



THE OLDEST  
CRAFT IN THE  
WORLD

PRICE ONE SHILLING

This e-replica of the Shelley Potteries booklet "*The Oldest Craft in the World*" is offered in the same sense which first created it. To quote from page 9:

"For the benefit of those who cannot visit the Potteries and see for themselves, we have written a short description of the way in which Shelley China is made, and of the various processes incidental to its production, in the hope that the knowledge may be of interest to many of its users."

We believe this booklet was first produced in 1937, and that the above benefit is equally relevant today.

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CW  
02/2015  
for The Shelley Group  
<http://www.shelley.co.uk/>

*A SIMPLE DESCRIPTION OF  
THE PROCESSES EMPLOYED  
IN THE MANUFACTURE OF  
ENGLISH BONE CHINA. . .*

*Written and Published by  
Shelley Potteries, Limited  
Longton Staffordshire*

FINE BONE CHINA



ENGLAND

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MADE AND PRINTED IN ENGLAND BY  
WARWICK SAVAGE, BURSLEM, STOKE-ON-  
TRENT

# *I*ntroduction

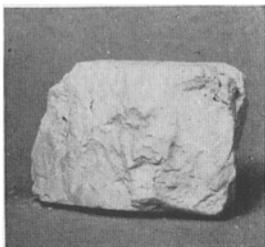
*T*HERE is something very fascinating in watching the processes by which a piece of plastic clay is converted into some dainty porcelain article.

Nothing is less attractive than a lump of clay in its original state; yet in the hand of the craftsman it takes grace and form, and by the ordeal of fire changes its characteristics, and emerges a thing of beauty and of charm.

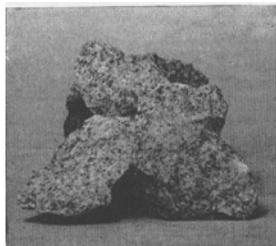
Although in essentials the methods of making Pots are the same to-day as were employed by the Egyptian Potter of 4,000 years ago; yet constant research and improved machinery have combined to make them more of an exact science, and to ensure that every piece of Shelley China, for instance, is as perfect as human skill can make it.



Calcined  
Beef Bones



A lump of  
China Clay  
or Kaolin



A piece of  
China Stone  
before grinding

For the benefit of those who cannot visit the Potteries and see for themselves, we have written a short description of the way in which Shelley China is made, and of the various processes incidental to its production, in the hope that the knowledge may be of interest to many of its users.

Technical terms, as far as possible, have been avoided, and simple language is used to describe the operations.

But first, what is Shelley China? and how does it differ from Continental China and from Earthenware?

Shelley China is English Porcelain at its best, perfect in shape, glaze and colour, translucent, dainty to handle, and pleasant to use.

Continental China is made from different materials, is usually poor in colour and being very brittle, is easily chipped, or cracked.

Earthenware is thicker, not so dainty; and being quite opaque, has not the brilliant whiteness of Shelley China.

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One of the huge Pans in which the stone and bone are separately ground in water to an impalpable fineness.

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In the rotary Cylinder shown on the right, the ingredients are further ground and thoroughly mixed together. The resulting creamy mixture is called "slip," which is passed over the powerful magnet shown in the upper left corner to remove any metallic particles, into the trough, which is called the "Ark".



The "Pug Mill" which kneads the clay to the requisite consistency and removes any imprisoned air bubbles.

