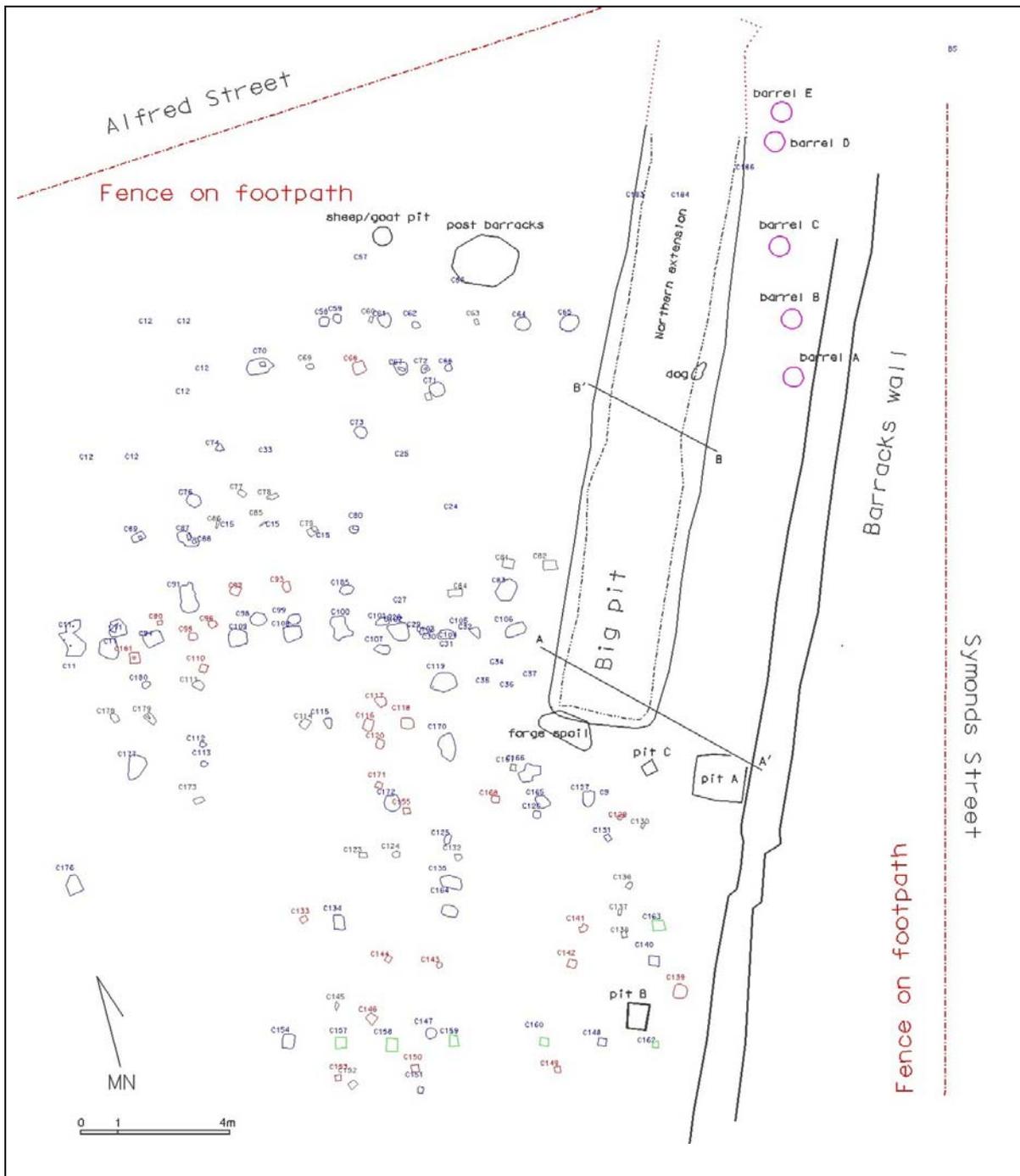


Figure 25. Excavation area showing location of features (postholes with concrete footings shown in green)

The barracks wall was followed for the whole length of the excavation area (Figures 25-26). Towards the north the foundations of the wall had been cut away by the construction of Alfred Street. To the south the foundations had been destroyed by the underpass which connected the University buildings on both sides of Symonds Street. Only in Trench 2 (Figure 27) were substantial remains of the barracks wall found.

Elsewhere only the rubble filled foundation trench which formed the base for the stone wall had survived (Figure 28).

Five round impressions in a line near, but curving away from, the barracks wall were encountered (Figures 25, 28). They were not very deep (c.0.5m in diameter by up to 10cm deep) and had only a few artefacts in them. They were clearly not dug as rubbish pits and their perfect round shape suggested that they were impressions of barrels, possibly used to store water (Barrels A-E in Table 1 and Figure 25).

Rubbish Pit A (complex 23, Trench 7) appeared to have been dug specifically as a rubbish pit since its contents appeared to be in a primary context with large numbers of complete or nearly complete bottles. It had vertical sides and was 1.3 x 1.3 x 0.3m deep (Figure 29). Rubbish Pit B (complex 55, to the west of Trench 6) was 0.5 x 0.7 x 0.4m deep. It also contained a large number of complete or nearly complete bottles indicating primary deposition.

The largest feature was the Big Pit, located exactly parallel to the barracks wall. Although referred to as a pit it proved to be a c.15+m x 4m x 0.5m deep trench with sloping sides (Figures 30-33). It had been filled with rubbish in two phases, with a thick deposit of clay separating an upper and a lower layer of fill. These layers are referred to as Big Pit a (upper layer of fill) and Big Pit b (lower layer), the clay layer being layer a/b. The pit included smaller dug out features on its southern edge, which might have been large postholes or small individual rubbish pits. At some stage the whole area underwent levelling and raising with more rubbish deposited. A possible shallow rubbish pit (Pit C, complex 6, in Trench 7) 0.3 x 0.35 x 0.4m deep, and a large area containing the what appeared to be tools from a workshop, possibly a forge (referred to as Forge Spoil, complex 17, at the southern end of the Big Pit), were part of this levelling. Most of the material in layer a of the Big Pit seemed to be in a secondary context, based on the fragmented state of most of the artefacts, but the lower layer (b) contained many relatively intact items (Figure 33). The southern end of the Big Pit was located in Trench 7 but it was not established how far the feature extended to the north, as the area was disturbed.

In the northern extension of the Big Pit, right at the bottom, a dog skeleton was found in situ (complex 51), (Figure 34). Another dog burial was associated with the later use of the site (complex 156, Figure 35).

In the northern part of the excavation area, some distance to the west of the Big Pit, a part of a sheep or goat skeleton was found, in what looked like a shallow rubbish pit

(the Sheep/Goat Pit, complex 53). This area was largely disturbed by the merchant houses.



Figure 26. Aerial view of the excavation area after machine clearing to expose all features.



Figure 27. Remnant of Barracks Wall in Trench 2



Figure 28. Wall foundation and Barrel A, looking west, Trench 8



Figure 29. Pit A



Figure 30. Big Pit, north section, Trench 10



Figure 31. Big Pit North Baulk Trench 9



Figure 32. Big Pit, north section, Trench 9



Figure 33. Layer b of Big Pit, Trench 10, looking south



Figure 34. Dog burial at bottom of Big Pit



Figure 35. Later dog burial, complex 156, post barracks period

About 150 postholes, almost all relating to the merchant house period, were recorded (Figure 25). Some linear patterns approximately perpendicular to Symonds Street were evident. Some postholes had concrete footings and related to 20th century site use. Each posthole was photographed with a 0.2 x 0.2m grid overlaid and at least two survey points visible along the grid lines. This allowed us to geo-correct all photos and put the shape of each posthole back into its original position, without drawing each and every one of the some 150 postholes.

Later incursions into the barracks levels were fireplace foundations and flower beds from the period of the merchant houses (referred to in the analysis as Post Barracks complexes).

The remaining complexes related to particular deposits or test investigations rather than to archaeological features (they are referred to in Table 1 as No Feature). Otherwise material from the trenches that did not derive from features was recorded within its metre square and is referred to in the artefact analyses as deriving from the 'general barracks area'.



Figure 36. Percussion caps in general barracks layer at N13/E16

Stratigraphy

The overburden from the demolition of the merchant houses was removed by the digger, and when the uppermost layer of the barracks occupation was reached excavation proceeded by hand. The ‘barracks layer’ was a general accumulation of smaller layers and lenses containing gravel in some areas and artefacts, some of which, such as percussion caps (Figure 36), were clearly recognizable as relating to barracks occupation. Gravel was presumably used as surfacing around the buildings to keep the area well drained. It did not extend over the Big Pit.

Sections were drawn for all trenches, showing the layers from the start of the manual excavations (Figures 37-43). Over much of Trenches 7 and 9, especially towards their western end, the general barracks layer, containing patches of gravel and material relating to barracks occupation, directly overlay the subsoil. In other areas it presented a more ashy appearance at the lower levels but also contained material from the barracks occupation.

Near the centre and towards the eastern side of the excavation area the long trench known as the Big Pit and three pits (A-C) had been dug into the subsoil. Figure 43 shows sections across the Big Pit. Two artefact-rich layers (a and b) separated by a thick deposit of clay represented two distinct episodes of filling, layer b being the earliest. The clay appeared to have been deposited to level off the Big Pit and the rest of the area between the Big Pit and the barracks wall. Layer a was not present in the northern extension of the Big Pit.

A number of smaller, shallow fills (e.g. complex 14) seem also to have been used to level the area between the buildings and the barracks wall. The Forge Spoil (complex 17) was one of these shallow fills.

Finally some features related to the merchant houses, such as fireplace foundations, concrete block foundations, stairwells and garden beds, cut into the barracks period deposits. This was particularly so towards the northern edge of the excavation where the ground sloped towards Alfred Street. This area was also disturbed by large tree roots.



Figure 37. Trench 7 Sections

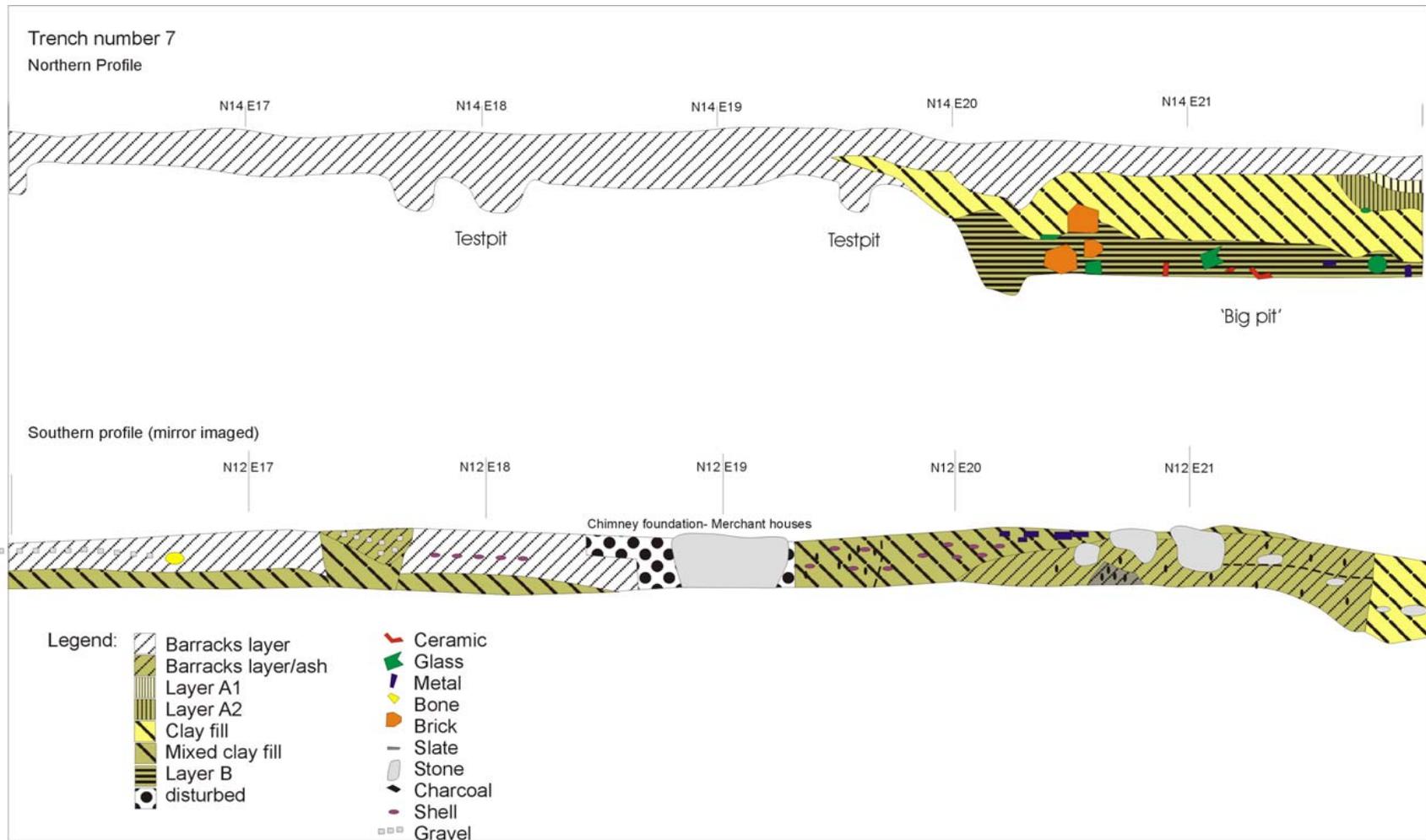


Figure 38. Trench 7 Sections

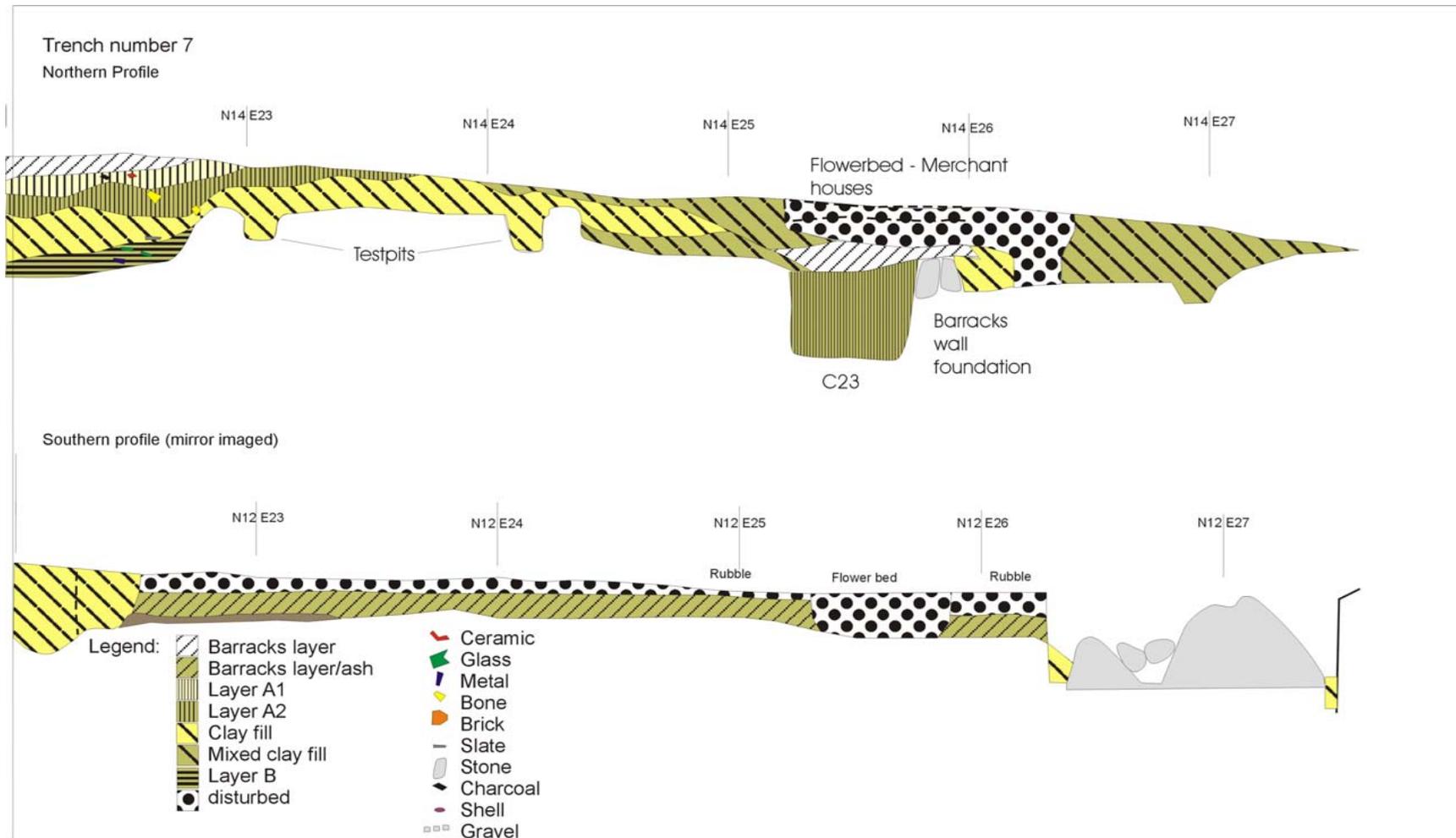


Figure 39. Trench 7 sections

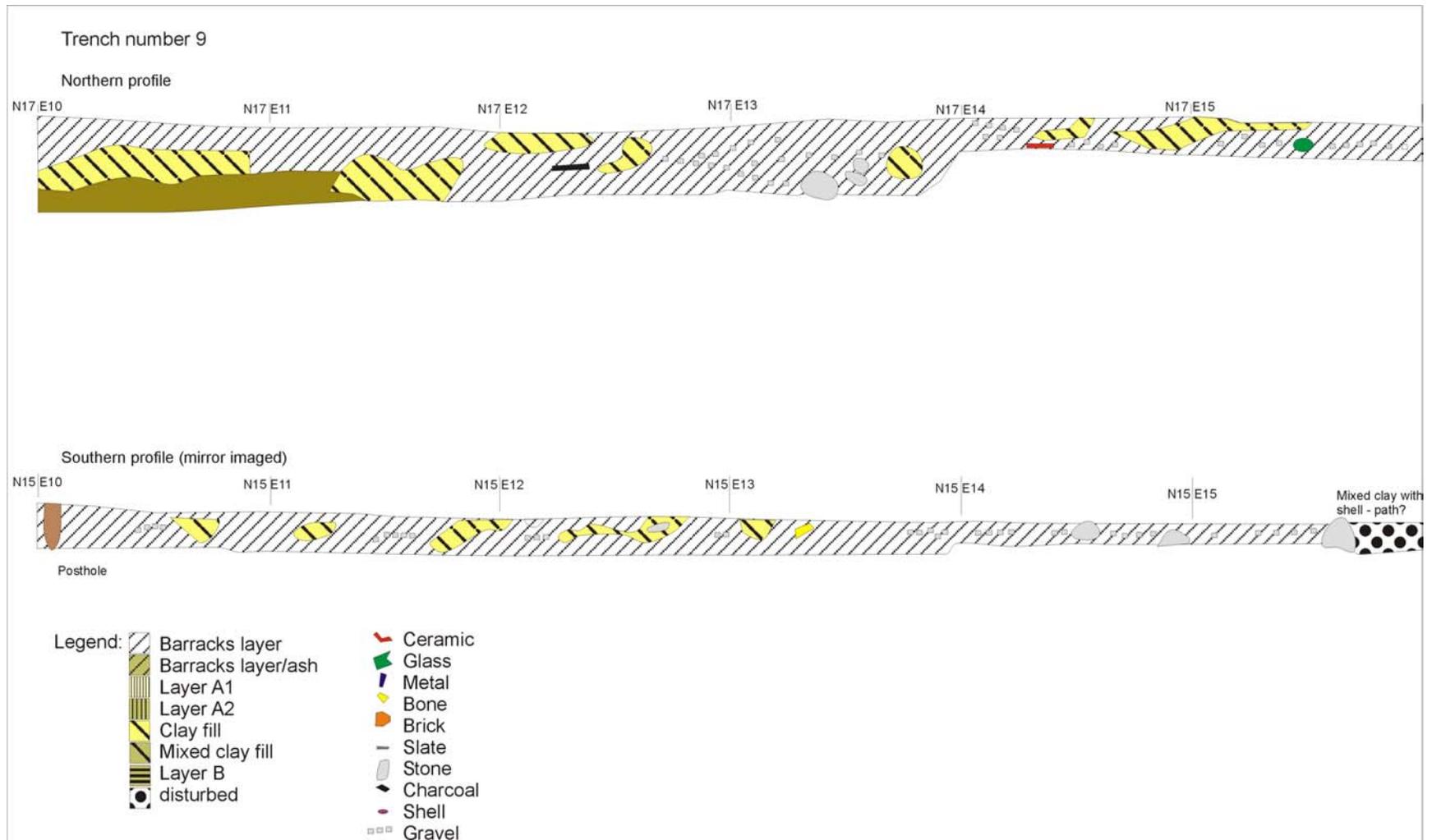


Figure 40. Trench 9 sections

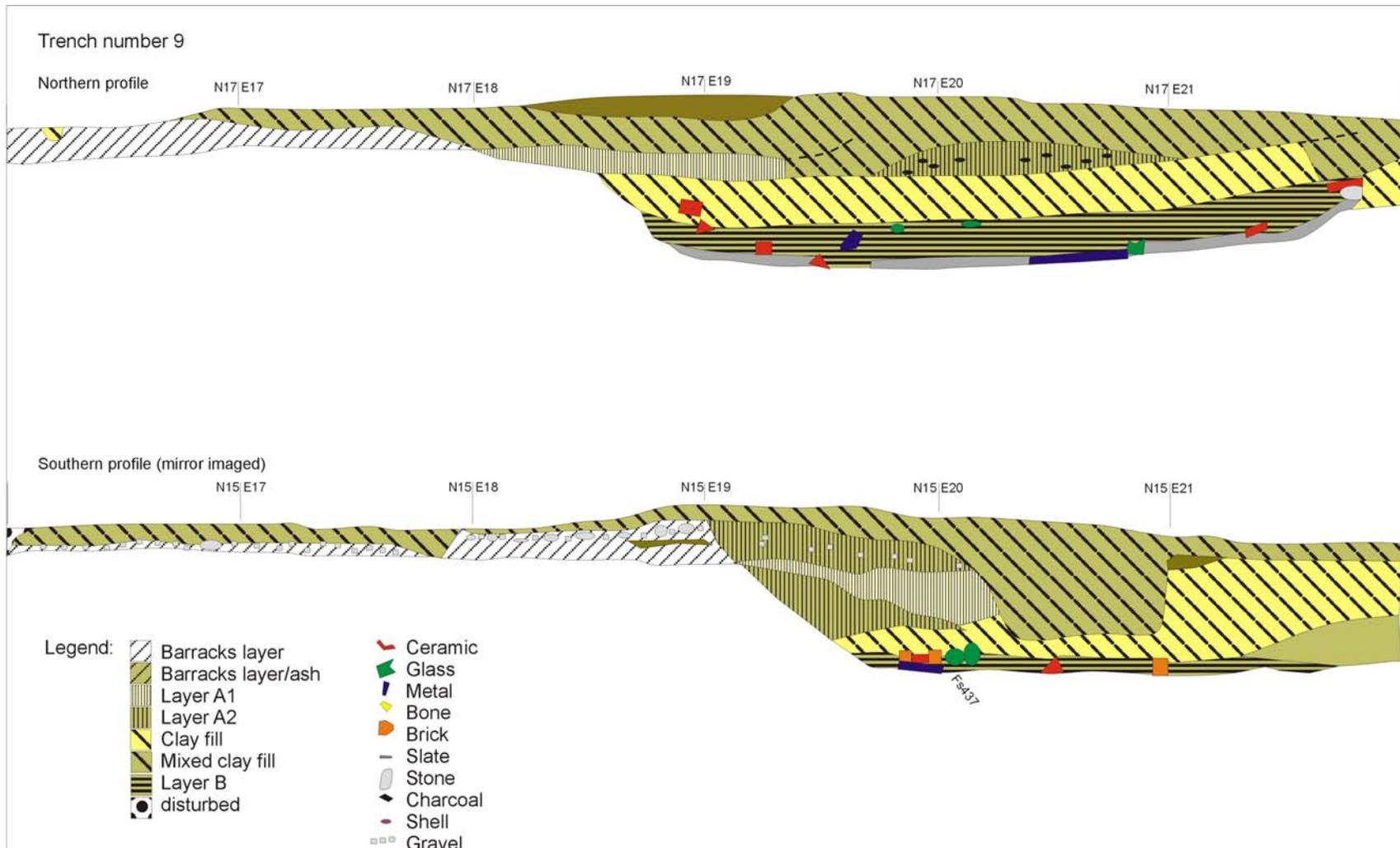


Figure 41. Trench 9 sections

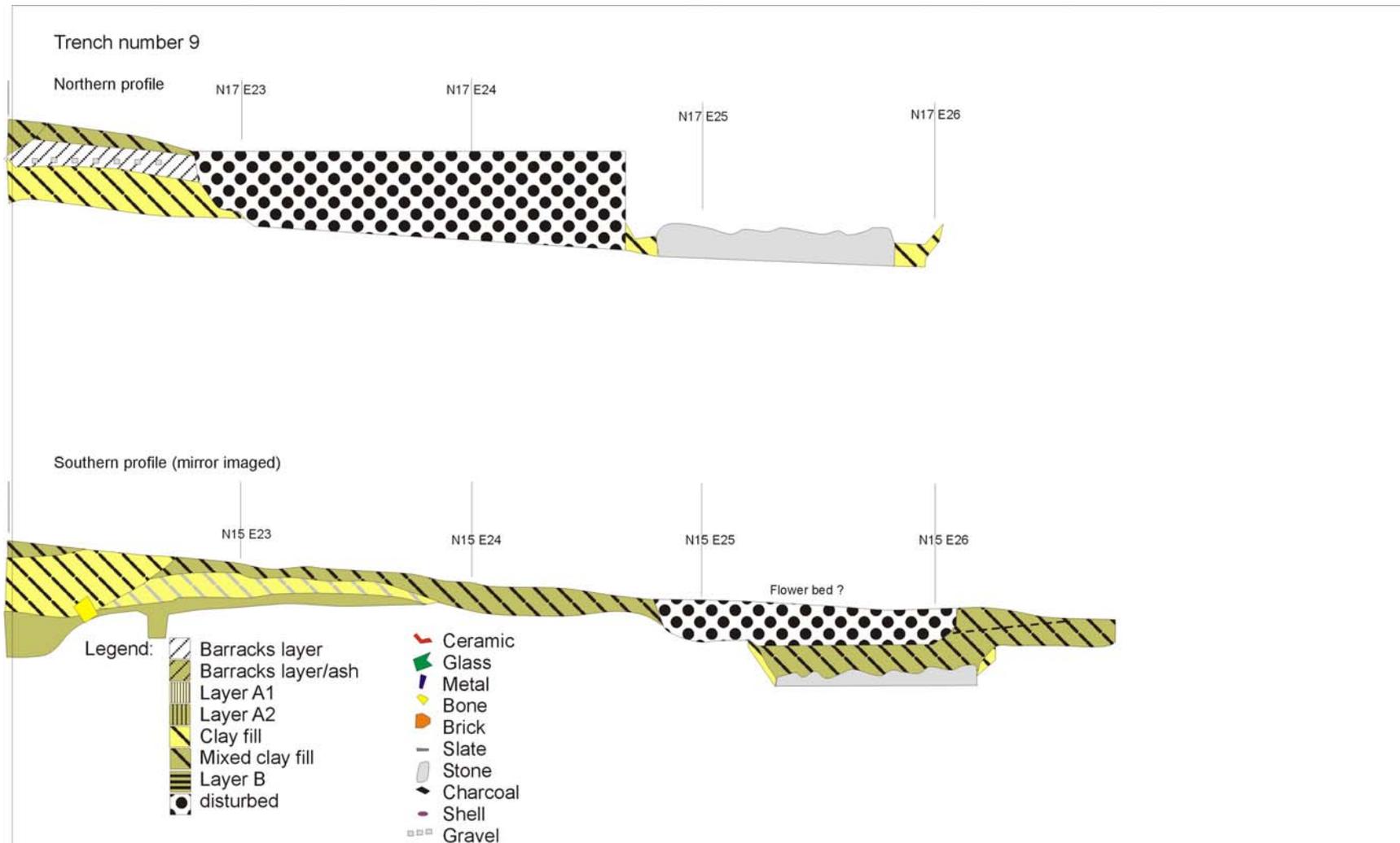


Figure 42. Trench 9 sections

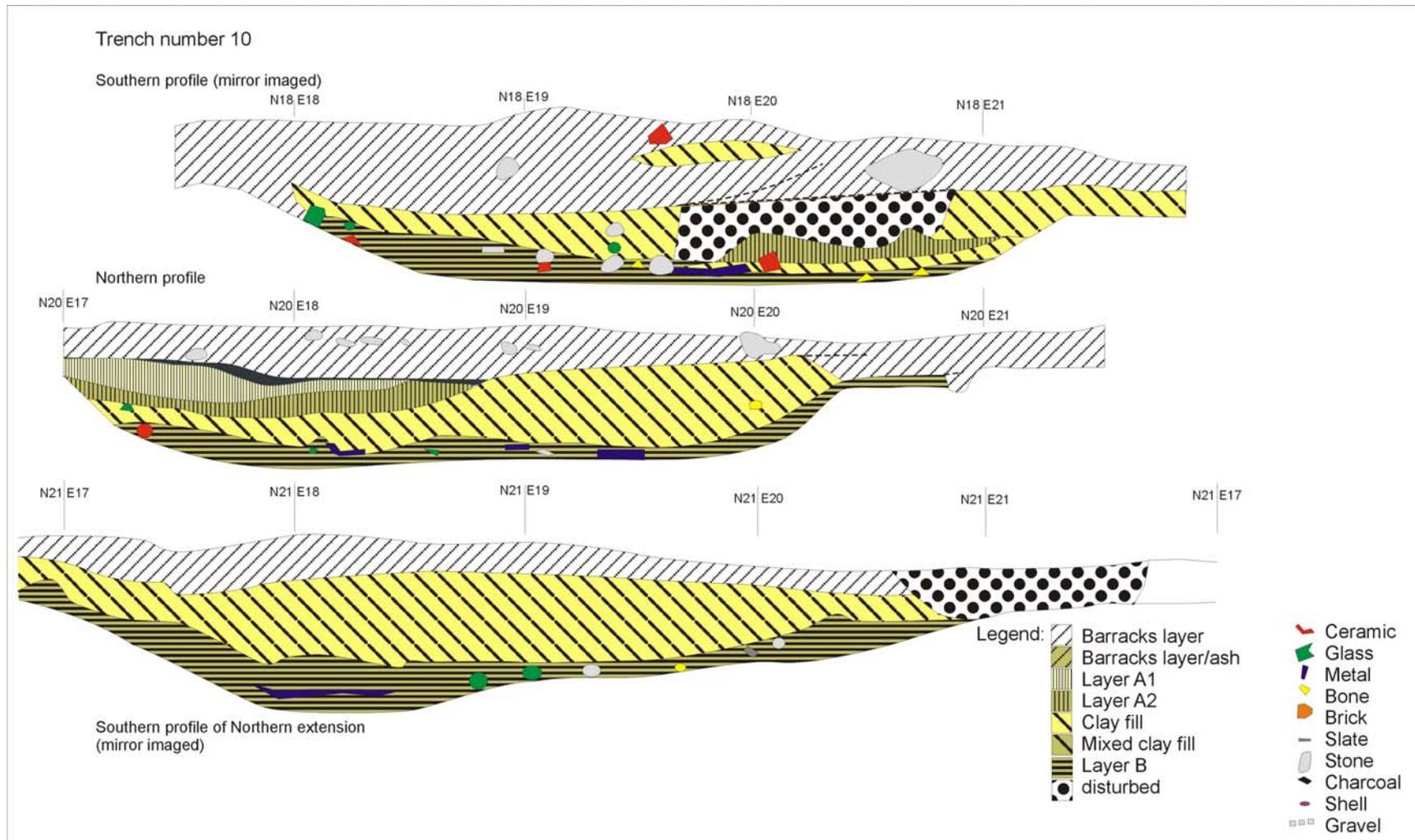


Figure 43. Trench 10 sections and south section of Northern Extension, showing the Big Pit

DISCUSSION

Initial machine clearance following removal of the merchants houses exposed intact deposits and features relating to the occupation of the Albert Barracks at the Symonds St/Alfred St corner of the Student Amenities Block site. Thousands of artefacts relating to the Barracks period (1845-1870) were recovered and analysed (Part 2 below), providing information about the dating of the features and the life of soldiers and others who lived in the barracks.

Dating of Features

The ceramic, clay pipe and glass assemblages included a number of items with makers' or other marks indicating their date of manufacture. A large range of militaria was also recovered, many of which were items of military uniform (buttons and badges) that could be identified by regiment. These provided valuable dating information since the dates when regiments arrived and departed from New Zealand are well recorded.

Several refitted (joining) artefact fragments were recovered from the fill of Pit A and layer a of the Big Pit, indicating that these two features were likely to have been filled at the same time (or at least with some material from the same source). No joining fragments connecting Pit A and layer b of the Big Pit were recovered, indicating that layer b may have been chronologically as well as stratigraphically earlier than layer a. Only one refitted artefact was recovered connecting layers a and b of the Big Pit, and this may have been due to site disturbance or excavation error. If not, however, this would also indicate that there may not have been much of a time lapse between the two episodes of filling.

Artefacts providing dating information were recovered from the fill of Pit A and both fill layers of the Big Pit, and confirm that both features were filled within a relatively short time frame and fairly late within the Barracks period:

Layer b of the Big Pit contained two items datable to the 1860s: a clay pipe made by Theophilus Milo of London, who operated between 1860 and 1870; and a Bouquet pattern table plate with a Pinder, Bourne & Co maker's mark, dating the plate to between 1862 and 1882.

Layer a/b of the Big Pit contained clay pipes made by Thomas Davidson of Glasgow (1861-1910) and Jones and Harris of Liverpool (1864-74), as well as part of the same Pinder, Bourne & Co (1862-1882) plate found in layer b.

Layer a of the Big Pit contained a Thomas Davidson clay pipe (1861-1910), a flow black saucer made by Mann & Co. (1858-60), and a Willow pattern plate made by Bell, Cook & Co (1859-1860) which joined a fragment found in Pit A.

Pit A contained a saucer with a Lockett & Cooper registered design mark that can be dated to 1861, as well as military items of the 40th regiment, which did not arrive in New Zealand until 1860 (departing 1866).

The Big Pit (layers a, b and a/b collectively) includes several military items dating to the 1860s, including an 1861 type shako plate (hat badge), buttons belonging to the 40th regiment (who served in New Zealand 1860-1866) and the 57th regiment (1861-1867), and a 'Military Train' button (this unit arrived in New Zealand in 1864).

The Big Pit and Pit A also included a range of other dateable material (see Part 2), including a number of items that had ceased production before 1860: flintlock munitions that were replaced c.1860; a 58th regiment button and shako plates (1845-1858); buttons belonging to the Sappers and Miners (pre-1857); and Royal Artillery buttons of a type no longer used after 1855. An early clay pipe also came from Barrel E: Joseph Scott (father or son, 1815-1851).

Material found in the Big Pit and Pit A therefore included material relating to the whole period of occupation of the barracks. The date of deposition, however, can be clearly dated to 1864 or later, on the basis of the Military Train button and the Jones and Harris pipe found in found in the Big Pit, and the refitted artefacts between the Big Pit and Pit A. There is unlikely to have been much time lapse between the deposition of layer b and layer a of the Big Pit in view of late date of the Willow pattern plate (1862-1882) and the Milo clay pipe (1860-70) in the lowest layer. However, there was clearly some lapse of time, since layer b was capped off with a layer of clay fill before layer a was deposited.

How long after 1864 the final filling occurred cannot be precisely established, but there would have been some time lapse between the date of manufacture of items and their discard due to loss or breakage. The 14th, 40th and 57th regiments had left New Zealand by 1866-67, so the buttons must have been discarded by that date. The disposal of rubbish into the Big Pit and Pit A may well have been part of a general tidying up of the site just after their departure, but could perhaps have been as late as the closing of the barracks in 1870. The latter may be supported by the presence of construction materials and door and window furniture in the Big Pit, although these could relate to ongoing maintenance activities rather than demolition.

The rubbish fill in Pit A and the bottom of the Big Pit was probably in a primary context, with rubbish discarded directly into rubbish areas, based on the condition of the artefacts, many of which were near complete. The upper levels of the Big Pit included material that was much more fragmented and is therefore likely to have been redeposited from rubbish piles elsewhere on the site as part of a general clean up.

Interpretation of Features

While Rubbish Pit A was clearly dug specifically to dispose of rubbish, the original purpose of the long rubbish-filled trench (the Big Pit) is less clear. It was at least 15m long and may be considerably longer (the northern end was never reached), and was of consistent width and depth, with sloping rather than straight sides. It seems unlikely that such a large feature would have been dug with such military precision simply to dispose of rubbish, though it is possible if it was part of a major site clearance. In addition, it clearly has some relationship with the barracks wall, as it runs exactly parallel to it (see Figures 25-26).

It is possible that it was dug to extract soil for some purpose related to the barracks wall. It may be significant that this corner of the barracks is in the lowest-lying area, with the ground sloping away to the east. Soil may have been required to build up some of these sloping areas as part of the initial wall construction (1846-52), or for later activities in this area. There was no indication of an earth ramp inside the barracks wall, but if there was one it could have been levelled out following site clearance and wall removal. Equally the trench might relate to some method of constructing the upper levels of the wall.

However, if the feature was associated with the initial construction of the wall it appears to have remained open and unfilled for some considerable time, since there was no indication of gradual accumulation in the fill and the lowest layer of fill was not deposited until the 1860s. It was also cut through the barracks occupation layer, indicating that the barracks may have been occupied for some time before the feature was dug. This therefore seems an unlikely scenario.

It is also possible that it was dug for the foundations of a structure parallel to the wall, but there was no evidence for any structure in the bottom of the trench. If the opportunity arises during future development work at the University it would be interesting to see how far this feature extends and whether any further information can be recovered that might shed light on its function.

The near complete skeleton of a medium to large sized dog was found at the bottom of the Big Pit. It is possible that this was a regimental mascot, but it is equally likely

to have been a pet belonging to one of the soldiers or their families, or even a working dog (a tracking dog perhaps). Incomplete remains of two other dogs were found less ceremoniously buried in Rubbish Pit A, discarded along with the rubbish. Elsewhere on the site part of a sheep or goat skeleton was found in what looked like a shallow rubbish pit (the Sheep/Goat Pit), but the area was disturbed. Another dog burial postdated the barracks.

Pit B may initially have been dug as a latrine pit, on the basis of material lining the bottom of the pit that proved to be coal. If so, it was later converted to a rubbish pit, with rubbish deposited directly into it (rather than redeposited from rubbish heaps) judging by the relatively intact condition of the artefacts.

The foundations of the barracks wall were exposed for some distance and this, together with the surviving remnant the other side of Alfred St (Figure 44), confirms the orientation shown on the 1866 map and allows the map to be overlaid on the site plan with reasonable accuracy (Figures 45-46).



Figure 44. Surviving remnant of barracks wall

The five shallow circular features near the barracks wall in the northern part of the excavation areas were identified as barrel impressions (Barrels A-E). They were clearly too circular and shallow to be rubbish pits, and did not contain many artefacts. Barrel E, however, included an early clay pipe (1815-51). They may have been used to store water. Another possibility is that they were used to support planking during the construction of the wall, and another that they were later garden features (urns), since their alignment is possibly related to that of the path shown in the 1908 map (see

Figure 46), as this area was fairly disturbed. The barrel impressions were not within any apparent structure.

There was clear evidence that a workshop with a forge was located within the barracks in the form of forging slag, metal off-cuts and tools such as cold chisels and files. The material was distributed throughout the site with concentrations in all layers of the Big Pit. (The deposit referred to as the Forge Spoil proved to have relatively few items – see Ironwork analysis below – but was the first context where the possibility of a workshop or forge was recognised.) The 29 small buildings along the south and eastern walls of the barracks (Figure 7) included a number of different sized and differently oriented structures, one or two of which may have been the workshop and forge.

About 150 postholes, many in clear linear patterns, were recorded (Figure 25 above). Some were concrete footings that clearly related to 20th century modification. Their distribution was compared with the position of buildings recorded in the 1866 plan and the 1908 plan by overlaying the city plans on the excavation plan (Figure 46). It was clear that while a few postholes at the edges of the excavation area might relate to the small barracks buildings in the 1866 plan, the vast majority relate to no. 9 Symonds St, and to the fence that separated it from no.11. The postholes are aligned perpendicular to Symonds St, as was the merchant house but unlike the small barracks buildings.

The 1866 plan was produced at a scale of 2 chains (132 ft): 1 inch, or 1:1584. While the small scale at which it was drawn is likely to have resulted in minor inaccuracies of a few feet (c.1m), overall it appears to be reasonably accurate when overlaid over the modern street plan, allowing for variations due to later events such as road widening and cut and fill. The two known sections of wall, one recovered in the excavation, the other still standing on the other side of Alfred St, allowed a fairly accurate positioning of the map overlay. The small buildings that once lay within the Student Amenities block were shown on the 1866 map to be 38 ft by 16 ft (11.59 by 4.88m). This was about three-quarters of the size of the temporary barracks, 50 ft by 22 ft (15.24 by 6.7m), that housed 30 men each (see Historical Context, above). These small buildings would therefore have housed no more than about 22 men, and may have been provided for smaller non-regimental units, or for families.

The sizes of other buildings on the 1866 plan appear to match the size of buildings reported at the time where this can be checked (Historical Context, above). The ‘big barracks building’ completed by December 1845 was described in a contemporary account as being 85 ft in length with two wings, each measuring 50 ft. The large U-shaped building by the south gate on the 1866 plan measures 86 ft with 50 ft wings,

and was almost certainly the big barracks. The magazine, described as 50 ft by 15 ft in September 1846, does not at first appear to have any relationship to the Magazine identified in the 1866 map, which is c.190ft by 82ft. However, the magazine was criticised as inadequate in 1859 just before the Taranaki war (see Historical Context), and it may well have been enlarged between that date and 1866. The 1871 Frissel plan (Figure 8) shows that the magazine was made up of three adjoining structures, one of which was presumably the early magazine. Overall, there seems little reason to doubt the general accuracy of the 1866 plan.



Figure 45. Excavation area with 1866 and 1908 maps overlaid

The merchant house at no.9 Symonds St underwent a number of structural changes. The 1882 map (Figure 15) shows it as a smallish building (about 38 by 28 ft, or c.11.5 x 8.5m), but it occupied much more of its site by 1908 (Figure 17). Further alterations were made in 1921 when it was converted to a boarding house; and in 1950 it was reblocked, had some internal alterations and a brick garage was built

(information from Lloyd Macomber and Bruce Petrie of Salmond Reed Architects, who made a record of the building prior to its removal). The majority of the postholes related to the house at no.9 Symonds St, with the line furthest to the south, which included several with concrete footings, clearly part of a fenceline between this and the adjacent property (Figure 46). The number of postholes clearly demonstrates the repiling and extensions that the merchant house is known to have undergone.

