AN INTRODUCTION TO THE IDENTIFICATION OF CERAMICS EXCAVATED FROM 18TH AND 19TH CENTURY ARCHAEOLOGICAL SITES

J. W. JAGGER & CO.

SPONGED BOWLS OR KOMMETJIES.

KOMMETJIES Assorted Patterns at Reduced Prices.

<table>
<thead>
<tr>
<th>Trade Sizes:</th>
<th>S34</th>
<th>S44</th>
<th>S45</th>
<th>S50</th>
<th>S50</th>
<th>S20</th>
<th>and S24</th>
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</thead>
<tbody>
<tr>
<td>About</td>
<td>3/4</td>
<td>1 1/4</td>
<td>1 1/2</td>
<td>2 1/4</td>
<td>6 and 7 inches</td>
<td>3/4 and 3/8 dozen</td>
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</tbody>
</table>

(New Shipments expected, May, 1914)

KOMMETJIES WITH COVERS.

<table>
<thead>
<tr>
<th>Trade Sizes:</th>
<th>S34</th>
<th>S44</th>
<th>S18</th>
<th>and S12</th>
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<tbody>
<tr>
<td>Cover</td>
<td>7/8</td>
<td>5/8</td>
<td>12/8</td>
<td>and 18/8 dozen</td>
</tr>
</tbody>
</table>

CAPE TOWN.

Jane Klose & Antonia Malan (eds)

August 2014
1. PLATE

2. BOWL

3. TEAPOT
AN INTRODUCTION TO THE IDENTIFICATION OF CERAMICS
EXCAVATED FROM 18TH AND 19TH CENTURY ARCHAEOLOGICAL SITES

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Preface

These notes were compiled by Antonia Malan from the work of Jane Klose, with her generous permission: *Identifying Ceramics: an introduction to the analysis and interpretation of ceramics excavated from 17th to 20th century archaeological sites and shipwrecks in the south-western Cape*, 2007. We have also made liberal use of Alasdair Brook’s, *An Archaeological Guide to British Ceramics in Australia 1788-1901* (2005), as we have freely swapped notes with each other in the past. The cartoons come from B. Hollowood, *Pottery and Glass* (Hamansworth: Penguin Books, 1947).

Why are ceramics important to the historical archaeology record? Ceramics are nearly universal on domestic sites of the period. They typically occur and survive in reasonably large quantities, and can provide information on dating. Used carefully, ceramics can also provide important information on function, economy, status, and meaning at both the artefactual and site levels. Artefact studies can be broadly divided into three groups: the empirical, dealing with the description and cataloguing of artefacts; the ethnographic, dealing with how the artefacts were used; and the cognitive, dealing with the ‘codes of meaning that must be mastered by those who use it, and which facilitates communication at a symbolic level by those who understand the language’ (Brooks 2005).

Of course, ceramics are but one element of an archaeological excavations, and but one element of material culture. Not every ceramic assemblage from every site will require the same level of in-depth analysis. It is also worth noting that while much excellent North American, European and British work on the identification of ceramics already exists, this body of research is not necessarily always relevant to the South African experience – the specific socio-cultural history of South Africa means that many of the issues relevant to ceramics analysis in the Atlantic world simply are not as directly applicable here.

The ceramics referred to in this handbook were recovered from sites in the Cape, and date from 1630 to the early 20th century. They include professionally excavated land sites, salvaged assemblages exposed during urban and rural development and those excavated or salvaged from identified shipwrecks situated off the coastline. All the sites are the consequence of European expansion into the Indies and the Far East that followed the discovery of the sea route to the East around the Cape of Good Hope by Vasco da Gama in 1497. From an historical archaeology viewpoint, this era can be divided into two phases which are clearly reflected in the ceramic assemblages. The first phase covers the ‘Dutch’ period before and during Dutch East India Company (VOC) rule at the Cape (1652-1795). The second phase is the ‘British’ period, from 1795 to the early 20th century. It includes the Transitional Years (1795-1820), the early British Crown Colony (ca 1820-ca 1860); and the British Cape and Republics to the Union of South Africa (ca 1860-1910).

The majority of ceramics found on the sites under consideration are European and Asian – only very small amounts of indigenous African pottery were recovered in the Cape. In general, the first period is largely dominated by Asian porcelain, while the second period is characterized by European ceramics, particularly British mass-produced industrial wares.

Jane Klose and Antonia Malan, September 2009
jklose@mweb.co.za / antonia.malan@gmail.co.za

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Section One: Describing and classifying ceramics

The word **ceramics** is derived from the Greek word *keramos* (potter’s earth / pottery). Today the term refers to objects made from fired clay or clay-like materials. They include household utensils and decorative items, flower pots, statues, clay smoking pipes, crucibles, linings of kilns and furnaces, and clay-derived building materials such as bricks and tiles.

The term **pottery** is an ambiguous term. It is commonly used for non porcelain items, particularly earthenware, but is best avoided in archaeological ceramic analysis. However, it is acceptable to refer to the ‘pottery industry’ and ‘The Potteries’, the traditional name for the factories in and around Stoke-on-Trent in England which developed and manufactured the first industrial wares from the early 18th century onwards. South Africans use the Afrikaans word *porselein* or its English equivalent to refer to all white-bodied ceramics (in Britain they use the word *china*). This is very misleading, as we need to reserve the word *porcelain* exclusively for actual porcelain. We prefer to use the broad term, *ceramics*.

The study of ceramics in historical archaeology emphasises the identification and interpretation of household items: plates, bowls, cups and mugs, cooking pots, jars, vases and small decorative items such as figurines. The remaining excavated ceramic artefacts are grouped into specific functional categories and analysed separately, for example, building materials, clay smoking pipes.

Up to the present, most household ceramics have been made from naturally occurring clays and other raw materials using methods based on-established techniques of production and firing. They are classed as **traditional** ceramics to distinguish them from **advanced** or **high-technology** ceramics recently developed for specialized industrial usage. Traditional ceramics are divided into those produced in relatively small amounts in *home-based workshops* by members of a family up to circa 1800, and those manufactured from the mid-18th century in much larger quantities in specially built *factories* using labour saving methods and out side labour. Factory-made (particularly machine-made) ceramics are called **industrial wares**.

Classification of traditional ceramics

Various methods of describing and classifying traditional ceramics have been used throughout the world. In the West, ceramics are categorised by their body, i.e. the clay from which the fired ceramic is made. They more or less fall into three major groups, **earthenware**, **stoneware** and **porcelain**. These categories reflect increasing hardness of the ceramic body and the order in which they were discovered and used. We refer to them as **primary wares**.

In most cases, the body of each primary ware has easily identifiable characteristics that are visible to the naked eye (macrostructure) or revealed by simple physical tests.

**Simplified, non-technical definitions of primary wares**

- **Earthenware**: a relatively soft, low-fired, porous, opaque ceramic that must be glazed to make it completely watertight. Either coarse-textured and earth-coloured or fine-grained with a wide colour variation.
- **Stoneware**: a hard, dense, high-fired, non-porous, opaque ceramic. Can be coarse or fine-textured and is commonly stone coloured.
- **Porcelain**: a hard, dense, high fired, non-porous ceramic. White to grey-white in colour, fine textured body, and translucent in thin section.

This simple method of categorizing ceramics can be used for most but not all traditional ceramics excavated in South Africa made before the 19th century. After this date, an increasing number of ceramics, particularly European industrial wares, fall between these body-based categories. For example, the body of some British stonewares can be slightly porous and earthenware-like, or have
the translucency and hardness of porcelain. Today a growing number of ceramics have vitreous porcelain-like bodies, small sherds of which are virtually impossible to visually distinguish from traditional porcelain. It is therefore impossible to identify and accurately classify all the ceramics in post-18th century assemblages using body-based categories (earthenware, stoneware and porcelain). In their place, archaeologists use a decoration-based typology to analyse assemblages of these wares (Miller 1980; 1991) as well as reference to the body type.

Archaeologists, in common with museum curators, art historians, collectors and dealers, systematically describe ceramic vessels by body, glaze, decoration, form and function.

The term **body** describes the type of clay or composite clay mixture from which the basic vessel is made but excludes any covering glaze and/or slip: e.g. *a jug with a hard red earthenware body; a jar with a grey stoneware body; a cup with a translucent porcelain body*. Paste is a synonymous with body but its use is usually restricted to porcelain bodies: e.g. *a German hard-paste porcelain cup or a French soft-paste porcelain milk jug*. The term ‘ware’ is synonymous with ‘body’: e.g. *stoneware, cream-coloured ware, pearlware, jasper ware*.

**Glaze** is the thin glassy layer on the surface of a clay vessel: e.g. *a blue printed whiteware plate covered in a clear lead glaze; the English delftware dish had an opaque white tin glaze; the German stoneware flask was salt-glazed; the English teapot had a shiny black glaze*.

Ceramics are often covered in **slip** (liquid clay). Slip has many uses:

- decoration;
- a covering to change or improve the vessel’s appearance;
- luting, joining pieces of unfired clay, e.g. handles and spouts;
- most commonly for slip-casting, particularly industrial wares.

**Decoration** of ceramics is carried out with a variety of techniques: altering the colour of the raw clay, changing the surface of the vessel by adding or subtracting clay before firing, and the use of glazes, slips, painting, printing, etc.

**Form** describes the shape of a vessel: e.g. *cup, plate, bowl, dish*.

The conceptual division between ware, decoration, and indeed form, while very real, tends to distract from the fact that the identification of a ceramic depends on a knowledge of all three of these characteristics. All three are diagnostic. All three can contribute towards the dating and analysis of an assemblage. Debate, however, centres on how to integrate these three basic elements of identification into a coherent whole.

**Function** can be either general or specific. We have chosen to simplify the initial description of excavated ceramics by limiting the functional categories to three general groupings: *useful, ornamental and architectural*.

**Useful / utilitarian wares**. General household ceramics: plates, dishes, bowls, cups, and jugs, vessels for storage or preparation of food and drink, containers for commercially produced goods, chamber pots, pharmaceutical jars and pots, toilet sets (wash basins and ewers, chamber pots, soap dishes, etc.), cutlery handles, and candlesticks.

**Ornamental / decorative wares**. Ceramics made for display: includes vases, ornamental jars, certain dishes and plates, wall plaques, statuettes and figurines. Dolls and toys are included in this category. Many useful wares were often used as ornamental wares (for example large decorated dishes are put on display) but are archaeologically indistinguishable from one another.

**Architectural wares**. Includes clay-based floor, wall and roof tiles, chimney pots, decorative embellishments for the interior and exterior of houses, etc.
Section Two: Ceramic raw materials and clays

The soft raw material used by potters to make ceramics is known as clay. Clays used by potters to make ceramics contain clay minerals and/or clay equivalents as well as small amounts of various other minerals. We refer to this group of clays as potters clays.

Primary and secondary clays

Primary clays are coarse-grained, pure clays found next to or within the parent rock, such as kaolin. Kaolin is an important primary clay, and is utilized by combining it with other clays and non-clay ingredients. For example, kaolin is an essential component of the clay mixtures used to make post 14th century Chinese porcelain, all European porcelains and many British industrial wares (Section Seven). Bentonite is another important primary clay. It is extremely fine-grained and is a valuable constituent of many potters clays.

Secondary clays are composed of more uniform particles and in general are fine-grained but they are not as pure as primary clays as they are carried and deposited away from their place of origin by rain, rivers and streams, glaciers and by wind (Aeolian deposits). Example: Red clays are widespread and were used to make early cooking pots, storage jars and bowls.

Potters clays

Potters clays are mixtures of clays and other materials and are generally categorised according to the type of ceramic body they produce after firing, for example, earthenware, stoneware, or porcelain clay. They are sometimes referred to as pastes. Paste is an old and rarely used term for potters clay. Its usage is now restricted to descriptions of porcelain: e.g. soft or hard paste porcelain (Hamer & Hamer 1986; Fournier 2000).

Household ceramics are made from a range of carefully prepared potters clays. Different potters clays produce distinct types of ceramic ware with characteristic physical properties that determine the use of the finished ceramic. For example, pots made from coarse earthenware clays containing a high proportion of temper be can placed directly on the coals of an open fire without cracking, because tempered coarse earthenware clays withstand uneven heating. Thickly potted bottles, flasks and storage jars made from dense stoneware clay cannot be put on open fires without cracking and breaking up. However, delicate tea cups and teapots made of porcelain can withstand heating and can be filled with boiling water without cracking (able to withstand thermal stress). Some modern vitreous ceramic materials are strong enough to be used for many different purposes, from coffee mugs and dinner services to cooking and baking utensils.

Flux is a mineral which lowers the firing temperature of clays and glazes. It would be difficult to fire, glaze and decorate ceramics without using the appropriate fluxes. They are either naturally present in the raw materials or added intentionally to the clay or glaze.

Frit is a powdered glassy substance which acts as a flux, and can add a measure of translucency to certain fired clay bodies.

Filler / Temper. The working, drying and firing qualities of clay can be altered by the addition of inert, non-clay-forming materials to the clay mixture. They improve the workability of clay, reduce shrinkage, increase the strength of a fired pot and, in some cases, change the colour of the fired ceramic body.

Inclusions. Small pebbles or pieces of quartz, sometimes seen in coarse earthenware such as ‘Khoi’ pottery, act as a ‘temper’ but are referred to as ‘inclusions’.

Metallic oxides act as colourants. They occur naturally or are purposely added to a clay mixture.