## *The Preparation of the Clay*

### *The Potter's Mill*

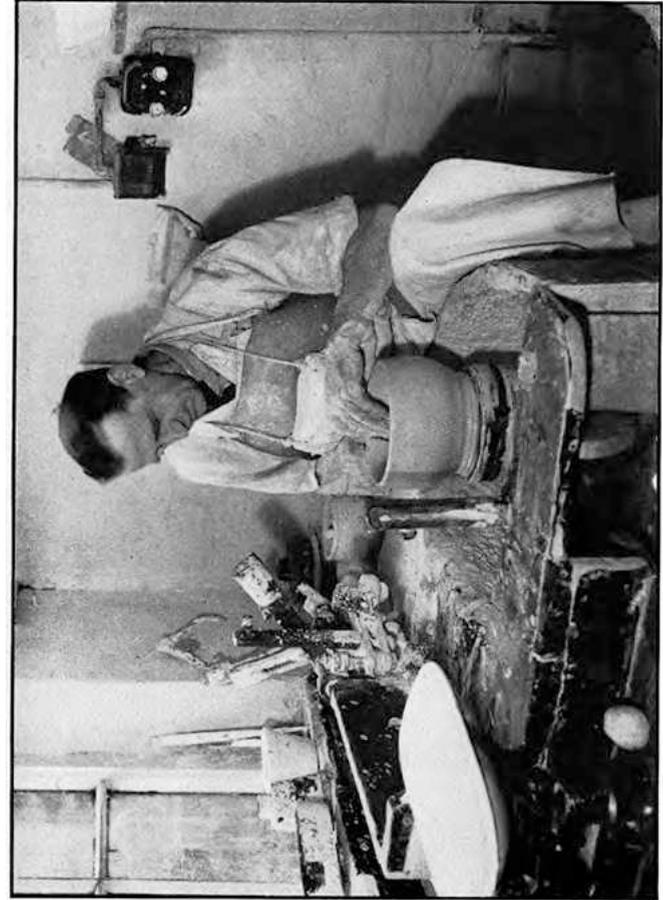
THE clay from which Shelley China is made is not a natural product, but a mixture of two parts of calcined beef bones, one part of China Clay or "Kaolin" from Cornwall, and one part of China Stone, also from Cornwall. It is the bone and stone which give the china its translucency. China Clay is delivered from the clay mine ready for use, but the Bone and China Stone are ground separately in large revolving pans to the fineness of powder, before being delivered to the sliphouse.

### *The Sliphouse*

The three materials are then weighed out in the correct proportions, placed in a revolving cylinder

and water is added. An hour later the mixture pours from the cylinder as a liquid about the consistency of cream; this is called Slip. The slip is then passed over sieves and powerful electric magnets to remove any particles of metal which, if not removed would leave black specks in the finished China.

The slip in this condition is used in the process of Casting; but for the Thrower or Platemaker the slip must be converted to clay. It is pumped into a filter press which squeezes out all the surplus water. The clay when taken from the filter press is further improved by Kneading to the requisite consistency in the Pug Mill which also removes any air bubbles imprisoned in the clay.



The "Thrower", the "Potter" of the bible. Note the revolving wheel on which the clay takes form under the pressure of the thrower's skilful fingers.

## *Potting*

### *The Thrower*

PLAIN round hollow articles such as cups, mugs, eggcups, etc., are made on the thrower's wheel by "the thrower," a highly skilled craftsman. A lump of clay is thrown on to the wheel and with clever fingers is worked into the shape of the cup required. The thrower then takes a piece of horn and smooths or polishes the inside of the cup.

### *The Turner*

THE cup, made by the thrower, is allowed to dry or toughen a little, and is then passed to the turner who places it on his lathe and with a metal tool shaves off the surplus clay from the outside, reducing it to the correct thickness. He then smooths or polishes the outside of the cup, as the thrower did the inside. The fancy round feet seen on many cups are shaped by the turner.



The "Turner" turns the cup or other round article on his lathe, after the thrower has finished his work, and makes it smooth externally, to give it the brilliant finish characteristic of Shelley China

## *The Handler*

THE cup is now passed to the handler who has ready before her a stock of handles. These have been made by a caster, by pouring slip into plaster moulds.

The handler takes the cup in her left hand and a handle in her right hand and after dipping the ends of the handle into a thick solution of slip, affixes it to the cup. The wet slip holds the handle to the cup until it is fired in the oven, when heat causes the clay to vitrify, and the cup and handle fuse together as one.

## *The Saucer Maker and Plate Maker*

SAUCERS and plates are made upside down on a machine called a jigger. The jiggerer throws on to the revolving mould a flat piece of clay, called a "bat," he then presses down on the bat as it revolves a metal profile the shape of the back or under-side of the plate. The profile is so fixed, that when fully pressed down, it makes a plate of the correct thickness. The mould, with the plate on, is now removed



After the "Turner" comes the "Handler," who fixes the handles (which are made separately in moulds) to the cups. This is work demanding extreme accuracy.



