

SCIENCE AND RESEARCH INTERNAL REPORT NO. 92

SLUMS AND SELF-IMPROVEMENT.

**THE HISTORY AND ARCHAEOLOGY OF THE MECHANICS INSTITUTE,
AUCKLAND, AND ITS CHANCERY STREET NEIGHBOURHOOD**

Vol. 2: The Artefacts and Faunal Material

By Sarah Macready and Jenny Goodwyn

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Vol. 2: Artefacts and Faunal Material

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ABSTRACT

Redevelopment of three city blocks on the south side of Chancery Street provided the opportunity to undertake a detailed archaeological and historical investigation of one of Auckland's earliest areas of European settlement, dating from the first land sale of 1841. Excavations uncovered structural evidence of the Mechanics Institute (1843-79), established for the education of the working classes, but which also served as the place for many other early organisations. Evidence of early cottages dating back to the 1840s was also recovered, including the workshop and initially the residence of William Bacon, Auckland's first ginger beer brewer. Analysis of a large assemblage of 19th century artefacts found during the excavations, including many directly associated with the ginger beer brewery, provided much new information on the range of manufactured goods available to early Aucklanders. Documentary research into the social and topographical history of the site enabled histories of ownership, and often tenancy and use, to be established for the many individual buildings and allotments, and revealed the Chancery Street area as one of the worst slums in Auckland until its redevelopment at the turn of the century.

1.0 INTRODUCTION

One of the largest assemblages of artefacts so far reported from an historic archaeological site in New Zealand was during the excavations at Chancery St. (site R11/1589). The majority can be shown to have been deposited before 1894 on the basis of documentary evidence (see Vol. 1 and below), and these therefore comprise one of the few securely datable 19th century assemblages of European artefacts recorded to date. Most of the material appeared to consist of household rubbish discarded by occupants of the site or their immediate neighbours, and redeposited as fill during later redevelopment work, but some derived from primary deposits.

Since historical archaeology is a comparatively recent discipline in New Zealand, there is relatively little published information on artefactual assemblages from historic archaeological sites. Those that have been described appear mainly in unpublished reports or theses. Most are from specialised sites, such as the military sites at Omata Stockade, Warea Redoubt and Fort Galatea, dating from the 1860s to the 1880s, but including some later civilian material (Prickett 1981a; Spring-Rice 1983). Or the Chinese mining settlements of Central Otago, occupied from the 1860s through (in some cases) to the 1930s (Ritchie 1986; and n.d.). Such specialised sites would be expected to have slightly different and perhaps more restricted artefactual assemblages than civilian urban sites.

Several assemblages former hotel sites have also been described: the Halfway House Hotel in Cromwell Gorge, 1864-1917 (Bedford 1986); Lambton Quay in Wellington, whose assemblage included material as late as the 1940s (Chester 1988); and two Alpine hut sites in Mt Cook National Park in use between 1890 and 1925 (Ritchie 1985; Bedford 1985). Assemblages from all these sites were relatively late and included 20th-century material, while again the range of might be expected to differ slightly from that discarded as ordinary household rubbish.

Within Auckland itself, a few assemblages have been reported in varying degrees of detail: a summary description of a group of artefacts from the Albert Park well (Nichol 1979); a summary of artefacts and a full description of the faunal material from the gaol site (Best 1987; Smith 1988); and fairly detailed descriptions of assemblages from Fort Ligar (Brassey 1989) and Brown's Mill (Brassey 1990); and the ceramics from the General Assembly building (Smith 1988).

The R11/1589 assemblage, however, includes a much broader range of artefacts than any of these sites. It has therefore been described in detail in an attempt to convey the range and frequency of occurrence of the various artefact categories. Even so, because of the size of the assemblage the information has had to be presented in summary form. Complete lists of individual artefacts are not included but are available for consultation in the DOC site archive. It is hoped that the presented here will serve as a database and reference source which will facilitate the analysis and publication of other assemblages.

1.1 The Archaeological Context

Although much of derived from redeposited rubbish layers and could not be directly related to historic structures on the site, if not all probably derived from dumping grounds within the site (see Vol. 1, Sections 4, 6, 9 and 11). A small percentage of artefacts, however, were derived from *in situ* primary deposits. These comprised material from an occupation layer, and four rubbish pits.

The assemblage derived from five excavated areas within the site (see Vol. 1).

In Area A a large group of material came from a layer of mixed fill laid over the remains of two early timber cottages during redevelopment in 1893/4 and sealed by the floor of the new building.

In Area B only two artefacts were recovered, from a drain within a brick building dating either to the 1860s or to the 1890s.

Area C produced a great deal of material, the majority from a deposit of mixed fill similar to and laid at the same time (1893/4) as that of Area A. It covered the remains of a brick building constructed in the 1860s, and was sealed by the floor of the 1894 building. Other came from an earlier layer of fill placed during the construction of the 1860s building. Of most significance, however, was the material accumulated on the original surface during the use of an earlier timber building dated c.1843-64, which until 1858 was owned by a ginger beer brewer called William Bacon and used as his brewery and store and, to begin with at least: his residence. Although some of this material may have been contaminated by intrusions from later deposits, part of the area was securely sealed by a layer of clay packing and the material contained within it must all derived from the period of occupation of the timber building. Much of the material laid as fill over this building could also be shown to relate to the ginger beer brewery, and presumably derived from its background.

In Area E a much smaller group of finds came from a posthole, a pit and a layer of cultural material probably associated with a brick building which occupied the site from the 1860s to the 1880s and perhaps longer. It was not clear whether the cultural layer represented a natural accumulation or redeposited fill.

Area F, the site of the Mechanics Institute (1842-79), also produced a large artefact assemblage. With the exception of a few items three rubbish pits, the material from mixed fill spread over the site during redevelopment in 1912, but not securely sealed until c.1919. A few artefacts were also found down a well, but it was not clear whether they were deposited during the use of the well or during redevelopment activity. The material is likely to have derived from the Mechanics Institute property and its neighbour, since the fill appeared to result from the cutting down of the upper part of the site to fill the lower. The Institute buildings were later occupied by a public library (1879-87) and kindergarten (c.1889-1900), but were not used after that date. The artefacts from the fill were probably all therefore of 19th century date, but presumably accumulated during all three periods of occupation. The well and one of the rubbish pits were probably associated with the Mechanics Institute period, but the remaining two pits are likely to be later features.

The material from Areas A and C, which together made up well over 65% of the total assemblage, did not therefore contain any artefacts made after 1894, while the probable origin of Area F material from within the Mechanics Institute property indicates a 19th century date for that assemblage also.

In the report below, artefact provenances are given as follows:

Area A

Fill. Layer of mixed fill placed over the remains of early timber buildings during redevelopment 1893/4. Probable origin unoccupied areas of site R11/1589 to the south or east.

Area B

From a drain within a brick building dating either to the 1860s or to the 1890s.

Area C

Phase 1. Occupation of timber building c.1843-64, used as ginger beer brewery and store by William Bacon It was also his residence, at least in the early years.

Layer 10 (sealed). Phase 1 occupation layer, sealed from later intrusions

Layer 10 (backyard). Phase 1 occupation layer in backyard area; includes some intrusive material from overlying layer.

Layer 9. Phase 1 construction layer, probably from secondary additions to the building; includes some intrusive material from overlying Layer 8, which appears largely to have derived from the backyard during Phase 1 occupation.

Postholes 3 and 22. Foundation postholes of Phase 1 building, filled after its demolition.

Phase 2. Construction of brick building c.1864 (demolished after 1882).

Layer 8 and walls. Material from a layer of fill laid to support the foundations of the Phase 2 building, and from within the building's wall foundations. Most of the material therefore deposited pre c.1864, and apparently derived from the backyard of the Phase 1 building, but includes some intrusive material from overlying layers.

Recess in cobbled floor. Brick edged recess in the cobbled floor of the Phase 2 building. Three objects apparently *in situ*.

Phase 3 fill. Mixed fill laid over the remains of the Phase 2 brick building 1893/4. Includes Layers 4-6 fill over the backyard area. Probable origin unoccupied areas of Site R11/1589 to the south or east.

Area E

Cultural layer. Layer of soil containing cultural material; unclear whether fill or *in situ* accumulation; not known when sealed by later development.

Pit. Beneath the cultural layer; probably related to the occupation of a brick building in this area c.1866-82 and probably longer (demolished by 1908).

Posthole. Beneath the cultural layer; perhaps part of the brick building.

Area F

Fill. Mixed fill deposited during redevelopment of 1912, probably deriving from higher up the Mechanics Institute property and if so entirely of 19th century date; sealed c.1919.

Rubbish Pit 1. Within the original boundaries of the Mechanics Institute property and probably filled during its period of occupancy (1843-79).

Rubbish Pits 2 and 3. Within the property boundaries established during its later use as a public library or kindergarten, and filled during either of those periods of occupation (1879-1900).

Well. Fill of Mechanics Institute well, built in the early 1860s

More detailed on the archaeological contexts here can be found in the appropriate excavation sections in Vol. 1.

1.2 Presentation

Illustrated artefacts have been assigned unique letter/number combinations to facilitate cross-reference between and within the two volumes. The prefix C is used for the majority of the ceramics (earthenware and porcelain), S for stoneware, P for clay pipes, M for metalwork, B for buttons and badges, and V for various items in other materials (bone, ivory, wood, stone, etc.). Illustrations appear at the end of each section, and brief accompanying catalogue entries are used in place of captions or detailed textual descriptions.

2.0 EARTHENWARE AND OTHER POTTERY

2.1 Introduction

Ceramic artefacts predominated in the NZI assemblage. Of these, clay pipes, stoneware, and bricks and drainpipes will be reported in separate sections below. The remaining pottery, described here, consisted mainly of earthenware, though some porcelain and other wares were also present.

Sherds were categorised by body composition, vessel form and type of decoration. Minimum numbers of vessels were calculated by excluding any joining fragments or sherds within each context which closely enough in decoration, composition possibly to derive from the same vessel. Broad manufacturing date ranges were assigned where possible on stylistic grounds in consultation with an earthenware and porcelain specialist (Mr G. Smith, Chatham Antiques, Auckland).

Fragments of least 1742 pottery vessels were present: 1644 earthenware vessels: 60 vitreous china, or semi-porcelain; 33 porcelain; 2 terracotta; 2 bisque china; and 1 sherd of black basalt ware. Of the total assemblage, a minimum of 631 vessels derived from Area C, 613 from Area F, 452 from Area A, 45 from Area E, and one from Area B.

Sherds within the assemblage were checked for joining fragments in order to assess the relationships between different deposits. The following points were noted:

Area A. Joining sherds were found throughout the fill, and some sherds found within the postholes of the timber cottages joined others from the overlying fill. All material from Area A was therefore treated as one deposit. One pie dish fragment was also found to join another from Area C Phase 3 fill.

Area C. In the Phase 3 deposits, one sherd from Layer 6 joined another from the backyard fill, and another joined one from Layer 5. A sherd from Layer 4 joined one from Layer 5. Layers 4-6 and the backyard fill, which overlay the remains of the Phase 2 brick building, were therefore treated as one deposit (Phase 3 fill). A sherd from Phase 1 Layer 9 joined one from Phase 2 Layer 8, and another joined one from within the Phase 2 wall foundations. A sherd from Phase 1 Layer 10 in the backyard area joined two other sherds, one from Layer 4 and one from Layer 5; another Layer 10 (backyard) sherd joined one from the backyard fill.

Area F. Joining sherds were found throughout the various 'layers', which were therefore treated as one mixed deposit (the fill). A sherd from Rubbish Pit 2 was also found to join another from the fill layers.

The significance of these relationships has been discussed in Vol. 1 (excavation sections). The most significant fact to emerge was that the Phase 3 fill layers in Area C and the fill of Area A were interrelated, since sherds from the same dish, broken at the point where it carried a maker's mark, were found in the two areas. The fills therefore derived from the same source and/or were deposited at the same time. This can be shown from documentary sources to have occurred in 1893/4.

2.2 Vessel Forms

Table 1 shows the range of vessel forms recovered. Tableware was by far the largest component in the assemblage, making up at least 87% of the total, and more if of the vessels whose forms could not be identified were to be included. The percentages of particular forms within the different areas did not differ greatly from the overall percentages. The proportions of plates, cups and bowls within Areas A, C and F, where a reasonable statistical sample was present (542, 631 and 613 vessels respectively), all 3 or 4% of the overall percentage, and bowls, ashets and jugs within 1%. Area F, however, had higher numbers (and percentages) of certain vessel types than Areas C or A. There were 21 mugs out of a total of 38, compared with 9 from Area C and 8 from Area A; more tureen pieces (16 out of 26, while 8 came from Area C and 2 from Area A); and 28 out of 57 kitchen containers or bowls, compared with 17 from Area C and 12 from Area A.

Among the tableware plates were the most common, and included small sized (side, or tea) plates, large (dinner) plates and soup plates. Many had moulded decoration on the rims. Cups came in various shapes, one of the most common forms being the carinated 'London shape' (Godden 1985: 21). Bowls consisted mainly of dessert bowls, but also included deeper 'slop' bowls, perhaps used with tea services. The ashets were oval serving plates. Tureens included soup, vegetable and sauce tureens, and three gravy boats. The three possible 'mazarins' were vessel fragments with perforations which may have served as fish drainers. The bottle and food pot were Chinese hand-painted polychrome porcelain.

The kitchenware made up only 3.8% of the total. The containers several white processed food jars with an attachment groove just below the rim. There was also a white bottle with carinated shoulder, a form identified elsewhere as an anchovy paste jar (Aldridge and Aldridge 1978: 13). Pie dishes and casseroles were plain utilitarian vessels in fawn, yellow or brown.

The bath/bedroomware made up 3.5% of the assemblage, and chamberpots and washbowls. The cream or ointment pots included a Bear's Grease and two Holloway's ointment pots (C37 and C38, below, Fig. 9). The toothbrush holders were long covered dishes with an internal rib across the short axis designed to raise and drain the head of the toothbrush (see Ball 1977: 55).

The ornaments or decorative items (1.4%) included fragments of 15 plain or hand-painted figurines or small objects. Six were porcelain (described below), the remainder earthenware. Most were fragmentary. The two decorative containers comprised an unglazed possible trinket box with red hand-applied decoration, and part of a porcelain container with green, pink and gilded hand-applied decoration.

The remaining items consisted of one flowerpot and 68 vessels whose form could not be determined (very small undiagnostic fragments were excluded from the total).

Thirteen ceramic 'marbles', ranging in diameter from 14 mm to 28 mm, were also recovered, but have not been included in the vessel count in Table 1. They were plain except for one which had red lines around the middle and another decorated with pale blue lines and a red flower. The decorated marbles, if not all of them, may be children's playthings. A decorated glass playing marble was also found (see below, Section 5.3.10).

TABLE 1

Minimum Numbers of Pottery Vessel Types

<u>Tableware</u>			
Plates	455	26.0%	
Cups	568	20.5%	
Saucers	271	15.5%	
Bowls	120	6.9%	
Jugs	74	4.2%	
Ashets	66	3.8%	
Mugs	38	2.2%	
Tureens (incl. 10 lids)	30	1.7%	
Teapots (incl. 2 lids)	15	<1%	
Eggcups	9	<1%	> 1520
Serving bowls/plates	8	<1%	(87.2%)
Sugar boxes	3	<1%	
? Mazarins	3	<1%	
Teapot stands	2	<1%	
Honey skep	1	<1%	
Butter tub lid	1	<1%	
Bottle	1	<1%	
Foodpot	1	<1%	
Cup/bowl	41	2.3%	
Plate/Saucer	23	1.3%	
<u>Kitchenware</u>			
Containers/bowls/jar	57	3.3%	> 67
Pie dishes/casseroles	10	<1%	(3.8%)
<u>Bathroom/Bedroomware</u>			
Chamberpots	25	1.4%	
Washbasins/bowls	18	1%	
Toothpaste/cream/ointment pots	6	<1%	> 61
Toothbrush holders	5	<1%	(3.5%)
Soap dishes	5	<1%	
Ewers	2	<1%	
<u>Ornament/decorative items</u>			
Figurines/other ornaments	15	<1%	
Vases/pots	4	<1%	
? Plaques	2	<1%	> 25
? Decorative containers	2	<1%	(1.4%)
? Candlestick	1	<1%	
Jardiniere	1	<1%	
<u>Flower pot</u>	1	<1%	
<u>Uncertain form</u>	68	3.9%	
TOTAL	1,742		

2.3 Wares and Types of Decoration

2.3.1 Earthenware

Almost 95% of the assemblage was made up of earthenware pottery (a ware fired at medium to low temperatures, which does not achieve the vitrification of porcelain and stoneware but is harder than terracotta). The vast majority were white-bodied earthenware, but teapots and occasionally other vessels were red-bodied.

2.3.1.1 Transfer-Printed Wares

Among the 1644 earthenware vessels, the majority by far (1182) were decorated with underglaze transfer-printed designs (see Table 2). Transfer-printing was introduced in the 1750s, initially over the glaze, but by the 1780s the more durable underglaze method had been developed. At first all designs were printed in blue, but other colours were introduced by c.1835. The period c.1835-45 saw the beginning of mass production of cheap dinner services, and a decline in patterns and standards of production. At the same time the Copyright Act and Ornamental Designs Act of 1842 restricted the manufacturers' choice of designs, and resulted in a proliferation of formula 'Romantic' designs, which generally included water scenes with oriental, medieval or classical buildings. Transfer-printing remained the most popular form of decoration for most of the 19th century, but declined after c.1880, when white plates with decoration confined to the rim became more common. (Coysh and Henrywood 1984: 8-11).

In this assemblage a variety of colours was used, blue being the most popular. 802 of the vessels had blue decoration, 113 of which were in flow (or flown) blue, a technique whereby the colour is made to flow into the glaze, giving a blurred look to the design (developed c.1834-45, Coysh and Henrywood 1984: 8-11). Green (94), black (89), purple (65), brown (61) and grey (40) patterns were reasonably well represented, and there were also a few red (11) and mauve (5) printed patterns. Fifteen vessels had additional colours hand-applied over the glaze, some in the 'Japan' style described below. In two of the blue and one of the purple printed vessels the transfer-pattern appeared to have been sponged before firing to give a diffuse effect.

It has been possible to identify 36 of the printed patterns by name, either by comparison with designs illustrated in the literature, or from a pattern printed on the vessel. Several of these patterns were previously unrecorded or unrecognised, and in fact little is so far known of the range of patterns available to 19th century New Zealanders. Since pattern recognition greatly facilitates the analysis and concise publication of ceramic assemblages, the patterns identified are described below.

Occasionally marks supplied the name of the manufacturer as well as the pattern name, but the same patterns were often produced by different potteries, and it cannot be assumed that because one vessel can be attributed to a particular maker, others of that pattern were produced by the same manufacturer.

The patterns are listed in order of importance within the assemblage. Published illustrations are referred to if easily accessible, but otherwise the patterns are illustrated in Figs. 2-9 (below). Some, however, are very incomplete.

TABLE 2

Earthenware: Types of Decoration (Minimum Number of Vessels)

	Transfer printing										Edgeline and hairlining	Plain coloured slipped and/or glazed ware	Other/combined decoration	Plain white	TOTALS
	Blue	Flow blue	Green	Brown	Black	Red	Purple	Mauve	Grey	With hand-applied on-glaze decoration					
AREA A fill	217	4	26	22	22	-	11	5	8	6	23	19	29	47	439
AREA C															
Phase 1															
Layer 10 (sealed)	36	-	5	-	-	-	-	-	2	2	5	2	2	9	63
Layer 10 (b'yard)	14	1	3	-	2	1	-	-	-	-	3	1	1	1	27
Layer 9	15	5	-	1	1	-	-	-	-	-	1	2	4	2	31
Phase 2															
Layer 8 & walls	68	16	13	3	5	1	2	-	-	2	4	2	8	26	150
Phase 3 fill (1)	97	23	25	17	14	2	13	-	12	2	25	13	25	45	313
AREA E															
Cultural layer	10	1	-	-	5	-	-	-	-	-	-	-	3	4	23
Pit	11	5	2	-	-	-	1	-	-	-	-	-	2	2	23
AREA F fill	214	56	18	15	39	6	37	-	17	3	7	18	50	66	546
RP 1	3	-	-	1	-	-	1	-	-	-	-	-	-	3	8
RP 2	1	1	2	1	1	1	-	-	1	-	-	-	3	-	11
RP 3	1	-	-	1	-	-	-	-	-	-	-	-	-	-	2
Well	2	1	-	-	-	-	-	-	-	-	-	1	-	4	8
TOTALS	689	113	94	61	89	11	65	5	40	15	68	58	127	209	1,644
	1182														

(1) Sampled during machine excavation.

Willow pattern (illustrated in Coysh and Henrywood 1984: 402). By the first decade of the 19th century a standard Willow pattern had emerged, though with many minor variations. Coysh and Henrywood (1984: 402) list over 50 firms known to have manufactured it before 1880. In this assemblage three different manufacturers have been identified from maker's marks: Copeland (two examples); J.M.C (or G); and H & C, either Hope and Carter or Harding and Cockson. See Section 2.4, below.

134 vessels in blue, almost all from dinner rather than tea services (79 plates, 20 soup plates, 19 ashets, 6 tureens, 1 tureen lid, 3 bowls, 2 bowls/tureens, 2 gravy boats, 1 cup, 1 saucer). (From Area A fill; Area C Phase 3 fill, Layers 8 and 10 (sealed and backyard); Area F fill).

Fibre (C1, Fig. 2). This is a very similar pattern to Seaweed, described below, but lacks the small flowers. It is not known how many potteries produced the pattern. Coysh and Henrywood list it only as a design appearing on children's teawares (1989: 83). Two partial pattern marks were present, one also bearing the initials S.W., for the South Wales Pottery (see below, Section 2.4). However, the pattern was also produced by Charles Collinson Co, Burslem, Staffs. (Godden 1964: 164 no. 1014) and Fell & Co. (R. Brassey, DOC, pers. comm.). Similar patterns also appeared on blue backgrounds, and/or in combination with flowers, so that it is difficult to identify the pattern if only a fragment has survived.

38 vessels in blue (26), grey (5), green (3), brown (2) and black (2), predominantly from tea services (17 cups, 14 saucers, 3 plates, 1 mug, 1 bowl, 3 cups/bowls). (From Area A fill; Area C Phase 3 fill, Layers 8, 9 and 10 (sealed); Area E cultural layer and pit; Area F fill).

Rhine (C2, Fig. 2). 'Rhine' refers to a number of patterns widely used in Victorian times (Coysh and Henrywood 1984: 300-301). The examples from R11/1589 have a characteristic border pattern around a river scene containing trees, turreted buildings and occasionally travellers. The pattern was identified from a more complete from Pompallier House (Site Q5/1074) which carries a pattern mark. One vessel from this assemblage carries part of the 'Rhine' mark. Another carries the letter D on the bottom but is incomplete. No attribution to maker can be made.

22 vessels in grey (14), green (6), brown (1) and blue (1). Both dinner and tea wares were represented (13 plates, 3 cups, 3 saucers, 2 ashets, 1 soup plate, 1 jug). Area A fill; Area C Phase 3 fill; Area F fill, and Rubbish Pits 2 and 3).

Asiatic Pheasants (illustrated in Coysh and 1984: 28). With the exception of Willow pattern this was the most popular of all blue printed designs in the second half of the 19th century, with at least 34 known manufacturers prior to 1880 (Coysh and Henrywood 1984:28-9). It was also made in new Zealand at the Milton Pottery after 1877 (Lambert 1985: 22). The pattern depicts pheasants among flowers and foliage within a floral border. No maker's marks were present in the assemblage.

15 vessels in blue (13) and grey (2) all from dinner services (8 plates, 1 soup plate, 3 ashets, 1 tureen, 1 tureen lid). (From Area A fill; Area C Phase 3 fill and Layer 8; Area F fill and Rubbish Pit 1).

Broseley (illustrated in Brassey 1989: Fig. 9a)). Broseley was a chinoiserie design similar to Willow pattern but in mirror image, and again produced by many different potteries (Coysh and Henrywood 1984: 62). One of the pieces from R11/1589 was marked 'semi-china', a term used by potters to describe bodies similar to ironstone (Coysh and Henrywood 1984: 327-8). This may have been produced by John Rogers & Son (see below, Section 2.4).

7 vessels in blue, including pieces from tea and dinner (2 cups, 2 saucers, 2 plates, 1 ashet). (From Area A fill; Area C Layer 8; Area E cultural layer; Area F fill).

Albion (C3, Fig. 2). Albion was a common pattern name used for several different designs. Coysh and Henrywood list four, and the examples recovered from the site show a scene to that produced by Robert 'a romantic river scene within a border of vignettes separated by ferns' (1984: 18; and see illustrations in Bell 1971: 96, 110, 114). Here, though, the vignettes are separated by berry branches rather than ferns.

7 vessels in blue from dinner services (3 plates, 2 bowls, 1 ashet, 1 tureen). (From Area A fill; Area C Phase 3 fill and Layer 8; Area F fill).

Medici (illustrated in Coysh and Henrywood 1984: 242; the pattern is shown here as C4, Fig. 2). A Romantic design with a large figured urn in the foreground, a statue behind a balustrade in the middle ground and a tall classical building in the background. The border carries a scroll pattern with urns set within oval reserves. One sherd carried a mark stating the pattern name. Mellor, Venables Co. were the only known manufacturers of this design (Coysh and Henrywood 1984: 242).

5 vessels in blue (3 cups, 1 jug, 1 plate). (From Area F fill).

Wild Rose (illustrated in Coysh and Henrywood 1984: 400). The design consists of a floral enclosing a scene with a cottage by a bridge over a river, two punts, and Nuneham Park House, Nuneham Courtenay (near Oxford) in the background. It was very popular in the 1830s-1850s. At least 20 firms were known to have produced it (Coysh and Henrywood 1984: 399-400).

4 vessels in blue (2 plates), brown (1 ashet) and red (1 plate). (From Area A fill and Area F fill).

Dorgan (C5, Fig. 2). Marks apparently stating the pattern appear on two bowl bases. The central pattern is a kaleidoscopic design of stylised leaves and stars. However, although the style of the lettering seems appropriate to a design than a manufacturer's name, a pottery manufacturer and dealer called Lawrence Dorgan is known to have operated in Aldersgate, London, in the period 1814-40 (Coysh and Henrywood 1989: 71), and the mark may refer to him.

3 vessels in blue (2 bowls, 1 saucer). (From Area A fill).

Canton (C6, Fig. 3). Coysh and Henrywood (1984: 69) list two designs under this name, one attributed to Robert Heron & Son, and a flow blue design on teawares by an unknown manufacturer. One of the bowls here, however, is marked for William Ridgway (see below, Section 2.4), and the prints are in plain blue. The scene is Chinese, but much less populated than chinoiserie designs.

3 vessels in blue (2 bowls, 1 jug). (From Area A fill, Area C Phase 3 fill and Layer 9).

Bouquet (C7, Fig.3). One of the sherds carries the pattern name and the maker's name, Pinder, Bourne & Co. (see below, Section 2.4). A more complete example from the Auckland Gaol site (R11/1589) allowed the rim design to be identified. The only pattern of this name listed in Coysh and Henrywood (1989: 32) is a floral design with Chinese figures made by Knight Elkin & Co. The dish shown here is from the Victoria Hotel site (R11/1530), but carries an identical pattern and mark to a plate from Area F.

3 vessels in blue (1 plate, 1 cup, 1 saucer). (From Area F fill).

Hannibal passing the Alps (illustrated in Coysh and Henrywood 1984: 170). None of the sherds carried a maker's mark, but Knight, Elkin & Co. were the only recorded manufacturers of this design. It has a central scene a battle involving an elephant and horse and foot soldiers, who seem Moorish rather than classical in appearance, and a medallion border with a procession of elephants and horsemen.

3 vessels in blue (1 plate) and brown (2 soup plates). (From Area A fill and Area C Phase 3 fill).

Seaweed (C8, Fig. 3). The design, identified in Milbourne and Milbourne 1983: 103, is similar to Fibre, but there are small flowers set among the fibrous tentacles.

3 vessels: 1 saucer (grey) and 2 cups (one green, one blue). (From Area F fill).

Botanical Beauties (C9, Fig. 3). The design name describes a series of patterns with stylised flowers as a central motif, one of which, which differs these examples, is illustrated in Coysh and Henrywood (1984: 48). The two examples here have identical designs, and one carries the pattern name. The series was manufactured by Elkin & Newbon, and others. One of the plates, however, can be assigned to Elkin & Newbon, as its mark includes part of the ampersand and final N. of the firm's initials (see below, Section 2.4).

2 plates in blue (from Area A fill).

Morea (C10, Fig. 4). Coysh and Henrywood list two designs by this name, one by J. Goodwin of the Seacombe Pottery, Liverpool, and the second a series of romantic scenes of classical ruins by an unknown maker (1984: 252). The specimens here differ from the illustrated example by Goodwin, but fit the description of the second design. Lewis (1985: 143) and Coysh and Henrywood (1989: 140) assign this version to T. Dimmock & Co, but here there is no maker's mark to confirm this.

2 plates in blue (from Area C Phase 3 fill and Area F fill)

Antique (C11, Fig. 4). One plate is marked 'P.B & Co', for Pinder, Bourne & Co. (see below, Section 2.4). The mark is identical to that illustrated in C7, with the pattern name 'Antique' in place of 'Bouquet'. The central design consists of classical figured urns set among wild roses.

2 plates in black (from Area F fill)

Gem (C12, Fig. 4). The complete design consists of a sea or lake scene with sailing boats (1. and foreground) and a castle-like building (r. but not shown on these fragments), surrounded by a border with latticing and bell-flower sprays. One piece had a maker's mark identical to that in Brassey 1990: Fig. 23c, comprising a floral scroll with the 'F. Jones' below a beehive, and 'Longport' below that (see below, Section 2.4). The mark from Chancery St also carried the pattern name 'Gem' above the beehive. An identical design was also found at the Auckland Gaol site (R11/1559), with the incomplete word 'Flore...' in place of Jones. This stands for 'Florentine China', a trade name used on pottery carrying a variety of patterns (Coysh and Henrywood 1989: 84). The Gem pattern is listed in Coysh and Henrywood, but assigned only to Samuel Barker & Son (1989: 88).

2 plates in blue (from Area C Phase 3 fill and Area F fill).

Coral (C13, Fig. 4). One sherd carries both the pattern and the maker's name (Davenport). A 'coral border' pattern is illustrated in Coysh and Henrywood (1984: 93), but has stylised flowers and leaves as well as coral, and Davenport is not listed as one of the makers.

2 bowls/cups in black (from Area C Phase 3 fill and Area F fill)

Cable (C14, Fig. 4). This is a border pattern of cross-over ribbons around a central cable, identified by comparison with an example from the Gaol site (R11/1559) which carried a pattern name.

2 vessels in purple (1 tureen, 1 saucer). (From Area F fill).

Amoy (C15, Fig. 5). The pattern name describes several different designs, some chinoiserie, some romantic. This plate carries both the pattern name and the maker's (Davenport, see below, Section 2.4), although only a fragment clearly shows the 'flown-blue chinoiserie design with two ladies seated beneath a parasol' attributed to the Davenport pottery (Coysh and Henrywood 1984: 21).

1 plate in flow blue (from Area A fill).

Pastoral (C16, Fig. 5). Coysh and Henrywood list 3 designs under this name (1984: 277). The example here carries the pattern and consists of a small fragment on which a tree and a castle with a flag on top can be made out (not shown). It is not the Stevenson design illustrated by Coysh and Henrywood, but could be the rustic scene attributed to Edward Challinor, or the other (not described) by Lockhart and Arthur.

1 saucer in black (from Area C Layer 8).

Young Piper (C17, Fig. 5). The sherd carries the pattern name in a cartouche, but is too small to show details of the design, apart from a vague impression of clouds or foliage. The pattern is not listed in Coysh and Henrywood.

1 plate in blue (from Area C Layer 10 (sealed)).

Foliage (C18, Fig. 5). A small fragment the pattern name in a cartouche but no maker's name. The design is possibly chinoiserie, and a vase and tree can just be out (not shown). Coysh and Henrywood do not describe the design, stating only that the maker is unknown (1984: 142).

1 plate in blue (from Area C Phase 3 fill).

Scinde (C19, Fig. 5). Coysh and Henrywood (1984: 11, 323) list only a flow blue pattern by J. & G. Alcock and their successors, produced after the annexation of Sind in India in 1845. This example carries not only the pattern name but the maker's initials, 'D. & S.', probably Dimmock and Smith (see below, Section 2.4). The sherd is too small to show much of the design, but a floral motif is visible in the centre of the bowl, and there was presumably an Indian theme.

1 bowl in flow black (from Area A fill).

Aesop's Fables (C20, Fig. 5). A saucer marked 'Copeland Late Spode' (see below, Section 2.4) carrying one of the Aesop's Fables designs produced by that pottery (Coysh and Henrywood 1984: 17; 1989: 12). The saucer illustrated here is an identical but complete version from Brown's Mill (R11/1643), and depicts The Fox and The Grapes.

1 saucer in blue (from Area A fill).

Alhambra (C21, Fig. 6). Coysh and Henrywood describe this as a dark flow-blue pattern with a Moorish design (1984: 18). This example carries a Moorish design in a slightly mauve blue, and on the base is a cartouche containing part of the pattern name below part of the word 'ironstone' (a type of earthenware body).

1 saucer in blue-mauve (from Area C Phase 3 fill).

Ribbon (C22, Fig. 6). The saucer carries the pattern name in a cartouche but no maker's name. The design consists of a border of cross-over ribbons enclosing a stylised leaf motif.

1 saucer in brown (from Area C Phase 3 fill).

Vermicelli (C23, Fig. 6). The pattern is identified in Faye-Halle and Mundt 1983: 206. Although the plate carries no maker's mark, Coysh and Henrywood attribute the design to William Ridgway Co. or William Ridgway, Son & Co. (1984: 376).

1 plate in brown (from Area C Phase 3 fill).

Marine (C24, Fig. 6). The base of the cup is marked 'Ironstone' above a floral motif and scroll carrying the pattern name 'Marine'; below is a plaque with the maker's name, 'Phillips' (see below, Section 2.4). Coysh and Henrywood list Marine as a pattern by George Phillips on ironstone dinner wares (1984: 237, 283). The design consists of a water scene, with an urn or vase in the foreground, a bridge, boats, and steps and buildings rising out of the water.

1 cup in red (from Area C Layer 10 (backyard))

Madras (C25, Fig. 7). The plate carries a mark with the name in a cartouche above the maker's name 'Davenport'. It is listed in Coysh and Henrywood (1989: 129) as a simple open pattern of flowers and leaves in flow blue.

1 plate in flow blue (from Area C Phase 3 fill)

Balmoral (C26, Fig. 7). The sherd carries both the pattern and the maker's name, Mann & Co, Hanley (see below, Section 2.4). Only a small part of a central floral design can be made out.

1 plate in brown (from Area F fill).

Beehive (illustrated in Coysh and Henrywood 1984: 37 and Milbourne and Milbourne 1983: 47). A design depicting a beehive and an urn containing roses in the foreground, with mountains in the distance beyond a stretch of water. An identical sugar box is illustrated in Milbourne. The initial design is attributed to W. Ridgway and Co., but a variant was used by W. Adams.

1 sugar box in blue (from Area C Phase 3 fill).

Gra... (C27, Fig. 7). The decorative style of the lettering indicates a pattern rather than maker's name, but the sherd is too small to make out any details of the design.

1 plate/saucer in blue (from Area F fill).

Aqua... (C28, Fig. 7). The plate carries part of the pattern and the maker's initials WR, probably William Ridgway (see below, Section 2.4). No details of the design can be made out.

1 plate in flow blue (from Area F fill).

Hawthorn (C29, Fig. 7). Only the base of the plate with the pattern name in a cartouche survives. Coysh and Henrywood, however, describe the design as an all-over or sheet pattern used at the Cambrian Pottery during the L. L1. Dillwyn period (1984: 172).

1 plate in black (from Area A fill).

'Leda and the Swan' (C30, Fig. 7). The pattern is not named, but clearly depicts the story of Leda and the Swan. A registration mark of 16 November 1868, parcel no. 3, identifies it as a product of Knapper and Blackhurst (see below, Section 2.4).

1 cup in brown (from Area C Phase 3 fill).

Other designs have not so far been identified, owing to the dearth of comparative illustrations in the available literature, or because the sherds are too fragmentary, or because of the similarity of many border patterns.

However, in addition to the Willow, Broseley, Amoy and Canton patterns, at least 10 other blue 'chinoiserie' vessels were identified (3 plates, 3 bowls, 2 cups, 1 saucer, 1 ashtray: from Area A fill, Area C Phase 3 fill, Layers 8 and 10 (sealed) and Area F fill). There were also at least four 'Japan' style vessels, with polychrome decoration consisting of several hand-painted on-glaze colours and a blue underglaze transfer-printed design (2 plates, 2 cups; from Area A fill and Area C Layer 10 (sealed)). Specific designs could not be identified.

There are five vessels whose design names have not yet been identified, but which carry maker's marks. These have been illustrated in the hope that their patterns may one day be identified (for details of the manufacturers, see Section 2.4).

There were two Davenport designs, one on a blue transfer-printed cup with a matching saucer showing a river scene with a bridge, buildings in the background, two figures in the foreground, and a floral border (C31, Fig. 8); the other a brown transfer-printed plate showing a water scene, with a waterfall, and a church in the background (C32, Fig. 8).

Part of a Copeland and Garrett blue transfer-printed tureen lid (C33, Fig. 8) carries a river scene which includes a man, a woman and two sheep. The mark includes the words 'New Blanche', a tradename for an earthenware body (Coysh and Henrywood 1984: 260).

A Copeland blue transfer-printed sauce tureen lid also carries a registration mark of 17 August 1849. The design is a simple rose pattern (C34, Fig. 8). The same pattern appeared on fragments of a jug.

Finally, a Till & Sons mark appeared on a saucer carrying a Chinese floral pattern in hand-applied polychrome on-glaze colours over black under-glaze transfer printing (Fig. 9). The saucer also carried a registration mark of 3 March 1969.

Transfer-printing was also used for lettering (other than maker's or pattern marks), either in combination with other transfer-printed designs, as on a child's mug labelled 'Catherine' (C39, Fig. 9); or to advertise contents, as on a Bear's Grease pot made c.1860-65 (Dale 1977: 289) and a Holloways's Ointment pot (C37, C38, Fig. 9). Two other vessels carried verse or quotations: a mug with part of a 'Christian' verse, also decorated with pink lustre (C39, Fig. 10); and a plate with a moulded floral border around part of a verse and a central design of which only a hand holding a sailor's hat can be made out (C40, Fig. 10).

2.3.1.2 Edgebanding and Hairlining

This form of decoration was popular in the late 18th and early 19th than the later 19th century (Sussman 1977: 108). In the NZI assemblage there were relatively few vessels decorated in this way (Table 2), although it was with other decoration (see below). It was mainly applied to flatware such as plates, saucers and ashtrays (73%), but it also appeared on cups, mugs, bowls and a jug. The most frequently used colour was blue (64%), but brown, red, black, green and gilded banding and lining were also noted. A few vessels had edgebanding in two or more colours, or different colours were used for the edgebanding and hairlining.

2.3.1.3 Plain Coloured Slipped and/or Glazed Ware

Almost equally common (see Table 2) was the use of coloured slips or glazes. This occurred most frequently on kitchenwares such as storage jars, bowls, casseroles and pie dishes and on teapots and jugs (29%). The remaining items consisted of cups, bowls, plates and vases. The majority were in utilitarian colours: yellow or fawn (38%), often on pie dishes or kitchen bowls; black or brown (22%) often on red-bodied teapots. Blue was also a common colour and there were a few green, cream and grey examples. Two vessels had differing interior and exterior colours: a cup with a brown exterior and eggshell blue interior; and a storage jar with green exterior and brown interior.

2.3.1.4 Other or Combined Forms of Decoration

Various other forms of decoration were noted, often combining two decorative techniques. Hand-painted designs, either in mono or polychrome, were common. Almost as common was moulded decoration, sometimes in combination with coloured slips or glazes. Moulded decorations included flower and leaf designs (C40, C41, Fig. 10) and 'basket-weaves', and were most commonly found on jugs, though teapots, mugs, a honey skep and a plate were also decorated in this way.

On several vessels coloured slips or glazes were combined with edgebanding and/or hairlining (mainly cups and mugs, but also bowls, plates and saucers). There were also a few examples of coloured slips or glazes combined with on-glaze hand-painted designs, and of edgebanding and hairlining combined with hand-painted designs.

There were five examples of spongeware, on which colours (blue, green, or mauve with green) had been applied with a sponge. Three of these vessels also had hairline decoration. Lustreing was observed on four vessels: pink lustre, on the transfer-printed mug described above and with yellow and green on-glaze hand-painted decoration on a cup and saucer; gold lustre on a brown glazed teapot lid; and silver lustre on another teapot lid with sprigged decoration (whereby separately moulded decorative elements are applied to the vessel). Majolica glazes in green or brown were noted on three vessels.

2.3.1.5 Plain White Wares

These made up the rest-of the assemblage (Table 2). They comprised mainly tableware, but there were several food containers, a couple of chamberpots, and a few other items such as toothbrush holders and soap dishes.