Dry clay has no plasticity and cannot be moulded or shaped until water is added.
Section Three: Ceramic manufacture

Location of potteries

Potteries were sited close to essential raw materials, clay deposits and supplies of fuel for the kilns, and within easy reach of the market they supplied. Jingdezhen, one of the largest and most important kiln complexes in China, was located near substantial deposits of fine quality raw materials for making porcelain (porcelain rock and kaolin), and close to fuel supplies (wood). The kilns were situated inland in south-eastern China on a river network and finished ceramics could be transported by water to markets throughout China and to sea ports for export overseas.

In Britain, the Staffordshire Potteries in central England were situated near clay, supplies of salt and lead for glazes, and coal to fire the kilns. Early in the 18th century, factories in this area began to develop and manufacture completely new types of ceramics (white salt-glazed stoneware and creamware) using raw materials from areas distant from these long-established potteries. These raw materials were transported to the Potteries by sea, river and canal, and the same waterways were used to distribute the finished ceramics.

Shaping the clay

Moist, carefully prepared unfired clay is shaped into objects using one or a combination of the following methods:

Hand-forming: these methods include pinching – hollowing out a ball of clay between the thumb and fingers; coiling – building a pot by coiling thin rolls of clay on top of each other and then consolidated and smoothed by using gentle pressure; and slabbing – joining pieces of shaped flattened clay with slip (Fournier 2000:295).

Moulding: three main methods are used: (a) press moulding – pressing damp firm clay over or into a mould, (b) slip casting – pouring slip (liquid clay) into a mould, and a more recent method (c) dust pressing – powdered clay is compressed and hardened in a metal mould (a die). The use of moulds allows exact duplication of vessels and is a method of increasing the rate of production.

Wheel throwing: Shaping a lump of soft clay by hand on a fast, continuously revolving horizontal turntable known as a potter’s wheel. This technique greatly increased the speed of production. Authorities agree that the fast wheel was invented and used in the fourth millennium BC but the place of origin is in dispute.

Jigger and jolley work. Flat shapes (plates, dishes, saucers, etc.) and open hollow vessels without undercuts (certain bowls, cups, etc.) can also be made by using mechanically assisted methods of shaping soft clay on or in revolving plaster moulds.

Today, the ceramic industry has become increasingly mechanised with the emphasis on moulding techniques including dust pressing. Wheel throwing is mainly used by craft potters or ceramic artists and is seldom used in industry.

Firing of raw clay

Firing is essentially the removal of all water (physically and chemically combined water) from raw clay by heating. During this process, the clay shrinks and various physical and irreversible chemical changes take place resulting in the formation of a completely new substance, hard durable ceramic. The initial heating procedures are the same for all types ceramic but the final changes that take place in the clay are different for earthenware, stoneware and porcelain.

General outline of drying and firing ceramics

Before clay can be fired it must be dried out. After a clay vessel has been shaped, it is allowed to dry to the leather-hard stage before the final trimming and turning can be carried out. Leather-hard clay is a stage in drying when the clay is still damp but almost rigid. The vessel can hold its shape and
is strong enough to be handled for glazing and decoration (e.g. painting, incising, application of moulded decoration). Following this, the clay vessel is left to stand in the open air, a warmed room or special drying oven to become completely dry.

Clay is **fired** (baked) by heating to a high temperature in an open fire or kiln. The heat irreversibly changes the friable, dried-out clay to hard, durable ceramic. The **firing (maturing) temperature** of a clay is the optimum temperature range to which it must be heated in order to produce a rigid, strong ceramic. Ceramics have one or many firings depending on whether they are glazed or not, the type of glaze used, and method of decoration.

**Methods of firing**

**Open firing:** The earliest ceramics (earthenware) were fired directly in the flames of wood fires made on open ground or in a pit (pit-firing). These methods are known as ‘open-firing’ or ‘bonfire-firing’. The pots were first slowly heated to approximately 100°C+ to remove the ‘free’ or physically combined water before firing in the flames, to prevent the pots exploding during firing. An ‘open-firing’ is very short and can be as little as thirty minutes to an hour (a ‘fast firing’). This method is only suitable for handmade coarse earthenware pots if the clay contains a high proportion of temper / grog to allow the steam from the water to escape through spaces in the clay. This method of firing is still in use in rural areas of Africa, India and South America (Freestone & Gaimster 1997).

**Kiln firing:** In time, ceramics were fired in specially built closed structures called kilns, insulated ovens in which the unfired pots were placed on perforated shelves away from the actual fire (combustion area) but not necessarily protected from the flames and smoke (open flame firing). The kiln firing technique has several advantages. It gives potters greater control over the firing of their ceramics by providing a sustainable all-round even heat. For protection from the flames and smoke and to minimise kiln accidents (such as collapse of stacked ceramics) pots were packed in **saggars** (fireproof-clay boxes) before placing in the kiln.

Most of today’s mass-produced ceramics do not need the protection of saggars as they are fired in clean-aired, thermostatically controlled electric, gas or oil-fired kilns, either **tunnel / continuous kilns** or static **intermittent kilns**.

**Firing procedure**

Firing or maturing of ceramics consists of two phases, **heating** and **cooling**, during which reversible and irreversible physical and chemical changes take place in the clay accompanied by phases of expansion and contraction. Once the firing (maturing) temperature range is reached, the
kiln is allowed to cool down slowly. During this period the melted component of the clay gradually solidifies to become hard and vitreous (glass-like) and ‘glues’ the un-melted particles together to give a rigid ceramic body.

**Vitrification**

The transformation of particles in the clay body to a glassy material during firing is known as vitrification (‘glassification’). In general, the higher the firing temperature, the more vitrified (glass-like and non-porous) a ceramic body becomes.

### Average firing / maturing temperature ranges, vitrification levels and porosity of primary wares

<table>
<thead>
<tr>
<th>Primary ware</th>
<th>Average firing/maturing temperature range</th>
<th>Level of vitrification &amp; porosity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthenware</td>
<td>600º/700º - 1000ºC – low-firing</td>
<td>Negligible to low – non-vitreous (porous)</td>
</tr>
<tr>
<td>Stoneware</td>
<td>&lt;1150º - 1350ºC - high-firing</td>
<td>high to very high – vitreous (non-porous)</td>
</tr>
<tr>
<td>Porcelain</td>
<td>1250º - 1400ºC &amp; higher – high-firing</td>
<td>very high to complete – vitreous (non-porous)</td>
</tr>
</tbody>
</table>

The apparent porosity and vitrification of a ceramic body is indicative of the degree of firing of the clay and its resultant strength. High fired porcelain and stoneware are dense and hard and give the impression that they are non-porous, while earthenware is less dense and relatively soft and appears to be porous and non-vitreous. Material science shows that all ceramics have some porosity. The porosity and level of vitrification of a ceramic are inversely proportional: high porosity is a sign of low vitrification and high vitrification denotes low porosity.

When earthenware is fired, the amount of molten glassy material produced in the clay is minimal and confined to minute areas at the contact points between the clay particles, resulting in a porous and apparently non-vitrified ceramic body. But porcelain and stoneware can be fired at much higher temperatures than earthenware (without deforming or collapsing) so the clay particles yield larger amounts of melted glass-like material that cools down to give apparently non-porous and vitrified ceramics.

Assessment of the level of apparent porosity and vitrification of a ceramic body is an important diagnostic tool in the identification and classification of excavated ceramics. Full laboratory evaluation is unnecessary for routine ceramic identification. A useful but not very accurate method of estimating vitrification is to put the tip of your tongue on the broken surface of a sherd. A low-fired porous, ‘non vitreous’ ceramic such as earthenware will feel dry and adhere to the tongue, while the broken surface of high-fired wares such as porcelain and stoneware will remain wet and feel slippery.

This ‘vitrification’ test can be a handy additional identification tool for 18th century earthenwares, but the system becomes far more complicated in the 19th century. Refined white-bodied earthenwares exist within a broad continuum of firing temperatures, densities and vitrification. If the ceramic does not stick to your tongue, then it could be a high-fired earthenware, or a stoneware or porcelain. What it looks like becomes more significant.

**Number and sequence of firings**

Ceramics can have either single or multiple firings. The number of firings is dictated by the clay material (body) and the type of glaze and decoration (if any). Firing is a long and expensive procedure due to the cost of fuel, and any extra firings increase the cost of manufacture.

**Once-fired ceramics.** Unglazed ceramics only require a single firing, for example African pots, terra cotta flowerpots and Chinese Yixing stoneware teapots. However, a few types of glazed ceramics are also ‘once-fired’. The vessels are shaped, decorated, covered in glaze and fired once. Examples include glazed European coarse earthenware cooking pots, German salt-glazed stoneware bottles and Chinese blue-and-white porcelain.
Twice-fired ceramics. The first firing (the biscuit or bisque firing) changes raw clay to hard, strong, dry ceramic known as 'biscuit' (from the French words bis (twice) and cuit (fired)). The second firing (glaze firing) melts and fixes the glaze onto a biscuit-fired vessel. Examples: tin-glazed wares, most industrial wares such as creamware, pearlware, white wares and English bone china.

Multi-fired ceramics. Overglaze decoration (decoration applied to a glazed surface, such as coloured enamels and gild, and bat and lithographic printing) requires further firing(s) to fix it permanently to the glaze covering the vessel. Before the advent of clean-aired modern kilns, glazed vessels freshly painted with unfired enamel decoration, were re-fired in muffle kilns, special kilns that protected them from contamination by fumes, flames and smoke.

Firing in oxidation and reduction

During firing, gasses present in the kiln (the kiln atmosphere) can change the chemical composition and appearance of ceramics. It is possible to alter the kiln atmosphere to be either oxygen-rich or oxygen-depleted. Firing ceramics in an oxygen-rich atmosphere is known as firing ‘in oxidation’ while firing in an oxygen-depleted atmosphere is known as firing ‘in reduction’.

Glazing

A glaze is a thin layer of glass covering or partially covering the surface of a ceramic. Not all ceramics are glazed. Most household and decorative ceramics are glazed while others are purposely left unglazed. Glazes are very important. They make porous bodies impervious (watertight), provide a smooth, virtually inert surface which is hygienic and easily cleaned, they minimise chipping, and in some cases add strength to the body by fusing with the underlying clay. Glazes also enhance the appearance of ceramics. They can be clear or coloured, matt or glossy, and either transparent or opaque.

Both glass and glazes are composed of silica (silica oxide, a glass forming mineral) and fluxes. Increasing the amount of fluxes can lower the hardness of glazes and produce glazes that are easily scratched (this is particularly noticeable in lead glazes).

Classification of glazes

A simple classification divides glazes into low-firing and high-firing glazes (alternatively known as low-temperature or high temperature glazes), indicating the temperature range at which they are formed and melt to cover the surface of the ceramic. Glazes can also be divided into raw glazes or fritted glazes. Raw glazes contain naturally-occurring substances while fritted glazes contain constituents that have been intentionally chemically altered to make them suitable for glaze production (for example, non-toxic).

Methods of glazing ceramics

There are many methods of glazing ceramics and all of them include firing / maturing in a kiln. These include (a) glazes applied directly onto a vessel as a liquid or a powder, and (b) glazes formed during firing by vapour in the kiln reacting with the ceramic body.

Liquid glazing

By far the most common and familiar type of glaze are transparent liquid glazes. Unfired or biscuit-fired ceramics are glazed by dipping them into liquid glaze or the glaze is applied by painting or spraying. The clay body absorbs water in the glaze leaving the glaze-forming materials on the surface. The vessel is then carefully placed in a kiln to avoid contact with the kiln or other vessels and fired in order to melt the glaze and fix it to the body.

Lead glazes are low-fired liquid glazes. They were used on coarse earthenwares in Europe from the 18th century (similar lead glazes were used much earlier in other parts of the world). Other lead glazed ceramics include early European soft-paste porcelains and the first English bone china (so-called English porcelain). Brightly coloured lead glazes are made by the addition of powdered
metallic oxides to a clear lead glaze. High-temperature liquid glazes melt at temperatures above 1200°C and are used on high-fired ceramics (porcelain and stoneware) when the clay body and glaze are fired at the same time.

**Powdered glazing**

An early method of lead glazing is known as powdered glazing. Naturally occurring powdered lead compounds, e.g. lithage (PbO) or galena (PbS), were sprinkled onto damp unfired clay pots before firing. They did not give a smooth overall finish.

**Vapour glazing**

A completely different and less common method of glazing is known as vapour glazing. An alkaline vapour, purposely produced in the kiln, reacts with the surface of the clay body to form a very thin strong layer of glaze over the outer surface of the vessel. It can only be used on high-fired stoneware ceramics. Two different methods of vapour glazing were used on European stoneware ceramics, salt-glazing and smear-glazing. The most common type was salt-glazing and was used to glaze European stoneware from the 16th century onwards. Smear-glazing was commonly used on 19th century British refined stonewares.

**Decoration of Ceramics**

A potter can decorate a pot at any stage during its construction, by working with the soft clay before it is hardened by firing, or by applying decoration before or after firing / glazing. Very few vessels are left completely undecorated.

Working with the clay alone. Methods include the use of coloured clays, either naturally occurring or clays with specially added pigments or oxides; the use of shaped and decorated moulds to form the basic vessel; impressing (embossing) designs into the soft, unfired clay; attaching separately moulded decorative shapes to the vessel; turning, incising or scratching (scraffitto), piercing, and engine-turning patterns into leather-hard clay.