The Platemaker. Plates and saucers are made on a jigger upside down on a mould which shapes the upper surface or face of the article. A specially shaped tool which is pressed down by the operative, squeezes out the clay to the desired thickness, and shapes the back or underside

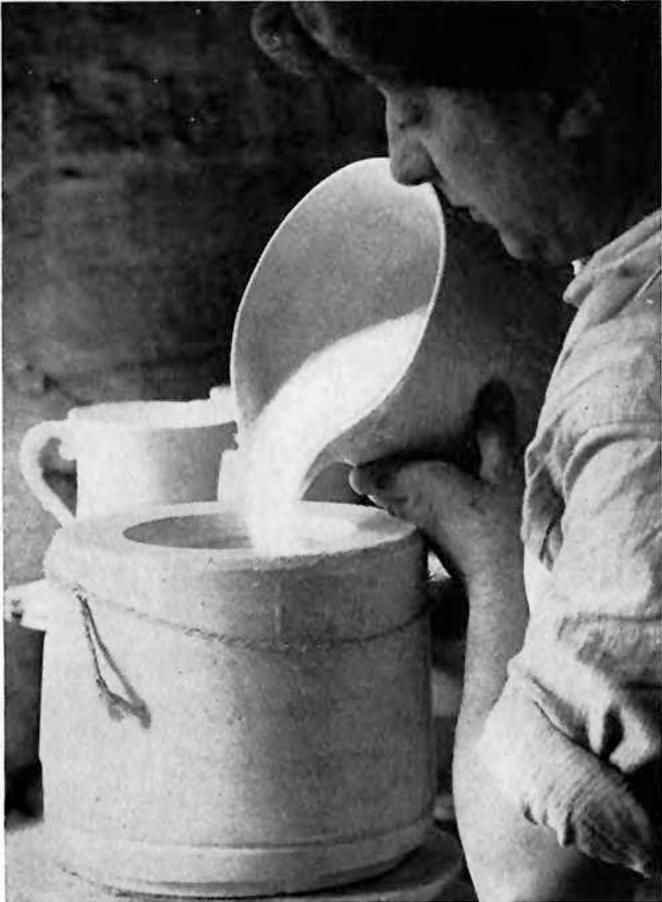
from the jigger and carried into a drying stove until the clay is dry and hard, then the plate is lifted off the mould, and after the edge has been trimmed and sponged, is ready for the oven.

### *The Caster*

TEAPOTS, jugs, fancy shaped cups, and all articles of irregularly shaped surfaces, are "Cast" by pouring slip into plaster of Paris moulds. The plaster absorbs the moisture, leaving a deposit of clay. When this is of sufficient thickness, the caster pours away the surplus slip and places the mould in a drying stove until the clay is dry enough for the article to be turned out of the mould.

THE utmost care is necessary in handling articles in the clay state owing to their fragile nature.

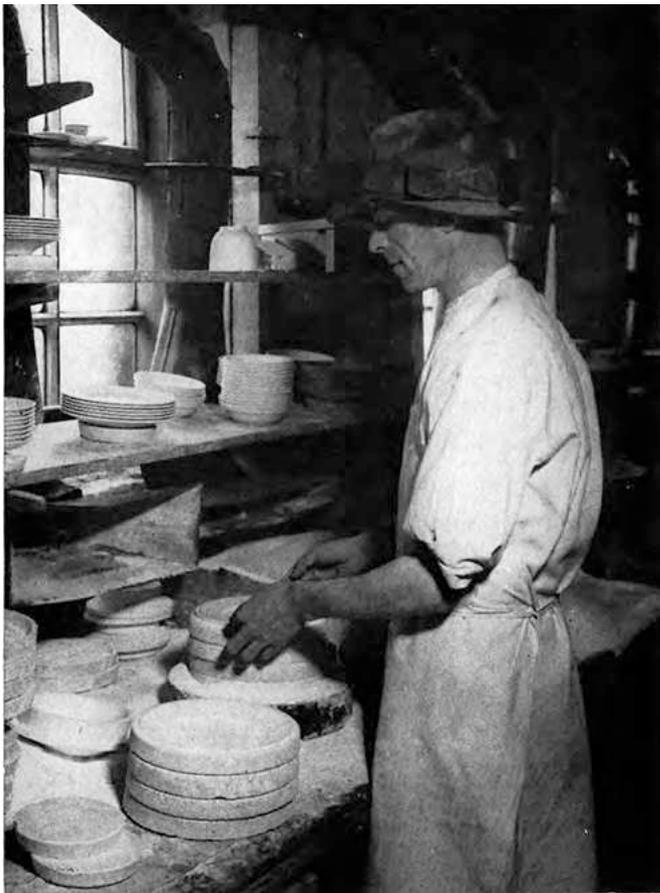
BONE china contracts or shrinks about one-sixth when fired in the oven, so that the clay articles are made of sufficient size to allow for this contraction.