2.3.2 Vitreous China

Sixty vessels were classed as vitreous china or semi-porcelain, being more vitrified than the earthenware but not achieving the fineness or translucency of porcelain. They carried similar forms of decoration to lower-fired earthenware vessels, but transfer-printing was relatively uncommon, while plain white wares, sprigged decoration and edgebanding/hairlining were relatively frequent.

The vitreous china comprised: 19 vessels with edgebanding and/or hairlining in pink or green, or gilded, sometimes in combination with gilded designs; 19 plain white vessels; 17 'imitation jasperware' vessels with coloured sprigging in bluish or pale purple leaf decoration; 4 vessels with underglaze transfer-printed designs with hand-painted on-glaze decoration (3 black underglaze with lemon on-glaze, the other blue underglaze with gilt on-glaze); and 1 vessel with green hand-painted decoration. The vessels came from tea sets rather than dinner services, the majority being cups and saucers.

2.3.3 Porcelain

There were only 34 true porcelain vessels (defined by Hamer (1975: 229) as a vitrified, white and translucent ware). Seven of these were Chinese, the remainder British-made (G. Smith, pers. comm.).

The Chinese items comprised a bottle, a cup (C42, Fig.10), a foodpot and a tea bowl with polychrome hand-painted decoration; an eggcup with a blue slip glaze; and a saucer with grey underglaze transfer-printed decoration.

The British porcelain items included fragments of six figurines or small ornaments, either plain white or with hand-painted decoration. One was a painted soft-paste fairing, showing the lower legs and long coat of what may have been a cleric. Three others represented an angel or cherub, the head of a madonna (plain white), and a painted monk's head. The other two were a chair with a blue painted garment draped over it, perhaps from a child's doll's house, and an unidentifiable fragment.

The remaining items comprised: 7 vessels with edgebanding and/or hairlining, mainly gilded, but blue, pink and a combination of orange and green were also used; 7 plain white vessels; 3 vessels with hand-painted polychrome designs; 3 with hand-painted monochrome designs; and one with 'Japan' style decoration consisting of a blue hand-painted underglaze design with polychrome on-glaze decoration. The vessels came from tea or breakfast sets rather than dinner services. The majority were cups, mugs, saucers and small plates, but there were also 2 eggcups, 2 jugs and a vase.

2.3.4 Terracotta

Terracotta is defined here as a porous, unglazed ceramic fired at a lower temperature earthenware (Rosenthal 1954: 313), and generally orange or red in colour. Only two vessels were recovered, one a flowerpot, the other a small thumbsized pot.

2.3.5 Bisque China

Bisque china is unglazed pottery fired only once (Rosenthal 1954: 304). Two examples of this ware were recovered, both fragments of what might have been plaques. One had red hand-painted floral decoration.

2.3.6 Black Basalt Ware

One sherd of black basalt ware with a gadrooned edge, probably part of a dish, was recovered. This ware was originated by Josiah Wedgwood and is technically a black unglazed stoneware (Hamer 1975: 21). It is included here since it differs from the utilitarian vessels more usually associated with the term stoneware. This piece was probably manufactured c.1790-1800 (Mr G. Smith, pers. comm.). It is the oldest ceramic item in the assemblage.

2.4 Manufacturers

There were only 26 recognisable maker's marks in the entire assemblage, all except two from potteries in Staffordshire. The exceptions were a South Wales and a South Derbyshire manufacturer. Manufacturers identified from maker's marks are listed below in order of frequency:

Davenport, Lonport, Staffordshire. c. 1793-1887 (Godden 1964: 189). 5 transfer printed marks. Two consisted only of the name DAVENPORT, one on a blue transfer-printed cup (C31, mark not shown); the other on a brown transfer-printed plate (C32, mark not shown). The remaining three were all set below cartouches containing pattern names: a flow blue Amoy pattern plate (C15); a black Coral pattern bowl/cup (C13); and a flow blue Madras pattern plate (C25).

W.T. Copeland (& Sons Ltd), Spode Works, Stoke, Staffordshire. 1847-present (Godden 1964: 171). 4 marks. Three were transfer-printed, consisting of the words COPELAND/LATE SPODE (not illustrated). The use of 'Late Spode' in the mark can be dated to 1847-67 (Godden 1964: 171). One occurred on a blue Willow pattern bowl, another on a blue Aesop's Fables saucer (cf. C20), and the third on a saucureen lid with a blue rose pattern (C34) and a registration mark of 17 August 1849. The Willow pattern bowl also carried an impressed mark. The fourth mark was incomplete, COPE also impressed, on a Willow pattern plate (not illustrated).

Pinder, Bourne & Co., Nile St, Burslem, Staffordshire. 1862-82 (Godden 1964: 495). 3 transfer-printed marks. Two are almost identical, but include different pattern names: P.B & CO. in a wreath below a crown, and the pattern name BOUQUET on a blue transfer-printed plate (C7); the same, with the pattern ANTIQUE on a black transfer printed plate (C11). Godden attributes the initials to Pinder Bourne & Co. The third mark occurs on a saucer with gilded edgebanding and hairlining and is incomplete: STONE.../PINDER BOUR.../BURSLEM beneath a scroll with a partial inscription DIEU...(C43, Fig. 10). 'Stone' was presumably part of the words "Stone China".

William Ridgway (& Co.), Bell Works, Shelton, and Church Works, Hanley, Staffordshire 1830-54 (Godden 1964: 538; Cushion 1976). Two transfer-printed marks, one with the initials WR below the pattern name Canton on a blue printed bowl (C6), the other with the initials WR ... on a flow blue transfer-printed plate below the pattern name Aqua... (C28). William Ridgway is the only of this period to use these initials. The second mark was incomplete, but there would not have been space for more than two or three other letters. It may have read WR & CO, also attributed to the Ridgway firm.

Copeland & Garrett, Spode Works, Stoke, Staffordshire. 1833-47 (Godden 1964: 173). One incomplete transfer-printed mark (...ELAND & GAR.../ NEW BLANCHE) below a crown on a blue printed tureen lid (C33). 'New Blanche' refers to an earthenware body type, not a pattern (Coysh and Henrywood 1984:260).

George Phillips, Longport, Staffordshire. 1834-48 (Godden 1964: 492). One transfer-printed mark on a red printed cup (C24): [I]RON [S]TONE/MARINE/PHILLIPS. The maker can be identified as George Phillips, since he is known to have produced Marine pattern wares (Coysh and Henrywood 1984: 237,283).

Mann & Co., Cannon St, Hanley, Staffordshire. 1858-60 (Godden 1964: 411). One transfer-printed mark on a brown printed plate: MANN & CO/HANLEY below a plain cartouche containing the pattern name BALMORAL (C26).

Till & Son(s), Sytch Pottery, Burslem, Staffordshire. c. 1850-1928 (Godden 1964: 617). A black transfer-printed mark on a polychrome saucer (C35, mark not shown): TILL & SONS set around a registration mark of 3 March 1869.

Frederick Jones (&Co), Longton, Staffordshire. 1865-86 (Godden 1964: 359). One near complete transfer-printed mark on a blue printed plate (not illustrated): F. JONES on a floral scroll below a beehive, and blurred lettering which can be read as LONGTON below the scroll (cf. Brasey 1990: Fig. 23c); the pattern name GEM above the beehive.

Elkin & Newbon, Stafford St, Longton, Staffordshire. 1844-45 (Godden 1964: 234). An incomplete blue transfer-printed mark on a 'Botanical Beauties' series plate: ...& N. (C9). Elkin & Newbon, were the originators of this design series (see above) and used the initials 'E. & N.' (Godden 1964:234).

South Wales Property, Chambers & Co. (c. 1839-54) succeeded by Coombs & Holland (1854-58), Llanelly, Wales. 1839-58 (Godden 1964: 587; Cushion 1976). One transfer-printed mark on a blue Fibre pattern saucer: FIB./ S.W... in a cartouche (C1). The South Wales Pottery used the initials S.W.P. and is the only firm listed to use the initials S.W ...

?Hope & Carter, Fountain Place, Burslem, Staffordshire. 1862-80. Or Harding & Cockson, Globe Pottery, Cobridge, Staffordshire. 1834-60. (Godden 1964: 310, 334; Cushion 1976). One transfer-printed mark on a Willow pattern plate, consisting of the initials H & C below an incomplete cartouche (not illustrated). The only known to have used these initials are the two listed above, and a third, Hammersley & Co (1887-1932) which produced only porcelain and has therefore been excluded (Godden 1964: 304-5).

Dimmock & Smith, Tontine St, Hanley, Staffordshire. 1826-33 and 1842-59 (Godden 1964: 209; Cushion 1976: index). A black transfer-printed mark D&S beneath a cartouche containing the pattern name SCINDE (C17). The pattern name, which refers to the taking of Sind in 1843 or its annexation in 1845, places it within Dimmock & Smith's second period of production.

Knapper & Blackhurst, the Boston Works, Sandyford, Tunstall (1867-71), or Dale Hall, (1883-8), Staffordshire (Godden 1964: 375). A registration on a brown 'Leda and the Swan' pattern cup (C30) is dated 16 November 1868, with the parcel no. 3, which identifies it as a product of this firm (Cushion 1976: 323).

William Brownfield (& Sons), Cobridge, Staffordshire. 1850-91. (Godden 1964: 110). A registration mark on a plate with a brown transfer-printed floral motif is dated 4 December 1861 with the parcel no. 3, which identifies it as a product of this firm (Cushion 1976: 309).

J. [?]aley, Swadlincote, South Derbyshire. An impressed mark on a fawn glazed pie dish. The first two letters of the surname are illegible. The mark is impressed on a fawn pie dish: J...ALEY/SWADLICOTE [sic]/FIREPROOF/WARRANTED (not illustrated).

Manufacturers can also be suggested for those vessels carrying patterns with only one known maker:

Mellor, Venables & Co., Hole House Pottery, Burslem, Staffordshire. 1834-51 (Godden 1964: 431). The only listed manufacturer of the Medici design (Coysh and Henrywood 1984: 242).

Knight Elkin & Newbon, Foley Potteries, Fenton, Staffordshire. 1826-46 (Godden 1964: 376). The only listed manufacturer of the Hannibal passing the Alps design (Coysh and Henrywood 1984: 170).

Thomas Dimmock & Co., Albion St (c.1828-59) and Tontine St (c.1830-50), Shelton, Hanley, Staffordshire. 1828-59 (Godden 1964: 208). The only listed manufacturer of this version of the Morea design (see above under patterns, and Lewis 1985: 143; Coysh and Henrywood 1989: 140).

Swansea Pottery, Cambrian Pottery, Swansea, Wales. c.1783-1870 (Godden 1964: 605). The only listed manufacturer of the Hawthorn design, during the L. Ll. Dillwyn period 1836-50 (Coysh and Henrywood 1984: 172).

Since the Ornamental Designs Act of 1842 allowed firms to protect their designs, these may well have been the firms responsible. However, copyrights had to be renewed every three years, and it is possible that some were allowed to lapse and the designs were taken over by other firms whose products have not yet been recognised.

Another possible attribution is a Broseley pattern saucer to John Rogers & Son, Dale Hall, Longport, Staffordshire, 1814-36 (Godden 1964: 548). It is marked SEMI CHINA in a double-line diamond (C44, Fig. 10), which Coysh and Henrywood ascribe to 'Rogers' (1984: 327-8). Of the various Rogers listed in 1964, only this firm seems appropriate in terms of products and date.

Three marks cannot be attributed to a manufacturer: J.M.C (or G) in a double line diamond on the base of a Willow pattern saucer (C45, Fig. 10); W & JA.../FIREPROOF/2 on the base of a brown glazed teapot (not illustrated); and H & J on the bases of two white cream or toothpaste pots (not illustrated). The latter might refer to the manufacturer of the contents.

2.5 Discussion

2.5.1 The Nature of the Assemblage

The ceramic assemblage comprised ordinary household wares, representing a varied range of breakfast, tea and dinner services, kitchen and toiletry items, and a few decorative pieces (Table 1). The great majority of vessels were earthenware (94.3%), the remainder in semi-porcelain (3.4%), porcelain (1.9%) or other wares (0.3%).

Transfer-printed tableware predominated (Table 2), in a wide range of designs. Many of these could be identified, the most popular being Willow pattern, Fibre, Rhine and Asiatic Pheasants.

The 36 designs identified here can be compared with those from Fort Ligar in Auckland (Site R11/1656), one of the few sites so far reported where designs have systematically identified (Brassey 1989). A much smaller assemblage included 15 identifiable patterns, seven of which were also found at Chancery St (Willow, Fibre, Asiatic Pheasants, Rhine, Cable, Broseley, Albion and Morea). Asiatic Pheasants, Rhine, Willow and Cable were also present at Fort Galatea (Spring-Rice 1983) and these, plus Bouquet and another identified pattern at Arrowtown (Ritchie n.d.). Rhine, Fibre and Willow were present at Omata Stockade (Prickett 1981a) and Asiatic Pheasants, Willow, Fibre, Bouquet and another identified pattern at the Halfway House Hotel (Bedford 1986). It is hoped that information on 19th century transfer-printed designs in New Zealand will be forthcoming as patterns become more easily recognised through published archaeological examples.

There seemed little significant variation in the content of the fills from Areas A, C (Phase 3) and F, which made up vast majority of the assemblage. All had percentages of vessel forms and contained examples of all designs represented by more than 5 vessels.

Most of the ceramics were supplied by the Staffordshire Potteries (above, Section 2.4, and G. Smith, pers. comm.), but a South Wales and a South Derbyshire firm represented and there were a few of Chinese porcelain. In several cases designs could be attributed to manufacturers not previously recorded as having produced them.

2.5.2 The Dating Evidence

Dates of manufacture could be established with certainty only in a few cases. Accurate date ranges for individual vessels can generally only be established when makers' or registration marks are present, or occasionally when dates of introduction can be established for particular patterns or techniques. Dating based on stylistic criteria can be helpful in giving an overall impression of the date range within an assemblage, but only be regarded as an estimate. The primary dating evidence usually comes from the documentary sources, though pottery which appears to be inappropriately dated when set against the historic evidence may be of value in pointing to unrecorded activities, or later disturbances that require explanation.

Within the ceramic assemblage there were only 25 vessels datable by maker's marks (Fig. 1). All except two of the firms ceased production by 1888, three of them by 1850, four more by 1860 and six by 1870.

The majority came from the various fill layers redeposited in 1893/4 (Areas A and C) or later (Area F). The exceptions were the Phillips (1834-48) and a Copeland Late Spode (1847-67) from the Area C occupation layer (Layer 10 backyard), and a Davenport from Area C Layer 9. None of the manufacturing date ranges conflicts with the dating evidence provided by documentary records (see above, Section 1.1).

Using stylistic criteria, some of these ranges can perhaps be reduced further. The products of the two firms which continued into this century (Till & Sons and Copeland) were probably made before 1880, and those of the Davenport within the period 1820-1860 (G. Smith, pers. comm.).

It was also possible to assign manufacturing date ranges on stylistic grounds to most of the remaining vessels (G. Smith, pers. comm.). Although such dates are estimates, and subject to revision, taken as a whole a useful statistical picture emerged. Dates of manufacture were assigned to c.1400 vessels within ranges of 10, 20, 30 or 40 years. The remainder were classified as general 19th century wares. Of the c.1400 assigned date ranges, only three were thought to have been made as late as the 1890s, only 10 as late as the 1880s, and c.60 as late as the 1870s. With one exception (see below), in all contexts where a reasonable statistical sample (over 50) was present, the great majority fell within the 1850s to 1860s, a significant number were given dates from the 1820s/1830s to the 1840s, and a much lower number post 1870. Overall, the range of manufacturing dates indicates a gradual accumulation of discarded ceramics from the initial settlement of the area 1841 through to the 1890s.

The time lag between the date of manufacture and date of discard (after breakage in most cases) is difficult to estimate, but an average of 10 years overall seems a reasonable assumption. Since the majority of vessels were probably manufactured in the period 1850s-1860s, the peak period of rubbish disposal was probably the 1860s-1870s.

It has been argued that the most likely source of the filling material in Areas A, C and F was rubbish dumps on vacant property within Site R11/1589 (see Vol. 1, and above, Section 1.1). If so the peak period of rubbish disposal would also indicate a peak in density of occupation on the site or its immediate neighbourhood in the 1860s-1870s.

The scarcity of rubbish discarded after the 1870s would appear to support the impression gained from the sources that the area had become very run down by this decade, being scheduled for redevelopment and perhaps experiencing a fall in population (Vol. 1, Section 2.3). On the other hand it may simply result from the provision of a municipal rubbish collection service from the early 1870s to 1887 (Brassey 1989: 64).

The exception to the general statistical pattern was the sealed Phase 1 occupation layer in Area C (Layer 10). Out of 55 vessels with a manufacturing date range of less than 30 years, over half (29) were assigned dates in the 1830s to 1840s, a few even earlier. None was dated later than the 1860s. This supports the historical evidence, which dates this period of occupation to c.1843-64 (see Vol. 1, Section 6.2.1).

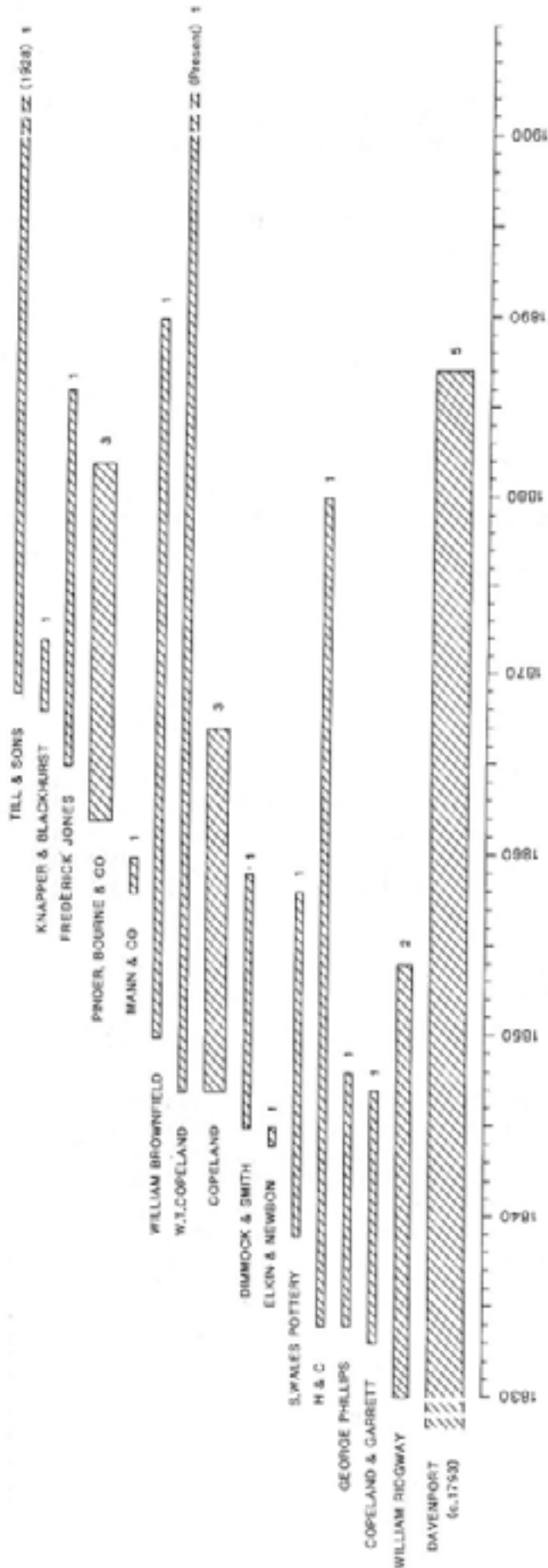


FIG. 1. Numbers of vessels carrying makers' marks, showing manufacturing date ranges.

However, a Willow pattern plate with a scalloped rim from the same layer but directly underlying the fireplace, and a green majolica ware plate from Layer 9 sealed by the Phase 1 brick path, were assigned dates in the 1860s. If the dates are correct, then both the fireplace and path were later additions to the building made shortly before its demolition (see Vol. 1, Section 6.2.1).

None of the vessels recovered from the three pits and the well in Area F, or the pit in Area E, were assigned dates later than the 1860s, which again provides no conflict with the documentary dating evidence.

In Area C, however, the Layer 8 fill laid beneath the foundations of the Phase 2 brick house built c.1864 contained four sherds assigned dates of 1865-1870s. These dates are clearly too late and if correct must be due to intrusive material from later deposits falling between the building's floor cobbles (see Vol. 1, Section 6.2.2).

The remaining material came from the fill layers of Areas A and C (Phase 3) redeposited in 1893/4, the Area F fill redeposited in 1912, and the Area E cultural layer (deposition date unknown). None of the material was assigned a date later than the 1890s.

2.5.3 Material in Primary Deposits

Layer 10 (sealed portion) in Area C was the only sealed occupation layer encountered during the excavation, its contents associated with the use of the earliest building by William Bacon as a residence, ginger beer brewery and store until 1858 and by other (unknown) occupants until c.1864. It is therefore possible to attempt to establish which of the ceramic items may actually have belonged to William Bacon.

The material comprised: a porcelain 'Japan' style cup; a vitreous china bowl with green edgebanding; and 63 earthenware vessels (see Table 2). The 45 transfer-printed vessels included nine in Willow pattern (seven plates, an ashet and a tureen); a black Fibre pattern saucer; a blue Young Piper pattern plate (C17), a 'Japan' style cup; and a bowl, plate and saucer in chinoiserie designs. The five vessels with edgebanding consisted of plates with moulded or scalloped rims and blue edgebanding.

On stylistic grounds the Willow pattern vessels belonged to at least two different services, one probably made in the 1850s/1860s and the other in the 1830s (G. Smith, pers. comm.). The blue edgebanded plates could all have derived from the same set, however, having similar moulded rims and being dated on stylistic grounds to the 1830s.

Allowing for a time lapse between date of manufacture and discard, it seems likely that most of the vessels thought to have been made before 1850 would have belonged to William Bacon, who occupied the property until 1858. Using stylistic criteria, this would include the set of five plates with blue edgebanding and moulded rims; one of the Willow pattern plates; the Young Piper plate; the 'chinoiserie' vessels; the porcelain and earthenware 'Japan' style cups; the vitreous china bowl with green edgebanding; nine blue and one green transfer-printed tableware items (3 saucers, 2 plates, 2 bowls, 1 cup and 1 ashet); and a hand-painted jug.

There were unfortunately no maker's marks to indicate the manufacturers of these vessels or provide further support for the stylistic dating.

Three rubbish pits and a well in Area F and a rubbish pit in Area E also contained material in primary deposition, although only the truncated Rubbish Pit 1 in Area F was secure from the possibility of later intrusive material. However, none of the ceramic material was assigned a date of manufacture later than the 1860s on stylistic grounds.

From its position Rubbish Pit 1 in Area F was thought to have been filled during the Mechanics Institute period (1843-79), presumably by one of the resident librarians (Vol. 1, Section 9.2.3). It contained few ceramic items: a porcelain cup with yellow edgebanding and gilt hairlining; a white vitreous china cup and saucer; and eight earthenware vessels (a blue Asiatic Pheasants pattern plate, a blue transfer-printed cup and plate, a brown transfer-printed cup, a purple transfer-printed chamber pot and three white food containers).

The other rubbish pits in Area F (2 and 3) were probably filled at a later date (1879-1900) during the public library or kindergarten periods (Vol. 1, Section 9.2.3). Rubbish Pit 2 contained a white vitreous china plate and 11 earthenware vessels (Table 2), which included a grey Rhine pattern plate and a moulded basketweave jug. Rubbish Pit 3 contained only two ceramic items: a blue Rhine pattern plate and a brown transfer-printed chamberpot. The well contained a white vitreous china cup and eight earthenware vessels (Table 2).

The rubbish pit in Area E was probably filled during the use of a building occupying the site from the 1860s to 1880s (Vol. 1, Section 8.2). It contained 23 earthenware vessels (Table 2), including a blue Fibre pattern cup or bowl and a blue Willow pattern plate.

2.6 Conclusion

Site R11/1589 produced a large assemblage of ceramic artefacts which has considerably increased our knowledge of the nature and variety of domestic pottery available to 19th century New Zealand, particularly in Auckland. Thirty-six designs, some of which do not appear in the available literature, were identified. At least 16 manufacturing were represented in the assemblage, the majority from Staffordshire, but two from South Wales and South Derbyshire. Some porcelain from China was also present. In some cases, designs could be attributed to manufacturers not previously known to have produced them.

Most of the material came from redeposited fill comprising soil mixed with household refuse which was probably discarded on vacant parts of the site by the local inhabitants from the 1840s to the 1890s. It included little material discarded after the 1870s, owing either to a reduced population in the immediate neighbourhood, or new methods of rubbish disposal provided by the City Council in the 1870s-80s. The material was removed from its original location during redevelopment of the site in the 1890s and redeposited in Areas A, C and F where fill was required to raise the existing ground level and/or cover the remains of earlier buildings.

A small percentage of the material was found in primary deposition in four rubbish pits and possibly a well in Areas F and E, and within a sealed occupation layer in Area C. Material from the occupation layer was of particular interest since it was largely accumulated during William Bacon's period of ownership and must have included ceramics owned by him. An attempt was made to identify these using stylistic criteria.



C1



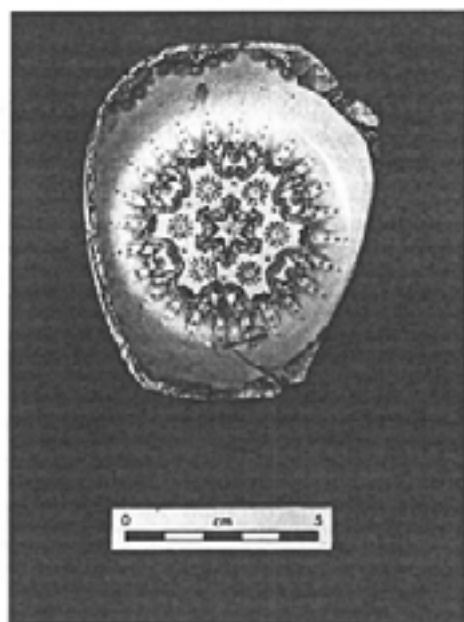
C2



C3



C4



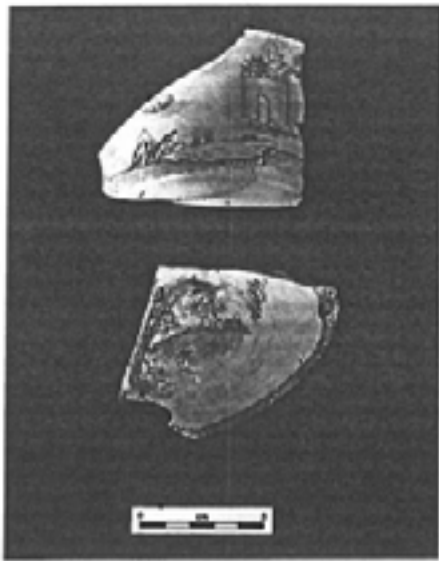
C5



FIG. 2. Earthenware. Marks actual size.

2.7 Catalogue of Illustrated Earthenware and Porcelain (Figs. 2-10)

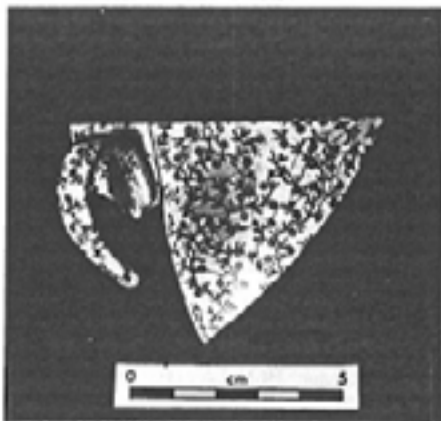
- C1 Fibre pattern. Blue transfer-printed saucer. Marked FIB[RE]/S.W. in decorative cartouche. South Wales Pottery (c.1839-54). Area C Phase 3 fill (C4.2120).
- C2 Rhine pattern. Blue transfer-printed cup and plate, grey printed plate. Cup marked RHI[NE] in decorative cartouche. Estimated date 1830s-1860s. Area A fill Area C Phase 3 fill (C1.1994) and Area F rubbish pit 3 (F42.4524).
- C3 Albion pattern. Blue transfer-printed ?bowl and plate. Est. date 1835-45. Area C Phase 3 fill (C4.2106-7).
- C4 Pattern mark on blue transfer-printed plate: MEDICI in decorative cartouche. Possibly Mellor, Venables & Co. (1834-51). Area F fill (F20.4403).
- C5 Dorgan pattern(?). Blue transfer-printed cup. Marked DORGAN in cartouche. Est. date 1820s. Area A fill (A1.1434).
- C6 Canton pattern. Blue transfer-printed bowl. Marked CANTON within rectangle, WR below, and no. 10 to the right. William Ridgway (1830-54). Area C Phase 3 fill (C51.2694).
- C7 Bouquet pattern. Blue transfer-printed serving dish. Marked BOUQUET/P.B. & CO in circle beneath crown within wreath. Pinder, Bourne & Co (1862-82). This example from Victoria Hotel site (R11/1530), but identical mark and pattern to a plate from Area F fill (F7.4344-5).
- C8 Seaweed pattern. Green transfer-printed cup. Est. date 1860s. Area A fill (A1.1767).
- C9 Botanical Beauties series. Blue transfer-printed plate. Marked BOTANICAL B[EA]UTI[ES] in floral cartouche, ...& N. below. Elkin & Newbon (1844-45). Area A fill (A1.1583).
- C10 Morea pattern. Blue transfer-printed plate. Marked MOREA in decorative cartouche, STONE CHINA below. Possibly T. Dimmock & Co. (1830-50). Area C Phase 3 fill (C4.2127).
- C11 Antique pattern. Black transfer-printed plate. Marked ANTIQUE/P.B & CO in identical to C7. Pinder, Bourne & Co. (1862-82). Area F fill (F7.4346).
- C12 Gem pattern. Blue transfer-printed plate. F. Jones (1865-86). Area F fill (F7.4058).
- C13 Coral pattern. Black transfer-printed bowl. Marked CORAL in coral cartouche, DAVENPORT below, and three no. 8s towards base rim (not shown). Davenport (c.1793-1887). Est. date 1850s. Area C Phase 3 fill (C4.2152).
- C14 Cable pattern. Purple transfer-printed tureen. Est. date 1860s. Area F fill (F7.4326).
- C15 Amoy pattern. Flow blue transfer-printed ?bowl. Marked AMOY in cartouche, DAVENPORT below. Davenport (c.1793-1887). Est. date 1820-40. Area A fill (A1.1495).
- C16 Pattern mark on black transfer-printed saucer: PASTORAL in decorative cartouche. Est. date 1840s. Area C Layer 8 (C46.2585).
- C17 Pattern mark on blue transfer-printed ?plate: [Y]OUNG PIPER in fernleaf cartouche. Est. date 1830s. Area C Layer 10 (sealed) (C66.2793).
- C18 Pattern mark on blue transfer-printed plate. Marked FOLIAGE in decorative cartouche. Est. date 1850s. Area C Phase 3 fill (C1.2008).
- C19 Scinde pattern. Flow black transfer-printed bowl. Marked SCINDE in cartouche, D & S below. Dimmock & Smith (1826-33 and 1842-59). Dated by subject matter to post 1845. fill (A1.1571).



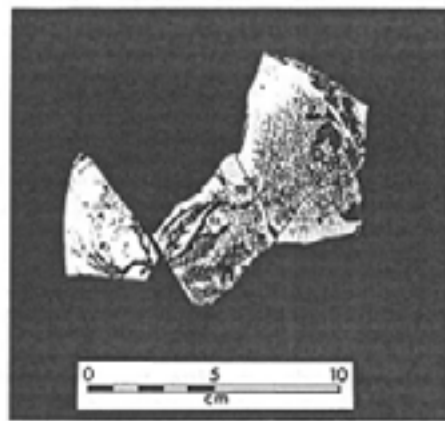
C6



C7



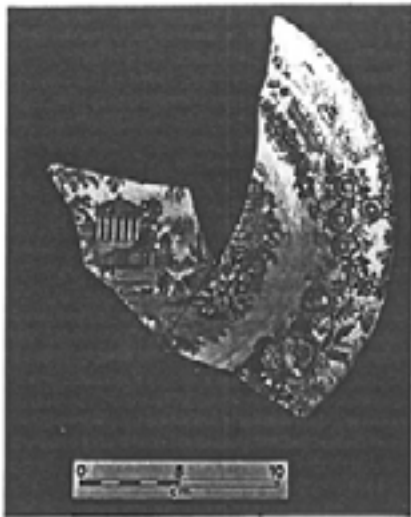
C8



C9



FIG. 3. Earthenware. Marks actual size.



C10



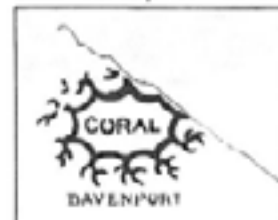
C11



C12



C13

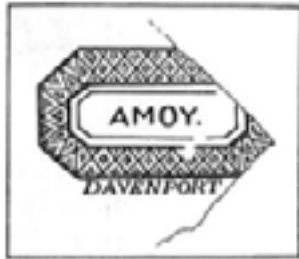


C14

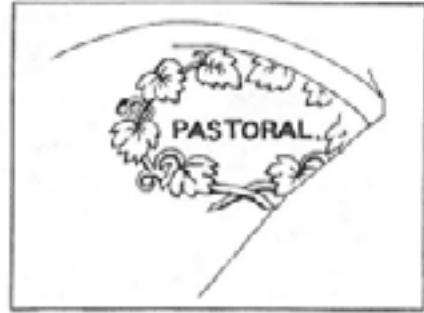
FIG. 4. Earthenware. Marks actual size.



C15



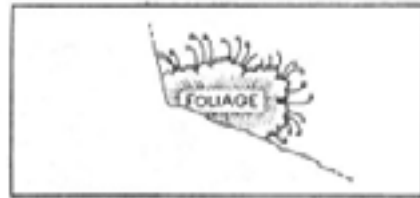
C16



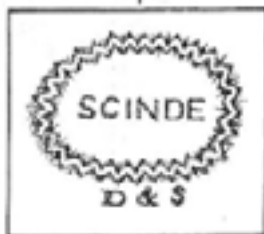
C17



C18



C19



C20

FIG. 5. Earthenware. Marks actual size.

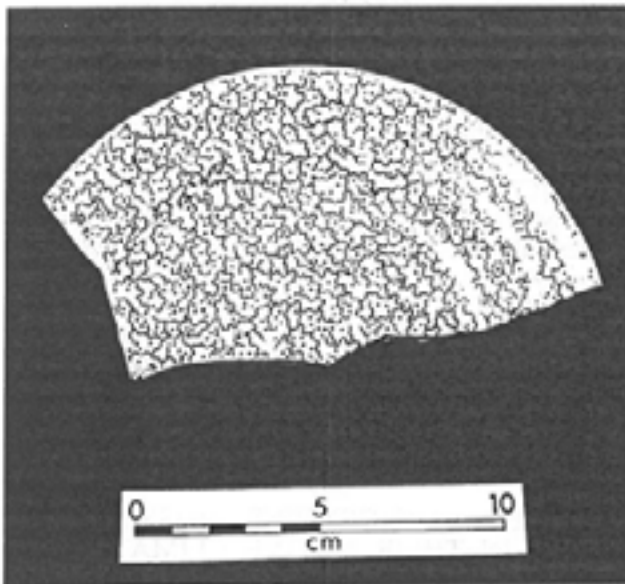
- C20 Aesop's Fables series, The Fox and The Grapes. Blue transfer-printed saucer. Marked COPELAND/LATE SPODE and no. 17 (not shown). W.T. Copeland (1847-present), the 'late Spode' mark datable to 1847-67. This example from Brown's Mill (R11/1643), nos. 37, 43, 44, but identical to an incomplete saucer from Area A fill (A1.1574), also marked COPELAND/LATE SPODE.
- C21 Alhambra pattern. Blue-mauve transfer-printed saucer. Marked ALHAM[BRA] in decorative cartouche, IRO[NSTONE] above. Est. date 1835-45. Area C Phase 3 fill (C8.2860).
- C22 Ribbon pattern. Brown transfer-printed saucer. Marked [R]IBBON within circle with floral decoration. Est. date 1850s. Area C Phase 3 fill (C14.2264).
- C23 Vermicelli pattern. Brown transfer-printed plate. Possibly William Ridgway (1830-54). Area C Phase 3 fill (C15.2266).
- C24 Marine pattern. Red transfer-printed cup. Marked MARINE in scroll, ...PHILLIPS on plinth below, floral decoration and [I]RON[ST[ONE] above. George Phillips (1834-48). Area C Layer 10 (backyard) (C22.2326).
- C25 Madras pattern. Flow blue transfer-printed plate. Marked MADRAS in decorative cartouche, DAV[EN]PORT below. Davenport (c.1793-1887). Est. date Area C Phase 3 fill (C13.2231).
- C26 Balmoral pattern. Brown transfer-printed plate, marked BALMORAL in cartouche, below. MANN & CO/HANLEY below. Mann & Co. (1858-60). Area F fill (F7.43 10).
- C27 Pattern name on blue transfer-printed ?plate: GRA ... Est. date 1835-45. Area F fill (F24.4445).
- C28 Pattern name on flow blue transfer-printed plate: AQUA ... over crossed leafsprays, WR... below. William Ridgway (1830-54). Area F fill (F7.4065).
- C29 Pattern name in black transfer-print on plain plate fragment: HAWTHORN in decorative cartouche. Possibly the Swansea Pottery in the period 1836-50. Area A fill (A1.1539).
- C30 'Leda and the Swan' pattern. Brown transfer-printed cup. Registration mark of 16 November 1868, parcel no. 3. Knapper & Blackhurst (1867-71). Area C Phase 3 fill (C4.2210).
- C31 Blue transfer-printed cup and saucer. Cup marked DAVENPORT (c.1793-1887) (not shown). Est. date 1820s. Area A fill (A1.1436-9).
- C32 Brown transfer-printed plate. Marked DAV[ENPORT] (not shown). Davenport (c.1793-1887). Est. date 1840s. Area C Layer 9 (C24.2445).
- C33 Blue transfer-printed plate. Marked [COP]ELAND & GAR[RETT]/NEW BLANCHE beneath a crown. Copeland & Garrett (1833-47). Area F fill (F6.3414).
- C34 Blue transfer-printed sauce tureen lid. Marked COPELAND/LATE SPODE, with registration mark of 17 August 1849 (not shown). W.T. Copeland (1847-present). 'Late spode' mark datable to Area C Phase 3 fill (C4.2137).
- C35 Polychrome saucer, with yellow, green, pink and orange-ochre colour hand-applied over the glaze, and a black transfer-printed underglaze pattern. Marked TILL & SONS with a registration mark of 3 March 1869 (not shown). Till & Sons (c.1850-1928). Est. date pre 1880. Area C Phase 3 fill (C4.2211).
- C36 Black transfer-printed child's mug with the name CATHERINE in a scroll. Est. date 1820s. Area A fill (A1.1489).
- C37 Bear's Grease black transfer-printed pot: PRICE & CO'S GENUINE / RUSSIAN / BEARS GREASE / FROM THE / BEARS / IN THEIR NATIVE CLIMATE / MONTPELLIER -HOUSE / 28 LOMBARD ST. c.1860-65. Area F fill (F7.4311).



C21



G22



G23



G24



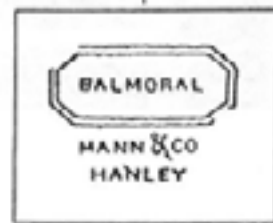
FIG. 6. Earthenware. Marks actual size.



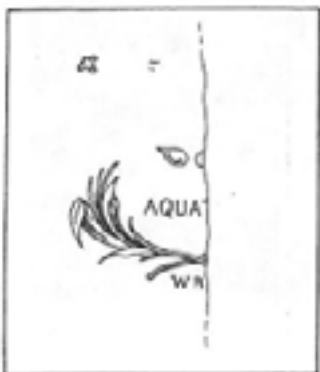
C25



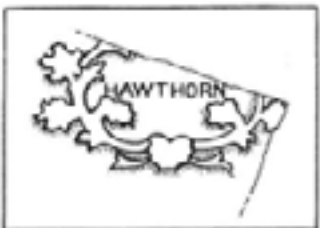
C26



C27



C28



C29



C30

FIG. 7. Earthenware. Marks actual size.



C31



C32



C33



C34



FIG. 8. Earthenware. Mark actual size.



C35



C36



C37



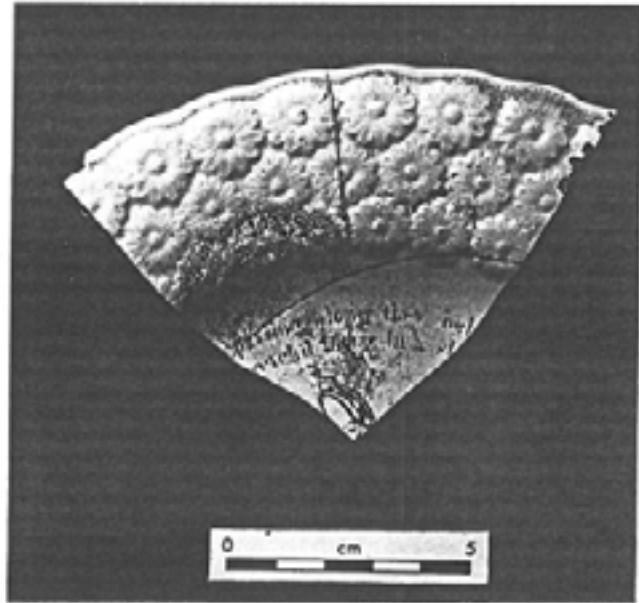
C38

FIG. 9. Earthenware. C37 actual size.