Working with an unfired ceramic. Application of coloured glazes or slips; painting with pigments, for example with cobalt oxide to produce blue-and-white porcelain.

Working with a fired but unglazed (biscuit) ceramic (underglaze decoration). Application of coloured glazes and slips; transfer printing; stencilling, stamping or sponging designs using coloured pigments, and painting with coloured pigments (painting) before covering with glaze.

Working with a fired and glazed ceramic (overglaze decoration). Decorating with coloured enamels (enamelling); gilding; bat printing; transfer printing, lithographic (decal) printing; lustre decoration.

**Underglaze decoration** – decoration applied to unfired or fired clay before glazing. Examples: the cobalt blue decoration on Chinese blue-and-white porcelain and transfer printed designs (e.g. the Willow Pattern) on industrial wares.

**Overglaze / onglaze decoration** – decoration applied and fixed on to the surface of a previously glazed and fired ceramic. Example: enamelled porcelain (e.g. Chinese Imari, Chinese famille verte and famille rose), gilding (gold decoration), lustre.

Only decoration deliberately sandwiched between two separately applied layers of glaze can be classed as inglaze decoration. Fired decorated and glazed Dutch fayence covered with a final covering of kwaart (a clear glaze) to enhance its appearance, could possibly be considered as ‘inglaze decoration’.
Segment Four: Brief outline of the development of ceramics

The first ceramic pots were hand-formed coarse earthenwares – low-fired, non-vitreous (porous) ceramics – independently discovered worldwide 8-9000 years ago. From about 5500 BC onwards, more sophisticated wares appeared. From the fourth millennium BC, earthenware was produced using moulds and the potter’s wheel. In time, potters developed a variety of decorative techniques including glossy black clay surfaces and polychrome wares using coloured slips (Charleston 1968).

Between 4500 and 4000 BC Egyptian faience, a completely new type of ceramic using non-clay materials, evolved in the region of Egypt and Mesopotamia (Kingery & Vandiver 1986:9). In China, presence of large reserves of high-firing ceramic raw materials and the development of kilns which could produce sustained high temperatures, led to the production of the world’s first high-fired vitreous ceramics: first stoneware (ca 1500-1028 BC) and then porcelain. Stoneware evolved into white porcelain (true / hard-paste) which was produced in Northern China circa AD 600 (Kerr & Wood 2004).

The whiteness of Chinese porcelain imported into Mesopotamia (present day Iraq) in the 8th century AD, is thought to have motivated Islamic potters disguise their light brown to yellow-bodied earthenware ceramics with a white opaque covering. By the early 9th century they had developed tin-glaze, an opaque white glaze (Allen 1991:6). In the early 9th century Islamic potters also produced the first lustreware – tin-glazed vessels decorated with a thin, shiny metallic coating. Islamic polychrome and lustre wares were the precursor of bright, beautifully decorated European tin-glazed wares that became the high status ceramics of Europe from the 16th to 18th century (Gaimster 1997c).

During the 10th to early 12th centuries, Islamic potters in Egypt and the Middle East developed another new ceramic, Islamic fritware. It was a white-bodied ware that emulated Chinese porcelain in appearance but not in strength and durability (Crowe 2002). It can be seen as the forerunner of 16th to 18th century European imitation or soft-paste porcelains (Allen 1991:16-64; Kingery & Vandiver 1986:229). By the 13th century the techniques of making tin-glazed earthenware and lustre decoration reached Europe, and the first European stoneware was produced in the Rhineland (Germany) (Gaimster 1997d: 122-126).

Chinese porcelain profoundly influenced the ceramic tradition of every country into which it was imported. Several mainly unsuccessful attempts were made to reproduce Chinese porcelain (true/hard-paste porcelain) in Europe. The earliest extant and documented attempt is known as Medici porcelain (imitation porcelain). It was made for a short period between 1572 and 1585 under the patronage of Francesco di Medici (Vainker 1991:145). More successful types of imitation porcelain (soft-paste porcelain) were developed in north-western Europe in the second half of the 17th century, beginning in northern France. The first European-manufactured hard-paste porcelain was made in Dresden (Germany) in 1708. Within a few years, the materials and method of manufacture of European porcelain changed slightly but still remained different to Chinese porcelain.

European stoneware and earthenware clays were progressively refined from the 1720s onwards, particularly in the North Staffordshire region of England. This development was in response to the demand for strong, lightweight, white-bodied ceramics comparable to imported Chinese porcelain. Porcelain was not produced in England until the 1740s and it remained expensive until the advent of bone china in the early 1800s. These new so-called refined earthenwares and stonewares, first made in Staffordshire, are known as industrial wares: factory-made (and machine-made) mass-produced affordable household ceramics. They were produced for the home market and for export throughout the world (where they were copied) from the mid-18th century to the present (Hildyard 1999:70-91).
Section Five: Historical background to ceramics in the Cape

The pre-colonial Western Cape region of South Africa was inhabited by hunter-gatherers (San) and later by pastoralists ('Khoe' / Herders). The knowledge of pottery-making is associated with the arrival of domestic stock in southern Africa from the North. Pottery is found on Western Cape sites from about BC 150 BC. Khoi pottery is low-fired, unglazed coarse earthenware in the form of jars and pots.

The Cape is situated halfway along the 6000 mile sea route from Europe to the Far East. The outward journey took up to six months which took its toll on the ships and crew. The Dutch East India Company (VOC), founded in 1602, was one of many European companies set up to trade in Eastern commodities. It became one of the most powerful East India companies. In 1652, it established a fortified outpost at the Cape solely to cater for the needs of its ships on the journeys to and from the Spice Islands in the East.

Europeans brought with them the ceramics that were being produced and used in Europe in the mid 17th century. They comprised glazed coarse earthenware, tin-glazed earthenware, and German salt-glazed stoneware, all made in a variety of forms and sizes. In addition, the high-ranking Company officials would have brought small amounts of Chinese porcelain among their personal belongings. Official VOC shipments of Asian ceramics for the Cape did not begin until 1666 when a small consignment of Islamic (Persian) fritware dishes and bowls was landed. Subsequent official shipments included both Persian and Japanese ceramics, followed by the first of many official consignments of Chinese porcelain beginning in 1678 (Volker 1971:115; Woodward 1974:165-66).

In 1663, Commander Wagenaer wrote to the Company officials in Batavia asking them to send potters to the Cape “as he was much in need of pottery”. Following this request it was recorded that the first European-type coarse earthenware, now known as ‘VOC earthenware’, was successfully produced in the Cape in 1665 (Woodward 1974:163-5). The Company did not make use of existing indigenous pottery.

As far as is known, no ‘fine’ ceramics were produced on a commercial scale in Southern Africa until the mid-20th century. A small amount of household and dairy pottery was made in Grahamstown between 1830 and 1833 by James Hancock, a ‘china painter’ who emigrated to the Eastern Cape from the Staffordshire potteries in England. Production of household china by small firms in Johannesburg, Grahamstown and Cape Town started during the second half of the 20th century. Only a few of these firms are still in existence today, for instance, Continental China (Nilant 1963:104).

Most ceramics found on Cape sites dating to between 1652 and the mid-20th century, apart from indigenous pottery and locally made VOC earthenware, were imported from Western Europe and the Middle and Far East. Archaeological evidence suggests that until the early 19th century, most of the porcelain used in the Cape was from China with lesser amounts from Japan, the stoneware (except for glazed Chinese stoneware storage jars / martevans) was salt-glazed ware from Germany, and the small amount of white and coloured-bodied refined earthenwares and stonewares were from Britain, particularly from the Staffordshire potteries. After this date and until the mid-1900s, the majority of household ceramics in the Cape and other areas in South Africa were of British manufacture. Relatively small amounts of identified ceramics from the Netherlands (e.g. Maastricht), Germany and possibly Portugal have been excavated so far.

The domination of ceramics production by British manufacturing centres (particularly Staffordshire), the standardization of ceramic bodies, glazes, and decoration, the proliferation of makers’ marks, and, perhaps most importantly, the improvement of global and local transport and trade links, means that identifying point of origins is easier but somehow less central to understanding the 19th century period. Trade also includes a consideration of wider economic issues,
consumer choice, social interaction, and status. Research into local trade, merchants’ records and related archival sources is yet to be carried out in South Africa.

Coarse earthenware cooking pots made at the Cape (VOC pottery).

J.W. Jagger had outlets in Johannesburg and Cape Town that supplied imported ceramics.
Section Six: Ceramics found in the Cape

Earthenware

Earthenware has an opaque, non-vitrified (porous) and relatively soft body. It is either coarse and earth coloured, or fine-grained with a wide colour variation. It must be glazed to make it completely watertight. Earthenware excavated in South Africa falls into three groups: coarse, tin-glazed and refined.

Coarse earthenware

Most coarse earthenware vessels excavated in the Cape are thickly potted from minimally prepared natural earth-coloured clays. They are either unglazed or lead-glazed. Some unglazed wares were burnished (polished) before firing. Decorative techniques used on coarse earthenware include incised, impressed and slip trailed decoration, and the use of coloured glazes.

Six categories of coarse earthenware have been identified on south-western Cape sites: Cape indigenous; African, Asian; Unidentified African / Asian; European; VOC pottery.

Cape indigenous earthenware. ‘Khoe’/’Khoe san’ (herder, Cape coastal) pottery is ovoid with a rounded or pointed base usually with a short raised neck (Figure 1). The pots were hand formed and were open-fired and the body often has a black core. They could have spouts or perforated lugs (Rudner 1968). This type of indigenous pottery was still being made in the south-western Cape region when the Dutch settlers arrived in 1652. Production continued but in decreasing amounts until the late 17th century. It was possibly made until the late 18th century in more remote areas (Andrew Smith pers.comm.).

African earthenware. A few grey-bodied sherds burnished with graphite are most probably of African origin, and were found in the Castle Moat and at Vergelegen.

Asian earthenware. These include fragments of thinly potted, long-necked, unglazed brown earthenware flasks with incised decoration or moulded bodies. They were found on the wreck of the Saõ Gonçalo (1630) near Plettenberg Bay, the Oosterland (1697) in Table Bay and at the Castle (Klose 1997; Werz & Klose 1994).

European-manufactured coarse earthenware is relatively uncommon in the Cape but small quantities of Dutch and North German wares have been excavated from late 17th to early 18th century sites in the Castle, and glazed and unglazed coarse earthenwares (probably Portuguese) were found on the wreck of the Saõ Gonçalo (1630) (Klose 2006).

VOC pottery is red-bodied European-style coarse earthenware made at the Cape during the VOC period from 1666 to ca 1790 (Figure 2). Using local materials, it was wheel thrown and partially or fully glazed with ‘clear’ lead glazes or less frequently with dark green, orange or brown glazes. The shapes were simplified versions of contemporary Germano-Dutch forms (Abrahams 1994; Jordan 2000:28, 42) and include footed cooking pots (koökkanne, kookpotte), chafing dishes (komfooren), charcoal holders (vuurtstijes), various sized lids, skillets, pots, ars, bowls, plates, dishes. The majority of coarse earthenware found on late 17th and 18th century and early 19th century sites is VOC pottery. It is always reddish-bodied with visible inclusions. Pale firing clays do not occur in the Cape. They are simplified European forms and the glaze, if present, is usually ‘clear’ (pale yellow tinted). They have minimal decoration, usually incising.

Note: Glazed or partially glazed red-bodied more refined coarse earthenware dishes and milk pans found on 19th century British period Cape sites were made in England.

Tin-glazed Earthenware

Generic term for Dutch majolica; Dutch fayence / Delft; delft (English); faience (French); fayance (German and Dutch); maiolica (wares of Italian origin) and a general term for all tin-glazed wares.
European tin-glazed earthenwares from Cape sites have buff, yellow or pink semi-refined earthenware bodies (Figure 3). The relatively thickly potted body is very soft and porous (non-vitreous), and covered with a thick, opaque white tin-glaze. Although it appears to be a sturdy pottery, it is somewhat fragile. The body and glaze chip easily and it often cracks if filled with boiling water, making it unsatisfactory for tea and coffee pots. It is a relatively scarce ceramic on Cape sites compared to contemporary European and North American sites. It was quicker as well as cheaper for the VOC to import strong and attractive glazed Chinese porcelain from their warehouses in Batavia than to transport fragile tin-glazed wares from Northern Europe to the Cape. All tin-glazed wares excavated from Cape land sites appear to be from the Netherlands, Britain and France, but Portuguese manufactured bowls and plates were found in Plettenberg Bay on the camp site of the survivors from the Saô Gonçalo (1630) (Storrar 1988).

Note: The glaze on some thickly potted 19th century refined white wares becomes crazed and these sherds are frequently mistaken for tin-glazed ware at first glance by the less experienced.

Refined earthenwares

Starting in the early years of the 18th century, potters in the British Staffordshire Potteries began to make ceramics using clays and ceramic materials from other parts of England to produce fine, thinly potted, light-weight glazed household wares such as tea, table, kitchen and decorative wares. The first new wares were made from refined clays and other new raw materials that were not available locally. The first was white saltglazed stoneware (Figure 9), followed a few years later by the first of many refined earthenwares (Figure 24 onwards). ‘Refined earthenware’ is an archaeological term for white-bodied and coloured-bodied refined earthenwares produced from ca 1720 onwards. They are discussed in detail at the end of this section together with refined stonewares and modern vitreous wares under the heading Industrial Wares.