The Caster. Jugs, tea pots, fancy articles and cups of fancy shapes are cast by pouring liquid clay or "slip" in to a plaster of Paris mould



Removing the cast article from the mould after drying



Bisque Placing. The clay ware is placed in saggars (fireclay receptacles) to be fired in the bisque oven. Each "Shelley" plate and saucer is first enclosed singly in a small saggur, known as a "settler" to ensure perfect results. Very few manufacturers take this trouble; but fire the plates in bungs in an ordinary saggur. That is one reason why "Shelley" plates are of better shape. Alumina is used to prevent the ware sticking to the saggur



"Setting in " a Bisque Oven. The saggars filled with clay ware are stacked one on the other till the oven is filled. The ladder is known as the " horse," and the head placer as the "cod placer"

## *Bisque Oven*

THE clay ware is now ready to be fired in the Bisque Oven, a tall bottle-shaped structure. The man who places the pottery in the oven is called a "Placer" and he is one of the most skilled and highly paid workers in the industry.

Each cup has a grooved clay ring made by the thrower and turner, placed on to it to keep it from going crooked during the firing. The cups are then placed in special fire-clay boxes called Saggars, which are carried into the oven and built up one on top of another in "Bungs." Saucers and plates are placed in separate small saggars called "Setters" on a bed of alumina, which holds them to the correct shape during the great contraction which takes place in firing.

When the oven is filled the entrance is built up with fire-bricks and the fires are lighted. The firing takes about 55 hours, about 15 tons of coal are used and a

temperature of about 1,250° Centigrade is reached. After the oven has cooled for 72 hours, it is emptied, and the bisque ware is carried to the bisque warehouse, where any particles of alumina adhering to the surface are removed by the electric brushing machines.

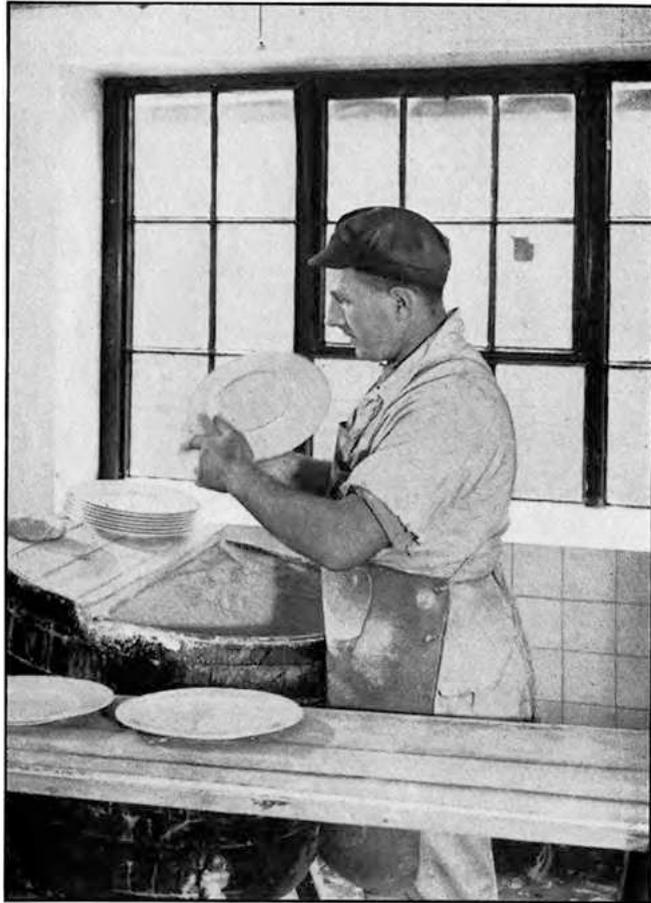
The "Shelley" trade mark is now stamped on each piece, so that being underneath the glaze it can never be removed.