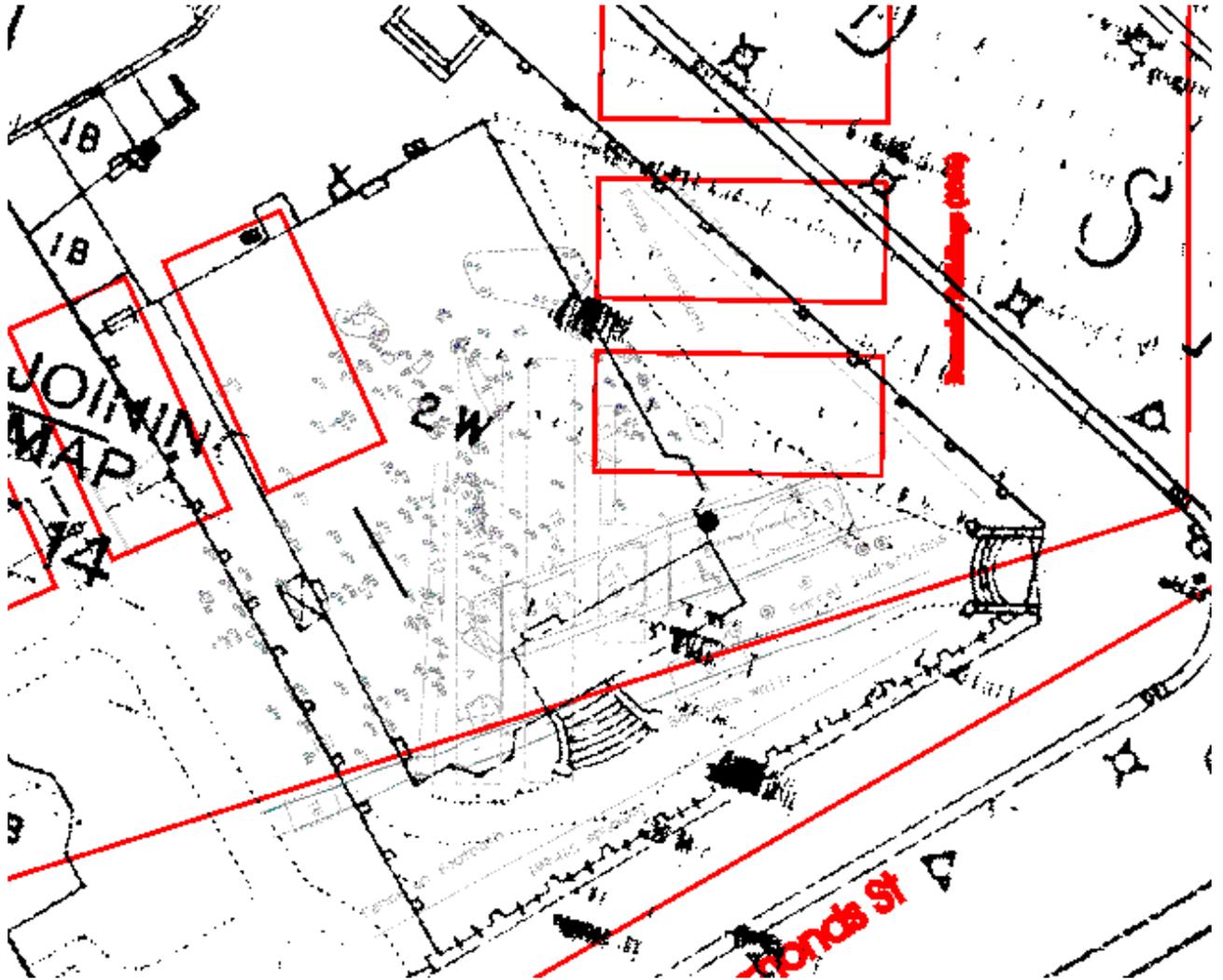


Figure 46. Overlay of excavation area (pale), and 1866 map outline (red) on 1908 City Plan which shows the detail of the merchant's house (building outline, paths, steps and fences). Compare Figure 25

Artefacts and Faunal Material

The artefacts are described in detail in Part 2. The primary data (artefact lists etc) are included in a separate appendix to this report which will be deposited at Auckland Museum, but can also be supplied by Hans-Dieter Bader of Geometria Ltd.

In addition to dating information (above) the artefacts and faunal material discarded by the soldiers and their families illustrated aspects of daily life in the barracks, as well adding significantly to the 19th century archaeological record.

Numerous military items were recovered, including buttons and badges that can be identified as belonging to the following regiments and units: the 14th, 40th, 57th, 58th ad 65th regiments; the Military Train (responsible for supply logistics during the Waikato campaign); the Royal Artillery; the Royal Corps of Sappers and Miners and their successors after 1857, the Royal Engineers. Some of the imperial troops (the 58th and 65th regiments) had been stationed in New Zealand since 1845-1846, but there was a major influx of troops in the late 1850s and early 1860s in the build up to the Land Wars. The 14th regiment arrived in 1858, the 40th and 57th in 1860 and 1861 respectively. The Taranaki War of 1860 and the Waikato Campaign of 1863-4 involved extensive troop movements between the Albert Barracks in Auckland and the areas of military action elsewhere. It was during the Waikato Campaign that the entire adult male population was enlisted for compulsory service and military training, and both conscripts and militia were recorded at Albert Barracks during the 1860s (see Historical Context above, Militaria below). Buttons belonging to the Volunteers and Militia were also recovered.

Additional regiments and units – the 12th and 50th regiments and the Royal Marines – were identified from material recovered from the well in Albert Park in 1979 (Nichol 1979). The fact that artefacts relating to these units were not recovered during the 2001 excavations may be an indication that they were housed elsewhere within the barracks.

Other items relating to the military include flintlock and percussion munitions, and a stoneware ink jar with a government issue broad arrow mark.

However, the artefact assemblages also produced evidence of family life – brass eyelets and lacing hooks from ladies' boots, a ceramic figurine, parts of two ceramic dolls, items from a child's teaset, a lead six-spoked wheel that might be a child's toy, a child's glass marble, and what were probably personal items, such as two chamberpots, a washbowl, a teapot, a porcelain jar and an octagon jug with a face moulded onto it. Some of these may have belonged to the lower ranks, since officers

were not provided with accommodation inside the barracks until after 1858, and many apparently continued to live in cottages outside the barracks after that date (see Historical Context above).

The ceramic assemblage included tableware and the more utilitarian stoneware. While quite a few transfer-printed tableware patterns were identified, the majority of identified patterns were Willow pattern (c.56%), most of them table plates. This lack of variety may be a feature of military sites, since the Te Awamutu Redoubt assemblage was also dominated by one pattern (Asiatic Pheasant, 68%), while non-military sites generally show more variety (see Ceramic analysis below). Some types of vessel that have been found at other sites were missing from the assemblage – soap dishes, egg cups and toothbrush holders, for example – and there was a relatively low percentage of ashets (serving plates). However, cups were well represented – tea was a popular drink and issued as part of the rations with meals. The assemblage included a transfer printed pattern ‘Schizanthus’ which has not previously been identified at any other site in New Zealand.

The clay pipe assemblage was small but varied, with 13 manufacturers identified and a range of pipe styles.

The glassware assemblage was dominated by alcohol bottles (c.76%), mainly beer and gin, at first sight bearing out the soldiers’ reputation for drinking referred to above (Historical Context). However, the percentage is not very different from that at other sites in 19th century Auckland. Several of the beer bottles had their tops deliberately removed, perhaps with a bayonet or knife. Other finds included pickle, sauce, oil and vinegar bottles and a number of pharmaceutical items (medicine, castor oil and pill bottles). Aerated water bottles were only present in small quantities but did include a rare Hamilton patent torpedo-shaped bottle embossed ‘Brown and Campbell’. William Brown and John Logan Campbell were early Auckland’s leading merchants and have been called the founding fathers of Auckland.

While the glassware provides some information on what was eaten and drunk in the Albert Barracks, the exact contents of the bottles cannot always be established, especially as bottles were extensively reused. More direct evidence of diet comes from the faunal assemblage. This showed that beef and mutton formed the staple diet, as might be expected, but that pork, poultry, geese, duck, snapper and possibly rabbit were also consumed. Most of the beef appeared to be of good quality, being represented by sub-adult rather than mature animals. However, mutton was more common than lamb. Whole carcasses appear to have been used and butchers, whether military or civilian, were presumably present in the barracks.

A quantity of ironwork was recovered from the site. In addition to the workshop and forge remains, a lot of material representing the maintenance or demolition of buildings was recovered, much of it from the Big Pit. It included nails, spikes, brackets, coach bolts, and door and window furniture. There was a certain amount of kitchen and utilitarian ware, including stove elements, a frying pan, and various containers, cooking pots and bucket handles. Men's hobnail boots were also represented, and horseshoes which, along with the other items recovered, indicate the presence of a smithy.

CONCLUSION

The artefacts and many of the features excavated in the Student Amenities Block site at the corner of Alfred and Symonds St can be securely associated with the period 1845-70 when the Albert Barracks occupied the site.

The remains included the foundations of the barracks wall demolished in the 1870s, rubbish pits, a trench feature exactly aligned with the wall, and a very small number of postholes that may have related to barracks buildings. The trench may have been excavated either to provide soil or for some other purpose related to the barracks wall, rather than as a rubbish trench, but if so its purpose could not be established. It was filled with rubbish on two occasions, the first some time after 1862, following which a layer of clay was placed over the top, filling the trench and the area between the trench and barracks wall. Another layer of rubbish was placed over the top of this after 1864 as part of a general tidying up of the site, which also involved the digging and filling a of square rubbish pit nearby. This may have been around the time of the departure of most of the imperial troops from New Zealand in 1866-7, or perhaps when the Barracks closed in 1870.

The artefact assemblages contain material relating to the whole period of occupation of the barracks. The artefacts and faunal material discarded during or at the end of the barracks occupation have provided much information about the daily lives of the soldiers and the families that some were allowed to bring with them, since they included items related to family as well as military life. Some items were recovered that have not previously been found on archaeological sites in New Zealand.

PART 2. ARTEFACTS AND FAUNAL MATERIAL

CERAMIC ANALYSIS

The ceramic analysis was the subject of a BA dissertation (Fraser 2002), which contains a fuller analysis and discussion.

Methodology

The excavation of the Albert Barracks yielded a large number of ceramic sherds, all of which were kept and analysed, regardless of sherd size. A total of 3,058 ceramic sherds were categorised by material, colour, vessel form, decorative technique and pattern and entered, together with the excavation context for each sherd, into a Microsoft Access database. A minimum number of 858 vessels was estimated as being present in the Albert Barracks area. This number was achieved through the process of excluding refitted (joining) sherds, and those that matched closely in pattern, colour, vessel form and were from the same context.

Ceramic patterns were identified by a number of means. Those that had formal pattern names were investigated predominantly in Coysh and Henrywood (1982, 1989). To see whether they had appeared in New Zealand assemblages previously reference was also made to accessible material, particularly the DOC reference collection, held in the Auckland Museum, and the His Majesty's Theatre assemblage as outlined in Plowman (2000). Many other designs did not have formal printed pattern titles, but were identified by use of these reference materials. Not all designs could be allocated a pattern name, and some were identified solely by the reference number allocated to them in the DOC reference collection, as an EA number, or Plowman's CE numbering system (Plowman 2000). Patterns without any other form of identification, were listed as 'unidentified'. Colour was based on the dominant colour of the sherd. Vessel form was decided by such factors as rim diameter, pattern placement, thickness and by referring to above mentioned reference material. A number of sherds were small, that is, less than 5mm, meaning it was difficult to accurately define vessel form in many cases. This accounts for the large number of 'unidentified' vessel forms. However, by recording the colour of these sherds it was possible to reach conclusions regarding many of these vessels.

Results

Ceramic Type

Divisions between groups describing ceramic fabric type can be difficult, as during the 19th century these categories became increasingly blurred, meaning that at this period, ‘modern earthenwares, the stonewares and porcelains run into each other by almost imperceptible gradations’ (Janvier 1880 cited in Thompson and Wilson: 1987: 1). The majority (96.62%) of the sherds recovered from the Albert Barracks were made up of earthenware body types (Table 2). Earthenware has been categorised quite broadly here, and encompasses ceramic body types also known as creamware, pearlware and ironstone. However, these are distinctions that are difficult to make without a deep knowledge of ceramics. Earthenwares are mostly made from common red clay mixed with other components. The wares are porous and fired up to 1100°C, and once fired can range in colour, depending on the additives, from pure white to deep red (Thompson and Wilson 1987). Some vessels in the Albert Barracks assemblage were categorised as terracotta, which is technically a reddish-brown earthenware body type (Godden 1980: xxiii). This distinction was made in this analysis in order to enable these particular vessels to be easily identified in the future. The gradation between vitreous china and porcelain is again a difficult one to make. Thompson and Wilson (1987) suggest placing the broken edge to the tongue to test porosity, but this technique was not found to be particularly useful. The high firing temperature of porcelain does, however, mean that the break of the sherd is very sharp, and the colour is even (Thompson and Wilson 1987). This was found to be a satisfactory observational technique used to distinguish the vessels manufactured from porcelain.

Table 2. Ceramic type (entire assemblage)

Type	Frequency	Percent
Earthenware	829	96.62
Porcelain	4	0.47
Porcelain/Semi-Vitreous	2	0.23
Semi-Vitreous	16	1.86
Terracotta	7	0.82
Total	858	100.00

Decorative Technique

As with many historic assemblages in New Zealand, the decorative technique observed on the majority of the ceramics was that of underglaze transfer printing,

reflecting the popularity of these types of vessels in the 19th century. Most of the techniques categorised from the Albert Barracks assemblage have been described elsewhere, particularly in Godden (1980) and Plowman (2000), and will therefore not be outlined further here. However, one category included here is that of ‘imitation jasper ware’ (Figure 47a), a colloquial term for what is more technically termed ‘sprigged vitreous ware’ (Best 1992: 78). These vessels have a moulded decoration in blue placed on to the white body, underneath a clear glaze. In contrast, Jasper ware has a coloured body, most often blue, with white moulded decorations, and is still in production and popular today (Godden 1980). There were a number (7.11%) of underglaze hand-painted polychrome tea wares, mostly of simple floral designs in a ‘peasant’ style (Miller 1991: 8; Elliot 2002: 347) (Figure 47b). One of the decorative styles is known to have been produced by Adams (Figure 47c), a pottery workshop which called these wares ‘Persian Painted Wares’ (Furniss, Wagner and Wagner 1999). Hand painted wares remained popular in the 19th century despite the appearance of transfer printing (Elliot 2002). The main advantage associated with these wares was their placement at the lower end of the price scale, especially when compared to other decorative techniques that raise the cost of production, such as relief moulding (Lockett 2002). The percentage of hand-painted wares is considerably higher than that from the His Majesty’s Theatre assemblage, where wares of this style are recorded as occurring at 2.53% of the minimum number of 1,620 vessels present (Plowman 2000). However the Albert Barracks assemblage only contains thick brush painted styles, rather than the thin brush painted style present at His Majesty’s Theatre (Plowman 2000). Polychrome painted tea wares were popular in the military site of Fort Beauséjour, New Brunswick, Canada, and may have been used in mess tea services after 1820 (Sussman 2000: 53). This factor may account for the higher percentage, and less variability in pattern, of these hand-painted wares at the Albert Barracks.

Table 3. Decorative technique (entire assemblage)

Decorative Technique	Frequency	Percent
Transfer Printed	560	65.27
Plain	90	10.49
Hand Painted	61	7.11
Sponged	23	2.68
Blue Banded	22	2.56
Slipware	20	2.33
Relief Moulding	19	2.21
Colour Glazed	17	1.98
Mochaware	16	1.86
Transfer Printed with Hand Painting	8	0.93

Decorative Technique	Frequency	Percent
Edge Banded	6	0.70
Transfer Printed with Relief Moulding	5	0.58
Imitation Jasper ware	3	0.35
Marbling	2	0.23
Rouletted	2	0.23
Shell Edged	2	0.23
Unglazed	2	0.23
Total	858	100.00

Ceramic Colour

The predominant sherd colour was blue, of various tones, comprising 52.56% of the entire assemblage, including 7.46% flow blue vessels (Table 4). Of these blue vessels, 390 (45.45%) were underglaze transfer printed. The next frequent colour for transfer printed wares was black, which, combined with flow black, comprised 6.53%. Brown transfer printed vessels comprised 5.13%. Brown vessels of other decorative techniques, white, together with yellow coloured vessels, as well as many of the remaining blue vessels in the form of blue banded and slipware, can be seen to represent utilitarian type vessels. Polychrome colours were mainly hand-painted vessels, although the multi-coloured ‘Pratt ware’ pot lid was classified also as polychrome (Figure 47e). Five vessels had gold or gilding (0.58%), which represents more than double the incidence of gilding at His Majesty’s Theatre (0.25%).

The colour classifications do not follow a standardised colour identification system, and none is available specifically for historic ceramics. For the purposes of this analysis, fine-grained colour specificity is not seen as an issue. However, this does mean that, if a colour analysis such as Samford’s (1997) is conducted on this assemblage and any other comparable ones in New Zealand, a re-examination of colour categories and attribution to a colour system such as Munsell may need to be conducted. Re-examination of categories of transfer-print design would also need to occur if this was the case.



a 'Imitation jasper ware' cup



b Hand painted 'peasant style' saucer



c Hand painted handleless tea bowl



d Mug



e 'Pratt ware' pot-lid



f Doll's arm and leg

Figure 47. Ceramics

Table 4. Ceramic colour (entire assemblage)

Colour	Frequency	Percent
Blue	338	39.39
White	90	10.49
Flow Blue	64	7.46
Brown	53	6.18
Polychrome	52	6.06
Light Blue	37	4.31
Yellow	35	4.08
Green	33	3.85
Grey	32	3.73
Black	30	3.50
Flow Black	28	3.26
Purple	27	3.15
Dark Blue	12	1.40
Red	12	1.40
Gold/Gilding	5	0.58
Beige	3	0.35
Cream	3	0.35
Orange	2	0.23
Light Green	1	0.12
Pink	1	0.12
Total	858	100.00

Vessel Form

The majority (69.7%) of vessels were classified as tableware, with cups (20.05%) more frequent than table plates (19.46%), and saucers (15.38%) (Table 5). There are some taxonomic issues associated with identifying vessel form, with these difficulties evidenced clearly by one near complete handle-less hand painted polychrome ‘London shape’ (Brassey 1989: 26; Miller 1991: 15) cup/bowl (Figure 47c). London shaped tea wares are thought to be most common from 1810-1840 (Miller 1991: 15). Although this vessel should technically be classified a bowl as it does not have a handle, other less complete vessels of similar painted design were designated as cups, even though these smaller sherds did not have the remains of a handle attached. Tea bowls were popular wares in Britain, which arose from the influence of Chinese design on the English (Copeland 1980). Cushion (1976) argues that the most important characteristic in a cup is its handle or lack of one, as handles can provide a good form of identification, and a lack of a handle may point to an earlier period of production. However, the transition from tea bowls to handled cups occurred over

many years, with tea bowls still being produced by English potters in 1820 (Cushion 1976: 146). However, Miller (1991) describes simple painted 'London size (Miller 1991:17) handleless teas as being produced up until 1871. Cups of this style without handles would have been cheaper to produce and purchase than fancier fluted or handled designs, and appear as the lowest price scale in Miller's (1991) scaling index. This particular vessel is therefore most likely to be an inexpensive tea bowl. It is similar in style to that recovered from Fort Beauséjour, New Brunswick, Canada, although it is not possible to identify a handle either in the photograph of this vessel (Sussman 2000: 53). Sussman describes these vessels as tea-wares (Sussman 1978, 2000), which is perhaps a more appropriate term in this case, referring to function, rather than form. Sussman believes that these tea-wares possibly belong to mess tea services dating to after 1820 (Sussman 1978, 2000). This is an important vessel in terms of New Zealand ceramic assemblages, as it is a near complete, albeit refitted, representation of a handleless hand painted tea-bowl.

All the mugs were straight-sided, with remnants of handles attached (Figure 47d). It is possible these could be 'coffee-cans' (Cushion 1976: 178). However, ascribing function to these vessels is problematic, as often there is an overlap in design between vessels with differing functions. Only 0.58% of vessels were ashets, or meat platters, and 0.58% were tureens, compared with 5.12% ashets, and 2.10% tureens recovered from His Majesty's Theatre (Plowman 2000: 85), possibly indicating a less formal element to many of the meals at the Albert Barracks.

Recovered from varying contexts was a leg and an arm of two different children's dolls (Figure 47f), pieces of a child's toy teaset (Figure 48a), as well as the base of a figurine (Figure 48b). All these items can be seen to have an association with domesticity, and provide an indication of the presence of women and children on the site. Figurines and other domestic ornaments for display were easily available, being mass-produced cheaply in Staffordshire. These types of ornaments were popular with working and middle class 19th century families, who readily decorated their homes with knick-knacks of this style (Mayne, Murray and Lawrence 2000). The children's toys could possibly have connotations of class associated with them, as the question is raised whether families on a soldier's wage could afford these kinds of possessions. However as it is not possible to associate particular artefacts with specific people residing in the Albert Barracks, this is an association that is not possible to make in this case.

Other items of interest indicating a more domestic side of life include chamberpots (Figure 48c), a washbowl (Figure 48d), and a teapot (Figure 48e).



a Children's toy tea set



b Base of a figurine



c Chamberpot



d Washbowl



e Teapot



f Yellow and brown glazed red earthenware/terracotta bowl

Figure 48. Ceramics



Figure 49. Ceramics

A Chinese porcelain jar was recovered and partially refitted (Figure 49a-b). These do appear periodically in assemblages in New Zealand, with two sherds from a similar vessel pictured in Plowman (2000: 199). Also recovered was a terracotta, or coarse red earthenware, bowl, with a yellow and brown glaze inside, and an unglazed exterior (Figure 48f). This is possibly an example of a fruit bowl, as it certainly would not have been particularly functional as a wash bowl. However, fruit bowls usually

occur on a pedestal (Best pers. comm. 2002). Fruit bowls were also recovered from the 40th regiment Redoubt site in Te Awamutu (Ritchie and Gumbley 1992). Also present was a yellow earthenware ‘octagon jug’ with a mask-head spout (Figure 49c). Spouts in the shape of human faces are indicative of two English factories, Caughley and Worcester, but many others also made them (Cushion 1976: 185). Details of the face can help with identification, with the ones from Worcester picturing a ‘pleasant-looking old gentleman’ (Cushion 1976: 185), and the jugs from Caughley looking stern. The gentleman on the Albert Barracks jug is rather stern looking. Octagon jugs were for sale in Fort Garry, Hudson’s Bay, Canada, in 1851, for various prices depending on size (Collard 1984: 33).

The majority of ointment jars recovered from the Albert Barracks were unidentifiable, although one that is in this category appears to be a ‘Pratt ware’ type decorative pot lid, which may have been atop an ointment pot, or a vessel used for other purposes (Figure 47e). F. & R. Pratt & Co. Ltd of Fenton developed a system of multicolour printing which was used successfully on pot lids and other wares after being shown at the 1851 Exhibition (Godden 1980: 266). Most are unmarked, as is the example from this assemblage. One partial ‘Bear’s Grease’ lid was recovered. Five jars were for Holloway’s ointment, with one intact, aside from a chip in the rim (Figure 47d). This pot is labeled on one side ‘HOLLOWAY’S/FAMILY OINTMENT/FOR THE CURE OF/SCROFULOUS & INDOLENT TUMOURS/INVETERATE ULCERS/Ulcerated Sore Legs Burns Scalds Ringworms Sore Breasts/AND ALL CUTANEOUS DISEASES/GOUT AND RHEUMATISM’. On the reverse reads ‘SOLD/In Pots 1s1½d-2/9-4/6 11 - 22 & 33 Ea/BY THE PROPRIETOR/244 STRAND/ LONDON/ And All Medicine/Venders throughout the Kingdom’. One fragment of another small Holloway’s jar is identified as having the same address as the one described above. The addresses provide a dating clue as Thomas Holloway’s business operated out of 244 The Strand, London, from 1839 to 1867, when he moved to 533 Oxford Street (Prickett 1994: 55). Another complete vessel is recorded from the Omata Stockade, with slightly different wording, but also originating from Holloway’s earlier address (Prickett 1994: 55). The surgeon-major to the 58th regiment, Arthur S. Thomson, was particularly concerned with scrofula, calling it the ‘curse of the New Zealand race’ (Thomson 1859: 215). However, generally the health of the soldiers stationed in New Zealand was far better than that of those in other colonies and in the United Kingdom (Thomson 1859).

A large percentage of the ceramics (26.46%) are classified as ‘unidentified’ vessel forms, because of difficulties providing a certain identification for a large amount of the smaller sized sherds. In this case, it proved well to not estimate vessel form, but to record the other characteristics of colour (Table 6) and decorative technique (Table 7)

of these sherds. These two categories were combined to provide a clearer understanding of the unidentified vessels (Table 8). It is noted that there is a low percentage of kitchenware/utilitarian ware represented in the vessel form category, at 0.35% compared with 2.41% recovered from His Majesty's Theatre (Plowman 2000: 85). Because many of the more utilitarian wares were yellow, white and brown (Collard 1984), it can be surmised, therefore, that the 20.75% of vessels of these colours were actually kitchen or utilitarian wares. Of decorative technique, 28.64% were either blue banded ware, slipware, or plain, and this therefore also indicates a high kitchen or utilitarian ware component.

Table 5. Vessel form (entire assemblage)

Vessel Form	Frequency	Percent
Tableware	598	69.70
Ashet	5	0.58
Bowl	72	8.39
Cup/Bowl	19	2.21
Cup	172	20.05
Jug	9	1.05
Mug	11	1.28
Saucer	132	15.38
Shallow Bowl	4	0.47
Soup Bowl	1	0.12
Table Plate	167	19.46
Teapot	1	0.12
Tureen	5	0.58
Bathroom/Bedroom	20	2.33
Chamber Pot	3	0.35
Ewer/Jug	2	0.23
Ointment	14	1.63
Washbowl	1	0.12
Kitchenware/Utilitarian	3	0.35
Canister/Jar	1	0.12
Jar	2	0.23
Other	237	27.62
Doll	2	0.23
Dolls Teaset	6	0.70
Figurine	1	0.12
Garden Pot	1	0.12
Unidentified	227	26.46
Total	858	100.00

Table 6. Unidentified vessel form by colour (entire assemblage)

Colour	Frequency	Percent
Blue	80	35.24
White	37	16.30
Yellow	24	10.57
Brown	17	7.49
Green	13	5.73
Grey	9	3.96
Purple	9	3.96
Red	9	3.96
Light Blue	6	2.64
Flow Blue	5	2.20
Beige	3	1.32
Black	3	1.32
Flow Black	3	1.32
Gold/Gilding	2	0.88
Orange	2	0.88
Polychrome	2	0.88
Cream	1	0.44
Dark Blue	1	0.44
Pink	1	0.44
Total	227	100.00

Table 7. Unidentified vessel form by decorative technique (entire assemblage)

Decorative Technique	Frequency	Percent
Transfer Print	93	40.97
Plain	34	14.98
Slipware	16	7.05
Blue Banded	15	6.61
Relief Moulded	15	6.61
Mochaware	14	6.17
Colour Glazed	10	4.41
Sponged	10	4.41
Hand Painted	9	3.96
Transfer print with additional moulding	3	1.32
Transfer print with hand painting	3	1.32
Unglazed	2	0.88
Edge Banded	1	0.44
Rouletted	1	0.44

Decorative Technique	Frequency	Percent
Shell Edged	1	0.44
Total	227	100.00

Table 8. Unidentified vessel form by decorative technique and colour (entire assemblage)

Decorative Technique	Colour	Total
Slipware	Beige	2
	Blue	1
	Brown	1
	White	2
	Yellow	10
Slipware Total		16
Sponged	Blue	3
	Dark Blue	1
	Light Blue	2
	Red	4
Sponged Total		10
Transfer Print	Black	2
	Blue	46
	Brown	12
	Flow Black	3
	Flow Blue	5
	Green	8
	Grey	4
	Light Blue	4
	Pink	1
	Purple	8
Transfer Print Total		93
Transfer print with additional moulding	Blue	2
	Green	1
Transfer print with additional moulding Total		3
Transfer print with hand painting	Blue	1
	Purple	1
	Red	1
Transfer print with hand painting Total		3

Decorative Technique	Colour	Total
Unglazed	Grey	1
	Orange	1
Unglazed Total		2
Total		227

Identified Transfer-Printed Patterns

A total of 14 transfer-printed designs were identified by pattern name, representing a minimum number of 205 vessels, or 23.9% of the total number of vessels: Albion, Alma, Asiatic Pheasants, Beehive, Bouquet, Cable, Fibre, Forest, Peacock, Rhine, Schizanthus, Seaweed, Willow and Wicker. Six of these designs had formal pattern titles printed on to the vessel, and one of these patterns, ‘Schizanthus’, has not been recorded as being recovered from historical sites in New Zealand to date (Figure 50a-b). Another pattern, ‘Alma’, has possibly been found in New Zealand previously (Best pers. comm. 2002), but no formal record of this could be found (Figure 50c-d). The 14 designs are listed in Tables 9 and 10 and some are shown in Figures 50-51. All these patterns aside from ‘Alma’ and ‘Schizanthus’ are commonly recovered from Auckland historic sites.

Table 9 shows the relative frequency of identified to unidentified patterns in the assemblage. Several unidentified patterns reported from other sites were found at the Albert Barracks and these are referred to by the number assigned at those sites or in the DOC reference collection (e.g. EA392). Figures 52-53 illustrate a range of these unidentified patterns.

Table 9. Identified patterns (entire assemblage)

Pattern	Frequency	Percent
Unidentified	363	42.31
Plain/No Discernable Pattern	259	30.18
Willow	116	13.52
Rhine	20	2.33
Forest	15	1.75
Cable	12	1.40
Fibre	11	1.28
Seaweed	9	1.05
EA328 – ‘... – Scroll’	8	0.93

Pattern	Frequency	Percent
Schizanthus	8	0.93
Wicker	6	0.70
Holloway's	5	0.58
EA392	4	0.47
CE47	3	0.35
CE96	3	0.35
Asiatic Pheasants	2	0.23
Beehive	2	0.23
CE41	2	0.23
EA312	2	0.23
'ACA...'	1	0.12
Albion	1	0.12
Alma	1	0.12
Bear's Grease	1	0.12
Bouquet	1	0.12
CE250	1	0.12
EA331	1	0.12
Peacock	1	0.12
Total	858	100.00

Willow

The standard 'Willow' pattern was extremely popular in Victorian times (Coysh and Henrywood 1982: 402). It was introduced by Josiah Spode I in approximately 1795 as a response to demand for replacements and additions to original Chinese tea services imported into England by the upper classes for their own tea rituals (Copeland 1980: 12-13). However by 1835-1845, the middle class market had reached saturation point, and designs became standardised, and production quality lower, in order to appeal to other classes who had not had access to such ceramics previously. 'Willow' pattern was one of these designs that became standardised and mass-produced, and soon, along with 'Asiatic Pheasants', dominated the market, being produced by a number of manufacturers (Coysh and Henrywood 1982: 10). In the Albert Barracks assemblage four vessels had manufacturer's marks, one table plate produced by Pinder Bourne and Hope (Figure 51a), two table plates by Scott Brothers, and one table plate by Bell, Cook and Co. Various partial marks also appear (see Fraser 2002). One table plate

also had additional hand painted writing, indicating a personalised design, but not enough of the design is visible to enable interpretation as to whether this was a regimental or an individual design. One vessel had what appeared to be cut marks on its surface, possibly made by a serrated knife.

Total Vessels: 116; 100 table plates, 3 ashets, 3 tureens, 2 bowls, 1 soup bowl, 2 unidentified vessel forms, in blue; 2 table plates in dark blue; 3 table plates in light blue.

Rhine

This name was used through the Victorian period to describe widely used romantic patterns (Figure 51b). It was mostly manufactured in grey, but occasionally occurred in blue (Coysh and Henrywood 1982: 300). Plowman (2000: 94) records a cup in green appearing in the His Majesty's Theatre assemblage. However in the Albert Barracks assemblage this pattern only occurs in grey. One 'Rhine' pattern cup has a printed monogram resembling an 'A', and one Rhine saucer has an impressed mark resembling a 'D'.

Total Vessels: 20; 8 cups, 8 saucers, 1 bowl, 1 table plate, 2 unidentified vessel forms, in grey.

Forest

This pattern is recorded in Coysh and Henrywood (1989: 85) as appearing on teawares, and the vessels from the Albert Barracks assemblage are consistent with this description (Figure 51c). Vessels in 'Forest' pattern have been recovered from historic sites in New Zealand previously, and this design is recorded in the DOC reference collection as EA313. However, the pattern was not identified formally until it appeared in the His Majesty's Theatre assemblage, although no manufacturer could be assigned (Plowman 2000: 95). The Albert Barracks assemblage, however, has two vessels with the trade name printed upon them in cartouche of 'Florentine China'. One brown saucer also has the pattern name 'Forest' and another has a printed beehive surrounded by flowers. Coysh and Henrywood (1989: 84) believe this mark belongs to Samuel Alcock & Co., and is recorded as appearing on a variety of patterns, including 'Forest'.

Total Vessels: 15; 8 cups in blue; 6 saucers, 1 unidentified vessel form, in brown.

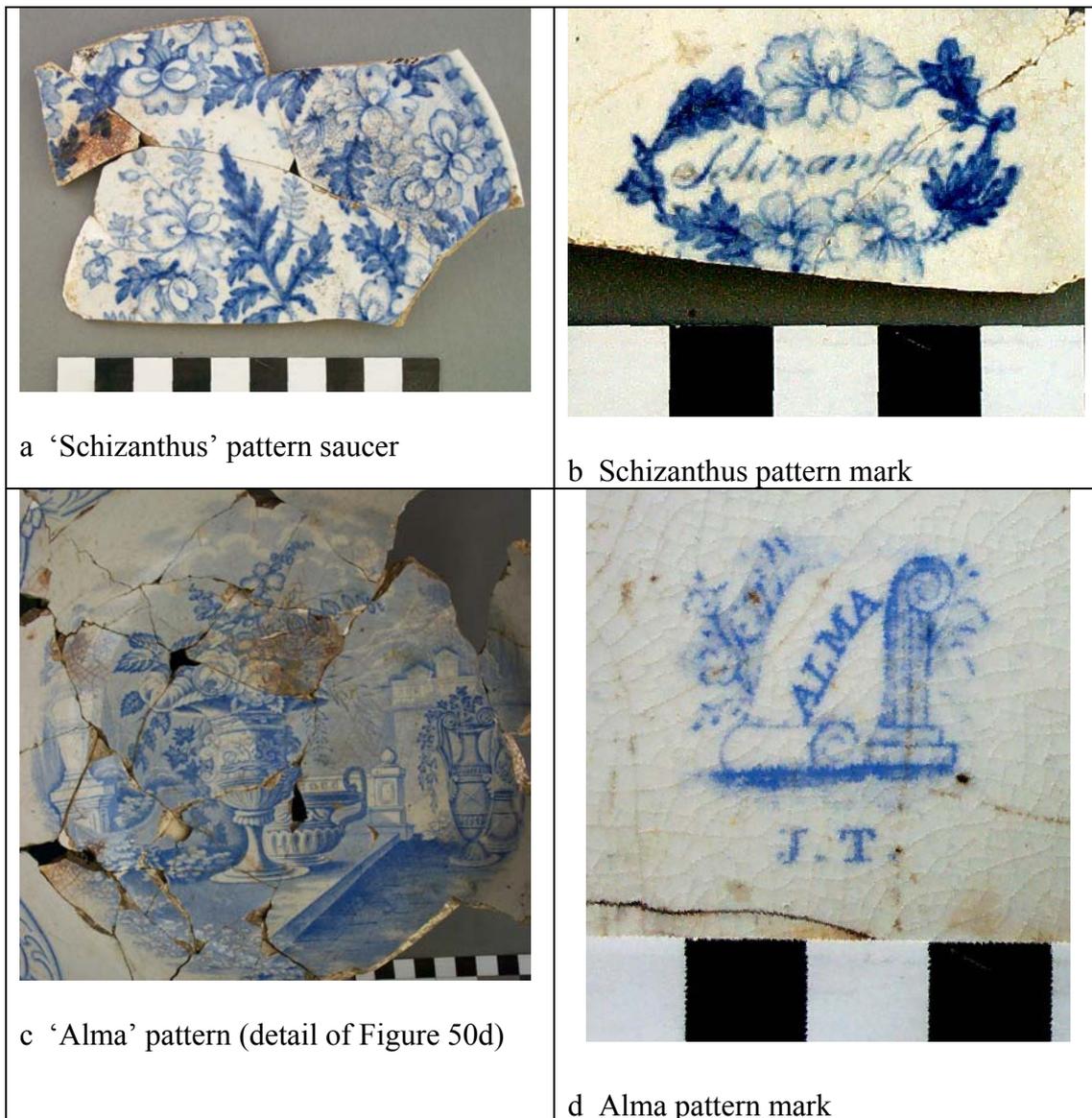


Figure 50. Identified transfer-printed patterns

Cable

A named version of this design appears in the Queen St Gaol assemblage (Best 1992), and is listed in the DOC reference collection as EA5 'Cable'. However, this pattern appears to be indistinguishable from the 'Lockett's Cable' pattern appearing in the Te Awamutu 40th regiment Site S15/173. No reference to either pattern appears in Coysh and Henrywood (1982, 1989).

Total Vessels: 12; 4 cup/bowls, 2 bowls, 1 cup in blue; 2 cups in dark blue; 2 saucers, 1 cup in black.



Figure 51. Identified transfer-printed patterns

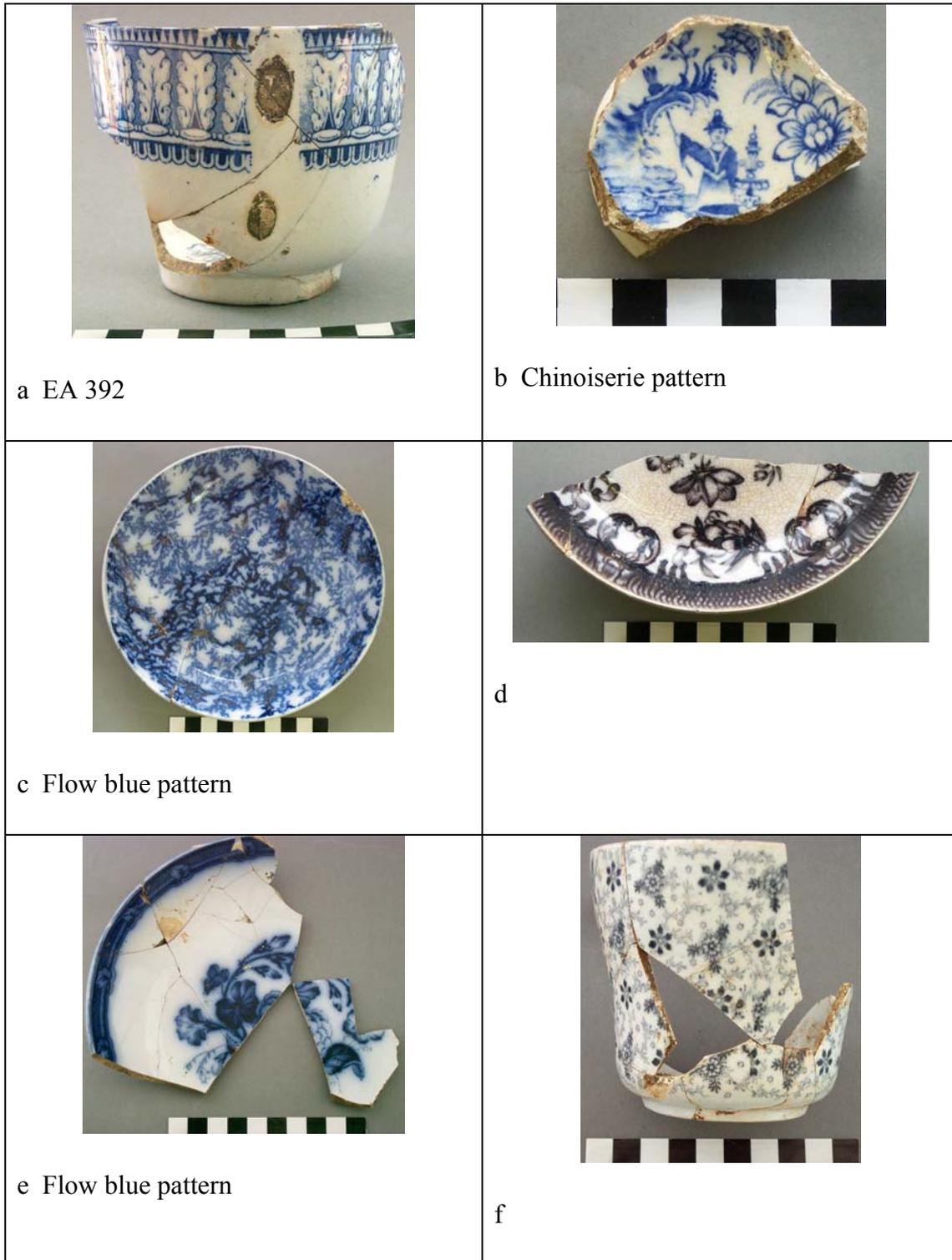


Figure 52. Examples of unidentified transfer-printed patterns

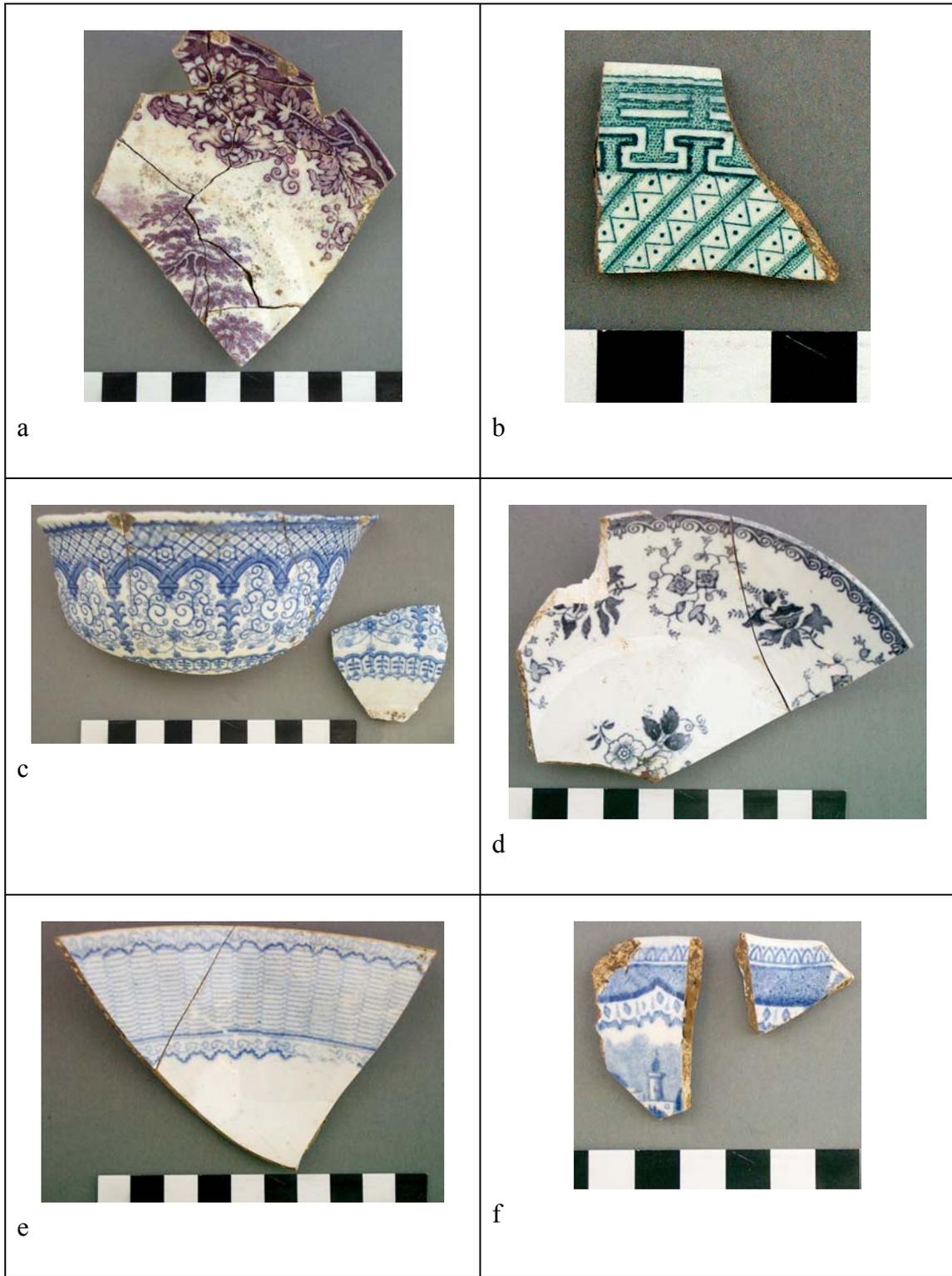


Figure 53. Examples of unidentified transfer-printed patterns

Fibre

This pattern is identified from the DOC reference collection where it is recorded as EA2. It is noted in Coysh and Henrywood (1989: 83) as appearing on children's teawares.

Total Vessels: 11; 1 bowl, 1 cup/bowl, 1 saucer in blue; 2 saucers, 1 unidentified vessel form in green; 3 bowls, 2 unidentified vessel forms in light blue.

Seaweed

This pattern was identified from the record in the DOC reference collection, where it is listed as EA38.

Total Vessels: 9; 2 cups, 2 saucers, 1 cup/bowl, 1 table plate, 2 unidentified vessel form, in blue; 1 cup in light blue.

Schizanthus

This pattern has not been recorded as appearing in historic sites in New Zealand to date, and there is no design of this name in Coysh and Henrywood (1982, 1989). The pattern is floral, and the name appears in cartouche, bordered with flowers (Figure 50a-b). The schizanthus plant is also known as 'butterfly flower' or 'poor-man's orchid' (Macoboy, Rodd and Spurway 1991: 566). This is an adequate description of the flower that appears in this design, and made this pattern readily identifiable in the Albert Barracks assemblage.