Stoneware

In general, stoneware is a high-fired dense, hard, vitrified opaque ceramic usually with a stone-like appearance and texture. Not all stoneware fits this definition, some can be lower-fired and slightly porous. High-fired stoneware is water-tight, stain-free and odourless and was used for storage of food and drink. It is often glazed for aesthetic or hygienic reasons but many later refined stonewares are purposely left unglazed. Unlike coarse earthenware, stoneware cracks with localized heat (i.e. from an open fire) and cannot be used for cooking pots, although many modern stoneware vessels can withstand such thermal stress.

Asian stoneware

Most of the utilitarian Asian stoneware pots and jars found on Cape sites come from China with a small number from Siam (Thailand) and Japan.

Chinese glazed stoneware was commonly used to make utilitarian wares such as minimally decorated storage jars and pots (Figure 4). These jars are also known as martevans, a merchant’s term derived from the port of Martaban on the south-east Asian mainland. Chinese greenware (formerly known as Celadon) is a high-fired, opaque, usually greyish bodied ceramic covered in a distinctive thick bluish-green or grey-green glaze. It is rarely found at the Cape as it had largely been replaced by blue-and-white porcelain by the time the VOC arrived in 1652. Chinese polychrome glazed stoneware. This group has a brownish-grey stoneware body decorated with coloured glazes. Chinese ‘red’ stoneware (Yixing) (Figure 5) is an unglazed fine-grained ‘red’ / ‘purple’ stoneware. Its fine texture made it ideal for fine precise decoration. Yixing teapots became widely known and appreciated from the 16th century onwards, and are still in production and use (Wong 1994:18-34).

The only examples of Japanese stoneware found so far in the Cape are 18th century shiny brown-glazed stoneware cooking or warming pots called donabe (Klose 1997) (Figure 6).
European stoneware (pre 20th century)

In the early 16th century, stoneware was manufactured in areas close to the German border, including Northern France and the area of present day Belgium. England began producing stoneware from the 17th century (Gaimster 1997a:302-305, 309). English white salt glazed stoneware and lower-fired red, black and cane coloured stonewares and coloured were made in the 18th century. White and coloured ‘feldspathic’ stonewares were made in England in the 19th century (Lockett & Halfpenny 1982).

Distinctive types of German stonewares with different coloured bodies and decoration were named after the area in which they were produced: e.g. Siegburg, Raeren, Cologne, Frechen and Westerwald. The body colours ranged from off-white to dark grey. Salt-glazing became the sole method of glazing German stoneware (Gaimster 1997a, 1997d). A key characteristic was applied moulded relief decoration (Gaimster 1998) (Figure 7). Globular, handled, brown salt-glazed stoneware bottles / jugs were mass-produced in the Frechen region in the 16th to 17th century and were used throughout the VOC period for drinking, storage and transport of liquids (wine and spirits and even mercury). They had a wider global distribution and deeper social penetration than contemporary Chinese export porcelain (Gaimster 1997a, 1998). Mineral water bottles / jugs have a hard grey body which is always salt glazed and thickly potted, and the inside shows pronounced rilling. The inside is coated with coloured slip (pale shades of beige, pink, yellow) and the colour is specific to the vessel and can be used to distinguish individual bottles (Figure 8).

In the early 18th century a pale grey-white refined salt-glazed stone ware was produced from ball clay and powdered flint. It is known as English white salt-glazed stoneware or Staffordshire salt-glazed stoneware, and mostly used to make light-weight and elegant tea and table wares and beer mugs (Figure 9).

Most British grey-bodied stoneware found on Cape sites are salt-glazed bottles and jars (Figure 10). After about 1820 some salt-glazed bottles were lined with a greenish low-fired lead-glaze and in about 1835 an overall liquid glaze was invented (Bristol glaze) (Hildyard 2005:222). Vessels completely covered with a clear liquid glaze postdate 1860 and this glaze is commonly seen on pale, putty-coloured jars and bottles (Oswald et al. 1982:68 fig. 235). The neck and upper half of many bottles and jars are dipped in brown slip before glazing and commonly decorated with rouletting below the shoulder (Figure 11). Cheap mass-produced stonewares continued to be salt-glazed until well into the 20th century.

Most are classed as British commercial stoneware, i.e. mass-manufactured containers for commercially produced food and drinks (jam, salt, beer, ginger beer, etc.), or non-food substances such as ink, blacking and polishes. It often has the manufacturer’s name or trade mark and the contents printed or impressed on the sides (Lastovica 2000). It was the 19th century equivalent of today’s glass and plastic containers, and as cheap. Salt-glazed water and sewage pipes were mass produced from the early 19th to the 20th century.

Slightly lower-fired refined white and coloured British refined stonewares were developed and produced from the middle of the 18th century (Figure 12) (see Industrial wares).

Porcelain

Porcelain is a hard, dense, high-fired, non-porous ceramic that is white to grey-white in colour, translucent in thin section and usually glazed. The world’s first porcelain was made in Northern China ca AD 600. Similar high-fired porcelain ware was not produced elsewhere until it was made in Korea in the 9th century followed by Japan in the early 17th century. The first European manufactured high-fired porcelain was made in Dresden in about 1708.

Various thickly potted glazed Asian bowls and dishes decorated with simple designs in underglaze blue have a grey body that would be classified as stoneware if European categorisation was followed.
but we use the Chinese classification and place them in the porcelain category as Coarse porcelain / Provincial ware /Asian market ware.)

**Chinese porcelain**

Almost all the fine Chinese export-ware porcelain found on Cape sites was made in Jingdezhen (Ching-te Chên). In general, Chinese ceramics were glazed. The Chinese porcelain on Cape sites can be divided into ‘fine’ and ‘coarse’ wares.

With few exceptions, all the ‘fine’ porcelain found on Cape sites is classed as Chinese export porcelain (for the European market) (Figures 13 to 16). This is a Western term and includes porcelain that is both entirely Chinese in form and decoration, and porcelain of which the form and / or decoration are copied from European sources (Jörg 1982:11). The latter is also known as Chine de commande (porcelain made to order).

Porcelain with cobalt decoration under a clear glaze is known as underglaze blue porcelain or more commonly as blue-and-white (Figure 13). Underglaze blue became the cheapest and most common type of Chinese export ware and was the earliest Chinese porcelain imported in quantity into Europe. It remained popular even when various types of coloured enamelled export wares were introduced in the 17th and 18th centuries.

Chinese porcelain decorated with overglaze coloured enamels was not produced in any quantity until later in the Ming dynasty (1368-1644). Export wares include famille verte, famille rose and Chinese Imari (which imitated Imari wares from Japan). ‘Mandarin’ ware was popular in the West (Figures 14 and 16).

Brown-glazed porcelain (formerly known as ‘Batavian’ ware) vessels are partially or completely covered in brown glaze, ranging from pale yellow and greyish shades to coffee-coloured (café au lait) and dark brown (Capuchine) (Wood 1999:160-161) (Figure 14). Blue glazed, green glazed and multicoloured glazed porcelains are less common types of monochrome glaze.

Dehua, known as blanc de Chine (Chinese white), is a pure, creamy-white, highly translucent porcelain made in the Dehua kilns 1000 km from Jingdezhen. The best known products were figurines, normally left undecorated but sometimes sparingly gilded, or decorated with overglaze enamels in Europe (Espir 2000, 2005). White porcelain made in Jingdezhen used a different clay mixture from Dehua. Purposely undecorated white tea wares ('blanks'), some minimally decorated with underglaze blue, were exported to Europe for decoration in the 18th century.

Note: Most excavated undecorated sherds of porcelain are fragments from decorated wares. Sherds with a very white un-crazed glaze are usually from 18th century enamelled items, and those with a blue cast are from vessels completely or partially decorated in underglaze blue.

**General identification of fine Chinese export porcelain**

Chinese export porcelain is rarely left unglazed and is translucent in thin section. Its glaze is smooth and glossy, typically blemish and craze free (except for huashi porcelain), and has a characteristic bluish cast which is more marked on items with underglaze blue decoration. It breaks cleanly with sharp edges and rarely shows post depositional crazing or discolouration except for occasional staining by iron and copper. The decoration on Chinese porcelain is nearly always hand-painted although printed wares appear from the 20th century onwards. Many vessels have a brown rim, particularly 18th century plates but it is not indicative of Chinese porcelain. Foot-rings are always unglazed as the glaze is trimmed away before firing, and they are usually pale beige to orange in colour, as are the unglazed flat bases seen on many 18th to 19th century serving dishes (dishes, platters, tureens). Chinese dinner plates made after about 1712 have recessed (countersunk) foot-rings, but deep / soup plates of the same period have a free-standing footring. Very small individual sherds of post ca 1730 white Chinese porcelain, even with traces of decoration, can be difficult to distinguish from European porcelain.
Note: Chinese porcelain cannot be dated on quality alone. The potters could always make high quality porcelain provided the purchaser was prepared to pay a higher price.

**Chinese ‘coarse porcelain’ / Provincial ware / Asian market ware**

(Min yao (Chinese) people’s ware; Kitchen Ch’ing; folk pottery)

Note: The term *Asian market ware* is not internationally recognised but is used by archaeologists at UCT to emphasise that it was made as an export ware for use throughout Asia and in settlements linked to eastern trade networks, such as the Cape. It was distributed to Chinese communities around the world in the 19th century, particularly in the USA (Hagan Jones 1992).

Asian market ware occurs on late 17th to early 19th century sites in the Cape. It is an export ware made in the kilns of the coastal province of Fujian. Asian market wares were made for markets in Asia particularly Southeast Asia. They formed an important part of VOC Asiatic trade. The first VOC merchants in the Far East retained the Chinese terminology and called it coarse (grof) porcelain in their business dealings in the East (Volker 1971). It was regularly imported into the Cape during VOC rule (1652-1795). The VOC ship *Geldermalsen* was carrying a consignment of ‘coarse porcelain’ for the Cape station when it sank in 1751 on its return voyage to Europe (Jörg 1986:95-97; Sheaf & Kilburn 1988:148). It was not officially exported by the VOC to Europe, where it was probably too crude for local taste.

It was a cheap ceramic and was made using fast economical methods. It was decorated with simple flowing designs, usually in blue (Figure 19). The inside of many bowls and dishes had a biscuit ring (an unglazed ring on the inside centre made by cutting away the glaze) while others had unglazed rims. Coarse-bodied underglaze blue bowls and dishes are the most common forms found on 18th century Cape sites but it also appears in small quantities in late 17th and early 19th to mid-century assemblages (Vos 1985). The body ranges from coarse grey to beige coloured coarse stoneware-like body to a relatively fine, grey-white porcelain-like body, and some examples have an under-fired creamy almost earthenware-like body (Figure 20).

Coarse bodied bowls and dishes (and some finer bodied bowls) with overglaze red and green decoration have been excavated, some with biscuit rings. Their identity is not known. It has been suggested that some of the Asian market wares found on Cape sites were made in Vietnam.

**Japanese porcelain**

Japanese porcelain, first produced in the first or second decade of the 17th century, is one of the smaller groups of porcelain excavated in the Cape and is found on late 17th to mid-18th century sites, coinciding with the main period of Japanese porcelain trade with the West (1659 to ca 1740-50). Civil unrest in China from the late 1640s to ca 1683 severely disrupted the supply of most Chinese export porcelain made in Jingdezhen and the VOC was forced to turn to Japan for porcelain suitable for its extensive European and Asiatic markets (Figures 17 and 18). The VOC monogram appears on a number of 17th century Japanese Kraak-style porcelain plates and dishes (the so-called Company Plates) and less commonly on bowls, bottles, etc. (Woodward 1974:93-109).

The Japanese style of painting differs from the Chinese. While better quality Japanese wares are well painted with clear cobalt blue on a white body, the painting in general is sometimes darker, heavier and blurred when compared to contemporary Chinese wares. Large plates and dishes may have three to five unglazed ‘spur marks’ arranged in an X or Y on the base inside the footring. Japanese ‘plates’ (medium-sized dishes) always have free-standing footnings and are not recessed like Chinese dinner / table plates made after the early 18th century. Unglazed ‘biscuit rings’ covered with enamel are occasionally seen on saucers. The glaze on excavated enamelled wares is nearly always crazed (delayed crazing). Enamelled wares with a pink wash enamel are characteristic of Japanese porcelain made after 1700. It is not seen on contemporary Chinese porcelain (Impey 2002:197). Most of the Japanese porcelain excavated in the Cape is hand-painted but overglaze
printed wares occasionally appear from the late 19th century onwards. Some wares were printed in red with added enamels.

It is difficult to identify Japanese decorative styles correctly from small damaged sherds. We separate the sherds into four groups based on the most common basic types of decoration used on the porcelain: (i) underglaze blue, (ii) underglaze blue with overglaze decoration (which includes the so-called Imari, underglaze blue with red and gilt), (iii) enamels only, and (iv) undecorated white.

Islamic fritware or Stone Paste (translation of the Persian term)

Islamic fritware, developed during the 10th to 13th centuries, was possibly an attempt to replicate Chinese porcelain. It can be considered an imitation porcelain as the composition of early European soft-paste porcelains were based on Islamic fritware. Excavated sherds have a thick, opaque sandy / sugary body that is discoloured on the broken surface. The glaze is translucent grey-blue and forms a thick layer on top of the body and is usually crazed. Excavated sherds of Islamic fritware can sometimes be initially mistaken for tin-glazed ware by those unfamiliar with this ceramic.

European porcelain – soft-paste, hard-paste and bone china

European porcelain – soft paste

European soft-paste porcelain has not been positively identified so far on Cape sites excavated by UCT. A soft paste body is said by some collectors to have a sugary texture. The precise identification of this type of European porcelain is best left to specialists.