Brushing Machine. When the bisque ware is taken out of the saggars after firing, particles of alumina adhere to the surface. The ware is brushed in this electrically driven machine and the dust is carried away by an exhaust fan.

## *Glazing*

THE next process is glazing. The glaze is a borax-flint-lead glass, ground to a fine powder in water to about the consistency of cream. The bisque pieces are dipped in this glaze by the "Dipper," who is able to judge the right amount of glaze required on each piece, and by the shake of his wrist, to spread the glaze evenly all over it. The ware is next placed in a hot drying stove until the wet glaze dries to a powder and can be handled without damage.



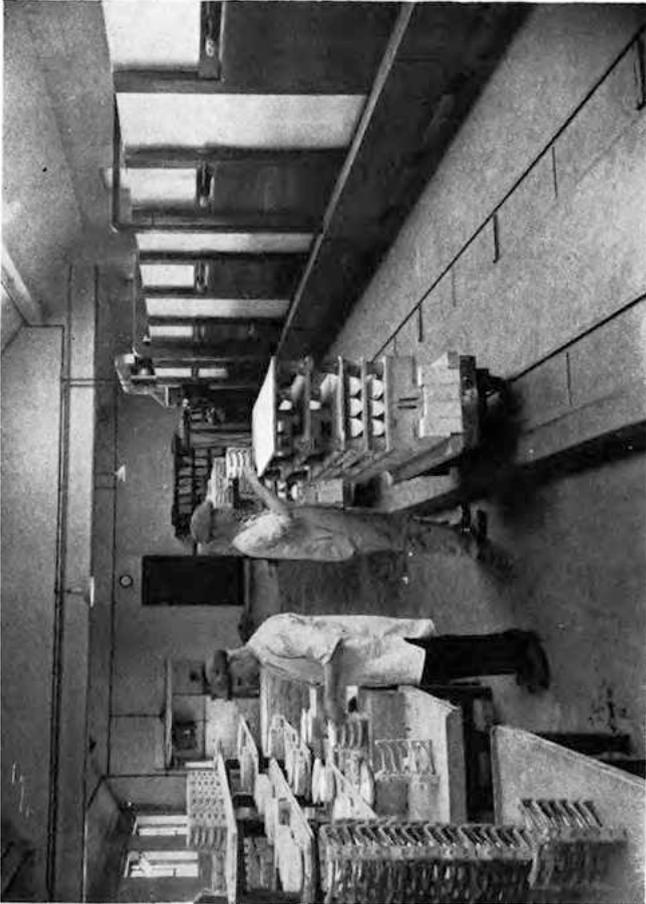
The Dipper takes each piece of Bisque ware, immerses it in the liquid glaze, and with a peculiar twist of his hand, removes any surplus and spreads it evenly over the surface. It takes years to get that twist perfect.

## *The Electric Glost Oven*

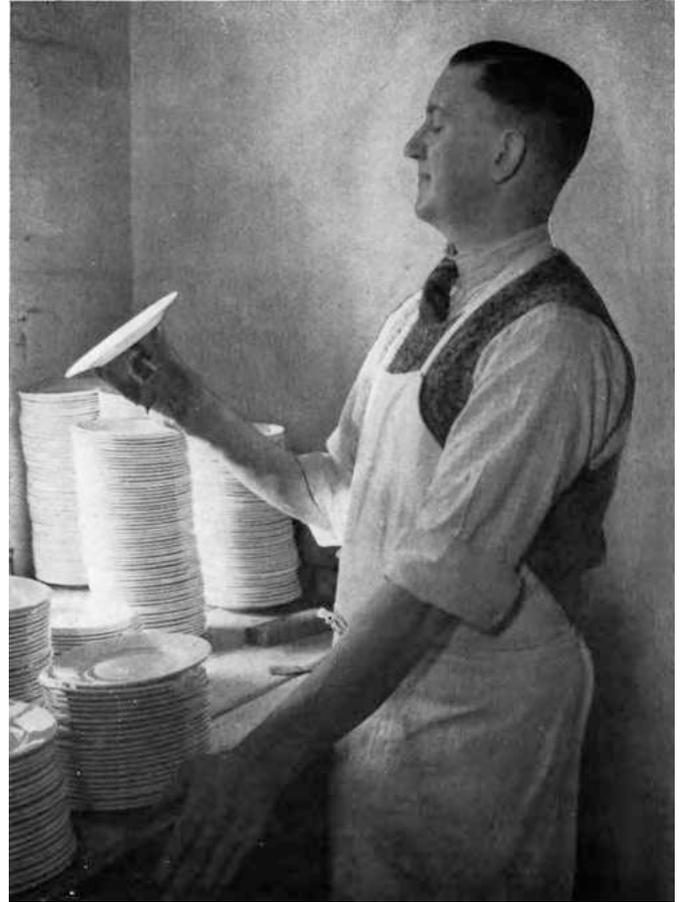
THE ware now passes to the "Glost " oven, a tunnel 140 feet long, where the glaze is melted by electricity to become a coating of clear glass. The articles are "placed" between shelves on travelling trucks which pass through the oven in a 30 hour journey, during which a temperature of 1,060° Centigrade is reached. The process is continuous and goes on night and day.