Total Vessels: 8; 3 cups, 3 saucers in blue; 2 saucers in grey.

... Scroll

Listed in the DOC reference collection as EA328, this pattern has not been identified previously. However the first half of the pattern name is not visible (Figures 51f and 54e). An Auckland antique dealer confirmed that the pattern name is 'Maltese-Scroll' (G. Smith pers. comm. 2002), but no reference to this name is found in Coysh and Henrywood (1982, 1989). There is also a Registered Design mark, indicating this design was registered to Lockett and Cooper on 20 December 1861 (Godden 1999).

Total Vessels: 7; 4 cups, 2 saucers, 1 unidentified vessel form, in purple.

Wicker

This design is recorded in the DOC reference collection as EA21, and was also identified from Plowman (2000: 122).

Total Vessels: 6; 4 bowls, 1 unidentified vessel form, in green; 1 table plate in light blue.

Asiatic Pheasants

This pattern was second in popularity to ‘Willow’ in the second half of the 19th century, and was printed in light blue (Coysh and Henrywood 1982: 29). It is recorded also in the DOC reference collection as EA3.

Total Vessels: 2 table plates in light blue.

Beehive

A romantic design picturing a beehive and vase of flowers, pictured in Coysh and Henrywood (1982: 37), and stated as being manufactured by William Ridgeway & Co. There is also a variant pattern referred to as having been manufactured by William Adams (Coysh and Henrywood 1982: 37). These vessels do not have formal pattern names on them and were identified from the ‘Beehive’ design listed in the DOC reference collection as EA58. The two cups recovered from the Albert Barracks excavation both have the impressed marks ‘W’ and ‘S’ on the base (Figure 51e).

Total Vessels: 2 cups in black.

Albion

This design is listed in Coysh and Henrywood (1982: 18) as being a common name for patterns, and lists four different designs by six manufacturers. Coysh and Henrywood (1989: 12) list another three manufacturers, including Lewis Woolf of Ferrybridge, the manufacturer of an identical Albion design from His Majesty’s Theatre.

Total Vessels: 1 table plate in blue.

Alma

This design is described in Coysh and Henrywood (1989: 12) as being a romantic scene with a floral border, manufacturer unknown, and the ‘Alma’ mark in a simple panel. The ‘Alma’ design recovered from the Albert Barracks is romantic, with a large urn in the foreground and a number of other urns to the side and behind it, all containing flowers. Mountain scenery forms the background, and the border is elaborate, consisting of a repeating decoration of scrolls, grapes, and flowers. The ‘Alma’ mark is set against a classical column, underneath which is the manufacturer’s mark ‘J.T.’ (Figure 50c-d). It was common to name designs after important events in

remote lands (Coysh and Henrywood 1982: 11). It is therefore probable that the design was named after the battle at the river Alma in the Crimea in 1854, in which the Russians were defeated by the British army and its allies (Barthorp 1987). The earliest manufacturing period for this design would therefore be 1854 or just after.

Total Vessels: 1 washbowl in blue.

Bouquet

Printed garter mark, similar to others found in historic sites around Auckland (Figures 51d, 54f). The Victoria Hotel site had the largest assemblage, of 76 vessels, in this pattern. Of those vessels, one manufacturer was identified, Pinder Bourne & Co., who also manufactured 'Bouquet' vessels recovered from both the Chancery Street and the Queen Street Gaol sites. Pinder Bourne & Co also made the vessel from Albert Barracks. There is no reference in Coysh and Henrywood (1982, 1989) to this floral design that accompanies the 'Bouquet' name.

Total Vessels: 1 table plate in blue.

Peacock

Coysh and Henrywood (1989: 155) list a 'Peacock' design as appearing on children's wares manufactured by Benjamin Godwin. The vessel from the Albert Barracks assemblage, however, has the manufacturer's initials 'S.B &...', and an impressed mark, possibly a flower (Figures 55b, d). This vessel is manufactured in flow blue, and therefore may not be the same design discussed in Coysh and Henrywood (1989), as these volumes do not cover flow blue patterns in great detail (Coysh and Henrywood 1982: 140).

Total Vessels: 1 saucer in flow blue.

ACA...

The design on this vessel bears no resemblance to 'Acadia' recovered from the His Majesty's Theatre site (Plowman 2000: 127), nor does the design fit the description of 'Acanthus' (Coysh and Henrywood (1982: 16). No other designs beginning 'Aca...' are listed. A manufacturer's mark also appears: 'J. & W. P (or R)' (Figure 55a).

Total Vessels: 1 saucer in black.

Other Transfer-Printed Patterns

As well as the 14 securely identified designs described above, one had an unidentifiable pattern title partially visible (Fraser 2002: figures 4.47 and 4.48). Seven

designs did not have full or partial titles, but were identified only by the DOC reference number, or number allocated by Plowman (2000). Only one of these, EA392, is a better representation than that already pictured in either the DOC reference collection or Plowman (2000), and is consequently illustrated here (Figure 52a). There are a number of other unidentified transfer-print patterns that will be recorded in later documentation regarding the Albert Barracks excavation.

Vessel Form by Identified Patterns

By far the most frequently occurring vessel type and pattern was that of ‘Willow’ patterned table plates, making up 51.22% of the Albert Barracks assemblage. The next highest occurrence was ‘Rhine’ pattern cups and saucers and Forest pattern cups at 3.9% respectively . It is only by cross-matching vessel form and pattern that this extreme division has been highlighted (Table 10). This lack of variation in ceramic style supports Sussman’s analysis of Fort Beauséjour, where British military sites can be expected to show a lack of variability (Sussman 1978, 2000).

Identified Manufacturers

Five manufacturers were securely identified from their maker’s marks (Figure 54), with one manufacturer identified by registered design mark referenced in Godden (1999) (Table 11). This is a small number considering the size of the assemblage.

However there are also some partial marks, possibly indicating the fragmented nature of much of the assemblage, and various unidentified manufacturer’s marks (Figure 55). The dates of identified manufacturers' are all within the Albert Barracks period of occupation, though Pinder, Bourne & Co. (Figure 54f) continued manufacturing for some time after (1862-82). An identical mark appears in the securely dated (1865) Victoria Hotel site (Brassey & Macready 1994: fig. 29a).

Table 10. Vessel form by identified pattern (entire assemblage)

Pattern	Vessel Form	Frequency	Percent
Albion	Table Plate	1	0.49
Alma	Washbasin	1	0.49
Asiatic Pheasants	Table Plate	2	0.98
Beehive	Cup	2	0.98
Bouquet	Table Plate	1	0.49
Cable	Bowl	2	0.98
	Cup/Bowl	4	1.95
	Cup	4	1.95
	Saucer	2	0.98
Fibre	Bowl	4	1.95

Pattern	Vessel Form	Frequency	Percent
	Cup/Bowl	1	0.49
	Cup	0	0.00
	Saucer	3	1.46
	Unidentified	3	1.46
Forest	Cup	8	3.90
	Saucer	6	2.93
	Unidentified	1	0.49
Peacock	Saucer	1	0.49
Rhine	Bowl	1	0.49
	Cup	8	3.90
	Saucer	8	3.90
	Table Plate	1	0.49
	Unidentified	2	0.98
Schizanthus	Cup	3	1.46
	Saucer	5	2.44
Seaweed	Cup/Bowl	1	0.49
	Cup	3	1.46
	Saucer	2	0.98
	Table Plate	1	0.49
	Unidentified	2	0.98
Willow	Ashet	3	1.46
	Bowl	2	0.98
	Soup Plate	1	0.49
	Table Plate	105	51.22
	Tureen	3	1.46
	Unidentified	2	0.98
Wicker	Bowl	4	1.95
	Table Plate	1	0.49
	Unidentified	1	0.49
Total		205	100.00

Although the number of identified manufacturers is small, it is interesting to note that none of the ‘best’ English tableware manufacturers are represented. One importer in Ontario, determined to sell tableware of the highest quality, had ceramics from manufacturers including Coalport, Copeland, Derby, Minton, Worcester, Wedgwood, as well as a range of continental porcelains (Collard 1984: 58). Most of the manufacturers represented in the Albert Barracks assemblage have a relatively short production phase, and were operating at the time between 1840 and 1860 when the number of potters producing printed wares was at a peak (Samford 1997: 59). This lack of representation by the higher quality manufacturers raises the question of

supply of ceramics to the New Zealand market at a time when the population was growing, and a cheap and readily available supply of earthenware was possibly all that was required. The role of the Imperial Army in supplying the ceramics to New Zealand is an open question.

Samuel Alcock & Co.

Burslem, Staffordshire Potteries. This manufacturer was identified by the use of the mark 'Florentine China' as part of a printed cartouche together with a beehive device, below the pattern title, 'Forest' (Figure 54a). 'Florentine China' is a trade-mark believed to have been used by Samuel Alcock & Co, and is recorded as appearing on a number of patterns, including 'Forest' (Coysh and Henrywood 1989: 84). Use of the beehive device is also attributed to this manufacturer between the dates of 1830-1859 (Godden 1991: 28).

Pinder Bourne & Hope

Burslem, Staffordshire Potteries. This manufacturer of earthenware operated between 1851 and 1862, when it became Pinder, Bourne & Co. (Godden 1991: 495). The mark 'Warranted P.B. & H' in cartouche, appears on one 'Willow' pattern plate (Figure 54b).

Mann & Co., Hanley

Cannon St, Hanley, Staffordshire Potteries. Arthur and Edward Mann operated this firm between 1858 and 1860, when it became Mann Evans & Co. (Godden 1991: 411). The mark 'Mann & Co. Hanley', appears on a flow black saucer (Figure 54c). Coysh and Henrywood (1982: 237), however, state that this short-lived firm produced blue printed wares. The appearance of this vessel in the Albert Barracks assemblage therefore adds to our knowledge regarding this particular manufacturer.

Bell, Cook & Co.

Phoenix Pottery, Ouseburn, Newcastle-upon-Tyne, Northumberland. There are two marks present on one 'Willow' pattern table plate. One mark, on the underside rim of the plate, pictures a phoenix, with the words 'Bell Cook & Co.' underneath. The second impressed mark, on the base of the plate, is a semi-circle, enclosing a crown, and the words 'Bell, Cook & Co.' around the outside (Figure 54d). This manufacturing partnership was only in production from 1859-1860 (Coysh and Henrywood 1982: 38). This mark is particularly interesting as it captures the fluidity and impermanent nature of the often short-lived pottery companies and partnerships.



a Florentine China mark (trademark of Samuel Alcock & Co) on Forest pattern plate



b 'P.B.&H.' (Pinder Bourne & Hope) mark on Willow pattern plate (Figure 51a)



c Mann & Co, Hanley mark



d Bell Cook & Co mark on Willow pattern plate



e '.... Scroll' mark on saucer (Figure 53f)



f Bouquet/Pinder Bourne & Co mark on Bouquet pattern plate (Figure 51d)

Figure 54. Maker's marks

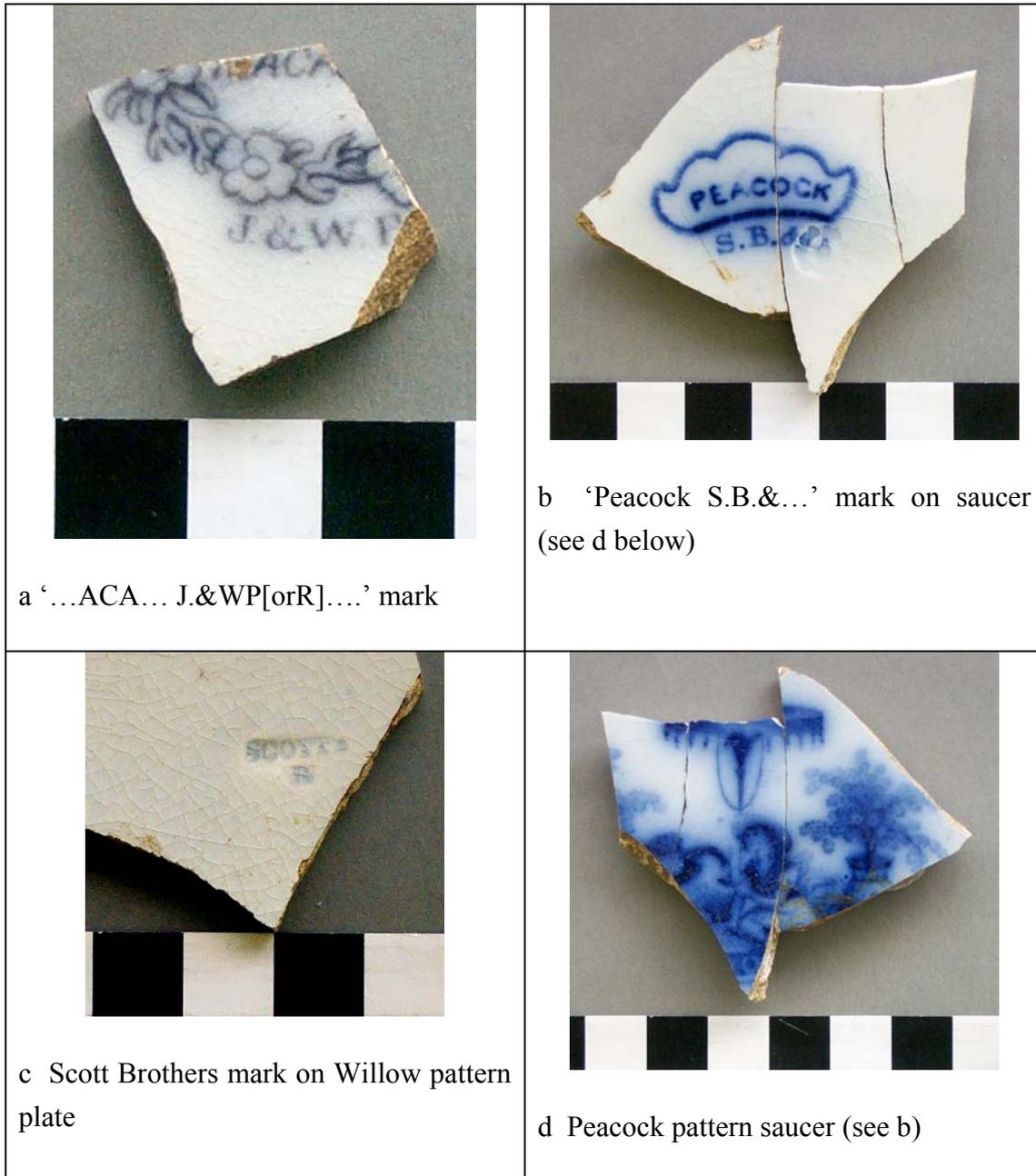


Figure 55. Maker's marks

Phoenix pottery, however, began in 1821 and was transferred to Isaac Bell & Co. in 1844. It then had a succession of owners, culminating with Cook Brothers who, in 1860, converted the ceramics factory into one for the production of chemicals (Godden 1972: 213). Despite this the Bell and Phoenix works must have had a long-standing relationship as they also had a china shop in New Brunswick, Canada, and were one of the most effective distributors of their own English earthenware products to that country during the 19th century (Collard 1984).

Lockett & Cooper

This manufacturer was identified solely through a registered design mark (see below) on one saucer with the partially visible pattern name ‘...- Scroll’ (Figure 54e). The mark was registered to this Hanley firm on 20 December 1861. No details regarding this particular manufacturer can be discovered, but Godden (1991: 393) refers to a Hanley firm, Lockett Baguley & Cooper, manufacturing between 1855 and 1860. The Lockett name was around the Staffordshire potteries from 1802 to 1832 in various partnerships (Coysh and Henrywood 1982: 224). From 1835 to 1852, John and Thomas Lockett traded in Longton, Staffordshire and it is likely that this was one family (Coysh and Henrywood 1989: 127). There are also several Staffordshire manufacturers from this period of the name Cooper. These were often of short duration, and none date to or were manufacturing in 1861 (Godden 1991: 714). Therefore it is likely that Lockett & Cooper emerged out of the previous partnership of Lockett Baguley & Cooper, and was possibly in production for a short time only.

Pinder, Bourne & Co

Nile St, Burslem, Staffordshire Potteries. This manufacturer of earthenware was in operation from January 1862 to 1892. The mark ‘P.B. & Co.’ appears on one ‘Bouquet’ pattern table plate in a crown-topped garter type printed mark, with the pattern name present also (Figure 54f).

Manufacturer’s Registered Design Marks

In 1839 the British Government passed a copyright protection Act whereby all new designs had to be registered (Godden 1999). In 1842 new designs were registered in London, where the pattern and other relevant details were received and entered into ledgers under various classes and given a parcel number. This was not just for ceramics, as there were thirteen classes in total. Ceramic objects covered class IV. The registered design mark is a diamond shape with coded letters for the year, day of month, parcel number, and month appearing in the corners of the diamond. The first placement of these codes occurred from 1842 to 1867, after which date the order changed (Godden 1999), providing a useful approximate indication of date even if only a partial mark occurs. There were two registered design marks in the Albert Barracks assemblage. One only has the day of the month visible in the right corner which is consistent with the earlier, 1842-1867, mark placement. The second mark has more detail, and was recorded as being registered to the firm Lockett & Cooper, Hanley, Staffordshire on 20 December 1861 (Godden 1999: 187) (Figure 54e). These registered design marks provide the earliest possible date for a new pattern, and the

copyright protection was only valid for three years. However, marks could still occur after this time period had elapsed (Godden 1999: 170).

Table 11. Dated manufacturer's marks

Manufacturer	Date	Pattern	Vessel	Context
Samuel Alcock & Co.	1830-1859	Forest	Saucer	Big Pit a
			Saucer	Big Pit a
Unknown	1842-1867	Unidentified Registered Design	Table Plate	Big Pit a
Pinder Bourne & Hope	1851-1862	Willow	Table Plate	Pit A
Mann & Co., Hanley	1858-1860	Unidentified	Saucer	Big Pit a
Bell, Cook & Co.	1859-1860	Willow	Table Plate	Big Pit a Pit A
Registered Design to Lockett & Cooper	1861	EA328 '...- Scroll'	Saucer	Pit A
Pinder, Bourne & Co.	1862-1882	Bouquet	Table Plate	Big Pit a/b Big Pit b

Partially Identified Manufacturer's Marks

J. & W. P [or R]

No manufacturers using the initials J. & W. P are listed in Godden (1991). However the Hanley, Staffordshire manufacturer John and William Ridgeway used the mark J. & W. R. between 1814 and 1830 (Godden 1991: 534). The mark is printed in cartouche together with the partial pattern name 'ACA...' on one black saucer (Figure 55a). Context: Complex 22 .

S.B. &...

One flow blue saucer in 'Peacock' design, marked 'S.B. & ...' is recorded. An impressed mark, possibly a flower, obstructs the view of the final letters in the mark (Figure 55b). This mark can be attributed to a number of manufacturers. Southwick Pottery, Scott Brothers, manufactured between c1800-1897, using a wide variety of impressed and printed marks. This manufacturing mark was known to be in use by this firm between 1838-1854 (Godden 1991: 587). There are, however, other firms that this mark could be attributed to. Samuel Barker & Son used the mark S.B. & S. 1834-1893 (Godden 1991: 55), Sampson Bridgwood & Son (Ltd) used the mark S.B.& Son, 1805 - . The firm Sharpe Brothers & Co. used the mark S.B. & Co. from 1838-1895, and made mainly sanitary wares. Context: T9 N15/E20.

SCOTT

This impressed mark with an ‘R’ or a ‘D’ below the ‘Scott’ name appeared on two ‘Willow’ pattern plates (Figure 55c). The ‘Scott’ mark was used by Scott Brothers, Portobello, Edinburgh c.1786-1796 (Godden 1991: 566), which would be an unlikely early manufacturing date for ceramics appearing in the Barracks assemblage. The more likely manufacturer is Scott Brothers, Southwick Pottery in Durham. Southwick Pottery used the ‘Scott’ mark between 1838-1897 (Godden 1991: 587-588), however no reference to the additional ‘R’ or ‘D’ can be found. Context: Complex 44.

Date of Manufacture

Table 12 shows the manufacturers’ date ranges. All datable ceramics fit within the period of occupation of the Albert Barracks, but three of the manufacturers are not recorded as starting production until 1860.

Distribution

Ceramic sherds came from every trench and many contexts within the excavation area (Table 13). Like most classes of material, their main distribution is inside the Big Pit (both layers) and rubbish Pit A.

Table 12. Manufacturers’ dates of production

1890							
1885							
1880							
1875							
1870							
1865							
1860							
1855							
1850							
1845							
1840							
1835							
1830							
	Samuel Alcock & Co.	Unknown	Pinder Bourne & Hope	Mann & Co.	Bell, Cook & Co.	Lockett & Cooper	Pinder, Bourne & Co.

Table 13. Vessel forms by context

Context	Vessel Form	Minimum Number
Big Pit layer a	Ashet	1
	Bowl	25
	Cup/Bowls	3
	Cups	51
	Doll	1
	Dolls Teaset	2
	Figurine	1
	Jar	1
	Jug	4
	Mug	3
	Ointment Jar	6
	Saucers	26
	Shallow Bowl	2
	Table Plate	50
	Tureens	2
	Unidentified	91
Total layer a		269
Big Pit layer a/b	Ashet	2
	Bowl	16
	Cup/Bowl	3
	Canister/Jar	1
	Cups	48

Context	Vessel Form	Minimum Number
	Doll	1
	Dolls Teaset	1
	Ewer/Jug	1
	Jugs	3
	Mugs	6
	Ointment Jar	4
	Saucers	41
	Soup Bowl	1
	Table Plate	44
	Tureen	1
	Unidentified	41
	Washbowl	1
Total layer a/b		
Big Pit layer b	Bowl	2
	Cup/Bowl	1
	Cups	6
	Saucers	6
	Table Plates	4
	Unidentified	13
Total layer b		32
Big Pit Complex 40	Cup	1
	Saucer	1
	Table Plate	1
	Unidentified	2

Context	Vessel Form	Minimum Number
Total C40		5
Total - Big Pit		521
Other Complexes		
Barracks Wall	Cup	2
	Mug	1
	Saucer	2
	Table Plate	2
	Unidentified	2
Total BW		9
Post Barracks C10	Cup	1
	Saucer	1
	Unidentified	3
Total C10		5
Posthole C15	Unidentified	1
Forge Spoil	Saucer	1
Pit A	Bowl	5
	Chamber Pot	2
	Cup	10
	Saucer	6
	Shallow Bowl	2
	Table Plate	9
	Teapot	1
	Tureen	1

Context	Vessel Form	Minimum Number
	Unidentified	9
Total Pit A		45
Posthole C38	Unidentified	1
Barrel C	Table Plate	1
Pit B	Ashet	1
	Bowl	1
	Cup/Bowl	1
	Jug	1
	Ointment Jar	1
	Saucer	3
	Table Plate	3
	Unidentified	1
Total Pit B		13
Post Barracks C56	Unidentified	2
Total C56		2
Total - Other Complexes		83
General Barracks Area		
Trench 1	Bowl	1
	Cup/Bowl	6
	Cup	5
	Saucer	5
	Table Plate	4
	Unidentified	2

Context	Vessel Form	Minimum Number
Total Trench 1		23
Trench 2	Bowl	1
	Cup	1
	Ointment Jar	1
	Table Plate	1
	Unidentified	2
Total Trench 2		6
Trench 3	Bowl	1
	Cup	2
	Dolls Teaset	1
	Saucer	2
	Unidentified	4
Total Trench 3		10
Trench 6	Cup	2
	Saucer	1
	Table Plate	1
	Unidentified	4
Total Trench 6		8
Trench 7	Bowl	8
	Cup	15
	Dolls Teaset	2
	Ewer/Jug	1
	Jar	1
	Jug	1

Context	Vessel Form	Minimum Number
	Mug	1
	Ointment Jar	1
	Saucer	18
	Table Plate	18
	Unidentified	24
Total Trench 7		90
Trench 9	Ashet	1
	Bowl	11
	Cup/Bowl	4
	Chamber Pot	1
	Cup	25
	Saucer	18
	Table Plate	25
	Tureen	1
	Unidentified	24
Total Trench 9		110
Total - Trenches		254
Total Vessels		858

The initial excavation interpretation suggested that the rubbish Pit A (Complex 23) constituted a primary context, that is, an area deliberately dug for the immediate disposal of rubbish. Therefore the ceramics were most likely discarded into this rubbish pit directly upon breakage. It was also suggested that the area comprising the Big Pit was a secondary context, where ceramics were moved from another area into this area, most likely as part of two separate fill episodes (although this seems to have been less the case in layer b). A comparison was therefore undertaken to determine whether there were any fundamental differences between the ceramics assemblages

from these two areas caused by these taphonomic processes (Fraser 2002: table 3.3 and figure 3.11).

Pit A (complex 23) and the layers of the Big Pit all had similar percentages of cups, regardless of the sample size from each context. This could be due to ease of identification of cups, or frequencies of use factors, meaning that cups regularly appear in the assemblage generally. Table plates appeared at similar frequencies also, aside from the bottom layer (layer b) of the Big Pit, where they were low. However this context also had a disproportionately high percentage of unidentified vessels. This may also reflect the relative chronology of the Big Pit. However, from examining the identified manufacturing dates, absolute chronological differences relating to the ceramics between the layers of the Big Pit were not possible to see by these dates. Pit A had the highest percentage of bowls, and this could be a result of vessels from this feature being composed of larger fragments, therefore allowing for easier identification. Likewise, this feature also had a low percentage of unidentified vessels. However, the mixed layer a/b from the Big Pit had the lowest percentage of unidentified vessels. This comparison therefore did not highlight any significant differences between percentages of vessels in the primary and secondary contexts, even though many of the vessels from Pit A consisted of larger, easily refitted fragments. The main conclusion that can therefore be drawn from this comparison is that identification and counting of vessels seemed to be consistent whether the context was thought to be primary or secondary.

Area C

In addition to the main assemblage, a minimum number of 17 vessels was recovered from Area 2, in the location of the house at no. 4 Alfred St (Figure 18) dating from the 1870s. The development revealed foundations at the back of this house that were examined by members of the archaeological team. Sherds from a yellow octagon jug and a blue transfer printed bowl were refitted with vessels belonging to the secure Albert Barracks context. The occurrence of earlier dated artefacts in a later site is consistent with the mixing up of contexts when the house foundations were established. The vessel forms are similar to the Albert Barracks assemblage, and include a Willow pattern athena, table plate and tureen; a Fibre pattern bowl; and a variety of other vessels, either plain or of unidentified pattern, including a doll's teaset. None of the vessels from Area 2 had manufacturing marks present. These vessels have not been included in the figures for the Albert Barracks.

Cross-Context Refitted Vessels

A number of vessels from both within and across contexts could be refitted. Each refitted vessel was given a refit identification number in the database in order to be able to easily retrieve provenance data. Pit A (Complex 23) had a number of vessels that could be easily refitted, and one teapot was recovered almost intact. Many of the vessels recovered from this pit consisted of larger fragments. This would be expected in a primary context, as the vessels are in their original place of deposition, and not subjected to secondary movement that may cause extra fragmentation. Many other vessels from within other contexts were also refitted. However, many vessels from across a number of contexts were also refitted, and this factor allows for some interpretation regarding relationships between areas in the site.

A number of relationships between areas and layers existed (Fraser 2002: table 3.4). Firstly, there were a number of vessels with fragments spread throughout the Big Pit layers and the trenches. However, only one vessel (refit 12) crossed from layer a to layer b. This could be due to site disturbance through taphonomic processes, although this seems unlikely given that this situation occurs with only one vessel. This could also be due to insecure excavation methods in this case. Fragments of three vessels from Pit A were also found in other contexts, mostly the upper layers of the Big Pit, and in trenches. This could possibly mean that Pit A is later than the bottom layer b of the Big Pit. The vessels may have been broken around the area of the filled in, or partially filled in, Big Pit, leaving fragments behind, with the bulk of the vessel being thrown away into the deep rubbish pit of Pit A.

Comparison with Other Assemblages

When comparing sites a number of factors need to be considered. Firstly, site comparison proved to be difficult as each site was unique, varying in area excavated and sample size. Added to this issue, methodologies regarding excavation, and particularly analysis, were not always explicit in the published reports. Sample sizes vary considerably. The closest site to the Albert Barracks in size of the assemblage is the Victoria Hotel, whereas His Majesty's Theatre is nearly double the sample size. This could have an effect on frequencies due to larger sample sizes generally exhibiting more diverse assemblages. This would appear to have an effect on the comparisons of vessel form, as the larger samples have a more diverse range of vessels than the smaller samples. Relative frequencies of vessels present on a particular site may be due to factors specific to that site, for example large amounts of plain whiteware may constitute a commercial site, or matched decorated sets may

indicate a domestic site (Worthy 1982). Likewise, Best argues, you would not expect to find comparable types of vessels from sites with varying uses, for example a pub and an upper class establishment (Best 1992). However, class differences in assemblages have proved to be difficult to pinpoint in New Zealand assemblages, as evidenced by Plowman, who argues for other factors to be considered such as supply (2000).

Sites of similar date with sufficient published information were selected for comparison with the Albert Barracks assemblage. All of the sites were Auckland ones in order to put the sites on an equal footing with regards to supply of wares, apart from the 40th regiment Redoubt Site in Te Awamutu, which was included to provide a comparison to another military site.

40th Regiment Redoubt Site Te Awamutu - S15/173 (Ritchie and Gumbley 1992)

The site was occupied by the 40th regiment of the British army during the Waikato campaigns of 1863-1864. The redoubt was headquarters of the general staff, commissariat, artillery and engineers, and also included a bakery and camp post office. Only the 'Redoubt Phase' ceramic artefacts have been used in the comparison with the Albert Barracks assemblage.

Fort Ligar (Brassey 1989; Smith 1989)

Fort Ligar was used as a comparison only with regard to vessel form, as this was the only available data regarding ceramics in the final publication (Brassey 1989). This site is the earliest used as a comparison, dating to 1845, when it was hastily put up by settlers in response to the fall of Kororareka in the north (Smith 1989).

Browns Mill (Brassey 1990)

This represents an early Auckland residential site, with occupation dating from the 1840s. For the purposes of this comparison, only the pre-1876 archaeological features as described in Brassey (1990: 22-29) have been used. These consist of Feature 1 (well), Feature 2 (house foundations, and Feature 3 (rubbish pit - occupation layer).

Victoria Hotel Site R11/1530 (Brassey and Macready 1994)

This site is an important one in relation to the historical archaeology of Auckland, and no comparison would be complete without the inclusion of this large, well-documented, assemblage. Because the hotel was destroyed by fire in 1865, a large cellar provided a secure context for dating the archaeological artefacts, and a number of the ceramic remains proved to be relatively complete and well marked. As a

consequence, many of these artefacts have been utilised further by the DOC reference collection, now held by the Auckland Museum.

Queen Street Gaol Site R11/1559 (Best 1992)

The Queen Street Gaol was operational from 1844 until 1864. The only area of excavation thought to be definitely associated with the Gaol is the lowest level of the well, where only buckets were found, and the Waihorotiu Creek bed. Only this context from the Gaol site was used, as it was wished to have another institutional site against which to compare the Albert Barracks.

His Majesty's Theatre Site R11/1624 (Felgate 1998; Plowman 2000)

The ceramics assemblage from His Majesty's Theatre is one of the largest recovered from historic sites in Auckland (Plowman in Felgate 1998: 29). This factor highlights the importance of including this assemblage in any comparison of ceramics from 19th century sites in New Zealand. All vessels from all areas were included in the comparison, as most corresponded with the time of occupation of the Albert Barracks.

Site Comparison - Vessel Form

The Albert Barracks assemblage has the lowest percentage of identified vessel forms, whereas the 40th regiment Te Awamutu site and the Queen Street Gaol (Waihorotiu Creek) site have the highest, totalling 100% (Table 14). These two sites may well have had no unidentified vessels, however this could be due to the unidentified vessel forms not being included in the totals in the reports, or to differing methodologies that are not made explicit in reports.

The Albert Barracks assemblage contains many of the vessel forms recovered from the comparison sites, but does not contain such items as soap dishes, egg cups and toothbrush holders (Table 15), despite being a large assemblage. This could be due to taxonomic difficulties with identification due to the fragmented nature of much of the assemblage, differences in interpretation of vessel form across the assemblages, or simply to lack of vessel presence in the military site. However, as stated by Best (1992: 70), every ceramics assemblage will vary in vessel form depending on the site's history of use and occupation. There are therefore some similarities and differences to be noted when comparing the Albert Barracks to the other sites chosen.

Table 14. Site comparison - total identified vessels

Site	Total No. Vessels	Total No. Identified	Percentage Identified
His Majesty's Theatre	1620	1492	92.1
Albert Barracks	858	631	73.5
Victoria Hotel	803	771	96.0
Fort Ligar	255	240	94.1
Browns Mill	168	164	97.6
Te Awamutu	122	122	100.0
Queen St Gaol (Waihorotiu Creek)	66	66	100.0

Table 15. Site comparison - vessel form as percentage of identified vessels

Vessel Form	His Majesty's Theatre	Albert Barracks	Victoria Hotel	Fort Ligar	Browns Mill	Te Awamutu	Queen St Gaol
Ashet	5.6	0.8	3.1	2.5	4.9	9.8	4.5
Bowl	8.8	11.4	4.0	6.3	7.3	5.7	15.2
Butter Dish	0.1						
Candlestick			0.6				
Canister/Jar	1.5	0.2	1.3				9.1
Chamber Pot	1.4	0.5	4	3.8	2.4	0.8	3
Chamber Pot/Washbasin			0.3				
Cup	17.0	27.3	17.1	26.7	13.4	27.9	12.1
Cup/Bowl	3.3	3.0	2.1				3
Doll		0.3	*				
Dolls Teaset		1.0	*				
Egg Cup	0.5		2.1	2.1	0.6	2.5	
Ewer	0.5	0.3	0.3		0.6		1.5
Figurine	0.4	0.2		*		0.8	
Garden Pot		0.2					

Vessel Form	His Majesty's Theatre	Albert Barracks	Victoria Hotel	Fort Ligar	Browns Mill	Te Awamutu	Queen St Gaol
Gravy boat/Sauce boat	0.1						
Jar		0.3	0.1				
Jug	2.5	1.4	4	2.9	1.8	3.3	6.1
Kitchen Bowl	1.0				0.6	0.8	
Mug	1.8	1.7	1.0	1.3	2.4	8.2	4.5
Ointment	0.1	2.2					
Ovenware	0.1		0.4			0.8	
Plate/Saucer			3.4				
Salt Cellar	0.1						
Saucer	19.4	20.9	14.1	13.3	20.1	9.0	6.1
Serving Dish					0.6		
Shallow Bowl	0.9	0.6					
Small Dish			0.3				
Soap Dish	0.1		0.5				
Soup Bowl	1.1	0.2				2.5	
Table Plate	29.0	26.5	34.1	38.8	37.2	25.4	21.2
Teapot	0.1	0.2	0.5	0.8	1.2	0.8	1.5
Toothbrush holder	0.5		0.4				
Toothpaste/creampot/ cosmetics	0.8		0.4			0.8	3
Tureen	2.3	0.8	5.1	1.7	4.3		9.1
Washbowl	1.0	0.2	0.8		2.4	0.8	
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (n)	1492	631	771	240	164	122	66

* A cup and saucer from a child's teaset, a doll's leg and a miniature doll were recovered from the Victoria Hotel, and 3 figurines from Fort Ligar, but were not included in the vessel counts. Figurines were also found at Chancery St (Macready & Goodwyn 1990), though this site has not been included in the comparison.

The percentage of bowls is relatively similar across all assemblages, with the Albert Barracks being slightly higher than the other sites, aside from the Waihorotiu Creek Bed of the Queen St Gaol site. The percentages for table plates are also similar, although Albert Barracks is slightly lower than the other sites.

The low percentage of ashets, particularly in comparison to Te Awamutu is of interest. The Albert Barracks has considerably fewer ashets than both His Majesty's Theatre and Victoria Hotel, despite assemblage size. Numbers of ashets in Te Awamutu could be high due to the lower sample size. However tureens were present in the Albert Barracks, whereas they were not recovered from Te Awamutu. However the percentage is low also compared with the other sites. These two vessel forms have a function as serving vessels, and these differences may have a relation to the types of food being cooked and the social situation surrounding food consumption.

British army rations for rank and file soldiers was fixed in 1813, and did not change substantially for at least 50 years (Skelley 1977: 63), although precise composition would vary depending on local conditions (Holmes 2001: 281). Most commonly, the staples were bread, meat and potatoes (Skelley 1977: 64). In Auckland, a Commanding Officer of the 40th regiment noted that the dinners were insufficient, and ordered commanding companies to provide men with one pound of potatoes while 'taking care that the Messing does not exceed the regulated 7½d' (40th (2nd Somersetshire) Regiment 25th November 1862, Alexander Turnbull Library). Meat was cooked in one copper, and potatoes in another, resulting in boiled beef, potatoes and broth, and the food was dished out with tin mugs (Holmes 2001: 281). These meals were hardly the sort to be served upon platters and tureens. On the other hand, officers' messes could be quite elaborate, requiring officers to contribute mess subscriptions in order to accumulate showy items of china and glass for parade and display purposes (Holmes 2001: 283). Therefore, the large difference in percentages of serving vessels between the Albert Barracks assemblage and the 40th regiment site in Te Awamutu could be due to these two differing social standings within the British army.

Of interest also is the high percentage of cups in the Albert Barracks assemblage, together with Te Awamutu and Fort Ligar. Tea was a popular, and affordable, drink, and the idea of tea parties was used by Sergeant William Marjouram, Royal Artillery, in Taranaki 1860-61 in order to prevent and discourage drunkenness amongst the soldiers (Barber, Clayton and Tonkin-Covell 1990). Tea was also served at breakfast, and supper as part of daily rations (Holmes 2001). Only one teapot was recovered, nearly intact (Figure 48e).

British army policy was to provide soldiers with cheap eating and drinking utensils, and soldiers were supplied with field kits, which included a tin plate and tin cup (Sussman 1978, 2000). When George Brier, a teenager with the 68th Durham Light Infantry (Brier 1990) was sent to Tauranga, he comments that all they had to eat off was their mess tins and a tin plate, 'nothing in the Pottery line' (Brier 1990: 25). By

highlighting this fact, it is reasonable to assume that George Brier had experienced eating off pottery at other times while in the army. Whilst Sussman (1978, 2000) argues that the issue of field kits is reason to believe earthenware items found in British military sites must have belonged to officers, this may not necessarily be the case, as each regiment was responsible for its own purchasing (Holmes 2001), and this may have included providing cheap crockery in some cases. In addition, wives taken on the strength of the army, who were on half rations (Holmes 2001), and children, were not issued with field kits, and would have required other implements from which to eat off, either provided by themselves, or by the army.

Albert Barracks shows a low percentage in washbowls and, together with Te Awamutu, chamber pots. One chamber pot from the Albert Barracks was refitted to complete, and has a rim diameter of 232mm. This is relatively small, and compares with chamber pots from His Majesty's Theatre measuring between 229mm and 254mm. Soldiers were issued with urine tubs in barracks rooms, replaced in the 1850s by wash-rooms and ablution blocks (Holmes 2001). New Zealand may have been advanced on this, as plans for a wash house and privy were made in 1845 for Fort Britomart, in Auckland (War Office, WO 01-403, 1845, University of Auckland Library). Therefore this particular chamber pot must have been a personal possession, possibly, due to its size, belonging to a woman (Figure 48c). Only one washbasin was recovered from Albert Barracks (Figure 48d). There is reason to believe this washbasin also was a personal possession, as soldiers washed in metal basins. These metal basins were thought to be the cause of an epidemic of sore eyes amongst the soldiers of the 40th regiment stationed at the Albert Barracks in 1862, and soldiers were ordered to 'scour them perfectly clean' on a daily basis (40th (2nd Somersetshire) 28th June 1862, Alexander Turnbull Library).

The Albert Barracks assemblage also has, albeit in low percentages, personal items belonging to children, such as dolls, and pieces of a doll's teaset, items which of all the other sites only appear at the Victoria Hotel. Also of interest is the figurine, which is most likely again to have been a personal possession. Figurines were also found at Te Awamutu, His Majesty's Theatre, Fort Ligar, and Chancery St.

In conclusion, this brief comparison highlights some fundamental similarities and differences of vessel form between varying 19th century sites. Some of these could be due to sample size, as the small assemblages do have a less diverse range of vessel forms. However, it is possible to see some differences in the Albert Barracks assemblage in that children's toys are present, and some vessels are notable by their absence, namely egg cups, soap dishes and kitchenware (although as discussed above, this could be due to taxonomic difficulties). Of interest are the large percentages of

cups in the military sites. It is also possible to see a military presence through an interpretation of the percentages of serving dishes, washbowls and chamber pots.

Site Comparison - Identified Patterns

Percentages of vessels with identified patterns vary across the comparison sites with the highest being Te Awamutu at 41.8% and the lowest being the Waihorotiu Creek assemblage at the Queen Street Gaol at 10.6%. Of the identified patterns listed below, the Victoria Hotel and His Majesty’s Theatre have the largest variety (Table 16). Victoria Hotel has 28 patterns present, and His Majesty's Theatre 21, including the category ‘other patterns’. The Te Awamutu site has the second to least variation in identified patterns with only nine patterns being identified. However it shows the highest percentage of identified patterns to the total number of vessels at 41.8%. Notwithstanding issues with pattern identification (discussed in Fraser 2002), it stands to reason that the more frequently a pattern appears in the archaeological record, the higher the likelihood of a formal pattern name eventually appearing with it. This proved to be the case with ‘Schizanthus’ in the Albert Barracks assemblage. This pattern stood out initially as it was appearing frequently, and a piece was recovered with the formal pattern title intact. Because ‘Willow’ pattern occurs so frequently in 19th century historic sites it is generally not necessary for the pattern name to be present for it to be identified. This pattern occurs in all the comparative sites, possibly because of ease of identification, but is most frequent in the Albert Barracks, at 56.59% compared with 44.9% in His Majesty’s Theatre. The other pattern to occur in all sites is Asiatic Pheasants, which occurs most frequently in the 40th regiment Te Awamutu site. However, site comparisons of this nature are a simple examination only, and interpretation is restricted by the difficulties and issues associated with pattern identification (discussed in Fraser 2002).

Table 16. Site comparison – percentage of identified patterns

Pattern	His Majesty’s Theatre	Victoria Hotel	Albert Barracks	Te Awamutu	Browns Mill	Queen St Gaol
Abbey		0.3				
Albion	4.13	17.1	0.49		12.1	14.3
Alhambra		0.3				
Alma			0.49			
Antique	2.75	4.4				

Pattern	His Majesty's Theatre	Victoria Hotel	Albert Barracks	Te Awamutu	Browns Mill	Queen St Gaol
Asiatic Pheasants	0.17	4.1	0.98	68.63	6.1	14.3
Avon				1.96		
Beehive			0.98			
Berry	1.03					
Bird				1.96		
Bouquet		24.1	0.49			
Broseley	1.72	0.6				
Buccleugh		1.0				
Buffalo Hunt		0.3				
Cable		0.3	5.85	1.96	3.0	
Canova	0.86					
Corea	0.86					
Dorgan	1.89					
Dulcamara		2.5			3.0	
Eugenie		0.6				
Fibre	10.33	3.8	5.37		3.0	28.6
Florence		0.3				
Foliage				1.96		
Forest	2.41		7.32			
Gem					12.1	
Hannibal Passing the Alps		1.9			3.0	
Kulat		1.9				
Medina	1.03					
Milanese		4.1				
Morea	1.72	0.6				
Peacock			0.49			
Persian Japan	0.86					
Princess Alexandra		0.6				
Provence		0.6				
Rhine	4.13	4.4	9.76	9.80	12.1	
Ribbon		0.3				
Rouen				1.96	6.1	
Schizanthus			3.90			

Pattern	His Majesty's Theatre	Victoria Hotel	Albert Barracks	Te Awamutu	Browns Mill	Queen St Gaol
Seaweed	0.17	0.6	4.39	1.96		
Scenery	2.24					
Syria		1.0				
The Fox and the Grapes					3.0	
Triumphal Car		0.6				
Vine		0.6				
Wicker	0.86		2.93			
Wild Rose	1.89				6.1	
Willow	44.9	22.2	56.59	9.80	30.3	42.9
Woodbine	1.03					
Zebra Hunt		0.3				
Other patterns	14.97					
Total (%)	100.0	100.0	100.00	100.00	100.0	100.0
Total (n)	581	315	205	51	33	7

Site Comparison - Vessel Form by Identified Pattern

Data from the two military sites, Albert Barracks and Te Awamutu, has been compared with His Majesty's Theatre, which has the largest assemblage. Only 'Willow' and 'Asiatic Pheasants', two of the most popular patterns in the 19th century (Collard 1984), have been compared against the vessel form from these sites, as these show the greatest level of difference (Table 17).