- C38 Holloway's Ointment black transfer-printed pot: HOLLOWAY'S / OINTMENT / FOR THE CURE OF INVETERATE ULCERS / BAD LEGS SORE BREASTS SORE HEADS / GOUT AND RHEUMATISM / IN POTS 1s 1 ½ D 2/9 4/6 11/22/ & 33 / EACH / BY THE PROPRIETOR / 244 STRAND LONDON. Area C Phase 3 fill (C15.2270).
- C39 Black transfer-printed mug with pink lustre decoration. Marked ...EN CHRISTIAN WHILE YOU MAY/ ...FTLY TIME IS FLYING/ ... MAN WHO LAUGHS TO .../...YING. Est. date 1835-45. Area F fill (F7.4092).
- C40 Plate with moulded floral border carrying traces of blue, and in the centre black transfer-printed lettering and design: ...PASSING ALONG THEY BEH .../... RETCH'D ALONG IN A SL..., above a hand holding a sailor's hat. Est. date 1860s. Area F fill (F6.3483).
- C41 Jug with moulded decoration and light grey slip. Est. date 1860s. Area C Phase 3 fill (C4.2151).
- C42 Chinese cup, hand painted in pink, blue, green, black, yellow, gilt and orange. Est. date 19th century. Area C Phase 3 fill (C4.2102).
- C43 Maker's mark on saucer with gilt edgebanding and hairlining: STONE [CHINA]/PINDER BOUR[NE & CO]/BURSLEM., below a scroll draped over a lion's foreleg with the word DIEU...Pinder, Bourne & Co. (1862-82). Area C Phase 3 fill (C4.2209).
- C44 Mark on blue transfer-printed Broseley pattern saucer: SEMI CHINA in double-line diamond. Possibly John Rogers & Son (1814-36). Area F fill (F7.4059).
- C45 Mark on blue transfer-printed Willow pattern plate: J.M.C (or G) in double-line diamond. Est. date 1830s. Area C Layer 8 (C57.2709).



C39



C40



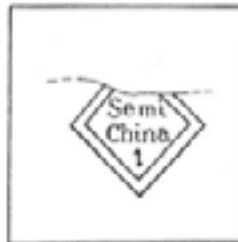
C41



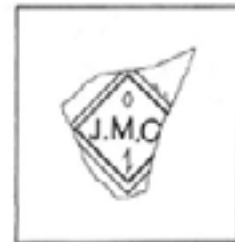
C42



C43



C44



C45

FIG. 10. Earthenware (C39-C41, C43-C45) and porcelain (C42). Marks actual size.

3.0 STONEWARE

3.1 Introduction

Stoneware is defined as a 'hard, strong, vitrified ware, usually fired above 1200°, 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, and soft edges to colour variations' (Hamer 1975: 285).

Stoneware vessels were usually utilitarian, used as storage containers for a variety of products. With the exception of ginger beer bottles, they rarely carried a maker's mark, and decoration was minimal, while vessel style and manufacturing techniques remained fairly constant throughout the nineteenth century, so that close dating can rarely be achieved.

The majority were salt-glazed, with characteristic pitted (or 'lemon peel') surfaces. Some also appeared to have been coated with a thin reddish wash, the colour probably due to the presence of iron minerals. Others had clear or coloured lead or feldspar glazes.

3.2 Vessel Forms

Table 3 shows the general breakdown of vessel categories per area by minimum numbers of vessels, and Table 4 gives a more detailed breakdown of type and context within the areas.

The majority (c.71%) of the total assemblage consisted of bottles which would have contained ginger beer, beer, gin, or other drinks. Jars of various types made up 18%, and ink bottles 6%. The remainder were either because of their condition, or oddments (jugs, a colander, a pie dish).

Ginger beer bottles were the most common (S1-S13, Fig. 11), typically mm high, 65-75 mm in body diameter, and with the characteristic 'dumpy' body with angled shoulder and 'blob' top illustrated in S1. A few had rounded shoulders, as S13. Several carried impressed makers' or brewers marks (see below). All examples had a brown (or occasionally grey) salt-glazed exterior, except for the bottle marked A.D (S11), which was atypical in being completely unglazed. The majority had unglazed interiors, but several had a clear or pale green/cream glaze applied to the inside.

The longer necked bottles (S14-18, Fig. 11) may have contained beer. They included the typical 'stout' bottles with angled shoulders and two-tone cream and brown Bristol glaze or with sloping shoulders and a clear glaze over an off white body (S17). Others were brown salt-glazed bottles with clear, pale green or cream internal glazes (S15, S16, S18). When bottles were incomplete it was not always possible to distinguish ginger beer from other bottles (Table 4).

The gin bottles were all of the 'Bols' type illustrated as S19 (Fig. 11) (cf. Roycroft and Roycroft 1976: 55, no. 1; 1979: 22, no. 3), a tall bottle with a handle and unglazed interior, with a buff, brown or reddish-brown salt-glazed exterior. Two had incomplete inscriptions incised into the shoulder (S20, Fig. 11, and see Section 3.3 below).

TABLE 3**Relative Percentages of Stoneware Vessel Types from Different Areas
(Minimum Number of Vessels)**

	Drink bottles		Jars *		Ink Bottles		Other	Totals	
Area A	25	58%	12	28%	5	11.6%	1	2.3%	43
Area C	259	83.5%	30	9.7%	11	3.5%	10	3.2%	310
Area E	6	60%	3	30%	-		1	10%	10
Area F	44	42.7%	40	38.8%	13	12.6%	6	5.8%	103
TOTALS	334	71.7%	85	18.2%	29	6.2%	18	3.85%	466

* Excluding lids

TABLE 4

Minimum Numbers of Stoneware Vessels

	Ginger beer	Ginger beer/ other bottles	Gin	Other bottles	Flagon	Ink Bottles					Jars					Jar lids			Unclassified	TOTALS				
						1d ink	2d ink	Large ink (60mm)	Large ink (90mm)	Syringed ink	Blacking	Preserving/ Storage	Crack/large jar	"Vase-shaped"	"Beaker-shaped"	Ointment/paste	Unclassified	Storage jar lid			Water filter lid	Jug	† Colander	Pie dish
AREA A, fill	18	5	-	2	-	3	-	2	-	-	3	6	2	-	-	-	1	2	-	-	1	-	-	45
AREA C																								
Phase 1																								
Layer 10 (sealed)	6	4	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	12
Layer 10 (b'yard)	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Layer 9	16	-	-	3	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1	-	-	2	24
PH 3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Phase 2																								
Layer 8 & walls	77	40	15	11	-	-	-	1	-	-	3	2	-	-	1	-	1	1	-	-	-	-	3	155
Recess in cobbled floor	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Phase 3 fill (1)	63	6	-	12	1	6	-	2+	-	2	3	2	5	6	-	3	1	2	-	-	-	-	2	116
AREA E																								
Cultural layer	2	1	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	1	-	-	-	7
Pit	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
AREA F																								
Fill	24	8	3	9	-	3	1	5	3	-	9	10	14+	-	-	-	3	2	1	-	-	1	5	101
Well	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2
Rubbish pit 2	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	3
TOTALS	209	66	19	39	1	13	1	10	3	2	19	23	25	6	2	4	6	7	1	2	1	1	13	473
							29				85					8								

+ One example stamped J. Bourne
 (1) Sampled during machine excavation

Also included among the 'drink' bottles (Table 3) was a handled brown glazed flagon (S21, Fig. 11) with rouletted and impressed shoulder decoration found wedged into a hole dug into Layer 10 beneath the Phase 2a building in Area C.

Ink bottles were of two types: the majority with simple bead rims (S22, S24-26, Fig. 11) and two with a pouring spout (S23, Fig. 11). The beaded-rim type came in four sizes: 'penny' (S25), 'twopenny' (S24); and two larger sizes, one c.60 mm in diameter (S26), the other c.90 mm (S22). The first three sizes were all brown salt-glazed bottles except for one clear glazed off-white penny ink. The two 90 mm ink bottles were clear glazed over off-white bodies, and one still retained part of its cork. One of the two spouted ink bottles (S23) in a similar ware, while the other had a brown salt-glaze. It was a different shape, being much shorter in the neck, but was too fragmentary to be illustrated. One of the 60 mm ink bottles (S26) had an impressed Bourne mark (see Section 3.3 below).

The jar assemblage was very varied. Brown salt-glazed 'blacking jars' (S27, Fig. 12), which often contained stove blacking or grease (e.g. Fletcher 1976: pl. 37) but may have been used for various purposes, were easily recognisable and relatively common.

The majority were preserving or storage jars (S28-S37, Fig.12). Preserving jars are defined as those with narrow necks (S29-S33) to take a tightly fitting cork bung. Many were Bristol glazed, but some were salt-glazed, and some had salt-glazed exteriors with clear or pale green glaze applied to the inside. Storage jars are defined as those with recessed rims to take a lid (e.g. S37). They were brown glazed, brown salt-glazed or off-white with a clear glaze. Since it was often impossible to distinguish between preserving and storage jars when vessels were incomplete, they have been grouped together (Table 4). Two table salt jars carried an impressed Weston and West mark (S28), and another (S36) an impressed Doulton mark (see Section 3.3 below).

Crocks or large jars (S38, S39, Fig. 12) include thick-walled and/or large containers over c.150 mm in diameter. They were generally represented only by body sherds and base fragments. Rim forms could have been either narrow-necked or recessed to take a lid. The majority had brown salt-glazed exteriors with unglazed interiors, but some had Bristol or other glazes. One thick-walled fragment (S38) carried an impressed Bourne mark (see Section 3.3 below).

The 'vase-shaped' jars (S40, Fig. 12) were found only in Area C. Although only the six listed here came from the excavated area, many more were found in the Phase 3 fill to the west of the area by bottle hunters, who left about two dozen damaged examples behind, presumably having removed other complete specimens. The majority were grey-bodied with dark brown salt-glazed exteriors and unglazed interiors, but two were orange-bodied. Their original contents are unknown as no other jars of this type have previously been reported (pers. comm. K. Rusden, an experienced collector).

Two beaker-shaped jars (S41, Fig. 12) with an attachment groove just below the rim were recovered. They were very hard-fired with an even brown salt glaze inside and out. It is not known what they would have contained.

Apart from some unclassifiable jar fragments (Table 4), the remaining jars comprised four small thumbsized pots (S42, Fig. 12), also with attachment grooves below the rim. They had brown salt glazes, with the exterior only partly glazed. They would have made suitable sized containers for ointment or paste.

Seven storage jar lids were recovered (as S43, Fig. 12), some clear glazed over an off white body, others brown and salt-glazed. S44 (Fig. 12) was a brown salt-glazed perforated lid from a water filter.

Fragments of two jugs were recovered. One (S45, Fig. 12) was a finely made neck and rim with an off-white body and brown salt glaze similar to that of a London made hunting jug or Doulton harvestware jug (Oswald, Hildyard and Hughes 1982: 71, 73. etc.: K. Rusden, pers. comm.). The complete jug would have had sprigged decoration on the body showing hunting or other scenes. The other was a brown salt-glazed handle fragment (not illustrated) from Area E.

The remaining items consisted of a perforated bowl-shaped vessel which was probably a colander (S46, Fig. 12), a fragment of the base of a pie dish (not illustrated), and twelve fragments which were too small to indicate vessel type (not illustrated).

3.3 Makers' and Other Marks

Of the 209 vessels identified as ginger beer bottles, 32 carried maker's or other impressed marks (Table 5, and below). All except one of these were from Area C. Two gin bottles, an ink bottle and four jars also carried marks.

Thomas Field of Sydney (S1-4, Fig. 11) manufactured ginger beer bottles from George St, Sydney, between 1839 and 1873 (see Jones 1979: 37). His earliest mark (T FIELD/POTTER/SYDNEY) was set in three straight lines (S4) and was used c.1839-50. Six of these were recovered. Two other Field marks can be dated to this period as they are stamped with the dates January 1849 (S2) and February 1850 (S3). From 1850 to 1871 the mark was set in three slightly curved lines and 6 of these were recovered. Two others, set in one curved and two straight lines (as S2-S3 but lacking a date), have also been included in the later date bracket. After 1873 Field's sons took over the business, using the mark T FIELD & SONS/POTTERS/SYDNEY (1873-87), but none of these were found. One of the Field bottles was also marked with the name of the brewer, ARTHUR (S1 and see below).

David Arthur of Auckland (S1, Fig. 11) was a ginger beer brewer operating from 1847 to 1858 or later (Robert Brassey, DOC archaeologist, pers. comm. 1990; information from jury lists and electoral rolls). His mark appeared on the shoulders of two ginger beer bottles, one of which also carried the maker's name, Thomas Field (S1).

Enoch Fowler (Fig. 11) owned a series of potteries in and around Sydney between 1837 and 1873. His marks E. FOWLER/POTTERS/SYDNEY (as S5) or E. FOWLER/SYDNEY with a ribbon symbol (as S6) date to the period 1847-63 (Jones 1979:37). Two of the former and one of the latter were present on ginger beer bottles.

TABLE 5

Stoneware Ginger Beer Bottles: Makers' or Brewers' Marks

	T. Fields 1839-50	T. Fields 1850-71	E. Fowler 1847-63	J. Bourse 1833-50	J. Bourne & Son 1850-61	J. Munro 1840-90	Moreton 1818-34	A.D.	Arthur 1847-58(+7)	W. Bacon 1845-58	Hill	Unmarked	TOTALS
AREA A, fill	1	-	-	-	-	-	-	-	-	-	-	17	18
AREA C													
Phase 1													
Layer 10 (sealed)	-	-	-	-	-	-	-	-	-	-	-	6	6
Layer 9	-	-	-	-	-	1	1	-	1	1	-	12	16
Phase 2													
Layer 8 & walls	4	3	2	-	-	-	-	-	-	2	-	66	77
Recess in cobbled floor	-	1*	1	-	-	-	-	-	1*	-	-	-	2
Phase 3 fill (1)	2	4	-	4	2	-	-	1	-	-	1	49	63
AREA E													
Cultural layer	-	-	-	-	-	-	-	-	-	-	-	2	2
AREA F													
Fill	-	-	-	-	-	-	-	-	-	-	-	24	24
TOTALS	7	8	3	4	2	1	1	1	2	3	1	176	= 208

* Same bottle.

(1) Sampled during machine excavation.

Joseph Bourne of Denby, Derbyshire (S7, S26, Fig. 11, and S38, Fig. 12), was a member of a family firm established c.1809. J. Bourne marks with 'Codnor Park' (as S7) date from 1833-1850, and the addition '& SON' (as S26) from 1850-1861 1964: 89-90). Four examples of the earlier mark and two of the later appeared on ginger beer bottles, one of the later marks on an ink bottle (S26), and another mark of unknown date on a crock fragment (S38).

All the Bourne marked products had a distinctive fabric, very smooth in section, vitrified and often displaying slight colour banding, varying from light grey to yellowish buff or mid grey. This fabric was noted in 18 other vessels (9 blacking jars, 3 large (60 mm) ink bottles, 3 ginger beer bottles, a ?beer bottle, a penny ink bottle, and an ointment or paste jar), which can probably also be attributed to Bourne. Some of the vessels which could not be in section may also have been Bourne products.

J. Munro (S8, Fig. 11) of Australia 'was only ever in business in a way producing ginger beer bottles' (Jones 1979: 37). His mark appeared on one ginger beer bottle and dates from the 1840s to 1890.

William Bacon of Chancery St, Auckland (S9, Fig. 11), operated a ginger beer brewing business between 1845 and 1858 (Vol. 1, Section 2.5). Two ginger beer bottles bearing his mark came from Layer 8 of Area C and one from Layer 9. All three were on the shoulders of the bottles.

Hill (S10, Fig. 11). Nothing is known so far about this on a ginger beer bottle, but as it is on the shoulder of bottle it may, like the Arthur and Bacon marks, indicate a brewer rather than a potter. Brewer's marks in this position seem quite common (e.g. Jones 1979: 11, no. 8), but potter's marks could also appear here (Jones 1979: 3, no. 6, Munro).

A.D. This mark appeared on a ginger beer bottle (S11, Fig. 11), but it is not known to whom it refers.

Moreton of Australia (S12, Fig. 11). Part of what was probably a Moreton mark appeared on a ginger beer bottle. Several were in operation in Australia between 1818 and 1834: A.J. Moreton (1825); Anson Moreton (1821-34); Henry Moreton (1821-28); and Ralph Moreton (Jones 1979: 38-9). These dates seem a little early even allowing for the common practice of bottle reuse (Vol. 1, Section 2.5).

...ES/...VEN (S20, Fig. 11). This mark was incised into the shoulders of two Bols type gin bottles. The complete inscription is not known.

Weston and West of London (S28, Fig. 12). The was presumably the manufacturer of the jar's contents, which can be identified as 'Table Salt' by comparison with complete examples observed elsewhere. Two jars carried the mark, but both were incomplete.

Doulton & Co., Lambeth, London (S36, Fig. 12). Doulton were in operation between c.1858 and 1956 (Godden 1964: 214). The firms mark appeared on a storage/preserving jar from Area E.

3.4 Discussion and Conclusions

A large assemblage of stoneware was recovered from the site, a major percentage of which were ginger beer bottles (Table 4). Thirty-two of these carried makers' marks, and of those which could be dated (Table 5) all except one were manufactured before The remaining assemblage comprised other bottles which may have contained beer; gin bottles; ink bottles; a variety of jars, including blacking and table salt jars and a previously unreported vase-shaped type; jugs; a large flagon; a pie dish; a colander; and a water filter.

The relative proportions of vessel groups (drink bottles, followed by jars, ink bottles and other categories) applied to every area (Table 3). However, Area C had a much higher percentage of drink bottles, the majority being ginger beer bottles (Table 4). By far the largest group of these bottles from any single context came from Layer 8, the fill deposited beneath the foundations of the Area C Phase 2 brick building around 1864. Nine (33%) of the bottles marked with makers' or brewers' marks also came from this layer, including two with William Bacon's mark (Table 5). The Phase 2 building directly overlay the timber building used as a store and brewery by William Bacon, and the high number of ginger beer bottles, including two carrying Bacon's name, a reasonable indication that the filling derived from Bacon's dumping ground, which was presumably within the property.

Another bottle carrying Bacon's name came from the underlying layer (9), a construction deposit associated with his building (Vol. 1, Section 6.2.1). No other bottles carrying Bacon's name were found on other areas of the site. The occupation layer associated with Bacon's use of the building (Layer 10 (sealed)) contained only 6 unmarked ginger beer bottles and a few other stoneware items (Table 4). Clearly most of the discarded stoneware was deposited further away from the building.

Of the features which contained material in deposition, only the Area E pit and the well and Rubbish Pit 2 in Area F contained stoneware, but the amounts were insignificant (Table 4).

3.5 Catalogue of Stoneware (Figs. 11-12)

- S1 Ginger beer bottle. Light orange-brown salt glaze; unglazed interior. T FIELD/POTTERS/SYDNEY impressed just above base and ARTHUR on shoulder. 1850-71. Area C recess in cobbled floor (C25.889).
- S2 Ginger beer bottle (base). Light grey body, mid brown salt glaze; unglazed interior. T FIELD/POTTERS/SYDNEY/JA. 1849 impressed just above base. Area C Layer 8 (C29.942).
- S3 Ginger beer bottle (complete). Light grey body, mid brown salt glaze; unglazed interior. T FIELD/POTTERS/SYDNEY/FEB 1850 impressed just above base. Area A fill (A1.254).
- S4 Ginger beer bottle (body and shoulder). Light grey body, mid brown to grey salt glaze; unglazed interior. T FIELD/POTTERS/SYDNEY impressed just above base. Area C Phase 3 fill (C4.530).
- S5 Ginger beer bottle (complete). Mid grey body, mid brown salt glaze; unglazed interior. E. FOWLER/POTTER/SYDNEY just above base. 1847-63. Area C recess in cobbled floor (C25.890).
- S6 Ginger beer bottle (top half, fragments). Light grey body, light brown salt glaze; unglazed interior. E. FOWLER/[ribbon symbol]/SYDNEY impressed just below shoulder. 1847-63. Area C Layer 8 (C47.1047, 1057, 1059, 1062).



FIG. 11. Stoneware. Scale 1:4, with marks at 1:2.

- S7 Ginger beer bottle (body and shoulder). Light brown body, light brown salt glaze; unglazed interior. VITREOUS STONE .../WARRANTED NOT TO ABSORB/J. BOURNE & SON/ PATENTEES / [DENBY] & CODNOR - PARK POTTERIES/NEAR DERBY impressed just above base. Area C Phase 3 fill (C1.498).
- S8 Ginger beer bottle (base fragment). Light grey body, mid brown salt glaze; unglazed interior. J. MUNRO impressed just above base. Area C Layer 9 (C24.871).
- S9 Ginger beer bottle (shoulder). Mid grey body, mid brown salt glaze; unglazed interior. W. BACON impressed on shoulder. Area C Layer 8 (C29.912).
- S10 Ginger beer bottle (shoulder and collar). Mid grey body, mid brown salt glaze; unglazed interior. HILL impressed on shoulder. Area C Phase 3 fill (C4.549).
- S11 Ginger beer bottle (complete). Light grey-brown body, unglazed. A.D. impressed a third of the way up from the base. Area C Phase 3 fill (C13.669).
- S12 Ginger beer bottle (base and body fragments). Light grey body, light grey salt glaze; unglazed interior. ...ETON... impressed. Probably 'Moreton'. 1818-34. Area C Layer 9 (C24.880).
- S13 Ginger beer bottle. Off white body, brown salt glaze; clear interior glaze. Area A fill (A1.271).
- S14 Stout bottle. Off white body, Bristol glaze. Area F fill (F7.3974).
- S15 Bottle. Off white body, mid brown salt glaze; light yellow-green interior glaze. Area C Phase 3 fill (C4.540).
- S16 Bottle. Off white body; light brown salt glaze; clear glazed interior. Area C Phase 3 fill (C4.540).
- S17 Stout bottle. Off white body, clear interior and exterior glaze. Area F fill (F7.3972).
- S18 Bottle. Off-white body, buff-light brown salt glaze; clear interior glaze. Area C Layer 10 (backyard) (C22.838).
- S19 Gin bottle. Bols type. Light grey body, light orange-brown salt glaze; unglazed interior. Finger impressions on base. Area C Posthole 3 (C30.979).
- S20 Gin bottle. Off white-buff body, light brown salt glaze; unglazed interior. ...ES/...VEN incised on shoulder. Area F fill (F7.4047; another mark on F6.3523).
- S21 Flagon. Mid grey body, mid-dark brown salt glaze; unglazed interior. Rouletted and impressed decoration. Area C Phase 3 fill (C10.668).
- S22 Large ink bottle, c.90 mm body diameter. Off white body, clear glaze. Area F fill (F6.3504).
- S23 Ink bottle. Off white body, clear glaze. Area C Phase 3 fill (C4.550).
- S24 Twopenny ink bottle. Off white body, mid brown salt glazed exterior; unglazed interior. Area F fill (F7.3978).
- S25 Penny ink bottle. Light brown-buff body, light brown salt glaze, unglazed interior. Area F fill (A1.302).
- S26 Large ink bottle, c.60 mm body diameter. Light brown-buff body, light brown salt glaze; unglazed interior. VITREOUS STONE BOTTLERS &.../WARRANTED NOT TO ABSORB. / J. BOURNE. / PATENTEE. / [D]ENBY & CODNOR-PARK POTTERIES/NEAR DERBY, impressed just above base. Area C Phase 3 fill (C4.525)
- S27 Blacking jar. Light brown-buff body, mid brown salt glaze; unglazed interior. Area C Phase 3 fill (C4.526).
- S28 Preserving jar. Mid grey body, clear exterior and interior glaze. WESTON & WEST/SUPERIOR/BRITISH TAB[LE SALT]/LONDO[N] impressed just above base. Area F fill (F6.3507; another mark on F6.3506).
- S29 Preserving jar. Off white body, Bristol glaze. Area F fill (F7.4000).



FIG. 12. Stoneware. Scale 1:4, with marks at 1:2.

- S30 Preserving jar. Mid grey body, mid brown salt glaze; light green interior glaze. Area F fill (F7.3998).
- S31 Preserving jar. Off white body, Bristol glaze. Area F fill (F7.3991).
- S32 Preserving jar. Off white body, clear salt glaze. Area C Phase 3 fill (C4.551).
- S33 Preserving jar. Off-white body, Bristol glaze. Area C Phase 3 fill (C4.552).
- S34 Preserving jar. Off white body, Bristol glaze. Area A fill (A1.311).
- S35 Preserving jar. Off white body, Bristol glaze. Rouletted decoration. Area A fill (A1.313).
- S36 Preserving jar. Off white body. clear glaze. [DOULT]ON & CO / [L]AMBETH/LONDON impressed just above base. Doulton Co. (1858-1956). Area E cultural layer (E1.2802).
- S37 Storage jar. Dark grey body, dark brown exterior glaze; light green interior glaze. Rouletted and impressed decoration. Area F fill and Rubbish Pit 2 (F7.4001, F44.4546).
- S38 Crock. Buff-light grey body, mid brown salt glaze; unglazed interior. Stamped WARRANTE[D NOT TO ABSORB]/BOU[RNE].../IMP.../VITREOUS STONE... on shoulder fragment. Area F fill (F7.4009).
- S39 Crock handle. Off white body, dark brown interior and exterior salt glaze. Area F fill (F7.4007)
- S40 'Vase-shaped' jar. Mid grey body, dark brown salt glaze; unglazed interior. Area C Phase 3 fill (C15.758).
- S41 Beaker-shaped jar. Mid grey body, mid brown exterior and interior salt glaze. Area C Layer 10 (sealed) (C64.1215, C49.1114).
- S42 Ointment/paste jar. Light brown body, mid brown salt glaze; unglazed interior. Area C Phase 3 fill (C4.553).
- S43 Lid of storage jar. Off white body, clear glaze. Area F fill (F7.4014).
- S44 Perforated lid of water filter. Off white-grey body, buff-pinkish brown salt glaze. Area F fill (F7.4016).
- S45 Jug neck. Off white body, mid brown salt glaze; clear interior glaze. Probably a hunting or Doulton harvestware jug. Area C Layer 9 (C24.866).
- S46 Colander (?). Dark grey body; dark brown interior and exterior glaze. Impressed or rouletted decoration. Area A fill (A1.301, 310).

4.0 CLAY PIPES

4.1 Introduction

The largest assemblage of clay pipes so far reported from a historic site in New Zealand was recovered from R11/1589. (Although an even larger assemblage has since been recovered from the Victoria Hotel site, R11/1530, and will be published by Robert in due course). It comprised 466 stem and 157 bowl (or stem/bowl) fragments. All of unglazed white clay, though a few had glazed mouthpieces (see below). 131 fragments identifiable maker's marks, and six distinct pipe styles were recognised (see Tables 6 and 7). The majority derived from Area C, and from the Phase 3 fill in particular. No significant differences between the various areas were observed in the relative proportions of marked, decorated and plain examples (see Table 6).

4.2 Makers' Marks (Table 8)

McDougall, Glasgow. Duncan McDougall's Glasgow manufactory began operation in 1846/7 as the Glasgow Pipe Manufactory and continued as D. McDougall & Co. (following a partnership agreement in 1871) until 1968 (Oswald 1975: 205; Walker and Walker 1969: 133; Walker 1983: 12). The firm described itself in an advertisement of the 1890s as 'the largest exporter in the world' out here since 43% (56 out of 131) of the attributable pipes are McDougalls.

P1-P6 (Fig. 13) show the range of McDougall marks on pipes recovered the site. All marks except one (P6) were on the stem. The unillustrated examples were all plain 'McDouglas/Glasgow' marks (often incomplete, but unidentifiable) as P1, except for one mark set in a relief frame as P4.

Two pipe styles used by McDougall could be identified: a Burns Cutty Pipe (P3) and a TD (P5) (see below for a discussion of these styles). P2 was probably also a TD pipe, since the number 1 which precedes the firm's name is almost certainly a mould number referring to a style of pipe, and No. 1 in the McDougall's 'Irish Price List' of c.1875 is a TD style (Walker 1983: 37; Sudbury 1980: 46).

The TD pipe (P5) carries a letter E on the spur on the right side, while another McDougall pipe (not illustrated) had an upside-down V in the same position. In some cases spur markings refer to the firm (see John Ford, below), but in these two examples it is not clear what the letters refer to.

Although McDougall continued in operation until 1968 none of the pipes recovered from R11/1589 are likely to have been produced after c.1900, since all give their place of origin as Glasgow, rather than Scotland. Under the requirements of the U.S. McKinley Tariff Act of 1891 imports had to be marked with their country of origin, and it is thought that all exported pipes (and other manufactured goods) would have conformed to this ruling within a few years, whatever their destination (Walker 1983: 3; 1964: 11). The same applies to other pipes in the assemblage, since there are no marked with the country of origin. An end date of c.1900 has therefore been assigned to all firms whose production continued into the 20th century (see Table 8).

TABLE 6**Total Number of Clay Pipe Fragments by Area**

	A		C		E		F	
	No.	%	No.	%	No.	%	No.	%
Pipes with makers' marks	25	15.24	80	22.40	1	10	25	27.47
Commissioned pipes	-		2	0.56	-		-	
Identified styles	9	5.48	30	8.40	-		4	4.39
Pipes with unidentified marks	9	5.48	11	3.08	-		5	5.49
Decorated pipes	14	8.53	20	5.6	-		3	3.29
Plain pipes	107	65.24	219	61.34	9	90	54	59.34
TOTALS*	164		357*		10		91	
								622

* Totals exclude 5 pipe styles which also carry maker's marks.

TABLE 7

Number of Clay Pipe Fragments by Type

	Identifiable maker's marks		Commissioned pipes		Pipe Styles						Unidentified marks		Decorated		Plain		TOTALS*
	S	B	Beyboldt & Touze	Harris (1859-90)	T.D.	Burns Cutty	Baltic Yachter	Riffe Drummer	The Tourist	Coo'ey	S	B	S	B	S	B	
AREA A, fill	16	9	-	-	6	1	1	-	-	2	4	5	8	6	86	21	164
AREA C																	
Phase 1																	
Layer 10 (sealed)	1	-	*	*	*	*	*	*	*	*	-	-	-	-	27	-	28
Layer 10 (b'yard)	4	-	-	-	-	-	-	-	-	-	-	1	-	7	-	13	
Layer 9	-	1	-	-	-	-	-	-	-	-	-	-	-	11	1	13	
PH 22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Phase 2																	
Layer 8 & walls	4	2	-	*	3	-	-	-	-	-	1	-	-	1	37	2	50
Phase 3 fill (1)	60	7	1	1	23	2	1	1	-	-	5	4	8	10	113	21	252
AREA E																	
Cultural layer	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	5
Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	5
AREA F, fill	22	2	-	-	2	-	1	-	-	-	2	2	2	1	36	17	87
RP 2	1	-	-	-	-	-	-	-	1	-	-	1	-	-	1	-	4
TOTALS*	109	22	1	1	34	3	3	1	1	2	12	13	18	19	321	68	622
	131		2		44						25		37		389		(S 466; B 157)

S = Stem, B = Bowl or bowl and stem.

(1) Sampled during machine excavation.

* Totals exclude 3 pipe styles which also carry makers' marks.

TABLE 8

Maker's Marks Identified on Clay Pipes

	Glasgow				Edinburgh		London				Bristol	Paris		France	TOTALS				
	D. McDoogall (1845-1900)**	Murray (1830-61)	Davidson (1861-1900)**	W. White (1805-1900)**	A. Coghall (1826-1900)**	W.M.C. Wood (1857-75)	T. White (1823-76)	C. Crep (1855-1900)**	T. Mille (1860-70)	Baline (1805-76)	J. Ford(?) (1810-65)	T. Taylor(?) (1836-88)	Ring & Son (1835-83)	Gambier (1780-1900)**			-nastios (?)	F.H.	Peter Dornit (1850-80+)
AREA A fill	8	-	1	3	1	1	2+2*	-	3*	1*	-	1*	1	1	-	-	-	25	25
AREA C																			
Phase 1																			
Layer 10 (sealed)	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	} 80
Layer 10 (b'yard)	-	-	-	-	1	-	2	1	-	-	-	-	-	-	-	-	-	4	
Layer 9	-	-	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	1	
Posthole 22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	
Phase 2																			
Layer 8 & walls	2	-	-	-	2	-	-	-	-	2*	-	-	-	-	-	-	-	6	
Phase 3 fill (1)	35	1	8+2*	1	-	2	8+1*	4	-	-	-	2	-	1	1	1	1	67	
AREA E																			
Cultural layer	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
AREA F fill																			
RP 2	9+1*	3	3	1	-	-	4	1	-	-	-	2	-	-	-	-	-	24	} 25
	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	
TOTAL	56	4	14	5	5	3	20	7	3	3	1	1	5	1	1	1	1	131	
	87 (65.4%)						(15.3%)		15 (11.5%)				(3.8%)		3 (2.3%)				

* = bowl marks

(1) Sampled during machine excavation

** These firms continued in operation into the 20th century, but the absence of marks identifying country of origin places the pipes within the 19th century (see below)

Murray/Davidson, Glasgow. William Murray's firm was founded in 1830 and in 1861-2 was taken over by Thomas Davidson, who may have been a former employee (Walker 1983: 12-13). The firm may have produced pipes solely for the export trade, at least during the Davidson period (Pfeiffer 1986: 79), and it ceased production in 1910 (Walker 1983: 12).

Four stems carrying the Murray mark, or part of it, were recovered, all of the type illustrated as P7 (Fig. 13).

There were 14 Davidson marks, 12 on stems, two on bowls. Six are illustrated as P8-P13 (Fig. 13). P8 has a letter L or number 1 preceding the firm's name and P11 a number 76 immediately after it. Both are presumably mould numbers indicating specific pipe styles.

The remaining stem marks are all plain 'Davidson/Glasgow' (some incomplete) as on P9. The other bowl has an identical mark to P13, but lacks the rouletting around the rim.

W. White, Glasgow. William White's firm is listed in directories between 1805 and 1955. In North America White and McDougall were the two major Glasgow firms supplying pipes in the 19th century (Walker 1983: 12) though here White is less well represented.

Only five stems bearing the White mark were recovered from the site. Two are illustrated as P14-P15 (Fig. 13). P14 may have carried a mould number ending in 1. The three remaining examples all carry a plain 'W. White/Glasgow' mark (some incomplete) as P15, without a relief frame.

Coghill, Glasgow. Alexander Coghill's Glasgow firm appears in the directories between 1826 and 1904. In North America, other Glasgow Coghills (probably related) were known to have exported pipes in the 19th century, but Alexander Coghill's pipes were the most common archaeologically (Walker 1983: 12).

Five stems with the Coghill mark were recovered, all identical to that illustrated as P16 (Fig. 16). One lacked an initial, but is assumed also to be an A. Coghill.

Wood, Glasgow. William C. Wood is listed in directories between 1857 and 1875 (Oswald 1975: 206). Three stems were recovered, only one (P17, Fig. 13) carrying the full mark. The other two lacked the initials, but as there are no other known Glasgow makers called Wood (Oswald 1975), they must have been made by the same firm.

T. White, Edinburgh. White's Edinburgh firm was in operation between 1823 and 1876 (Walker 1983: 20).

Twenty pipe fragments carrying Thomas White's mark (or part of it) on the stem were recovered. Four are illustrated as P18-P21 (Fig. 13), which includes the full range of marks except for one example whose mark was too faintly impressed to be drawn, but which appears to be T. WHITE (l.) and EDINBURGH (r.) (C4.1287).

One pipe style can be identified: a [Burns] Cutty Pipe (P18).

P21 carries an abbreviated form of mark which if complete would read T.W. & Co (1.) and EDIN^R(r.) (Walker 1983: 20 and pl. II, n and o).

The total of 20 includes two pipes marked 'Edinburgh' but lacking the maker's name. They have been attributed to Thomas White on statistical grounds since there is no evidence for any other Edinburgh firm in the assemblage. One is marked BURNS ... and must be a Burns Cutty Pipe as P18. Where enough of the legend survives, the remainder are all of the 'Tho White & Co/Edinburgh' type illustrated as P19.

Crop, London. Charles Crop and Sons appears from directories to have operated from several successive locations in the London area between 1856 and 1924 (Oswald 1975: 133).

Seven examples bearing Crop's mark on the stem were recovered, four of which are illustrated as P22-P25 (Fig. 13). All the names are set within frames of dots in relief; two of the stems are curved; and P25, with its lip and moulded flattened upper stem section, represents the most elaborate mouthpiece recovered from the site. It also carries a registration mark which can be dated 8 June 1861.

The three remaining examples are all of the type illustrated as P23.

Milo, London. Theophilus Milo operated Finch Lane in the City of London, between 1860 and 1870 (Oswald 1975: 142). Milo was also in business as a tobacconist in the Strand, and three bowls bearing his name and the location 'Strand' were recovered (P26-P27, Fig. 14; the third bowl had the same mark as P26).

Balme, London. Two bowls carrying a Balme mark were recovered, one marked London, the other Mile End (in London) (P28-29, Fig. 14). Several pipe manufacturers called Balme, all operating from Mile End (and probably all related) are listed by Oswald (1975: 132): Thomas 1805-45, Paul 1832-66, and George 1867-76, giving an overall date range of 1805-76.

?Ford, London. A spur carrying the mark 'I/F' set sideways (P30, Fig. 14) has been tentatively attributed to the firm of John Ford, London, which was known to use an identical mark (Walker 1983: 7-9 and Fig. 2). However, more than one London firm called John Ford existed, and at least two were known to use this mark. The best operated in Stepney from 1810 to 1909 under the successive names of John Ford, Jesse & Thomas Ford, Ford & Company, and Thomas Ford. It was listed as an exporter in 1856-1877 and 1880-1909, although it was known to be supplying the Hudson's Bay Company as early as 1831. A lesser branch in Pentonville, also called John Ford, operated between 1826 and 1865 and was known to be exporting pipes between 1857 and 1865.

Taylor, London. A pipe stem marked 'T.J. Ta...' of '[L]ondon' (P31, Fig. 14) can probably be attributed to one of two Thomas Taylors listed by Oswald (1975: 147), since no other names with the initial T and surname beginning 'Ta...' are listed under London. Oswald lists a Thomas Taylor of Shoreditch (1836-75) and another in Mile End Road (1877-88), giving an overall date range of 1836-88.

Ring & Son, Bristol. Ring and Son were the most important pipe-making manufactory in Bristol in the 19th century, specialising in the export market. They were the only Bristol firm known to have supplied pipes to North America in the 19th century (Walker 1983: 4-5).

Of the five stems attributed to Ring & Son, P32 (Fig. 14) is the only example which carries the full name. Three others carry most of the words 'Son' and 'Bristol' on the right of the stem, as P32, and can clearly be assigned to the same firm. The fifth is illustrated as P33 (Fig. 14), and retains only the final letters '...OL'. It has been modified, presumably after breakage, into a very short-stemmed pipe by grinding down the end of the stem and cutting grooves to form a lip. Since the O and L are almost certainly the last letters of 'Bristol', and appear on the right side of the stem, as on all the other examples, this has also been assigned to Ring & Son. No products of other Bristol pipemaking firms have been reported from New Zealand sites.

Gambier, Paris. The Gambier firm operated from Givet in France between 1780 and 1926. Although they never had a manufactory in Paris, this commonly appeared as the place of origin (Duco 1986). A single example was recovered (P34, Fig. 14), identical to one illustrated by Duco (1986: 106, Fig. 19), and this mark was in use by 1854. P34 can presumably also be dated pre c.1900 since the country of origin is not given (see above). Gambier did conform to the McKinley Act since some of their later pipes were stamped 'made in France' (see Duco 1986: 106, Fig. 20).

...ntaslos, Paris. A pipe stem marked '...ntaslos/Paris', with the initial letter probably a lower case 'n', is illustrated as P35 (Fig. 14). So far no reference to such a firm has been found in the available literature.

F.H., Paris. Another clearly marked stem fragment produced by a Paris with the initials F.H. is illustrated as P36 (Fig. 14). Again, no reference to such a firm has been found in the literature.

Peter Dorni, ?France. Peter was a pipemaker operating in northern France between 1850 and 1880 (Oswald 1975: 119). His name, with Peter on one side of the stem and Dorni on the other, was set within a relief decorated panel, as in the example illustrated here (P37, Fig. 14). However, his pipes were widely imitated in Scotland and Holland (see also Alexander 1983: 209-11 perhaps for some time after he ceased

production, and it is therefore not clear where this example originated. McDougall's 'Irish Price List' has a Peter Dorni as no. 139, and on the basis of Sudbury's chronology this style was probably introduced in the late 1860s (Sudbury 1980: 31-3, 46). Bearing in mind McDougall's dominance in the assemblage this example may well be one of that firm's products.

Commissioned pipes. Two pipes carrying a name on the bowl were probably commissioned from pipemaking manufactories by other businesses (P38-P39, Fig. 14). One (p38) bears the name Berghoff and Touze, the other Harris of Cavendish House, Auckland.