## *The White Warehouse*

THE trucks, as they leave the tunnel, are emptied and the glazed china is taken to the white warehouse, often called the "Sorting" warehouse; because it is here that, after each piece has been carefully examined, the china is sorted into complete sets ready to be passed to the decorating department.



Glost placers at work. On the right is the electrically heated Glost Oven, in which the ware is fired for 30 hours and the trucks on which the ware is carried through the tunnel oven.



When the glost ware comes from the oven it is finished, except for the decoration; but every piece is critically examined, and any not absolutely perfect, is discarded. Another instance of the meticulous care in the manufacture of Shelley China

## *Decorating*

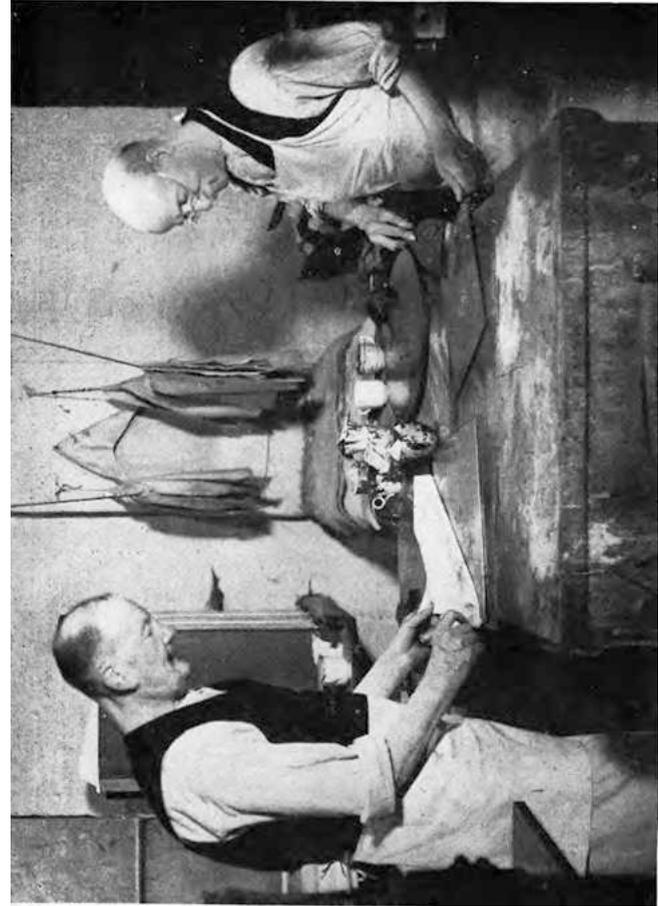
SOME of the most beautiful decorations are entirely hand painted by skilled artists; but utility china, such as table ware, is usually decorated by more commercial methods, some of which we will describe. The Colours used on pottery are metallic oxides, combined with a flux to enable them to fuse into the glaze, when fired in the enamel kiln. The gold used is the pure powdered metal mixed with a flux in the same way.

### *The Engraver*

A NEW design is created by a Designer who paints it free-hand on pieces of china, say a cup, saucer and plate. These original pieces are passed to the engraver who engraves on a copper plate the outline of the design and as much more of it as can be produced in the same colour.