'Asiatic Pheasants' was most common in the 40th regiment Te Awamutu site, with table plates representing 54.9% of vessels with identified patterns, with ashets and bowls also present in this pattern. By contrast Albert Barracks has only 0.98%, and His Majesty's Theatre even less, on 0.17%. This is a stark contrast, as 'Asiatic Pheasants' was extremely popular in the second half of the 19th century (Coysh and Henrywood 1982: 29).

Table 17. Site comparison – vessel form by identified pattern (percentages)

Pattern/Form	Albert Barracks	Te Awamutu	His Majesty’s Theatre
Asiatic Pheasants			
Ashet	-	11.8	-
Bowl	-	2	0.17
Table Plate	0.98	54.9	-
Willow			
Ashet	1.46	-	8.78
Bowl/Soup Bowl	1.35	-	0.86
Table Plate	51.22	9.8	30.46
Tureen	1.46	-	4.13
Other	-	-	0.68
Unidentified	0.98	-	-

When examining ‘Willow’ pattern by vessel form, the differences between the Albert Barracks assemblage, His Majesty’s Theatre and Te Awamutu is highlighted. Although the percentage at His Majesty’s Theatre is still relatively high at 30.46% of vessels with identified patterns, it is possible to see the range and frequency of vessels present at this site is greater than that at Albert Barracks, where table plates dominate at 51.22%.

The Albert Barracks assemblage and the 40th regiment Te Awamutu site exhibit a lack of variability when the data on vessel form and identified pattern are combined. This analysis is consistent with Sussman’s (1978, 2000) analysis of British military ceramics, where she has argued that a lack of variability in ceramics is a feature of military sites when compared with civilian sites.

Conclusion

A minimum number of 858 vessels were recovered from the Albert Barracks assemblage, and a minimum number of 17 recovered from Area 2. Ceramic type, vessel form, decorative technique and colour are consistent with those found in other historic sites in New Zealand. One new transfer printed pattern, ‘Schizanthus’, has been positively identified, with another, ‘Alma’, also clearly recorded. One DOC referenced pattern has now been partially identified. The Albert Barracks assemblage would appear to support Sussman’s argument (1978, 2000) that British military sites

are categorised by a lack of variability. A Chinese porcelain jar was recovered and partially refitted (Figure 49a-b). These do appear periodically in assemblages in New Zealand, with two sherds from a similar vessel pictured in Plowman (2000: 199).

However, also contained within the Albert Barracks assemblage are clear indicators of domesticity, namely the children's toys and the figurine, together with items that were most likely personal possessions, such as the washbowl and chamberpot.

STONEWARE

Stoneware is defined as a ‘hard, strong, vitrified ware usually fired above 1200°C, in which the body and glaze mature at the same time and form an integrated body-glaze layer...[The] glaze ... quality shows as an integration of the colours of body and glaze, mottlings and soft edges to colour variations’ (Hamer 1975: 285). Stoneware vessels were generally hardwearing utilitarian containers that held products such as ink, stove blacking, grease, ginger beer, other liquids and food products.

Vessel Types

The Albert Barracks stoneware assemblage was relatively small, with 230 stoneware sherds recovered, representing a minimum of 48 vessels (Table 18).

Table 18. Minimum numbers of stoneware vessels

Context	Ink containers	Bottles	Blacking Jars	Jars	Jug	Other
Big Pit a	3	-	2	1		
Big Pit b	5	2	1	1		
Big Pit a/b	5	5	-	1	1	1
Pit A	1	-	2	-		
General Barracks Area	4	9	2	1		
Forge Spoil	1	-	-	-		
Total	19	16	7	4	1	1

Ink containers were the most common vessel type (19) (Figure 56), followed by other kinds of bottles (16) (Figures 57c-d, 58a). There were also at least 7 ‘blacking jars’ (Figure 58b), 4 preserving jars (Figure 58c), a jug (Figure 58d) and at least one unidentifiable but very thick walled vessel of relatively small diameter.

Seventeen of the ink containers were small ‘penny’ ink bottles. All were plain (Figure 56a) except for one more decorative example (Figure 56b). The other two containers were a large glazed off-white bottle (Figure 56c), probably an ink bottle but with no pouring spout, and a large salt-glazed ink jar (Figures 56d, 57a-b). The latter was of particular interest since it carried an impressed broad-arrow mark, distinguishing property belonging to the British government (Gordon 1982). The vessel originally had a spout (now broken, but the base of the spout can be felt on the vessel) and was identified as an ink jar by Simon Best (pers. comm. 2002). The vessel is glazed inside, but is poorly fired and finished.

The bottles were mainly ginger beer bottles with typical 'blob' tops (Figure 57c-d). There were 11 definite examples and three bases which almost certainly came from ginger beer bottles. The other two bottles consisted of a long-necked bottle, possibly for beer (Figure 58a), and the base of what was probably a 'bols' type gin bottle (not illustrated).

The 'blacking jars' have a characteristic shape (Figure 58b). This kind of jar often contained stove blacking or grease, but may also have been used for various other products.

Three of the four preserving jars were small two-tone cream and brown clear-glazed jars ('Bristol glaze') (Figure 58c). One had a line of rouletted decoration just below the shoulder. The fourth example was a base, most probably from a preserving jar, with an off white fabric and pale greenish interior and exterior clear-glazed surfaces.

Manufacturers' Marks

Impressed manufacturers' marks occurred on three vessels, one of which, on a preserving jar from Big Pit layer b, was illegible.

The second mark was on a ginger beer bottle from layer a/b of the Big Pit and read: VITREOUS STONE .../WARRANTED NOT TO ABSORB/J. BOURNE/PATENTER/DENBY & CODNOR PARK POTTERI[ES]/NEAR DERBY (Figure 59a). The Bourne pottery was established in 1809. Joseph Bourne marks with the addition of 'Codnor Park' were produced between 1833 and 1861, while '& Son' was added to the mark from about 1850 (Godden 1964: 89-90). This bottle can therefore be dated to 1833-50.

Two small sherds from the same ginger beer bottle (on the basis of the very distinctive fabric) also carried marks. The sherds came from the general barracks area and had a grey fabric with a distinctive mottled dark brown salt glazed exterior. One sherd was from the body of the vessel and carried the mark ... FIELD. The other consisted of part of the neck and shoulder carination and was impressed [AR]THUR (Figure 59b). A bottle with these marks was found at the Chancery St site (Macready and Goodwyn 1990: 38, S1). The 'Field' mark relates to Thomas Field of Sydney, who manufactured ginger beer bottles between 1839 and 1873. He used a mark with his name set in curved lines as on this example from 1850 on (Jones 1979: 37). Arthur refers to David Arthur, a ginger beer brewer operating in Auckland in the 1840s and 1850s (Macready & Goodwyn 1990: 44). This bottle can be dated to 1850-1973.



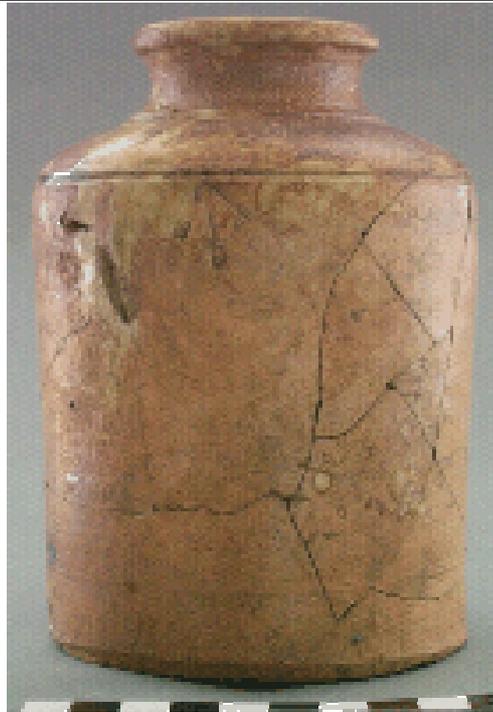
a 'Penny' ink bottle



b 'Penny' ink bottle

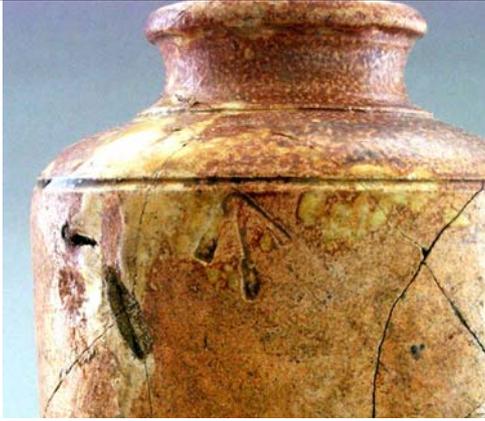


c Large ink bottle



d Poorly made ink container with government issue broad arrow mark

Figure 56. Stoneware ink containers



a Detail of Figure 58d



b Same vessel from above



c Ginger beer bottle



d Ginger beer bottle

Figure 57. Stoneware



a Bottle



b 'Blacking' jar



c Preserving jar



d Jug

Figure 58. Stoneware



Figure 59. Manufacturers' marks on stoneware ginger beer bottles

Conclusion

The stoneware assemblage was small, with a fairly limited range of types, mainly ink containers, ginger beer bottles, blacking and preserving jars. Single examples of a 'beer' bottle, a probable gin bottle and a jug made up the rest of the assemblage, and crocks may have been represented by a few thick-walled sherds. The two identifiable marks show that stoneware was being brought to New Zealand from both England and Australia, and that at least some of the ginger beer was being produced locally. It is interesting to note that the government issue ink jar was one of the poorest quality items in the assemblage.

CLAY PIPES

378 Clay Pipe fragments were recovered from the Albert Barracks, mostly associated with the Big Pit and Pit A. A count of the most frequently occurring, uniquely identifiable feature, in this case the transition between stem and bowl (spur), gives the minimum number of pipes represented as 73.

Manufacturers and their Marks

There are at least 11 different manufacturers represented in the Albert Barracks assemblage, including two that have never been found in New Zealand (Dumeril and Joseph Scott), and two which are only rarely found (Jones and Harris and J.G. Reynolds).

Of the 56 fragments attributed to known makers, Scottish firms represented a huge majority, with 50 examples (89%), a theme that is mirrored in most New Zealand sites (Figure 60).

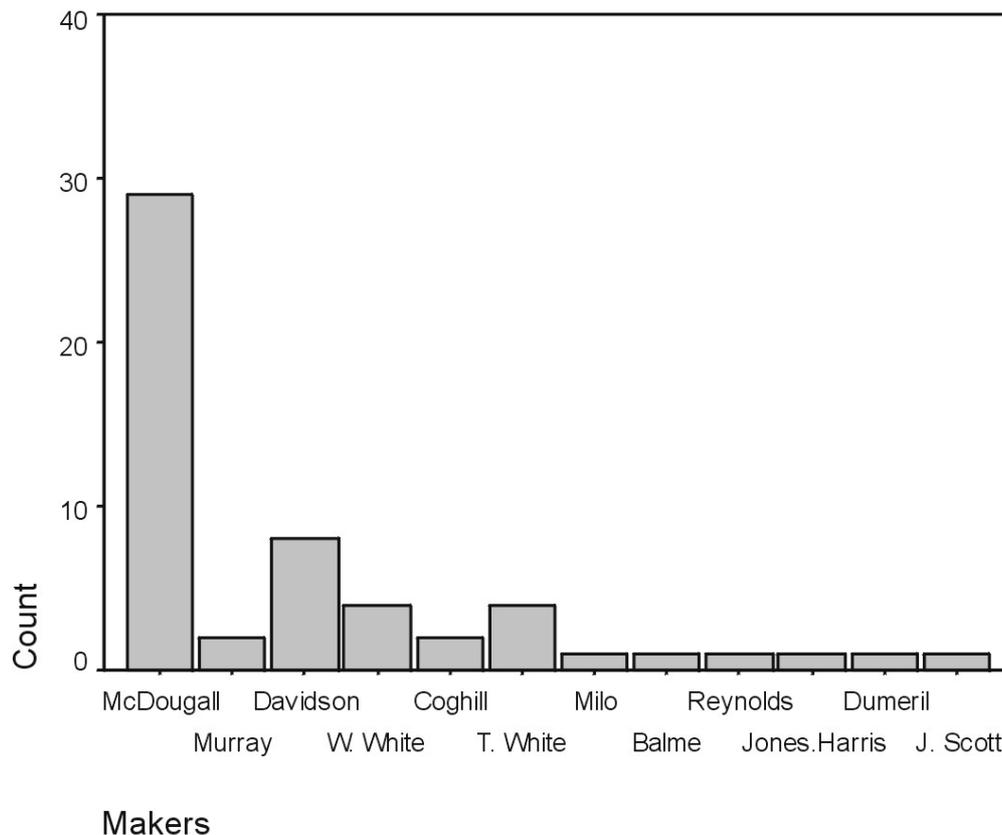


Figure 60. Frequency of makers' marks

Duncan McDougall and Co., Glasgow

Duncan McDougall and Company are listed for the period 1847-1968 (Oswald 1975:205.) At least 29 fragments from this maker are present, exhibiting three different marks. By far the most numerous is the simple MCDOUGALL/GLASGOW (Figure 61j) which is represented by 26 stems and one bowl, with one of these belonging to a bowl with the face of a Greek king on it (Brassey and Macready 1994: fig 41.P79). (Figure 63b). One stem has MCDOUGALL.GLA[SGOW]/ [CO]URIER PIPE, and another MCDOUGALL.GLASGOW/CUTTY PIPE (Figure 61k). All these types appeared at Victoria Hotel and Omata Stockade (Brassey and Macready 1994; Prickett 1994).

William Murray and Co., Glasgow

This company operated between 1830 and 1861, when it was taken over by Thomas Davidson (Oswald 1975:205; Walker 1983). It is not unusual to find Murray pipes in sites dating to around 1865 (Brassey and Macready 1994; Prickett 1994). Only two fragments were recovered at the Albert Barracks, both bearing the words MURRAY/GLASGOW (Figure 61d).

Thomas Davidson and Co., Glasgow

Thomas Davidson took over Murray's company (Caledonian pipe works) in 1861/2 and continued to manufacture pipes until 1910. Eight fragments were recovered from different contexts in the Albert Barracks. All bear the inscription DAVIDSON/GLASGOW (Figure 61g).

William White, Glasgow

Oswald (1975:206) lists William White of Glasgow as manufacturing pipes between 1805 and 1955. This firm is represented in this assemblage by no less than 4 fragments, most of which bear the simple inscription W.WHITE/GLASGOW (Figure 61b). The one exception is a robust bowl which bears the words BEN NEVIS CUTTY on the back, with 471 W[.WHITE]/[GLASGO]W on the stem (Figure 63e). A good number of these pipes were found in the Cromwell district in the South Island (Foster 1983).

Alexander Coghill, Glasgow

Oswald (1975:205) lists Alexander Coghill as manufacturing clay pipes between 1826 and 1904. Only two fragments were recovered from the Barracks, both bearing the

words A.COGHILL/GLASGOW (Figure 61f). Large amounts of these pipes were recovered from the Paremata Barracks in Wellington (1846-52) and from the excavation of an Albert Barracks period well from Albert Park (Nichol 1979; Prickett 1981b).

Thomas White and Co., Edinburgh

Walker (1983:20) reports this firm as having operated between 1823 and 1876. It is quite well represented within New Zealand assemblages, proving to be most frequently represented firm after the Glasgow manufacturers. It is represented in the Albert Barrack Assemblage by five fragments, many of which exhibited raised relief writing on the stem (Figure 61e).

Paul Balme, London

Paul Balme is listed in directories as a pipe manufacturer for the periods of 1832-54 and 1862-6 (Oswald 1975:132.) Only one pipe fragment from this manufacturer is present in the Albert Barracks assemblage, with the inscription BALME/MILE END appearing in a shield on the back of the bowl (Figure 61a).

Theophilus Milo, London

This maker appears in the directories between 1860-70 (Oswald 1975:142.) Only two fragments were found from this maker, which fit together to form the words MILO'S ENGLISH COURIER along the top of the stem (Figure 62c). Milo pipes have been found in a number of New Zealand sites, though always in small numbers.

J.G. Reynolds, London

J.G. Reynolds is listed in the directories between 1828-82, meaning that it encompasses the entire period of the Barracks occupation. However, it has only been found in two New Zealand sites to date, with the greater majority of the finds coming from Victoria Hotel in an 1865 context (Brassey and Macready 1994). The inscription on the one fragment that was recovered reads [REYNAL]DS.CITY ROAD/BURNS CUTTY [PIPE] (Figure 62a).

Jones and Harris, Liverpool

This firm is listed in directories between 1864 and 1874 (Oswald 1975:178.) It is represented by a single stem fragment [JONES.] HARRIS/LIV[ERPOOL] (Figure

62d). As far as I am aware this maker appears only in one other New Zealand site, that of Victoria Hotel (Brassey and Macready 1994).

Joseph Scott, Hull

One fragment has the words JOSEPH SCOTT written on a shield on the back of the bowl (Figure 62h). This may be representative of the Hull maker Joseph Scott, who manufactured pipes between 1815 and 1851, or his son Joseph Henderson Scott, who manufactured pipes between 1842-8. This is the only such bowl reported from a New Zealand site.

McLaughlin, Ireland

Two fragments of bowl fit together to form the words MCLAUGHLIN FRANOSSY[?] on the back, facing the smoker (Figure 62g). Oswald's (1975) lists four Irish makers by the name of McLaughlin, all of them working out of Dublin. They are I. McLaughlin (1846), Jane McLaughlin (1846), Phillip McLaughlin (1832-5) and Patrick McLaughlin (1837). It is most likely that none of these makers were actually responsible for this pipe, and that it was made by one of the large Glasgow firms, since no other Irish pipes were present.

Dumeril, St Omer

Dumeril was, along with Filet and Gambier, one of the most famous pipe making firms in France. They produced pipes out of the city of St Omer between 1844 and 1895, and have been found in many sites in America (Humphrey 1969). The one stem recovered from the Albert Barracks is the only known example from New Zealand, and bears the inscription DUMERIL/LEURS/S!OMER/DEPOSEX, at right angles to the stem (like many French pipes, Figure 62e). This stem presumably dates from before 1877, when the firm changed its name to Dumeril and Bouveur (Walker 1983:30).

Commissioned Pipes

Much like the cap in modern society, clay pipes were often used as a form of advertising, and would be either sold or given away to clients. Only one stem from this assemblage can be attributed to this category, that being one that bears the inscription ...XSON/SYDN... (Figure 61c). The full inscription should read DIXSON/SYDNEY. This was made for Hugh Dixson, who was a Sydney Tobacco

merchant from 1839-59 and 1863-1902. A similar pipe was found in Kerikeri in the early 1990s, but unfortunately no context is given (Challis 1994).

Pipe Styles

The Albert Barracks site is represented by quite a variable assemblage, which includes many different styles. Many of these are named, with others being decorated and others still being variations with neither mark nor design.

Named Varieties

TD

As with most New Zealand sites the most numerous style of pipe is the TD pipe. TD pipes are found all over the world and have been manufactured for the past 250 years (and are still made in Germany and Japan.) To give some idea of the style's popularity, by 1900 Glasgow firms were making 42 varieties of TD pipe, more than half of which were produced by McDougall (Walker 1983:38).

There were at least nine TD pipes found at the Albert Barracks (Figure 63a). Of these, most had the letters' mould imparted to either side of the back of the bowl (Figure 63c). This specific style of TD pipe was known to have been made by Thomas Davidson, though it is very likely that McDougall and other Glasgow manufacturers also produced it. There is also one bowl fragment with the letter D on it in conjunction with the American flag (Figure 61h).

Baltic Yachter

The Baltic Yachter is a well known make of pipe that has appeared in many New Zealand sites. It is represented by a single stem (Figure 62i). A Baltic Yachter appears on McDougall's Irish Price List of 1875, though other Scottish firms are known to have made this variety (Brassey and Macready 1994:75; Sudbury 1980:46).

Coo'ey

A bowl fragment was found which has the word Coo'ey in a circle on the back (Figure 62f). This style of pipe has also been found at Victoria Hotel. Coo'ey appears as number 119 on the Irish Price List (Sudbury 1980:46) and would have been made with the Australasian market in mind. (Brassey and Macready 1994:76).

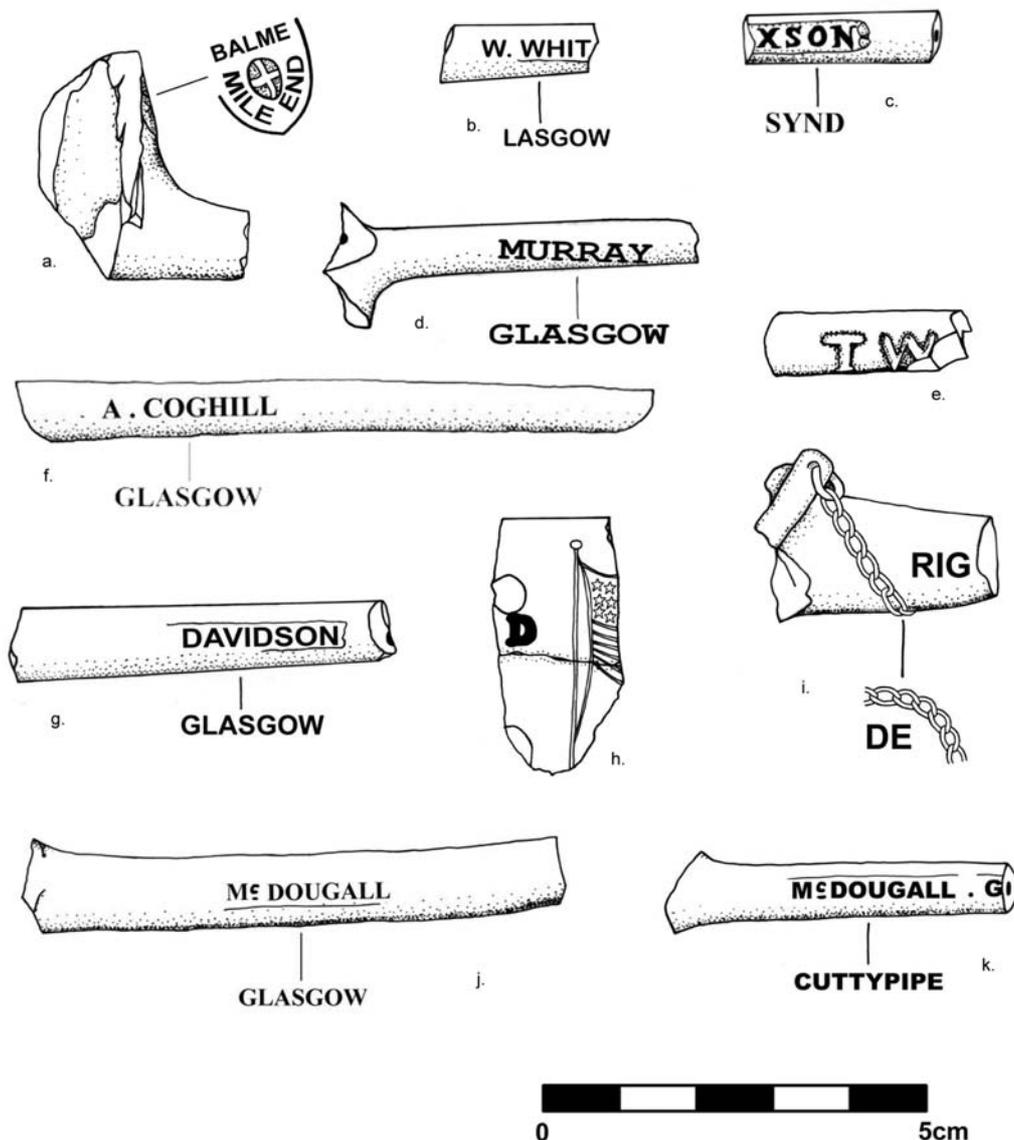


Figure 61. Clay pipes

Squatters Budgerees

This style of pipe seems to have had a long history in New Zealand, with examples from a wide range of sites. One example was recovered from the Paremata Barracks (1846-52) (Prickett 1981a), with further examples from Edmunds Ruins (in an 1850s context) (Challis 1994), and in a recently excavated site at Bell Block. This style of pipe, as with Coo'ey, was made with those Down Under in mind, and could have been made by any of the firms represented in the site (though it is quite likely that McDougall, who supplied most of the pipes, made this one).

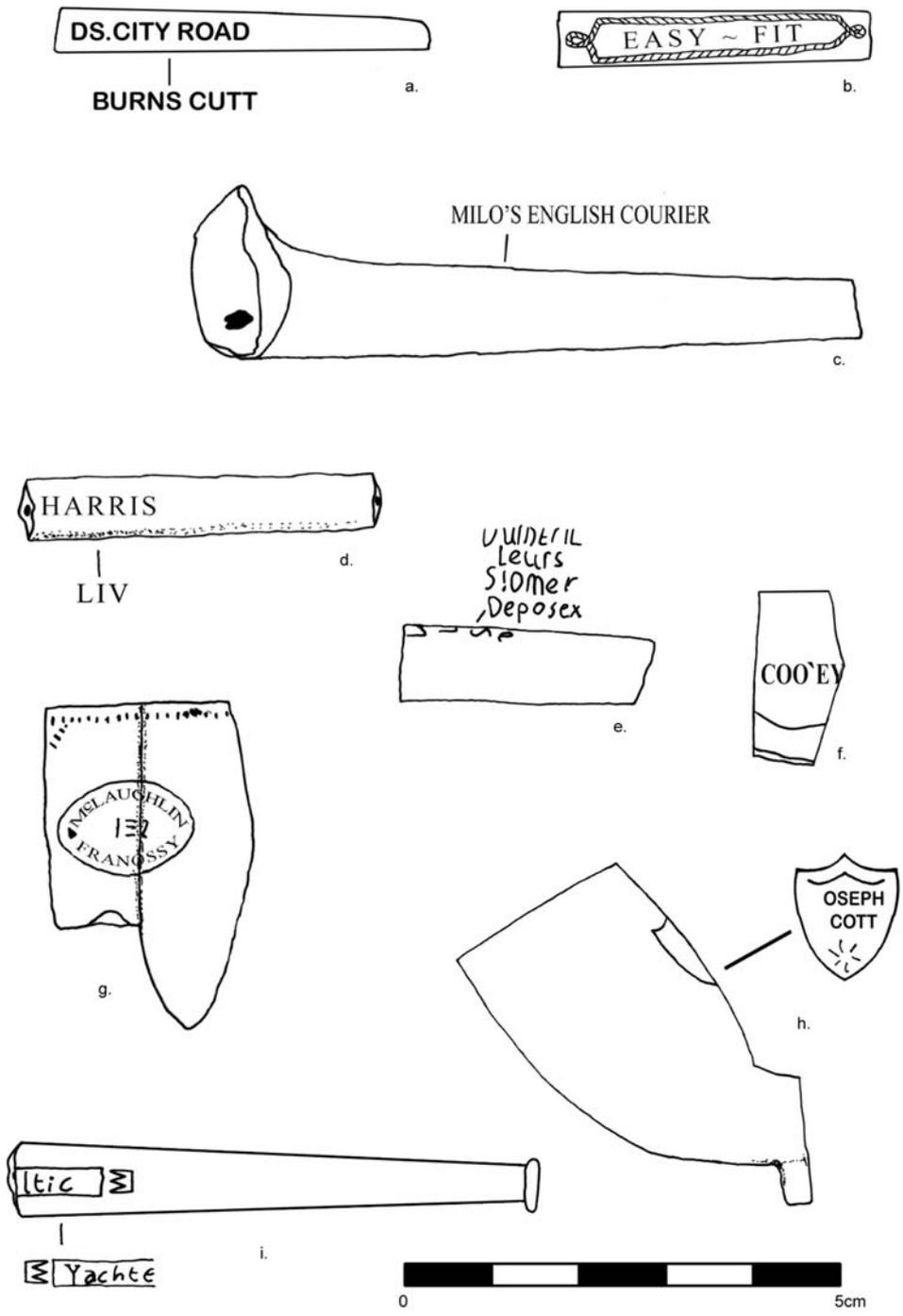


Figure 62. Clay pipes

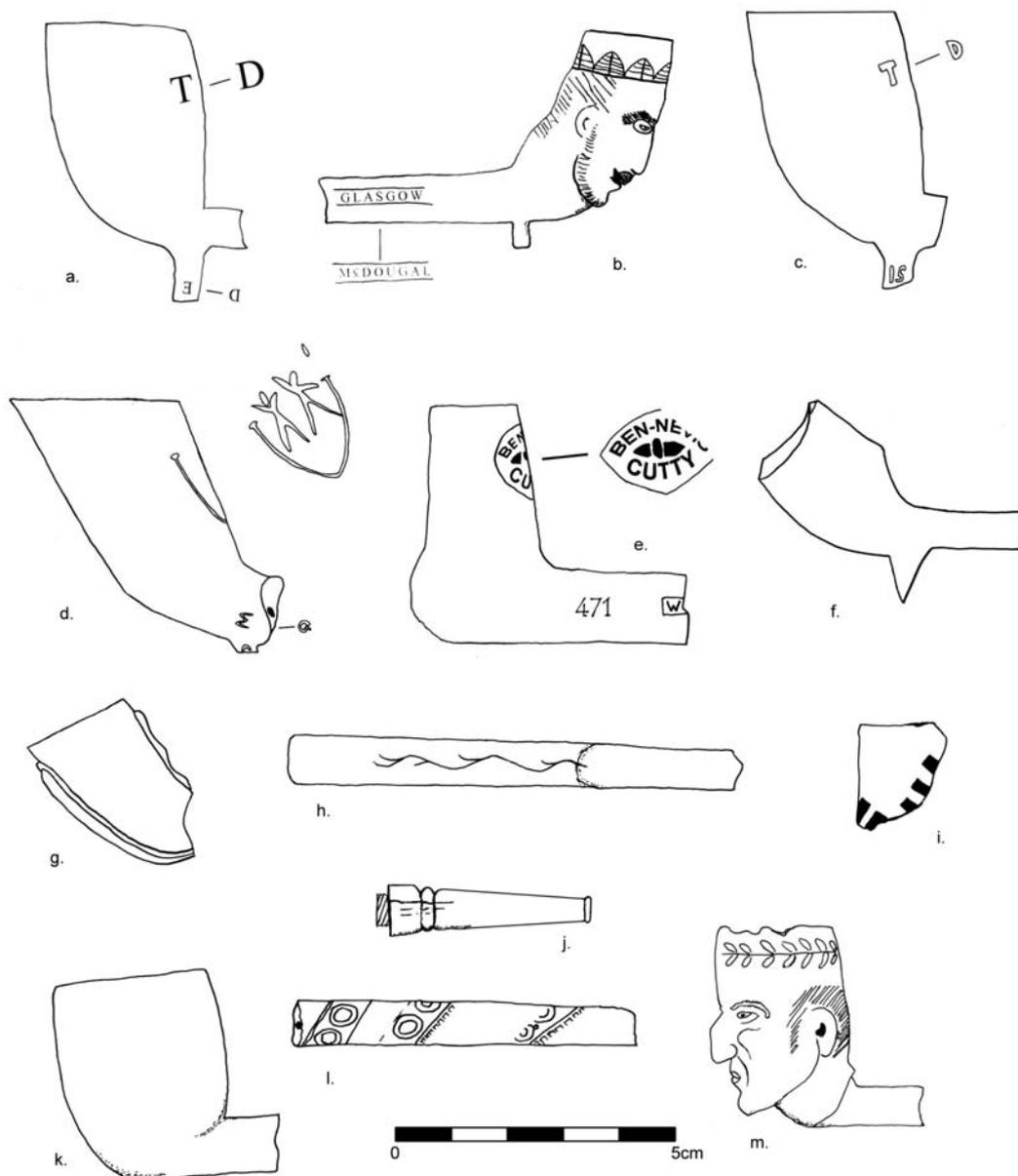


Figure 63. Clay pipes

Easy-Fit

This is quite a strange little stem fragment. It has the words EASY-FIT on both sides and is glazed (Figure 62b). Neither New Zealand sites, nor American sites have produced this type so far.

Garibaldi

One bowl, quite robust, has the word GARIBALDI impressed on the back. Only two makers have had Garibaldi pipes attributed to them in New Zealand. They are J. G. Reynolds, whose version contains a portrait of Garibaldi (Brassey and Macready 1994: fig 37.P32) and McDougall, whose version was recovered from the Queen Street Gaol (Best 1992:90). Both differ from the style found here.

Rig[ger]

This lovely bowl/stem transition has a collar around where a spur should be. There is a chain running from it, which seems to circle around the writing on the stem RIG[GER?]/[?]L (Figure 61i). This pipe has a definite nautical theme, which is not uncommon in Auckland, though it is quite different to anything else found in New Zealand. It is quite common for nautical pipes to commemorate great naval events (such as the battle of Trafalgar).

Unnamed Decorated Pipes

There were a number of pipes recovered that exhibited designs without any writing at all (Figure 63i, l, m). Many of these had designs impressed into the bowl or stem that were Irish in nature, the most noticeable being that with a harp on the back of the bowl. Pipes similar to this have been found in New Zealand and America with the word CORK above the harp; it is a very common design and was made by most Glasgow firms. Other decorations include a stem with vines running up both sides (Figure 63h), a bowl fragment which bears part of a design found at Victoria Hotel (Brassey and Macready 1994: fig 41.P77) and a bowl which has two human stick figures on the back (Figure 61d).

Undecorated and Unidentified Pipe Styles

Many of the pipes recovered are just plain white pipes and are thus unable to be classified. Many of these fall into two broad categories, those with spurs and those without (Figure 63f, g, k).

Terracotta Pipes

Only one fragment made from Terracotta was recovered. This was a transitional fragment that included a spur. There are no marks on this fragment that hint at a maker, but terracotta pipes found in New Zealand tend to be of French origin.

Glazed pipes

Many of the fragments exhibited signs of glazing, and there was quite a variation of colours used, ranging from almost transparent, to light-mid brown. Most of these fragments had the glazing at the tip, though one pipe seems to have had glazing over most of the stem.

Bone mouthpiece

Only one of these was found. It appears here not because it was definitely used on a clay pipe (though there is a chance that this may be the case), but because it is quite obviously related to smoking. It is most likely part of a composite pipe (Figure 63j).

Dating of Features

Date ranges of the manufacturer's mark provide an indication for the time of the fill of the features they occur in.

Barrel A

There were only three fragments from this complex, fitting together quite nicely to form a complete bowl. The break is clean enough to have occurred during the excavation. One of the fragments has a small 2 on it.

Barrel E

This contained only two fragments, though a date can be attributed to both of them. There was one stem identified as a Thomas White (1823-1876) and a complete bowl with Joseph Scott on it (1815-51.) It is possible that this complex dates to early in the Barracks, from its construction or shortly after.

Posthole C11

Two fragments came from this complex, both of them stems. One of them (cp34) is the Dumeril pipe dating this complex to between 1844-95 (but probably 1844-77, see above), any time within the date range of the Barracks.

Posthole C24

Only one stem fragment was recovered, which bore a small Irish design on it, the date of which is unknown.

Posthole C187

One stem fragment was recovered from this posthole. It has been identified as a McDougall pipe (1847-1968).

Pit A

Three stem fragments and one transitional piece were recovered from Pit A. Of the stems one is from a McDougall pipe, the maker also responsible for the transitional piece, which is the McDougall Courier pipe. This dates the complex to post 1847.

Big Pit a

Three fragments were found in complex 13, two stems, and half a bowl (cp128.) The bowl has a spur which has the number 33 moulded onto it, and TD written in raised relief on the back of the bowl. One of the stem fragments has DAVIDSON on it and is possibly related to the bowl (see Brassey and Macready 1994: fig 36.P4 for a Davidson pipe with 33 on the spur, identified as a TD pipe.) This dates complex 13 to between 1861 and 1910.

There were 10 stem fragments and 1 bowl fragment in complex 14. One of the fragments is a glazed mouthpiece and two badly damaged stem pieces fit together to form the words BUDGEREE/SQUATTERS. This pipe cannot be firmly dated, but is within the Barracks range (1850s-60s).

Two fragments were recovered from complex 19, both of which fit together to form a vine pattern along each side. Something similar was found at Chancery Street (Macready and Goodwyn 1990), though such designs were common on British pipes and have no clearly defined date range.

Four fragments came from the top layer of complex 22, three of them bowls (including a complete bowl and the back half of a bowl) with the fourth being a glazed mouthpiece. The lower layer of complex 22 contained seven fragments, five stems and two transitions. One of the stems is from a McDougall pipe, while one of the transitional pieces has the letters M/G over the spur, dating this complex to after 1847.

28 fragments came from complex 26: 15 stems, 8 bowls and 3 transitions. Among the stems are the makers McDougall (two examples), Reynolds (1828-82), Thomas White (1823-76) and William White (post 1805). There are two complete bowls (one with a 19 on the spur) and two TDs, one of which is accompanied by the American flag. One of the transitional pieces is a McDougall pipe, while another is the start of what could

be another Caesar face, and the third may be from an as yet unidentified Glasgow maker.

Big Pit a/b

21 fragments came from complex 44, 11 stems, 5 bowls, 4 transitions and a bone mouthpiece. Two of the stems are McDougall stems (post 1847) with a third being a patterned pipe. There is one glazed mouthpiece and one of the transitions had an M over the spur.

Fifteen fragments came from complex 52, including two complete bowls and two glazed mouthpieces. Only one of the stems has a maker's mark, McDougall.

Four fragments from the baulk between trenches 9 and 10 bear maker's marks, with three of them being from McDougall pipes, the fourth from Jones and Harris of Liverpool. This last pipe is important as Jones and Harris didn't start to produce pipes until 1864.

There were two pipes with maker's marks from the baulk between Trench 10 and the Northern Extension, one of them from McDougall and the other from Thomas Davidson, which dates to after 1861.

Big Pit b

There were 44 fragments from complex 42: 27 stems, 14 bowls and 3 transitions. Only one of the stems bore a maker's mark, McDougall (post 1847), with another having the words EASY-FIT on both sides and a third the words BALTIC/YACHTER. One of the transitional pieces has the words Milo Courier Pipe, while a second is from McDougall. There are six complete bowls; one is a TD, while another has the word GARIBALDI on it, with a third bearing a harp in its back. Of the bowl fragments, one of them is from the McLaughlin pipe, while another is the Coo'ey.

Complex 42 dates from after 1860, when Milo started to make pipes. The presence of a Baltic Yachter pipe may even push this further towards the mid 1860s, if Sudbury is to be believed (Sudbury 1980).

Post Barracks

The one fragment, from complex 56 (merchant house garden feature), is a Murray pipe, manufactured before 1865.

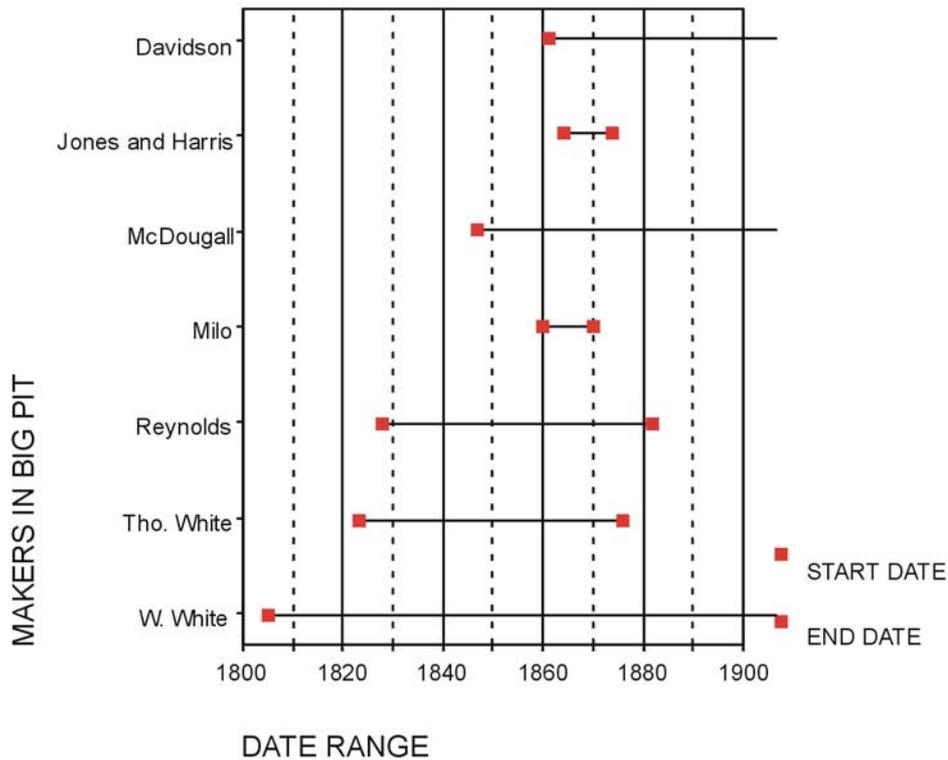


Figure 64. Date ranges of clay pipe manufacturers in the fill of the Big Pit

Conclusion

The clay pipe assemblage from the Albert Barracks is quite a modest one in size, but of great variability. Like most sites in New Zealand, the majority of the material comes from Scotland, especially Glasgow, with pipes from England and France making up the rest.

Figure 64 shows the range of dates for pipes that were in the Big Pit. As can be seen, all the pipes for which the dates of manufacture are known could have been manufactured within the period of occupation of the barracks. Two of the seven manufacturers began production in 1860 and one, from the upper layer a, not until 1864.

It is of interest that Barrel E contained an early pipe not known to have been manufactured after 1851 (Joseph Scott 1815-51), and another that could also have been made at an early date (W. White 1823-1870).

GLASS

Methodology

Glass constituted the largest group of cultural material remains recovered from the Albert Barracks site with 12,077 individual pieces, although most were in a highly fragmented condition. Of these, 10,456 were removed from analysis as non-diagnostic, leaving 1,621 pieces representing 1,403 samples. Of these a minimum number of 390 bottles, panes and other items were identified, including 18 whole bottles, one refit bottle and one complete spectacle lens.

Retention for analysis was based on portion of bottle represented and included bases, tops, necks, sides of bottles and glasses, embossing, and any patterning that might enable identification. Selection of analytical material was carried out during the cleaning process. All pieces discounted from the analysis were sorted into four basic colour ranges, sized to over 3 inch (7.62cm) (L) or under 3 inch (S) classes and counted. Table 19 summarises the non-diagnostic glass for each colour and size. Almost all black/brown glass is associated with 'black beers', this colouration coming from the levels of iron oxide present in the glass. A small number may be associated with bitters and possibly pharmaceutical bottles. It should be noted much of the green glass could be associated with 'black beers' but when held to the light appeared olive green in colour. The remainder of the green glass is primarily associated with gin, brandy (cognac), and wine or champagne bottles.

Table 19. Summary of non-diagnostic glass remains

Black/Brown		Green		Clear/Aqua		Blue		Total
L	S	L	S	L	S	L	S	
184	976	1175	4949	312	2831	6	23	10456

Much of the clear/aqua glass is associated with food product containers such as oils, vinegars and pickles, and alcohol (whisky), pharmaceutical, aerated water bottles and window glass. Very little blue glass was recovered from the site, with almost all that was recovered representing castor oil bottles.

Analysis of Albert Barracks diagnostic material was based on the format designed by Marianne Turner (1998) for the His Majesty's Theatre assemblage.

Glass manufacturing was undergoing numerous technological improvements during the occupation of Albert Barracks, with the history and advancements being well presented in Grogan (1997) and Ritchie & Gumbley (1992), so will not be revisited here.

Complete or nearly complete bases were used to calculate minimum numbers (MNI) for most types of bottle, as their number was greater than that of rims. In the case of gin bottles, rims were used to calculate the MNI, although it is likely the total gin number is larger due to the fragmented nature of some bases. Where bases and/or rims were not extant, the presence of the bottle type or item within the assemblage was calculated at one. All stoppers and five of the six marbles were excluded from the total MNI, as they are additional elements to bottle types probably represented within the MNI. The single marble included is unlikely to have been associated with aerated waters.

Results

Minimum numbers for Albert Barracks glassware is summarised in Table 20. It should be noted that identification has been determined on the basis of the likely original contents of the vessel, notwithstanding the fact bottles were often reused and for sometimes very different contents (Tasker 1989).