European hard paste porcelain (post 1708-1710)

Europeans struggled to make ‘true’ hard-paste porcelain similar to Chinese porcelain. It was eventually made in Germany. It was secretly discovered in Dresden in 1708 but only became generally available from the factory in Meissen from 1710. Meissen hard-paste porcelain eventually became the standard porcelain body manufactured throughout continental Europe. In the 18th century European and British porcelain eventually acquired a higher status than Chinese porcelain and towards the end of that century it exceeded the amount of Chinese export porcelain imported into Europe (Kerr & Wood 2004:37). Eighteenth century European hard-paste porcelain is rare on Cape sites. Almost all 19th century (and later) non-British European porcelain is hard-paste but it is difficult to accurately identify small isolated sherds without knowing the shape and decoration of the vessels.

The most common type of British porcelain found at the Cape is English bone China, a completely new type of porcelain that was developed and made in Staffordshire from ca 1800 (Godden 1992; Kerr & Wood 2004:763-64). English bone china is also known as English porcelain. When new it has an exceptionally strong, white, highly translucent body. The foot ring is glazed, unlike Chinese foot rings where the glaze is trimmed away before firing. Early bone china is finely crazed, which is more pronounced on excavated wares (where the body is often stained). Common 19th century excavated forms are tea wares and ornamental wares – less common are table wares. It is not always possible to distinguish very small sherds of excavated late 19th and 20th century bone china from European hard-paste porcelain, but if you compare them side by side, European porcelain appears to be slightly grey. White bone china decorated with thin gold lines or lilac sprigged decoration is found on mid-19th to early 20th century Cape sites (Figures 21 and 22). Most excavated late 19th to 20th century bone china is decal printed.
Industrial wares (factory-made wares)

In Europe, traditional ceramics were produced in relatively small quantities until the mid-18th century when ceramic manufacture in Britain became a factory-based industry. Initially, higher production was achieved by working the poorly paid potter harder, using child labour and cutting corners. The use of non-family wage labour and more efficient methods made the mass-production of ceramics possible. This change is part of what is known as the Industrial Revolution (Weightman 2003; Allan 2009). The term ‘industrial wares’ refers to mass-produced, factory- and machine-made ceramics first manufactured in Britain and later throughout the world, from approximately the mid-18th century to the present. British industrial wares begin to appear on a regular basis in the Cape at the end of the 18th century, long after they were commonplace in Europe and North America.

The first refined earthenware was glazed red earthenware (Barker & Halfpenny 1990). It was followed by various black-glazed red earthenwares. These two wares were followed by a succession of white-bodied refined earthenwares: creamware, pearlware, and white wares, which developed into the stronger 19th century iron stone, stone china and the more vitrified 20th century hotel wares’. Examples of Industrial refined stonewares include English white salt-glazed stoneware (ca 1720-1790s); black and various coloured unglazed stonewares (from the mid 18th century); and ‘white’, buff and pastel coloured ‘feldspathic’ stonewares (late 18th century into the 19th century) (Lockett & Halfpenny 1982).

White-bodied refined earthenwares were the most widely manufactured industrial wares. The first kind to be produced was creamware developed from the 1740s and perfected by Wedgwood around 1760. It was joined by pearlware from 1775 and various white wares from 1800 onwards. The glaze and body of creamware and pearlware gradually became lighter after the 1820s and 1830s and became indistinguishable in appearance from white wares produced in the 19th century. The lessening of the cream colour was an inconsistent process that varied between manufacturers, and identifying wares from the 18120/30 transitional period can be notoriously subjective. Time lag may also make it an issue outside of Britain. Manufacturers developed other white-bodied wares white wares (various ironstones and stone chinas) from the early 19th century.

Coloured-bodied refined earthenwares (yellow ware, brown ‘teapot ware’, pale tinted-bodied ware) and refined stonewares (Basalt, cane ware, Jasper, etc) were made alongside the white-bodied wares during the 18th and 19th centuries.

Refined earthenwares – white bodied

Creamware / cream-coloured ware: (produced from the 1740s to the 1830s and later). A glazed, hard, non-vitreous, white bodied, light-weight refined earthenware with a transparent glaze. It can be varying shades of cream ranging from butter colour to almost white. The identification of late 18th to 19th century creamware is made easier by contrasting it with obviously white ceramics. Most early 19th century creamware is undecorated but the plates have characteristic rim patterns (Doncaster Library 1983). Factory and potters marks are rarely found on sherds from Cape sites. They are usually impressed marks, and include ‘Spode’, ‘Shorthouse’, ‘C’ and ‘6’. The majority of creamwares from Cape sites are pale undecorated plates, bowls, and dishes, with smaller quantities of tea and coffee ware (Figure 24).

Pearlware: (produced from ca 1775 to 1840s) pearlware is a 20th century archaeological term for white-bodied refined earthenware covered in a clear, slightly blue-tinted lead glaze. It was purposely developed as an alternative to creamware and made in imitation of Chinese porcelain. The glaze on the earlier wares appears blue particularly where it pools on the inside of a foot-ring. Pearlware is very rarely undecorated and any undecorated sherds will probably come from decorated vessels. Hand-painted pearlware tea wares with Chinoiserie designs were manufactured ca 1775 until ca 1810 followed by floral patterns (Miller 1991:8; David Barker pers.comm.) (Figure 25). Polychrome pearlware appeared from about the 1790s and was painted with the so-called ‘soft early’ colours of blue, olive green, brown, yellow and orange.
Whitewares: (produced from about 1800 onwards) are the largest category of white-bodied industrial wares, usually, but not always, with a transparent clear glaze. They include types of white-bodied refined earthenwares with trade names such as ‘stone china’, ‘ironstone china’, ‘semi-vitreous china’ and later more wares such as ‘white granite’ and ‘hotel ware’ (Figures 26 and 27). The body is not always white, ironstones can have a greyish body. In the 20th century more vitreous types of whiteware were produced. One type was developed to give a strong and relatively impermeable body which could be easily manufactured into utilitarian household wares and sanitary ware (Singer & Singer 1963: 450). Makers’ marks / backmarks are found on whitewares, and they gradually become more common from mid-18th century onwards. In South Africa we can only really hope to see them from the early 19th century, and even then most ceramics were unmarked.

Whitewares are usually decorated but many later ones are left undecorated. Decorations include moulded (particularly rims), printed (all types), painted, enamelled, industrial slipware, coloured glazes; sponged; lined, etc. Examples include printed tea and table wares, lined plates and teawares; industrial slipware bowls and jugs, shell edged plates; green glazed moulded plates, pharmaceutical pots; plates printed with crests or hotel names; ‘hotel wares’ (Figures 49 and 52). Many later whitewares are left undecorated.

The sheer ubiquity of whiteware in the 19th century raises the issue of whether a traditional division of ceramics by ware type, except in the broadest sense, continues to have any real validity for ceramics post-dating 1840.

Refined earthenwares – coloured bodied

Glazed, minimally refined red-bodied earthenware is known as ‘Staffordshire coarseware’. Bowls were made everywhere in England for dairying (milk processing) (Barker & Barker 1984; David Barker pers.comm.) and are found in association with household ceramics at the Cape in the first half of the 19th century. Glazed red earthenware (ca 1720-1760 and later) is twice-fired red-earthenware with clear lead glaze, sometimes with moulded decorations in low relief. Used for tea and coffee wares, but in the 19th century a thicker type of less refined glazed red earthenware was used to make kitchen bowls. They often had a cream or yellowish interior.

Blackware (18th to 19th century). Early black-glazed ‘red’-bodied wares and some later wares are known as Jackfield ware. Early Jackfield ware has a red-purple-greyish bodied hard, refined earthenware body. The glaze is a thick lustrous black glaze. A degenerate form persisted into the 19th century (Barker & Halfpenny 1990:34). Some is gilded or enamelled (Dudson 1999). Examples: tea and coffee wares, crabstock handles and spouts, and animal paw feet on tea and coffee pots, jugs and sugar bowls. Salt cellars often had similar feet.

Teapot ware (late 19th century to present day) is related to blackware. A dark red to buff non-to semi-vitreous earthenware body with shiny brown to dark brown glaze (Figure 28).

Yellow ware (19th century, perhaps as early as 1820s). Dense, partially vitrified earthenware made from a naturally coloured buff clay body covered with a clear glaze (Figure 29). The glazed ware varies in colour from brownish mustard to a light clear yellow (Sussman 1997:77). Some are decorated with slip and mocha decoration (factory-made slipware); other forms are decorated with horizontal white lines or bands. Examples: kitchen wares (storage jars, bowls, jugs); chamber pots.

Brown-bodied lusterware (19th century). Thick brown body decorated with overall lustre, lustre glaze with painted applied decoration, or with lustre painted on top of an opaque glaze band on a lustred body, or lustre applied over printed decoration.

Tinted-bodied ware (19th to 20th century and later). Refined white body tinted pale blue, green, yellow, etc. Examples: pale blue tinted plain cups and saucers; orange-bodied teapot.

Refined stonewares

English white salt-glazed stoneware (from ca 1720 to 1790s; small amounts made until early 19th century). It was the first English ‘white’-bodied ceramic, with a vitreous, opaque greyish-white body,
often with slight orange peel effect. Press moulded decoration often with piercing, and plates have moulded rims. Tea and table wares, also tankards, jelly moulds, candlesticks, vases and figurines. Variation: *scratch blue* (1720-90) with incised decoration filled in with cobalt blue; unglazed or smear glazed (late-17th century for a short period, again from ca 1740-1800s and later).

**English refined stonewares**: unglazed wares sometimes referred to as *dry-bodied wares* (Lockett & Halfpenny 1982); red stoneware similar in appearance to Chinese Yixing (late 17th century and again from mid-18th to early 19th century and onwards); black bodied stoneware (ca 1750s to 1840s and onwards) usually unglazed, moulded and often engine-turned, *Egyptian Black, Black Basaltes, basalts; cane ware* (1770s-1830s), light, yellowy-buff coloured unglazed stoneware (Figure 12); *Jasper ware* (1774 onwards), the first and most popular colour was blue but other colours were manufactured in 18th century and later – green, lilac and yellow (Young 1995:39) - commonly decorated with white sprigged decoration (Figure 30).

**19th century refined stoneware** (produced from the late 18th century). **White or buff**, also known as *felspathic stoneware* and *Turner’s stoneware*, is a semi-translucent smear-glazed white stoneware used to make moulded teapots, jugs and vases. The buff stoneware, known as *Stone*, was stronger and thicker than the white. **Coloured smear-glazed stoneware** (fawn, brown, sage green, blue, lilac, etc.) was produced from ca 1830 onwards. It was commonly used for moulded jugs that were particularly popular in the 19th century (Rumsey 1987) (Figure 48, bottom right).
Section Seven: Ceramic decoration

Industrial wares were decorated using methods that had been used for hundreds of years as well as completely new fast techniques suitable for mass-produced ceramics. Pigments (substances that give colour to materials) were used to change the colour of raw clay and clay slips, to produce coloured glazes and enamels, and provide different colours for painted and printed decoration. Before the early 19th century, most of the colours used for the decoration of ceramics were derived from finely powdered, known, naturally occurring metallic oxides. Towards the end of the 18th century, the fast growing British cotton industry required new stable dyes and coloured pigments and this was a driving force behind the so-called ‘chemical revolution’ that began in the late 18th century. Bright aniline colours derived from coal tar (new reds, purples and blues) were used from the mid-19th century.

Painted (underglaze decoration or unglaazed decoration)

Painted decoration is applied with a brush onto fired clay and covered with glaze. Metallic oxides used for painting ceramics had to withstand the heat of the glaze-firing (900°C) without decomposing or changing colour. This restricted the number of colours used for underglaze decoration of ceramics until about 1820 when new high-firing colours were developed.

Blue painted (ca 1775-1830s) decoration derived from cobalt oxide is stable under a wide range of temperatures provided it is covered by a glaze. It was used for painting pearlware from ca 1775 to 1830s, oriental-style designs (Chinoiserie) predominated until ca 1810 and floral patterns were popular in the 1820s (Miller 1991:7-8) (Figures 25, 31 and 32).

‘Soft’ colour painted (popular 1790s–1820s) or ‘earthy’ colours (olive green, mustard yellow, orange, brown) were commonly used for underglaze decoration of tin-glazed wares and for refined earthenware until the early 19th century (Figure 33). Common motifs were stylised floral patterns. More frequently used on tea wares than table wares (Miller 1991:8).

‘Harsh’ colour painted (1830s onwards) included bright new chrome-based colours such as pink, apple green and yellow (Hildyard 2005:223), and known variously as boerenbont (Quik & Polling 1989), peasant enamel ware and Gaudy Dutch. This decoration was used on refined earthenware tea and tablewares, and a similar design painted in these colours is still made today (Figure 34).

Enamelled (overglaze decoration)

Enamelled ceramics are decorated with coloured enamels applied on top of a fired glaze. Most enamels are coloured, low-fired lead glazes and thickly painted enamels can be seen or felt on top of the glaze. This type of decoration wears off or becomes damaged during use, and degrades when buried in the ground or submerged in seawater. A ‘shadow’ of the design usually remains and can be seen if the surface of the vessel is viewed at an angle or lightly dusted with graphite. Porcelain (Figure 16), stoneware and industrial wares can be decorated with enamels.