James Harris was a stationer, bookseller and tobacconist in business between 1859 and 1890 (Rusden 1982: 21-22). On the stem of this pipe (P39) on the right side is part of a relief frame which would normally carry the maker's town of origin and/or name, but which in this example is blank. This may be because firms which commissioned pipes may have preferred only their own names to appear.

Berghoff and Touze are not listed as pipemakers in the available literature, and since P38 has similar blurred blank frames, they may also have been a firm of tobacconists who commissioned pipes from abroad. However, Berghoff and Touze are not listed in any of the Auckland street directories available for the 19th Century.

4.3 Pipe Styles

Six pipe styles could be identified.

TD pipes. TD pipes have been manufactured for over 200 years and are still in production. They occur in a variety of sizes, shapes, colours and styles of marking, and were made in England, Ireland, Scotland, France, Holland, Germany, Japan and the U.S. The originator of the style is not known, but it may have been an 18th-century London pipemaker called Thomas Dormer (Alexander 1983: 197-8; Walker 1983: 36-9). They were the most popular pipe style in North America in the last century, but curiously have not been found in England (Walker 1983: 36-7).

McDougalls of Glasgow produced five TD styles according to the 'Irish Price List' (Sudbury 1980: 46). Since the list appears to run chronologically, style no. 1 (a plain TD) probably dates from the start of production in 1846 (Walker 1983: 36-7). Two McDougall TD pipes were recovered, one identified by the mould mark 1 (P2), the other by the letters TD on the bowl (P5). A complete pipe carrying a Glasgow mark but an illegible maker's name may also have been a McDougall product (P40, Fig. 14).

There were 31 other TD pipes, all identified from the letters TD on the bowl. Three are illustrated as P41-P43 (Fig. 14). The majority had impressed lettering (as P42), but four examples had lettering in relief (as P41). Four had the TD set in a circle, as P43.

Fourteen of the 33 TD pipes had relief lettering or numbering on the spur: L or E (P5); 9/H (P40); D (three examples); M (two); V (one); C/G (one); 6 (one); ?P/7 (one); A/A (one); W (one); and L/L (one). A fifteenth example had a relief letter M just above the spur. It is not clear what these marks signify.

Burns Cutty pipes. This was a popular short-stemmed style known to be made by at least five 19th century Glasgow makers as well as in Edinburgh. Aberdeen and London (John Ford of Stepney), and was one of the cheaper varieties available (Walker 1983: 10).

Three examples were present: a McDougall (P3), another possible example by Thomas White of Edinburgh (P18) and another unillustrated example marked Edinburgh and attributed to White for reasons stated above. McDougall's 'Irish Price List' lists a Burns Cutty as no. 13, which may place its introduction by McDougall in the 1850s (Sudbury 1980: 31-3, 46).

Baltic Yachter. This style was produced in a number of varieties by Glasgow makers (including White and McDougall) and perhaps others in the 19th century (Walker 1983: 17). A 'Baltic Yachting' style was listed as no. 43 in McDougall's 'Irish Price List', which might place its introduction by that firm in the mid 1860s (Sudbury 1980: 46).

Three stems marked 'Baltic/Yachter' were recovered, one of which is illustrated as P44 (Fig. 14). The other two were similar.

Rifle Drummer. One example of this type was recovered and is illustrated as P45 (Fig. 14). Various styles which included the word 'rifle' are known (Walker 1983: 16), though it is not clear what it signifies.

The Tourist. Again represented by only one example, consisting of a bowl marked 'The Tourist' in a circular frame, without decoration (P46, Fig. 15).

Coo'ey. Jack (1986: 29) lists 'Coo'ey' as one of the styles in the McDougalls 'Irish Price List' reflecting Australian interests, since the word has a long history of usage in the Australian English vocabulary (Dane and Morrison 1979: 51). Two were found at Port Arthur in contexts dated 1830-77 (Dane and Morrison 1979). Presumably the style was considered equally suited to the New Zealand market. As no. 119 in the price list, its introduction by McDougall probably dates to the late 1860s (Sudbury 1980: 1-33, 46), though it is not known how many other firms may have produced this style.

Two identical 'Coo'ey' pipes were found, one of which is illustrated as P47 (Fig. 15).

4.4 Unidentified Marks

Twenty-five fragments carried lettering or numbering which could not be attributed to a particular maker or style. Twelve are illustrated as P48-P59 (Fig. 15).

P48 carries a letter N on the left of the stem, perhaps the last letter of 'London' (although placenames were usually on the right of the stem), and on the right two illegible letters preceding 'RNS'. The first letter may be a K or B.

P49 carries a distinctive mark on the bowl: the initials A, M and S set in a bow. These could be a maker's initials, in which case Alexander Middleton of Stamford, Lincolnshire (1871-89), would be the most likely candidate, as the only maker listed by Oswald with the initials A.M. working from a place beginning with S (see Oswald 1975, esp. p. 182). The letters could equally refer to a firm which commissioned the pipe.

P50 carries the letters 'L-DER...' following asterisks and bow or clover leaf symbols. It is not known what these refer to.

P51 has the letters M and G in relief just above the spur on either side. These may be maker's initials, and if so Oswald (1975) lists four makers with the initials MG: Matilda Gallon, North Shields (1841), Mary Galbraith, Brighton (1841-5), Mary Gill, Wakefield (1822-53) and Malcolm Galbraith, Glasgow (1848-54) (Oswald 1975: 186, 195, 200 and 205). The Glasgow maker seems the most likely since the majority of pipes come from that town.

P52 carries the incomplete legend ...ERS, and may be a military style, since the relief decoration on top of the stem perhaps represents the foot and lower leg of a man, slightly forward in classic infantryman pose.

P53-P55 all carry mould numbers (30, 258 and 3 respectively), but without knowing the manufacturer it is impossible to know what style of pipe these refer to. P53 was made in Glasgow, since it retains the last two letters of the name on the right of the stem. If it was a McDougall pipe the number 30 would indicate a 'London Straw' (Sudbury 1980:46).

P56-P58 are decorated bowls with lettering set among the decoration: T (P56, incomplete); I D repeated twice (P57); and an ?I and S on the near side of the bowl, with a G on the side at the base (P58, incomplete).

P59 has the words 'Trade mark' set within a wreath.

The remaining 13 marked fragments consist of nine stems and four bowls. Six of the stems carry part or all of the word 'Glasgow', but no maker's name; the remaining three only retained single letters (D or G; D or G with K on the opposite side; and a possible C). The four bowls carried lettering on the spur: 1/?C; D/?; S; and ?C/?5 or S.

4.5 Decorated Stems

Four decorated stems have already been described under those attributed to particular makers or styles: the Peter Dorni stem (P37), the Rifle Drummer (P45), a Davidson (P11) and a Crop (P24). The decoration on the last two probably represents the beginning of a bowl decoration. P52 also had decoration on the stem, although it is impossible to make it out.

Eighteen other decorated stems were recovered, five of which are illustrated as P60-64 (Fig. 15). P60, with fine lines towards the bowl end of the stem, probably had a bowl with fluted decoration as P72 or P73 below. Three of the unillustrated examples had similar markings.

P61 carries a pattern of circles and squares winding diagonally around the stem. This seems to have been a fairly common stem pattern, appearing on five other unillustrated examples.

The decoration on P62 is unique this collection, while patterns of raised dots and lines, as on P63, appear in various on five other unillustrated examples.

P64 is more elaborately decorated, with leaf stems at the top and bottom of the stem, and a snake's tail (or crocodile or lizard?) winding down towards the mouthpiece end. The bowl illustrated as P65 would have had a similar tail (in this case a crocodile's) trailing down the stem.

4.6 Decorated Bowls

Three decorated bowls have already been referred to under 'unidentified marks', above. P56 has fluted decoration confined to the far side of the bowl and a central on the near side, with a letter T to the left. P57 has fluting below and swathes above the letters I D, repeated on both sides. P58 has what appear to be spears and tassels suspended an approximately diamond shaped frame around the letters ?I and S, and above a G set towards the bottom on the side. In addition, P6, P13, P23, P27 and P28 are decorated with simple rouletting around the rim.

Nineteen other bowls carry decoration, 12 of which are illustrated as P65-P76 (Figs. 15-16). The most elaborate is P65, with very detailed relief decoration consisting of a crocodile straddling the far side of the bowl and a snake winding up the near side. A bowl and stem with identical decoration was recovered from the Victoria Hotel site (R11/1530: R. Brassey, pers. comm.).

Two bowls had nautical themes: P66 with a ship on one side and an anchor on the other, and P67, incomplete, but with an anchor on one side and central leafstem. P66 seems to have been a common motif: a batch of c.900 of a very similar design were found on one Auckland site (Rusden 1982: 21).

P68 is incomplete, but carries a crown, and P69 carries the Isle of Man insignia of three joined legs, repeated both sides of the bowl.

P70 is decorated with triangular ribbed leaves, and is apparently identical to one found at Port Arthur, in contexts dated (Dane and Morrison 1979: P77063).

P71, decorated with flutes and scrolls, is also a type found at Port Arthur (Dane and Morrison 1979: and P77185 and P77013). P72 and P73 both carry simple fluted decoration, which seems to have been a fairly common 19th century form of decoration, while P74 has a less common fluted pattern set in two tiers.

P75 is decorated with an elongated leaf on the far side of the bowl, continuing along the underside of the stem. P76 also has a relief feature at the base and far side of the bowl, perhaps also part of a leaf.

The seven decorated bowls which have not been illustrated include two fluted examples similar to P72 and P73; four with simple rouletting on the rim; and one too incomplete to determine the decoration.

4.7 Mouthpieces

The stem fragments included 76 clay mouthpieces and two made from other materials. Of the clay mouthpieces, 59 were simple unformed types as P40, and the remainder were lipped, as P60. P25 had the most elaborate mouthpiece in the assemblage, with a moulded and flattened stem beyond the lip.

Six of the simple mouthpieces showed some modification, apparently by chewing, while P33 (not included in the total count of mouthpieces) had a new mouthpiece on a broken stem by grinding down the end and cutting grooves to form a lip.

Forty-two (55%) of the mouthpieces had been glazed, a common addition designed to prevent the smoker's lips from sticking to the clay. The majority (36 examples) had a yellow-brown glaze, known to be common on Glasgow products, while the remainder were green-glazed, a colour thought to be more characteristic of Ring & Son, Bristol, products (Walker 1983: 39). However, the glaze colours used varied and are not a reliable guide to manufacturing sources.

The two mouthpieces illustrated as P77 and P78 (Fig. 16) are not made of clay but have been included here for convenience. P77 was wooden with a screw attachment, while P78 was made of polished bone and had an internal screw thread.

4.8 Discussion

4.8.1 Dating

As highly breakable items, few of the clay pipes are likely to have been manufactured much before the initial use of the site in 1841. None, however, are likely to have been made after 1900, since the place of manufacture given was invariably the town and not the country. By c.1900 all firms exporting their goods would have had to comply with the requirements of the McKinley Tarriff Act 1891, and would have used the country of origin (see above).

The datable examples are listed in Table 8 and comprise: 45 whose makers were operation from the earliest use of the site in the 1840s and before (Murray, W. White, Coghill, T. White, Balme, Ford, Taylor, Ring & Son and Gambier); 56 which cannot have been produced before the 1840s (McDougall); 11 not produced until the 1850s (Wood, Crop, Dorni and Harris); and 17 manufactured in the 1860s or later (Davidson and Milo). None of the marked examples need have been made after the 1860s.

4.8.2 Sources of Pipe Imports

Of the 131 pipes attributed to particular makers (Table 8) 87 (66%) came from Glasgow. A further 7 unattributable fragments (see above) were also marked Glasgow, which was clearly the major source of supply.

Among the Glasgow firms McDougall was the main supplier (56 pipes), followed by Murray and its successor Davidson (18 pipes), William White (5), Coghill (5) and Wood (3). The predominance of Glasgow, and of the McDougall firm in particular, is also reflected in the 19th century pipe imports of Australia (Jack 1986) and North America (Walker 1983: 12). In America, however, pipes manufactured by W. White are as common as those of McDougall (Walker 1983: 12), presumably reflecting the White earlier foundation date. In New Zealand, where the vast majority of imports would date to post 1840, McDougall, founded in 1846 (see above), would have competed with White almost from the start and was clearly able to capture the market (see Table 9).

After Glasgow Edinburgh was the main source of supply, providing 20 (15%) of the attributable pipes in the assemblage. All the examples were from the firm of Thomas White.

The rest of the attributable pipes came from London (15, or 11.5%), with Charles Crop & Sons the main supplier; Bristol (5, all from the firm of Ring & Son); Paris (3); and a Peter pipe which could have been made in either France, Scotland or Holland (see above).

Table 9 compares the makers recorded in the Chancery St assemblage with those other sites in New Zealand whose clay pipe assemblages have been reported, and also from Port Arthur in Tasmania, which produced a large group of pipes. The Halfway House Hotel produced a small assemblage but is not included since only one attributable pipe was recovered (a Davidson: Bedford 1986). (Note: one of the Central Otago pipes, listed as WAT..., had been reidentified as a W. White by comparison with Prickett 1981a: 444).

Some of the assemblages were small, and there are too few as yet to achieve an accurate statistical breakdown of the pipe manufacturers exporting to New Zealand and their relative contributions. In general, the picture from the other sites is similar, with Glasgow firms, in particular McDougall and Murray/Davidson, dominating the assemblage. Paremata, an early military site near Wellington, is an exception with an assemblage dominated by Coghill. Site R11/1589 seems to have produced an unusually large number of pipes from Edinburgh (all made by Thomas White), and is the only assemblage to include pipes from Bristol. The Port Arthur assemblage is dominated by the more common Glasgow firms, but includes two Liverpool firms and Thomas White of Edinburgh. The same firms presumably supplied both countries, though differences due to Australia's earlier date of settlement might be expected to manifest themselves in some assemblages, as at Port Arthur, where products of the Murray firm predominated over those of its successor Davidson.

TABLE 9
Number of Pipes Carrying Maker's Marks
at Chancery Street and Other Sites

		Chancery St R11/1589	Fort Ligar, R11/1636 (1845-1900+) (1)	Brown's Mill, R11/1643 (1850s-70s) (2)	General Assembly, R11/1595 (1854-1918) (3)	Parmentia, Wellington (1846-52) (4)	Omata Stockade, Taranaki (1860-67+) (5)	Warra Redoubt, Taranaki (1865-68+) (6)	Fort Galatea, Bay of Plenty (1866-87+) (7)	Central Otago Mining Sites (1860s-1930) (8)	Port Arthur, Tasmania (1830-77) (9)
McDougall	G	56	2	.	1	.	29	20	11	.	36
Murray	G	4	.	.	.	1	3	.	2	.	24
Davidson	G	14	1	1	1	.	6	22	17	3	2
W. White	G	5	2	.	1	2	9	.	.	3	1
Coghill	G	5	1	.	.	24	.	.	.	.	5
Wood	G	3	.	.	.	.	.	.	.	.	.
T. White	E	20	.	.	.	3	4	.	.	.	1
Crop	Ln	7	.	.	.	.	2	.	.	.	.
Milo	Ln	3	1	.	.	.	1	.	.	.	.
Balme	Ln	3	.	1	.	.	7	.	.	.	.
? Ford	Ln	1	.	.	.	.	.	.	.	.	.
Taylor	Ln	1	.	.	.	.	.	.	.	.	.
Blake	Ln	.	.	.	.	.	.	.	.	1	.
Higgins	Ln	.	.	.	.	.	2	.	.	.	.
Joseph	Ln	.	.	.	.	.	1	.	.	.	.
Posener & Co.	Ln	.	.	1	.	.	.	.	.	.	.
Ring & Son	B	5	.	.	.	.	.	.	.	.	.
Miller	L	.	.	.	.	.	.	.	.	.	2
Jones	L	.	.	.	.	.	.	.	.	.	1
Gambier	P	1	.	.	.	.	.	.	.	1	.
Other French firms		2	.	.	.	.	.	.	.	.	.
Spamay	H	.	.	.	.	.	1	.	.	.	.
McI'hee	D	.	.	.	.	.	.	.	.	1	.
		130	7	3	3	30	65	32	30	9	72

B = Bristol; D = Dunedin; E = Edinburgh; G = Glasgow; H = Holland;
L = Liverpool; Ln = London; P = Paris.

(1) Brassey 1989; (2) Brassey 1990; (3) Smith & Goodwyn 1990; (4) Prickett 1981b; (5) Prickett 1981a;
(6) Prickett 1981a; (7) Spring-Rice 1983; (8) Ritchie 1986; Foster 1983; (9) Dane & Morrison 1979.

4.8.3 Pipe Styles

Of the named pipe styles, TD was by far the most popular at the Chancery St site (34 examples), followed by Burns Cutty Pipes (3), Baltic Yachter (3), Cooley (2), The Tourist (1) and a Rifle Drummer. TD and Baltic Yachter were also popular at Omata and Warea, which between them produced 19 of the former and 14 of the latter (Prickett 1981a), while Galatea produced 9 TDs and Paremata 6 (Spring-Rice 1983; Prickett 1981b). Three Burns Cutty Pipes, two TDs and a Baltic Yachter were found at Fort Ligar, together with a TW and a Boro, also thought to be style names (Brassey 1989: Appendix 3). Seven Ben Nevis Cutty pipes and a Rifle Volunteer were recovered from mining sites of the Cromwell district (Foster 1983), and two Ben Nevis Cutty from the Halfway House in the same region (Bedford 1986). Since these sites were late in date, the Ben Nevis Cutty style is perhaps a later one. A Cooley was recovered from Port Arthur (Dane and Morrison 1979), where it was thought to represent a style designed for the Australian market. Paremata also produced a 'squatter's budgeriee' and Omata and Warea 'Emu' and 'Kangaroo' styles, also examples of Australian themes (Prickett 1981b; 1981a).

Many of the decorated pipes have parallels on other sites (see above) and as more information emerges it will become possible to recognise the consistently popular types.

4.8.4 Clay Pipes from Primary Deposits

Apart from some plain stem fragments, the Area C sealed occupation layer associated with William Bacon's ginger beer brewery contained only one marked pipe -an Alexander Coghill (Tables 7 and 8). Rubbish Pit 2 in Area F contained a pipe marked Charles Crop and the specimen marked The Tourist, among other fragments (Tables 7 and 8). Of the other features (Rubbish Pits 1 and 3 and the well in Area F, and the pit in Area E), only latter contained a few plain fragments of pipe.

4.9 **Conclusion**

The Chancery St site produced the largest and most varied assemblage of clay pipes so far reported from a New Zealand site. 131 carried recognisable makers marks of 16 different firms. Glasgow firms, and in particular McDougall, predominated, but pipes from Edinburgh, London, Bristol and France were also present. Many examples were decorated, and several named pipe styles were identified, the most common being the TD style. When dating criteria could be applied, none of the pipes were manufactured after c.1900.

Although few other sizeable assemblages from New Zealand sites have so far been reported, it was possible to make a preliminary comparison between Chancery St and other sites, and with a large assemblage from Australia. The initial picture of the range of manufacturers and their relative contributions, and the most common styles and types of decoration, can be established with increasing reliability as more assemblages are published.

4.10 Catalogue of Clay Pipes (Figs. 13-16)

All pipes are drawn as viewed from the left side (i.e. with the bowl to the left and the mouthpiece to the right), with any detail appearing on the right side set below.

McDougall, Glasgow

- P1 Stem fragment. Incuse McDOUGALL (l.) and GLASGOW (r.) in serif lettering. Area F fill (F6.3335).
- P2 Stem fragment. Incuse 1 McDOUGALL (l.) and GLASGOW (r.) in serif lettering. Area C Phase 3 fill (C4.1264).
- P3 Stem fragment. Incuse [M]cDougall GLASGOW (l.) and BURNS CUTTY PIPE (r.) in sanserif lettering. Some evidence of toothmarks. Area C Phase 3 fill (C4.1253).
- P4 Stem fragment. Incuse McDOUGALL (l.) and blurred GLASGOW (r.) in sanserif lettering, in scrolled frames of relief dots. Stem pared down, with possible evidence of toothmarks. Area C Phase 3 fill (C4.1263).
- P5 Bowl, spur and stem fragment. Incuse MCDOU[G]A[LL] (l.) and GLASGOW in serif lettering; incuse T D on near side of bowl; E or possibly L in relief sideways on r. side of spur. Area C Phase 3 fill (C4.1242).
- P6 Bowl fragment. Incuse [Mc]DOUGALL [GLA]SGOW in circular frame on near side of bowl in serif lettering; rouletting around rim. Area F fill (F6.3353).

Murray, Glasgow

- P7 Stem fragment. Incuse MURRAY (l.) and GLASGOW (r.) in sanserif lettering. Area F fill (F6.3343).

Davidson, Glasgow

- P8 Stem fragment. Incuse L (or 1) DAVIDSON (l.) and GLASGOW (r.) in sanserif lettering. Area F fill (F7.3758).
- P9 Stem fragment (curved). Incuse DAVIDSON (l.) and GLASGOW (r.) in sanserif lettering. Area C Phase 3 fill (C4.1278).
- P10 Stem fragment. Incuse DAVIDSON (l.) and GLASGOW (r.) in sanserif lettering, in scrolled frames of relief dots. End pared down. Area C Phase 3 fill (C4.1280).
- P11 Stem fragment. Incuse DAVIDSON 76 (l.) and GLASGOW (r.) in sanserif lettering; both names framed by a blurred scroll of relief dots; relief decoration of leaves towards the bowl end. Area C Phase 3 fill (C4.1281).
- P12 Stem fragment. Incuse [DAV]IDSON GLASGOW (l.) in sanserif lettering in blurred relief frame. Area F fill and Rubbish Pit 2 (F6.3405/F44.4527).
- P13 Bowl. Incuse DAVIDSON GLASGOW in sanserif lettering in circular frame set around a quatrefoil on near side of bowl; rouletting around rim. Area C Phase 3 fill (C4.1240).

W. White, Glasgow

- P14 Stem fragment. Incuse W. WHITE (l.) and GLASGOW (r.) in sanserif lettering, in scrolled frames of relief dots; I or 1 on l. before scroll. Area A fill (A1.384).
- P15 fragment. Incuse W. WHITE (l.) and GLASGOW (r.) in sanserif lettering. Area C Phase 3 fill (C4.1289).

Coghill, Glasgow

- P16 Stem fragment (curved). Incuse A. COGHILL (l.) and GLASGOW (r.) in serif lettering. Area C Layer 8 (C47.1084).

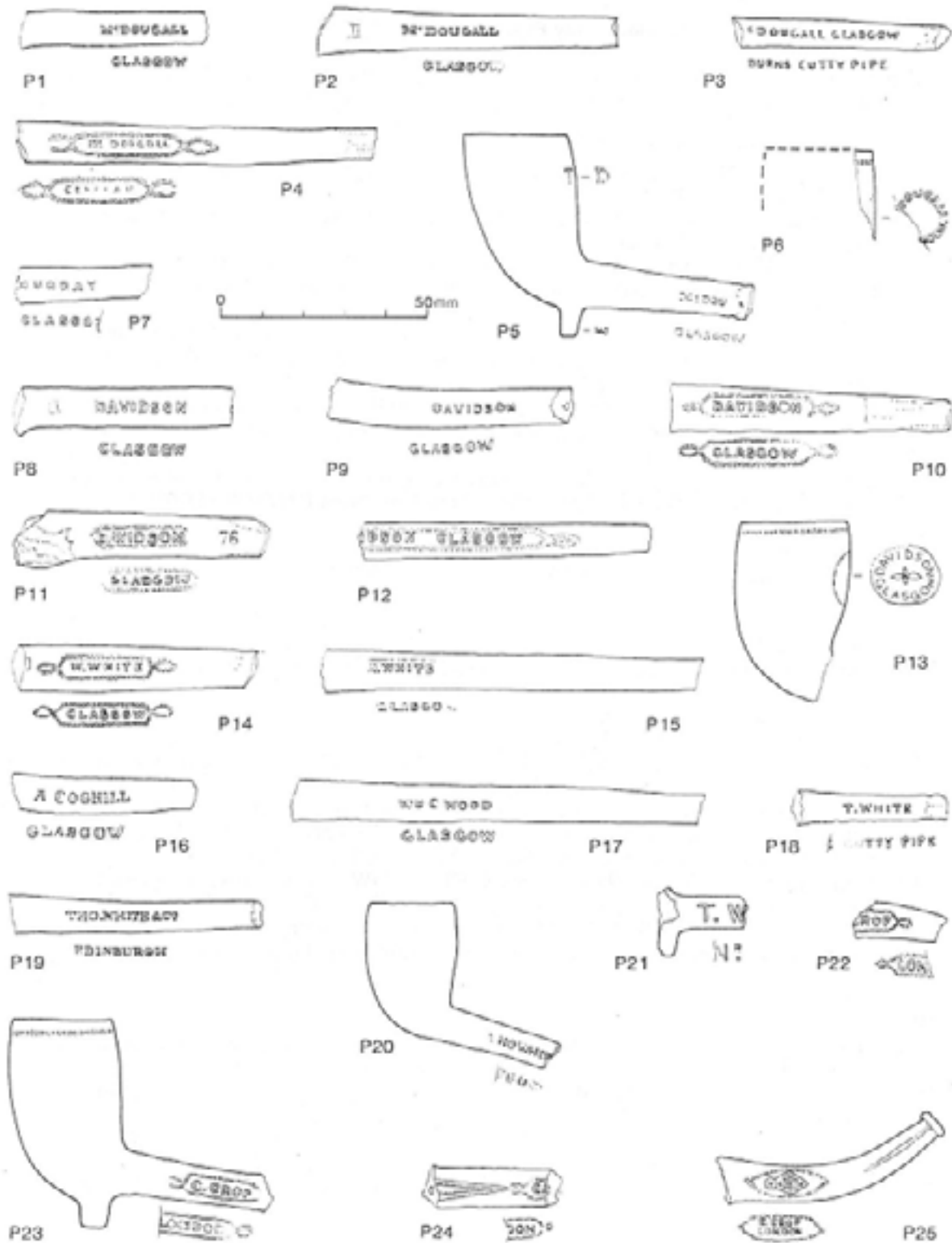


FIG. 13. Clay pipes. Scale 3:4.

Wood, Glasgow

- P17 Stem fragment. Incuse W^MC WOOD (1.) and GLASGOW (r.) in sanserif lettering. Area C Phase 3 fill (C4.1294).

T, White, Edinburgh

- P18 Stem fragment. Incuse T. WHITE (1.) and ...S CUTTY PIPE (r.) in sanserif lettering. Toothmarks near end obliterating the 'CU' of Area A fill (A1.398).
- P19 Stem fragment. Incuse THO. WHITE & C^O (1.) and (r.) in serif lettering. Area C Phase 3 fill (C13.691).
- P20 Bowl and stem fragment. Incuse THO WHIT[E] (l.) and faint [EDIN]BU[RGH] (r.) in sanserif lettering. Area A fill (A1.370).
- P21 Spur and stem fragment. Relief T. W... (l.) and ... N^R (r.) Area A fill (A1.409).

Crop, London

- P22 Stem fragment (curved). Incuse ...CROP (1.) and LON[DON] (r.) in sanserif in scrolled frames of relief dots. Area F fill (F6.3346).
- P23 Bowl stem fragment. Incuse C. CROP (l.) and LONDON (r.) in sanserif lettering on stem in relief frames; rouletting around run. Area C Phase 3 fill (C13.685).
- P24 Stem fragment. Incuse C.C[ROP] (1.) and [LON]DON (r.) in sanserif lettering in scrolled frames of relief dots; part of relief pattern towards bowl end. Area C Phase 3 fill (C4.1292).
- P25 Stem and mouthpiece fragment (curved). Incuse C. CROP/LONDON (r.) in sanserif lettering and registration mark dated 8 June 1861 (1.) in pointed oval frames of relief dots; lipped mouthpiece with stem flattened for c.20 mm beyond lip. Area C Phase 3 fill (C4.1290).

Milo, London

- P26 Bowl. Near side of bowl impressed MILO/STRAND in sanserif relief lettering; rouletting around rim. Area A fill (A1.373).
- P27 Bowl. Incuse *MILO*/STRAND in serif lettering in circle on near side of bowl; rouletting around rim. Area A fill (A1.369).

Balme, London

- P28 Bowl and spur fragment. Incuse BALME/MILE END/* in serif lettering framed by a shield on near side of bowl; relief B sideways on r. side of spur and relief ?Q upside down on l. side of spur. Area A fill (A1.379).
- P29 Bowl fragment. Incuse BALME LONDON in sanserif lettering in circular frame and surrounding a shield, on near side of bowl. Area C Phase 2 walls (C35.997).

?Ford, London

- P30 Spur and stem fragment. Relief I sideways on l. side of spur and F sideways on r. side. Area C Layer 9 (C24.884).

?Taylor, London

- P31 Bowl and stem fragment. Incuse 77 T.J. TA ... (1.) and [L]ONDON (r.) in sanserif lettering on stem; relief pattern on near and far sides of bowl. Area A fill (A1.372).

Ring & Son, Bristol

- P32 Stem fragment. Incuse RING. & SON. BRIST[OL] on r. side in sanserif lettering. Area F fill (F6.3344).
- P33 Part of bowl and stem. Incuse in serif lettering; new mouthpiece formed after breakage by top and bottom to form a lip. Area F fill Gambier, Paris

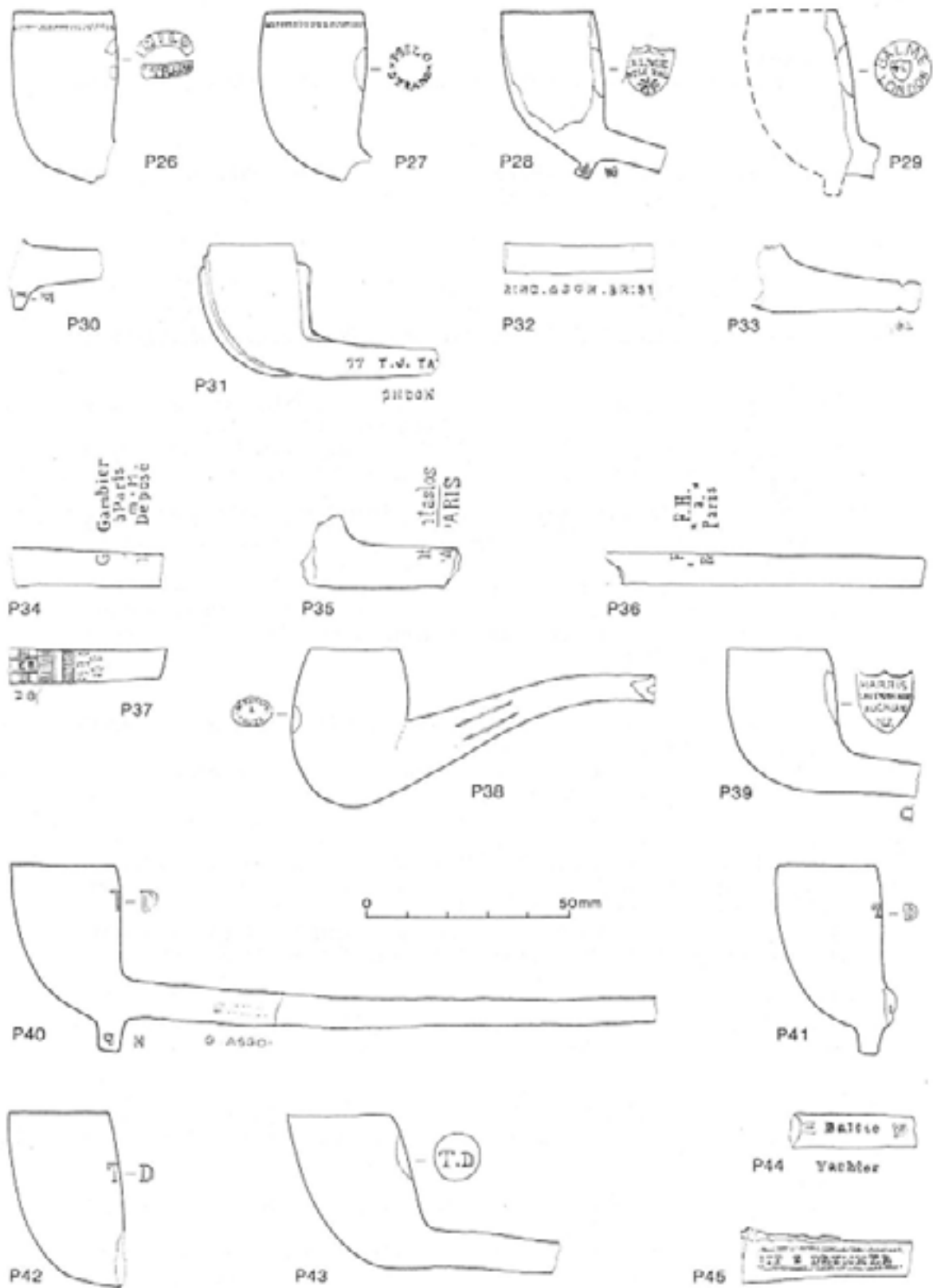


FIG. 14. Clay pipes. Scale 3:4.

Gambier, Paris

P34 Stem fragment. Incuse 'Gambier/a Paris/m.M./Depose', sideways on stem. Area A fill (A1.394).

?ntaslos, Paris

P35 Bowl and stem fragment. Incuse '...ntaslos/PARIS' sideways on stem in serif lettering. Area C Phase 3 fill (C4.1250).

F.H., Paris

P36 Stem fragment. Incuse 'F.H./* a */Paris' sideways on stem in serif lettering. Area C Phase 3 fill (C13.714)

Peter Dorni, ?France

P37 Stem fragment. Relief [PET]ER (l.) and DO[RNI] (r.) in rectangular surrounded by linear decoration. Area C Phase 3 fill (C13.714).

Berghoff & Touze

P38 Bowl and stem. Incuse .BERGHOFF./ & TOUZE in sanserif lettering set in circular frame on far side of bowl; oblong frames on l. and r. side of stem, but no legend visible. Toothmarks on stem. Area C Phase 3 fill (C4.1249).

Harris, Auckland

P39 Bowl and stem fragment. Incuse HARRIS/CAVENDISH HOUSE/AUCKLAND/N.Z. in sanserif lettering framed by a shield on near side of bowl; part of oblong frame in relief on r. side of stem. Area C Phase 3 fill (C4.1237).

TD

P40 Complete pipe, broken in two. Very faint incuse G[L]ASGO[W] (r.) and illegible mark (l.) on stem; faint incuse T D on near side of bowl; relief 9 on l. side of spur and H on r. Area C Phase 3 fill (C4.1305).

P41 Bowl and spur. Incuse T D in serif lettering on near side of bowl. Area F fill (F6.3352).

P42 Bowl. Incuse T D in serif lettering on near side of bowl. Area C Phase 2 walls (C35.994).

P43 Bowl and stem fragment. Incuse T.D in serif lettering in circular frame on near side of bowl. Area C Phase 3 fill (C4.1228).

Baltic Yachter

P44 Stem fragment. Incuse 'Baltic' (l.) and 'Yachter' (r.), each with three-pronged symbol in relief at both ends of the inscription. Area F fill (F6.3348).

Rifle Drummer

P45 Stem fragment. Relief RIFLE DRUMMER in serif lettering (l.) in frame of relief dots; incomplete relief decoration on top of stem. Area C Phase 3 fill (C1.490).

The Tourist

P46 Bowl and spur. Incuse THE TOURIST in sanserif lettering in circular frame, around symbol of two triangles either side of central diamond, on near side of bowl. Area F Rubbish Pit 2 (F44.4530).

Coo'ey

P47 Bowl and stem fragment. Incuse COO'EY in circular frame on near side of bowl; sanserif lettering except for the 'C'. Area A fill (A1.367).

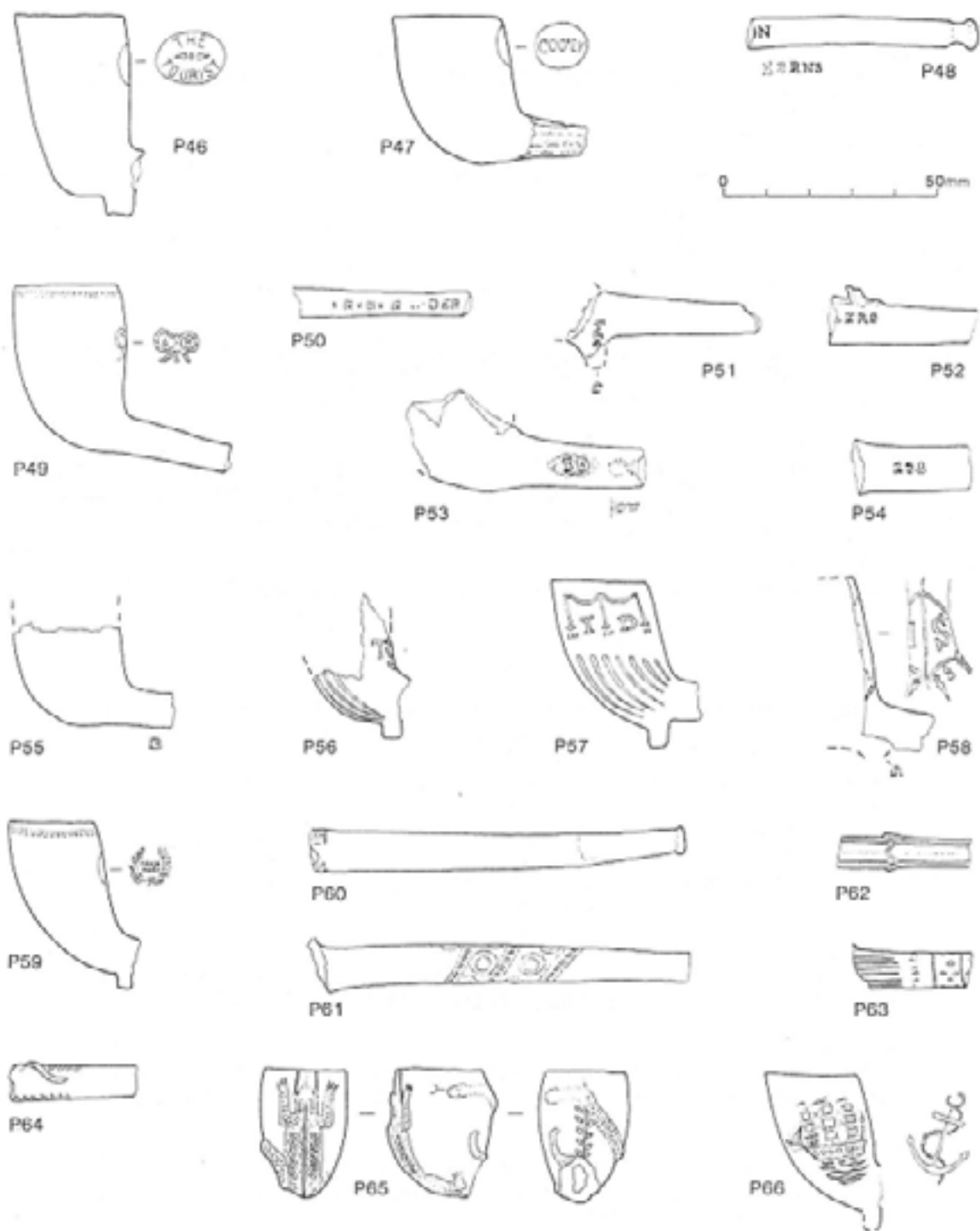


FIG. 15. Clay pipes. Scale 3:4.

Unidentified marks

- P48 Stem fragment with mouthpiece. Incuse ...ON (l.) and ...RNS (r.) in serif lettering; lipped mouthpiece. Area C Phase 3 fill (C4.1251).
- P49 Bowl and stem fragment. Incuse A M set within loops of a bow, with an S below, in sanserif lettering on near side of bowl; rouletting around rim. Area C Phase 3 fill (C13.680).
- P50 Stem fragment. Incuse L-DER... on l. in sanserif lettering preceded by clover leaves (or bows) and asterisks. Area C Phase 3 fill (C13.696).
- P51 Stem and spur fragment. Relief M (l.) and G (r.) just above spur; part of a letter or number (?3) on l. side of spur. Area C Layer 10 (backyard) (C22.847).
- P52 Stem fragment. Incuse ...ERS (l.) in sanserif lettering; incomplete relief decoration on top of stem, perhaps representing a man's foot and lower leg. Area F fill (F6.3347).
- P53 Stem and bowl fragment. Incuse 30 (l.) and [GLASG]OW (r.) in ?serif lettering in frames of relief dots on stem; also part of a scrolled frame of relief dots beside the number 30. Area F Rubbish Pit 2 (F44.4529).
- P54 Stem fragment. Incuse 258 (l.) Area C Layer 4 (C8.647).
- P55 Bowl and stem fragment. Relief 3 (r.) on stem. Area C Phase 3 fill (C13.686).
- P56 Bowl and spur fragment. Relief T at near side of bowl, l. of a central leaf stem; fluted decoration on far side of bowl. Area A fill (A1.383).
- P57 Bowl and spur. Relief I D (r. and l.) with fluting and swathe decoration. Area C Layer 8 (C46.1031).
- P58 Bowl fragment. Relief ?I and S on near side of bowl in frame with ?spear and tassel motif. Relief G sideways just above spur (r.). Area A fill (A1.376).
- P59 Bowl and spur. Incuse TRADE/MARK in sanserif lettering set in wreath on near side of bowl. Area C Phase 3 fill (C4.1243).