Table 20. Minimum numbers of glass items

Category	Type	MNI
Alcohol	Black Beer - not identified	2
	Black Beer - squat wide 'quart'	87
	Black Beer - squat wide 'pint'	16
	Black Beer - porter/stout	1
	Black Beer - tall slender 'pint'	5
	Black Beer - tall slender 'quart'	87
	Champagne	33
	Case Gin- pig snout	33
	Case Gin- cone collar	2
	Brandy/Cognac	20
	Whisky	7
	Wine	4
	Spirits - Not Identified	1
	Bitters	1
		299
Food Products	Pickle	15
	Salad Oil	12
	Oil	3
	Vinegar	5
	Sauce	1
	Pepper Sauce	1
	Jam	1

Category	Type	MNI
		37
Pharmaceutical	Medicinal	15
	Castor Oil	3
	Pill	1
		19
Water	Mineral Water	5
		5
Miscellaneous	Stopper	11
	Cut Glass Vessel	1
	Drinking Glass	12
	Dish	1
	Ink	4
	Handle	2
	Spectacle Lens	1
	Insulator	1
	Marbles	6
	Mirror	1
	Window Glass 2.15mm	1
	Window Glass 4mm	1
	Window Glass 6mm	1
	Window Glass 7mm	1
	Perfume	2
		30
Total MNI excluding stoppers and marbles		390

Figure 65 clearly demonstrates the dominance of alcohol bottles within the site. Of the 390 minimum items identified, 299 or 76.7% can be placed within this category. Miscellaneous items account for 7.7% of the calculated assemblage, slightly more than food products at 9.5%. This may be due in part to the wider range of items recovered and identified within this category compared to that of food products. Pharmaceutical products comprise a relatively small percentage (4.9%) of the assemblage with aerated waters being the least represented at 1.3%.

Glass Composition Percentage by Category

Albert Barracks, Auckland

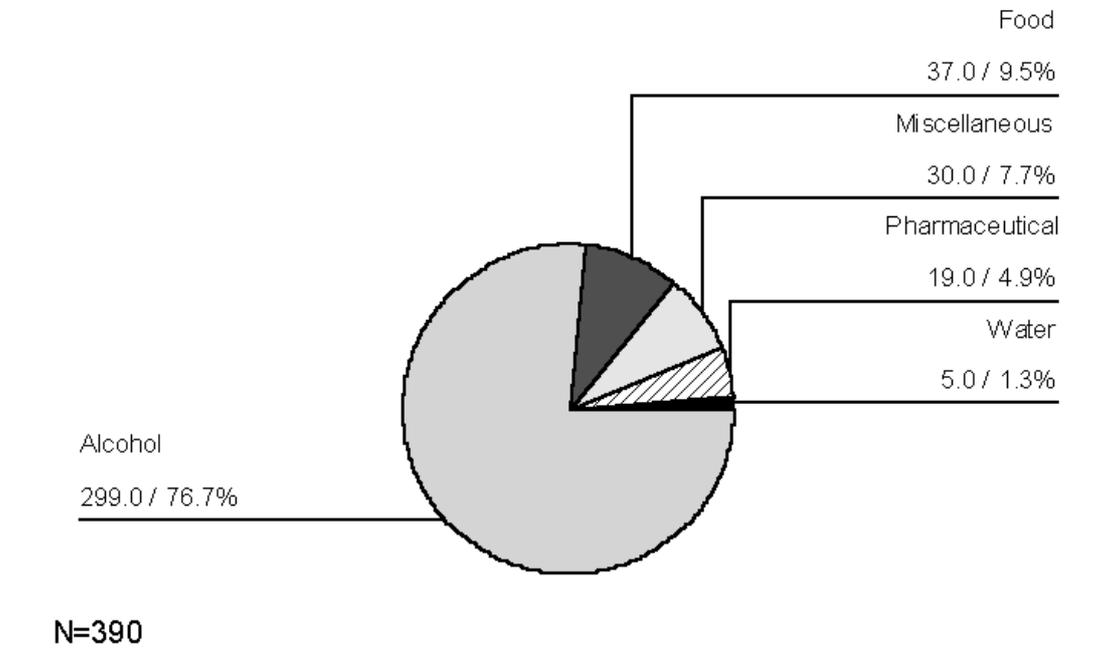


Figure 65. Summary of glassware composition

Alcohol

Ryan & Parham (2002) suggest that the wet canteen was one of the first buildings erected within a military establishment. However, soldiers of the Barracks would often frequent the public houses of Auckland and the resulting drunkenness and misbehaviour appears to have been the concern of residents at the time (*New Zealander* 1846). The availability of alcohol within the confines of the Barracks for enlisted men through the wet canteen may have helped lessen disturbances within the city, and may account for the high number of beer bottles, the least costly alcoholic beverage.

'Black Beer' Bottles

Within the alcohol category, 'Black Beers' account for 65.8% of the assemblage, numbering a minimum of 197 individual items. Large squat quarts (91) comprise 46.1% and tall slender quarts (82) 41.6%, totalling 87.7% of all 'Black Beers'. Squat pints are represented by a minimum of 16 examples or 8.1%, tall slender pints by 2.9% while only one porter bottle (also quart sized) was identified (0.6%).

The above figures would indicate a propensity towards the purchase of beer in large capacity containers as opposed to smaller sized vessels. Whether this was a conscious preference of individual occupants, or of those supplying alcohol through the wet canteen likely to have been established at the Barracks, cannot be determined through the archaeology.

The diameters of large squat quart ‘black beer’ bases range by 13mm from 83mm to 96mm. The frequency of each is presented in Table 21. The most common value is 90mm, with a median of 89mm and a mean of 88.8mm.

Table 21. Frequency of base diameters for Large Squat Quarts

mm	Frequency
83	1
84	2
85	4
86	3
87	16
88	19
89	8
90	20
91	9
92	3
93	5
96	1
Total	91

They were not, however, evenly distributed across the site. 68% of these bottles came from within the Big Pit, with 21 from layer a and 41 from layer b. A second and much smaller rubbish pit, Pit A, contained 10 large squat quarts or 16%. The remaining bottles were located across the general barracks area.

Figure 66 depicts the many variances found within the large squat quart bottle shapes. Seven of the bottles show evidence of having had their rims deliberately removed. Ritchie & Gumbley (1992) and Prickett (1981 and 1994) suggest that soldiers may have removed the tops of the bottles using perhaps a bayonet or knife. A total of 19 bottles and necks showed evidence of their rims deliberately removed whilst 31 rims showed evidence of having been deliberately removed (Figure 67).

The breakage pattern of deliberately removed rims observed within the Albert Barracks assemblage differs greatly from that observed by Petchey (2000). It appears that in the Albert Barracks assemblage the tops were mostly removed through an

upward moving blow originating from beneath the skirt or banding with enough force exerted to leave a smooth regular breakage point. The removed top depicted by Petchey (2000) shows jagged breakage, a pattern which at Albert Barracks was deemed to have been post-depositional.

Three complete bottles were recovered: G277, a 2-piece mould bottle was recovered from layer b of the Big Pit. The base diameter measures 91mm while the height measures 265mm. The base was tool formed and the rim a hand applied collar-skirt. G280 located in the Barracks Wall is a 3-piece moulded bottle measuring 248mm in height with a base diameter of 92mm. The rim is an applied collar-band and the base tool formed. G284 is a 3-piece mould bottle with a moulded base measuring 90mm in diameter. The bottle stands 242mm high with a cone-collar rim with an unusual shaped neck.

Eighty-six or 94.5% of the 91 large squat quart bases were formed by the means of a pontil. Only five examples appeared to have been moulded.

Sixteen squat pints could be quantified within the assemblage, eight of these (50%) within the Big Pit, four in layer a and four in layer b. Seven of this type were found in the general barracks area, with one coming from a posthole. Twelve (75%) of the bases are tool formed.

Only one example of a porter bottle was recovered during the excavation from layer b of the Big Pit. This comprised the rim and neck portion of the bottle.

Five Tall Slender Pints were recovered including two complete bottles (Figure 68). G777 is a well-formed 2-piece mould bottle with a collar-band rim and tool formed base. The diameter of the base measures 63mm with the bottle standing 249mm high. It is very dark black in colour and is opaque.

G792, a 3-piece mould bottle, is not so well constructed, with a distinct lean and badly applied collar-skirt rim. Standing 233mm tall it is 16mm shorter than G777; however the base diameter is 2mm wider at 65mm.

Eighty-two Tall Slender Quarts were identified from the assemblage, with two almost complete bottles shown in Figure 69. Both these bottles, G187 and G190, show evidence of the rims being forcibly removed. These two bottles were made in a 3-piece mould, both having the same base diameter of 80mm.

Fifty-three or 64.6% of the identified remains came from layer b of the Big Pit, 50 of those having a tool formed base. One 3-piece mould bottle and one 2-piece bottle came from this location.



Figure 66. Large Squat Quart 'Black Beers'. (Top row: G277 G279 G161 G288; 2nd row: G284 G284 G281 G280; 3rd row: G234 G233 G187 G192; below: G190)



Figure 67. 'Capped' bottles (with rim deliberately broken off)



Figure 68. Tall Slender Pint 'Black Beers' (G777, G792)

Layer a of the Big Pit contained remains of 15 tool formed bases and one moulded base. The clay layer (a/b) between a and b yielded remains of one moulded base and two tool formed bases. Five bottles with tool formed bases were identified in Pit A and a further 10 bottles were identified from the general barracks area.

The base diameters of Tall Slender Quarts ranged from 74mm to 92mm, with a mean of 78.35 and a mode of 78mm. Table 22 summarises frequencies of base diameters.

Rim types were recorded for black beers and their type where possible (predominantly whole bottles). Table 23 summarises the quantities of each type found in each area of the excavation where they were identified. It should be noted that only whole rims were considered for this analysis.



Figure 69. Tall Slender Quart 'Black Beers' (G187, G190)

Table 22. Frequency of base diameters for Tall Slender Quarts

mm	frequency
74	2
75	3
76	13
77	10
78	21
79	12
80	9
81	9
83	1
84	1
92	1
Total	82

Sixty-seven of the identified black beer rim types were located within the Big Pit, comprising 76.1% of all rims. Forty-eight (54.5%) of all rim types are collar skirt followed by 25% (22) collar band rims. Only one cone collar band is represented within the assemblage. No black beer rims were identified from Area 2, postholes or post barracks features. Figures 70 and 71 indicate the range of rims recovered from

Albert Barracks. Of particular note is G116. This rim is very crudely made and appears similar to rims found on wine bottles from the 18th century.

Table 23. Rim type by excavation area

	General Barracks Area	Big Pit A	Big Pit B	Big Pit A/B	Pit A
Cone collar	0	1	1	0	1
Collar band	4	5	13	1	0
Collar skirt	12	12	24	0	3
Cone collar skirt	0	3	2	0	0
Cone collar band	1	0	0	0	0
Collar skirt with wire	0	2	3	0	0
Total	17	23	43	1	4

Many of the rims/necks in Figures 70 and 71 are very misshapen. This may be the result of bad manufacturing techniques, as perhaps the rims were applied too early. If the glass is not sufficiently cool it will not hold the intended shape as the molten rim is applied.

Nine bases have embossed lettering, numbering or symbols (Figures 72 and 73). G570, a tall slender quart with a base diameter of 76mm, is embossed with the letter **'B'**; a single nipple is located at the centre (Figure 72). A similarly embossed base, although probably from a squat quart, was recovered from Te Awamutu Redoubt (Ritchie & Gumbley, 1992). G688, a squat quart measuring 90mm diameter at the base, is embossed with a **'B'** and the number **'162'**. The moulded base also contains a single raised nipple at the centre. G571 another tall slender quart with a base diameter of 85 mm is embossed **'LYON'** (Figure 72) with a nipple at the centre of the letter **O**. Of note, a large squat quart measuring 84mm across the base is embossed **'LYON'** (G343, Figure 72). It is possible to suggest that this may have been an earlier base than G571, with the error in the lettering later being corrected.



G 116



G 116



G 941



G 863



G 316



G 936



G 695



G 298



G 740



G 846



G833



G 854



G 491



G 933

Figure 70. 'Black Beer' Rims

Figure 71. 'Black Beer' and Case Gin Rims



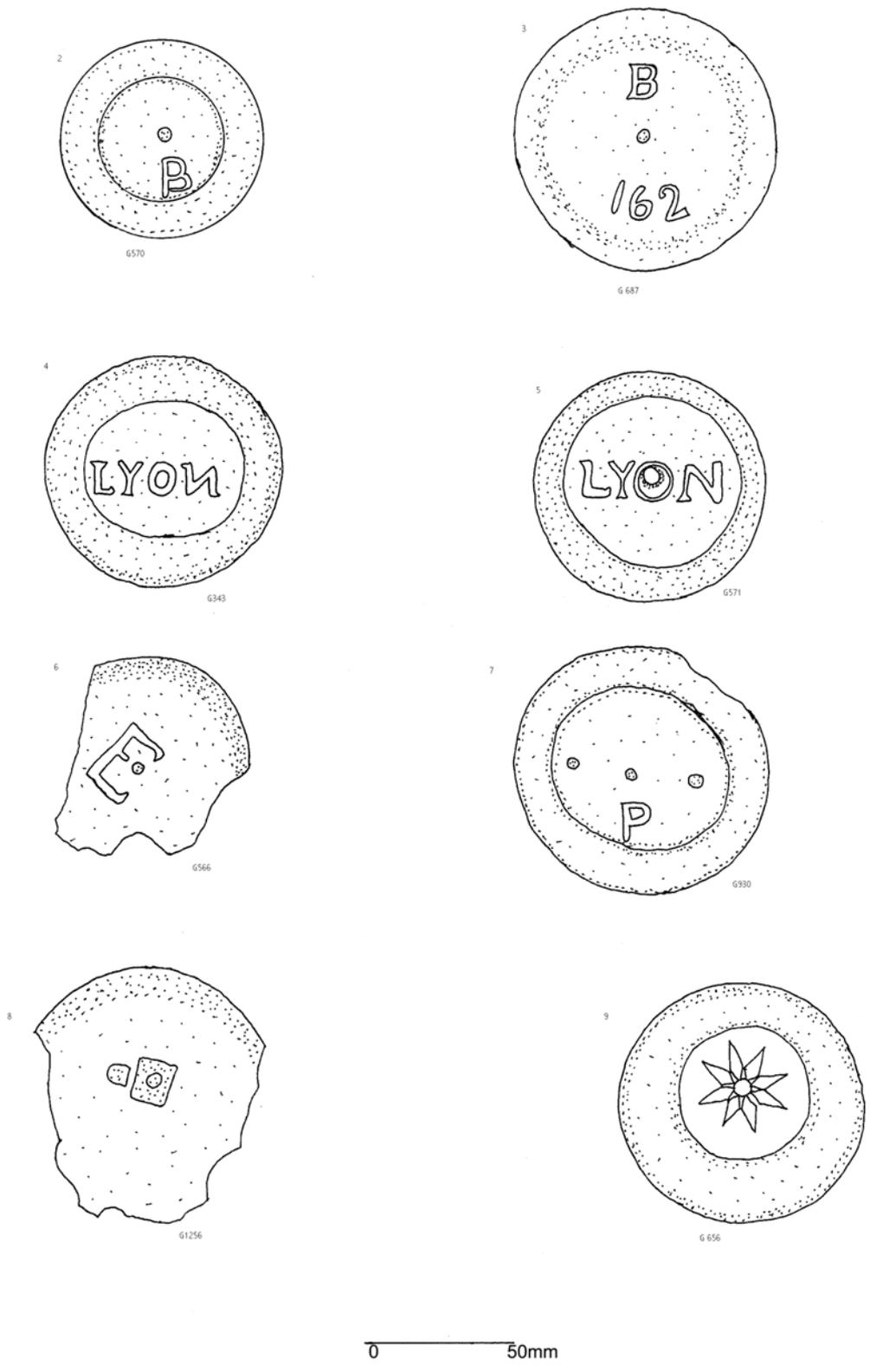
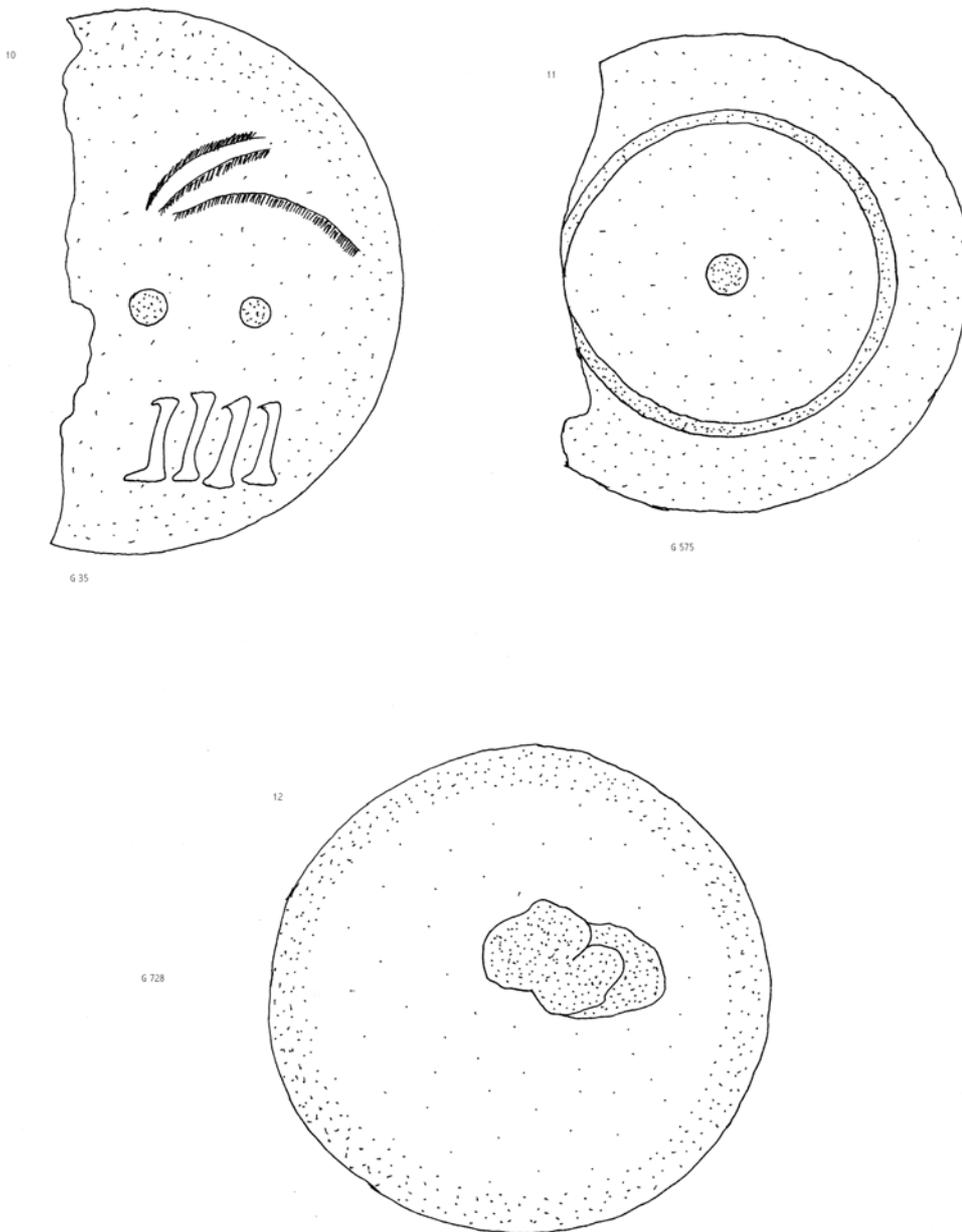


Figure 72. 'Black beer' bottle bases



0 50mm

Figure 73. 'Black beer' bottle bases

A squat pint (G566) with a moulded base has a single nipple at the centre with an embossed 'E' (Figure 72). G930 (Figure 72), a large squat quart tool formed base, has the letter 'P' embossed to one side with three nipples running centrally across the base. G1256, a moulded squat quart, has a raised nipple within an embossed square located centrally (Figure 72). To one side of this is an embossed in-filled D shape. G656 (Figure 72) a tall slender quart with a tool formed base has what is perhaps a star or flower pattern embossed on the base. G35 (Figure 73), a shallow moulded base, is impressed with the number '1111' to one edge. Raised and indent nipples are located centrally above the embossing. G575 (Figure 73) has a raised nipple at the centre of the moulded base. G728, a tall slender quart (Figure 73), shows evidence of a snap pontil.

Six of the black beers were manufactured in a 3-piece mould. The 3-piece mould is believed to have been replaced by the 2-piece mould during the 1850s (Brassey 1989). Ten bottles are attributed to having been manufactured in a 2-piece mould. One bottle does not appear to have mould lines, but it is uncertain whether this bottle was manufactured in a 1-piece dip mould or whether the lines were removed by turning whilst still in the mould.

Case Gins

A minimum number of 35 case gins are represented in the assemblage, based on rims, comprising 11.7% of all alcohol vessels. Of these 33 or 94.2% are identified as pig snout, whilst cone collar rim types number two. The fragility of case gin bottles and the degree of fragmentation within the site has led to under-representation in the MNI of gin.

Twelve pig snouts and one cone collar gin were recovered from layer a of the Big Pit, and 13 pig snouts and one cone collar from layer b. A single pig snout was identified from Pit A, while a further seven pig snouts were identified from the general barracks area.

All rims, both pig snout and cone collar, are hand applied, examples of which can be seen in Figure 71. All have some irregularity in the formation of the rim, most vividly seen in the pig snouts. The rim of G700 (not shown) is of very poor quality. It is difficult to determine whether the rim is a cone collar (noted as such in MNI) or pig snout as it appears to have aspects of both types of rim. It has approximately half the height of a regular cone collar and the general shape, but has been pressed somewhat like a pig snout although the lip does not protrude. Another pig snout G670 has an unusually long neck (see Figure 71).

Two sizes of case gins were identified using base measurements. Eighteen large gins and five small gins were identified. The large gin base sizes range from 60 to 74mm in diameter whilst the small gins range from 55 to 57mm. Thirteen different embossing patterns were identified (see Figure 74: 13, and 15-28). However, none could be attributed to any maker. Only one, G169 (Figure 74: 13) had remains of side embossing, ...& C. An indentation from the top of the mould or plate used to emboss the bottle can be seen above the lettering. No other embossed fragments of case gins were recovered.

Two bases, G345 and G68 (Figure 75), show evidence of 'snap pontils', a remainder from the base formation process. The scar on G345 is smooth, having been almost completely broken off, whilst the scar on G68 is extremely jagged.

Whisky

A minimum of seven aqua whisky bottles were recovered from the excavation. Although the basic rim and neck shape of the bottles appear to be similar to the tall slender type 'Black Beer', no complete bottle was recovered to verify the accuracy of this suggestion. G86 (Figure 75) depicts the similarity between whisky and some 'Black Beer' necks and rims. The rim is hand applied with visible wrench and stretch marks beneath the point of attachment and along the neck.

The bases of the whisky bottles, however, do not bear close similarity to 'Black Beers'. Of the bases recovered, the kickup is much shallower and more evenly shaped compared to the usually conical shape of the 'Black Beers'. G643 (not shown) is embossed with the letter 'W' on the base. A second embossed base has the letter 'B:' (G1211).

One rim, neck and shoulder portion was recovered from layer a of the Big Pit (Figure 75). Also found within this layer was a partial base and a partial neck/shoulder.

Layer b of the Big Pit yielded one complete base (G643 described above), one partial base and one complete base with partial side. This example, G1217, has a raised nipple at the centre.

G1150 a collar band rim, was recovered from a posthole (complex 38). Many of the whisky bottle remains came from the general barracks area. These included four bases with partial sides including G1211, one complete base with a single nipple at the centre, three partial bases, one partial neck/shoulder and one diagnostic sherd.

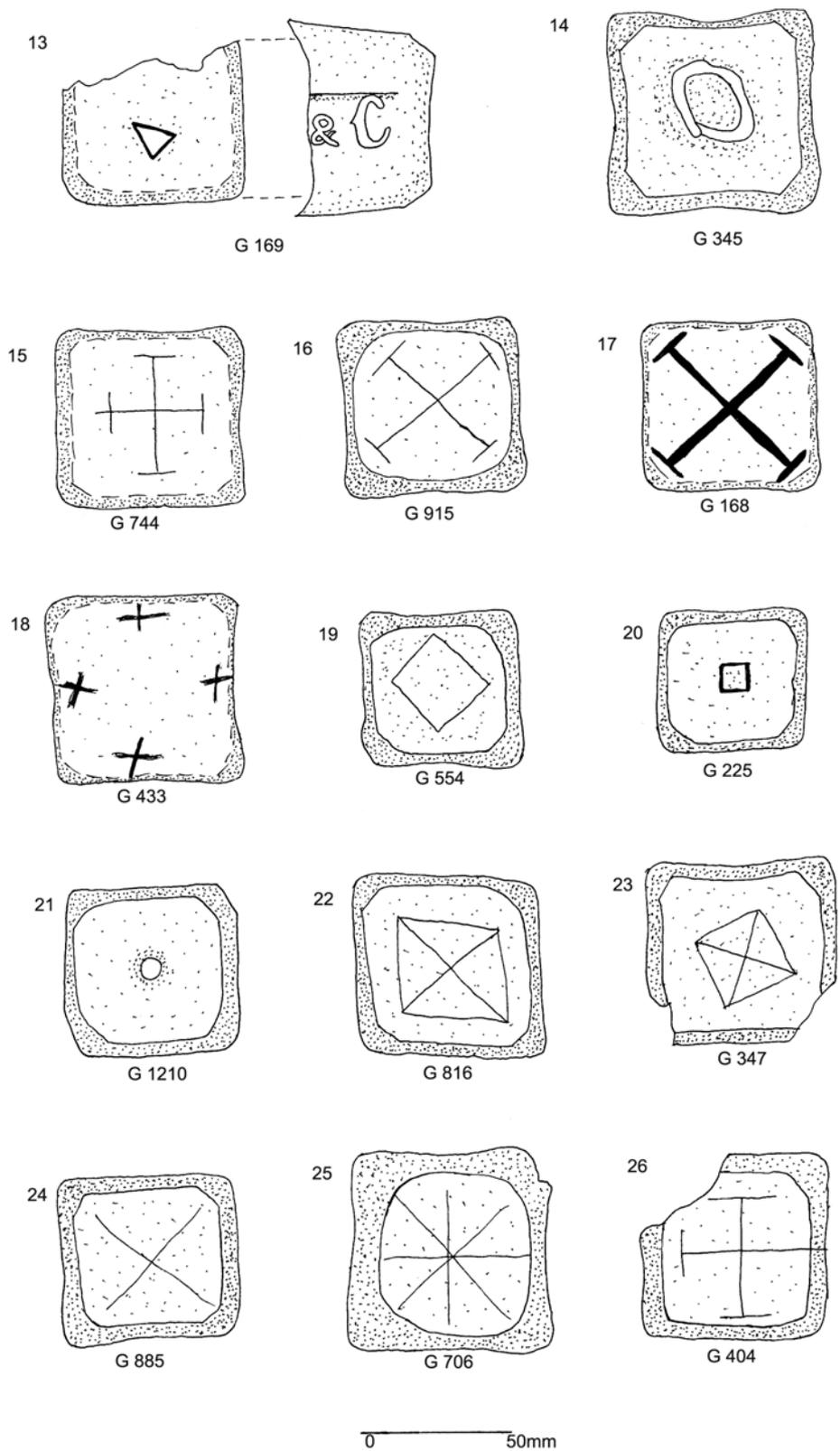


Figure 74. Case gin bottle bases

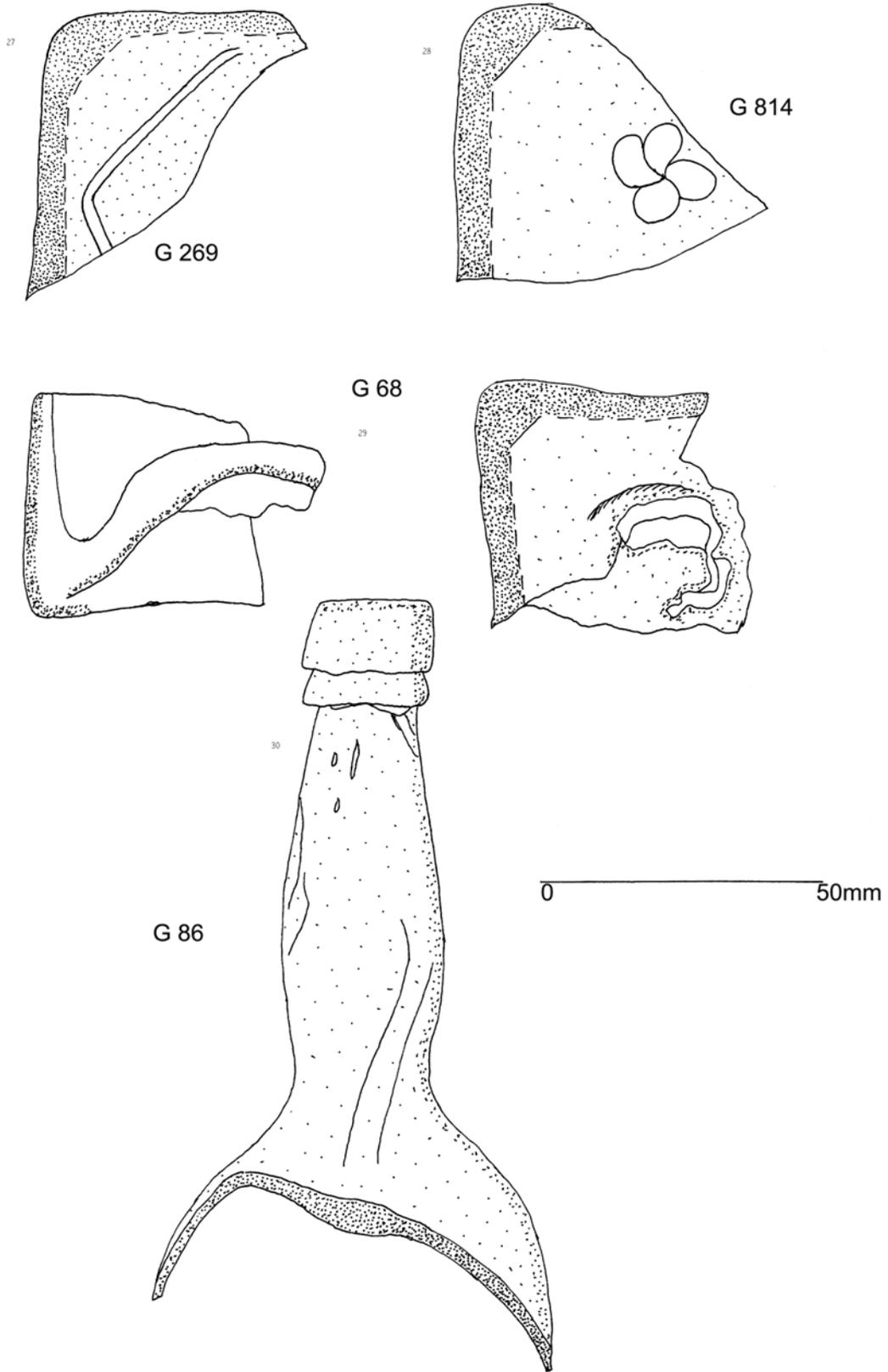


Figure 75. Case gin bottle bases and whisky bottle top

Wine

Four wine bottles were identified in the assemblage. One complete bottle G791 (Figure 76) was recovered from layer b of the Big Pit. The lip of this bottle is flared in a manner similar to bottles manufactured prior to the 1800s. A second example of this type of rim G922 (Figure 76) was recovered from Pit A. One sample was recovered from layer a of the Big Pit and a second from layer b.

Champagne

A minimum number of 33 ring seal champagne bottles were recovered during the excavation. One complete example, G188 (Figure 76), with a base diameter of 75mm stands 249mm tall. This example from layer b is one of 15, with a further six identified in layer a. A minimum of 12 champagne bottles was identified from the general barracks area. Fifteen partial bases were identified as champagne but not included in the MNI.

Brandy/Cognac

A minimum of 20 green brandy bottles was identified from the assemblage (e.g. Figure 76, G713 and G599). The Big Pit contained 15 of these, five from layer a and 10 from layer b. The remaining five came from the general barracks area. Brandy/cognac bottles were identified primarily from tops rather than bases. Many of the identified tops were similar to that shown in Figure 76 (G599).

Other Alcohol

One spirit bottle was identified but its original contents could not be established due to the fragmentary nature of the sample. Fragments of bitters bottles were identified within the assemblage with the minimum number of individuals calculated at one. A liqueur bottle may be represented among the assemblage but this cannot be determined as not enough of the item is represented.

No schnapps bottles were identified within the assemblage. All square alcohol bases had a tapered base indicating case gin, with none having the angles normally associated with schnapps.

Food Products

9.5% of the assemblage is attributed to food vessels such as pickles, oils, sauces, vinegars and jams. While this number may seem low, it should be remembered that these types of bottle are usually made of very thin glass and fragment very easily. This may be partially substantiated by the number of small fragments of aqua glass

removed from analysis (2831). Five complete bottles were recovered including two pickles (one refit), two salad oils, and one vinegar. A further three are almost complete with only their tops missing.



Figure 76. Wine, Ring Seal Champagne and Brandy/Cognac (above G791 G 188; middle G922 G713, below G599)

Pickles

The most numerous type of food container identified from the assemblage is pickle bottles. Fifteen or 40.5% of all food product vessels fall into this type. The majority of pickles are the goldfields type such as G192 (Figure 77). Most are square with a few being of a rectangular shape. G778, recovered from Layer b of the Big Pit, has a rectangular bevelled base and contains no embossing (Figure 77).

Six bottles carry embossed crowns, one from layer b of the Big Pit (G223 Figure 77) and two from Pit A. These two examples (G835 and G918) are diagnostic pieces containing only the embossed crown. The fourth bottle, G725, is embossed with the letter 'A' (Figure 78). A fifth bottle is embossed with the initials 'G W' and most likely represents George Whybrow (Figure 78). One pickle (G218 Figure 79) has a registration mark on the base, 16 May 1858, bundle 7.

Two pickles are quantified from layer a of the Big Pit with a total of six from layer b. One sample from Pit A, five from the general barracks area and one from Area 2 (post barrack foundations), complete the minimum number.



Figure 77. Food Products (above G286, G1012, G285, G194; below G786, G778, G192, G719)

G1265 (not shown) is a front panel of what is believed to be a pickle bottle. A paper label is applied to the glass although badly deteriorated. The printing on the label 'G WHYBROW MERCHANT and MANUFACTURER OF PICK...SA...' must be viewed in the reverse to read it.

Salad Oils

A minimum number of 10 salad oils comprising eight distinct designs were identified within the assemblage. These include the earlier bell, genie, column, christmas tree, and teardrop designs and the later whirly and fluted designs (Aldridge and Aldridge 1978). The teardrop design G719 (Figure 77) has been previously identified only from His Majesty's Theatre (Turner 1998).

Several diagnostic pieces of the teardrop salad oil were recovered from the site, most from the general barracks area. G719, however, was recovered from the Big Pit layer b. The base of this bottle is embossed with the number '44' and measures 43mm in diameter.

One almost complete bell shaped salad oil was recovered from layer a of the Big Pit. Only the rim is missing from G1012 (Figure 77). The bottle is oval and measures 61 x 57mm in diameter. Two rings can be seen around the neck of the bottle. G194, a complete fluted genie shape bottle, has a shear lip (Figure 77). Recovered from Pit A, its base diameter is 41mm and it stands 127mm high. This was the only example of its type recovered from the assemblage. G786, a whirly salad oil, is complete (Figure 77). The base diameter measures 43mm and was recovered from the spoil. Several diagnostic portions of whirly were represented, predominantly the characteristic neck whirls (Figure 80).

One genie shaped bottle G1014 (Figure 78) was complete only to the shoulder area. The base diameter measures 55mm. A triangular pattern can be seen around the base of the bottle and a single ring lies around the midsection of the body. This bottle was recovered from the northern end of layer b of the Big Pit. Several other diagnostic portions of this type of bottle were identified amongst the assemblage but not included in the minimum numbers.

Six separate samples of Christmas tree salad oils were recovered, all from the general barracks area. One sample comprising 11 refit pieces (G117 not shown) appears to be of a large size. Other samples, G125, 140, 152-154 contained only diagnostic fragments.

One column salad oil was identified G1228 (Figure 81). This particular bottle was excavated by mechanical digger in the general barracks area.

The fluted salad oil was the most represented type of bottle with a minimum number of four. G286 (Figure 77) is a large size bottle with a registration mark on the base that is badly worn and not legible. The bottle is not symmetrical and leans to one side. This particular example came from Pit A. Three further registration marks were

identified from the bases of fluted salad oils. G1175 (Figure 79), a digger excavated find, has a registration mark that provides the date of ‘**April, 1870, bundle (r)**’? with the bundle information quite badly worn. (The style of the registration mark is consistent with those used 1868–1883 (bottlediggers.com)). G1251 (Figure 79) and G1133 (Figure 79) have dates of ‘**10 January 1855 bundle 7**’ and ‘**10 January 1847...**’ respectively.

The eleventh salad oil bottle was not identified to subtype as only the base was present with no sides to aid determination. G1089 (not shown) was embossed with the registration date ‘**March 1844 bundle 7**’.

G915 (Figure 80), the top of a salad oil bottle with three rings around the neck, is a type usually described as goldfields salad oil.

Oils

Three oil bottles have been identified from the assemblage, but two are only fragmentary. G779 (not shown) located in unit N16 E21 reflects a ‘barbell’ shape. With approximately half the bottle recovered it is difficult to accurately determine the complete shape. The base and area below the shoulder are ribbed, with the midsection plain. Two other oils identified appeared to have been of a fluted type.

Vinegar

Five vinegars are represented in the minimum number including G285 (Figure 77). This complete bottle was recovered from Pit A. The neck and shoulders of this type are fluted with the base (as Figure 78, G1317) being partially plain and partially bevelled. It is similar to one identified by Turner (1998) from His Majesty’s Theatre (HMT G43).

One dimpled example G1297 was recovered from on top of the barracks wall in the baulk between trenches 7 and 9 (Figure 78). A world globe embossed fragment (G532 Figure 81) was recovered from layer a of the Big Pit, whilst the fifth example (G839 Figure 78), recovered from Pit A, has a squat base with a single ring around the midsection.

Sauce

One likely sauce bottle, G841, was identified from Pit A. The rectangular bottle (Figure 81) has a base diameter of 71 x 29mm. The rim of the bottle has been removed. A square formed by small dimples is located on the front panel of the bottle. This same bottle type was also recovered from His Majesty’s Theatre (Turner 1998).