### *The Printer*

THE printer covers the copper plate with colour mixed in an oily medium. After scraping



The Printer. He covers the copper plate with colour mixed in stiff oily medium, scrapes the excess colour off with a spatula, and then polishes the surface with a cloth rubber, leaving the colour in the incised lines only. Then by means of a roller press, he takes an impression on thin tissue transfer paper.



The Transferrer cuts up the tissue transfer and applies it face downwards to the portion of the article to be decorated, rubbing it down into optical contact with a stiff brush. The paper is afterwards washed off, leaving the design on the ware. Great accuracy is needed in the application of the transfer.

off the excess colour, he places a piece of thin tissue paper on the plate and passes it through a roller press. The pressure causes the paper to pick up the colour from the incised lines. The paper which is now pulled off the copper plate is called the transfer.

### *The Transferrer*

THE woman who transfers the design from the tissue paper to the china is called the "Transferrer." She cuts from the transfer paper the amount of the design she requires to fit the piece she is decorating, and applies it to the china. The transfer is now rubbed down with a stiff brush to ensure perfect contact, then the paper is washed off with a sponge, leaving the design on the china.

### *The Painter or Enameller*

THE design left on the china by the transferrer is all in one colour; but it is not complete, there are other colours to be painted in by hand. If it is a floral design, only the outline is showing, and the flowers must be painted in their natural colours.



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Hand Painting. This is a very skilled occupation. The design is actually painted on the ware in colours which do not develop their beauty until they have undergone the ordeal of fire in the enamel kiln.



Banding and Gilding is done on the wheel which is revolved as desired by the operative's left hand. The accuracy and skill of Shelley Banders is astonishing

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## *The Bander and Gilder*

DECORATED china is usually finished off with either a coloured or gold edge. The china is placed on a revolving wheel which the worker rotates with her left hand whilst she applies the colour or gold with a brush held in her right hand. Colour or gold-band designs require great skill for the bander has no outline to help her.

## *The Lithographer*

THE famous Mabel Lucie Attwell Children's designs are produced by Lithography, as are many of Shelley decorations. The coloured transfers, which have been specially printed in pottery colours by a lithographic printer, are applied to the china in the same way as the transfers taken from the copper-plate engravings.

## *The Groundlayer*

SOLID all-over colours or large patches of colour are applied by a process called Groundlaying. An oil is first brushed over the china



Placing the decorated china in the continuous firing Electric Circular Enamel Kiln, in which the china receives its final fire to a temperature of 800 centigrade. The operation is complete in 20 hours.



Papering. Every finished piece of Shelley China is carefully examined by experienced ware sorters, and if perfect is wrapped in tissue paper before it is sent to the Packing department.

and allowed to stand for a few minutes until it becomes really sticky, then a silken boss is pressed down on to it to take out all the marks of the brush. Colour, in a fine powdered form, is dusted over the china with a piece of cotton wool, the sticky oil collecting an even coating of colour.

### *The Enamel Kiln*

THE decorated china is now fired to a temperature of 800<sup>o</sup> Centigrade to fasten the colours to the glaze. The kiln is circular, electrically heated and continuous in operation. The china is "placed" on a rotating platform which completes its journey through the kiln in 20 hours.

### *The Papering or Finished Warehouse*

THE china is taken from the kiln to the papering or finished warehouse where a staff of experienced warehouse women, under the supervision of a Head warehouseman, carefully examine each piece before papering it and passing it on to the packer.



Packing for Export. As no china can withstand, unprotected, the rough treatment which it receives in transit; it must be very carefully packed. Shelley packers are experts in the use of straw and wood wool as shock absorbers

*Shelley China is the finest expression of the Potter's Art. Its pure white translucent body, brilliant glaze, and lovely colouring make it pre-eminent amongst the productions of the World's greatest Pottery centre, The Staffordshire Potteries.*

*P.N.S.*

*ask to see*

FINE BONE CHINA



ENGLAND

*Dinner Sets*

*Tea Sets*

*Coffee Sets*

*Breakfast Sets*

*Early Morning Sets*

*The famous Mabel Lucie Attwell  
Children's Ware and quaint little Figures*