Printed

Ceramics are printed by the transfer of preformed decoration or pattern onto the surface of a ceramic using a ceramic pigment. Several distinct techniques are used for printing. The two most common types of types of printed decoration found on excavated British ceramics are transfer printing from the mid-18th to early 20th century, and lithographic printing (decal printing) which was used from the last third of the 19th century to the present (Majewski & O’Brien 1987:146).

Transfer printing

Transfer printing was developed in England in about 1750. There are two methods of transfer printing: bat printing and tissue printing (Figure 42).
Bat printing was predominantly black but other colours were occasionally used including a very dark red and brown. A disadvantage of bat printing was that the bats stretched and distorted the design if not properly handled. Tissue printing is more commonly known as transfer printing. The first underglaze transfer printing was on porcelain in 1757 and on refined earthenware in about 1780 (Drakard & Holdway 2002:186; Halfpenny 1994:25). This type of transfer printing is almost indestructible as it is covered by a layer of glaze. The first tissue printed wares were blue and this was the predominant colour until the 1830s (Figure 37). New colours were introduced: brown was in use by the 1790s and green, pink, purple, lilac, etc. appeared from the 1820s onwards (Figure 38). Multi-colour printing was in use by the 1830s (Barker 2001). Blue printing tended to become brighter and paler in colour during the 19th century (Copeland 1997:138). Sheet printing was a variation of the 19th century. A sheet of tissue paper was printed with an all over repeating design (Figure 40). It was used to completely cover the whole surface of a ceramic (Drakard & Holdway 2002:219-220). A third method of transfer printing was known as pluck and dust. This type of printing was a combination of bat and transfer printing techniques and was used by Spode from 1833 to 1943.

The patterns on printed refined earthenware have a chronology. Beginning in about 1785, the prints were blue and predominantly oriental in style; European scenes started to appear ca 1810 which became ‘romantic’ in style during the 1830s and 1840s (e.g. ruins in landscapes) (Snyder 1997); Gothic inspired scenes appeared in the 1860s and 1870s; and asymmetric Japanese-style prints were popular in the 1870s and 1880s (Klose & Malan 2000). The production of blue-printed Chinoiserie-style prints continued throughout this period and beyond. For example, the Willow Pattern that first appeared in the 1790s is still manufactured today (Coysh & Henrywood 1982). Among the most commonly occurring patterns on Cape sites are blue printed Willow pattern (Figure 37), pale blue and green printed Asiatic Pheasants pattern (Figure 39), usually grey printed Rhine pattern (a characteristic scrolling rim pattern) (Figure 38), and various blue printed designs with wild rose borders.

Lithographic printing: from second half 19th century or earlier, becoming the standard type of printed decoration on British industrial wares in the 20th century (Figure 41). Also known as ‘stick-on’ or ‘slide-on’ printing (UK) and as decals (USA). Ceramics are decorated by permanently attaching complete decorations (lithographs) to the glazed surface. Specialist manufacturers produce the lithographic designs which are sold in sheets.

Note: It is important to be able to distinguish between printed and painted wares. Transfer and bat prints are often blurred or smudged due to careless application of the design to the ceramic. Circular blank spots can appear on bat-printed wares caused by bubbles of air trapped under the bat. Lithographic and tissue transfers are cut to fit the vessel therefore it is often possible to detect joins, cuts or obvious missing parts in the finished decoration. Lithographic prints are sharp and clear in a wide range of colours, and as they are attached and fired on top of the glaze some types stand proud of the glaze surface.
‘Flow-blue’ transfer printed wares (from 1820s to 1840s onwards and popular to first quarter of 19th century in the USA). Tissue printed patterns on refined earthenwares were purposely blurred by placing a volatile chloride into the saggar during the glaze firing (Figure 42). Flow-blue was made for export, particularly to North America (Snyder 1992). Occasionally produced in mulberry colour.

Multi-coloured transfer printed wares (in use in the early 1830s) (Figure 26). Potters used this type of decoration on refined earthenwares, most commonly on ironstone china, and particularly dinner and tea services, ornamental and toilet wares and a wide range of pot lids. It gave the same effect as enamelled decoration but was considerably cheaper. Replaced by lithographic printing (decals) (Halfpenny 1994: 69).

‘Print & Paint’ (late 18th to 19th century). Printed and glazed wares with added enamelled decoration (Figure 41). Used on refined earthenware and porcelain, either tissue or bat printed (Drakard & Holdway 2002:42). Some transfer printed vessels enhanced with coloured enamels appear to be covered with an overall glaze.

Applied decoration

Applied (appliqué / sprigged) decoration: either made by hand or by using small plaster of Paris, fired clay or metal moulds. Applied decoration can either be in high relief or low relief. Applied decoration on bone china tea ware is referred to as sprigging (Figure 22); German salt-glazed stoneware bottles can have mould applied decoration (Figure 7).

Brown edge

A brown edge is often seen on 18th century Chinese and Japanese export porcelain dishes, bowls, cups and saucers. It is also seen on a few late 18th to early 19th century fine quality European tea wares with printed Chinoiserie decoration.

Edged / Moulded edge

Many vessels, particularly flat wares (plates, dishes, saucers), were formed by pressing clay into moulds with decorated edges. The following types of moulded edges are found on 18th and 19th century refined industrial wares. Feather-edged: only found on early undecorated cream-coloured ware in the Cape. Shell-edged: commonly occurring on pearlware and white ware plates, and occasionally on lidded table wares (Figure 46). Most shell-edged wares are highlighted with simple painting, usually in blue or green, which was carried out by semi-skilled labour. Moulded-edged cream coloured and cockled or notched shell-edged plates have a rough chronology (Malan & Klose 2003). English white salt-glaze stoneware plates have characteristic moulded ledges (Figure 48, top right).

Turning and engine turning (post 1764)

Turning: Unfired leather-hard vessels are mounted on a slow turning horizontal potter’s wheel and clay cut away (trimmed) with metal blades to improve the appearance by smoothing the outside surface and reducing the thickness of the walls of the vessel, to smooth the rim and sometimes to cut a foot ring.

Engine-turning: A special type of horizontal lathe could be adjusted to incise a variety of regular designs, including fluted, diced and similar designs, on leather-hard ceramics (Figure 48).

Gilding (‘gold’ and ‘gilt’ are synonymous - true gilding must not be confused with lustre)

Gilding is an overglaze decoration, the application of gold to the surface of a ceramic. It is used to decorate rims, to highlight enamelled, painted, printed or moulded wares, and to paint lines or bands on undecorated wares (Figure 36). It is not always easy to detect gilding on excavated wares but a pinkish colour residue is often discernable. Gold printing was introduced in about 1810 and the first wares were bat-printed porcelain (Halfpenny 1994:52).
Lined, Band & Line, Banded (late 18th to early 19th century)

These terms describe ceramics decorated around or on the rim with wide lines (bands) and / or narrow lines; either painted (underglaze) or enamelled or printed (overglaze). This was a cheap and fast method of decorating tea and table wares. Creamware plates often had lined decoration, usually olive green or brown lines on the rim edge; lined decoration is more commonly seen on white wares, particularly blue but also red or green 'band and line' (Figure 45). Wide underglaze bands are seen on late 19th to early 20th century plates. Not to be confused with banded industrial slipware (see below).

Lustre (popular in 19th century)

Lustre decorated ceramics were produced in vast quantities in Britain throughout the 19th century particularly on bone china items (Gibson 1999) (Figure 35). There are many types of lustre decoration. It can be an overglaze solid or painted metallic decoration (‘pink’, ‘purple’, ‘copper’ and ‘silver’ lustre). This known as ‘resinate lustre’ to distinguish it from the earlier Islamic and Hispano-Moresque lustre. The iridescent (mother-of-pearl) lustre effect seen on later 19th and 20th century ceramics was obtained by using an all-over transparent glaze containing bismuth (a metal), often applied over painted or printed decoration (Figure 23). There were also methods of producing iridescent coloured glazes which could be painted or sprayed onto previously glazed ceramics.

Slipped – Industrial slipware or factory-made slipware: (in regular use from 1797 to 1890 and some types made until mid-20th century)

Factory-made slipware was one of the cheapest decorated wares in the 19th century in England and North America, and used on bowls, jugs and mugs but not plates (Figure 43). Coloured clay slips were applied in various ways to leather-hard vessels attached to a horizontal lathe, known as slip trailing. The most common slip trailed decoration was banding: the application of different widths of horizontal bands (this type is known in the USA annular ware). Slip was also applied as dots, blobs (cat's eye), swirls of different colours (marbled), etc. This was often followed by rouletting on the rims, engine turning to give a diced effect, or the application of an acidic solution to a wet slip to produce a dendritic decoration known as mocha (Sussman 1997). The rim of many slipwares was decorated with rouletting and green glaze. Finally, the decorated vessel was biscuit-fired, followed by glazing (a clear glaze) and fired again.

Note: The decoration is confined to the outside. The slightly raised banded decoration can be seen or felt with the edge of a fingernail.

Slipware should not be confused with glazed banded ware. Cornish Ware, a 20th century version of banded slipware made in England from 1926 to the present day, uses a different technique to produce a range of kitchen and household wares decorated with wide blue and white bands (Figure 29).

Sponged

Decoration applied to biscuit fired (unglazed) vessels with a sponge dipped in coloured liquid pigments. At first only uncut natural sponges were used but after 1845 the denser part of the sponge was cut into shapes such as stars, flowers and geometric designs (Majewski & O'Brien 1987:161). This allowed for rapid reproduction of regular repeating patterns and was often used in conjunction with painted decoration. Sponged decoration is generally found on tea, kitchen and toilet wares. Common on 19th century industrial wares, production continued into the early 20th century (Figure 44).

Impressed / Stamped, Rouletting

Impressed decoration is produced by pressing a preformed shape (a stamp) into damp clay vessels. Repeating patterns can be made on leather hard vessels using a roulette, a handled brass wheel with a faceted edge (Sussman 1997:33 fig.48) (Figure 47).
Section Eight: Dating of ceramic types

Many ceramic types have precise and known periods of manufacture. Excavated ceramics can be used for relative dating to give an approximate date range for the site. Any dating technique relies on three factors: accurate identification, knowledge of the dates of production and an awareness of the time lag before deposition in the ground. The date of manufacture is rarely the same as the date of deposition in the ground. Some vessels, particularly valuable ones, can survive for decades before breaking. Site occupation dates derived from excavated ceramics must be used with caution and preferably in conjunction with documentary sources and other evidence. Due attention should be paid to glass, coins, nails, etc. when dating the entirety of an assemblage.

Asian porcelain

Asian porcelain is identified and dated by observing the form and body type, the colour and quality of the glaze, the colour, translucency or opacity of the overglaze enamels, the quality of the cobalt used for under-glaze blue, and the style, colour combinations and content of the decoration. Pieces are occasionally found with identifiable marks on the base. Many reign marks are spurious and therefore unreliable for dating. Excavated porcelain can be compared to accurately dated reference collections and catalogues from museums, exhibitions and dealers. Catalogues of ceramics from professionally excavated dated sites and from shipwrecks are of enormous value to museums, collectors and ceramic historians.

Chinese porcelain cannot be dated on quality alone. The potters could always make high quality porcelain provided the purchaser was prepared to pay a higher price. The presence of Chinese ‘ginger jars’ is a useful marker of 19th century sites (Figure 50).

British industrial wares

British industrial wares were manufactured from about 1740 onwards but were not brought into South Africa in any quantity until about 1800, following the British occupation of the Cape. We have identified certain chronological markers for the 19th century (Klose & Malan 2000). Sometimes tight dates can be ascribed to wares through the documentary record and through maker’s and registration marks. For example, the Spode firm operated from c.1784 to 1833; Spode was succeeded by Copeland and Garrett, which operated between 1833 and 1847; and then by Copeland from 1847 through to the 20th century. By cross-referencing marked pieces from these three sequential firms with decorative styles, it is often possible to date individual pieces even more closely. Ceramic experts in the USA have noticed that the glaze on refined earthenwares manufactured in Staffordshire before ca 1860 has parallel linear crazing while those after this date form a more square-like configuration similar to that of a dry lake bed (James Deetz pers.comm.).

Chronological markers

(main periods of production of selected British industrial wares found on Cape historical sites)

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<tr>
<td>Undecorated pale cream coloured wares</td>
<td>Ca 1790 to 1840 (and after).</td>
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<tr>
<td>Description</td>
<td>Date range</td>
<td>Illustration</td>
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<td>-------------</td>
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<tr>
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<tr>
<td>Refined black stoneware – Egyptian black / Etruscan ware / black basalt</td>
<td>From 1750s to 1840s and onwards, Black Basaltes (Wedgwood) from 1768, other more refined bodies from 1770s.</td>
<td>Fig. 12</td>
</tr>
<tr>
<td>Cane ware</td>
<td>Late 1770s to 1830s.</td>
<td>Fig. 12</td>
</tr>
<tr>
<td>Stone china, ironstone / ironstone china</td>
<td>1800 onwards.</td>
<td>Fig. 26</td>
</tr>
<tr>
<td>‘Stone China’ &amp; ‘Semi Porcelain’ trade marks</td>
<td>Misleading, as some are standard 19th C earthenware.</td>
<td></td>
</tr>
<tr>
<td>Mason’s Patent Ironstone China</td>
<td>From 1813.</td>
<td>Fig. 26</td>
</tr>
<tr>
<td>‘Motto’ plates and mugs</td>
<td>19th C.</td>
<td>Fig. 51</td>
</tr>
<tr>
<td>Yellow ware</td>
<td>19th C.</td>
<td>Fig. 29</td>
</tr>
<tr>
<td>Lithographic (decal) printing</td>
<td>Standard printed decoration since ca 1870.</td>
<td>Fig. 41</td>
</tr>
<tr>
<td>Stoneware with all over clear liquid glaze</td>
<td>In general use from ca 1860.</td>
<td>Fig. 11</td>
</tr>
<tr>
<td>Sprigged bone china</td>
<td>Popular middle half 19th C.</td>
<td>Fig. 22</td>
</tr>
<tr>
<td>Cornish Ware</td>
<td>From 1926.</td>
<td>Fig. 29</td>
</tr>
</tbody>
</table>

**Maker’s marks**

Maker’s marks on ceramics in the 18th century are rare. Most date from the 19th century. The best reference books are G.A. Godden’s *Encyclopaedia of British Pottery and Porcelain Marks* (first published in 1964, revised and reprinted 1991) and *Handbook of British Porcelain and Pottery Marks* (revised and reprinted 1989).