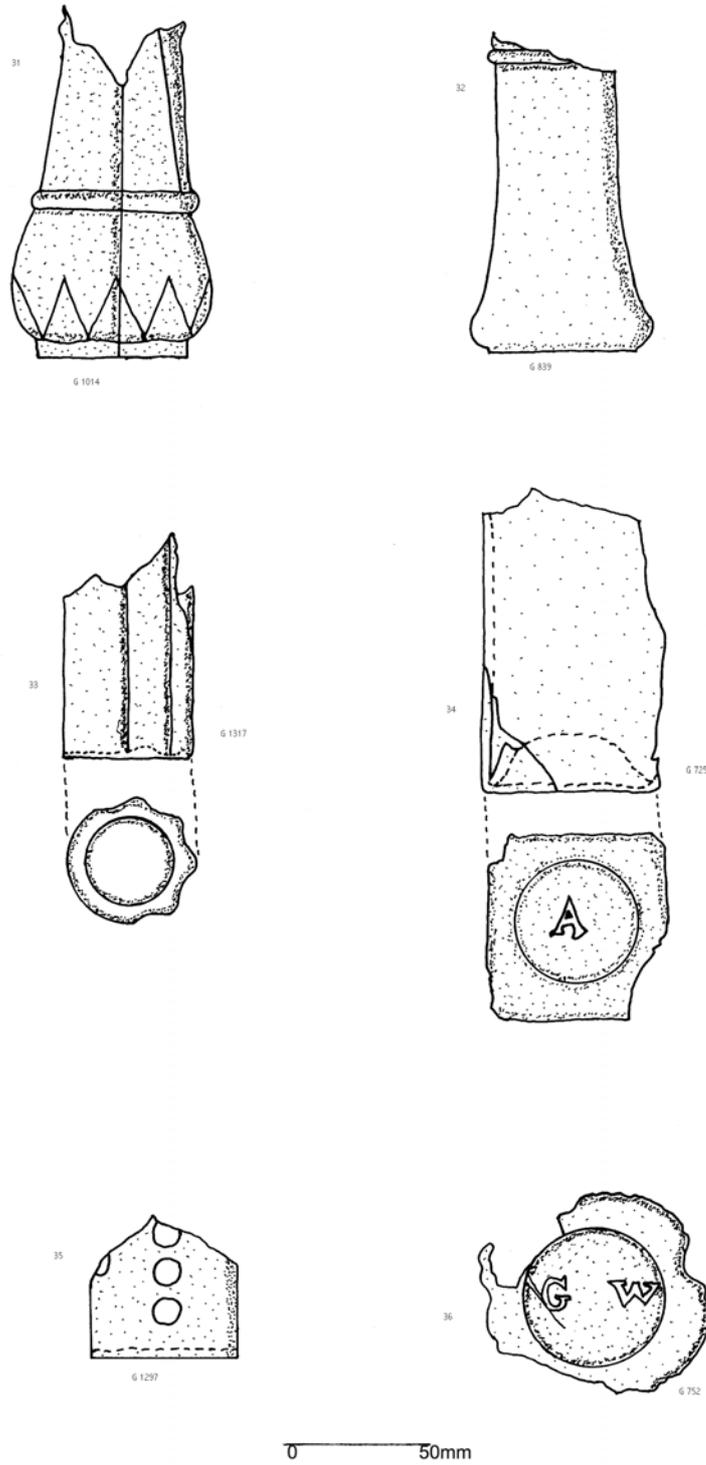


Figure 78. Pickle, salad oil and vinegar bottles

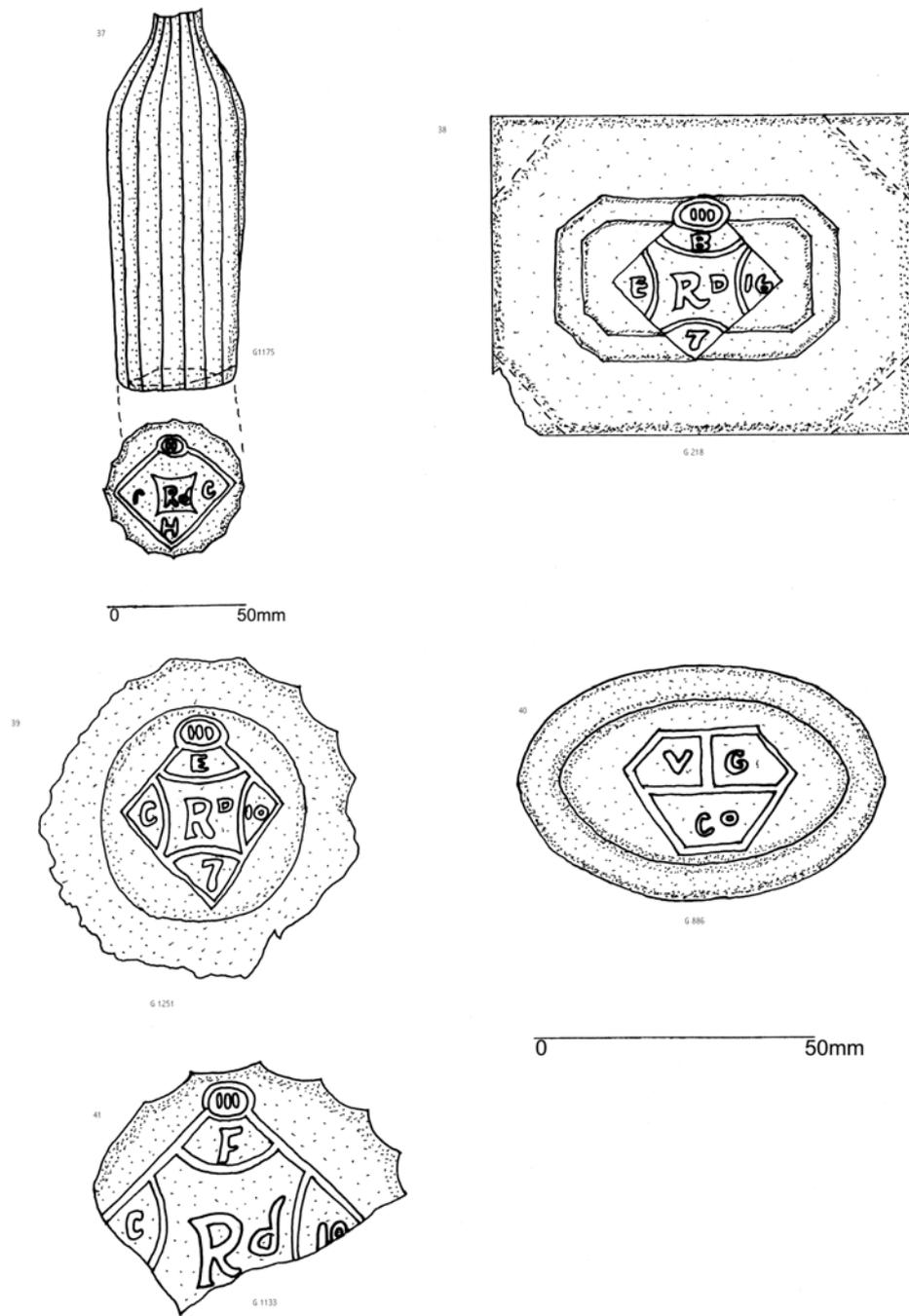


Figure 79. Registration marks on pickle and salad oil bottles

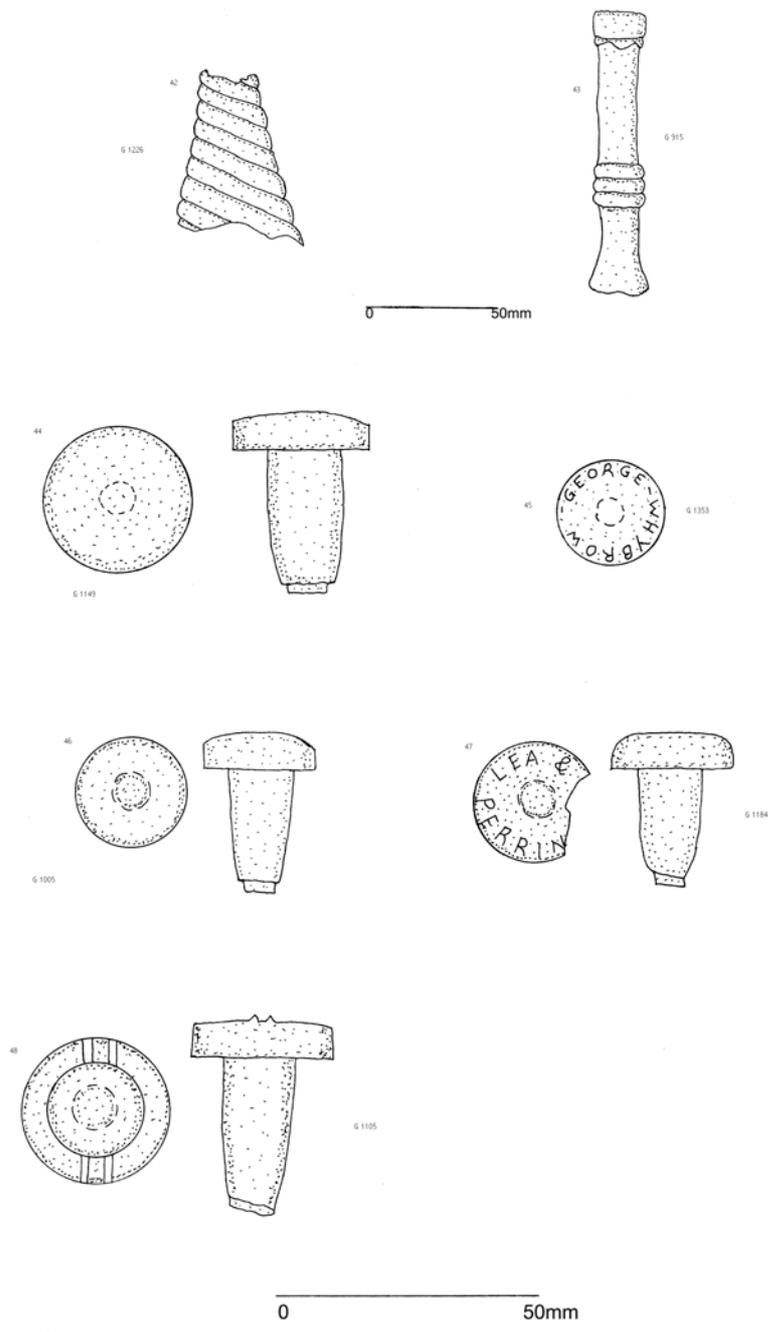


Figure 80. Salad oil necks and stoppers

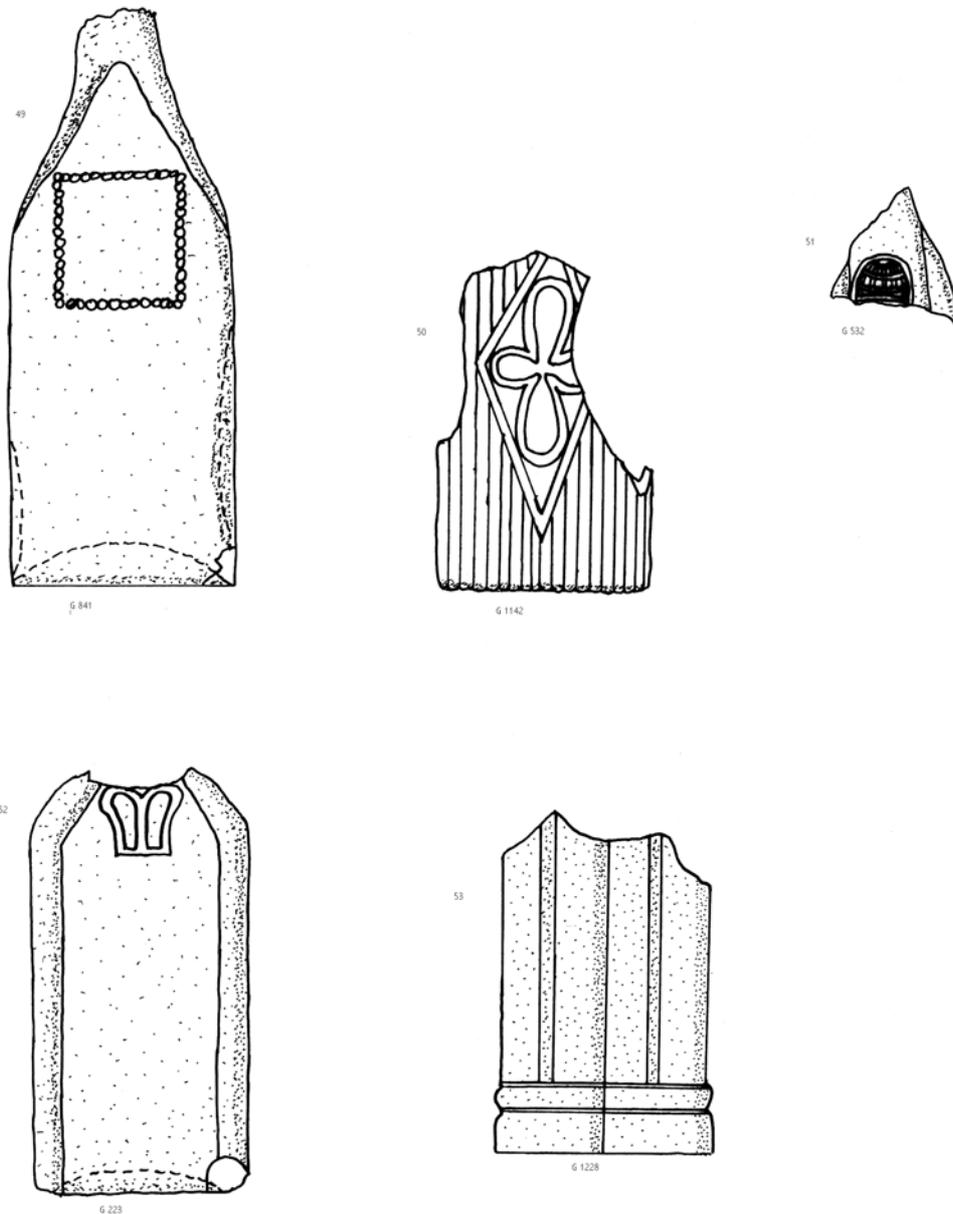


Figure 81. Sauce, vinegar and salad oil bottles

One pepper sauce (Figure 79) was identified from Big Pit layer a. A rectangular bottle with a base diameter of 69 x 31mm, a characteristic shamrock within a diamond

and vertical ribbing is located on the front. This same bottle was identified at His Majesty's Theatre (Turner 1998) and Omata Stockade (Prickett 1994).

Jam

One jam bottle (not shown) was identified from Trench 1. The sample comprised part of the rim, neck and shoulder and the proportions of these were used to determine identification. The mouth of the bottle would have been approximately 30mm in diameter, the neck was extremely short and the shoulder was not broad.

Mineral or Aerated Waters

Five mineral waters were identified from the assemblage: four Hamilton's patent, commonly known as 'torpedo' bottles, and one Codd patent. Although few bottles were recovered in this category, they include the most significant find of all the glassware recovered.

G790 (Figure 82), a Hamilton's patent missing only the rim, is embossed '**BROWN AND CAMPBELL**'. The firm of William Brown and Logan Campbell became one of Auckland's leading merchants, initially settling on '...Lot 26 with a frontage upon the main thoroughfare, Shortland Crescent...' (Stone 1982:94). The successful businessmen are viewed amongst Auckland's founding fathers (Stone 1982) and it is for this reason that the discovery of such a bottle is important. The bottle was recovered from layer b of the Big Pit. They are also very rare, probably dating to the 1840s, and only two examples were known prior to this (Simon Best, pers. comm.).

A second almost complete bottle G 771 (Figure 82) was recovered from the northern end of the Big Pit. This bottle however has no embossing and again is missing only the rim.

A surface find portion of a Hamilton's patent bottle was embossed '...**LING**...' (G32), while a diagnostic portion (G1047) from N16 E21 was embossed '...**SON**'.

Two further examples of Hamilton's patent bottles were recovered. G381 is plain with approximately 1/3 of the bottle recovered. G718 is represented by approximately half the bottle.

One Codd patent bottle was identified from N13 E26 trench 7. This example (G129), a rim neck/shoulder, is believed to have been associated with Merchant occupation after the closure of the Barracks as Codd patent bottles emerged after 1870 (Tasker 1989).



Figure 82. Aerated water bottles (above G771; below G790, Brown and Campbell example)

Pharmaceutical

A minimum of 19 pharmaceutical bottles was recovered from Albert Barracks: 15 medicinal, three castor oil and one pill bottle. Of these, two are considered post-barracks. G69 (Figure 83), a square amber bottle recovered from the spoil, is embossed 'A C M' at the top of the base, 'S' at the centre and 'T 37' at the bottom. The diameter of the base is 25 x 25mm, with a height of 66mm. It is believed this bottle originally may have contained pills. G246 (Figure 83) located in a merchant house garden feature, is embossed 'BONNINGTON'S IRISH MOSS CHRISTCHURCH'. The rectangular bevelled bottle measures 48 x 28mm across the base with a height of 130mm. Both of the above bottles have a pressed lip.

G1196 (Figure 83) is a clear plain unidentified medicine bottle. The rectangular/oval bottle measuring 40 x 16mm stands 89mm high. Like the above bottles it also has a pressed lip. Another pressed lip bottle is G259 (Figure 83). This bottle is light blue in

colour and is likely to have contained some form of medicine. The plain oval bottle was recovered from N15 E19 and measures 54 x 33mm at the base and stands 136mm tall.

At least four Hora & Co bottles were recovered from the site, each appearing to be of a different age. G794, one from the Spoil, and G376 (Figure 83) clearly show a change in bottle shape and lettering style over time. G794 from the clay layer of the Big Pit (layer a/b) measures 194mm tall with a base diameter of 62 x 36mm. The bulbous neck and italic lettering '**HORA & CO LONDON**', and flared shape suggest an earlier form than the Spoil bottle and G376. The Spoil bottle is rectangular with straight sides, embossed '**W HORA & CO LONDON**'. G376, recovered from layer b of the Big Pit, is also embossed '**W HORA & Co LONDON**', with the lettering in block type. All three have cone collar hand applied tops. The fourth Hora bottle identified (G721 Figure 85) was recovered from N13 E26. The bevelled bottle has a mixture of italic and block lettering '**HORA & CO LONDON**', similar to G794.

A rim/neck portion was identified as being from a medicine bottle. G870 embossed with either a '**P I**' or '**P H**' has a pressed lip. A further seven bottles were identified from diagnostic fragments such as bases necks or rims.

Castor Oil

Three castor oil bottles were calculated from the assemblage. One whole bottle, G282 (Figure 83) was recovered from Pit A, measuring 221mm tall with a base diameter of 42mm. The top is hand applied and the neck is curved to one side.

G495, recovered from layer b of the Big Pit, comprises only the neck portion of the bottle with the colour of this bottle not as deep as most cobalt blue bottles. G816, found in the baulk between trenches 9 and 10 (layer b of the Big Pit), is a base with approximately one-third of the body. The base diameter measures 43mm.

Miscellaneous Items

A total of 30 items was calculated within this category, with a further 16 stoppers and marbles placed in this category but not counted in the MNI due to the fact they are components of bottles possibly already counted. Five clay marbles are associated with aerated waters.



Figure 83. Pharmaceutical bottles (above, G1196, G246, G259; middle, G794, Spoil, G376; below, G69 G282)

Stoppers

Eleven stoppers were recovered during the excavation, ten associated with food products and one possibly associated with alcohol. The latter, G300 from layer a of the Big Pit, is a large dark green stopper with a wide notch across the top.

Six of the stoppers are plain. G1149 (Figure 80) has a diameter of 28mm, while G1005 (Figure 80) has a diameter of 21mm. G1353 (Figure 80), a surface find, is embossed '**GEORGE WHYBROW**' and has a diameter of 20mm. G1134 (Figure 80) from the merchant house garden feature, although not complete, would have a diameter of 23mm and is embossed '**LEA & PERRIN...**'.

Two stoppers G 1105 (Figure 80) and G1006 both have a diameter of 28mm and have two raised lines across the outer ring on top. Both of these stoppers came from layer a of the Big Pit.

Inks

Two complete ink bottles have been identified. The bottles are plain and round. One from layer a of the Big Pit (G463 Figure 84) stands 51mm high with a base diameter of 46mm. The second from Pit A stands 52mm high with a diameter of 47mm. Both bottles have a shear lip.

G1013 (Figure 84) from the Barracks Wall is a square clear frosted bottle constructed of quite thick glass. It stands 50mm high and has a base diameter of 39 x 39mm. G131 (Figure 84) from Area 2 (post barracks foundation) is embossed '**WALKDEN'S INK LONDON**'. The aqua bottle is square at 44 x 44mm and stands 38mm high.

Spectacle Lens

One complete spectacle lens G920 (Figure 85) was recovered from Pit A. The lens was badly scratched on the external side but has no breakage. The lens may have accidentally come out of the frame without being able to be replaced, or alternatively if the scratches on the lens were inflicted prior to removal they may have caused difficulty in clear vision and been deliberately removed.



Figure 84. Miscellaneous items (ink and perfume bottles, marble and lid) (top row, G1013, G193; 2nd row, G463, G131; 3rd row, G70, G20; bottom row, G1035, G136)

Drinking Glasses

Twelve drinking glasses are calculated in the MNI. Forty-seven samples contained drinking glass remains, but many were fragmentary. G1168 (Figure 85), from the base of the south baulk, Big Pit layer b, is a moulded triangular ribbed glass. G1144 (Figure 85) from layer a of the Big Pit, is unidentified to pattern as only a portion of

the base was recovered. However, the base is hexagonal. G916 (Figure 85) from Pit A has triangular ribs running vertically between overlapping cascading panels.

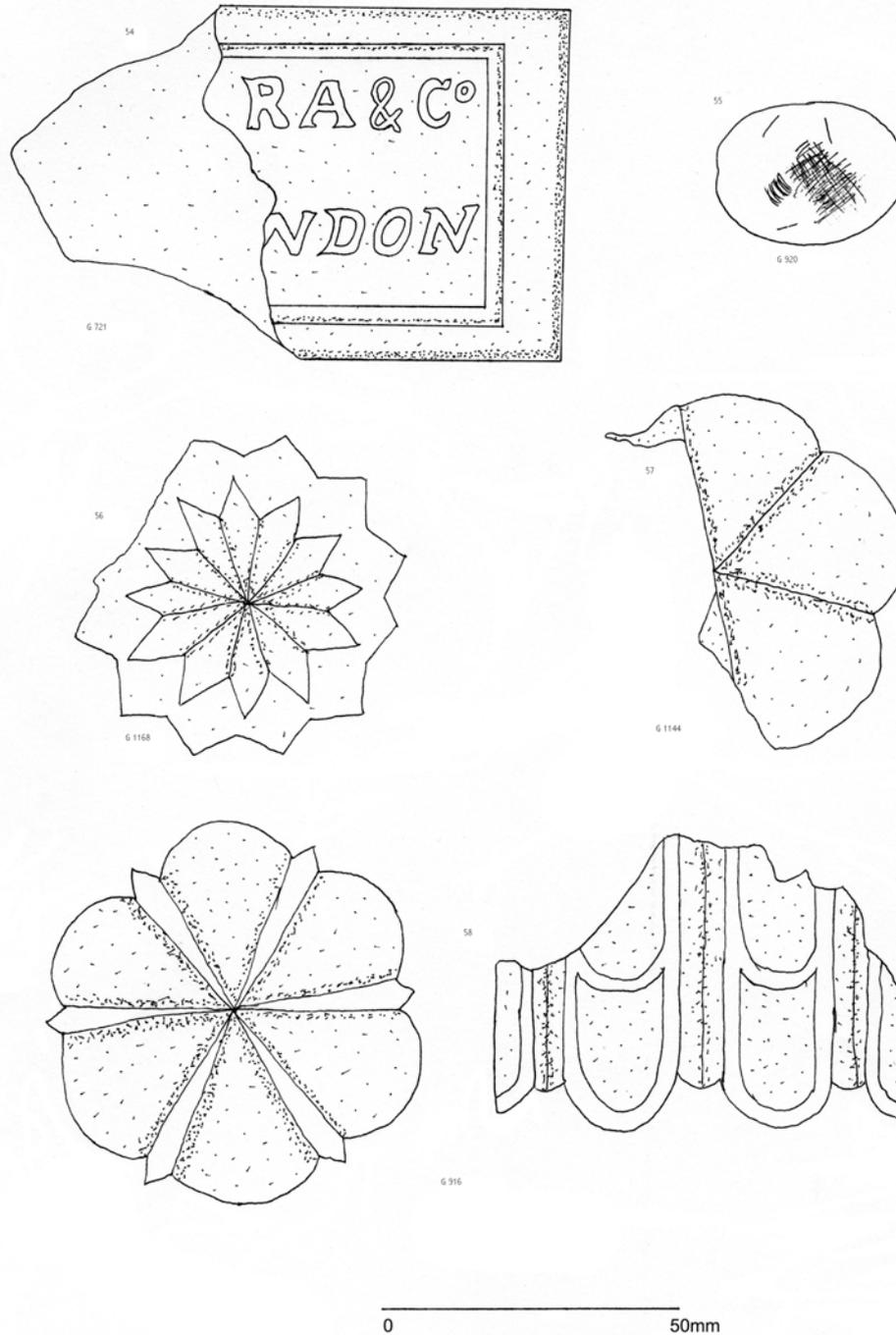


Figure 85. Miscellaneous items (pharmaceutical bottle, spectacle lens, drinking glasses)

Other smaller fragments of drinking glasses can be identified. G1115, recovered from the Big Pit layer b, is round in shape with panels and appears to be a shot glass. G1337 from N16 E22 is a plain round vessel. One ribbed glass was identified (G1145) from fill around a metal frying pan found at the top of or above Big Pit layer a (complex 14 N13 E20). G1347, located in N16 E20, had large dimples running vertically up the side. Several pieces appear to have come from a milkshake style glass, including G964 and G640 from layer b of the Big Pit and G843, G850 and G851 from Pit A. G4 from the Barracks Wall is a vessel with small dimples running vertically up the side. Examples G299, G866 and G867, all from complex 26 in the Big Pit layer a, have what may be described as a leaf shaped pattern running vertically up the glass. G717, G749 and G261, all from layer b of the Big Pit, are plain panelled vessels with 12 sides. Examples G386 and G387 from layer b of the Big Pit and G93 (N16 E10) have 10 plain panels.

Perfume Bottles

Two complete perfume bottles were identified within the assemblage. G70 (Figure 84), recovered from the spoil, is considered post-barracks due to its external thread and screw cap. Printed on the remaining paper label are the letters ‘**VIOL...**’ and it is suggested it is most likely a violet fragrance. The bottle has a bevelled oval shape with dimensions of 51 x 20mm across the base and a height of 73mm.

G20 (Figure 84) is also considered post-barracks due to an external thread. The clear bottle is very small measuring only 48mm high with base dimensions of 22 x 11mm. The numbers ‘**6**’ and ‘**1**’ are embossed on the base.

Other Miscellaneous Items

One multicoloured marble G1035 (Figure 84) was recovered from the base of Pit A. The origin of the marble is unknown but it was probably a child’s toy.

A 6mm thick portion of a mirror, G1357, was recovered from the surface of the general barracks area. Four pieces of window glass were retained for analysis. G29, a surface find, has a thickness of 2.15mm. G1361, also a surface find, is rose coloured and has a thickness of 4mm. This glass is likely to have come from the merchant house era as opposed to the Barracks occupation. G1223, a digger excavated example, is 6mm thick while G1018, recovered from the spoil, is 7mm thick.

A cut glass bowl lid (G136 Figure 84) was recovered from Area 2. The lid, although fragmented, appears to have come from a round bowl. Another post-barracks artefact is the lower portion of a glass insulator measuring 75mm in diameter and black in colour.

Distribution

The distribution of bottle types throughout the major features of the excavation does not show any pattern (Table 24). Only the alcohol and food stuff bottles have high enough numbers to show possible trends. The only observation that can be made is that in Pit A and layer a of the Big Pit the large square quart black beers are more dominant than the tall pint ones. The reverse is the case for layer b of the Big Pit. The difference is so small, though, that it could be just chance.

Table 24. Distribution of glassware

Alcohol Bottles by Area and Layer								
				Big Pit layers				
	Spoil	Postholes	Barracks	a	a/b	b	Pit A	Total
Lg Sq Qrt			15	21		41	10	87
Lg Sq Pt		1	7	4		4		16
Porter						1		1
Tall Qrt			2	1		2		5
Tall Pint			10	16	3	53	5	87
Gin - PS			7	12		13	1	33
Gin - CC				1		1		2
Champagne			12	6		15		33
Brandy			5	5		10		20
Whisky		1		3		3		7
Wine				1		2	1	4
Spirits				1				1
Bitters				1				1

Food Product Bottles by Area and Layer								
				Big Pit layers				
	Spoil	Postholes	Barracks	a	a/b	b	Pit A	Total
Pickle	1		5	2		6	1	15
Salad Oil	1		5	2		2	2	12
Oil			1			1	1	3
Vinegar			1	1		1	2	5
Sauce							1	1
Pepper Sc				1				1
Jam			1					1

Aerated Waters by Area and Layer											
					Big Pit layers						
	Spoil	Psthl	Barracks	Upperfill	a	a/b	b	Pit A	Area 2	Merchant	Total
Hamilton			1				3				4
Codd			1								1
Pharmaceutical Bottles by Area and Layer											
					Big Pit layers						
	Spoil	Psthl	Barracks	Upperfill	a	a/b	b	Pit A	Area 2	Merchant	Total
Medicine			3	1	3	1	4	1		2	15
Castor Oil							2	1			3
Pill	1										1
Miscellaneous Items by Area and Layer											
					Big Pit layers						
	Spoil	Psthl	Barracks	Upperfill	a	a/b	b	Pit A	Area 2	Merchant	Total
Stoppers		1	4		5					1	11
Cut Glass							1		1		1
Drink Gls			2		2		4	4			12
Dish			1								1
Ink			1		1			1	1		4
Handle			2								2
Spc Lens					2			1			1
Insulator			1								1
Marbles			1		1		3	1			6
Mirror			1								1
Wind 2.15			1								1
Wind 4											1
Wind 6			1								1
Wind 7			1								1
Perfume	1									1	2

Conclusion

Alcohol dominates the Albert Barracks assemblage at 76.7%, closely resembling the 80% recorded from the Victoria Hotel (Brassey and Macready 1994), but higher than that of His Majesty's Theatre at 67.3% (Turner 1998).

The Albert Barracks assemblage is similar to both the Victoria Hotel assemblage and His Majesty's Theatre. 92.96% of all black beer bases were tool formed, a figure very similar to that of the His Majesty's Theatre assemblage of 96.2% (Turner 1998) but higher than that of the Victoria Hotel at 80% (Brassey & Macready 1994). A direct contrast to Albert Barracks is the Te Awamutu Redoubt with only 55.5% pontilled bases. Mould formed bases at Albert Barracks number 14 or 7.04%, a figure substantially lower than the 40.7% recorded at Te Awamutu Redoubt. All black beer rims recovered from Albert Barracks were hand applied. This compares well with the assemblage from Omata Stockade (Prickett 1994).

Pig snouts dominate the Albert Barracks gin assemblage at 94.2%, a figure slightly lower than the 96.7% from His Majesty's Theatre (Turner 1998). Only two cone collar gins were recovered from the Barracks.

Of the food category, pickle and salad oil account for 72.97% of the assemblage. The majority of pickle bottles are of the goldfields type. Four salad oil bottles contained registration marks where dates could be established. These dates – March 1844, January 1847, January 1855 and April 1870 – all fall within the military occupation of the Barracks. However, it cannot be conclusively determined that deposition occurred during this time. Only one sample (January 1847) came from within the Big Pit, with all others being close to the surface in the general barracks area.

Medicine bottles accounted for 78.94% of the pharmaceutical assemblage. Four embossed **HORA & CO** bottles were recovered with at least one of these being of post-barracks deposition based on the style of lettering. Two further bottles, an amber pill bottle and a **BONNINGTON'S IRISH MOSS** bottle, are also considered post-barracks.

Castor oil bottles were few within the assemblage. This does not appear to be the result of a sampling error as the amount of blue glass removed from analysis numbered 29 pieces or 0.0025% of all removed glass.

Hamilton's patent or torpedo bottles were also few in number with four examples being calculated, three from layer B of the Big Pit and one from the general barracks area. One Codd patent bottle recovered from the general barracks area may be associated with the merchant house era.

The composition of the assemblage associated with the Barracks closely resembles that of the other Auckland assemblages of the 1840-1870 period mentioned in the text. The high number of pontilled black beers, pig snouts, Hamilton patent aerated water bottles and goldfield type pickles and salad oils strongly indicate a deposition date within this period. Of note is the absence of schnapps bottles, known to have been available in 1865, securely dated from the Victoria Hotel assemblage (Brassey and Macready 1994).

Several post-barracks items were identified, most being associated with the merchant house era. Alongside those mentioned above, other post-barracks items included a portion of a glass insulator and two perfume bottles both with external threads.

MILITARIA

Introduction

For the most part, military equipment can be classified by the regiment each piece belonged to. British regiments of the time conveniently wore their regimental numbers all over their uniforms, making buttons, badges and shako plates (large cap badges which were worn on the military hats of the time, called shakos) relatively easy to ascribe to any one regiment. Many regiments served in the New Zealand Wars, and only some of them are represented in the 2001 Albert Barracks assemblage, interestingly a different selection of regiments represented by the assemblage excavated from the Barracks well in 1979 (Nichol 1979).

The British regiments that served in the New Zealand Wars were the 12th East Suffolk, 14th Buckinghamshire, 18th Royal Irish, 40th Somersetshire, 43rd Monmouthshire, 50th Queens Own, 57th West Middlesex, 58th Rutlandshire, 65th 2nd Yorkshire North Riding, 68th Durham Light Infantry, 70th Surrey, 80th Staffordshire Volunteers, 96th Regiment of Foot, 99th Lanarkshire Volunteers, Royal Artillery, Royal Corps of Sappers and Miners (later the Royal Engineers), Army Medical Department, Army Hospital Corps, Military Train (later the Commissariat Staff Corps) and divisions of the Royal Marines and Royal Navy (Cairns 2002). The barracks were not demolished until 1870 and were used by the colonial forces during and after the departure of the imperial regiments. New Zealand possessed several regiments of Militia, Volunteers, and after 1867, the Armed Constabulary. In addition to the 'regimental buttons', many unmarked buttons made from bone, brass and ceramic were recovered. The material recovered from the barracks, however, does not resemble material recovered from battle sites or frontier posts. A lot of civilian items have been identified, many of them belonging to women or children as would be expected in a central military base that housed the families of many of the soldiers as well as serving civilian functions. Brass eyelets from ladies boots were found, as well as a lead six spoke 'wheel' that from its construction appears to be from a child's toy of some sort.

Munitions

Percussion caps were used in firearms of the mid-19th century to ignite the gunpowder within the barrel, and fire the projectile. They worked much as the plastic caps used in children's toys do. A cap consists of a housing containing a small amount of a relatively unstable explosive, which is put on a nipple on the outside of the gun.

When the trigger is pulled, a metal hammer impacts with the cap, and the small explosion ignites the main charge. British military 'top hat' percussion caps featured four 'wings' that allowed the cap to be easily positioned and removed from the nipple (see Figure 86d). In all 310 percussion caps were recovered, 121 of these from a single pile in Trench 7, the remainder found in a more spread out cluster around the south end of the Big Pit, as well as a few within the Big Pit and in Pit A. Certain percussion caps bear army symbols on them. One of the barracks caps bears the British army broad arrow symbol and either 'BC' or 'RC' underneath. There were many different cap manufacturers and this has not yet been allocated to a particular maker. Caps can be examined for indents that indicate whether they have been fired or not. These have been identified on many of the barracks caps; however, the poor state of preservation means that this cannot be ascertained for many specimens without chemical cleaning.

Fifteen projectiles were recovered. Of these 13 were 0.557 inch 'minie' bullets belonging to Enfield percussion lock rifles used intensively during the Waikato war in 1863 and 1864, issued to British regiments in New Zealand in 1855 (see Figure 86c and e). The less corroded bullets such as the one shown in Figure 86e have the raised 'broad arrow' symbol, indicating that they were manufactured at the Royal Laboratories, Woolwich Arsenal (Spring-Rice 1982). In addition, two 'Brown Bess' musket balls (Figure 86b), a pistol ball (not illustrated), and a gunflint (Figure 86a) were recovered, which belong to much earlier flintlock weapons and probably date to the northern war between 1845 and 1846, although flintlock weapons could have remained in use by militia or volunteers well into the 1860s. The gunflint is too small to have belonged to a Brown Bess musket, so it probably belongs to a pistol or blunderbuss. Half of the fifteen projectiles came from Pit A; all of these were Enfield rounds.

In the late 1850s a new type of firearm began to filter into the world's militaries, not reaching combat use by the British until the mid to late 1860s. These rifles could be loaded from the breech rather than the muzzle, incorporating the percussion cap, charge and projectile into a metal and cardboard (or later, a shim brass) case. These early charges were the direct ancestors of modern brass shell cases. The weapon most commonly used by the colonial forces in New Zealand after 1867 was a modified Enfield rifle known as the snider. At least one snider shim brass shell case was recovered from the barracks excavation (Figure 86f), a mark 5 case providing a date of between c.1867 and the demolition of the barracks in 1870-71.

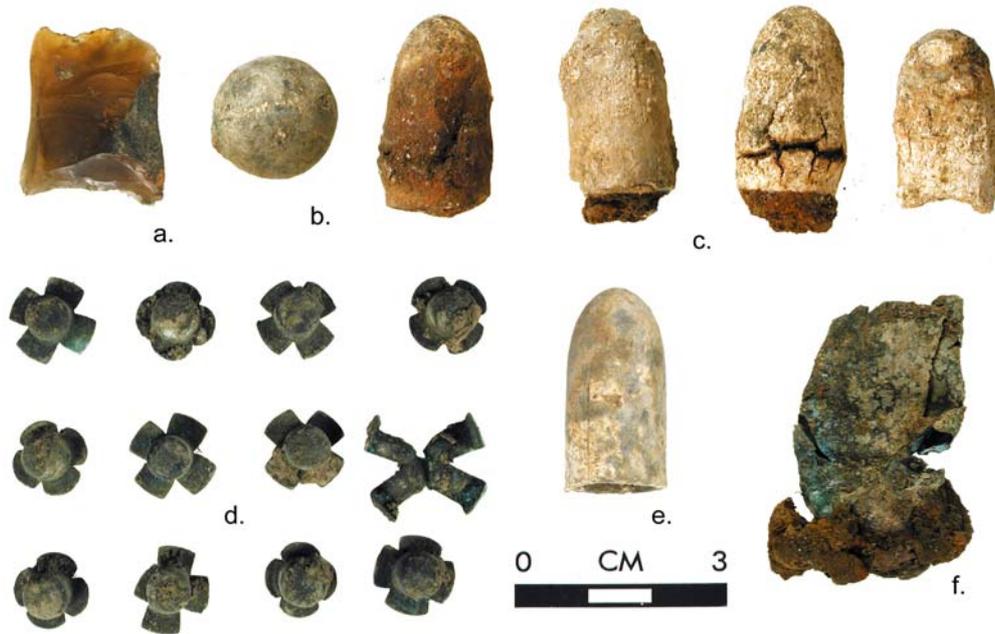


Figure 86. Ammunition

Shakos

Four fragmentary shako plates were recovered in all. Two Albert pattern shakos dating from 1844 from the 58th regiment, one from a centre company (Figure 87h) and one from a grenadier flank company (Figure 87f), were recorded. The remains of another Albert shako plate was found belonging to the 65th regiment, see Figure 87g. In addition, a small section of the later, 1861 type shako plate was found (Figure 87b), featuring the motto ‘[HONI SOIT QUI MAL Y P]ENSE’ on the garter. Other artefacts were recovered associated with Albert shakos that were not shako plates. Four plume mounts were found, two with decorative leaves as in Figure 87a, and two plain ones as in Figure 87e. These mounts held decorative plumes and sat directly above the shako plate at the front of a shako. A decorative brass hook, with the mount in the shape of a lion’s head was found (see Figure 87c); these hooks held the strap or chain that went under the soldier’s chin, and were located at the side of shakos.

Also a ventilator from an Albert shako was recovered (Figure 87d). As shakos were very hot and heavy ventilation was very important. The ventilator still bears traces of the original black paint used to camouflage it into the side of the shako.

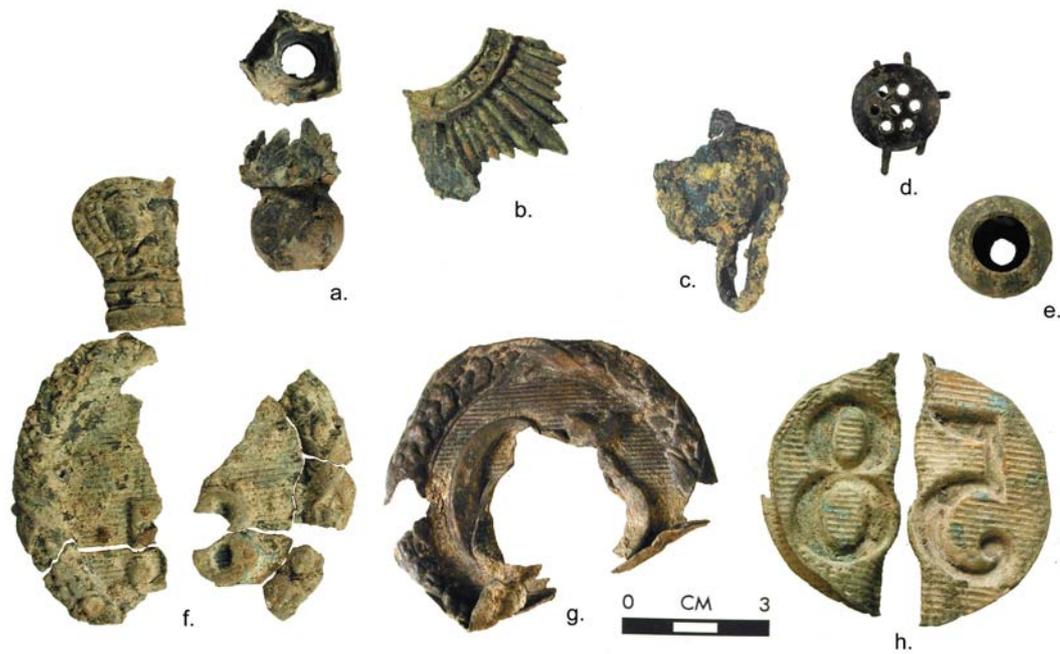


Figure 87. Shakos

Belt Buckles

Other artefacts of interest are the fragmentary belt buckles that were recovered, made of thin, pressed brass. They are very fragile, and quite unlike the more solid, serviceable buckles issued to soldiers as part of their uniform. This would suggest that these buckles are civilian in design although they could have been worn by one of the many militia or volunteer units.

Figure 88a and b show the two standard circular ‘wreath’ buckles that were found. They bear no markings but seem to emulate the standard military design, except that the buckles are pressed brass rather than cast.

Figure 88c shows the refitted fragments of a pressed brass buckle of civilian design found in the rubbish trench. It features fine engraving in a floral pattern and a thin coating of silver.

Figure 88d is a highly fragmentary buckle which, once refitted, bears the text ‘BLESSED [ARE] THE MERCIFUL, CRIMEA’, which is the exact text engraved on a brooch gifted to Florence Nightingale by Queen Victoria, suggesting the buckle was in some way related to nursing or medicine.



Figure 88. Belt buckles

Miscellaneous

Many other miscellaneous items were identified; a group of these are shown in Figures 89 and 90.

Figure 89a is two lead discs, one with quadrants stamped into it, and the other with a raised relief pattern of eight dots and a symbol in the centre and the number 7. It has been proposed that these may be mess tokens. Hooks and eyes – four such hooks were found – were used commonly in shirt collars and cuffs at the time (Figure 89b). Figure 89c is a toggle from an ammunition pouch. Figure 89d is a hook from the shoulder-strap of a knapsack. There was a ring from an Enfield rifle, used to hold a chain that ran to the ‘snap cap’ that protected the nipple when not in use (Figure 89e).

Figure 89f is a heart shaped mount for the handle of a soldier's mess tin. Figure 89g is a 'bee hive' tourie from a Royal Sappers and Miners or Royal Engineers forage cap.

A collection of assorted buckles could have served many purposes from soldiers equipment and uniform to horse harness (Figure 89h). Figure 89i is a decorative gold-plated buckle from an officer's sword belt.

Figure 89j shows what appears at first glance to be a bone gaming piece, with the numbers 18 and 22 (alternatively 77 and 81) written on it in ink. Interestingly, the edge of this disc is threaded and tapered, implying that it screwed into something else. Perhaps this object is an example of recycling, a threaded cylinder sliced into several discs for some other use. Figure 89k is a lead seal, used to label packages of supplies for the British army, with 'No. 61, Yds. 25' written on the front, and 'JU HENR EDWA' written on the back. Figure 90a is the remains of a harmonica, the copper reeds still visible riveted to the body.

Figure 90b is a brass flower with six petals, its function as yet unknown. Figure 90c shows two brass adjustable slides, exact use unknown. Figure 90d is a bone letter opener handle, with a finely detailed Scottish terrier displayed on it in raised relief. Figure 90e is a broken iron key. Also found (not illustrated) were three brass lock-plates of appropriate size. It is unknown whether they are from buildings or strongboxes. Figure 90f is the brass handle from a safety razor. Figure 90g is an escutcheon from a drawer handle; two of these were found, together with a broken swan neck drawer handle (not illustrated). Figure 90h is a fragment of an ivory knife handle, engraved with floral designs and the regimental number of its owner, the 65th. Figure 90i and j are the remains of a cut-throat razor.

Figure 90k is a brass teaspoon, unmarked. A fragment of a similar spoon was also found (not illustrated). Figure 90l is the remains of an iron fork, with an elaborately carved bone handle. Figure 90m is a damaged dessertspoon, with the name 'Z SAMSON' stamped on the rear of the handle. It is as yet unknown whether this is a soldier's name or a maker's mark. Part of a similar spoon was also found (not illustrated). Figure 90n is the remains of a small iron fork.

Also recovered, but not illustrated, were fourteen fragments of styluses used to write on slate, four beads, a section of comb, a pencil lead, three copper pins, a long brass 'hairpin' and two brass cylinders that were probably guides for a rifle's ramrod.

A brass toe plate was identified and is very different in design from the large number of iron heel and toe plates recovered from the barracks. Also four brass stiffeners from officer's shoulder-boards were found, as well as two brass mounts for the tassels that hang from shoulder-boards.



Figure 89. Buttons, hooks and other implements

Buttons

Buttons were used in all parts of a soldier's uniform, their shirts, trousers and underwear, and the barracks excavation has unearthed numerous examples of each, many of which are not discernibly different from modern buttons. The vast majority are plain ceramic, pearlshell, bone or brass, with three of the brass buttons featuring makers' marks, such as '[CLOTHIERS S.W. S]ILVER & Co LONDON' and '[*MO]SES LEVY & Co * [LONDON]'. 133 buttons were found in all: 25 'small chinas', 27 bone buttons, a ferrous button, four shell buttons, 17 brass buttons, a floral bakelite button and 58 regimental buttons (Figure 91).



Figure 90. Knives, handles, spoons, etc

Each button bears the maker and city of origin on the rear, and on some of the less corroded specimens, this is still visible. It is hoped that the makers' names will provide some useful information. The regimental buttons are illustrated in Figure 92.

Figure 92a and b belonged to soldiers of the 14th Buckinghamshire Regiment of Foot; five of them were found in total. They feature the regimental badge: the royal tiger, and the battle honours, INDIA and WATERLOO. The 14th was a very old regiment. Raised in 1685, it served in Flanders, Ireland, Scotland, Gibraltar, Culloden, Windsor, America, Jamaica, Famars, the Peninsula, India, Waterloo, West Indies, Canada, Malta and Crimea before the 2nd battalion came to New Zealand in 1858 (Mills 2002). The 14th regiment served in the assault on Rangiriri Pa on 20 November 1863 and, together with the 12th regiment, suffered greatly in an assault on the centre of the Maori lines, while the 65th hesitated on the right flank (Belich 1986). However, the assault by the 14th and 12th shifted the defenders away from the 65th, and allowed the 65th, once rallied by Lt St Hill, to successfully breach the outer defences. (Belich 1986). After assaults on the central redoubt by revolver-armed Royal Navy and Royal

Artillery troops, the defenders ‘surrendered’ around a controversy with a white flag. The Maori wished only to parley, but the British sent in a large force of troops and demanded they hand over their arms. With their defensive position gone, the Maori defenders had no choice but to surrender. (Belich 1986).

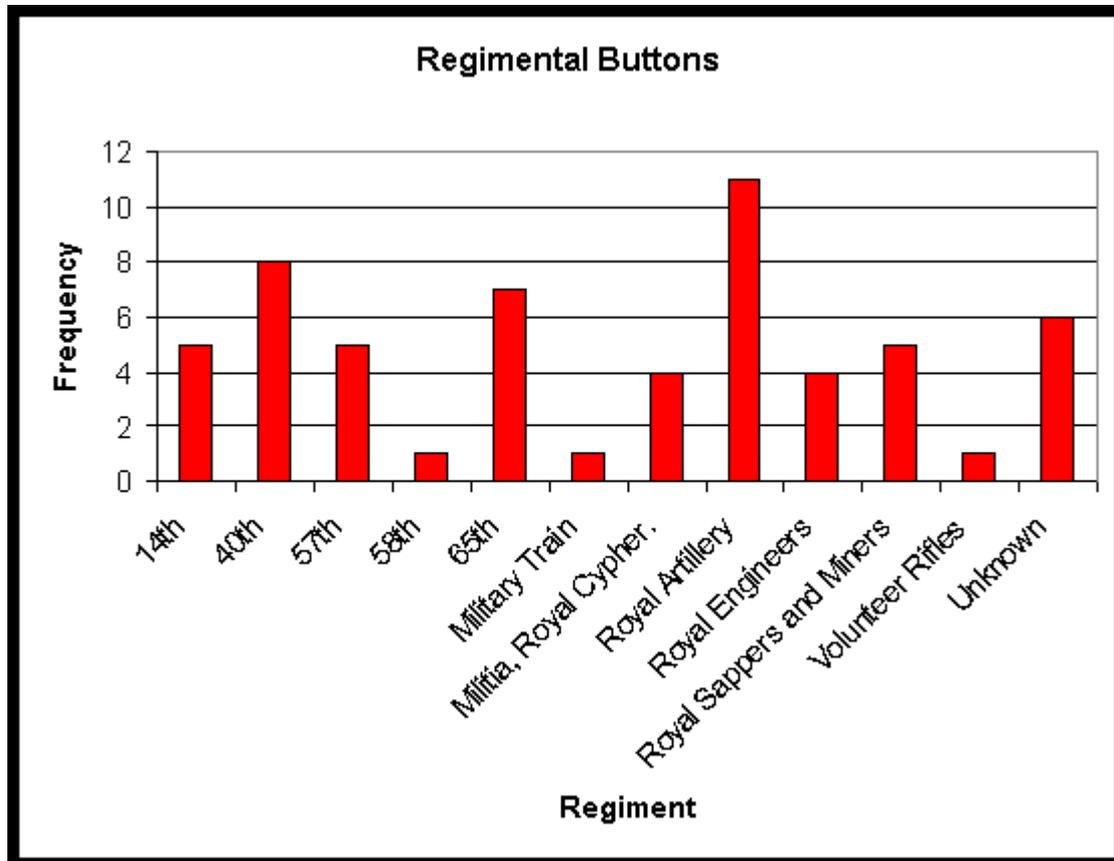


Figure 91. Military buttons frequency

Figure 92c and d are from the 40th 2nd Somersetshire Regiment of Foot. Eight of these were found in all. They feature the large numeral 40 within a laurel wreath on the large and medium buttons and a large 40 with a Victorian crown over it on the small buttons. The 40th were raised in 1717 as Richard Philips’s regiment, and renamed the 40th regiment in 1751. The 40th regiment arrived in New Zealand in 1860 and left in 1866. They comprised about two thirds of the British force that was defeated by Atiawa and Ngati Maniapoto at Puketakauere Pa on 27 June, 1860. The 40th grenadiers alone lost 33 men, and the entire British force lost a third of its troops (Mills 2002). They also served with the 65th at Rangiriri. They were involved in a critical part of the encirclement of Orakau Pa, and gained infamy around colonial New Zealand for ‘allowing’ the Maori warriors to break through the area they were guarding, and thus escape the besieging British forces. General Cameron wrote to Governor Grey: ‘But for the want of vigilance on the part of the 40th Regiment, who

were stationed at that part of the cordon to which they [the Maoris] directed their flight, not a man of them would have escaped.’ (Belich 1986).