Decorated stems

- P60 Stem with mouthpiece. Linear relief decoration towards bowl end; lipped mouthpiece; yellow-brown glaze covering first 25 mm of stem. Area C Phase 3 fill (C8.640).
- P61 Stem fragment. Pattern of circles and small squares in diagonal rows around stem; squares and circle surrounds impressed, leaving circles in relief. Area A fill (A1.401).
- P62 Stem fragment. Relief decoration of long leaves with central rib extending up the stem towards the bowl; grooved lines extending from between the leaves. Area A fill (A1.402).
- P63 Stem fragment. Relief pattern of dots and lines. Area A fill (A1.406).
- P64 Stem fragment. Relief decoration of leaf stems at top and bottom of the stem, with a creature's tail (?snake) extending along the top. Area C Phase 3 fill (C13.703).

Decorated bowls

- P65 Bowl. Relief decoration of snake on near side of bowl and crocodile on far side; central leaf stem on near side. Area A fill (A1.374).
- P66 Bowl and spur fragment. Relief decoration of sailing ship (l.) and anchor (r.). Area A fill (A1.371).
- P67 Bowl fragment. Relief decoration of anchor (l.) and leaf stem on far side of bowl. Area F fill (F6.3354).
- P68 Bowl fragment. Relief decoration of crown (r.). Area C Phase 3 fill (C4.1247).
- P69 Bowl and stem fragment. Relief decoration showing the Isle of Man insignia (three bent legs joined at the top) on l. and r. of bowl. Area C Phase 3 fill (C13.677).
- P70 Bowl and spur. Relief decoration of triangular ribbed leaves. Area C Phase 3 fill (C4.1245).

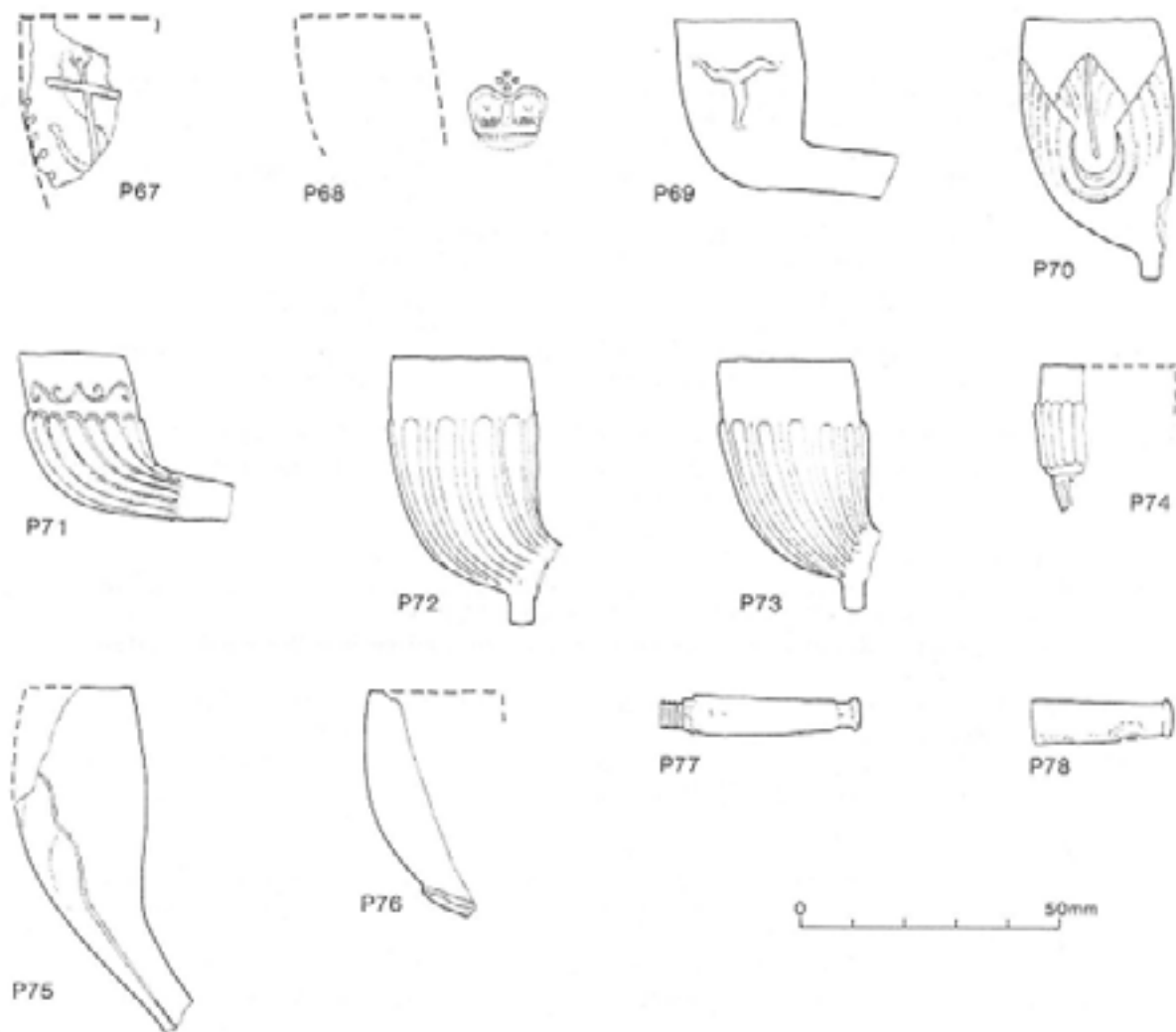


FIG. 16. Clay pipes. Scale 3:4.

- P71 Bowl and stem fragment. Relief decoration of flutes and scrolls. Area C Phase 3 fill (C4.1246).
 P72 Bowl and spur. Fluted relief decoration. Area C Phase 3 fill (C4.1239).
 P73 Bowl and spur. Fluted relief decoration. Area C Layer 10 (backyard) (C37.1000).
 P74 Bowl fragment. Two-tier fluted decoration in relief. Area C Phase 3 fill (C4.1248).
 P75 Bowl and stem fragment. Relief decoration of leaf on far side of bowl and underside of stem. Area C Phase 3 fill (C13.683).
 P76 Bowl fragment. Relief ?leaf feature at base of bowl. Area C Phase 3 fill (C4.1235).

Wood and bone mouthpieces

- P77 Wooden mouthpiece with screw attachment; cut marks near screw. Area A fill (A1.420).
 P78 Polished bone mouthpiece with internal screw thread and lip. Area C Phase 3 fill (C4.1304).

5.0 GLASSWARE

5.1 Introduction

A large number of glass items were recovered from the site, predominantly bottle glass, but also table glass, beads, and other items. They were generally in a fragmentary condition, except for those from Layer 5 of the Phase 3 fill in Area C, which contained a large proportion of complete or near complete bottles.

Only a few vessels carried maker's or other marks providing information on source or date. Occasionally patent bottle types whose dates of introduction are provided further dating evidence, and in a general way techniques of manufacture can provide dating information since various improvements were introduced in the course of the 19th century.

5.2 Changes in Production Techniques in the 19th Century

Most 19th century bottles were blown into a mould rather than free-blown. In the late 18th century bottle makers had begun to use a one-piece dip mould (Lorrain 1968: 37-38), and this was soon followed by the invention of the 3-piece mould early in the 19th century. The first 3-piece mould was invented in 1802, but their use did not become widespread until after 1821, when Henry Ricketts of Bristol patented his version, a 3-piece mould with the company name embossed on the outer ring of the base (Dumbrell 1983: 22, 41, 115). The 2-piece mould began to replace the 3-piece from c.1840-50 (Lorrain 1968: 39-40). Attempts to introduce automatic blowing machines were made as early as the 1880s, but a fully automatic system with glass taken into moulds direct from the furnace did not arrive until 1903 (Michael Owens, U.S.A.). Automatic bottle-making began to replace hand blown from c.1905 (Miller and Sullivan 1984: 83-5).

Freeblown bottles can generally be identified from their irregular shape and absence of mould seams. However, absence of marks is not in itself an indication of free-blowing as some fail to show, while makers later in the century occasionally turned their bottles in the mould to obliterate the seams (Dumbrell 1983: 32; Roycroft and Roycroft 1976: 43).

The one-piece dip mould did not include the shoulder or neck, which were hand finished, leaving a horizontal mark at the shoulder (as G1, Fig. 17, below). The 3 and 2-piece moulds included the shoulder and neck, but not the lip and rim, which were hand applied to the bottle top as a separate gather of glass and then moulded to the required shape. Three-piece mould marks are shown in G4 and G7-G9 (Fig. 17 below), and 2-piece in G79 (Fig. 20). Hand-applied lips are easily identified by the glass hanging down the neck, the twist or stretch marks on the neck caused by manipulating the lip, and the absence of mould marks over the lip (e.g. G1-3, Fig. 17) (Tasker 1984: 3). Initially the lip was formed freehand, and appeared very irregular (see G1), but by c.1850 the lipping tool was introduced, giving a regular finish in a variety of shapes (G2, G5, G7, etc) (Lorrain 1968: 40). Lips were not moulded integrally until this century (Dumbrell 1983: Lorrain 1968: 38).

Another diagnostic feature is the treatment of bottle bases. As long as lips and rims were applied and finished separately, a method of holding the bottle during the operation was required. Initially this was achieved by attaching a pontil (rod) to the base of the bottle. These might be glass-coated, and on removal would leave a jagged scar (or 'snap pontil' mark) (e.g. G6); or shaped to the base to avoid distortion and coated with sand to prevent sticking, on removal leaving a 'pebbled' area in the centre and sometimes glass chips around the rim; or the glass-blowpipe itself might be used, leaving a ring-shaped mark of extra glass the same diameter as the neck (very common on French bottles); or a bare iron pontil which would not stick and would usually leave a black or red scaly deposit. (Jones 1971: 68-72).

On many bottle bases a deep kick-up was formed by a variety of pointed or conical tools either before (Jones 1971: 62-68) or after (Dumbrell 1983: 16) attachment of the pontil. On some bottles, especially black bottles manufactured in the 1850s and 1860s, pontil marks were smoothed and the base refired ('refired pontils'), so that it is not always possible to determine the type of pontil used (Roycroft and Roycroft 1976: 6). The difference between tool-formed bases (as G1-G3) and moulded bases with their central pimple and often embossed lettering (as G4, G7-G21) is clear. Pontil marks do occur on early moulded bases. The Ricketts patent, with its embossed outer base ring, allowed a pontil to be applied to the centre without damaging the lettering (Jones 1971: 66-7), and some Continental bottles with plain moulded bases occasionally show a pontil scar (e.g. G36, and see Dumbrell 1983: 131 Fig. F).

The use of the pontil gradually died out from c.1840/1850 onwards when cradling devices such as the sabot or 'snap case', which held the body of the bottle during the finishing process, were developed, and was rare after c.1870 (Jones 1971: 72; Dumbrell 1983: 131). The new devices allowed an undisturbed moulded base, the centre of which could be used to carry embossed letters or numbers (Jones 1971: 72).

The use of a new technique can therefore provide a *terminus post quem* (or earliest possible date) for the manufacture of a particular bottle, but as in most 19th century industries, old techniques would have continued side by side with new for many years. Early dates cannot be assumed for individual bottles on the basis of superseded techniques, but general trends within a large assemblage can give an overall indication of date.

5.3 The Glasswares

A large number of small undiagnostic glass fragments were excluded from the analysis. Over 700 complete or fragmentary bottles and other glass objects could be identified (Table 10). Minimum numbers were calculated using form, colour and size as criteria. The majority came from Areas F and C.

As far as possible bottles have been categorised by content. Sufficient labels have survived elsewhere to give a good indication of the range of contents, but types of bottle, in particular the black 'beer' bottles (below), were basic utilitarian containers that could have been supplied for a number of different purposes. They were also frequently reused. As late as 1870 New Zealand brewers were still dependent on the supply of imported bottles (Tasker 1989: 14).

We are indebted to Keith Rusden, an experienced collector, for identification of some of the less familiar forms.

TABLE 10

Minimum Numbers of Glass Objects

	Beer bottles	Case gin/ Schnapps bottles	Other alcohol bottles	Soft drink bottles	Pickles, salad oil, vinegar & sauce bottles	Medicine/chemist bottles	Perfume bottles	Ink bottles	Stoppers	Glasses	Other	TOTALS
AREA A fill	45	23	23	2	27	13	1	1	5	16	9	165
AREA C												
Phase 1												
Layer 10 (sealed)	2	1	-	1	3	4	-	-	-	1	1	12
Layer 10 (b-yard)	1	1	-	-	-	-	-	-	-	3	1	6
Layer 9	1	1	-	-	-	1	-	-	-	2	1	6
PH 22	-	-	-	-	1	-	-	-	-	-	-	1
Phase 2												
Layer 8 & walls	7	8	7	2	4	5	1	-	2	6	2	44
Phase 3 fill (1)												
	22	15	26	11	29	22	6	1	26	16	13	187
AREA E												
Cultural layer	1	4	-	1	3	-	-	-	-	1	-	10
PH	1	1	-	-	3	2	-	-	-	1	-	8
AREA F												
FH	55	30	24	10	34	27	3	2	4	14	6	209
Well	2	1	2	-	-	1	-	-	1	-	-	7
RP 1	13	3	6	3	5	11	-	1	1	2	4	49
RP 2	2	1	3	-	1	1	-	-	-	-	1	9
RP 3	1	-	-	-	-	-	-	-	-	-	1	2
TOTALS	153	88	91	30	110	87	11	5	39	62	39	715

(1) Sampled during machine excavation.

5.3.1 'Beer' Bottles (G1-G21, Figs. 17-18)

These are black or greenish-black cylindrical bottles and make up the largest group from the site (Table 10). When labels as at Omata Stockade (Prickett 1981a: 390) and elsewhere, they usually identify the contents as beer (ale, porter, and stout can all be included in this category). Sometimes they held whisky, and occasionally ginger wine (Tasker 1989: 38-9). The majority were in the large size illustrated as G1-G3 and G7-G9, holding on average 800 ml (1.4 pints), but they also came in smaller sizes, holding 400 ml (0.7 pints) (G4). The capacities, allowing for corkage, were very consistent.

All had hand-applied lips: a few finished freehand (as G1), the majority with a lipping tool (as G2-3, G5). There were no crown seal closures, which confirms the early date of the assemblage (crown seals were patented in 1892 and very common during the 20th century, although perhaps not until after c.1914 - Lorrain 1968: 42; Tasker 1984: 28).

Of 139 bases whose forming techniques could be recognised, 100 were tool-formed (as G6) and only 39 moulded (as G4, G7-G21). Many of the tool-formed bases had been refired, but some showed indications of the use of sand or iron pontils, and one (G6) had a snap pontil. None of the moulded bases had pontil scars, and all therefore postdated the introduction of the snap case (or similar devices). Some of the moulded bases were plain, with the characteristic central 'pimple' (as G4), but several carried maker's marks, presumably identifying either the firm or batch number (the range of marks illustrated as G7-G21). Little work has been done on these base marks, and only G21 can be assigned to a maker. It is marked 'Cooper & Wood Portobello', which refers to Richard Cooper and Thomas Wood of Portobello, Scotland 1859-68) (Toulouse 1971: 141).

Most of the moulded bases were very irregular in shape, presumably due to having been removed from the mould before the glass was sufficiently hard. One noticeable exception was G13, a completely symmetrical moulded base, 'Imperial Pint'. This may therefore be a later product, as the reference to a standard measure also implies (probably post 1880, K. Rusden, pers. comm.).

The majority of the bottles were made in 3-piece moulds (as G4, G7-G9), but several appeared to have been made in a one-piece dip mould (G1-G3).

5.3.2 Case Gin or Schnapps Bottles (G22-G34, Fig. 18)

This group includes the typical square Dutch gin bottles in black or dark green glass, broader at the shoulder than the base (G22-G33), and square green bottles containing schnapps, a gin with herbs added to make it aromatic (G34). Almost all case gin or schnapps bottles were made in Holland (Tasker 1989: 47; Aldridge and Aldridge 1978: 30-31; Roycroft and Roycroft 1976: 40-41).

Of the 88 bottles (see Table 10), 79 were gin bottles. All lips were hand-applied, and of the 47 that survived 36 were of the 'pig snout' variety illustrated as G22 and only 11 of the 'cone collar' type shown as G23. The pig snout was generally an earlier form, being finished freehand, while the cone collars were all finished with lipping tools. Capacity could only be tested on G24, which held 850 ml (1.5 pints).

Forming techniques could be determined on 60 gin bottle bases. 12 were tool-formed and carried pontil scars (e.g. G25, G26), nine of them snap pontils (G25). The remainder were moulded, either plain or incorporating star, radial or other designs (G24, G27-G33). G32 carried the initial J, but this yet be assigned to a maker.

There were nine 'Udolpho Wolfe's Aromatic Schnapps' bottles, manufactured in Schiedam, Holland. They came in at least two sizes, most as G34, but one in a half size (not illustrated). When tops were present, all had cone collars finished with a lipping tool and all bases were plain and moulded. These bottles were thought to have been manufactured between 1880 and 1915 (Bedford 1986: 28), but have recovered from a mid 1860s context at the Victoria Hotel site (R11/1530) (pers. obs.).

5.3.3 Other Alcohol Bottles (G35-G43, Fig. 18)

There were at least 91 other alcohol bottles which did not fall into either of the above categories (Table 10). The majority were in green glass (54), most of the remainder in aqua glass (35), one in black glass and one in brown.

The majority were cylindrical bottles in green or aqua glass (as G35-G37 and G39), which would probably have contained spirits, champagne or wine rather than beer. G35 may be an exception. It is not dissimilar to the 'beer' bottles discussed above, but is green, which may indicate a continental European origin (Dumbrell 1983: 134). Similar types have been known to contain either spirits or beer (K. Rusden, pers. comm.).

G36 is a typical 'champagne' bottle with thick walls and a deep moulded kick-up with a central boss. This example also has a glass pontil mark around the boss. There were at least 6 champagne bottles, mainly large as G36, but one half size was also recovered. Capacity of 'champagne' bottles was 800-850 ml (1.4-1.5 pints). G37 has the ring seal and green colouration typical of French wine or champagne bottles from c.1850 on, and may have held either (Dumbrell 1983: 39, 134). Eleven other similar green ring seal tops were recovered. However, champagne bottles were frequently reused for beer as were ring-seal bottles generally from c.1880 (Tasker 1989: 39-41; 1984: 28; Roycroft and Roycroft 1976: 43).

G38 is the base of a brown bottle on which the word 'Hamburg' can be made out. Similar brown bottles invariably contained bitters, usually manufactured in Hamburg (Prickett 410-11, Fig. 4.23). The bottle has been included here rather than under medicines (below), since bitters usually had a high alcoholic content, the bitter herbs or citrus rinds initially being added as a means of avoiding liquor taxes by claiming a medicinal use (Tasker 1989: 50). The remaining letters may refer to J.J.W. Peters, a Hamburg bitters manufacturer (cf. Prickett 1981a: 410-11, Fig. 4.23), although here an ampersand appears to precede the W.

Most of the remainder were tall cylindrical bottles in green or aqua glass (as G39, which had a capacity of 780 ml). The majority had moulded kick-ups, but two had tool-formed bases with snap pontils. At Omata Stockade, where several labels survived, the green bottles contained cognac and the aqua whisky (Prickett 1981a: 396-404, Figs. 4.17, 4.19). Such bottles, however, were also used for gin, which in all shapes and sizes of bottle (e.g. Roycroft and Roycroft 1976: 40). An aqua glass Booth's gin seal probably came from this type of bottle (G41).

G40 is a whisky flask in aqua glass (K. Rusden, pers. comm.).

Three seals were recovered (G41-G43). In the 19th century these were generally used on spirits, wine or bitters bottles, or bottles intended as decanters (Roycroft and Roycroft 1979: 14; K. Rusden, pers. comm.), but not on beer bottles. The Booths gin seal from an aqua bottle (G41) can be dated to c.1850-60 (Roycroft and Roycroft 1976: 40 no. 6). G42 is from a green bottle, with the letters VR either side of an inverted anchor, and G43 is a black glass bottle with a seal bearing a crown. Neither can be attributed to a maker (or user) at present.

5.3.4 Soft Drink Bottles (G44-G54, Fig. 19)

Relatively few soft drink as opposed to alcohol bottles were recovered (see Table 10). All except two were aerated water bottles in aqua glass. These are characterised by thick walls to withstand pressure and a variety of patent stoppers designed to seal in the gas effectively. Of the various closures patented in the second half of the 19th century, the most widely adopted was the Codd stopper, patented by Hiram Codd in 1872. This consisted of an internal glass 'marble' which was forced to the top during filling by gas pressure and prevented from falling to the bottom by internal neck ridges (Tasker 1984: 6; Roycroft and Roycroft 1976: 46, 50; 1979: 9; Aldridge and Aldridge 1978: 5-7). A number of variations on this patent were subsequently introduced. Aerated water bottles often carry the name of the soft drinks manufacturer, and sometimes the patent name and that of the bottle manufacturer.

The two exceptions were 'Dr Townsend's sarsaparilla' bottles in bright green glass, as G44. This drink was based on a root extract and tasted similar to root beer. The bottles are thought to have been manufactured between 1870 and 1900 (Bedford 1986: 28).

The aerated water bottles included three Hogben patent bottles (using long stick-shaped wooden stoppers), as G45 and G46. Both those illustrated were manufactured by Lumb & Co. of Castleford, who were in business from the 1870s to 1905 (Toulouse 1971: 281). G45 also carries the drink manufacturer's name - J. Grey & Sons, of Auckland (1880 - 1902 - Rusden 1979: 17, 25). Two other bottles marked J. Grey & Sons, but of unknown shape, were also recovered.

G47 is part of a Nicholls patent bottle.

G48 and G49 are both Gledhill's patent bottles. The design was patented in 1873 by George Gledhill, an aerated water manufacturer established in Auckland in 1859 and continuing in production into the 1890s. The closure consisted of an internal lead-lined rubber ball (Tasker 1989: 15-16, 18, 58-59; K. Rusden, pers. comm.). Five of these bottles were recovered.

Only one Codd patent bottle could be positively identified (G50), marked William Handley of Auckland, in business as a soft drinks manufacturer from c.1890 to 1917 (K. Rusden, pers. comm., information from street directories). The words 'trade mark' were not used before 1862 (Litherland n.d.: 18). Two glass marbles from Codd patent bottles were also recovered.

G51 is a plain Hamilton patent bottle, patented in the 1830s, although the 'torpedo' shaped bottle had been produced from the first decade of the 19th century (Tasker 1989: 57; Jones 1979: 40). Seven examples were recovered, all unmarked.

G52 carries the monogram KCB on the base, which is similar to monograms known to have been used by the Kilner Brothers of Yorkshire (1857-1937) (Toulouse 1971: 302). G53 carries part of the name of the Auckland Aerated Water Works, owned by George Gledhill and operating from 1859 to the 1890s (see above). Little survived of G54 except for part of the words 'superior' and 'waters'. This description was used by Schwebbe & Co ('Genuine Superior Aerated Waters') among others (K. Rusden, pers. comm.).

There were also fragments of four Lamont patent bottles (not illustrated here, but see Roycroft and Roycroft 1976: 48 nos. 5 and 6; 1979: 43). Patented in 1874, they used an internal bullet-shaped ebonite (or similar material) stopper with a washer, as G121 below (Jones 1979: 43; Tasker 1989: 62).

Where present, lips were hand-applied and finished with a lipping tool, and bases were moulded.

5.3.5 Pickles, Salad Oil, Vinegar and Sauce Bottles (G55-G80, Figs. 19-20)

There were relatively large numbers of these bottles (see Table 10), the majority in aqua glass, a few in green, two in amber and one clear glass example. Of the 110 bottles, 40 would have contained salad oil, 38 pickles, 18 sauce and 6 vinegar. The remainder were too incomplete for pickle to be distinguished from sauce bottles, or salad oil from vinegar bottles.

In general these bottles are easy to recognise. Salad oil bottles in particular, but also pickle and vinegar bottles, tend to be ornate since they were meant for use on the table.

Pickles bottles are wide-mouthed and have square or angular bases, as G55-G60 (cf. Tasker 1984: 33; Aldridge and Aldridge 1978: 33; Roycroft and Roycroft 1976: 17; 1979: 13). When measurable, their capacity was 500-550 ml (0.9-0.95 pints).

G59 carries a registration mark on the base of the type in use between 1842 and 1867. The year mark is illegible, but the '1' and 'B' refer to the 1st of October (Cushion 1976: 284 ff.). G61, either a pickles or a sauce bottle, is marked 'AAL', attributed on the basis of other bottles to A.A. Lackersteen, a Sydney general merchant and supplier of condiments (K. Rusden, pers. comm.). G62, a hexagonal aqua base, could have contained either pickles or gin, since gin was occasionally put in hexagonal bottles.

Salad oil bottles are characterised by long slim necks and a variety of fluted, spiral and other patterns (cf. Tasker 1984: 33; Aldridge and Aldridge 1978: 32, 35; Roycroft and Roycroft 1976: 12-15; 1979: 12). Their capacity here varied slightly around 200 ml (0.3 pints). The range of types is illustrated as G63-G71, all except G66 represented by more than one example. G66 carries a fake registration on the base, a feature observed on a similar bottle from Fort Ligar (Brassey 1989: Fig. 6b). G71 is a clear glass miniature, or sample salad oil bottle (K. Rusden, pers. comm.). G72 could have contained either salad oil or sauce.

Vinegar bottles are also characterised by elongated necks, often with fluted or chamfered sides or shoulders (see references cited for salad oil bottles, above). The six examples identified were all the 'dimpled' type illustrated as G73 and G74. The large size held 780-800 ml (1.4 pints) and the smaller 200 mm (0.3 pints).

Sauce or relish bottles are either flat or cylindrical, and fairly short (as G75-G79). The necks are generally narrower than pickle bottles but wider than salad oil/vinegar bottles. G75 is a pepper sauce (cf. Roycroft and Roycroft 1976: 17). G76 is one of two Lea & Perrins Worcestershire Sauce bottles. The position of the embossed lettering dates the latter to 1840-90, while the ledged top, designed to take a cork ring and glass stopper, was not introduced until 1850, narrowing the range to 1850-90 (Stockton 1981: 61-4). G77 is embossed 'C & B' for Crosse & Blackwell of London (established in 1830 and still in business -Toulouse 1971: 113-114). Manufacturing techniques (moulded base and tool finished lip), place it post G80 could have contained either sauce or a soft drink, though sauce seems more likely in terms of size.

All of the surviving bases were mould-formed, in many cases with embossed letters or numbers (G59, G66, G67, G73, G74, G77, G78, G80), but these marks cannot yet be assigned to manufacturers. All lips were hand-applied, the majority finished with lipping tools.

5.3.6 Medicine and Chemists' Bottles (G81-95, Figs. 20-21)

A variety of bottle types are included under this heading (cf. Aldridge and Aldridge 1978: 38; Roycroft and Roycroft 1976: 22; 1979: 34). They were predominantly in clear, aqua or pale blue glass, but at least nine vessels were in cobalt blue (traditionally the colour used for poison bottles, but also, as here, put to other uses).

G81, a cylindrical bottle of clear glass, is embossed 'T.B. Hill, chemist and druggist, Auckland'. This refers to Thomas Boucher Hill, one of Auckland's earliest chemists, who was established by the early 1860s and continued in business into the 20th century (information from street directories).

The Hill bottle is not a particularly common form for a medicine or chemist's bottle. Where bottles were complete enough for the form to be determined, the majority fell into three categories: flat, as G82-G87 (12 examples, 6 in aqua glass, 5 clear, pale blue); oval, as G88-G89 (17 examples, 10 pale blue, 4 aqua, 3 clear); or vials, as G90-G92 (16 examples, 14 clear, 1 pale blue, 1 cobalt blue).

It is usually impossible to determine the original contents of these bottles, and they were presumably often refilled and relabelled. However, the use of embossed lettering on the panels of flat bottles began c.1867 (Lorrain 1968: 40), and some patent medicines bottles clearly identify their contents in this way. G82 is one such, marked 'Barry's Tricopherous for the skin and hair', and probably datable to c.1880-1915 (Bedford 1986: 28). Another is G85, which although incomplete can be identified as a 'Davis' Vegetable Pain Killer' (cf. Prickett 1981a: 415-416, Fig. 4.25D). G86 & G87, of thin light blue and aqua glass respectively, are fragmentary and their inscriptions have not yet been determined, though they presumably relate either to content or to manufacturer.

Both of the oval bottles illustrated as G88 and G89 have embossed lettering on the base, again so far unattributed. Three bottles carried the inscription 'Y C Co', as on G89. (A similar bottle was found at Fort Ligar: Brassey 1989: 21, Fig. 7d). G88 has a wide mouth and was therefore probably a pill bottle.

All of the above had fully mould-formed bases without pontil marks. Among the vials, however, (as G90-G92) there were examples of both moulded and tool-formed bases. A few of the latter had sharply pointed basal indentations, and some of the moulded bases also had glass pontil marks which had largely been ground away.

G93 and G94 are castor oil bottles of cobalt blue glass, the latter embossed 'Hora & Co', of London (cf. Roycroft and Roycroft 1979: 40 no. 4). Four castor oil bottles were recovered, three in cobalt blue and one (also embossed 'Hora & Co') in pale blue.

G95, in thick aqua glass, has been identified as the base of an Epsom salts bottle, although the embossed 'H' cannot be attributed (K. Rusden, pers. comm.).

G96 is a small pot of frosted blue glass that may have been used for pharmaceutical purposes (K. Rusden, pers. comm.). Also recovered, but not illustrated since they were too fragmentary, were parts of the bases of four large cobalt blue chemists' jars.

5.3.7 Perfume Bottles (G97-G104, Fig. 21)

At least 11 perfume bottles were recovered, eight of which are illustrated. All were in clear glass except for a small brilliant green vial (G104), a ruby base fragment from a oval bottle (not illustrated), and an aqua fragment (not illustrated).

Some were marked with the perfumer's name: G97, from Piesse & Lubin, London; G98 and G99, both marked 'J.M. Farina, Cologne', and both with ground glass pontil marks on the base; and G102, marked '[R]immel', for Rimmel of London ('Eugene Rimmel, Perfumer to her Majesty, 96 Strand', observed on a Bear's Grease pot lid in a private collection). The initials 'FSC' on G100 have not so far been attributed, nor the 'JP' on the Piesse & Lubin bottle. Both may refer to bottle manufacturers.

5.3.8 Ink Bottles (G105-G108, Fig. 21)

Ink bottles were produced in a great variety of shapes. Three aqua glass and two clear glass ink bottles were recovered, four of which are illustrated here. G105 carried the initials 'HCS' (unattributed) on the top. G108 is small container which probably part of a travelling set. The fifth bottle (not illustrated) was a clear glass bell-shaped bottle (as Roycroft and Roycroft 1976: 8 no. 6).

5.3.9 Stoppers (G109-G121, Figs. 21)

Thirty-nine stoppers for bottles or other vessels were recovered. Two (not illustrated) were glass 'marbles' for Codd patent bottles and one (G121 below) was an ebonite stopper for use in Lamont or similar patent bottles. The remainder were in either aqua (25 examples) or clear glass.

There were ten small aqua stoppers of a suitable size for salad oil bottles, as G109-G110. The majority were plain, but two were decorated as G109, and four were embossed 'George Whybrow' (a well-known salad oil manufacturer), as G110. Fourteen larger sized stoppers, as G111, would have been a suitable size for sauce or whisky bottles.

The remainder were all unique examples. G112 is a salt jar stopper (K. Rusden, pers. comm.) marked 'Sykes Macvay & Co, Albion Glass Works Castleford'. This firm was in operation from the 1860s to 1888 (Toulouse 1971: 477-8). G113 is an aqua Enos fruit salts stopper (K. Rusden, pers. comm.). G114 is a clear glass perfume bottle stopper with a ground neck, similar to that in are also clear glass stoppers with ground necks, and may have been perfume bottle or cruet stoppers. G117-119 are clear glass stoppers, probably for decanters on the basis of size and decoration. G120, in aqua glass, was probably a jar stopper. One other was too fragmentary to illustrate.

5.3.10 Miscellaneous Glass Objects (G122-129, Fig. 21)

These included 62 table glasses (see Table 10), all in clear glass. The majority (46) were tumblers, most as G122, but occasionally other types occurred, as G123. The remainder were wine glasses, too fragmentary to illustrate, but generally plain with a long stem and round bowl.

G124 is a fire extinguisher (or 'bomb') in clear glass. These came in various shapes and contained carbon tetrachloride. Some examples have survived with their contents intact (K. Rusden, pers. comm.). G125, two examples of which were recovered, is a preserving jar seal (K. Rusden, pers. comm.). G127-129 are apparently bases of decorative stands (for vases, candlesticks, or plates?). G129 is in white glass and has part of a name ('DI...') embossed internally; the other two are clear glass.

Other items (not illustrated) include fragments of vases, bowls, a glass funnel, preserving or storage jars, jugs, and some whose forms could not be determined.

There was also a child's playing marble, of clear glass containing red and blue wavy lines (from Area A fill), and eight assorted glass beads (not illustrated or included in Table 10):

1. Oval black bead. L. 21.5 mm, d. 8 mm. Area A fill (A1.5216).
2. Oval mid blue bead. L. 10 mm, d. 5.3 mm. Area A fill (A1.5215).
3. Round white milk glass bead. L. 5.2 mm, d. 7.7 mm. Area A fill (A1.5213).
4. Round amber bead. L. 10.5 mm. d. 12 mm. Area C Phase 3 fill (C4.5120).
5. Prussian blue barrel-shaped faceted bead, with pale blue core. L. 6 mm, d. 6.5 mm. Area A fill (A1.5214).
6. Round faceted pinkish-red bead, with white core. L. 7.7 mm, d. 9.9 mm. Area C Layer 8 (C61.5624).
7. Oval blue milk glass bead. L. 16 mm, d. 8 mm. Area A fill (A1.5218).

Aqua window glass was recovered from most contexts.

5.4 Discussion

A wide range of glass bottles and other objects was recovered.

5.4.1 Glass Colour

The most frequently used colours were 'black' (greenish-black) for beer and spirits bottles; and aqua for almost the entire range of products (soft drinks, some types of alcohol, condiments, medicine, perfume, ink, and window glass). Also common were green glass (for some types of alcohol, occasionally soft drinks and condiments, a perfume vial and a small plate); and clear glass, used mainly for medicine, perfume and ink bottles, but also for a salad oil miniature, and extensively for table glass (tumblers, wine glasses, decanters, decorative plates and stands, etc.). Several bottles came in pale or occasionally cobalt blue. Some white milk glass was used, as in G129, but forms could rarely be recognised. The only other colours used were amber (two salad oil bases), brown (a bitters bottle), and ruby (a perfume bottle). A different variety of colours was used to make beads (described separately above).

5.4.2 Dating

Few of the glasswares can be ascribed more than a general date range based on manufacturing techniques. Exceptions are a Booths gin bottle probably dating to the 1850s (G41); a pickle bottle (G59) carrying a registration mark within the 1842-67 period; a Lea & Perrins Worcestershire Sauce bottle (G76) dated 1850-90; and at least four types of aerated water bottles whose patents were not taken out until the 1870s (5 Gledhills, 3 Hogbens, 4 Lamonts), of which can be given even later dates from the firms who used them: J. Grey & Sons (1880-1902) and William Handley (c.1890-1917).

The assemblage was very much a transitional one in terms of manufacturing techniques. While the majority of bottles were produced using techniques not introduced until c.1840/1850, such as the lipping tool, 2-piece mould and cradling devices which obviated the need for pontils, a significant number were made by more traditional methods (one-piece dip moulds, hand-finished lips and tool-formed bases). The new techniques would have replaced the old by gradual stages, and it may not have been until c.1870 that their use became widespread. The mixture of techniques within the assemblage probably reflects their manufacture largely during this transitional period of the 1840s to the 1870s.

None of the bottles displayed any features associated with 20th century production, such as machine moulding or crown seal closures.

5.4.3 Glassware from Primary Deposits

The glass remains from the occupation layer associated with William Bacon's ginger beer (Area C Layer 10 (sealed)) were relatively few, consisting of two 'beer' bottle fragments, a Hamilton patent aerated water bottle, three pickles bottles, three medicine vials (two with ground glass pontil marks), the base of a fruit salts bottle and a wine glass fragment.

The pits and well in Areas F and E contained only small amounts of glass (Table 10), with the exception of Rubbish Pit 1 in Area F, probably filled by one of the Mechanics Institute resident librarians during the period 1843-79. It contained a very varied assortment of 13 beer bottles which included G2, G4, G5, G10, G11, G13, G14 and G17. There were also two schnapps (G34), and one gin bottle; two whisky bottles (as G40), two Hogben patent aerated water bottles (one G46), a Gledhill patent bottle (G49); four salad oil bottles (including G68 and G69), a pickles bottle; 11 medicine bottles (including G81 and a castor oil bottle similar to G93); and a small bell-shaped ink bottle. These could well have been the sort of material discarded by a resident caretaker, and show an emphasis on alcohol and medicine bottles. If they were, they relate to the end of the Mechanics Institute period rather than the start. G13, with its well moulded base, is unlikely to have been made much before the late 1870s, and the Gledhill and Hogben patents were not taken out until the early 1870s (see above).

5.5 Conclusion

A large and very varied assemblage of over 700 glass bottles and other objects was recovered. Manufacturing techniques comprised a combination of new methods, introduced from the 1840s-1850s with more traditional ones, and indicated a transitional assemblage, much of which was probably produced in the period 1840-1870. A dozen or so aerated water bottles could be dated as late as the 1870s-1890s, but none of the glasswares appeared to be of 20th century date.

Little material was recovered from the occupation layer associated with William Bacon's ginger beer brewery and store, but a large number of glass bottles, mainly for alcohol and medicine, were found in the pit probably filled by one of the Mechanics Institute's resident librarians. Dating evidence provided by some of these bottles showed that the pit would have been filled towards the end of the Institute's period of occupation.

5.6 Catalogue of Illustrated Glassware (Figs. 17-21)

'Beer' bottles

- G1 Beer bottle. Greenish-black glass; ?one-piece dip mould; tool-formed base; hand-applied lip. Area A fill (A23.324).
- G2 Beer bottle. Greenish-black glass; ?one-piece dip mould; tool-formed base; hand-applied lip finished with lipping tool; twist marks on neck. Area F Rubbish Pit 1 (F51.2978)
- G3 Beer bottle. Greenish-black glass; ?one-piece dip mould; tool-formed base; hand-applied lip finished with lipping tool; twist marks on neck. Area C Phase 3 fill (C15.764).
- G4 Beer bottle, small size. Greenish-black glass; 3-piece mould; plain moulded base. Area F Rubbish Pit 1 (F51.2979).
- G5 Beer bottle. Black hand-applied lip finished with lipping tool; twist marks on neck. Area F Rubbish Pit 1 (F51.2969).
- G6 Beer bottle. Blackglass; tool-formed base with snap pontil. Area F fill (F6.3534).
- G7 Beer bottle. Dark green glass; 3-piece mould; moulded base, embossed with reversed N; hand applied lip finished with lipping tool; stretch marks on neck. Area C Phase 3 fill (C4.578).
- G8 C Phase 3 fill (C4.578). Beer bottle. Black glass; 3-piece mould; moulded base, embossed A B C; hand-applied lip finished with lipping tool; stretch marks on neck. Area C Phase 3 fill (C4.575).