**Design Registration Marks:** All the records for 1839-1910 registrations are in the Public Record Office, Kew, which is open to the public.
• 1839 Copyright of Designs Act: Protection given to the design of the ornamentation, shape or configuration of most manufactured articles for 12 months. Protection subject to deposit of the design under the proprietor’s name with the Registrar of Designs.

• 1842 Copyright of Designs Act: Thirteen classes of ornamental design created, giving 3 years protection to registered designs of earthenware. Initiated the use of the diamond registration mark (see below).

• 1850 Copyright of Design Act: Possible to register provisionally for 1 year any design that could be registered under the previous Acts, without prejudice to later full registration. This was in response to the Great Exhibition, so exhibitors could display their latest designs without fear of losing copyright.

• 1883 The Patents, Designs and Trade Marks Act: Period of protection extended to 5 years. Registration mark changed to letters ‘Rd’ or ‘Rd No’ followed by number.

Marks on pottery to help with dating:

• Diamond-shaped patent mark, from 1842 to 1884.
• ‘Limited’ or ‘Ltd’ from 1860, but not generally on ceramics until 1880s.
• ‘Royal’ in trade name or title, from mid 19th century.
• ‘Trade Mark’ from 1862 (Trade Mark Act), but not generally used on ceramics until c.1875.
• ‘Rd. No.’ followed by a number, from 1884. If above 360,000 it is post-1900.
• ‘England’ from 1891 (to comply with the American McKinley Tariff Act). ‘Made in England’ is a 20th century term.
• ‘Bone China’ and ‘English Bone China’ are 20th century terms.
• Garter-shape mark from 1840s.
• Staffordshire Knot from c.1845, much used in 1870s and 1880s.
• Royal Arms, from early 19th century through to 20th century: (i) in escutcheon in centre, pre-1837; (ii) simple quartered shield, post-1837.
• Name of pattern incorporated in the mark, from ca 1810.
• Some firms had marks for yearly dating, e.g. Minton, Wedgwood, Royal Worcester, Royal Crown Derby.
• Some firms impressed their ware with numbers denoting the month and two last figures of the year e.g. 1 / 75 for January 1875. Some used initials, but J could be January, June or July.
• Some firms put their initials over a letter in a triangle, e.g. F&R / B. The bottom letter denotes their Potteries town – Burslem (B), Cobridge (C), Fenton (F), Hanley (H), Longton (L), Tunstall (T).
• Some marks are retailers’ not manufacturers’ marks.

Painted, printed and impressed letters, numbers and miscellaneous marks: It is not always possible to understand what they are for, so they can be confusing. They may be marks made by the printer, painter or potter denoting batch numbers, i.e. to record the amount of work done and therefore what wages to be paid, or a number, a letter or a mark, such as a cross or a heart. They may be the pattern number for the decoration. If they are the latter they are probably more than one number, such as 75, 348 or 2897. Impressed numbers may denote the size of the object, particularly in multiples or divisions of 12, e.g. 3, 4, 6, 12, 24, 36, 48.
Section Nine: Ceramic identification, cataloguing and analysis

Once removed from their archaeological context - where they were dropped, thrown or buried - artefacts are separated into various categories for identification and analysis. Ceramics, glass, metal, bone, shell, stone, organic (e.g. wood, ivory, leather), ‘other’ (modern synthetics), and ‘unidentified’ are the main preliminary divisions that we use, on the basis of raw material. However, objects can be organised in a number of other ways: colour, size, function or use, etc. The way you choose to sort items into types (to create *typologies*) ultimately depends on the questions you wish your artefacts to answer – i.e. they must have ‘analytical utility’. The type of assemblage also dictates the questions you can ask: for example, a city dump results from general deposition from a neighbourhood, but you need debris from identifiable households to make meaningful comparisons between them (e.g. wealth, occupation and ethnicity).

**Ceramics Analysis Model**

Stage 1 – Identification
- Ware – Form – Decoration – Date

Stage 2 – Analysis
- Economy – Status – Function – Meaning

On the ‘theoretical’ level, it is important to note that the analytical categories of the model are intentionally loosely defined. Each site is different and requires a different interpretive focus; each analyst is different and brings his or her own experience and interests to analysis.

At the ‘identification’ level are those characteristics with which a fragment of pottery is inherently imbued, and which exist objectively outside analysis. All researchers agree that ceramics are made of something (ware), have a certain shape (form), and have a certain external appearance (decoration), even if they disagree on how to define those categories. Here, subjectivity is largely a matter of defining boundaries and terminology (e.g. transition from pearlware to whiteware). Vessel form and decoration identification can also present problems, e.g. very small rim sherds.

The topics in the ‘analysis’ level – economy, status, function and meaning – depend on these basic building blocks of identification, but are based on an entirely different level of interpretation and subjectivity. For the higher levels, interpretation is not only necessary but unavoidable. While a ceramic vessel intrinsically has a ware and form type, none are automatically imbued with function, status or meaning. These categories are constructed by both the original user and the analyst, and have no real existence outside of those constructions. Those factors which make basic identification subjective are entirely different from those which make analysis subjective.

As historical archaeologists, we base our ceramic identification around three main classifications: ware, decoration and form. The conceptual division between them, while very real, tends to distract from the fact that the identification of a ceramic depends on knowledge of all three of these characteristics. All three are diagnostic. All three can contribute towards the dating and analysis of an assemblage. Debate centres on how to integrate these three basic elements into a coherent whole.

**Classification of ceramics by ware**

A ware-based classification, based on the three primary wares (porcelain, stoneware, earthenware) would be ideal if it could be applied to all ceramics found on historical sites but unfortunately many types fall between these categories. Despite this problem, it does form a basic framework for the general classification of ceramics. Ceramic ware types developed before about 1800 can be sorted using a primary ware classification alone, but ceramics developed and manufactured after this date become increasingly difficult to fit into this simple classification and require a different method. The initial classification thus depends on the age of the assemblage and the questions to be asked. Despite this, all analyses of assemblages of ceramic assemblages from
Cape sites have been facilitated by recognising five categories of ceramic wares: **porcelain**, **stoneware**, **coarse earthenware**, **tin-glazed earthenware** (a variant of earthenware), and **industrial wares**.

**Classification of ceramics by decoration**

Ceramics are classified according to their decorative attributes. From the mid-18th century, British potters listed their wares according to their decoration – i.e. edged, dipped, painted, printed, etc. The terms creamware, pearlware and white-ware are often used by archaeologists but would have had no meaning to ceramic manufacturers or consumers in the 19th century; they were referred to by potters as ‘cream coloured’ (CC) (Miller 1980, Miller 1991). From the early 19th century onwards, it becomes increasingly difficult to identify most contemporary white-bodied ceramics by ware, so it would simplify matters to categorise excavated industrial wares by decoration alone. However, we make an effort to continue distinguishing between cream-coloured ware, pearlware, and white wares when analysing 19th century Cape sites, in particular those dating to the period of transition between Dutch and British rule at the Cape (ca 1790-1820).

Where possible, we continue categorising refined white-bodied industrial ceramics by ware and decoration up until the mid-19th century, but integrating decoration and ware is preferable for the inexperienced analyst examining 19th century assemblages (Majewski and O’Brien 1987: 135). Shifts in decorative style on ceramics often provide far greater control on the dating of ceramic items than traditional ware categories.

**Classification of ceramics by form**

Ceramics can be described according to their form regardless of their ware and decoration. We use two levels of classification. A primary level (e.g. ‘useful’ or ‘decorative’) is used for generalised functional descriptions of ceramics but it has limited ‘analytical utility’. A secondary level is more detailed (e.g. cooking pots, bowls, cups) and used for in-depth analysis of ceramic assemblages.

The identification of vessel form presents quite different issues from ware and decoration, in that the names we use for the most common vessels in everyday life remain largely applicable to the most common vessels from archaeological sites – though unusual late 19th century forms such as ‘offal dishes’ and ‘butter pats’ provide plenty of potential for confusion. The main issue of terminology is more often in the naming of the parts of vessels, for instance there are correct technical names for the different parts of a plate or platter, and a cup or bowl (with or without handles). Other common forms are teapots, jugs and chamber pots. Remember that vessels made of glass, metals and other materials may have similar forms and uses. An excellent pictorial source for many more unusual forms are the two volumes of the Dictionary of Blue and White Printed Pottery (Coysh & Henrywood 1982), including such items as toast racks, dog dishes and urine bottles.

There is a slight difference between ‘unidentified’ and ‘unidentifiable’ (undiagnostic), as the former holds the possibility that the fragment might be identified in the future or by someone else. Even unidentified vessels can be grouped by slightly more diagnostic categories. Though the specific form is unidentifiable, it may be possible to see whether the original vessel was flat (e.g. a plate or platter) or hollow (e.g. a cup or bowl), so it can be recorded as ‘unidentified flat’ or ‘unidentified hollow’.

**Classification of ceramics by function**

Many people hopelessly confuse ‘form’ and ‘function’ even when these are separate categories within the catalogue. This is not some minor matter of semantics, but is rather crucial to our understanding of an assemblage. ‘Function’ is used to refer to how the vessel was used, whereas ‘form’ refers to what shape that vessel takes. Therefore ‘food consumption’ is a function, but ‘plate’ is a form, even if the function most often associated with the form plate is food consumption. See further discussion under Analysis, below.
Identification

Ceramic identification is methodical and systematic, and often extremely boring. There is a strict hierarchy of procedures. First you prepare by cleaning and marking, then sort into ware and decorative categories and estimate the number of vessels present, then you identify form and function, then make a catalogue. You express your findings graphically and interpret the results. Each step is based on the preceding one, and is increasingly subjective. Only once you have refined your artefacts to a table or catalogue can you make reliable interpretations.

It is important to acknowledge that ceramics identification and analysis is not the absolute objective practice that many practitioners implicitly assume that it is, but is instead subjective at all levels, though to varying degrees and for very different reasons. Analysis is still often carried out on an ad hoc basis by students or volunteers. Needless to say, if basic identifications are incorrect, all subsequent analysis will be faulty (Brooks 2005: 1, 17).

Stage One: Conservation and preparation

The condition and state of preservation of excavated ceramics varies considerably. Some are fragile and porous, and this has to be taken into account when cleaning, marking and conserving these artefacts. Vessels with food remains or other deposits and residues should be left unwashed and preserved intact for further analysis.

Once thoroughly dry, all sherds should be labelled (using Indian ink and a mapping pen, and sealed with clear nail varnish). If excavation and artefact provenience is not recorded properly, your careful laboratory techniques count for nothing. In a busy lab, if an artefact becomes parted from its label, at most, you may be able to say which site it came from.

Stage Two: Sorting

While whole or near complete vessels are often retrieved from archaeological sites, particularly from wells, privies and single occupation sites, the majority of excavated ceramic assemblages consist of medium to very small fragments. A ceramic analyst must be able to identify and date vessels by observing the body, glaze, decoration and curvature of single sherds.

Many excavated ceramics will not match all the criteria set out in their definition – i.e. not all porcelains will be translucent or white-bodied, not all stonewares will be opaque, not all translucent ceramics are porcelain. Remember that the clay body (ware type) is related to the glaze, decoration and form of a vessel. Salt-glazed sherds are stonewares (often bottles and jars); very thinly-potted sherds are usually porcelain; thick, coarse-bodied unglazed sherds are earthenwares; transfer-printed wares are usually late-18th and 19th century industrial wares.

For mid to late 19th century sites it is still possible to use the technique above but you may have to sort the white-bodied industrial wares as a single category, making no attempt to identify and classify late creamwares and pearlwares or translucent ceramics, which could be porcelain or translucent stonewares. The enormous variety of ceramic wares produced from the 1880s onwards makes it extremely difficult to categorize assemblages from the late 19th century to the present (Figure 53). Decoration becomes the main distinction and wares should be sorted accordingly.

Levels of sorting and identifying sherds from 18th and early 19th century sites, based on body, provenance and decoration:

<table>
<thead>
<tr>
<th>LEVEL 1 (body type)</th>
<th>PORCELAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL 2 (overall area of production)</td>
<td>Asian</td>
</tr>
<tr>
<td>LEVEL 3 (specific producer)</td>
<td>Chinese</td>
</tr>
<tr>
<td>LEVEL 4 (decoration)</td>
<td>Underglaze blue &amp; enamels</td>
</tr>
</tbody>
</table>

Stage Three: Minimum vessel analysis

A sherd count is the basic level of data. For example, there are three sherds of ‘Willow’ transfer-printed whiteware plates from a particular site. This is not adequate for counting the relative
amounts of different ceramics that occur at a site, and these relative amounts are vital to broader analysis.