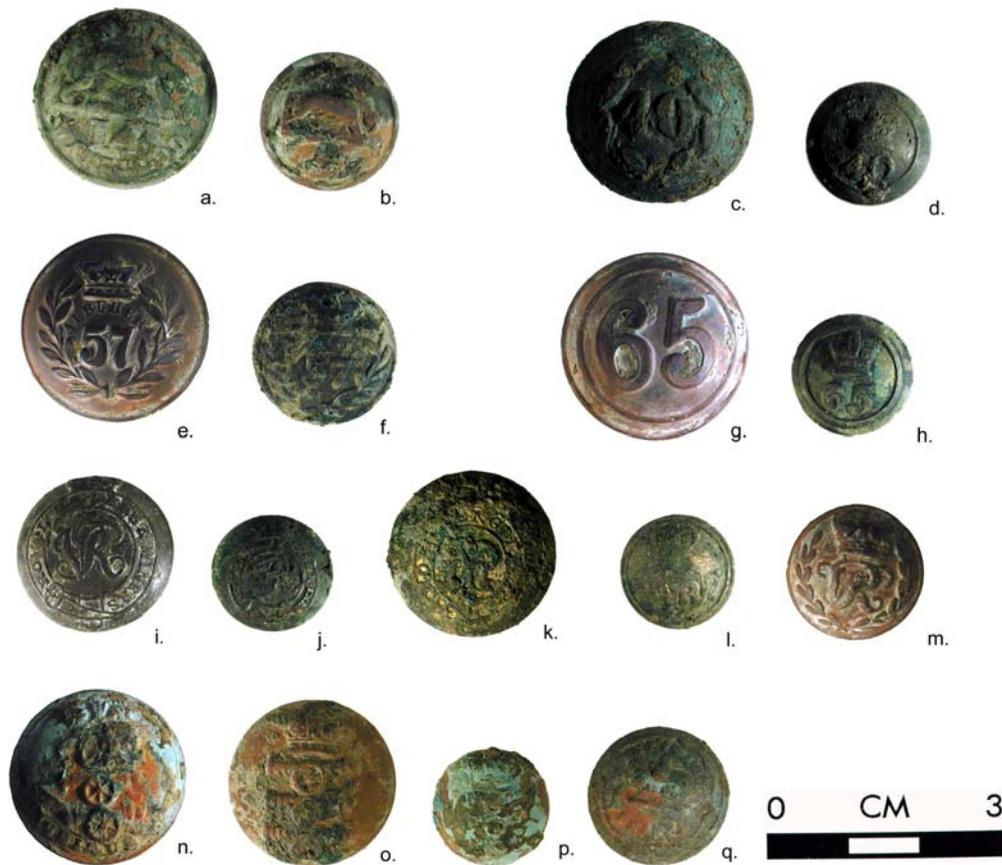


Figure 92. Buttons, showing regimental insignia and numbers

Figure 92e and f are buttons belonging to the 57th West Middlesex Regiment of Foot. Five buttons were found, featuring the large numerals 57 surrounded with a laurel wreath, with a Victorian crown above, and the battle honour ALBUHERA in-between. The 57th were raised as the 59th regiment in 1755, renamed the 57th in 1757, and the mainly Irish regiment served in New Zealand from 1861 to 1867. They arrived at the end of January 1861, but their first real engagement was at Katikara Pa in 1863, which was acclaimed as a great victory around the colony. The other main conflict the 57th were involved in was the assault of Otapawa Pa in 1866. Otapawa was a traditional pa in Wanganui. It lacked the rifle pits and anti-artillery defences that modern pa possessed, making it a relatively easy prospect to storm, compared with the cunning defences of modern pa. The ‘Die Hards’ of the 57th carry an unusual honour as being one of the few British regiments not to suffer a defeat in their service in New Zealand. (Powell 2002).

Only one button was found belonging to the 58th Rutlandshire Regiment of Foot (not illustrated) and it was virtually crushed beyond recognition. However two damaged shako plates were recovered, the centre from an Albert Pattern Shako and fragments of what is probably a Grenadier's Albert Pattern Shako. The 58th were originally raised as the 60th regiment in 1755, and renamed the 58th in 1757. The 58th arrived at Fitzroy's request from Australia on 22 April 1845 and were defeated in an open battle at Puketutu in the Bay of Islands. They showed almost suicidal courage in the failed assault on Ohaeawai Pa in 1845, when their Grenadiers and the light infantry of the 99th sustained heavy fire for five to ten minutes while trying to breach the *pekerangi* defences around Ohaeawai Pa, losing two out of every five men in the process. (Belich, 1986). They continued to serve in New Zealand until their return to Britain in 1858 (Carter 2002).

Figure 92g and h are buttons belonging to the 65th 2nd Yorkshire North Riding Regiment of Foot. Seven of these buttons were found, the large ones featuring the large numerals 65 within a circle while the small one had the 65 with a Victorian crown over it. The 65th were initially raised as the 12th regiment, and renamed the 65th in 1758. They served in New Zealand from 1846 to 1865, making them the longest serving British regiment in New Zealand (Cairns 2002). Like most other regiments, the 65th spent most of its time here split up into companies, serving as garrisons around the young colony. The only times it was concentrated in one place was between 1861 and 1863 when the 65th was gathered at the Albert Barracks for the upcoming Waikato campaign, and again in 1865 when they gathered at Albert barracks in preparation to depart. The 65th served in many battles in New Zealand, arriving just in time for the final fighting in Northland, serving in Taranaki, and played a major part in the Waikato campaign. (Cowan 1922).

Figure 92i and j belonged to members of the Royal Corps of Sappers and Miners who, together with the Royal Engineers, were present at Albert Barracks. Five Engineer buttons were found, and four Sappers and Miners. One of the Engineer buttons is separated from the rest as it is gold plated, indicating that it was an officer's button (see Figure 92k). In addition the large Sappers and Miners button (Figure 92i) is not of the same design as the rest. It is a one piece pewter button, meaning that it dates to before the introduction of brass tunic buttons in 1855. Each of these buttons features a Royal Cypher and a crowned garter with either 'Royal Sappers & Miners' or 'Royal Engineers' inside. The Royal Engineers were formed in 1716, and the Sappers and Miners created in 1812 from the old Corps of Royal Military Artificers. The two corps were combined in 1857 when the Royal Engineers absorbed the Sappers and Miners (Mills 2002). Like the Royal Artillery, the engineers' motto was UBIQUE (everywhere), and they too served everywhere, and were responsible for the design of

many roads, forts and redoubts, including the Albert Barracks that was built using Maori labour under military supervision. The Royal Engineers also took part in the construction of saps (hence the title 'sappers and miners'), which are earthworks created to allow an attacking force to approach a defensive position without taking fire, and thus breach the defences without a costly and risky assault. This method was employed extensively by General Thomas Pratt in the first Taranaki war (Prickett 2002).

Figure 92l shows a small button that bears the text: 'VR', meaning volunteer rifles, and features a Victorian crown and a bugle, identifying the button to a light infantry unit. This button is silver plated, indicating that it belonged to someone of rank. Volunteer units raised in New Zealand and in Australia were deeply involved in the New Zealand wars and quite often used as cavalry, in the absence of any British cavalry regiments. Four 'VR' buttons (Figure 92m) were found which were associated with New Zealand militia units; they feature the letters 'VR', which is the royal cipher (Prickett 1994). They also feature a laurel wreath and the Victorian crown. Volunteers and Militia were also employed as garrisons in settlements when the Imperial forces were out on campaign. After the departure of the British imperial army, the various militia groups, forest rangers and volunteers were reorganised into a more formal New Zealand defence force called the Armed Constabulary.

Figure 92n,o and p belonged to soldiers of the Royal Artillery Regiment. Eleven buttons belonging to this regiment were found in all. This large number is unsurprising considering their heavy involvement in the New Zealand wars. Each button features three cannons and a Victorian crown. One of the buttons differed from the rest in that it had the word UBIQUE printed on the button itself, indicating that it is an older variant, pre 1855. The Royal Artillery were formed in 1716 and they fully live up to their motto, 'UBIQUE', meaning everywhere, with batteries serving around the world in every major campaign the British army undertook. This included the New Zealand wars. During the conflicts, they operated many different artillery pieces, and in Rangiriri, gunnery teams were ordered to assault the pa with revolvers (Belich 1986). The Royal Artillery operated mortars, cannons and howitzers of various calibres, and the most modern guns of the period, Armstrong guns (see Figure 93).

Unlike the mortars, cannons and howitzers of the day, which were smooth bored muzzle loading artillery pieces, the state-of-the-art Armstrong gun was both rifled and breech loading. Invented in 1854, the Armstrong gun could deal immense damage to conventional fortifications relative to its size and poundage. In the disastrous attack on Gate Pa, two 40 pounders were used as well as one enormous 110 pounder, in addition to smooth bore artillery. (Cowan 1922).

Figure 92q is a button bearing the text: 'MILITARY TRAIN', identifying it as belonging to what is now called the Royal Corps of Transport. Only one of these buttons was found. The Military Train was founded in 1794 as the Corps of Waggoners, and went under many names including the Military Train in 1856, the Commissariat Staff Corps in 1859 and the Army Service Corps in 1869. The 4th battalion of the Military Train arrived in New Zealand in May, 1864 (Mills 2002), and was entrusted with the logistics of campaigns, food, ammunition, supplies, supply lines, and while they served under many names, were vital in any major operation such as the Waikato campaign.

Coins

Eight coins were found, as follows: a 1941 New Zealand half-penny, an 1865 Victorian penny, an 1861 Victorian half-penny, an 1857 token, issued by Professor Holloway of London, an 1854 Victorian penny and half penny, an 1845 Victorian silver three-pence, and an 1843 Victorian farthing. The token has had a hole drilled into it for attachment or suspension. All except the threepenny bit (from the Big Pit) came from the general barracks layer. Because coins tend to circulate for a long time before being lost, each of these dates represents the earliest possible date for the deposit, and because the range of dates fits within the period of occupation of the barracks, they are likely to have been lost during the barracks period. However, the 1941 coin indicates that there has been some mixing with later material.



Figure 93. Armstrong gun

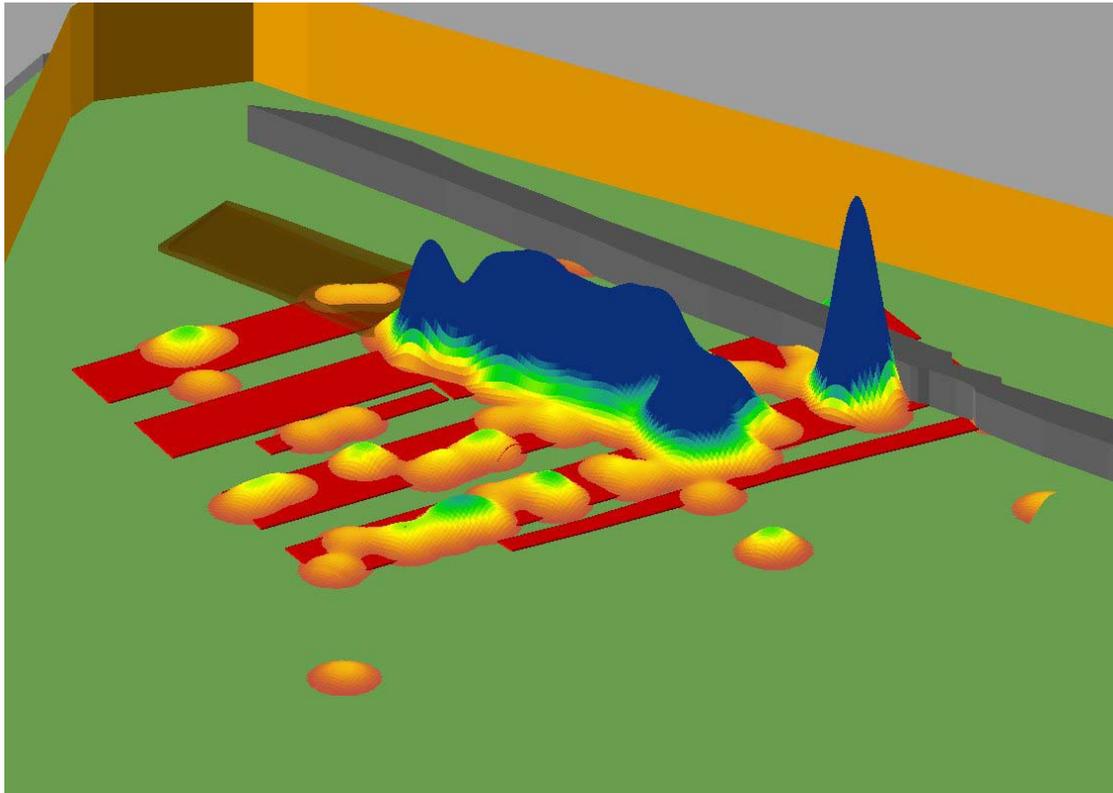


Figure 94. Distribution of militaria

Distribution

Figure 94 shows a density plot of all artefacts covered in this section of the report except the percussion caps. The artefacts were almost entirely recovered from two features, Pit A, which is a rubbish pit, and the series of complexes collectively known as the Big Pit.

Pit A

Pit A contained the majority of the Enfield ammunition, and buttons belonging to the 40th regiment and the Royal Artillery. These regiments and weapons were only present in the country for a very short time in the 1860s (Figure 95). The most likely time for this material to be deposited is in the period when they were leaving, as they had to wait in the barracks for quite a while before being shipped out.

Complex 23

Datable Contents

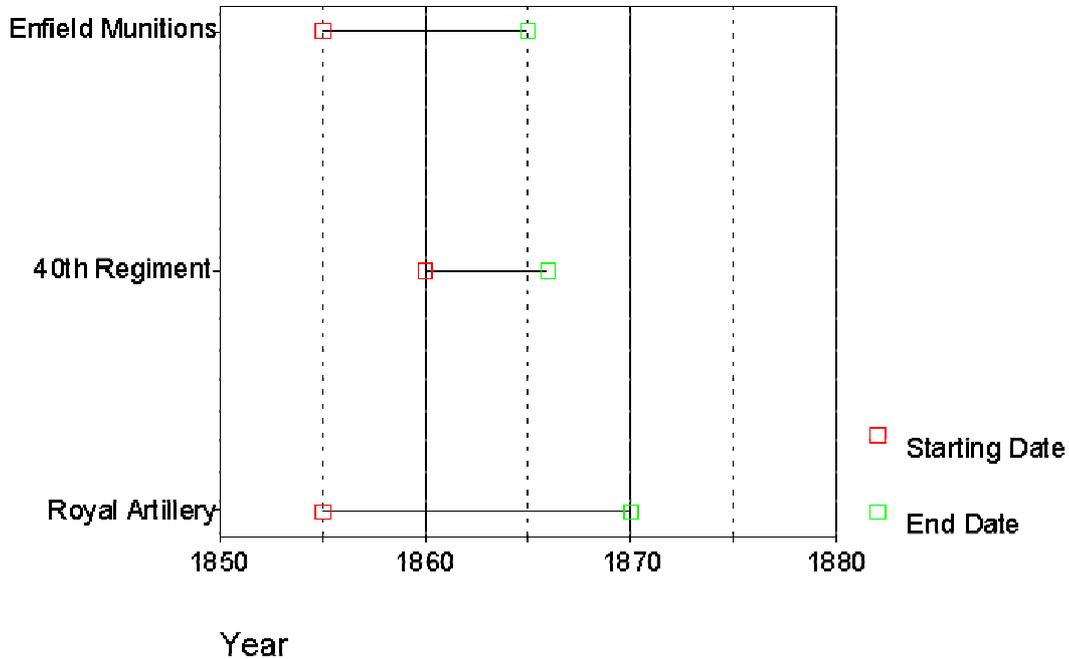


Figure 95. Militaria dating Pit A (complex 23)

Big Pit a/b

The material from the Big Pit makes up the vast majority of the Albert Barracks assemblage. Material that could date from any period of the barracks was recovered from it. The very early materials such as flintlock munitions, 58th regiment items, early artillery, sappers' items and Albert shakos were not recovered in any great numbers. They are generally only present in one example, and those individual items tend to be fragmentary and badly corroded. The materials from the 1860s are both better preserved and more numerous. This suggests that the rubbish trench was constructed to 'clean up' the barracks either as the imperial army was leaving or after they had left (1865/66), gathering a few early items and a large quantity of later material and dumping the rubbish in layers into a large trench away from the majority of barracks buildings next to the wall.

Rubbish Trench

Datable Contents

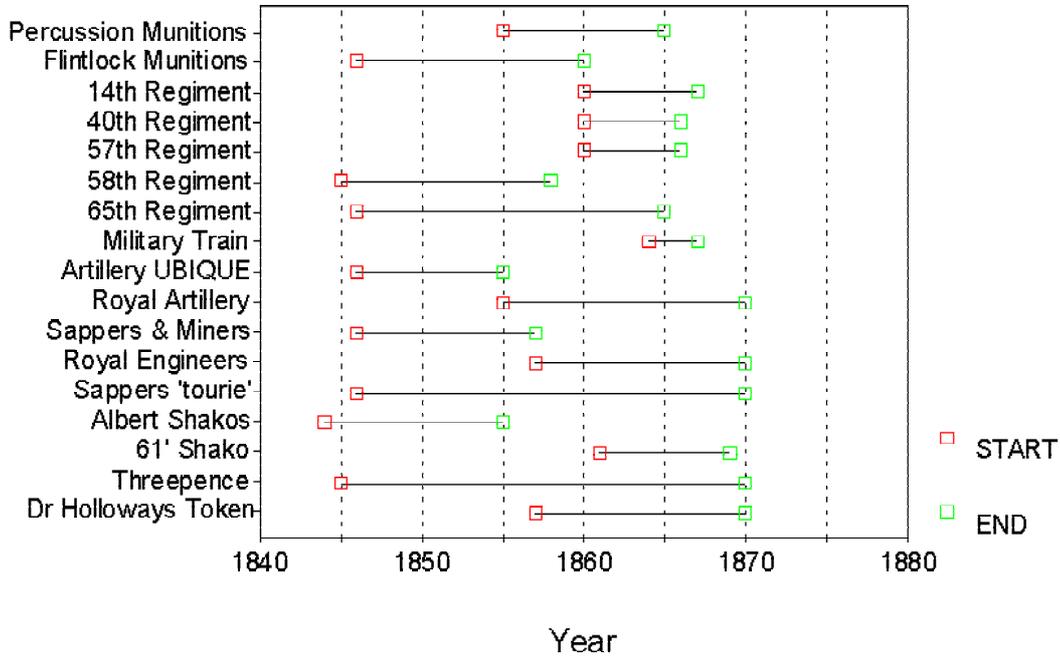


Figure 96. Datable militaria items and coins in the Big Pit a/b

Conclusions

The military (and civilian) artefacts discussed in this section provide an accurate date for the deposition of the material, probably in the mid 1860s when the Imperial army was leaving New Zealand. They present an image of daily, family life in the 19th century British and colonial military, with items of day to day use, ceremonial and decorative function as well as weaponry and munitions. It is significant that the range of regiments represented in the Big Pit a and b assemblage differs from the regiments represented in the 1979 well excavation, where items belonging to the 12th, 40th, 50th, 57th, 58th and 65th regiments, Royal Artillery, Royal Marines, Royal Sappers and Miners, Royal Engineers, Military Train and Commissariat Staff were reported (Nichol 1979: 104; however, the full analysis and excavation report are still to be published) This is due to the temporary nature of the barracks structures in and near the area excavated in 2001, built to house the large numbers of troops gathered for the invasion of the Waikato.

IRONWORK

Introduction

In common with most historic sites the small part of Albert Barracks exposed during the construction of the Student Amenities Block contained hundreds of iron objects scattered across and recorded in most features investigated at the site.

Analysis of the over 1200 iron objects (some 280kg in weight) loosely classified the remnants into a number of functional categories which provide an indication of activities at the barracks. Most fell into categories such as workshop offcuts, hardware (such as nails, spikes, and brackets), apparel (components from hobnailed boots), window and door furniture, containers, stove elements and tools (see Table 25 and Figures 97-100), while over 10% of the remains were heavily corroded, amorphous in structure and could not be attributed to any category.

Results

Most of the categories and the objects themselves would be characteristic of any historic residential or commercial site in 19th century historic Auckland and elsewhere: hobnail boots (Figures 99b-c), cooking vessels (frying pan and pots, Figure 97a-c) and other containers, hundreds of nails and discarded fixtures and fittings. However, the collection differed significantly in two important aspects:

The presence of a forge/workshop was indicated by cakes of smithing slag, numerous off cuts from bar, rod and sheet metal and remnants of various files (Figures 97d, 98a-b). These elements represented over 12% of the collection by weight (Table 26) and while they do not necessarily indicate the location of the workshop/forge, they do suggest that one was operating nearby (within the Barracks) and that at least some of the military's iron requirements were being met on site.

The volume of both hardware (nails, spikes and brackets) and window/door furniture (latches, hinges, locks) provided a clear indication of building maintenance or demolition during the occupation of the barracks.

Some of the artefacts, such as a fireplace, drain grating and wire cut nails, were clearly related to post barracks occupation and the stormwater/drainage system of the merchant houses which occupied the site after 1873.

Stratigraphically, over half the iron objects were recovered from the general barracks area and were not associated with any particular feature. However, over a third (37%) of the objects were recovered from the various layers in the Big Pit.

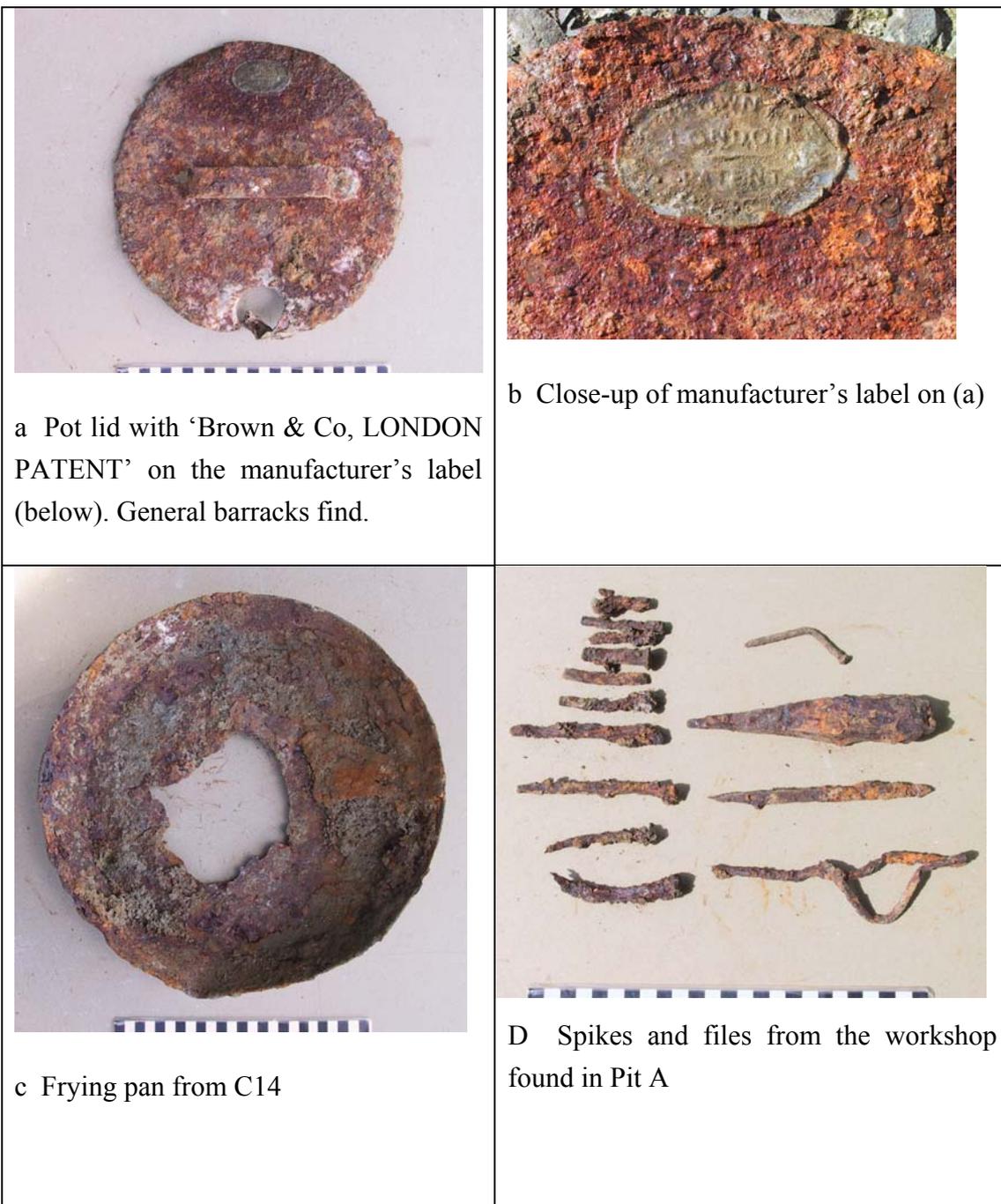


Figure 97. Ironwork



a Offcuts from layer a/b of the Big Pit



b Forging slag recovered from layer a of the Big Pit



c Remains of cast iron vessel (top left), padlock, spike, chain link, bracket and nuts and bolts. General barracks area



c Stove element recovered from overlay of Big Pit

Figure 98. Ironwork



Figure 99. Ironwork

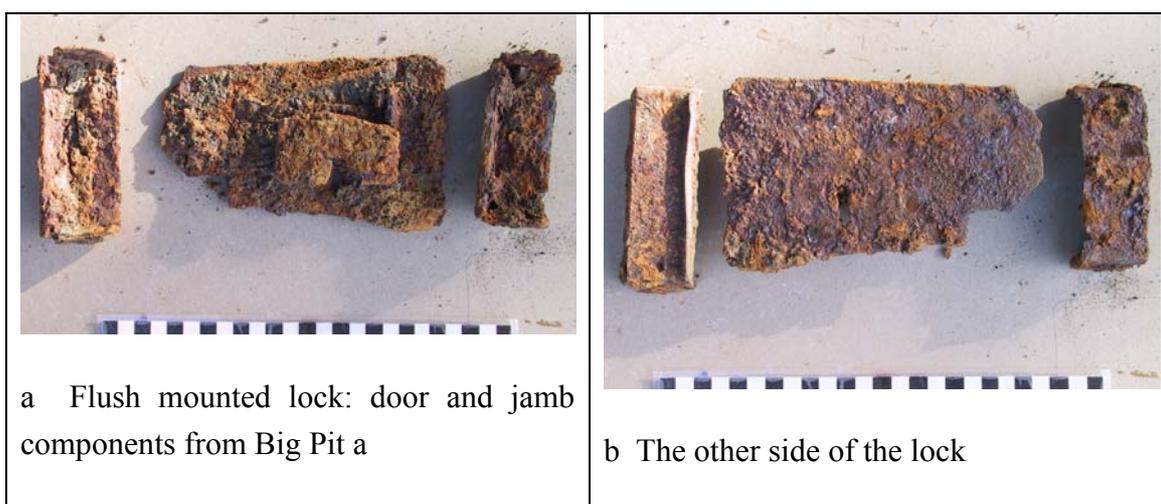


Figure 100. Ironwork

The Workshop – Forge

There are clear indications that a workshop with a forge was active within the barracks and that many activities traditionally associated with the smithy such as the production of horseshoes and probably hobnails for boots were carried out. It also appears that many fixtures and fittings such as latches, door bolts, hinges and other door and window furniture were manufactured on site based on the types of offcuts recovered. Some of the bar off-cuts would also indicate that iron gates and cart springs were made or repaired on site.

This material was distributed throughout the site with particular concentrations from all layers of the Big Pit. At least 23% (wt) of the iron (offcuts and forge waste) was recovered from this context. However, this proportion may be considerably higher if the amorphous material is considered (Table 26). The distribution throughout the site would indicate that forging activities occurred throughout the period of the barracks represented in the excavated area. Apart from offcuts and manufactured items, forging slag and tools (cold chisels and files) were recovered from all levels of the Big Pit, with the main concentration of forging slag from complex 26, a rubbish hole in the upper part of the Big Pit.

The concentration of remains from the Big Pit could well represent a scrap heap accumulated by the smithy, and it is tempting to conclude that the forge was located in this part of the barracks.

Some cast iron objects were recovered such as stove elements and remains of an old pot or kettle (Figure 98c-d), but it is likely that these were manufactured elsewhere since there was no indication of casting waste at the Albert Barracks site.

Building Materials

Hundreds of nails were recovered from all contexts on the site. They fall into the categories typical of historic sites and reflect the various manufacturing techniques and styles of nail available through a large part of the 19th century.

Wrought or forged nails of varying sizes were recovered from the site and the larger nails and spikes (Figure 98c) were all manufactured using this technique, although it is not known whether or not they were manufactured on site. They were cut from rods of iron and although off-cuts of rod were recovered from the site, nail production is an unlikely activity for the barracks smith as it is time consuming and there were many more urgent tasks. Nail rods were generally imported from England at the time (ASHA 1980).

The majority of the nails were medium to small sized cut nails. These required long thin plates of iron instead of rods of iron as the base material. These plates were then cut to the desired nail length by machine. No nail plates indicating on site manufacture were found in the assemblage.

Wire cut nails are manufactured from machine drawn wire. They were manufactured in America from 1851 and came into common use in that decade. They were not imported into Australasia until c.1853 and were not fully accepted until the mid-1860s – largely because of expense and uncertainty as to their strength. By the 1870s new methods of manufacture enabled cheap production of this type of nail and they gradually displaced cut nails over the over the following decades (ASHA 1980). Wire cut nails represent less than 15% of the total and almost without exception these were recovered from the final layers of the site and from the period of the merchant houses from 1870, while others were recovered from postholes (e.g. C30, C35 and C148) and the spoil heap.

In general nails represent the range of size and type expected in the construction of timber buildings for framing, weatherboards, roofing, flooring and panelling.

Door and window furniture included flush mounted locks and padlocks (from all layers of the Big Pit), door knobs, escutcheons (metal plates for key holes and door knobs), hinges, latches, stays and sash locks and bolt locks (Figures 99-100).

Tables below document the distribution of iron by both weight and number throughout the various features of the site.

Features	Amorphous	Apparel	Container	Drainage	Fence/gate parts	Fittings	Hardware	horsegear	Implement	Miscellaneous	Offcut	Plumbing	Stove element	Tool	Unidentified	Vessel	Window/door furniture	Workshop forge waste	Workshop offcuts	Grand Total
Barracks wall	1																			1
Barrel A							1												2	3
Barrel B	1																			1
Barrel C							2													2
Barrel D	1																			1
Big Pit a	30	3	2	1		7	115		5	8	1		3		5	2	16	3	18	219
Big Pit a/b	17	9	1		1	4	60		1	8	1	1	2	1	6	1	9		14	136
Big Pit b	13	7				5	46		5	6		1		2	6		12	1	13	117
Forge Spoil	2						2							1	1				1	7
General barracks area	71	18		1	1	5	453	2	4	24		6	7	5	17		23	2	55	694
Pit A	6		2				5			2			2	2					2	21
Pit B							2			2					1				1	6
Post barracks	2					1	5			1		1		3			1		2	16
Postholes	7		1			1	25			4		1					1		2	42
Grand Total	151	37	6	2	2	23	716	2	15	55	2	10	14	14	36	3	62	6	110	1266

Table 25. Iron artefacts by provenance and number

Table 26. Iron artefacts by provenance and weight (kg)

Features	Amorphous	Apparel	Container	Drainage	Fence/gate parts	Fittings	Hardware	Horsegear	Implement	Miscellaneous	Plumbing	Stove element	Tool	Unidentified	Window/door furniture	Workshop forge waste	Workshop offcuts	Grand Total
Barracks wall	0.13						0.01											0.145
Barrel A																	0.5	0.5
Barrel B	0.03																	0.03
Barrel C							0.04											0.04
Barrel D	0.1																	0.1
Big Pit a	33.2	0.34					9.34		2.29	0.22		4.15		0.66	6.78	6.70	1.815	65.481
Big Pit a/b	16.2	1.01				7.5	3.22			3.01		1.74		0.07	0.36		8.785	41.92
Big Pit b	22.8	4.23					3.59		2.5	0.08				0.34	3.80	1.55	20.12	59.017
Forge spoil	3.55												1.15					4.705
no complex	29.08	1.15		0.18	1.2	1.2	14.9	3	0.7	3.23	3.825	2.00	0.48	0.04	4.60	0.3	4.155	70.091
Pit A	4.57		1.56				0.86					0.7	1.55					9.245
Pit B							0.45			4.62								5.07
Post barracks	14.34						3.74										0.03	18.115
Posthole	0.75					0.52	0.3								0.69		0.08	2.35
Grand Total	124.7	6.73	1.56	0.17	1.2	9.23	36.5	3	5.49	11.16	3.83	8.59	3.18	1.12	16.24	8.55	35.48	276.81

FAUNAL ANALYSIS

Introduction

The colonial and British forces during the New Zealand wars were isolated from regular supplies available from the British Empire and like most troops stationed abroad had to rely heavily on perishable food supplies produced locally. The soldiers who occupied the Albert Barracks were at the beginning of this local supply line, and would therefore probably have experienced the best military rations available. Food procurement was crucial to the success of the war effort, and one would expect close supervision of quality through routine inspections, as well as proper management of storage to prevent deterioration in a pre-refrigeration age, efficient preparation (butchery, cooking), maximization of available meat resources and bulk purchase of supplies where possible to reduce costs. It was anticipated that many of these assumptions would be difficult if not impossible to measure archaeologically, but it was hoped that meat production and consumption activities and the general subsistence pattern could be outlined.

Methodology

A variety of methods were used to identify and quantify taxa, determine age at death of individual animals, and present butchery data. To record this data it was necessary to clean sediment from the majority of the faunal remains. The primary data, and complete tabulation of elements by species and provenance, and of butchery indications and degree of epiphyseal fusion, is recorded in a separate appendix to this volume. A bone code system developed from Frison and Todd (1987) was used to describe elements, element portions, and the degree of epiphyseal fusion.

The faunal remains were identified by comparison with the University of Auckland Anthropology Department reference collection and with the help of published resource materials (Hillson 1992; Schmidt 1972; Sisson 1930). Identifications were made to the highest taxonomic level possible. Sheep and goat specimens are particularly difficult to separate morphologically, and published illustrations were consulted (Boessneck 1969; Payne 1985; Prummel and Frisch 1986). If a specimen could not be distinguished morphologically between sheep and goat, then in the absence of other goat remains it was assumed to be sheep.

In order to assess the relative frequency of animals and animal portions deposited on site, the faunal remains were quantified by number of identified specimens present (NISP), minimum number of elements (MNE), minimum number of individuals (MNI), Minimum animal unit (MAU) (see Grayson 1984 for a further discussion on these), and minimum number of butchery cuts (MNBC) (see Watson 2000 for a full definition). MNE, MNI, and MNBC values were aggregated per provenance unit (e.g. Big Pit layer a), while %MAU values were calculated for the barracks assemblage only.

Data was recorded for the construction of a mortality profile consisting of three-age categories: juvenile, sub adult, and adult. Animal age at time of death was estimated based on rates of epiphyseal fusion data from Silver (1969), although tooth eruption and tooth wear data from Grant (1982) was also recorded.

Modifications such as burning, gnawing, rodent gnawing, recent breakage, weathering, and butchery patterns were observed, although only the latter modifications were quantified by element per species. This was achieved in a manner similar to that applied by Bunn and Kroll (1986). Where sawing and chopping suggest dismemberment of skeletal elements into butchered units using saws and cleavers, cut marks suggest skinning and removal of meat using a knife. Butchery cut definitions were provided by Watson (2000: figure 3.3) for pork, beef and mutton, and Schulz and Gust (1983: figure 1) for beef. Difficulties in calculating MNBC were due to limitations in the reference collection. The placement of ribs and thoracic vertebrae into the correct butchered unit requires that one knows which specific rib or thoracic vertebrae one is looking at. This is certainly not possible with the reference collection used for the purposes of this report. The only way around this was to identify the general rib location from illustrations while thoracic vertebrae were simply placed in the butchered unit adjacent to the loin.

Summary of Results

A total of 4,998 bones, bone fragments, and teeth were recovered from a number of provenance units associated with three assemblages: barracks, post barracks, and postholes. Faunal remains were also recovered from the general barracks area, and while these were analysed to the same level as the other assemblages and are briefly referred to below, they have not been included in the barracks assemblage analysis provide in this report.

The majority of the remains recovered were associated with the Albert Barracks assemblage (73.2%), followed by a significant quantity from the general barracks area (20.6%), while only small amounts were associated with the post barracks (5.4%) and posthole (0.68%) assemblages. Overall the majority of the faunal remains from the combined assemblages were unidentified mammal (68.1%), and total mammal remains made up 94.8%; 4.1% were fish; 0.9% were bird; and 0.2% were unidentified. Mammal species identified included dog (*Canis familiaris*), cattle (*Bos taurus*), sheep (*Ovis aries*), pig (*Sus scrofa*), rat (*Rattus Sp.*), cat (*Felis catus*) and a tentative identification of rabbit. Identified bird species included chicken (*Gallus gallus*), duck (*Anas sp.*) and goose (*Anser anser*), while identified fish remains included snapper (*Pagrus auratus*) as well as the cartilaginous subclass Elasmobranchii.

Barracks Assemblage

Mammal

The barracks faunal assemblage was by far the largest recovered during the excavation. The majority of remains recovered from this assemblage were associated with layers a and b of the Big Pit, while mammal remains were also recovered from a number of other archaeological features.

The assemblage had been heavily modified during excavation and handling, as well as by the butchery methods practised by the inhabitants who deposited the faunal remains. Weathering, rodent gnawing, and dog gnawing had also modified this assemblage, although these appeared to be less frequent occurrences. These taphonomic factors resulted in an assemblage that was composed mostly of 2,582 unidentified mammal remains (70.5% of the barracks assemblage) most of which were fragments that could not even be identified to element. In total only 91 mammal bones were complete elements, and most of these were small compact elements such as caudal vertebrae, carpals, tarsals, metacarpals, metatarsals, as well as elements from the dog burial, which will be discussed separately below. Element fragments that could only be identified to mammal were mostly unidentified vertebrae, long bone, and ribs, although some were cervical vertebrae, pelvis, unidentified teeth, lumbar vertebrae, mandibles, scapulae, femora, thoracic vertebrae, tibiae, as well as a single calcaneum, cranium, humerus, metacarpal/metatarsal and patella. A further 83 bones and bone fragments could only be identified as cf sheep/goat/pig. These were mainly unidentified ribs, with some thoracic vertebrae, unidentified vertebrae, tibiae, femora,

humeri, lumbar vertebrae, and a single unidentified tooth fragment, long bone, proximal phalange, pelvis, radius, and scapula. Three unidentified tooth fragments could only be identified as bovid. Nine fragments, which were mostly unidentified vertebrae, were identified tentatively as cf cattle. A mandible and tibia fragment were both identified tentatively as cf pig, while an unidentified premolar was identified as cf sheep/goat.

The most frequently identified mammal species were cattle, with a NISP of 275 representing 132 elements and a minimum number of 11 individuals, and sheep with a NISP of 202 representing 125 elements and a minimum number of 13 individuals. Two complete dogs were excavated and most of their remains were recovered for analysis, while the partial remains of two more dogs were recovered. Smaller quantities of pig (62 NISP, 37 MNE, 8 MNI) were also identified. There was also one tentatively identified rabbit pelvis fragment.

Cattle

Cattle remains were concentrated in layers a and b of the Big Pit, with relatively smaller concentrations in Pit B, the Sheep/Goat Pit, Pit A, the Forge Spoil, and Barrel D (Table 27).

The elements identified to cattle were listed per provenance unit. The most frequent elements recovered were ribs, followed by lumbar vertebrae, cervical vertebrae, thoracic vertebrae, femora, and tibiae. Cattle elements were more or less evenly distributed across the body when the number of elements per animal is taken into account, and the fact that hind limbs and forelimbs are the most significant anatomical units within the cattle assemblage. Crania, thoracic vertebrae, carpals, tarsals, phalanges, and caudal vertebrae were, relatively speaking, the least significant elements within the cattle assemblage.

Table 27. Mammal remains by provenance

Taxon per unit	NISP	MNE	MNBC	MNI
Big Pit layer a				
Cattle	143	62	70	3
Sheep	108	69	70	4
Pig	24	17	16	2
Dog	1	1	0	1
Mammal Sp?	1219	3	0	0
Cf sheep/goat/pig	46	0	0	0
Bovid	3	0	0	0

Taxon per unit	NISP	MNE	MNBC	MNI
Cf cattle	4	0	0	0
Cf pig	2	0	0	0
Cf rabbit	1	1	0	1
Cf sheep/goat	1	0	0	0
Total	1552	152	156	11
Big Pit layer b				
Cattle	109	52	58	2
Sheep	71	37	34	4
Pig	31	15	14	2
Mammal Sp?	966	0	0	0
Cf cattle	4	0	0	0
Cf sheep/goat/pig	36	0	0	0
Dog	1	1	0	1
Total	1218	105	106	9
Dog/big pit C51				
Dog	258	91	1	1
Mammal Sp?	184	0	0	0
Total	442	91	1	1
Forge Spoil				
Cattle	1	1	1	1
Mammal Sp?	9	0	0	0
Total	10	1	1	1
Pit B				
Cattle	10	7	7	1
Sheep	4	4	4	2
Mammal Sp?	149	0	0	0
Cf cattle	1	0	0	0
Cf sheep/goat/pig	1	0	0	0
Total	165	11	11	3
Sheep/Goat Pit				
Cattle	8	6	6	1
Sheep	11	10	9	1
Mammal Sp?	2	0	0	0
Total	21	16	15	2
Pit A				
Cattle	2	2	2	1
Sheep	4	3	3	1
Pig	2	2	1	1
Dog	38	23	0	2
Mammal Sp?	28	0	0	0
Total	74	30	6	5

Taxon per unit	NISP	MNE	MNBC	MNI
Barracks Wall				
Cattle	1	1	2	1
Sheep	4	2	2	1
Mammal Sp?	1	1	0	0
Total	6	4	4	2
Barrel C				
Pig	1	1	1	1
Total	1	1	1	1
Barrel D				
Cattle	1	1	1	1
Pig	3	1	1	1
Mammal Sp?	23	0	0	0
Total	27	2	2	2
Barrel E				
Pig	1	1	1	1
Total	1	1	1	1
Barrel A				
Mammal Sp?	1	1	0	1
Total	1	1	0	1
Sum Total	3518	415	304	39

Table 28 shows the minimum number of butchery cuts (MNBC) observed on cattle elements from the barracks assemblage. Cattle MNBC involved rib and short rib cuts, followed by short loin, neck, hindshank, foreshank, and rump. Arm, chuck, round, sirloin, short plate, and head cuts were also represented, but in smaller numbers. Surprisingly cattle carcasses were reduced into manageable portions equally by chopping and sawing, although the ratio of chopping in relation to sawing varied per anatomical unit. Elements sawn in the greatest proportions are pelves, so as to separate the rump from sirloin. A single shaft femur was sawn near the proximal end to separate the round from the rump. To separate the round from the hindshank, shaft tibiae were intensively sawn, usually near the proximal end while some sawing occurred at the proximal tibiae, and distal femora. Chopping was also frequent at the proximal end of the shaft tibiae, while there was also some chopping at the distal end of the shaft tibiae. The vertebral central column was both sawn and chopped longitudinally and transversely as the carcass was divided into sides and then further reduced into smaller cuts. It is interesting to note that chopping was significantly more frequent than sawing on forelimb elements. While there was a single instance of both

an ulna and a radius sawn near the proximal end, chopping was the main method used to separate the foreshank from the arm and brisket, especially near the distal end of the shaft humeri or proximal radii, while chopping was also used to process the foreshank into smaller portions. The arm was sectioned from the chuck either by chopping or sawing where the glenoid meets the blade. Ribs were butchered usually by sawing and then chopping into smaller portions often where the rib meets the short rib as well as near the proximal end of the rib. Cut marks are absent from hind limbs but are concentrated most heavily on tarsals, pelves, distal humeri, sacral vertebrae, and shaft humeri. Lumbar vertebrae, ribs, thoracic vertebrae, and cervical vertebrae also had cut marks present at smaller frequencies.