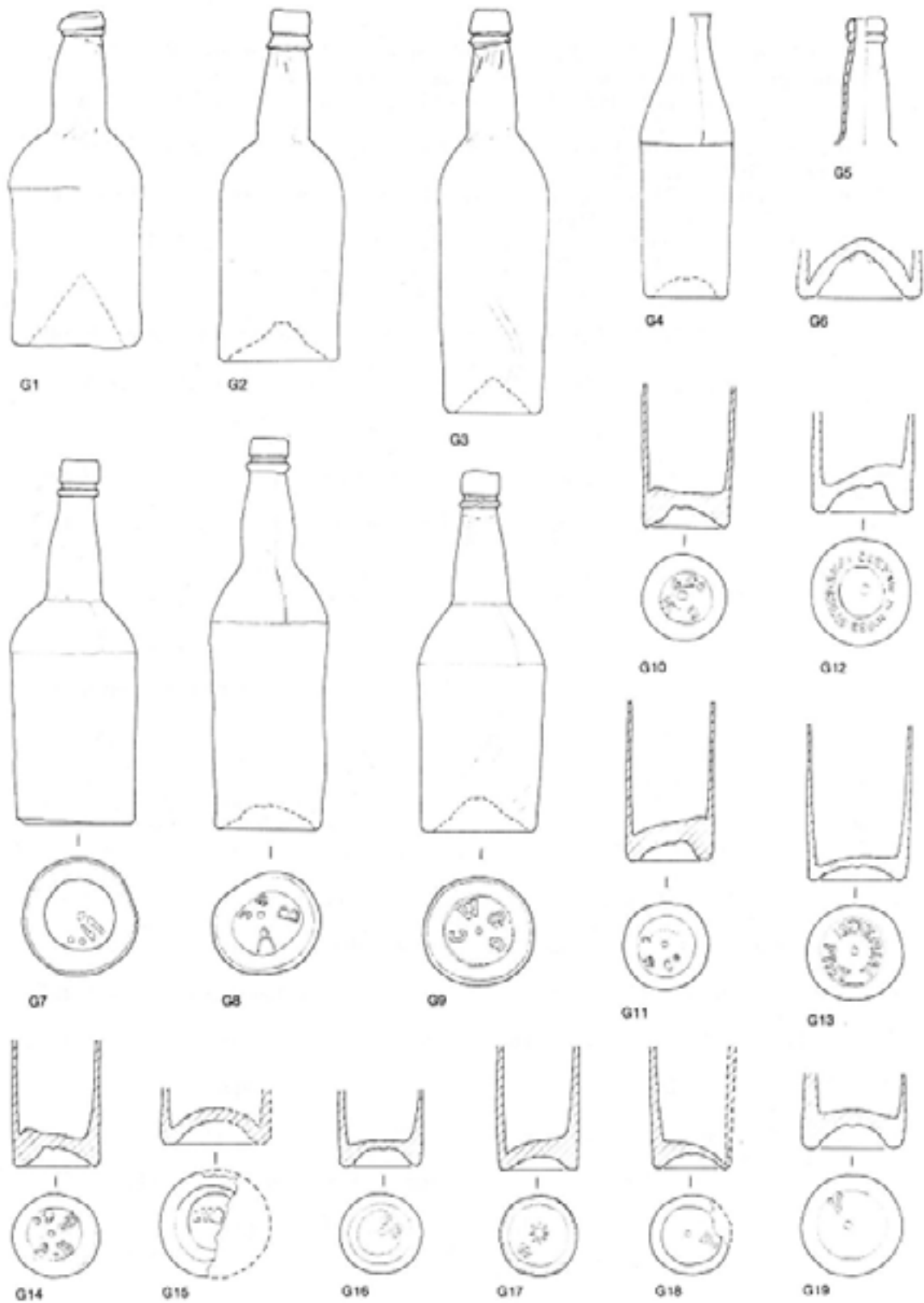


FIG. 17. Glassware. Scale 1:4.

- G9 Beer bottle. Black glass; 3-piece mould; moulded base, embossed C W & C; hand-applied lip; twist marks on neck. Area C Phase 3 fill (C4.574).
- G10 Beer bottle. Greenish-black glass; moulded base, embossed C W & Co. Area F Rubbish Pit 1 (F51.2964).
- G11 Beer bottle. Greenish black glass; moulded base, embossed C & Co. Area F Rubbish Pit 1 (F51.2954).
- G12 Beer bottle. Black glass; moulded base, embossed COOPER & WOOD/PORTOBELLO. Area F fill (F6.3531).
- G13 Beer bottle. Greenish-black glass; 'moulded base, embossed IMPERIAL PINT. Area F Rubbish Pit 1 (F51.2959).
- G14 Beer bottle. Greenish-black glass; moulded base, embossed P.B & Co. Area F Rubbish Pit 1 (F51.2957).
- G15 Beer bottle. Greenish-black glass; moulded base embossed LY.. Area F fill (F7.3799).
- G16 Beer bottle, small size. Black glass; moulded base. embossed C B. Area A fill (A1.33).
- G17 Beer bottle. Greenish black glass; moulded base, embossed W and star. Area F Rubbish Pit 1 (F51.2963).
- G18 Beer bottle, small size. Black glass; moulded base, embossed P. Area F fill (F7.3805).
- G19 Beer bottle. Black glass; moulded base, embossed V. Area A fill (A1.28, A1.18, A1.78).
- G20 Beer bottle. Black glass; moulded base, embossed I. Area F fill (F6.3536).
- G21 Beer? bottle. Green glass; moulded base, embossed XI (or IX). Area F Rubbish Pit 2 (F44.4536).

Case gin or schnapps bottles.

- G22 Gin bottle. Dark green glass; hand-applied 'pig-snout' lip; twist marks on neck. Area C Layer 8 (C29.967).
- G23 Gin bottle: Dark greenish-black glass; hand-applied cone-shaped lip finished with lipping tool. Area C Phase 3 fill (C4.614).
- G24 Gin bottle. Dark green glass; moulded base with cross. Area C Layer 8 (C16.765).
- G25 Gin bottle. Greenish-black glass; tool-formed base with snap pontil. Area C Layer 8 (C47.1096).
- G26 Gin bottle. Greenish-black glass. Tool-formed base with pontil mark. Area C Phase 3 fill (C1.465).
- G27 Gin bottle. Greenish-black glass; moulded base with cross and ring. Area C Phase 3 (C1.468).
- G28 Gin bottle. Greenish-black glass; moulded base with radial pattern. Area C Phase 3 fill (C1.464).
- G29 Gin bottle. Greenish-black glass; moulded base with radial pattern. Area F fill (F6.3565).
- G30 Gin bottle. Black glass; moulded base with cross design. Area C Phase 3 fill (C1.469).
- G31 Gin bottle. Black glass; moulded base with pattern of squares. Area F fill (F6.3563).
- G32 Gin bottle. Black glass; moulded, with striated decoration and J embossed on base. Area F fill (F7.3843).
- G33 Gin bottle. Black glass; moulded, with striated decoration. Area C Phase 3 fill (C1.466).
- G34 Schnapps bottle. Green glass; plain moulded base; hand-applied cone-shaped lip finished with lipping tool; embossed UDOLPHO WOLFE'S / AROMATIC / SCHNAPPS / SCHIEDAM. Area F Rubbish Pit 1 (F51.2980).



FIG. 18. Glassware. Scale 1:4.

Other alcohol bottles

- G35 Beer/spirits? bottle. Dark emerald green glass; 3-piece mould; moulded base. Embossed C.H.C. & S/1.B/11; hand applied lip finished with lipping tool. Area F Rubbish Pit 1 (F51.2926).
- G36 Champagne bottle. Dark green glass; hand-applied ring seal finished with lipping tool: stretch marks on neck; moulded base with glass pontil mark. Area C Phase 3 fill (C4.5000).
- G37 Wine/champagne bottle. Green glass; hand-applied ring seal finished with lipping tool; twist marks. Area C Layer 8 (C46.1006).
- G38 Bitters bottle (base). Brown glass; moulded base (Rickett's patent), embossed ...&WP... HAMBURG. Area A fill (A1.7).
- G39 Spirits bottle. Aqua glass; hand-applied ring seal; stretch marks on neck; moulded base. Area C Phase 3 fill (C4.567).
- G40 Whisky bottle. Aqua glass; hand-applied lip finished with lipping tool; moulded base. Area F Rubbish Pit 1 (F51.2952).
- G41 Gin bottle seal. Aqua glass; embossed BOOTH & CO/55 COW CROSS / SUPERIOR / NO 1 / GIN. c.1850-60. Area A fill (A1.172).
- G42 Seal marked VR divided by upside-down anchor. Dark green glass. Area A fill (A1.84).
- G43 Spirits? bottle. Greenish-black glass. Seal with a crown just above base. Area C Layer 8 (C46.1007).

Soft drink bottles

- G44 Sarsaparilla bottle. Emerald green glass; DR TOWNSEND'S / SARSAPARILLA / ALBA[N]Y / N.Y.; moulded base. c.1870-1900. Area F fill (F6.3589, F4.3591).
- G45 Aerated water bottle. Hogben's patent. Aqua glass; moulded base; embossed [J.] GREY / & SONS / [A]UCKLAND / [REGI]STERED/JGS [monogram] / TRADE MARK / LUMB & CO MAKERS CASTLEFORD. 1880-1902. Area C Phase 3 fill (C8.650).
- G46 Aerated water bottle. Hogben's patent. Aqua glass; hand-applied lip finished with Area F Rubbish Pit 1 (F51.2940).
- G47 Aerated water bottle. Nicholls Patent. Aqua glass: hand-applied lip finished with lipping tool; embossed NIC[HOLLS PATENT] and part of a Masonic symbol. Area C Phase 3 fill (C1.456).
- G48 Aerated water bottle. Gledhill's patent. Aqua glass; moulded base; embossed GLEDHILL'S/PATENT. Post 1873. Area C Phase 3 fill (C4.573).
- G49 Aerated water bottle. Gledhills patent. Aqua glass; hand-applied lip finished with lipping tool; moulded base; Area F Rubbish Pit 1 (F51.2949).
- G50 Aerated water bottle. Codd patent. Aqua glass; embossed W.M. HA[NDLEY] / REG[ISTERED] / TRADE M[ARK] / AUCKL[AND]. C.1890-1917. Area C Phase 3 fill (1.442, 437).
- G51 Aerated water bottle. Hamilton patent. Aqua glass; two-piece mould. Area C Layer 9 (C17.766).
- G52 Aerated water bottle. Aqua glass; moulded base embossed KCB (possibly Kilner Brothers). Area A fill (A1.188).
- G53 Aerated water bottle. Aqua glass; embossed [AUCKLA]ND AER[RATED]...(Auckland Aerated Water Works. G. Gledhill). Post 1873. Area A fill (A1.163).
- G54 Aerated water bottle. Hamilton patent. Aqua glass; embossed ...ERIO... /...WATERS (possibly J. Schweppe & Co 'Genuine Superior Aerated Waters'). Area F fill (F7.3925).



FIG. 19. Glassware. Scale 1:4.

Pickles, salad oil, vinegar and sauce bottles

- G55 Pickles bottle. Aqua glass; hand-applied lip. Area C Phase 3 fill (C4.571).
- G56 Pickles bottle. Greenish aqua glass; moulded base; hand applied lip. Area A Fill (A23.332, 343, 351, 352).
- G57 Pickles bottle. Aqua glass; hand-applied lip. Area A fill (A1.150/236).
- G58 Pickles bottle. Aqua glass; moulded base with diamond-shaped registration mark on base (illegible, not shown); hand-applied lip. Area C Phase 3 fill (C15.763).
- G59 Pickles bottle (base). Aqua glass; moulded base with registered trademark dated 1 or 9 October [1842-67]. Area F fill (F20.4394).
- G60 Pickles bottle. Aqua glass; hand-applied lip. Area C Phase 3 fill (C26.900).
- G61 Pickles or sauce bottle. Aqua glass; 2-piece mould; embossed AAL (A.A. Lackersteen, general merchant, Sydney). Area C Phase 3 fill (C4.590).
- G62 Pickles (or ?gin) bottle. Aqua glass; hexagonal body; moulded base. Area C Phase 3 fill (C8.651).
- G63 Salad oil bottle. Aqua glass; moulded base; hand-applied lip finished with lipping tool. Area F fill (F20.4393).
- G64 Salad oil bottle. Aqua glass; hand-applied lip finished with lipping tool. Area C Phase 3 fill (C4.4596).
- G65 Salad oil bottle. Aqua glass; moulded base; hand-applied lip finished with lipping tool. Area C Phase 3 fill (C15.761).
- G66 Salad oil bottle. Light green glass; hand-applied lip finished with lipping tool; moulded base with fake registration mark. Area F fill (F7.3890).
- G67 Salad oil bottle. Aqua glass; moulded base; hand-applied lip finished with lipping tool. Area A fill (A1.249).
- G68 Salad oil bottle (near complete, design as G67). Greenish aqua glass; moulded base embossed 465. Area F Rubbish Pit 1 (F51.2976).
- G69 Salad oil bottle. Aqua glass; moulded base. Area F Rubbish Pit 1 (F51.2977).
- G70 Salad oil bottle. Aqua glass; moulded base embossed V8 (not shown). Area C Phase 3 fill (C4.619).
- G71 Miniature (sample) salad oil bottle. Clear glass; tool-formed base with snap pontil; embossed decoration. Area C Phase 3 fill (C13.727).
- G72 Sauce or salad oil bottle. Aqua glass; moulded base; hand-applied ring seal finished with lipping tool. Area C Phase 3 fill (C15.760).
- G73 Vinegar bottle. Aqua glass; moulded base, embossed 125; hand-applied lip finished with lipping tool. Area C Phase 3 fill (C4.4594).
- G74 Vinegar bottle, small size. Aqua glass; moulded base, embossed S; hand-applied lip finished with lipping tool. Area C Phase 3 fill (C15.762).
- G75 Pepper sauce bottle. Aqua glass; decorated with ridged pattern and 4-leaf clover in diamond panel, plain diamond panel on other side; moulded base. Area A fill (A1.190-6).
- G76 Worcestershire sauce bottle. Aqua glass; 2-piece mould; hand-applied lip finished with lipping tool; moulded base; body embossed WORCESTERSHIRE SAUCE / LEA & PERRINS. c.1850-90. Area C Phase 3 fill (C4.572).
- G77 Sauce bottle. Aqua glass; moulded base; hand-applied lip finished with lipping tool; embossed C & B (Crosse & Blackwell) just above base and KE on base. Area C Phase 3 fill (C4.582).
- G78 Sauce bottle (base). Aqua glass; moulded base, embossed DE. Area C Phase 3 fill (C8.654).



FIG. 20. Glassware. Scale 1:4.

- G79 Sauce bottle (near complete). Aqua glass; 2-piece mould; moulded base; hand-applied lip; stretch marks on neck; moulded base. Area C Phase 3 fill (C4.580).
- G80 Sauce (or aerated water?) bottle. Greenish aqua glass; moulded base, embossed W & D. Area F fill (F7.3922).

Medicine (etc.) bottles

- G81 Medicine bottle. Aqua glass; moulded base: hand-applied lip finished with lipping tool; embossed T.B. HILL / CHEMIST / & / DRUGGIST / AUCKLAND. Area F Rubbish Pit 1 (F51.2974).
- G82 Medicine/cosmetics bottle. Bluish-aqua glass; flat, panelled body; 2-piece mould; moulded base; hand-applied lip finished with lipping tool; twist marks; embossed BARRY'S / TRICOPHEROUS / FOR THE SKIN / AND HAIR / NEW YORK / DIRECTIONS / IN / THE / PAMPHLET on sides and 3 on base (not shown) c.1880-1915. Area F fill (F6.3629).
- G83 Medicine bottle. Pale blue glass; flat body, panelled on three sides; moulded base. Area C Phase 3 fill (C1.436).
- G84 Medicine bottle. Clear glass; flat, panelled body; moulded base; hand-applied lip finished with tool. Area C Phase 3 fill C1.446).
- G85 Medicine bottle. Bluish aqua glass; embossed ...ABLE ('Davis' Vegetable Pain Killer). Area F fill (F4.3166).
- G86 ?Medicine bottle (body fragment). Light blue glass; embossed ...LAR CIT .../M...Area F fill (F6.3627).
- G87 ?Medicine 'bottle (body fragment). Greenish aqua glass; embossed ...ERV...HT. Area F fill (F6.3628).
- G88 Medicine/pill bottle. Clear glass; oval body; 2-piece mould; moulded neck ring; ground rim; embossed J McL on base. Area C Phase 3 fill (C4.586).
- G89 Medicine bottle. Pale blue glass; oval body; 2-piece mould; hand-applied lip; embossed Y C/Co on base. Area C Phase 3 fill (C4.579).
- G90 Medicine vial. Clear glass; 3-piece mould; moulded base; hand-applied lip. Area C Phase 3 fill (C4.588).
- G91 Small medicine vial. Clear glass; 3-piece mould; moulded base; hand-applied lip. Area C Phase 3 fill (C14.750).
- G92 Small medicine vial. Light blue glass; snap pontil mark on base. Area C Phase 3 fill (C51.1156).
- G93 Castor oil bottle. Cobalt blue glass; 2-piece mould; moulded base; hand-applied lip. Area F Rubbish Pit 1 (F51.2975).
- G94 Castor oil bottle. Cobalt blue glass; embossed ...HORA & CO. Area F fill (F7.3936).
- G95 Epsom salts bottle (base). Aqua glass; moulded base, embossed H. Area A fill (A1.177).
- G96 ?Medicine/pharmaceutical bottle. Frosted blue glass; flat moulded base. Area C Phase 3 fill (C21.837).

Perfume bottles

- G97 Perfume bottle. Clear glass; flat body; moulded base; hand-applied lip finished with lipping tool; embossed PIESSE/AND/LUBIN/LONDON on front and 1 ½ OZ on base. Area C Phase 3 fill (C4.584).
- G98 Perfume bottle. Clear glass; hexagonal body; tool-formed base with snap pontil; embossed on side panels J.M. FARINA/COLOGNE. Area C Phase 3 fill (C14.749).
- G99 Perfume bottle. Clear glass; hexagonal body; tool-formed base with snap pontil; embossed on side panels J.M. FARINA/VIS A A VIS LE MARCHE/COLOGNE. Area C Phase 3 fill (C10.665).
- G100 Perfume bottle. Clear glass; 2-piece mould; hand-applied lip; base FSC in diamond. Area C Phase 3 fill (C4.585).



FIG. 21. Glassware. Scale 1:4, with top of G110 at 1:2.

- G101 Perfume bottle with stopper. Clear glass; 2-piece mould; flat body; moulded base. Area A fill (A1.250, 251).
- G102 Perfume bottle. Clear glass; embossed [R]IMMEL. Area F fill (F50.2901).
- G103 Perfume bottle. Clear glass; 2-piece mould. Area F fill (F7.3952).
- G104 ?Perfume vial. Brilliant green glass; 2-piece mould; hand-applied lip. Area C Phase 3 fill (C4.592).

Ink bottles

- G105 Ink bottle. Greenish aqua glass; embossed HC/S on shoulder. Area F fill (F7.3931).
- G106 Spouted ink bottle (retaining part of cork). Greenish aqua glass; moulded base. Area C Phase 3 fill (C4.587).
- G107 Ink bottle. Aqua glass; 2-piece mould; moulded base. Area F fill (F7.3930).
- G108 Ink bottle (travel set miniature). Clear glass; faceted. Area A fill (A1.205).

Stoppers

- G109 ?Salad oil stopper. Greenish aqua glass; embossed circles around rim. Area F fill (F7.3909).
- G110 Salad oil stopper. Greenish aqua glass; embossed GEORGE WHYBROW. Area C Phase 3 fill (C13.731).
- G111 Spirits/salad oil bottle stopper. Aqua glass. Area C Phase 3 fill (C4.601).
- G112 Salt jar stopper. Aqua glass; embossed SYKES MACVAY & CO/ALBION GLASSWORKS CASTLEFORD. Area C Phase 3 fill (C4.612).
- G113 Enos fruit salts stopper. Aqua glass. Area C Phase 3 fill (C4.604).
- G114 Perfume bottle stopper. Clear glass; ground neck. Area C Phase 3 fill (C13.728).
- G115 Perfume bottle or cruet stopper. Clear glass; ground neck. Area C Phase 3 fill (C13.732).
- G116 Perfume bottle or cruet stopper. Clear glass; ground neck. Area F fill (F7.3948).
- G117 ?Perfume bottle or small decanter stopper. Clear glass; ground neck; 40 scratched on neck post-manufacture (not shown). Area C Phase 3 fill (C8.663).
- G118 Decanter stopper. Clear glass; ground neck. Area C Phase 3 fill (C4.594).
- G119 Decanter stopper. Clear glass. Area C Phase 3 fill (C4.611).
- G120 Jar stopper. Aqua glass. Area C Phase 3 fill (C4.629).
- G121 Black ebonite stopper for Lamont or similar patent bottle. Area C Phase 3 fill (C1.5173).

Miscellaneous glass items

- G122 Tumbler. Clear glass. Area C Phase 3 fill (C4.610).
- G123 Tumbler. Clear glass. Area A fill (A1.212).
- G124 Fire extinguisher (base and body fragments). Clear glass; cross-hatched decoration. Area C Phase 3 fill (C1.448, 454, 453, 455).
- G125 Preserving jar seal. Clear glass. Area C Phase 3 fill (C4.nn)
- G126 Small plate. Clear glass. Area C Phase 3 fill (C4.625,624).
- G127 Stand base. Clear glass. Area C Phase 3 fill (C4.626).
- G128 Stand base. Clear glass. Area C Phase 3 fill (C4.627).
- G129 Stand base. White milk glass; embossed DI ... internally. Area F Rubbish Pit 2 (F44.4540).

6.0 COINS

Fourteen coins were recovered from the site and are listed below:

- Copper half farthing of Victoria, dated 1843. Area A fill (A1.5221).
- Copper half farthing of Victoria, dated 1843. Area C Phase 3 fill (C4.5105)
- Copper farthing of Victoria, date illegible, but 'young head' (1838-49) (Seaby 1982: 265). Area A fill (A1.5220).
- Copper farthing of Victoria, date illegible but 'young head' (1838-49) (Seaby 1982: 265). Area C Layer 9 (C24.5001).
- Copper farthing of William IV (1830-37), date illegible. Area C Phase 3 fill (C13.5029).
- Copper farthing of Victoria, dated 1843. Two holes subsequently drilled through it, probably for use as a button. Area F (F6.3731).
- Copper halfpenny of George III dated 1799. Area A fill (A1.5219).
- Copper halfpenny of Victoria, dated 1854. Area C Phase 3 fill (C13.5028).
- Bronze penny of Victoria, dated 1876. Area C Phase 3 fill (C51.5030).
- Bronze penny of Edward IV dated 1903. Area F fill (F4.3191).
- Silver shilling of George IV, dated 1829. Area C Layer 8 (C46.5019).
- Silver shilling of George III, dated 1817. Area F fill (F6.4570).
- Silver half crown of William IV (1830-37), date illegible. Area C Phase 3 fill (C4.5106).
- Copper 2 cent piece of the Kingdom of the Netherlands, dated 1838 (cf. Chester and Mishler 1988: 888). Area C Layer 8 (C23.5018).

The last coin listed, a Dutch coin dated 1838, would have been considered valid currency in the early days of the colony, when coinage was scarce (Clarke 197 1: 116).

Except for the 1903 and 1876 pennies, all the coins were minted in the 1850s or before, the earliest being a George III halfpenny of 1799. The 1903 penny from Area F provides a rather late date compared to the rest of the cultural assemblage and dates to a period when the Area F buildings were no longer used. It seems likely that it was lost during the redevelopment work in 1912 or c.1919 (see Vol. 1, Section 9.2.2).

7.0 BUTTONS AND BADGES

7.1 Introduction

Buttons are a common find on archaeological sites, usually being made of metal or other durable material, and have received some attention as possible indicators of date (Cameron 1985). They often carry brand names, trade marks, manufacturers' names or other lettering.

The Chancery St buttons were made of metal (42), china (26). Bone (12), shell (4), and glass (4).

7.2 Types of Button

7.2.1 Bone Buttons (B1-B5, Fig. 22)

Bone buttons were introduced in the 1700s. Initially handmade, machinery was introduced c.1850 (Cameron 1985: 96). In machine-made examples, the holes are drilled at a slight angle while held in the lathe (Cameron 1985: 97; Peacock 1972: 21). All the examples from the assemblage displayed holes cut at an angle, indicating that they were probably all machine-made sometime after 1850.

Twelve bone buttons were recovered, among which five different styles were distinguished (B1-B5).

The majority (seven) were in the B1 style, ranging in diameter from 13.49 mm to 20.29 mm, and in thickness from 2.62 mm to 3.62 mm. There were two examples of the B2 style, giving a size range of 15.79-16.48 mm in diameter and 3.12-3.39 mm in thickness. B3, B4 and B5 were unique specimens.

Bone buttons were recovered mainly from the fills of Areas A, C and F, but two (a B1 and a B2 example) came from the sealed occupation layer in Area C.

7.2.2 China Buttons (B6-B 14, Fig. 22)

Small china buttons are thought to have been used mainly on underwear (Prickett 451). All the china buttons, with the possible exception of the large button B12, would have been a suitable size for such use.

Twenty-six china buttons were recovered, among which nine different styles were showed only minor differences. All the buttons were white except for B14, which was a mid grey-brown.

There were eight examples of the style shown as B6 (diameter range 10-13.55 mm; thickness range 2.64 to 4.85 mm); two examples of B7 (d. range 10.65 mm; th. Range 2.99-3.04 mm); eight examples of B8 (d. range 11.05-11.38 mm; th. range 2.47-3.45 mm); two examples of B9 (d. range 10.9-11.05 mm; th. range 3.02-3.45 mm); and two examples of B10 (d. range 10.47-11.21 mm; th. range 2.85-2.91 mm). The remaining styles (B11-B14) were represented by single individuals. The decorated example, B 11, is a style known to collectors as a 'hobnail' (Peacock 1972: 102).

China buttons were mainly recovered from the fills of Areas A, C and F, but two B8 buttons came from the Area C occupation layer and B14 from Rubbish Pit 1 in Area F.

7.2.3 Shell Buttons (B15-B17, Fig. 22)

As with bone buttons, mechanisation in shell button production was introduced c.1850. When hand produced, the buttonholes may be unevenly spaced since they were drilled individually, while the multiple-boring tools introduced c.1850 gave an even placement of holes. The new tubular saws would also have resulted in a more evenly rounded shape than hand-cutting techniques. (Cameron 1985: 72-73, 77-79).

Three four-hole shell buttons (B15, B16 and a fragmentary example of similar style to B15), and a one-hole button or backplate (B17) were recovered. The three four-hole examples have unevenly spaced holes indicating hand production. However, manual techniques may have continued for some time side by side with machine methods, and no dating significance can be attached to this.

The type of shell used cannot be identified, as only the inner undiagnostic layers of shell were used. Up to 1850 pearl oyster (genus *Auricula*) was the shell most commonly used, but after that date a variety of others, e.g. *Trochus*, *Turbo*, *Abalone* and *Haliotis* spp., became common (Cameron 1985: 70-71).

7.2.4 One-Piece Metal Buttons (B18-B33, Fig. 22)

One-piece metal buttons are generally thought to have been used as trouser buttons. Eighteen were recovered, exhibiting a wide variety of styles (B18-33). All except two were represented only by individual examples: the exceptions were an iron button of the same style as B19 but larger (diameter 17.96 mm), and a broken button identical to and from the same context as B27.

All were made of copper alloy (probably brass), except for the iron button mentioned above, and B32-B33, made of a tin-based alloy. B28 and B29 and B31-B33 carried traces of black enamelling. No trade or manufacturers' names could be made out, but two (B32 and B33) carried traces of lettering.

In addition to these buttons, an improvised one-piece button had also been manufactured out of an 1843 copper farthing by drilling two attachment holes through it (see above, Section 6). Provenances of all buttons are given in the catalogue (below).

7.2.5 Two-Piece Metal Buttons (B34-B35, Fig. 23)

Four two-piece metal buttons were recovered. All were flat plates with looped 'alpha' shanks (B34, B35, and two unillustrated examples identical to and from the same context as B34; see Peacock 1972: 122 for shank types). B35 had part of what may have been the maker's name on the back: 'GIL...' and part of a word which included the letters 'ND', perhaps 'standard'.

7.2.6 Three-Piece Metal Buttons (B36-B46, Fig. 23)

The three-piece metal buttons consisted of a front and back plate crimped together, with a separate looped shank.

Seven military buttons were recovered, five of which are illustrated as B36-B40. Three were of the 40th regiment (B36, B37 and another identical to B37). They were found in the fills of three different (A, C and F). The 40th (2nd Somersetshire) Regiment of Foot was stationed in New Zealand from 1860 to 1866, and this type of button was introduced sometime between 1829 and 1852 (Montague 1981: 45, 117). It was issued in brass (as here) rather than pewter from 1855. Two different makers were identified, Jennens & Co of London for the smaller size and Tait & Co of Limerick for the larger.

B38 was worn by the 58th (Rutlandshire) Regiment of Foot, stationed in New Zealand in 1845-46 and 1847-58 (Montague 1981: 117; Platts 1971: 128). This button is brass or copper alloy rather than pewter and was therefore one of the tunic buttons first issued in 1855 (Montague 1981: 96).

B39, a brass button carrying a royal tiger and the inscription 'India' and '14 Waterloo': was worn by the 14th (Buckinghamshire) Regiment of Foot, stationed in New Zealand from 1860 to 1867 (Montague 1981: 98, 117; Ripley 1971: 17, no. 101). This example was made by Firmins of London.

Two examples of B40, both from the same context (Area F fill), have the royal cypher VR beneath the crown and set within a wreath. They were made by Smith and Wright of Birmingham (cf. Prickett 1981a: Fig. 4.30, type C). They are of the General Service pattern and do not carry regimental numbers. They would probably not have been worn by regiments of the line, but could have belonged to units such as the Army Hospital Corps, in New Zealand in 1861-70, or the military train and horse transport division, (Montague 1981: 107-9, 118). They would have been worn by junior ranks rather than the officers and NCOs, who wore larger buttons with the Corps initials. They could also have been worn by the common militia or volunteers, as suggested for similar buttons from Omata Stockade and Warea Redoubt (Prickett 1981a: 458). (We are grateful to Captain M.A. Robinson, Royal Marines, for research on some of the military buttons.)

The remaining three-piece metal buttons were non-military (B41-B46), or insufficiently complete to be identified as such. Four carried identifiable lettering, in three cases including the work 'Extra', presumably part of a brand name (B41, B42, B45). B45 also carried the words '...peri... Stand^d', presumably 'Imperial Standard', and B41 may also have included the word 'standard', though the lettering is unclear. B42 also carries an incomplete word 'Rich...', following the word 'Extra'. B43 probably read 'Imperial Quality'. Two of the buttons (B41-B42) had floral designs on the obverse, B43 and B44 were plain, and the remainder were incomplete.

Three shank types were noted on three-piece buttons: the Saunders type, as in B41, B42, B44 and B46; the pinhead type, shown in B45; and a third (?'flexible') type shown on B40 (see Peacock 1972: 122-24).

There were half a dozen other fragments of three-piece metal buttons, but except for a backplate with a Saunders type shank similar to B46, they could not be identified.

7.2.7 Metal Button/Stud (B47, Fig. 23)

B47 is a button or stud with a screw hole attachment at the back. It was not clear whether it was made in two or three pieces.

7.2.8 Glass Buttons (G48-G51, Fig. 23)

Only four glass buttons were recovered. Three (B48-B50) were large black coat buttons, the fourth (B51) a light blue bell-shaped button. All had looped metal shanks embedded in the glass.

7.2.9 Badges or Brooches (B52-B54, Fig. 23)

Three badges or brooches have been included in this section. The first (B52) was made of brass with tinned inlay and, in some areas, green paint. It depicts a dove of peace below a radiant eye encircled by a snake and wreath, and carries the mottoes 'Band of Hope' in a scroll at the top and '...Strength' on a side column. Such badges were often used by temperance societies (Captain M.A. Robinson, pers. comm.).

B53 is the top of a copper alloy shako plate (cf. Montague 1981: Figs. 14, 15, 42, etc.). However, the rest of the plate, which would have identified the military unit concerned, is missing.

B54 is a copper alloy cross with small studs that may have been used to attach it to clothing. However, it is not clear which side is the back and which the front, since the side with possible attachment studs may also carry lettering at the top, possibly the Christian inscription 'INRI'.

7.3 **Discussion and Conclusions**

Cameron's (1985) analysis of buttons and other clothing hardware from the Chinese goldmining sites of Central Otago (1860s-1930) provides a useful basis for comparison with the Chancery St assemblage. This proved to be somewhat different, however, with only the simplest bone, china and one-piece metal button types finding parallels in the Otago assemblage. The military buttons found here do not appear in the goldmining sites, nor do any of the buttons carrying lettering coincide. There were no fabric-covered, horn, wood, plastic/synthetic, slate or rubber buttons. These differences must relate both to the earlier date of the Chancery St assemblage and the different character of the site (urban and largely residential).

The restricted time scale (post 1840) means that few of the dating criteria cited by Cameron apply, the main exception being the change from hand to machine made buttons from c. the 1850s. Examples of both were recognised in the Chancery St assemblage, but were of dubious significance since hand-made buttons would have continued in production for many years after this date.

A few buttons were found in primary deposits. In the occupation layer associated with William Bacon's ginger beer brewery and store there were several: three bone buttons (a B1 and two B2 types); two china buttons (B8 types); two shell buttons (B15 and B17); and three one-piece metal buttons (B21, B22 and B25). In Area F a china button (B14) was found in Rubbish Pit 1 and a metal one-piece trouser button in each of Rubbish Pits 2 and 3 (B26 and B23 respectively).

7.4 Catalogue of Illustrated Buttons and Badges (Figs. 22-23)

Bone buttons

- B1 Four-hole bone button. Front: convex rim marked off from concave central depression by a circular groove; back: convex. D. 20.2 mm; th. 3.3 mm. Area A fill (A1.5198).
- B2 Four-hole bone button. Front: flat narrow rim (2.48 mm wide), concave central depression; back: convex. D. 15.8 mm, th. 3.1 mm. Area C Layer 10 (sealed) (C64.5005).
- B3 Four-hole bone button. Front: flat wide rim (5.5 mm wide), flat central depression; back: convex. D. 18.3 mm; th. 2.6 mm. fill (A1.5199).
- B4 Four-hole bone button. Front: convex rim, central concave depression; back convex. D. 28.8 mm; th. 5.75 mm. Area F fill (F6.3742).
- B5 Five-hole bone button. Front: flat rim, central flat depression; back, flat in centre, sloping towards rim. Three of the four exterior holes show signs of redrilling. D. 17.6 mm; th. 2.9 mm. Area A fill (A1.5197).

China buttons

- B6 Four-hole white china button. Front: flat sloping rim, deep concave central depression; back: convex. D. 13.6 mm; th. 4.9 mm. Area C Phase 3 fill (C5.5115).
- B7 Four-hole white china button. Front: flat sloping rim, deep concave central depression; back: flat. D. 10.9 mm; th. 3.0 mm. Area C Phase 3 fill (C13.5056).
- B8 Four-hole white china button. Front: flat sloping rim, shallow concave central depression; back : convex. D. 11.1 mm; th. 2.6 mm. Area C Layer 10 (sealed) (C64.5008).
- B9 Four-hole white china button. Front: flat sloping rim, deep concave central depression; back: flat in centre, sloping towards rim. D. 11.1 mm; th. 3.5 mm. Area C Phase 3 fill (C4.5118).
- B10 Four-hole white china button. Front: concave; back: flat in centre, sloping towards rim. D. 10.5 mm; th. 2.9 mm. Area C Phase 3 fill (C4.5119).
- B11 Four-hole white china button. Front: circle of embossed dots on rim, concave central depression raised above level of rim; back: convex. D. 11 mm; th. 2.7 mm. Area A fill (A1.5210).
- B12 Four-hole white china button. Front: flat sloping rim, central flat depression with central boss; back: convex. D. 16.2 mm; th. 2.6 mm. Area C Layer 8 (C61.5023).
- B13 Two-hole white china button. Front: flat sloping rim with raised edge, central concave depression; back: flat in centre, sloping towards rim. D. 11.3 mm, th. 3.1 mm. Area F fill (F6.3748).
- B14 Three-hole grey-brown china button. Front: concave; back: flat in centre, sloping towards rim. D. 7.5 mm; th. 2.2 mm. Area F Rubbish Pit 1 (F5 1.301 1).

Shell buttons

- B15 Four-hole shell button. Flat. D. 10.0 mm; th. 1.3 mm. Area C Layer 10 (sealed) (C64.5011).
- B16 Four-hole shell button. Front: flat sloping rim, central concave depression; back: flat. D. 8.8 mm; th. 1.4 mm. Area C Phase 3 fill (C13.5054).
- B17 One-hole shell button? Flat. D. 13.1 mm; th. 1.4 mm. Area C Layer 10 (sealed) (C64.5010).

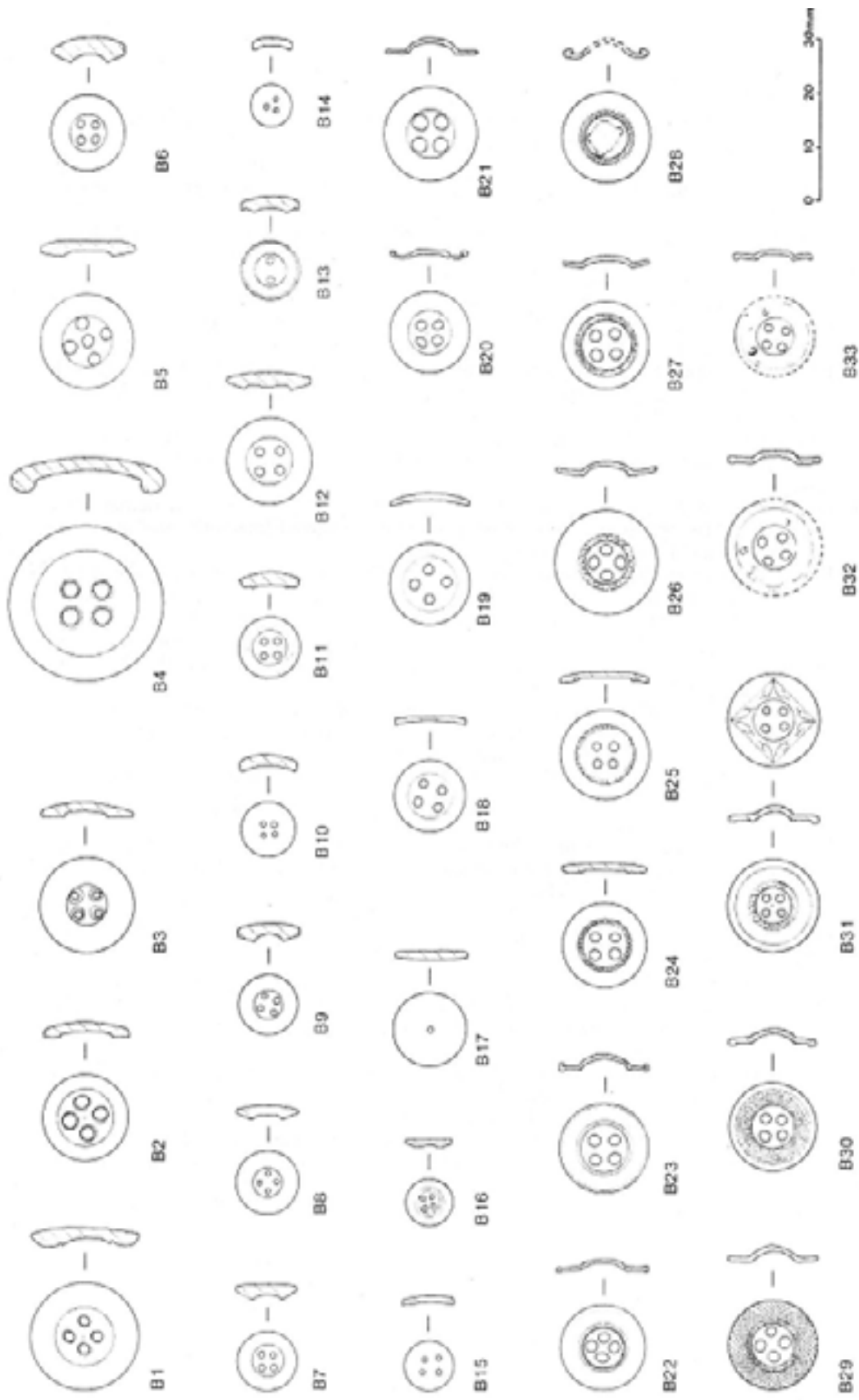


FIG. 22. Bone (B1-B5), china (B6-B14), shell (B15-B17) and metal (B18-B33) buttons. Actual size.

One piece metal buttons

- B18 Four-hole copper alloy one-piece button. Front: slightly concave, with groove the rim. D. 13.3 mm; th. 1.8 mm. Area C Phase 3 fill (C1.5141).
- B19 Four-hole copper alloy one-piece button. Front: concave, with groove defining the rim. D. 15.9 mm; th. 2.4 mm. Area C Layer 8 (C61.5020; another from Area A fill, A1.5196).
- B20 Four-hole copper alloy one-piece button. Front: convex rim marked off from concave central depression by grooved line; back: rim rolled over. D. 13.9 mm; th. 1.5 mm. Area F fill (F6.3738).
- B21 Four-hole copper alloy one-piece button. Front: flat rim, deep concave central depression (large button holes). D. 17.4 mm; th. 3.1 mm. Area C Layer 10 (sealed) (C64.5004).
- B22 Four-hole copper alloy one-piece button. Front: flat rim marked off from central concave depression by grooved line and circle of dots D. 16.5 mm; th. 2.1 mm. Area F fill (F6.3737).
- B23 Four-hole copper alloy one-piece button. Front: flat rim, central concave depression; back: rim rolled over. D. 17.3 mm; th. 2.9 mm. Area F Rubbish Pit 3 (F42.4525).
- B24 Four hole copper alloy one-piece button. Front: slightly convex rim demarcated from flat centre by circle of dots within grooved lines. D. 16.7 mm; th. 1.8 mm. Area C Layer 10 (sealed) (C64.5002).
- B25 Four-hole copper alloy one-piece button. Front: inward sloping rim marked off from flat or slightly concave centre by circle of embossed dots; back: slightly convex. D. 16.3 mm; th. 2.1 mm. Area C Layer 10 (sealed) (C64.5003).
- B26 Four-hole copper alloy one-piece button. Front: flat outward sloping rim with circle of dots on inner margin, concave central depression. D. 18.9 mm; th. 2.9 mm. Area F Rubbish Pit 2 (F44.4542).
- B27 Four-hole copper alloy one-piece button. Front: flat rim with circle of ellipses around inner margin, concave central depression. D. 16.0 mm; th. 2.3 mm. Area A fill (A1.5192; and another from the same context).
- B28 Four-hole copper alloy one-piece button with black enamelling. Front: flat rim marked off from central depression by circle of oblique lines; back: rim rolled over. D. 16.2 mm; th. unknown. Area A fill (A1.5194).
- B29 Four-hole copper alloy one-piece button with black enamelling. Front: flat rim with impressed pattern marked off from central depression by circle of ellipses. D. 16.6 mm; th. 2.9 mm. Area F fill (F4.3192).
- B30 Four-hole copper alloy one-piece button. Front: flat rim with impressed pattern of tiny dots and raised plain edge, deep concave central depression. D. 16.2 mm; th. 3.2 mm. Area A fill (A1.5191).
- B31 Four-hole copper alloy one-piece button with black enamelling. Front: flat with possible (illegible) lettering, marked off from central concave depression by circle of dots within grooved lines; back: impressed design. D. 17.1 mm; th. 3.3 mm. Area A fill (A1.5195).
- B32 Four-hole tin-based alloy one-piece button with black enamelling. Front: flat rim with outer groove with embossed lettering ...S...G...S, central concave depression. D. 17.5 mm; th. 2.4 mm. Area F fill (F6.5293).
- B33 Four-hole tin-based alloy one-piece button with black enamelling. Front: with embossed lettering ...G... &., central flat depression. D. 14.5+ mm; th. 1.8 mm. Area F fill (F6.5294).