Broader analysis and interpretation requires the generation of an MNV (minimum number of vessels). This is the means to estimate the number of vessels recovered from a site, and to quantify the relative amounts of each different type at a site. Thus, the three sherds of ‘Willow’ pattern may have come from a single vessel, i.e. MNV=1. At another site there may be 20 sherds representing a single vessel. It reduces statistical problems, such as differential breakage (e.g. porcelain may break into smaller pieces than stoneware) and the tendency of sherd counts to overestimate the numbers of undecorated materials (many decorated vessels have undecorated parts).

Calculating the completeness of a vessel is of use when examining broader site formation processes. A privy cesspit assemblage is likely to contain complete or almost complete vessels, but a surface scatter is more likely to have a single piece from each of several vessels.

**Minimum vessel analysis using identification of form**

Calculation of the minimum number of vessels and identification of basic vessel form can be carried out simultaneously as both use information from rim, footing, and body fragments. To estimate minimum number of vessels (MNVs) of large assemblages, it is easier to start by using the rims and footrings alone, before looking for other (diagnostic) fragments that are not represented by rims or footrings. The MNV can therefore be described as the sum of either the rims or footrings from individual vessels, which ever is the greater, to which is added the sum of the diagnostic fragments. In our experience, rims invariably outnumber footrings in ceramic assemblages.

The procedure starts at Level 4 by dividing, where possible, the decorative categories into stylistic groups. For example, Chinese underglaze blue wares can be grouped and dated according to their border design: panelled borders, early 17th century; blue wash with white half blossoms; ornate, second half 18th century; ‘Canton’ border, late 18th to mid 19th century. The sherds within each group (plus any associated stylistic groups) are assigned a shape or identified form, e.g. bowls, cups, plates, etc. Where the exact form cannot be accurately deduced, sherds are classified as unidentifed and qualified with the addition of hollow or flat ware where possible. A sherd with no identifiable characteristics is classified as undiagnostic. Each formal group (cups, plates, etc.) is divided into rims, bases, handles and body fragments, which are sorted, grouped into individual vessels and counted.

These numbers (MNVs) are converted to percentages in order to compare relative proportions of each type in the assemblage. We thus create a ceramic profile for the assemblage (or layer, or site).

**Note:** Minimum vessel analysis is the cornerstone of ceramic analysis, but it is subjective. It almost invariably introduces bias into our analysis, because some artefacts are more readily identified, or the analyst has more knowledge of one type than another. The analyst should note his or her methodology carefully, so the reader can follow the process and pick up where bias may have crept in. This is why we are careful to keep aware of stages in analysis, from basic description to interpretative flights of fancy.

High fragmentation affects the results, as arbitrary decisions have to be taken throughout the procedure, especially regarding vessel form. Fragmented ‘Willow’ pattern items, unless they are cross-matched or mended, may therefore be under-represented in an MNV count. Undecorated wares, such as coarse earthenwares or plain white ‘hotel’ wares, are the most difficult to count with any degree of confidence. Whiteware may even be put aside as ‘undiagnostic’. Industrial mass-production means that most vessels are not unique. If there is more than half of the vessel, this is not a problem, but more fragmentary assemblages are problematic.
Stage Four: Compilation of a Catalogue

At a minimum, a catalogue according to provenience unit must include an identification of the object, material of manufacture, and quantification (count or weight). A description of the artefact is recommended where possible. Choosing which categories to include in the database is important - these are a guideline:

- The relevant archaeological context data;
- The ware, or material, comprising the body of the vessel or fragment;
- The form, or shape, of the vessel;
- The decoration, if any, of the vessel;
- The dates, where known, of the vessel;
- Some means of quantifying, or counting, the amount of the vessel.

The laboratory identification process is completed by the compilation of a catalogue of the whole ceramic assemblage, but such a separate vessel catalogue is a completely different level of data to the provenience / sherd catalogue. It is a detailed record of individual vessels, consisting of a description, dimensions, photograph, identification, period / date of manufacture, references, and so on.

One potentially difficult cataloguing area is deciding how to describe unidentified printed patterns. No researcher, however experienced, will be able to identify every last pattern. Sticking to a standardized descriptive terminology is more useful in describing an industrially mass-produced artefact type than inventing ad hoc terms.
The absence of decoration requires a conscious decision and choice on the part of the manufacturer, so ‘undecorated’ is a decorative category. It is important to draw a distinction between undecorated vessels and undecorated fragments. Databases should allow for the presence of both ‘undecorated’ and ‘none present’ categories under decoration. The former refers to vessels known to be undecorated, and the latter refers to undecorated sherds that may possibly come from decorated vessels. Where this distinction is not clear, the ‘none present’ category is the safer term to use.

Photographing ceramics for records and identification

A photographic record of the various types of ceramics found on archaeological sites is invaluable for quick referencing and identification. Only basic equipment is required: a digital or SLR camera with flash attachment; pale grey non-reflective material for the background; a black and white centimetre scale; Prestik to support ceramics in position. For the photographs to be of any use they must clearly show the shape, decoration, colour and size of the vessel or sherd. The photograph must include a small card showing the provenience of the ceramics. This is most important.

Although daylight photography can give very good colour reproduction, flash gives consistently good results. Remember digital cameras can take excellent photographs in low light conditions without flash and the images can be digitally enhanced – but first experiment with your camera. Shadows are inevitable with complete or nearly complete vessels, but unless the picture is to be published, don’t worry. Digital images can be stored easily but prints are of more use as they can be attached to record cards or in files. Photographs in flip-files are easier to access and use for comparative work.

Note: Try to fill the frame but do not overcrowd the picture. Remember the scale and provenience card. Reflection can be minimised by angling the camera slightly, or tilting flat surfaces away from the camera.

Sherds. Arrange in rows, grouping rims, footrings, handles, etc. together. Tilt the sherds away from the camera to avoid reflection and hold in place with prestik. If they are decorated on both sides, turn the sherds over in the same positions and repeat the photograph.

Plates and dishes. Photograph both sides, paying particular attention to the footring and any decoration or marks on the under-surface. Use a plate stand where possible.

Bowls and cups. Photograph the vessel in profile, showing the handle (if present), the footring and base, the interior base if decorated, and an angled shot to show the inner surface and rim if decorated.

Teapots and other lidded vessels. Photograph in profile with the lid on, then the under surface, and take a separate angled photograph of the lid.

General photographs of parts or the whole assemblage laid out in groups are very useful for comparative purposes.

Analysis

Cataloguing is the identification and recording of the artefacts’ attributes, the raw data about the assemblage. Analysis constitutes the synthesis and ordering of the raw artefact data.

Charts, tables and catalogues have different functions and so require their own system of recording. Charts and tables express the contents of an assemblage in a simplified, quantified, graphic manner (see ceramic profiles, above) whereas the catalogue is a complete record of the assemblage in narrative form, to which you can add possible alternative identifications of ware, form and function and other interpretations of the MNVs.

The assigning of function to vessels is difficult (Figure 54 and Figure 55) but very important. Some cataloguers include ‘function’ and / or ‘activity’ fields that are designed to describe how, and in what context, a vessel was used. Unfortunately, this can be problematic. In essence, it blurs the line...
between cataloguing as the compilation of raw data, and analysis as the synthesis of that data. Function is an interpretive, socially constructed category, and therefore placed conceptually in the interpretive level of the ceramics analysis model (Brooks 2005: 21).

**Function**

How a vessel was actually used may initially seem to be a relatively straightforward category, but here the archaeologist must be ready to consider the differences between primary intended function, primary intended use, and secondary use and function. The primary intended function of a plate at the point of manufacture may be food consumption, but the primary intended use of the same plate by the purchaser may be to display it on a dresser. Nor can it be assumed that the function of a vessel remains constant over time. Vessel function is more readily accessible for more recent periods – cookbooks, catalogues, or familiarity with still-existing forms and functions – but which vessels were used for everyday and which were displayed?

For 18th century ceramics, ware, form and function were closely related. For example, German salt-glazed stonewares were bottles used to store and serve liquids, fine Chinese export-ware porcelain was used on the dining table, and cooking pots were made of coarse red earthenware. By the mid-19th century, this simple correlation does not apply. Nevertheless, it should be possible to place most of the identified vessels from an assemblage under these assumed functional headings:

- Storage (jars, pots, martevans)
- Food preparation and cooking (kitchenware)
- Food distribution and consumption (tableware)
- Drinking and pouring vessels (tea and coffee ware, bottles)
- Health and Hygiene (pharmaceuticals and sanitary ware)
- Utilitarian (candlestick, ink bottle)
- Ornamental (vases, epergnes, figurines)
- Unidentified.

**Meaning**

The major role of ceramics is in *foodways* (an ugly but useful term). Foodways describes the whole interrelated system of food conceptualisation, procurement, distribution, preservation, preparation and consumption, shared by all members of a particular group. The presence of ceramics in the foodways complex is dictated by four factors: *availability, need, function*, and *social status*.

Economy, status, function and meaning are inter-related issues. For example, the simple cost of a teacup is affected by wider economic circumstances, influences how it might be used by a household, and impacts upon the status and wider social ideologies through which that teacup is perceived. Economy refers not only to the specific monetary value of objects, but also to trade.

How and why did British ceramics reach the colonies, and how much were they worth once they reached their shores? The colonial Cape was always dependent on imported ceramics, except for some kitchen-wares that were fired alongside bricks in the Company kilns, so the problem of *availability* was a very real one (Klose & Malan 2003). If every kind of pottery were easily available, a household would select only certain types, since their choice obviously would be dictated by need. This in turn is a factor related to the uses to which pottery might be put, and what other kinds of artefacts might serve the same purpose. Functionally equivalent artefacts in other materials such as wood or pewter might make the adoption of certain ceramic forms unnecessary.

Attention must also turn to the *cost* of objects in their domestic market – a distinction between *absolute cost and relative value*. The absolute cost is its monetary worth at the moment of acquisition. Relative value refers to how much more expensive it is when compared to other goods. (Note that George Miller’s widely admired ‘CC Index’ (1991) is derived from US contexts, so it cannot necessarily be used elsewhere.)
Status refers to how perceptions of different ceramic types helped to form, and were informed by, the broader social rank or position of an individual or household. The place of a household on the social scale had an important effect on the kinds of ceramics to be found in it. Foodways of different social classes differed significantly, and a family’s means would also affect their choice of ceramic types. Different types and forms of ceramics were used for different purposes. Cheap soups and stews are served in bowls, more expensive chops or roasts are served on flat plates, tea is ceremonially drunk from delicate cups, and flowers are displayed in a vase.

There is an occasional assumption that transfer-printed and porcelain vessels in sites associated with the ‘poor’ (itself a slippery concept) indicates that the ‘poor’ were not nearly as poor as anticipated. There is a crucial difference between ‘relatively more expensive’ and unaffordable. Both the relative value and the absolute cost of transfer printed ceramics declined through the 19th century. No real status conclusions can be made from the presence alone of transfer prints from the later 19th century – these materials are completely ubiquitous on sites from this time period, irrespective of the social class of the inhabitants (Brooks 2005). The mere presence or absence of vessels does not necessarily indicate that the group using them has somehow automatically merged itself into the dominant local socio-cultural group – this assumption refers also the issue of ‘accluturation’.

Function is closely related to need, but it is more than a matter of technological efficiency. Function can be strictly utilitarian and relates directly to the technology of a culture. A candle used for lighting solves a problem directly imposed by the environment. An artefact can also be used in a social rather than technological way. Our use of candles at formal dinner parties, for example, is not necessary in an electrical world, but they contribute to social aspects of our lives. Candles are also used in religious and ideological contexts, in church or on a menorah, for instance. The archaeologist therefore has to bear in mind the different levels of function that artefacts may have fulfilled in the past.

Our understanding of the acquisition, display and use of ceramics in Cape Town households has been enriched by research into estate inventories. These documents include chronological information (names and dates) and spatial information (houses with addresses and floor plans), so that patterning in the role of ceramics and comparisons over time and space can be made. Former layouts of houses, arrangement of furnishings and display, storage and use of ceramics reflected the broader changes in social, political and economic contexts. The historical chronological and spatial contexts of our research is therefore a crucial factor to take into consideration.

Discussions of meaning – the myriad social, ideological, and symbolic implications of an artefact – are almost inevitably both more subjective and more controversial than other types of analysis. Topics include issues of gender and gentility, national and regional identity (Figure 56), concepts of childhood, expressions of political and religious beliefs, or even whether the symbolism of the late 19th century ‘language of flowers’ was transposed to floral ceramics. Leone and Shakel (1987) have argued that dining-related material culture does more than denote rank, order and hierarchy, it helps create these very categories. Teawares have also been used to look at issues of status involving social groups outside of narrow class associations (Brooks 2005). Charles Orser notes that “archaeological examinations of past symbolism are of necessity variable in approach and design because they typically relate to at least two elements: what something is meant to portray, and how people actually perceive the message being sent (Orser 2003: 446). This crucial gap between design and perception remains at the core of examinations of meaning.
Section Ten: References


Klose, J.E. 2007. *Identifying Ceramics: an introduction to the analysis and interpretation of ceramics excavated from 17th to 20th century archaeological sites and shipwrecks in the south western Cape*. Revised edition. Historical Archaeology Research Group, UCT.