The degree of epiphyseal fusion of cattle elements per provenance unit was identified. It was found that most of the late fusing centres of epiphyseal fusion were unfused, and centres of epiphyseal fusion that fuse early were all fused, suggesting that the majority of cattle specimen were sub adults at the time that they died. Big Pit layer a had 2 phalanges with unfused proximal ends, which usually fuse between 18-24 months of age, so this indicates at least one individual that was either a juvenile or sub adult. Adult specimens were present in Big Pit layers a and b, as well as Pit B, while a specimen that could either be from an adult or sub adult was present in the Barracks Wall assemblage.

Sheep

The majority of the barracks assemblage sheep remains were concentrated in Big Pit layers a and b, but they were also present in Pit B, the Sheep/Goat Pit, Pit A, and the Barracks Wall (Table 27).

Identified sheep elements from the barracks assemblage were listed. The most common elements were ribs; however, cervical vertebrae, thoracic vertebrae, pelves, humeri, radii, lumbar vertebrae, scapulae, tibiae, crania, ulnae, and axial vertebrae are well represented, suggesting an even spread of elements per anatomical unit. Carpals, tarsals, and metapodials were also present in the assemblage. Forelimbs and hind limbs appeared to be relatively the most frequent body parts in the assemblage, while cranial material, and vertebrae, were well represented.

Table 28. Minimum numbers of butchery cuts (MNBC) on cattle by provenance

Provenance Unit	Head	Neck	Arm	Chuck	Fore-shank	Rib	Short plate	Short rib	Short loin	Sirloin	Rump	Round	Hind-shank	Total
Big Pit layer a	0	8	3	1	7	19	1	8	5	3	7	2	6	70
Big Pit layer b	0	7	2	2	4	17	1	10	7	1	0	3	4	58
Forge Spoil	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Pit B	0	0	1	1	0	0	0	0	2	0	2	0	1	7
Sheep/Goat Pit	0	0	0	0	0	4	0	0	2	0	0	0	0	6
Pit A	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Barracks Wall	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Barrel D	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	1	15	7	5	11	40	2	20	16	4	10	5	11	147

Table 29 shows the minimum number of butchery cuts observed on sheep elements within the barracks assemblage. Sheep MNBC was dominated by forequarter cuts with substantial portions of leg and neck cuts. Hindfoot, scrag end of neck, loin, and head cuts were also present in various numbers. Overall dismemberment was most commonly carried out by chopping, although sawing was frequent too. The forequarters were divided into smaller portions by chopping at the shaft radii, chopping at the shaft humeri and scapulae (near the distal portion of the blade) as well as sometimes sawing at the shaft humeri and distal humeri. Sawing was most heavily concentrated at the vertebral centrum, especially at the atlas, although chopping was also employed at a similar frequency. Many vertebrae were chopped or sawn either longitudinally or transversely. Leg cuts were further divided into smaller portions, usually by means of chopping near the distal end of shaft femora, shaft tibiae, and pelvis. The sacrum was sawn longitudinally, while some shaft tibiae, and pelvis (acetabulum) were also sawn. No evidence could be found for chopping or sawing on ribs, ulnae, metapodials, tarsals, carpals, caudal vertebrae, and cranial material. Cut marks were focused mainly on proximal tibiae, proximal humeri, and proximal ulnae, but were also concentrated on distal tibiae, shaft femora, and shaft radii, as well as being present on proximal radii, distal humeri, shaft tibiae, pelvis, scapulae, ribs, and cervical vertebrae. Cut marks were absent from metapodials, tarsals, carpals, thoracic and lumbar vertebrae, as well as cranial material.

Table 29. Sheep MNBC by provenance

Provenance Unit	Head	Scrag	Fore-quarter	Neck	Breast	Loin	Leg	Hind-foot	Total
Big Pit layer a	2	7	18	17	0	5	13	8	70
Big Pit layer b	1	5	15	5	0	2	5	1	34
Pit B	0	1	2	0	0	0	1	0	4
Sheep/Goat Pit	0	0	1	0	0	0	2	6	9
Pit A	0	1	0	0	0	1	1	0	3
Barracks Wall	0	0	1	0	0	0	1	1	2
Total	3	13	37	22	0	8	23	16	122

A mortality profile was constructed using rates of epiphyseal fusion. It suggested that the majority of sheep individuals were adults at the time in which they died, although there also appeared to be a significant number of sub adult individuals in the barracks assemblage. None of the early fusing centres were unfused, suggesting that none of the individuals were juvenile. Adult sheep remains were recovered from the Big Pit layer a in roughly equal numbers to sub adult specimens. In Big Pit layer b, adult

specimens seemed to be more numerous than sub adult specimens. While all that can be said of the age at which sheep died in Pit B is that they were not juvenile, adult specimens dominated the Sheep/Goat Pit, Pit A, and Barracks Wall assemblages.

Pig

Again, most of the pig remains identified from the barracks assemblage were concentrated in Big Pit layers a and b (Table 27). There are also small amounts of pig remains from Pit A, Barrel C, Barrel D, and Barrel E.

Identified pig elements from the barracks assemblage were listed. They are spread unevenly across the body in small numbers with a wide range of elements represented in the assemblage, including mandibles and crania, forelimbs, and hind limbs, although vertebrae were uncommon. Crania and mandibles were relatively the most frequent elements to survive, followed by humeri, pelves, and radii. Axial vertebrae, tibiae, and calcaneum were well represented, while ulnae, scapulae, ribs, vertebrae, metacarpals and tarsals were relatively less numerous, and carpals, femora, thoracic vertebrae, and metatarsals were absent.

Table 30 shows the minimum number of butchery cuts observed on sheep elements from within the barracks assemblage. The most frequent pig MNBC were trotter and shoulder cuts. Rib, loin, jaw, head, neck, and leg cuts were also represented in the assemblage, while blade cuts were absent. Both chopping and sawing were equally common. The only cervical vertebrae identified were both chopped and sawn longitudinally as the carcasses were turned into sides. A proximal rib was also sawn down the longitudinal plane. Sawing occurred on one cranium fragment as the brain case was split open and the skull cut in half. A mandible was portioned by chopping, transversely, at the caudal dentary ramus. Shoulder cuts were separated from the blade by sawing at the distal blade close to where it meets the glenoid. Shoulder cuts were further divided into smaller portions by chopping at the shaft humeri and distal humeri. Trotters were separated from the shoulder and leg cuts respectively by chopping at the shaft ulnae and shaft tibiae, as well as sawing at the calcaneum. Trotters from the forelimb were trimmed by chopping at the shaft metacarpals. Cut marks were concentrated mainly on forelimb elements, shaft ulnae, distal scapulae, shaft radii, and shaft humeri, but were also present on pelves and mandibles.

Table 30. Pig MNBC by provenance

Provenance Unit	Head	Jaw	Neck	Shoul-der	Blade	Ribs	Loin	Leg	Trotter	Total
Big Pit layer a	1	1	0	2	0	4	2	0	6	16
Big Pit layer b	1	1	2	5	0	0	1	1	3	14
Pit A	0	0	0	0	0	0	0	1	0	1
Barrel C	0	0	0	0	0	0	0	0	1	1
Barrel D	0	1	0	0	0	0	0	0	0	1
Barrel E	0	0	0	1	0	0	0	0	0	1
Total	2	3	2	8	0	4	3	2	10	34

Age at death of pig individuals was assessed using rates of epiphyseal fusion. Early fusing centres of epiphyseal fusion were fused, while late fusing and middle fusing centres of epiphyseal fusion were unfused. This suggested that sub adult pigs were slaughtered for consumption.

Dog

The remains of 5 dogs associated with the barracks assemblage were recovered from the excavation. One of these dogs was represented by a single distal metacarpal/metatarsal from layer a of the Big Pit, and another by a humerus shaft from layer b of the Big Pit. A near complete adult dog skeleton was found in the bottom of the Big Pit (complex 51) buried in situ. The dog was medium to large in size, and most likely European in origin. It is possible that it belonged to one of the soldiers. The excavated skeletal material represented only 56% of a complete dog skeleton because of the fragile nature of the bones and the dense clay matrix that they were recovered from. Most of these bones have suffered from recent breaking and some form of moderate bone weathering. Of the 258 dog bones, bone fragments and teeth identified from this burial, 17.8% represented complete elements. Ribs and most of the thoracic vertebrae material disintegrated upon excavation, while distal phalanges and most of the caudal vertebrae were possibly overlooked. The cranium also disintegrated upon excavation although it was partially recovered in many fragments that could be identified. And finally, the partial remains of 2 dogs, one an adult and the other a sub adult, were recovered from Pit A.

Bird

The barracks bird assemblage represented at least 6 individual birds (NISP 21; MNE 16). A total of 13 unidentified bird bones was recovered. These included 2 tibiotarsals, 1 humerus, 1 sternum, and 3 unidentified long bone fragments. Four chicken bones from Big Pit layer a included 2 femora (1 with cut marks), 1 humerus, and 1 tarsometatarsal. Three chicken bones from Big Pit layer b included 1 coracoid, and 2 tibiotarsals. Pit A chicken bones included 1 coracoid, and 2 humeri. All centres of epiphyseal fusion were fused, indicating specimens were adults at time of death, and the tarsometatarsal was from a female individual because it had no spur or spur scar. One goose tibiotarsal and one duck femur with cut marks were identified from the Big Pit layer a, with fused epiphyses.

Fish

The largest concentration of fish remains are associated with Big Pit layer a, but a concentration was also recovered from Big Pit layer b. A total of 85 unidentified fish remains was recovered, of which 1 was a scale, 23 were spine fragments, 21 were vertebrae, and the rest were either cranial fragments or unidentified. Snapper was the only species identified in association with the barracks assemblage.

General Barracks Area Assemblage

A large quantity of the faunal remains recovered from the Albert Barracks excavation were provenanced to the general barracks area but were not associated with specific features. Most of these remains were also unidentifiable mammal fragments. However there were also significant amounts of unidentified fish, cattle, pig, sheep, cf sheep/goat/pig, and snapper. While chicken remains and unidentified bird fragments were identified from grid reference units, additional species not identified from the other assemblages with archaeological context were identified as rat, cat, and a species of the elasmobranch fish subclass.

Post Barracks Dog Burial

The majority of the faunal remains from post barracks contexts came from a dog burial from merchant house complex 156. The remains belong to a small adult dog comparable in size to one of the terrier breeds. Two stones were excavated in association with the dog burial (Figure 35). The large one was located in the vicinity of the stomach cavity, while the smaller one was protruding from the anal cavity. These stones appear to be pitted from the action of stomach enzymes. It is highly likely that this small dog died a very painful death shortly after swallowing these

stones (a cause of canine death that has been recorded by veterinarians from time to time). The cranium and right mandible were destroyed when the digger uncovered the skeleton, although a few fragments were recovered and identified. The lower limbs were not recovered, but otherwise the skeleton is complete.

Discussion

The faunal remains recovered from the Albert Barracks excavation of 2001 were frequently damaged during excavation, and this was after weathering, gnawing, burning, and butchering had all had a chance to modify the bone remains. On top of this add the potential for analytical bias and there is great difficulty in accurately interpreting the data collected from the Albert Barracks faunal assemblage. Despite these limitations there are some general patterns that have been observed.

The range of taxa identified from the barracks assemblage suggests that while the staple diet was beef there was a greater variability in military diet than what might be expected. Sheep were equally as frequent in the assemblage as cattle, while pork, poultry, goose, duck and snapper were added to the diet at certain times. Beef, from prime sub adult individuals, probably male, appears to have been the staple meat, suggesting that the army purchased only the best quality meat. However, some adult individuals were present, which suggests further variability in the purchasing strategy employed. This variability is probably the result of balancing the needs of quality with affordability. Some variability is also apparent when examining the sheep epiphyseal fusion data. Mutton was not always exclusively purchased. Someone or some element of the barracks society was choosing sub adult individuals as part of their diet. Could this variation be the result of food waste from both officers and the common ranks?

Food remains were deposited with domestic refuse into rubbish holes and the Big Pit feature in great quantities. The even spread of elements across anatomical units and the limited range in age of slaughtered animals suggests that the treasury department acquired complete animals or animal carcasses from local producers and that the maximum meat potential was yielded from these animals. This pattern is confused somewhat and not entirely conclusive for cattle remains considering the limited cranial material and small quantities of carpals.

Based on the butchery evidence it is possible that the army either employed civilians to butcher the carcass so the army could receive wholesale butchered cuts, or that the Albert barracks had a specialist butcher to reduce the carcasses once complete animals were acquired. What is known is that the carcasses were reduced systematically into standard meat cuts of the 19th century. Chopping was equally as frequent as sawing of

cattle and pig bones, while chopping of sheep bones was more frequent, suggesting that after sawing by a specialist the bones were further chopped into edible portions by an army cook or by the troops themselves in preparation for consumption of army rations.

It appears that the maximization of meat resources was practised at the Albert barracks. The size of the meat cuts indicates the portions that were issued. The best way to maximize an animal carcass is to butcher cuts for preparation of soups and stews, although unpopular with soldiers, so as to increase the nutritive value and the number of portions per carcass (Crass and Wallsmith 1992), and while a few steak cuts were present in the assemblage the portions appear to fit this pattern. Pig craniums and trotters were butchered, suggesting maximum use of pig carcasses. Cut marks were frequent, indicating intensive meat removal from cattle forelimbs, sheep leg and forequarter cuts, and pig forelimbs. Pig and cattle remains were recovered in association with barrel features. Could this be the result of pork and beef being salted and stored in barrels for transport down the supply line or consumption at the barracks at a later time? Tin can remains that salt beef could be packed in were not recovered. Fresh meat is more desirable than salted meat, and because the Albert Barracks were at the beginning of the supply chain the best way to avoid wastage and increase nutrition would be to provide the meat fresh to the garrison as they needed it.

Dogs were buried on the site both during the barracks occupation and the merchant house occupation. In the case of the barracks assemblage the dog burials are curiously associated with rubbish pits. Not much can be said of these individuals apart from the fact that one is an adult large to medium in size, a second is also an adult, while a third is sub adult. Pictures contemporary to the Albert Barracks period show dogs in the company of soldiers. Maybe the dog skeleton recovered from the Big Pit belonged to one these dogs.

LEATHER AND ORGANIC ITEMS

A small number of leather and organic items were recovered. Apart from leather there were two finds of organic material that have not so far been described: one the wooden backplate of a hairbrush (Figure 101a) and the other a piece of tar (Figure 101b). During the period of occupation of the Albert Barracks, tar found in New Zealand was generally used for industrial purposes (pers. comm. John Adams).

Most of the leather remains were of shoes (Figures 101-102), but a few other unidentified pieces of leather and off-cuts (Figure 101c) were also found.

Some of the shoe parts show machine stitched edges (e.g. Figure 102c). Sewing machines for leather were introduced by 1856 (Pratt and Woolley 1999: 75), allowing mass production of shoes and large scale retailing. It is hard to tell how far Auckland was influenced by these developments in England, and other shoes are clearly hand stitched (Figure 102d).

Compared to other historic excavations around Auckland, e.g. His Majesty's Theatre (Felgate 1998), leather remains from Albert Barracks are few and fragmented. They mainly survived when close to metal, either iron or copper, so that only the remains of heels, heeltips, clumps, facings and one waist part survived. The heels are stacked and many are hobnailed with iron. The soles are riveted with copper. Long facings with lace holes suggest men's boots, not bluchers (Swann 1984(2): 45), which seems to be consistent with the military occupation of the barracks. The diameter of the lace holes varies between 2 and 4 mm. This might mean that a variety of different boots were used by the army, or it might indicate a difference between men's and women's shoes, or between military and non-military footwear.

Lacing hooks were patented in 1865 and seem to have been used on women's shoes (Swann 1984(2): 41). The only example, which also has signs of machine stitching, came from the Big Pit (Figure 102c). There is also a stacked heeltip which, judging from its size, was part of a woman's shoe (Figure 102a). These illustrate the domestic side of barracks life.

The leather and other organic items were too few to establish a distribution pattern. They came mainly from the general barracks layer or the Big Pit (the hairbrush from Big Pit layer a).



Figure 101. Leather and organic items



a Small heel and heeltip, possibly of a woman's shoe



b Facing with lace holes



c Facing with hooks (the only example found), from a machine stitched shoe, possibly a woman's



d Near complete hobnail sole, including heel and heeltip, held together by iron, and clump, which looks hand stitched

Figure 102. Leather Shoes

WOOD, COAL AND CHARCOAL

Numerous wood, charcoal and coal samples were collected during excavation at the Albert Barracks site and submitted for identification to Dr Rod Wallace, Anthropology Department, University of Auckland.

29 of the samples were identified as coal samples, 37 as wood (predominantly puriri and kauri) and four as charcoal (kauri, tutu, mapau and puriri) – see Table 31.

The coal samples derived in roughly equal proportions from the Big Pit (layer a and a/b) and from the general barracks layer, with two samples from postholes. Coal was also observed at the base of Pit B, but no samples were taken. Most of the wood samples came from postholes and therefore related to the merchant house period – the majority (14) were puriri, but two were kauri. A few samples from the Big Pit (layers a and b) were identified as kauri, puriri and matai. Other samples of kauri, puriri, and an exotic angiosperm (A) came from the general barracks layer. The kauri charcoal sample came from the Big Pit layer b, the tutu from a posthole, and the mapau and puriri from the general barracks area. The exotic angiosperm (B) was the back of a hairbrush (Figure 101a) from Big Pit layer a.

Table 31. Identification of wood, coal and charcoal samples

Species etc	Plant Type	Totals
Tutu (<i>Coriaria arborea</i>)	Shrub species	1
Mapau (<i>Mysine australis</i>)		1
Puriri (<i>Vitex lucens</i>)	Broadleaf trees	24
Exotic angiosperm A	Imported? Timber	1
Exotic angiosperm B		1
Matai (<i>Prumnopitys taxifolia</i>)	Conifers	1
Kauri (<i>Agathis australis</i>)		12
Coal	Fossil fuel	29
Totals		70

The abundance of coal might perhaps be explained by conservatism in British military behaviour, i.e. a traditional preference for coal rather than wood burning fires. The coal was probably imported from Australia at this date.

Puriri and kauri dominate the wood samples. Puriri is an abundant species in the Auckland area and is one that seems to survive on landscapes after forest clearance. It

is a very hard wood, probably too hard when dry to be sawn into lumbar by 19th century tools. Its normal use was as posts and piles, both relying on the durability of wood of this species in the ground. Given its abundance in the landscape, its durability, its use in structures originally below ground level, and the later destruction or decay of above ground structures, it is not surprising that puriri was the most common species recovered at this site.

Kauri was the most common sawn lumber in colonial Auckland, so its abundance at this site in Barracks period contexts is not surprising.

REFERENCES

Primary Sources

Newspapers

- Auckland Star* 8 January 1929
- Auckland Weekly Argus* 7 January 1865
- New Zealander*
- 5 July 1845
 - 13 September 1845
 - 27 December 1845
 - 24 January 1846
 - 25 April 1846
 - 4 July 1846
 - 25 July 1846
 - 26 September 1846
 - 19 December 1846
 - 10 April 1847
 - 16 June 1847
 - 4 September 1847
 - 18 September 1847
 - 10 November 1847
 - 11 March 1848
 - 5 April 1848
 - 28 June 1848
 - 29 May 1850
 - 7 September 1850
 - 11 September 1852
 - 30 January 1856
 - 8 May 1858
 - 22 May 1858
 - 4 December 1861
 - 14 December 1861
- New Zealand Herald*
- 16 November 1863
 - 25 November 1863
 - 2 January 1864
 - 1 July 1864
 - 22 February 1873
 - 22 March 1873
- Southern Cross*
- 24 July 1847
 - 31 July 1847
 - 9 April 1850

14 January 1853
 31 March 1864
 21 August 1867
 21 February 1870
 23 April 1870
 18 February 1871
 22 March 1871
 1 April 1871
 8 April 1871
 22 August 1871

Official Publications

<i>British Parliamentary Papers: Papers Relating to New Zealand</i>	337
<i>(BPPPNZ)</i>	556
	892
	2719
<i>Appendix to the Journals of the House of Representatives</i>	1860
<i>(AJHR)</i>	1865
	1870
<i>Statutes of New Zealand</i>	1872

Plans

- Vercoe, J. and E.W. Harding. 1866. Map of the City of Auckland, September 1866. Held at Special Collections Auckland Public Library.
- Frissell, G. 1871. Plan of Albert Barracks. Compiled by R.S. Fletcher, Lands Department 1936, from the field notes of G. Frissell's September 1871 Survey. Held at Special Collections Auckland Public Library.
- Auckland Improvement Commission. 1873. Plan of Proposed Alterations in the City of Auckland. Held at Special Collections Auckland Public Library.
- Auckland Improvement Commission. 1875. Plan Shewing Building Allotments to be Leased for 99 Years at Public Auction. Held at Special Collections Auckland Public Library.
- Hickson, T.W. 1982. Map of the City of Auckland. Held at Special Collections, Auckland Public Library.
- Stevens, George Tracey. 1886. View of Auckland as from a point 1000 feet above and 100 feet to the rear of the Public Hospital. Lithograph. Held at Special Collections, Auckland Public Library.
- Wrigg, H.E. 1908. Plan of Auckland City. Held at Auckland City Council (Plan Filing Department).

Photographic Collections

Auckland Public Library (APL)
National Library, Wellington

Material held at Archives New Zealand, Auckland

Auckland Depositions Book Police/Resident Magistrate 1845-1847, BADW 5989 2a

Secondary Sources

- ASHA 1980. Article (author unknown), The Nail as a Criterion for the Dating of Buildings and Building Sites (Late C18 to 1900). Vol. X.
- Barber, L., G. Clayton and J. Tonkin-Covell, 1990. *Sergeant, Sinner, Saint and Spy: The Taranaki War Diary of Sergeant William Marjouram, R.A.* Auckland: Random Century.
- Barr, J., 1985. *The City of Auckland*. Christchurch: Whitcombe & Tombs.
- Barthorp, M., 1987. *The British Army on Campaign (2) The Crimea*. Oxford: Osprey Publishing.
- Beale, G.C. 1937. *Seventy Years in and Around Auckland*. Wellington.
- Belich, J., 1986 (reprinted 1988, 1998, Penguin). *The New Zealand Wars*. Auckland: Auckland University Press.
- Best, P.S., 1973. The Fifty-Eighth Regiment in New Zealand 1845-1858. Unpublished Research Essay, University of Auckland.
- Best, S., 1992. *The Queen Street Gaol: Auckland's First Courthouse, Common Gaol and House of Correction (Site R11/1559)*. Auckland Conservancy Historic Resource Series No. 2. Auckland: Department of Conservation.
- Boessneck, J. 1969. Osteological differences between sheep (*Ovis aries* Linne) and goat *Capra hircus* Linne). In *Science in Archaeology*, edited by D. R. Brothwell and E. S. Higgs, pp. 331-358. London: Thames & Hudson.
- Brassey, R., 1989. *Rediscovering Fort Ligar: Archaeology at R11/1656, Auckland*. Vol. 2: *Analysis of the Artefact Assemblages and Faunal Material*. Science and Research Internal Report No. 41. Auckland: Department of Conservation.
- Brassey, R., 1990. *The History and Archaeology of the Brown's Mill Site, 15-17 Durham Lane, Auckland*. Science and Research Internal Report No. 77. Auckland: Department of Conservation.
- Brassey, R. and S. Macready, 1994. *The History and Archaeology of the Victoria Hotel, Fort St, Auckland (site R11/1530)*. Auckland Conservancy Historic Resource Series No. 10. Auckland: Department of Conservation.
- Brier, G., 1990. My Travels in New Zealand. *NZ Legacy*, 3:24-5.

- Bunbury, T., 1861. *Reminiscences of a Veteran*. Vol. III, London.
- Burroughs, P. 1996. An Unreformed Army? 1815-1868. In David Chandler (ed.), *The Oxford History of the British Army*. Oxford: Oxford University Press.
- Bush, G.W.A., 1971. *Decently and in Order: The Centennial History of the Auckland City Council*. Auckland: Collins.
- Cairns, B., 65th (2nd Yorkshire North Riding) Regiment of Foot [online]. 24 October 2002 [cited 27/11/2002]. Available from <http://hicketypip.tripod.com/>.
- Carter, R., 2002. 58th Regiment of Foot [online]. unknown [cited 27/11/2002]. Available from <http://homepages.paradise.net.nz/r-c/58th.html>.
- Challis, A., 1994. *Edmonds Ruins, Kerikeri Inlet, Bay of Islands: The Stone Structures and the Artifact Assemblage*. Science and Research Report No. 68. Wellington: Department of Conservation.
- Clough, R. and T. Mace, 2000. University of Auckland: Proposed Redevelopments: Archaeological Assessment. Report prepared for University of Auckland.
- Collard, E., 1984. *Nineteenth Century Pottery and Porcelain in Canada*. Montreal: McGill-Queen's University Press.
- Copeland, R., 1980. *Spode's Willow Pattern and Other Designs after the Chinese*. London: Cassell Ltd.
- Cowan, J., 1922. *The New Zealand Wars*. New York: AMS Press, Vol. 1.
- Coysh, A.W. and R.K. Henrywood, 1982. *The Dictionary of Blue and White Printed Pottery 1780-1880*. Volume I. Suffolk: Antique Collectors Club.
- Coysh, A.W. and R.K. Henrywood, 1989. *The Dictionary of Blue and White Printed Pottery 1780-1880*. Volume II. Suffolk: Antique Collectors Club.
- Crass, D.C., and D.L. Wallsmith, 1992. Where's the Beef? Food Supply at an Antebellum Frontier Post. *Historical Archaeology* 26(2): 3-23.
- Cushion, J., 1976. *Pottery and Porcelain Tablewares*. London: Cassell & Collier Macmillan.
- Douet, J., 1998. *British Barracks 1600-1914*. Norwich.
- Elliot, G., 2002. *The Design Process in British Ceramic Manufacture 1750-1850*. Staffordshire: Staffordshire University Press.
- Felgate, M., 1998. *His Majesty's Theatre Site Excavations (Site R11/1624). Final Archaeological Report*. Unpublished report. Auckland: The Pacific Dynasty Group.
- Foster, D., 1983. Clay Pipes From the Cromwell District, Central Otago. *New Zealand Archaeological Association Newsletter*, 26(2):94-101.
- Fraser, J. 2002. The Domestic Front: An Archaeological Investigation of the Albert Barracks Ceramic Assemblage. A dissertation submitted in partial fulfilment of the requirements for the BA (Honours) in Anthropology, University of Auckland.

- Frison, G. C. and L. Todd (eds), 1987. *The Horner Site: the Type Site of the Cody Cultural Complex*. Orlando, FL: Academic Press.
- Furniss, D.A., J. Richard Wagner and J. Wagner, 1999. *Adam Ceramics. Staffordshire Potters and Pots, 1779-1998*. Atglen, PA: Schiffer.
- Gluckman, L., 2000. *Touching on Deaths: A Medical History of Early Auckland Based on the First 384 Inquests*. Auckland: doppelganger.
- Godden, G.A., 1972. *Jewitt's Ceramic Art of Great Britain 1800-1900*. London: Barrie & Jenkins.
- Godden, G.A., 1980. *An Illustrated Encyclopaedia of British Pottery and Porcelain*. London: Barrie & Jenkins.
- Godden, G.A., 1991 (1964). *Encyclopaedia of British Pottery and Porcelain Marks*. London: Barrie & Jenkins.
- Godden, G.A., 1999 (1964). *New Handbook of Pottery and Porcelain Marks*. London: Barrie & Jenkins.
- Gordon, I.A. (ed.), 1982. *The New Collins Concise Dictionary of the English Language*. Sydney: Collins.
- Grant, A., 1982. The use of tooth wear as a guide to the age of domestic ungulates. In B. Wilson, C. Grigson, and S. Payne (eds), *Ageing and Sexing Animal Bones from Archaeological Sites*, pp. 91-108. Oxford: British Archaeological Reports British Series 109.
- Grayson, D. K., 1984. *Quantitative Zooarchaeology: Topics in the Analysis of Archaeological Faunas*. New York: Academic Press.
- Grogan, D.J., 1997. The Analysis of Glassware from New Zealand Historic Sites. MA Thesis. University of Otago.
- Hamer, F., 1975. *The Potter's Dictionary of Materials and Techniques*. London: Pitman.
- Hillson, S. W., 1992. *Mammal Bones and Teeth: An Introductory Guide to Methods of Identification*. London: Institute of Archaeology, University College London.
- Holmes, R., 2001. *Redcoat: The British Soldier in the Age of Horse and Musket*. London: Harper Collins.
- <http://bottlediggers.netfirms.com>.
- Humphrey, R.V., 1969. Clay Pipes from Old Sacramento. *Historical Archaeology*, 3:12-33.
- Kenny, H. E. 1912. Pen and Ink Sketches of Officers Commanding the Forces in New Zealand from 1845 to 1870. *New Zealand Military Journal*, Vol. I, January.
- King, M., 1981. *New Zealanders at War*. Auckland.
- Lockett, T.A., 2002. Pearlware: Origins and Types (Part 2) [Internet]. [cited 5 September 2002]. Available from www.thepotteries.org.
- Macoboy, S., Rodd, T. Spurway, M. (eds.), 1991. *The Reader's Digest Gardeners' Encyclopedia of Plants and Flowers*. Sydney: Reader's Digest.

- Macready, S. and J. Goodwyn, 1990. *Slums and Self-Improvement: The History and Archaeology of the Mechanics Institute, Auckland, and its Chancery Street Neighbourhood*. Volume 2: *The Artefacts and Faunal Material*. Science and Research Internal Report 91. Auckland: Department of Conservation.
- Macready, S. and J. Robinson, 1990. *Slums and Self-Improvement: The History and Archaeology of the Mechanics Institute, Auckland, and its Chancery Street Neighbourhood*. Volume 1. *The Site (R11/1589)*. Science and Research Internal Report 91. Auckland: Department of Conservation.
- Main, G.M., 1884. *Old Auckland: The City Thirty-Two Years Ago*. n.p.
- Mayne, A., T. Murray and S. Lawrence, 2000. Melbourne's "Little Lon". *Australian Historical Studies*, 114:131-151.
- McKillop, H.F., 1849. *Reminiscences of Twelve Months' Service in New Zealand*. London: Richard Bentley.
- McLean, M., 1989. *Auckland 1842-1845: A Demographic and Housing Study of the City's Earliest European Settlement*. Science and Research Internal Report No. 33. Auckland: Department of Conservation.
- Miller, G.L., 1980. Classification and economic scaling of 19th century ceramics. *Historical Archaeology*, 14:1-14.
- Miller, G.L., 1991. A revised set of CC index values for classification and economic scaling of English ceramics from 1787 to 1880. *Historical Archaeology*, 25:1-25.
- Mills, T.F., 2002. Land Forces of Britain, the Empire and Commonwealth [online]. 12/11/2002 [cited 27/11/2002]. Available from <http://www.regiments.org/milhist/uk/lists/bargxref.htm>.
- Moon, P., 2000. *Fitzroy: Governor in Crisis 1843-1845*. Auckland.
- Mundy, G.C., 1852. *Our Antipodes or Residence and Rambles in the Australasian Colonies*. Vol. II. London.
- Nichol, R., 1979. Preliminary Report on the Excavation of a Well in the Albert Barracks, Auckland. *New Zealand Archaeological Association Newsletter*, 22(2):91-104.
- Oswald, A., 1975. *Clay Pipes for the Archaeologist*. Oxford: British Archaeological Reports 14.
- Palmer, I.M., 1978. The Nature of Urban Settlement in Auckland 1840-1865. Unpublished Research Essay, University of Auckland.
- Payne, S., 1985. Morphological distinctions between the mandibular teeth of young sheep, *Ovis*, and goats, *Capra*. *Journal of Archaeological Science* 12(2):139-147.
- Petchey, P., 2000. A quick note on the tops of bottles or boys will be boys. In *Archaeology in New Zealand* 43(3):202-205.
- Phillips, J.R., 1966. A Social History of Auckland 1840-1853. Unpublished Thesis, University of Auckland.

- Platts, U., 1971. *The Lively Capital: Auckland 1840-1865*. Christchurch: Avon Fine Prints.
- Plowman, M.C., 2000. The Archaeological Use of Historic Ceramics as Indicators of Status and Class: His Majesty's Theatre Ceramic Assemblage: A Case Study. Unpublished Master of Arts dissertation, University of Auckland.
- Powell, A., 2002. Little Wars of the 57th 1856-1881. May 2002 [cited 27/11/2002]. Available from <http://www.albuhera.co.uk/lw.htm>.
- Pratt, L. and L. Woolley, 1999. *Shoes*. London: Victoria & Albert Publications.
- Prickett, N., 1981a. The Archaeology of a Military Frontier: Taranaki, New Zealand, 1860-1881. Unpublished PhD Dissertation, University of Auckland.
- Prickett, N., 1981b. Clay Pipes From Paremata. *New Zealand Archaeological Association Newsletter*, 24(2):126-32.
- Prickett, N., 1984. Report on Preliminary Investigation of Kihikihi Redoubt site (N74/246), 16-17th August, 1984. Report for NZ Historic Places Trust.
- Prickett, N., 1994. *Archaeological Excavations at the Omata Stockade and Warea Redoubt, Taranaki*. New Zealand Archaeological Association Monograph 20.
- Prickett, N., 2002. *Landscapes of Conflict: A Field Guide to the New Zealand Wars*. Auckland: Random House New Zealand.
- Prummel, W., and Frisch, H.J., 1986. A guide for the distinction of species, sex, and body side in bones of sheep and goat. *Journal of Archaeological Science* 13(6):567-77.
- Ritchie, N.A. and W. Gumbley, 1992. *The 40th Regiment Redoubt Site, Te Awamutu S15/173: Archaeological Excavations, 1991*. Hamilton: Department of Conservation.
- Rolfe, J., 1999. *The Armed Forces of New Zealand*. St Leonards.
- Samford, P.M., 1997. Response to a market: Dating English underglaze transfer-printed wares. *Historical Archaeology*, 31(2):1-30
- Schmidt, E. 1972. *Atlas of Animal Bones for Prehistorians, Archaeologists, and Quaternary Geologists*. Amsterdam: Elsevier Science Publishers.
- Schulz, P.D. and S.M. Gust, 1983. Faunal remains and social status in 19th century Sacramento. *Historical Archaeology* 17(1): 44-53.
- Silver, I.A., 1969. The ageing of domestic animals. In D.R. Brothwell and E.S. Higgs (eds.), *Science in Archaeology: A Survey of Progress and Research*. 2nd edition, pp. 283-302. New York: Praeger Publishing.
- Sisson, S., 1930. *The Anatomy of the Domestic Mammals*. Philadelphia: W.B. Saunders Company.
- Skelley, A.R., 1977. *The Victorian Army at Home: The Recruitment and Terms and Conditions of the British Regular, 1859-1899*. London: Croom Helm.

- Smith, I.W.G., 1989. *Rediscovering Fort Ligar: Archaeology at R11/1656, Auckland*. Volume 1. *Excavation and Site Histor.* Science and Research Internal Report 40. Auckland: Department of Conservation.
- Spring-Rice, W., 1982. The History and Archaeology of Fort Galatea, Bay of Plenty, New Zealand, 1869-1969. Unpublished MA Thesis, University of Auckland.
- Stone, R.C.J., 1982 *Young Logan Campbell*. Auckland: Auckland University Press.
- Stone, R.C.J., 2001. *From Tamaki-Makau-Rau to Auckland*. Auckland.
- Sudbury, B., 1980. White clay pipes from Old Conellsville dump, 36FA 140. *Historic Clay Tobacco Pipe Studies*, 1:23-46.
- Sussman, L., 1978. British military tableware, 1760-1830. *Historical Archaeology*, 25:93-104.
- Sussman, L., 2000. British military tableware, 1760-1830. In D.R. Brauner (ed.), *Approaches to Material Culture Research for Historical Archaeologists*. Pennsylvania: The Society for Historical Archaeology.
- Swainson, W., 1853. *Auckland, the Capital of New Zealand and the Country Adjacent*. London: Smith, Elder & Co.
- Swann, J., 1984(2). *Shoes*. London: The Costume Accessories Series.
- Tasker, J., 1989. *Old New Zealand Bottles and Bygones*. Auckland: Heineman Reed.
- Thompson, C. and A. Wilson, 1987. A guide to the identification of nineteenth century ceramic body types. *Research Bulletin (Australian Society for Historical Archaeology)*, no5: Summer 1987
- Thomson, A.S., 1859. *The Story of New Zealand: Past and Present, Savage and Civilized*. Volume 1. London: Murray.
- Thomson, A.S., 1974. *The Story of New Zealand*. Vol. II. Christchurch.
- Trustram, M., 1984. *Women of the Regiment: Marriage and the Victorian Army*. Cambridge: Cambridge University Press.
- Turner, M., 1998. Glassware. In M. Felgate (ed.), *His Majesty's Theatre Excavations (R11/1624) Final Archaeological Report*. Volume 1. Auckland: Bioresarches.
- Vincent, L.J. and R.C. Goyen, 1986. *The Vincent Variety - Family History of the Vincent Family*. Ruawai: L.J. Vincent and R.C. Goyen.
- Walker, I., 1983. Nineteenth-Century Clay Tobacco Pipes in Canada. In P. Davey (ed.) *The Archaeology of the Clay Tobacco Pipe 8: America*. Vol. 175, pp. 1-88. Oxford: British Archaeological Reports International Series.
- Watson, K. A., 2000. A Land of Plenty: Butchery Patterns and Food Supply in C19th NZ. Unpublished MA dissertation, University of Otago.
- Worthy, L., 1982. Classification and Interpretation of Late Nineteenth and Early Twentieth Century Ceramics. In R.S.J. Dickens (ed.), *The Archaeology of Urban America: The Search for Pattern and Progress*. New York: Academic Press.

APPENDIX 1. HISTORY OF OWNERSHIP AFTER THE BARRACKS

9 Symonds Street

Lot 1 and half of lot 2 on the corner of Symonds and Alfred Streets was leased in 1876 to Burton John Daveney, gentleman. By the beginning of 1878 Daveney had built a wooden dwelling with a rateable value of £80.⁶ In 1878 the property was sold to Henry Goulstone, gentleman, who then sold to Charles Brown Grierson, bank agent, in 1882. The property then went to Elizabeth Brown in 1888 and then to William Thorne, solicitor, in 1890. Nora Gick, widow, gained the property in 1921.⁷ Gick converted the home to a boarding house known as “Jollimont”.⁸ Nora Gick evidently died as the property was passed to Elizabeth Nora Gick and Athol Thomas Gick in 1939. In 1943 they were joined by Lewis Gick who owned shares in the property. In 1944 the property was subleased to Esther Muriel Paramore for 5 years. Paramore’s sublease was transferred in 1945 to John Willis McKeown. In 1950 the property was transferred to Hinemoa Private Hotel Ltd.⁹ In 1956 the house was taken for police purposes and converted to a barracks. In 1961 the University acquired it.¹⁰

11 Symonds Street

Lot 3 and half of lot 2 on Symonds Street was leased to Elliot Meyers, solicitor in 1876. By the beginning of 1878 he had built a substantial brick building with a rateable value of £120.¹¹ In 1878 the property was sold to Henry Brett, newspaper proprietor and in 1890 Isador Alexander, gentleman, acquired the property. In 1893 Alexander passed the property to his wife Fannie Alice Alexander.¹² By 1920 it had been converted to a boarding house and was run by Mrs Mary West.¹³ In 1935 the property was acquired by Eliot Rypinski Davis and Oliver Nicholson before it was

⁶Valuation List 1877, Auckland City Archives, ACC Series 210 item 1, p.14.

⁷Land Information New Zealand, Provisional Register 5 folios 27 and 28.

⁸New Zealand Historic Places Trust, Auckland, file BDG 413, Vol I, “Jollimont”, 9 Symonds Street, Auckland, p.2.

⁹Land Information New Zealand, Provisional Register 5 folios 27 and 28.

¹⁰Ibid., folios 27 and 28 and Auckland Scrap Book, Auckland Public Library, July 1955, p.46.

¹¹Valuation List 1877, Auckland City Archives, ACC Series 210 item 1, p.14.

¹²Land Information New Zealand, Provisional Register 5 folio 29.

¹³*Wises New Zealand Post Office Directory*, 1920, p.147.

passed to Stella Marie Davis the following year.¹⁴ By 1940 the property was being run by Mrs A. McLeod as the San Remo Private Hotel.¹⁵ In 1945 James Percival Thorpe and Winifred Thorpe purchased the property. Michael Walter Carew purchased the home in 1951 and in 1954 it was sold to Norman Vivian Newdick, hotel proprietor. In 1957 the leasehold interest was acquired by the University, who gained title to the land in 1961.

2 Alfred Street

Lot 19 fronting Alfred Street was leased in 1876 to James Ansenne, timber merchant. By the beginning of 1878 a house had been erected on the site by John Goodall, civil engineer and it was occupied by Mrs Reeve.¹⁶ In 1903 Isabella Page (nee Reeve) had acquired an interest in part of the property. In 1904 it was transferred to Edward Albert Brown, accountant. A month later it became the property of medical practitioner William Chisholm Wilson McDowell. In 1909 agent, Samuel Rout, acquired the property. However, Rout died on 4 February 1911 and the property was inherited by Mary Leslie Rout who sold to Joseph Sommerville, medical practitioner. In 1940 the property passed to Florence Nora Darnell who then sold to Sheelah Mary Denniss, widow, in 1943. In 1961 the land was taken for university purposes.¹⁷

4 Alfred Street

Lot 18 land had not been built upon by the beginning of 1878.¹⁸ It had been leased from 1876 by James Ansenne, who also had the lease on neighbouring lots 4 and 19, before being inherited by William Evers, clerk of Mercury Bay, and David Goldie, timber merchant, in 1890. By 1892 a stables had been erected on the site. In 1895 William Ledingham acquired the property and built a brick house on it while retaining the stables. Two years later Auckland surgeons William Chisholm Wilson McDowell and Joseph Edward Wilson Somerville purchased the property. In 1924 the property was purchased by Jane Wilson Newcombe, wife of agent Neville Newcombe.¹⁹ By

¹⁴Land Information New Zealand, Provisional Register 5 folio 29.

¹⁵*Wises New Zealand Post Office Directory*, 1940, p.183.

¹⁶Valuation List 1877, Auckland City Archives, ACC Series 210 item 1, p.2.

¹⁷Land Information New Zealand, Provisional Register 5 folio 45.

¹⁸Valuation List 1877, Auckland City Archives, ACC Series 210 item 1, p.2.

¹⁹Land Information New Zealand, Provisional Register 5 folio 44 and Certificate of Title, Volume 695 folio 45 and New Zealand Historic Places Trust, Auckland, file BDG 413, Vol I, "Dr Somerville's House", 4 Alfred Street, Auckland.

1930 it was being run by Misses E.H. and S. Sweetman as an apartment house.²⁰ In 1956 the property was acquired by Elizabeth Coates, widow, and in 1961 the land was taken for university purposes.²¹

²⁰*Wises New Zealand Post Office Directory*, 1930, p.25.

²¹Land Information New Zealand, Provisional Register 5 folio 44 and Certificate of Title, Volume 695 folio 45.

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