Two-piece metal buttons

- B34 Two-piece copper alloy button with gilded surface. Flat, with looped alpha shank. D. 14.0 mm; th. 1.8 mm. Area C Phase 3 fill (C13.5035).
- B35 Two-piece copper alloy button. Flat, with impressed design and lettering on rear ...GIL...ND...; looped alpha shank. D. 16.0 mm; th. 1.7 mm. Area A fill (A1.5190).

Three-piece metal military buttons

- B36 Three-piece brass button. Front: convex. embossed 40 set within a wreath; back: flat, incuse lettering JENNES & CO/LONDON. D. 21.6 mm; th. 4.1 mm. Area F fill (F6.3734).
- B37 Three-piece brass button. Front: convex, 40 in wreath; back: flat, incuse lettering ...TAIT & Co LIMERICK. D. 25.4 mm; th. 4.6 mm. Area C Phase 3 (C13.5034; another identical from Area A fill, A1.5183).
- B38 Three-piece copper alloy button (front part only). Slightly convex, embossed 58. D. 12+ mm; th. unknown. Area A fill (A1.5184).
- B39 Three-piece copper alloy button. Front; convex, embossed lettering INDIA and 14 WATERLOO set above and below a royal tiger; back: flat, incuse lettering FIRMIN'S/LONDON. D. 18.6 mm; th. 7.5 mm. Area F fill (F6.4568).
- B40 Three-piece alloy button. Front: convex. embossed royal cipher VR set within a wreath and below a crown; back: convex, incuse lettering SMITH & WRIGHT. ?Flexible shank. D. 18.0 mm; th. 6.5 mm. Area F fill (F6.3735; another identical F6.3736).

Three-piece metal buttons (non-military)

- B41 Three-piece copper alloy button. Front: convex, with relief decoration of leaf stems; back: slightly convex, incuse lettering ...EXTRA/...S...ARD, with Saunders shank. D. 19.0 mm; th. 6.3 mm. (A1.5185)
- B42 Three-piece copper alloy button. Front: slightly convex with relief decoration of leaves and flower; back: slightly convex, incuse lettering EXTRA RICH..., with Saunders shank. D. 11.5 mm; th. 4.4 mm. Area F fill (F6.3739).
- B43 Three-piece copper alloy button. Front: slightly convex, too corroded to see detail; back; slightly convex, incuse lettering ...IMP.../QUAI... D. 17.0 mm; th. c.4.1 mm. Area A fill (A1.5189).
- B44 Three piece copper alloy button. Front: convex; back: flat, with Saunders shank. D. 11.5 mm; th. 7.7 mm. Area C Phase 3 fill (C4.5114).
- B45 Three-piece copper alloy button (backplate and shank). Flat, with pinhead shank, incuse lettering EXTRA/...PERI...STAND^D. D. 20.0 mm; th. unknown. Area A fill (A1.5186).
- B46 Three-piece copper alloy button (backplate and Saunders shank). Slightly convex. D. 17.5 mm. Area A fill (A1.5187).

Button or stud

- B47 Two or three-piece copper alloy button/stud. Front: convex; back: convex. extending into a neck with backplate and central screw hole. D. 20.6 unknown. Area C Phase 3 fill (C4.5112).

Glass buttons

- B48 Black glass button. Front: convex with detailed relief pattern; back: convex, with embossed lettering REGISTERED and stub of metal shank. 27.8 mm; th. 8.5 mm. Area A fill (A1.5200).

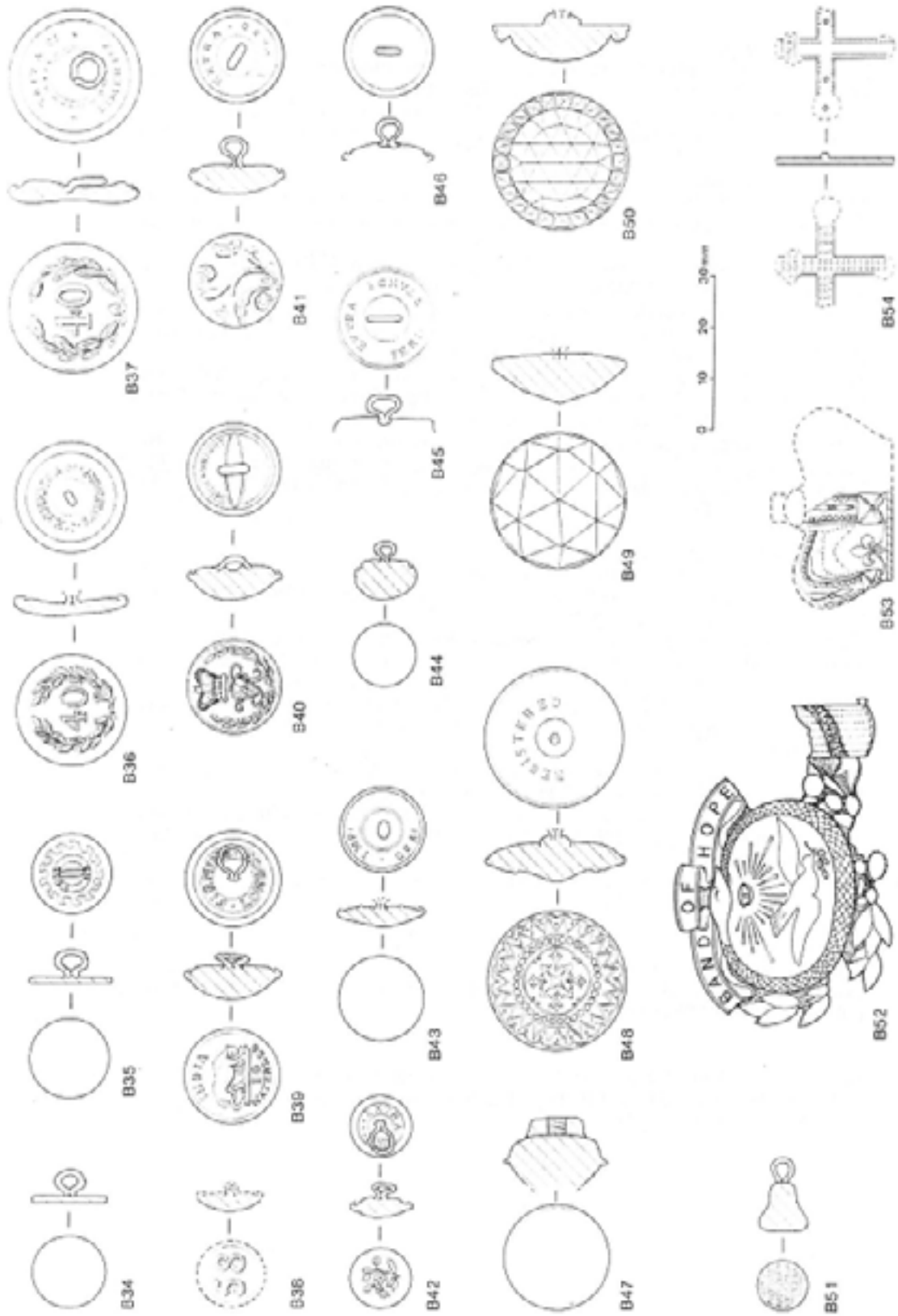


FIG. 23. Metal (B34-B47) and glass (B48-B51) buttons and metal badges (B52-B54). Actual size.

- B49 Black glass button. Front: convex with faceted decoration; back: flat, with stub of metal shank. D. 26.0 mm; th. 10.3 mm. Area A fill (A1.5201).
- B50 Black glass button. Front: convex with faceted decoration set within rim of embossed knobs; back: flat, with stub of metal shank. D. 26.3 mm; th. 8.3 Area F fill (F6.3746).
- B51 Blue glass button. Bell-shaped with metal shank and pattern of impressed squares on end. D. 10.0 mm; th. 10.0 mm. Area A fill (A1.5217).

Badges or brooches

- B52 Brass badge (incomplete) depicting a dove of peace below a radiant eye encircled by a snake and wreath. Above, the words BAND OF HOPE; to the right, a column with the word STRENGTH. There is tinned inlay on the background-of the central scene, partly covered by green paint. Area F fill (F7.4569).
- B53 Copper alloy shako plate (incomplete) consisting of a decorative crown. Area C Phase 3 fill (C4.5167).
- B54 Copper alloy cross. One side: decoration of embossed knobs; other side: decorative hatching on edge, possible lettering at top (INRI?), and three attachment stubs. Possibly part of a badge or brooch. Area C Layer 10 (backyard) (C22.5013).

8.0 METAL AND MISCELLANEOUS OBJECTS

8.1 Metal Objects (M1-M76, Figs. 24-31)

A quantity of metal objects were recovered from the site, a large proportion of which were too corroded or fragmentary to be identified. The metal buttons, badges and coins have been described in previous sections. The remaining material, described below, fell into the broad categories of tools, construction components, household fittings, household utensils, cutlery, belt fittings, and miscellaneous items which included ammunition, musical instruments, matchboxes, horse shoes and harness fittings. Metals were identified visually, and it was rarely possible to identify specific alloys by this means. Most of the copper alloy objects, however, are likely to be brass (Dr R. Clough, Department of Anthropology, Auckland University, pers. comm.)

8.1.1 Tools (M1-M12, Fig. 24)

At least 17 steel tools were recovered, of which 12 are illustrated and described in the accompanying catalogue. Some were types in use in modern times: the two different styles of axehead (M1-M2), a mason's or brickmaker's chisel (M3), a large plasterer's trowel (M5), long half-rounded file (M6), chisel (M7) and carpenter's brace bit (M9). Others are less familiar: the blacksmith's hammer (M4), carpenter's nose auger, or down-cutting bit (M8, cf. Sloane 1964: 73), and leatherworker's awl (M10). M11 appears to be a small gouging tool, while M12, a large corkscrew-shaped tool, is of uncertain function. Dr S. Best (consultant archaeologist, DOC, Auckland) has identified it as a device for curing constipation (pers. comm. 1989).

The remaining five tools (not illustrated) consisted of two chisel fragments, a much smaller flat file (incomplete), and two indeterminate tools with iron handles.

All the tools derived from the Phase 3 fill of Area C, except for M2 (Area A fill) and M9 (Area E cultural layer).

8.1.2 Construction Components (not illustrated)

These included several large iron hooped or square brackets/staples, two cast iron collars (d. 170 x w. 30 x th. 6 mm and d. 100 x w. 17 x th. 20 mm), a long iron T or cross garnet hinge (l. 230 mm) and a copper alloy butt hinge (52 x 16 mm). All were from Area A and C fill layers.

There were also a minimum of 223 iron and copper alloy spikes, nails and bolts. They have been categorised by head type following 1986 and are shown by type and context in Table 11. Iron spikes were the most common (107, or 48%). Where head type could be determined roseheads were the most frequent, followed by flatheads. Iron nails were also common (66, or 29%), and although most of the heads were indeterminate there was a greater variety in head type than the spikes. Twenty-seven copper-alloy spikes and tacks were recovered, which roseheads and flatheads were identified. The remainder consisted of 19 iron coachbolts, two iron tacks and two lead-headed iron roofing nails.

TABLE 11
Distribution of Nails, Spikes and Bolts

	A	B	C	D	E	Size range mm	Totals
Iron spikes							
Rosehead	6	-	7	-	11	39-220	24
Flathead	7	-	2	-	6	23-105	15
Rhomboid	-	-	-	1	2	33-205	3
Indeterminate	-	1	22	-	42	-140	65
Iron nails							
Rosehead	-	-	4	-	-	41-102	4
Flathead	2	-	6	-	-	50-102	8
Rhomboid	-	-	1	-	1	70-78	2
Flarehead	-	-	1	-	-	-	1
Protojolthead	4	-	-	-	-	64-78	4
Indeterminate	26	-	6	15	-	50-75	47
Iron tacks	1	-	1	-	-	12-16	2
Lead-headed iron nails							
Flattop	-	-	-	1	-	70	1
Indeterminate	-	-	1	-	-	55	1
Iron coach bolts	15	-	3	-	1	60-158	19
Copper-alloy spikes							
Rosehead	-	-	1	-	1	53-80	2
Flathead	15	-	-	-	3	20-47	18
Indeterminate	-	-	-	-	2	-	2
Copper-alloy tacks	3	-	2	-	-	15-30	5
TOTALS	79	1	57	17	69		223

8.1.3 Household Fittings (M13-M26, Fig. 25)

Most of these were wall and door fittings. All were copper alloy, probably brass, except for an iron key (M13), door knocker (M14) and small (50 x 45 mm) corroded padlock (not illustrated). Two styles of doorknob were identified (M15-M16). Three other doorknobs of the same type as M15 were recovered (not illustrated). Two door-handle backplates (M17 and another, not illustrated), a keyhole plate (M18) and escutcheon (M19) and backplate for a lock (100 x 58 mm, not illustrated) completed the range of door fittings.

Two bell cases (M20 and a similar example, not illustrated) may have been parts of front-door (or shop counter?) bells.

Various furniture fittings were also recovered: M21 and M22 are drawer handles, while M23 and M24 are ornamental fittings that may have been lamp parts (a back or base plate and a wall bracket respectively).

The final two illustrated items are probably sink or basin fittings: M25 a plug surround or strainer, which would have taken a central screw fitting, and M26 a plug handle.

Although limited in range and number, these few household items give a general impression of the range of fittings available to householders in what was one of the poorer quarters of Auckland. All came from the various fill layers of Areas A, C and F with the exception of M14 (Area F, Rubbish Pit 1).

8.1.4 Household Utensils (M27-M38, Figs. 26-27)

A varied range of items was recovered. Three were parts of fire-sets: a copper alloy poker with iron core (M27), a copper alloy grip from a pair of iron-handled tongs (M28), and what appears to be a toasting fork improvised iron wire (M29).

Kitchen furniture was represented by the cast iron handle of a butter churn (M30), and what are probably stove parts: M31 a cast iron cover plate, and M32 a cast iron handle. Kitchenware included a tinned iron cup (M33), and a large iron three-legged cauldron (M35, found in a recess set into the floor of the Phase 2 building in Area C beside two complete ginger-beer bottles - see Vol. 1, Section 6.1.1). Two other fragments of the bases of cast iron cooking pots were also recovered (not illustrated).

A copper alloy canister with an attached tube (M34) has been identified as a bottle jack. 'This was either hung in a Dutch oven or suspended from a jack rack screwed or clamped above the fireplace. A joint of meat was suspended from this clockwork device and slowly rotated as it slowly cooked in front of an open fire' (description given for object on display in Little Walsingham museum, Bridewell, Norfolk). The tube was positioned above the canister, not within it as here, and was fastened by a handle to the suspension device. At the bottom of the canister was a hook on which the meat was hung. Details of the internal mechanism are not clear. It was also noted after completion of this report that a manufacturer's nameplate (M57) was originally attached to the canister, and the bottle jack was therefore made by the firm John Linwood (see below).

Rather more decorative household items were a brass collar with relief decoration (M36), which may have been a lamp fitting, a brass candlestick (M37), and a copper alloy tripod stand with central screw hole (M38), which could also have been the base of a candlestick.

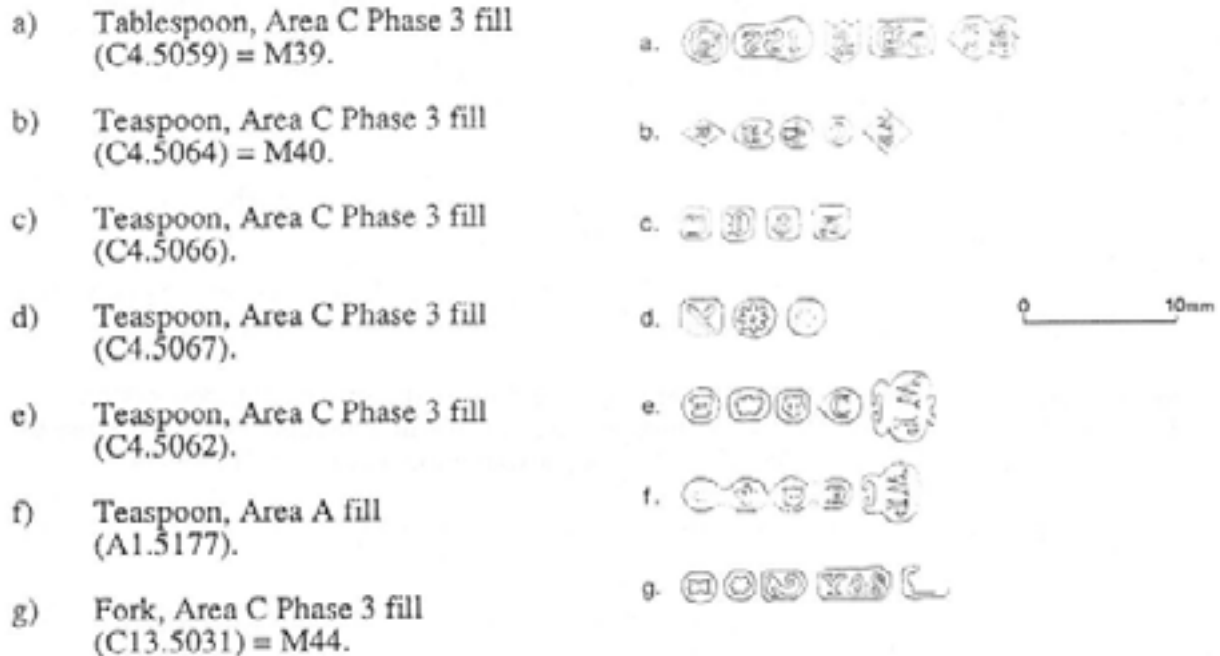
Other items (not illustrated) included a small copper alloy key suitable for a travelling case or cabinet drawer, and an iron double-ended hook, probably used for hanging pots over a fire.

With the exception of M35 (see above) and M38 (from Rubbish Pit 1 of Area F) all the items came from the fill of Areas A and C.

8.1.5 Cutlery (M39-M45, Fig. 27)

No silver tableware was recovered. With the exception of an iron fork and knife, all the pieces were copper alloy, although two tablespoons had traces of silver plating. The cutlery comprised six tablespoons (one illustrated as M39); a dessert spoon; 11 teaspoons (two shown as M40 and M41); a condiment spoon (M42); a mustard spoon (M43); two forks (M44, and M45, of iron with an antler handle); and one very corroded iron fishknife (blade only, not illustrated).

The tablespoons, dessert spoon, all except one (M41) of the teaspoons and the fork M44 were all plain with fiddle-shaped handles. One of the tablespoons (M39), five of the teaspoons and the fork M44 bore legible marks (see below). None was a silver hallmark and it has not yet been possible to identify them from the available literature on other forms of mark.



The cutlery derived from Area A fill (3 tablespoons, 1 teaspoon, the condiment spoon, and the iron fork and fishknife); Area F fill (4 teaspoons); and the Phase 3 fill of Area C (the remainder).

8.1.6 Belt Fittings (M46-M55, Fig. 28)

At least 14 belt fittings were recovered. All were copper alloy/brass except for M48, which was made of iron.

There were two brass belt buckles with double tang and central roller bar. One, illustrated as M46, bore the date '1872' and the words 'Paris' and 'Solide'. The other (not illustrated) was identical in shape and size, but only carried the letters 'W...W' embossed on the outer bar.

One other fragment from a copper alloy double-tanged buckle was recovered (M47); the remaining fittings were of the single-tanged (M48-M50) or clasp (M51-M53, ?M54) type. Two single-tanged buckles retained parts of the leather belt (M48-M49), but little detail could be made out.

The most ornate fitting was the S-shaped belt clasp with a swan design (M53), a type which (with minor variations) remained popular up to the middle of this century. M54, with its three attachment studs, is probably a belt clasp, while M55 is probably a brace adjuster (cf. Cameron 1985: 159 no. 2). Two other fittings (not illustrated) consisted of a simple rectangular buckle (42 x 22 mm) missing its single tang, and a plain oval clasp fitting (55 x 22 mm).

All the fittings came from the various fills in Areas A, C and F, except for M46, which came from Rubbish Pit 2 of Area F.

8.1.7 Other Metal Objects (M56-M76, Figs. 29-31)

A variety of items such as musical instruments, ammunition, umbrella fittings, horseshoes and harness fittings, matchboxes, heelplates and combs were recovered.

M56 is so far unidentified. It consists of a gold disc marked 'Wests Patent' (among other lettering) with a copper alloy opening mechanism clasped onto it, presumably operated by a key of some sort. A coiled spring would have allowed the movement of part of the mechanism. It appears to be a backplate, and the use of gold indicates that it was part of a luxury item such as a watch.

M57 is a copper alloy nameplate of a firm called 'John Linwood' which was originally attached to a bottle jack canister (see above, M34).

The musical instruments comprised two pewter harmonica parts from the Area F fill (M58-M59) and two copper alloy jew's harps from the fill of Area A (M60-M61).

Firearms were represented by a lead bullet (M62) and unused copper alloy percussion cap (M64) from Area A fill, and a copper cartridge base for use in a Snider .577 from Area C Phase 3 fill (M63: cf. Ritchie 1986: 463a-c). (See also the musket flint, V11, Fig. 31).

A small copper alloy comb (M65) was one of four combs recovered (see also V9 and V10, Fig. 31).

Silver thimbles of the type shown as M66 were quite common. Six were found in all, from the various fills in Areas A, C and F.

A few umbrella fittings were found: a copper alloy ferrule (M67) and top notch (M68) and a bone ferrule illustrated below as V8. (See Farrell 1985: 91, Fig. 76 for umbrella parts.)

M69 is a lead sounding weight recovered from Area C (Layer 10, backyard). It has a recess in the base which would have been filled with soft wax, so that when lowered to the sea bottom material would adhere to it, indicating the type of surface below (Leigh Johnson, DOC archaeologist, Auckland, pers. comm. 1989).

A variety of iron horseshoes (not illustrated) and harness fittings (M70-72) were recovered. There were four horseshoes: two medium-sized (1. 115 and 118 mm), one large (1. 145 mm) and one Clydesdale-sized from the well fill in Area F (1. 205 mm).

M73 appears to be an incomplete iron animal trap for a medium-sized animal such as a rabbit. It consists of an angled base and raised catchplate.

At least eight iron heelplates for adult-sized shoes were recovered. Most were of the simple type shown as M74, but M75 had an additional crossbar at the front of the heel.

M76 consisted of an embossed oval nameplate marked 'Griffiths & Co/M & G/1859'. It was attached to a slightly curved fragment of tin can. It was probably part of an oval oil can, since a similar example by a different manufacturer has been observed elsewhere, the 'M & G' standing for 'M[achine] and G[un Oil]' (Mr F. Johns, collector, New Plymouth, pers. comm.).

At least five tin matchboxes were found. They were very fragmentary and have not been illustrated. Only two retained enough legible lettering for attribution:

- a) Bryant & May matchbox (lid fragments only). Incuse lettering visible on the inside in mirror image: BRYANT & M./WAX VEST./...DON. The complete legend would have read 'Bryant & MAY/Wax Vesta/London' (cf. Anson 1983: 118 nos. 19-21). Area A Fill (A1.5283).
- b) Bell & Black matchbox (fragments of lid and side). Incuse lettering visible in mirror image on the inside: ...OWLANE/...IDE. The full legend would have read 'Bell & Black/15/Bowlane/Cheapside/London' (cf. Anson 1983: 116 no.3). Area C Phase 3 fill (C4.5104).

Other metal objects (not illustrated) included such items as a copper alloy bayonet fitting, copper alloy clock (or other) movements, small copper alloy machine cogs, an iron cotter pin for use in machinery, plaited copper alloy wire, and a copper alloy rope thimble.

8.2 Miscellaneous Objects of other Materials (V1-V11, Fig. 31)

A of objects in a variety of materials other than metal, glass or ceramic were recovered. A selection is illustrated in Fig. 31.

V1 is an ivory stopper or knob with copper alloy pins set through it. V2 and V3 are bone and ivory cylinders (respectively) with internal screw threads. V2 is perforated by 12 holes, one of which held the broken-off stub of an ivory screw. Their function is unclear.

V4 is an ivory cribbage peg and V5 parts of two or more wooden chess pieces. A similar chess piece was recovered from Area C (not illustrated).

V6 and V7 are bone knife and fork handles, V6 plain and in a single piece, V7 consisting (originally) of two panels riveted together with iron pins and covered by an iron cap. (An antler fork handle was also recovered: see M45, Fig. 27).

V8 is a bone umbrella ferrule (compare the metal one, M67, Fig. 30). V9 and V10 are combs, V9 made of synthetic material (probably vulcanite) with a copper alloy trim, and V10 of tortoiseshell (compare the small metal comb M65, Fig. 30). Another comb fragment, probably also of vulcanite, but lacking the metal trim was found in the same context (Area F fill).

V11 is a grey-brown opaque musket flint. Other objects of stone (not illustrated) included two whetstones, fragments of roofing slate, and a slate pencil.

Various leather items were recovered from the fills of Areas A, C and F. In addition to offcuts were the soles of at least seven adult and six children's shoes. The children's shoes all came from the Area C Phase 3 fill. All had built up heels c.15-20 mm thick, and one had a copper alloy toe cap and copper alloy nails still in place. Three of the soles were complete and measured 140 by 45 mm, 150 by 50 mm and 150 by 45 mm (length by width of the toe area).

Four of the adult-sized shoe soles from the same context, and the remainder from Rubbish Pit 1 of Area F. Two retained heels 20 mm and 35 mm thick. Measurements could be made on three soles: 240 by 80 mm, 230 by 65 mm and 240 by 65+ mm.

Only one adult shoe retained fragments of the upper, around the heel. It appeared similar to an example of a lady's boot illustrated in Prickett 1981a (Pl. 4.12). Two or three leather strips with copper alloy rings for lace fastenings were also recovered.

A few fragments of woollen, and cotton cloth had survived, but were too small to be identifiable as garments or other items.

8.3 Discussion and Conclusions

The metal and miscellaneous objects recovered from the Chancery St site represent the general household items that one would expect to find in the 19th century middens of a predominantly residential area with perhaps a few small workshops. They include tools, structural and household fittings, household utensils and cutlery, belt fittings, horseshoe and harness fittings, matchboxes, umbrella fittings, game pieces, and some and firearm components. A concentration of leather shoes and in the fill of Area C might represent waste from a cobbler's workshop. More than one shoemaker lived, and perhaps worked, on the site (Vol. 1, Section 2.3).

The material derived overwhelmingly from the fill layers of Areas A, C and The only items in primary deposits were an iron door knocker (M14), copper alloy tripod stand (M38), the Griffiths & Co oil can 9M76) and three leather shoes from Rubbish Pit 1 of Area F. There was also a belt buckle from Rubbish Pit 2 of Area F, and a large iron cauldron that may have been *in situ* in a recess in the Phase 2 cobbled floor in Area C.

8.4 Catalogue of Illustrated Metal and Miscellaneous Objects (Figs. 24-31).

Metal tools

- M1 Steel axehead. L. 183 mm; blade w. 122+ mm; th. (haft end) 45 mm. Area C Phase 3 fill (C4.5078).
- M2 Steel (haft end broken off). L. 170+ mm; blade w. 115 mm. Area A fill (A1.5258).
- M3 Steel mason's or brickmaker's chisel. L. 125+ mm; blade w. 125+ mm; th. (haft end) 18 mm. Area C Phase 3 fill (C4.5080).
- M4 Steel blacksmith's hammer. L. 265 mm; w. (butt end) 56 mm; w. (centre) 46 mm; th. (butt end) 30 mm. Area C Phase 3 fill (C13.5046).
- M5 Steel plasterer's trowel. Blade l. 255 mm; blade w. 120 mm; handle ht. 55 mm. Area C Phase 3 fill (C4.5076).
- M6 Steel half-rounded file. File l. 450 mm; tang l. 65 mm; file w. 38 mm; file th. 13 mm. Area C Phase 3 fill (C4.5077).
- M7 Steel chisel (complete). L. 171 mm; max. blade w. 27 mm; blade th. 8 mm. Area C Phase 3 fill (C4.5079).
- M8 Steel nose auger. Total l. 390+ mm; scoop l. 143 mm; scoop w. 26 mm; scoop 15 mm. Area C Phase 3 fill (C13.5174).
- M9 Steel brace bit. L. 135+ mm; w. 14 mm. Area E cultural layer (E1.5292).



FIG. 24. Metal objects: tools.

- M10 Steel awl, consisting of point, shoulder and handle. Total l. 116 mm; point l. 52 mm; mid point w. 3 mm. Area C Phase 3 fill (C4.5084).
- M11 Steel gouging tool, consisting of long handle and small spoon-like end. Handle 152 mm x 12 mm x 10 mm: bit 38 mm (l.) x 8 mm (max w.) x 3 mm (th.). Area C Phase 3 fill (C4.5083).
- M12 Large steel screw with handle. L. 246+ mm; handle w. 120 mm; th. 10 mm. Area C Phase 3 fill (C4.5081).

Metal household fittings

- M13 Iron key for mortice lock. L. 131 mm; handle w. 46 mm; shaft th. 10 mm. Area C Phase 3 fill (C13.5042).
- M14 Iron door knocker. L. 120 mm; w. at centre 44 mm; th. 15 mm. Area F Rubbish Pit 1 (F51.4583).
- M15 Copper alloy door knob, with square attachment hole at base, and single attachment hole on neck. D. 51 mm; base d. 26 mm; ht. 24 mm. Area C Phase 3 fill (C13.5038).
- M16 Copper alloy door knob, with round attachment hole with internal screw thread at base. D. 41 mm; base d. 19 mm; ht. 46 mm. Area C Phase 3 fill (C14.5288).
- M17 Copper alloy backplate for door handle. D. 35 mm; th. 1 mm. Area A fill (A1.5251).
- M18 Copper alloy keyhole plate. L. 61 mm; max. w. 24 mm. Area C Phase 3 fill (C13.5040).
- M19 Copper alloy keyhole escutcheon. L. 52 mm; ring d. 14 mm. Area A fill (A1.5249).
- M20 Copper alloy bell case. D. 75 mm. Area C Phase 3 fill (C13.5039).
- M21 Copper alloy drawer handle. L. 112 mm; w. 43 mm. Area C Phase 3 fill (C4.5070).
- M22 Copper hinged drawer handle. Handle l. 70 mm; plate w. 27 mm. Area C Phase 3 fill (C4.5071).
- M23 Copper alloy ornamental fitting, possibly a backplate for a wall lamp. D. 55 mm. Area C Phase 3 fill (C13.5043).
- M24 Copper alloy wall bracket, perhaps to support a lamp. L. 115 mm; w. 50 mm. Area F fill (F6.3727).
- M25 Copper alloy surround/strainer for basin or sink, with internal screw thread. D. 53 mm. Area F fill (F6.3653).
- M26 Copper alloy attachment for sink or basin plug. L. 38 mm; ring d. 21 mm. Area F fill (F6.3706).

Metal household utensils

- M27 Copper alloy poker with iron core (incomplete). L. 340+ mm; shaft th. 10 mm. Area C Phase 3 fill (C13.5044).
- M28 Copper alloy spoon-shaped tong grip, retaining the stub of an iron handle. L. 42 mm; d. 27 mm; spoon th. 5 mm. Area C Phase 3 fill (C1.5172).
- M29 Iron improvised 2-pronged toaster made of twisted wire. L. 185 mm; w. 65 mm; wire d. 3 mm. Area A fill (A1.5261).
- M30 Cast iron handle of butter churn. L. 198 mm; handle ht. 60 mm; ring d. 31 mm. Area C Phase 3 fill (C1.5144).
- M31 Cast iron stove part (incomplete). W. 118 mm; th. 35 mm. Area C Phase 3 fill (C1.5147).
- M32 Cast iron handle, possible for a stove. L. 90 mm; max. w. 28 mm; th. 8 mm. Area C Phase 3 fill (C1.5146).
- M33 Tinned iron cup with handle. D. 109 mm; ht. 70 mm; th. 1 mm. Area C Phase 3 fill (C4.5098).
- M34 Copper alloy bottle jack. L. 115 mm; d. approx. 80 mm; tube d. 20 mm. (Note that the nameplate M57 was originally attached to the cylinder). Area C Phase 3 fill (C15.5163).

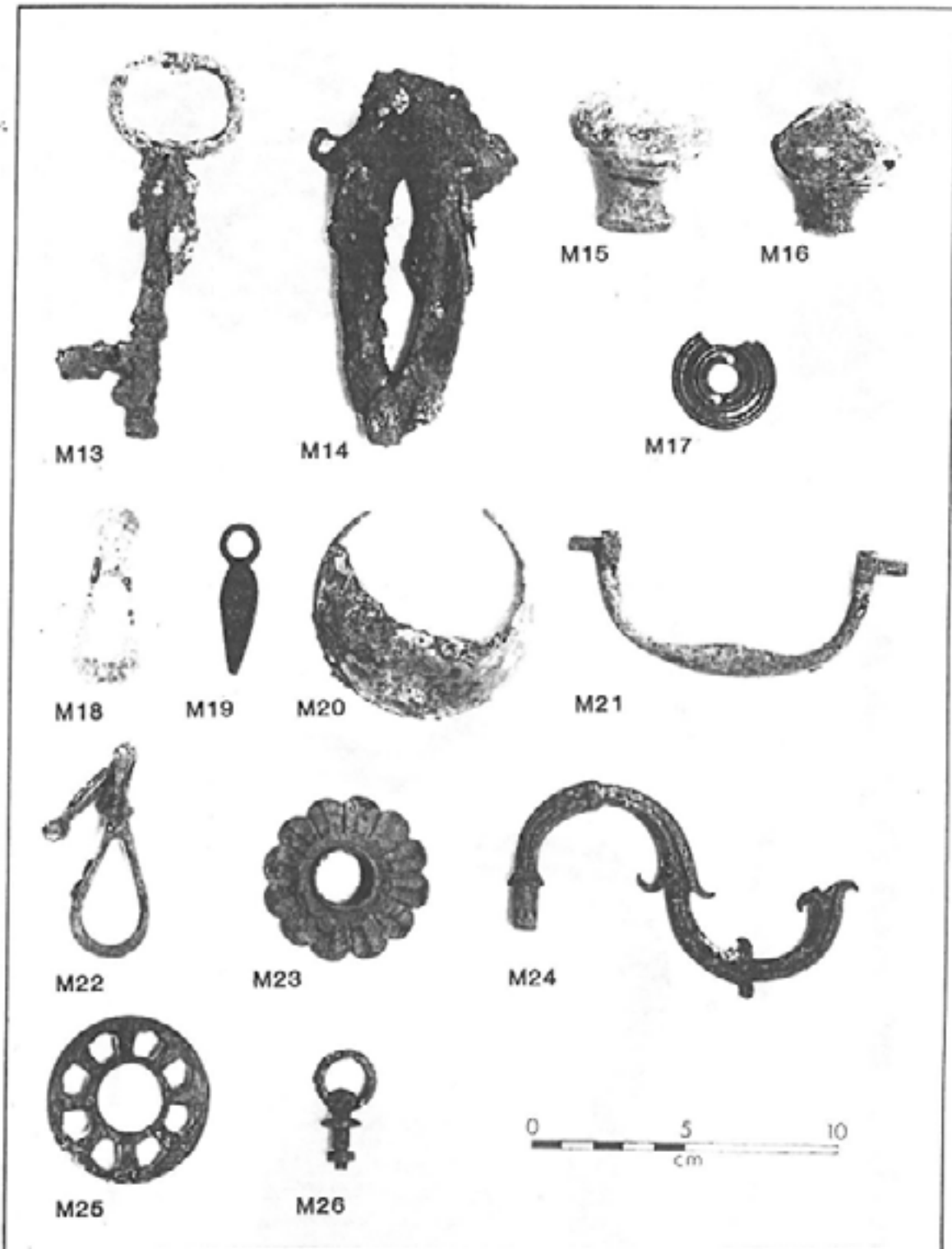


FIG. 25. Metal objects: household fittings.

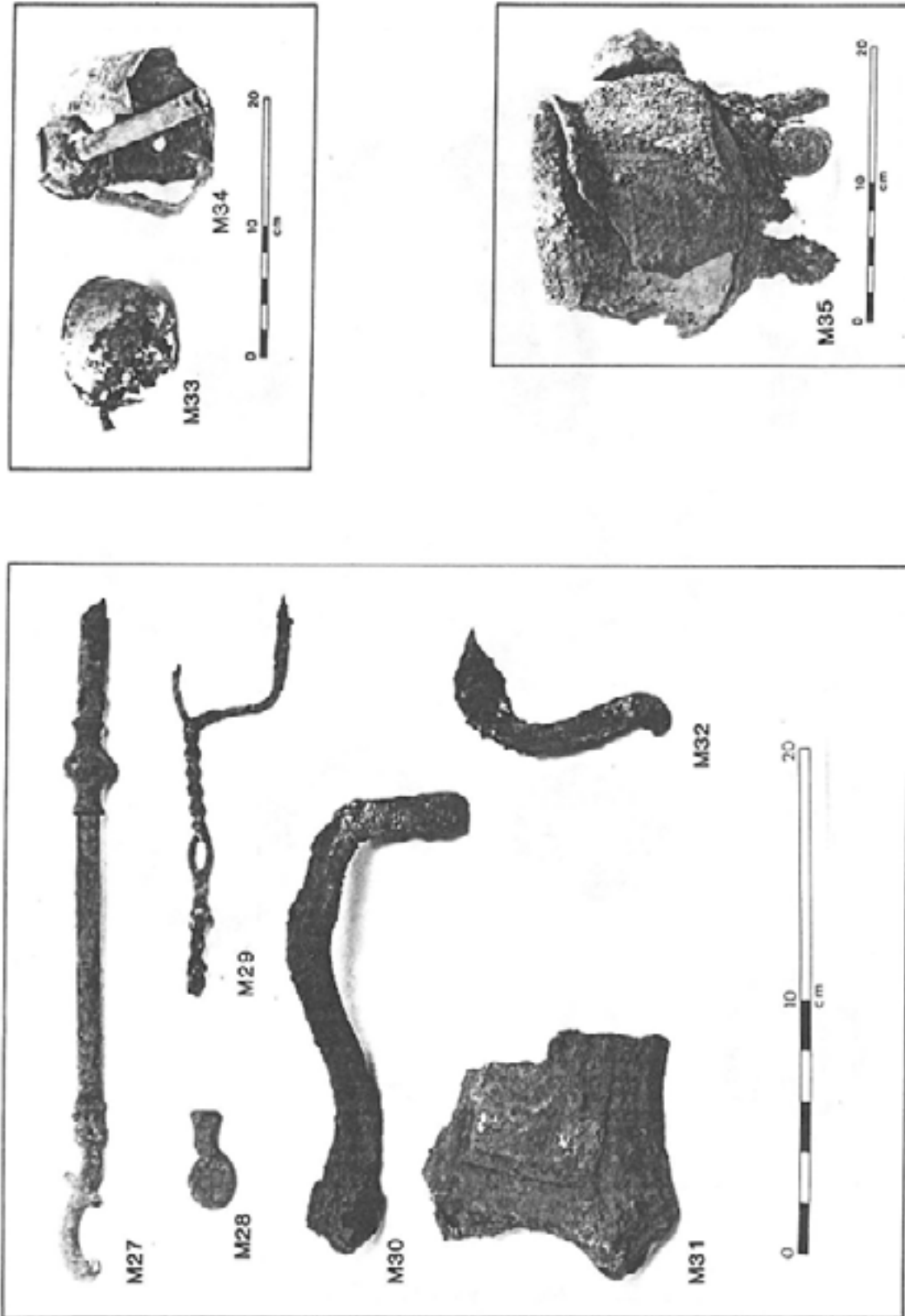


FIG. 26. Metal objects: household utensils.

- M35 Cast iron tripod cauldron. Rim d. 224 mm; ht. 135 mm. Area C recess in Phase 2 cobbled floor (C25.5289).
- M36 Brass ornamental fitting, possibly for a lamp, with relief decoration of flowers and leaves; there are three notches cut into the upper rim, which is flat and 6 mm wide. D. 82 mm; ht. 30 mm. Area C Phase 3 fill (C4.5110).
- M37 Brass candlestick. Ht. 72 mm; base d. 53 mm. Area C Phase 3 fill (C4.5073).
- M38 Copper alloy tripod stand (incomplete) with internal screw thread. Ht. 11 mm; radius 30 mm. Area F Rubbish Pit 1 (F51.4586).

Metal cutlery

- M39 Silver-plated copper alloy tablespoon with mark on handle (see figure in text). L. 221 mm; bowl w. 47 mm; handle w. 27 mm. Area C Phase 3 fill (C4.5059).
- M40 Copper alloy teaspoon with mark on handle (see figure in text). L. 143 mm; bowl w. 32 mm; max. handle w. 16 mm. Area C Phase 3 fill (C4.5064).
- M41 Copper alloy teaspoon (incomplete); shaft decorated with embossed dots. Bowl 50 mm x 30 mm. Area C Phase 3 fill (C4.5063).
- M42 Copper alloy condiment spoon (incomplete). L. 100 mm; bowl w. 28 mm; max. handle w. 14 mm. Area A fill (A1.5178).
- M43 Copper alloy mustard spoon (incomplete). L. 100 mm; bowl w. 16 mm; handle w. 15 mm. Area C Phase 3 fill (C4.5068).
- M44 Copper alloy fork, mark on handle (see figure in text). L. 170 mm; w. 23 mm; handle w. 21 mm. Area C Phase 3 fill (C13.5031).
- M45 Iron fork (incomplete) with antler handle. Handle l. 75 mm; max. handle w. 22 mm; fork l. 68+ mm. Area A fill (A1.5179).

Metal belt fittings

- M46 Brass double-tanged belt buckle with black enamelling. Incuse lettering on roller bar PARIS (obv.) and SOLIDE (rev.), and on the outer plate 1872. 32 mm x 12 mm. Area F Rubbish Pit 2 (F44.4541).
- M47 Copper alloy tang from double-tanged belt buckle. W. unknown. Area A fill (A1.5239).
- M48 Iron single-tanged belt buckle, retaining part of leather belt. 50 mm x 37 mm. Area F well (F1.2995).
- M49 Copper alloy belt buckle, retaining part of leather belt. 27 mm x 21 mm. Area C Phase 3 fill (C4.5102).
- M50 Brass single-tanged belt buckle. 45 mm x 33 mm. Area C Phase 3 fill (C4.5101).
- M51 Brass belt clasp. 44 mm x 42 mm. Area F fill (F7.3765).
- M52 Brass belt clasp. 58 mm x 25 mm. Area F fill (F6.3732).
- M53 Brass S-shaped belt clasp with swan design and attachment ring. 37 mm x 18 mm (excl. ring). Area C Phase 3 fill (C4.5100).
- M54 Brass ?belt clasp consisting of a hooked plate with three attachment studs. 45 x 23 mm. Area F fill (F20.4400).
- M55 Brass brace adjustor. 34 mm x 14.5 mm. Area F fill (F6.3730).

Other metal objects

- M56 Gold backplate with copper alloy release mechanism, perhaps for a watch. Flat gold plate with incuse lettering T and M either side of a monogrammed CWE, above, and below WESTS PATENT. Other lettering is concealed by the mechanism, which consists of a sliding plate operated by a coiled spring clamped to the backplate by another piece of metal; this has a keyhole-shaped opening revealing the coil below, and in the centre a small copper alloy projection. D. 18.9 mm. Area F fill (F6.4570).

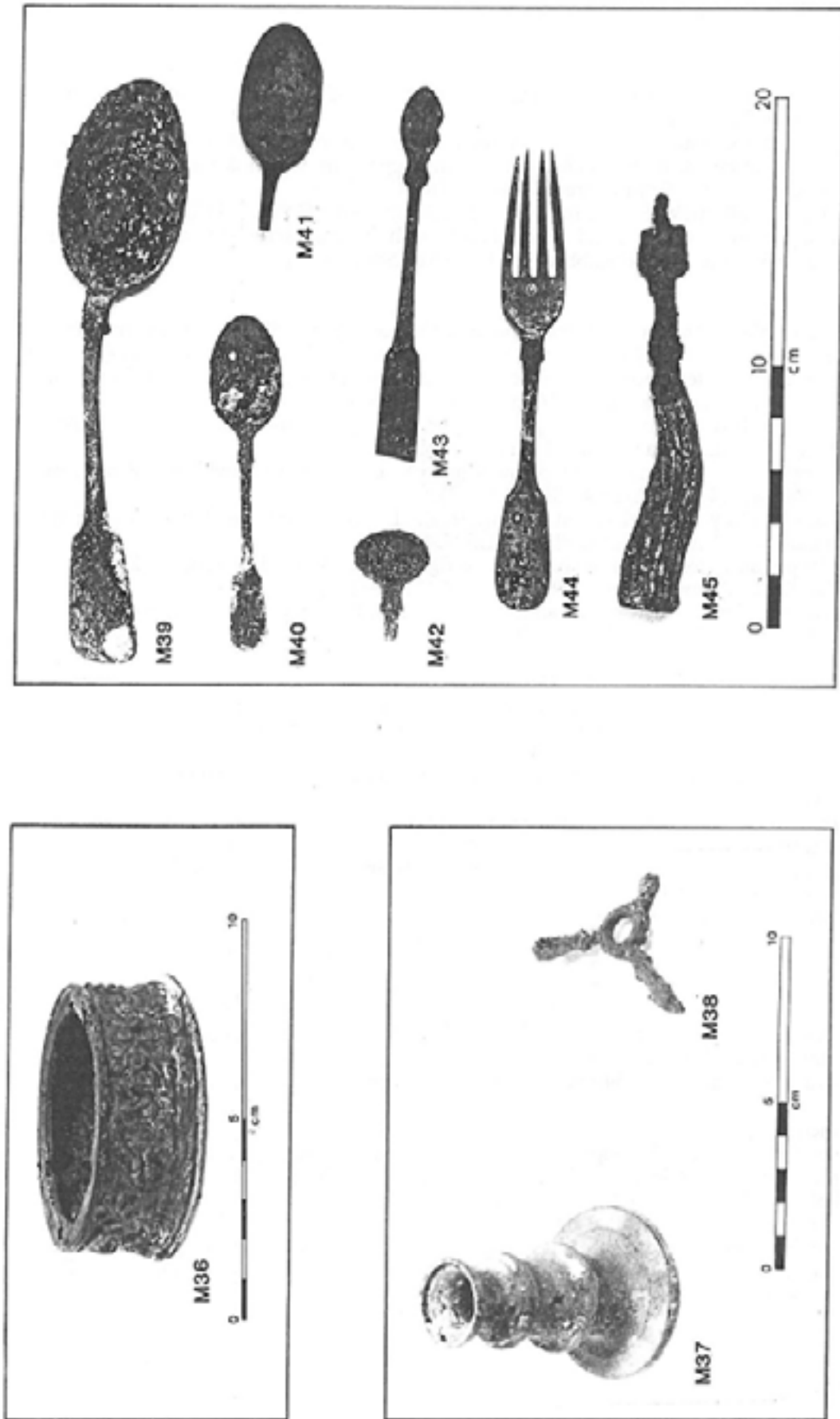


FIG. 27. Metal objects: household items and cutlery.

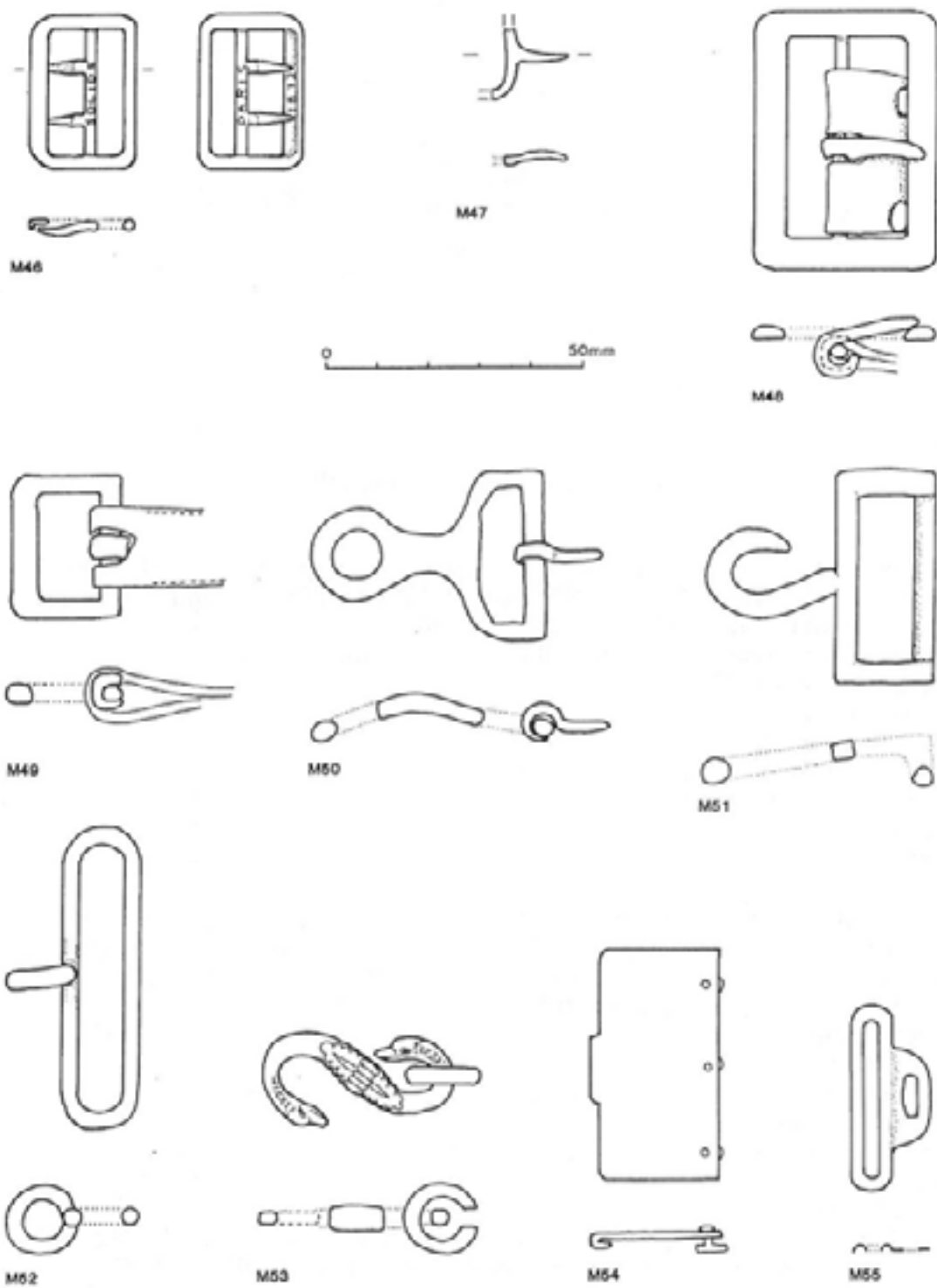


FIG. 28. Metal objects: belt fittings.



FIG. 29. Metal objects: miscellaneous.

- M57 Copper alloy name plate, originally attached to the bottle jack canister, M34. Embossed lettering JOHN LINWOOD/WARRANTED, around a tree design. 58 mm x 40 mm. Area C Phase 3 fill (C15.5162).
- M58 Pewter harmonica with copper alloy reeds (incomplete). L. 73 mm; w. 39+ mm. Area F fill (F6.3722).
- M59 Pewter harmonica with copper alloy reeds (incomplete). L. 47+ mm; w. 31 mm. Area F fill (F52.4590).
- M60 Copper alloy jew's harp. L. 59 mm; w. 34 mm. Area A fill (A1.5241).
- M61 Copper alloy jew's harp. L. 38 mm; w. 21 mm. Area A fill (A1.5242).
- M62 Lead bullet. L. 27 mm; base d. 18 mm. Area A fill (A1.5264).
- M63 Copper cartridge base' for a Snider .577. D. 19.5 mm. Area C Phase 3 fill (C4.5109).
- M64 Copper alloy percussion cap. D. 19 mm, ht. 6 mm. Area A fill (A1.5263).
- M65 Copper alloy comb (incomplete). L. 37+ mm; w. 15 mm. Area F fill (F6.3751).
- M66 Silver thimble, cone-shaped with surface indentations. Ht. 21 mm; base d. 18 mm; top d. 12 mm. Area C Phase 3 fill (C4.5072).
- M67 Copper alloy umbrella ferrule. L. 46 mm; d. 10 mm at tip. Area C Phase 3 fill (C13.5045).
- M68 Copper alloy umbrella top notch (incomplete). L. 22+ mm; max. d. 25 mm. Area A fill (A1.5280).
- M69 Lead sounding weight, with oval recess at the bottom. L. 102 mm; base d. 39 mm; recess in base 25 mm x 18 mm x 8 mm deep. Area C Layer 10 (backyard) (C22.5012).
- M70 Iron horse harness fitting. 109 mm x 109 mm. Area C Phase 3 fill (C4.5096).
- M71 Iron buckle for horse harness. 100 mm x 56 mm. Area A fill (A1.5257).
- M72 Iron horse harness fitting. 113 mm x 56 mm. Area C Layer 8 (C23.5017).
- M73 Iron part from an animal trap consisting of a base and raised catchplate (incomplete). 92 mm x 80 mm. Area C Phase 3 fill (C1.5143).
- M74 Iron heelplate for adult shoe. 62 mm x 70 mm. Area C Phase 3 fill (C4.5097).

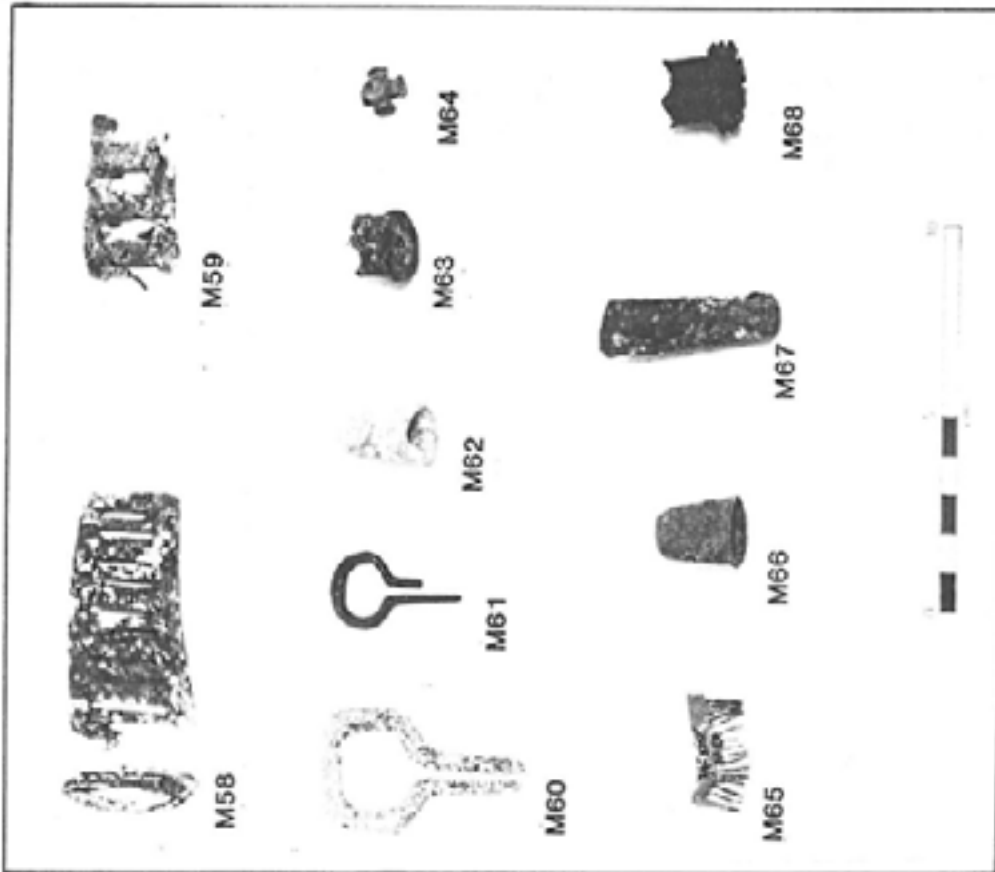
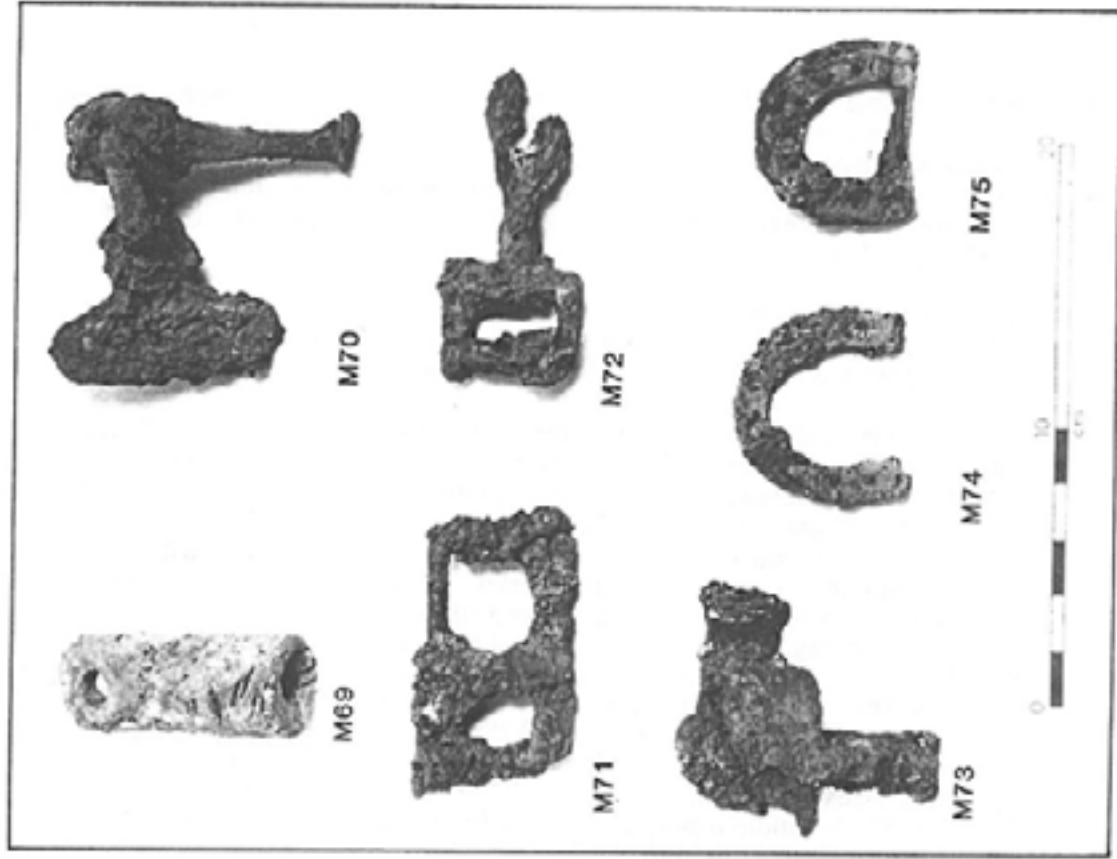


FIG. 30. Metal objects: miscellaneous.

- M75 Iron heelplate for adult shoe, with crossbar; 9 nailholes around the edge, all retaining the iron nails, and one nailhole in the centre of the crossbar (nail absent). 54 mm x 65 mm. Area A fill (A1.5273).
- M76 Curved tin fragment (53 x 44 mm) from machine and gun oil can, with oval nameplate. Embossed lettering: ...GRIFFITHS & Co/M. & G./1859. Area F Rubbish Pit 1 (F51.3007).

Miscellaneous non-metal objects

- V1 Ivory knob or stopper with copper alloy pin through the neck and others set into the faceted sides and top. L. 38 mm; w. (top) 21 mm; neck d. 14 mm. Area C Phase 3 fill (C1.5160).
- V2 Bone cylinder with internal screw threads (5 mm wide) at either end. Three grooves run around the cylinder, with four holes set in each; one hole contains the broken stub of an ivory screw, which projects 5 mm into the cylinder. L. 31 mm; d. 30 mm. Area C Phase 3 fill (C4.5169).
- V3 Ivory beehive-shaped object with internal screw thread 3 mm wide at the base; ringed with circular grooves on the exterior. L. 26 mm; d. 24 mm (base), 18 mm (top) and 16 mm (interior). Area C Phase 3 fill (C4.5171).
- V4 Ivory cribbage peg. L. 34 mm; th. 4 mm. Area C Phase 3 fill (C13.5057).
- V5 Wooden chess pieces (two bases and the head of a pawn); internal screw thread visible in the centre of one base (the other filled). D. of bases 28 mm, and of attachment holes 6 mm. Area F fill (F50.2897).
- V6 Bone knife/fork handle, retaining part of iron tang. L. 91 mm; max. w. 17 mm; th. 8 mm. Area F fill (F6.3752).
- V7 Bone knife/fork handle panel; half rounded with decorative carving. There are two holes for iron rivets (one retained), and on the end an iron cap, now detached but originally fastened to the handle by iron rivets still projecting from the bone handle. L. (excl, cap) 75 mm; max. w. 20 mm; max. th. 6.5 mm. Area A fill (A1.5182).
- V8 Bone umbrella ferrule. L. 61 mm; max. d. 18.5 mm. Area C Phase 2 walls (C56.5027).
- V9 Comb of synthetic material (probably vulcanite) with copper alloy back strip (incomplete). W. 40 mm. Area F fill (F6.3749).
- V10 Tortoiseshell comb (incomplete). W. 40 mm. Area C Phase 3 fill (C4.5121).
- V11 Musket flint. 25 mm x 28 mm. Area A fill (A1.5272).



M76

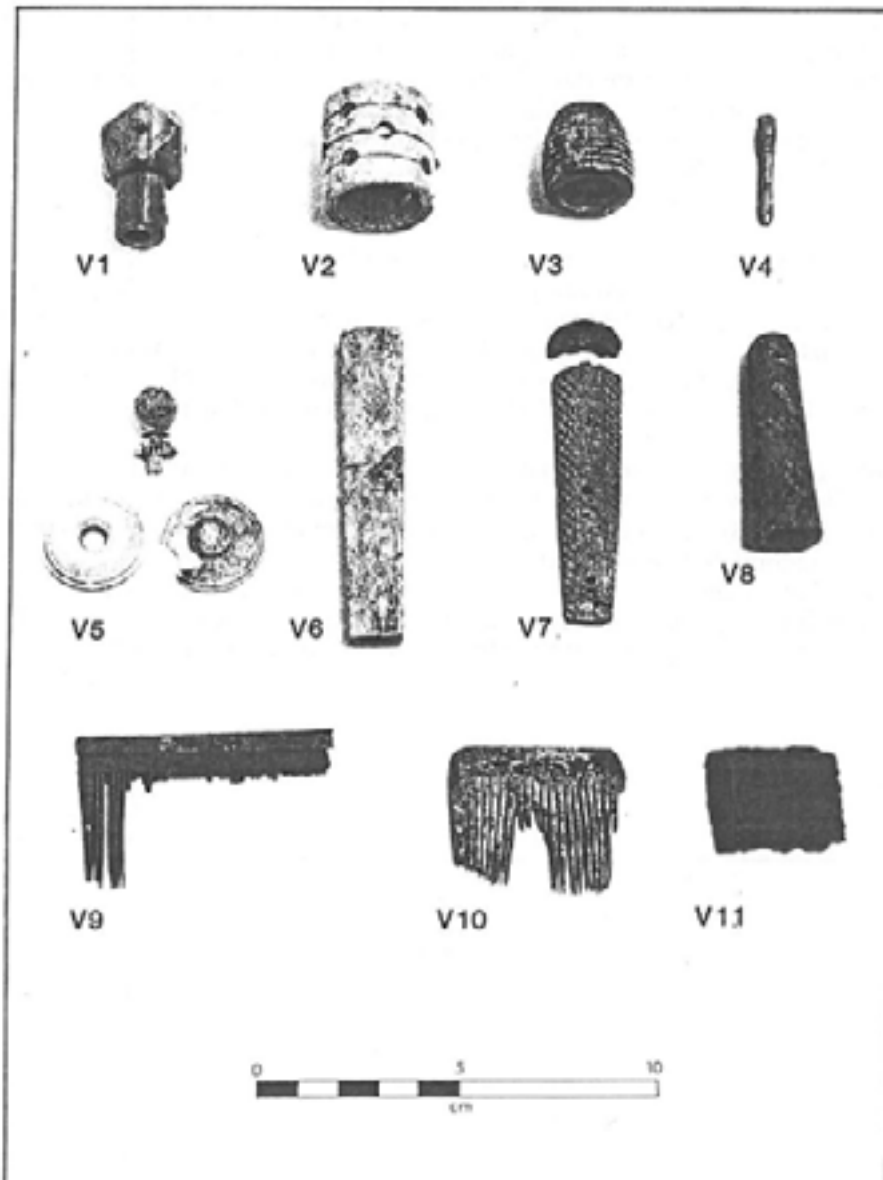


FIG. 31. Metal (M76) and miscellaneous (V1-V11) objects. M76 actual size.

9.0 BRICKS AND DRAINPIPES

A number of bricks and brick fragments were found on the site. All were hand made, confirming their early date (machine methods were not introduced to New Zealand until 1882 (Scott 1979: 105-6). All were likely to have been made in the period c.1840-1860, and some may have been imported from Australia, as was common practice during this period (pers. Mr Jack Diamond, local historian, and Ms Myfanwy Eaves, Dept of Anthropology, Auckland University. Many carried impressed thumbprints at the corners or moulded frogmarks in the centre. Many were found loose within the various layers but remnants of five brick structures were encountered.

Fireplace in Area A. Seven courses of the base of a brick fireplace had survived the demolition of a timber cottage dated c.1841 to the early 1860s by documentary evidence (Vol. 1, Pl. 8). About half the bricks were incomplete, showing crooked breaks, and there were often gaps between bricks, which were held together with a basic mud and shell mortar. Many of the bricks had impressed thumbprints in one or two diagonal corners. Others had a partial crazed grey/green glaze, probably an unintentional effect due to their position in the kiln during firing. The mixture of brick types, including many broken ones, implies the use of salvaged bricks for this rather crude structure.

Pathway in Area C. Part of a brick pathway beside the timber building owned by William Bacon had survived. Although the building was dated c.1843-1864 on documentary evidence, an artefact beneath the bricks indicated that the path was a later addition, perhaps not laid until shortly before the building's demolition (above, Section 2.5.3). The path consisted of four rows of roughly broken unmarked half bricks (Vol. 1, Fig. 19), of a slightly broader size than usual, set into a sandy bed.

'Fireplace' in Area C. Like the pathway, this was a later (early 1860s?) addition to the building previously owned by William Bacon (Vol. 1, Fig. 19 and Pl. 10). It comprised a base course of unusual shaped broad (140 mm wide) orange-red bricks, and a second course of regular-sized (c.100 mm wide) plain red bricks aligned with one edge of the base course. They were bonded together with mud. There were seven bricks in the base course, six of which had bevelled edges (Fig. 32a) and were laid overlapping each other. The seventh (Fig. 32b) had a notch

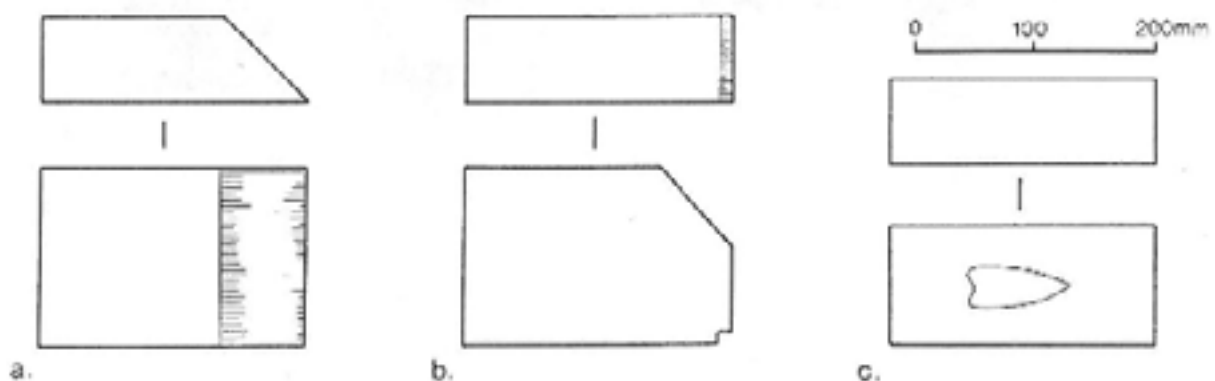


FIG. 32. Bricks from the fireplaces in Areas C (a-b) and F (c).

cut in one corner and a slice off another (in both cases before firing). An identical brick was found a little further to the north, and may have been part of the same structure. It was not clear what purpose these features served, and it seems likely that the bricks were designed for some other use and reused for the base course of this structure because of their width.

Oven or fireplace in Area F. A single course of red/orange-red bricks around three sides of a feature that was probably an oven or fireplace in use during the Mechanics Institute period (1843-79) was encountered (Vol. 1, Fig. 24). There were 29 bricks in all. They were covered with a sand-based mortar and all were marked with an identical elongated heart-shaped frogmark (Fig. 32c). They were presumably bought as new bricks specifically to build the fireplace, unlike the previous structures, whose bricks appeared to have been reused. They were similar to Australian-made bricks of the period c.1840-60 (Myfanwy Eaves, pers. comm.). Australian bricks with heart-shaped frogmarks are recorded in Gemmel (1986: 30, 32, 33, 48), but they are not of this elongated form.

Well in Area F. This was the Mechanics Institute well, built during the 1860s (Vol. 1, Fig. 23). It was lined at the top with three courses of small (100 mm wide) plain bricks. The similarity of colour range and size suggested that all may have come from the same kiln and that, as with the oven/fireplace, they were bought as new bricks.

Three drainpipes were found on the site. Two came from Area B and were in an identical ware: a buff coloured fabric with a brown mottled salt glaze. One served as a vertical drain within a building dating either to the 1860s or to the 1890s and the other, with a square run, as a gully trap outside the building (Vol. 1, Fig. 16). The drainpipe had a machine-made base and was probably of the Hobsonville type not manufactured until c.1870/1880 (Jack Diamond, pers. comm.).

The third came from Area A. It was brown glazed drainpipe (150 mm (6 in) in diameter and was probably associated with the construction of a brick building in 1893/4 (Vol. 1, Fig. 14).

10.0 FAUNAL MATERIAL

10.1 Introduction

Bone remains were recovered from most of the excavated layers and features (Table 12). They have been analysed by Dr Ian Smith, Department of Anthropology, University of Otago (Areas A, C and E) and Ed Visser (of the same Department) (Area F). Their findings are summarised below, but a full list of the bone elements identified is available in the site archive.

10.2 Results of the Analysis

454 bone elements, representing a minimum of 53 individual animals, were recovered (Tables 12 and 13). The majority were from pig (*Sus scrofa*), sheep (*Ovis aries*) and cattle (*Bos primigenius taurus*). These represented food waste, as a number of butchering marks on the bones indicated (Table 14). Smaller quantities of chicken (*Gallus gallus*), turkey (*Meleagris gallopavo*), snapper (*Chrysophrys auratus*) and possibly other fish appear to have supplemented the diet, as perhaps did rabbit (*Oryctolagus cuniculus*). Dog (*Canis familiaris*) and cat (*Felis felis*) remains were very scarce and could have represented either pets or scavengers. At least four rats (*Rattus* sp.) were present. The only unexpected element in the assemblage was a dolphin (*Delphinidae*) vertebra.

Most of the material derived from the redeposited rubbish layers in Areas A, C and F, thought to represent discarded household waste from the site itself (see above). The main exceptions were three sheep bones from the pit in Area E, and in Area F five from Rubbish Pit 1, a sheep and a snapper bone from Rubbish Pit 2 and three sheep bones the well. There were no bones in the sealed occupation layer associated with William Bacon's ginger beer brewery.

The largest group of bones came from the Area A fill. To give an indication of butchering practices, the number of fragments showing butchering marks, and the estimated number of meat cuts represented by the pig, sheep and cattle bones from this area are listed in Tables 14 and 15.

Table 14 shows that pig and sheep were more commonly sectioned by cutting, though some joints were sawn or chopped, whereas the larger cattle bones were generally sawn. Similar practices were noted at the Auckland Gaol site (Smith 1988), though there the percentage of bones with butchering marks was much higher. Another feature noted in the Chancery St assemblage was the clean 'snapping' of 10 ungulate long bones, either after cooking (for marrow extraction) or from breakage after discard. Since two of these bones also showed signs of butchering marks it may have been the latter.

Table 15 indicates a fairly wide utilisation of body parts. There were also signs that some butchering was carried out on site, since the assemblage included body parts not normally used for food. Parts of three sheep's heads and a cow's head and four cattle metapodials and phalanges from Area A probably represent butchering waste.

It was rarely possible to establish the age at death of the food animals, but at least three pigs, one sheep and one cow had unerupted or partially erupted teeth, indicating immature animals.

TABLE 12

Minimum Numbers of Bone Elements (MNE)

	Pig	Sheep	Sheep/ pig	Cow	Rabbit	Cat	Dog	Rat	Dolphin ? sp.	Mammal ? sp.	Chicken	Turkey	Bird ?sp.	Snapper	Fish	TOTALS
AREA A fill	103	46	13	59	1	3	-	1	1	1	13	2	-	2	25	270
AREA C																
Phase 1																
Layer 10 (b'yard)	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Layer 9	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Phase 2																
Layer 8 & Walls	8	-	-	2	-	-	-	1	-	1	-	-	1	-	-	13
Phase 3 fill *	7	18	7	6	-	-	-	6	-	-	-	-	1	-	13	58
AREA E																
Cultural layer	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	3
Pit	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3
AREA F fill	2	39	20	12	-	-	1	-	-	5	-	-	1	9	6	95
RP 1	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	5
RP 2	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	2
Well	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3
TOTALS	120	117	40	81	1	3	1	8	1	7	13	2	4	12	44	454

* Sampled during machine excavation.

TABLE 13

Minimum Numbers of Individuals Represented by Bone Elements (MNI)

	Pig	Sheep	Cow	Rabbit	Cat	Dog	Rat	Dolphin? sp.	Chicken	Turkey	Snapper	TOTALS
AREA A fill	6	3	3	1	1	-	1	1	3	1	1	21
AREA C												
Phase 1												
Layer 10 (b'yard)	-	-	1	-	-	-	-	-	-	-	-	1
Phase 2												
Layer 8 & Walls	2	-	1	-	-	-	1	-	-	-	-	4
Phase 3 fill *	1	3	1	-	-	-	2	-	-	-	-	7
AREA E												
Cultural layer	-	1	1	-	-	-	-	-	-	-	-	2
Pit	-	1	-	-	-	-	-	-	-	-	-	1
AREA F fill	1	3	1	-	-	1	-	-	-	-	7	13
RP 1	-	1	-	-	-	-	-	-	-	-	-	1
RP 2	-	1	-	-	-	-	-	-	-	-	1	2
Well	-	1	-	-	-	-	-	-	-	-	-	1
TOTALS	10	14	8	1	1	1	4	1	3	1	9	53

* Sampled during machine excavation.

TABLE 14

Butchering Marks on Ungulate Bones from the Area A Fill

	MNE	Cut	Sawn	Chopped	Knife marks	Total butchering marks
Pig	103	4	2	2	2	10 (9.7%)
Sheep	46	5	2	1	3	11 (23.9%)
Sheep/pig	13	3	-	-	-	3 (23.1%)
Cow	59	-	16	-	2	18 (30.5%)

A small number of bones from Area A showed signs of weathering or animal gnawing, indicative of surface exposure prior to burial. Four had been gnawed by rats, two by dogs, and another two were weathered. This is a much lower proportion than at the Gaol site, where at least 10% of the bones showed such signs (Smith 1988: 8 and Table 10). This may indicate a more frequently used or less dispersed dumping ground at Chancery St, in which earlier waste was soon covered by fresh material.

Shell remains were scattered throughout most of the deposits but only a sample collection was made. They included cockle (*Chione stutchburyi*), rock oyster (*Crassostrea glomerata*), pipi (*Paphies australis*), scallop (*Pecten novaezelandiae*), and mudsnail (*Amphibola crenata*).

10.3 Discussion and Conclusion

Apart from the dolphin, this appears to be a fairly nonnal assemblage in terms of species range, although there are only two other reported faunal assemblages from to serve as a comparison. The Gaol site (Smith 1988) produced a larger assemblage, which also included goose and duck, while at Fort Ligar (Brassey 1989) the assemblage was much smaller and lacked the rabbit, turkey, dog and cat remains. However, the Gaol assemblage had a much higher proportion of dog bones, deriving from the city's dog pound close by, and of the main food animals cattle were the most common, followed by sheep and then pig (the reverse of the situation here).

TABLE15**Minimum Number of Meat Cuts Represented by the Area A****Ungulate Remains**

	<u>Cut</u>	<u>No.</u>
<u>Pig</u>	Head	6
	Whole shoulder	1
	Boston (upper) shoulder	2
	Picnic (lower) shoulder	4
	Loin (chops/roast)	1
	Ham - butt end	4
	- shank	2
	Trotters	2
		<u>22</u>
<u>Sheep</u>	Neck	1
	Shoulder	4
	Blade chops	1
	Forequarter	1
	Foreshank	1
	Rib roast	1
	Sirloin	2
	Sirloin half-leg	2
	Hind shank	4
	<u>17</u>	
<u>Cow</u>	Blade roast	3
	Arm roast	1
	Foreshank	3
	Rump	4
	Hindshank	1
	Short ribs	1
	<u>13</u>	

Despite the apparent size of the food assemblages, it cannot represent more than a fraction of the meat consumed by the inhabitants of the site. The estimated number of meat cuts from pig, sheep and cattle carcasses amounted to only 52 cuts, probably much less than the average family's yearly intake even in one of the poorer quarters of town such as Chancery St.

The ceramic evidence, on the other hand, indicates an accumulation of rubbish over a period of at least 50 years. Much of the bone waste must have been disposed of elsewhere, as was also noted at Fort Ligar (Brassey 1989: 66). Bearing in mind the prevailing slum conditions in Chancery St (see Vol. 1. Section 2.3) this is unlikely to have been for reasons of hygiene. Bone-processing mills producing fertiliser were known to have been in operation by the 1860s (Brassey 1990: Section 4), and it is possible that much of the original bone waste was disposed of in this way.

11.0 CONCLUSION

The Chancery St artefactual and faunal material made up one of the largest and most varied assemblages so far recovered from a historic archaeological site in New Zealand. It is also the only assemblage so far reported from an urban residential site with a secure 19th century context.

The material in general consists of household refuse: domestic crockery in a wide variety of patterns and styles, including tableware, and kitchen and bathroom items; clay pipes; bottles; metal tools, household fittings, and cutlery; recreational items; belt buckles and buttons; and some food waste.

A large number of ginger beer bottles, however, were survivals from William Bacon's ginger beer brewery and store, which was also his residence, at least in the earlier years. These were apparently removed from a backyard rubbish dump during later building work and redeposited with other refuse beneath the foundations of a later building. They included three bottles with his name stamp, which so far have not been reported from any other Auckland site. It was also possible to distinguish some of the tableware and other items which may have belonged to him, since these were securely sealed in a layer accumulated during his period of occupation.

Other items found in features in which they were originally deposited could also be securely related to occupants of the site. One rubbish pit in particular, which may have been filled by a resident librarian of the Mechanics Institute, contained a very varied assortment of discarded rubbish, including porcelain and earthenware, a large number of alcohol and medicine bottles, leather shoes, an iron door knocker and some bones.

The majority, however, came from rubbish dumps, probably from other areas within the site, which were redeposited as fill during later building work. Joining artefacts showed that this happened simultaneously in Areas A and C, an event which could be dated by documentary evidence to 1893/4. The material was sealed by the foundations of the 1890s buildings and therefore comprises one of the few historic artefactual assemblages with no intrusive 20th century material.

The material in Area F, although not sealed until c.1919, was of similar date. Few differences could be observed in the range and style of artefacts between Areas A, C and F, and where dating criteria could be applied all Area F items were of 19th century date (except for a 1903 penny which could have been lost during the 20th century building work). This material almost certainly derived from the backyard of the Mechanics Institute or the public library and kindergarten which succeeded it. The buildings lay vacant from c.1900 until the site was redeveloped, which supports a 19th century date for this group of artefacts too.

Dating evidence provided by the artefacts indicated a long period of rubbish accumulation, from the initial use of the site c.1814 through to the 1890s. The majority of datable items, however, were made in the 1850s and 1860s, with few made after 1870. It was not clear whether this reflected a drop in the local population from c.1870/1880, as may be indicated by the documentary sources, or a change in rubbish disposal methods, also documented during this period.

The main value of the assemblage, however, lies not so much in the dating evidence as in the information it provides about the range, popularity and source of the manufactured goods available to 19th century New Zealand. This kind of information is only beginning to emerge from this and other published groups of artefacts, and it is hoped that many more will be forthcoming. It is only by building up a database of artefact types from secure archaeological contexts in many different types of site that an accurate picture can be reconstructed and biases due to the special circumstances of individual sites fully understood. It is also hoped that this volume will serve as a useful reference source for the analysis and publication of other assemblages.

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