

## A Brief History of Ceramics by *Cathy Edgar*

In February, Chapter 59 members viewed the first half of the DVD entitled "The American China Cased Clocks" by Brian Stout. He described ceramic development including the three kinds of porcelain. Other than this DVD, there seems to be only one Bulletin article written on the subject ("Ceramic" by William F. Keller (IL) and W. Clarke Eldridge (IL)). As many NAWCC members have at least one ceramic clock in their collection, this is a synopsis of the above DVD with a few additional facts.

American women during the Victorian era were interested in ceramic clocks not only because they displayed time, but as decorative items for their parlors, libraries, studies, etc. During this period, many ceramic clock cases were manufactured in Europe and contained movements from American clock manufacturers such as Ansonia and New Haven. For example, Royal Bonn is a trademark found on ceramic clock cases that were produced in Bonn, Germany by Franz Anton Mehlem and imported by Ansonia Clock Company.



What is porcelain and where was porcelain first made? Porcelain is a ceramic material which is often referred to as "china" as China was the birthplace of porcelain making. There are three main kinds of porcelain: hard-paste, soft-paste, and bone china. Hard-paste porcelain was first made in China during the Tang dynasty (9th century) and is composed of a mixture of two ingredients: feldspathic rock (petuntse) and kaolin (a very fine pure white clay that forms when the mineral feldspar breaks down). These raw materials were fired at very high temperatures (up to 2,552°F) making a piece of hard-paste porcelain as shiny on the inside as the glaze on the outside.

For centuries, the Chinese produced the only hard-paste porcelain; consequently, hard-paste porcelain objects were quite rare and expensive in Europe. Ultimately, the secret spread to Korea and to Japan in the 1500's. After failing to produce hard-paste porcelain in Europe during this time, manufacturers created soft-paste porcelain in Florence, Italy. Soft-paste porcelain consists of a mixture of fine clay and glasslike substances fired at lower temperatures (~2,200°F) making the inside grainy and more porous and the outside layer needing a glaze. In addition, the surface is somewhat less white than hard-paste porcelain.



In 1708 or 1709, a German alchemist named Johann Friedrich Bottger discovered the secret of making hard-paste porcelain which led to the establishment of a porcelain factory in Meissen, Germany. Meissen's trademark of cobalt blue crossed swords was first adopted in 1720 and is one of the oldest in existence.

Near the town of Limoges in southwest France, kaolin was discovered in 1768 which eventually became one of the largest hard-paste porcelain centers in Europe. Limoges porcelain was produced by a number of manufacturers including Cioffe, Guerin-Pouyat-Elite Ltd, Lavillette, and Haviland.

The last kind of porcelain, bone china, was discovered by English porcelain manufacturers about 1750. Bone china is a combination of bone ash (calcified cattle bones), kaolin, and china stone. The bone ash increases the translucence of the porcelain and makes it more durable than soft-paste porcelain. It is also completely waterproof and typically white in color. Josiah Spode is credited for finalizing the formula for bone china in England between 1789-1793. Some notable English bone china manufacturers were Spode, Davenport (1800), Coalport, Worcester, Wedgwood (1812), Rockingham (1820), and Minton (1820).

American clock cases were also made out of majolica, delftware, and jasperware. Majolica was developed in the Middle East, later refined in Spain, and introduced to Italy by Majorcan merchants in the 14th century. The word "majolica" is derived from the Majorca Island which is off the east coast of Spain. Majolica is a tin glazed soft earthenware ceramic known for its vivid colors. Majolica household objects such as plates, bowls, pitcher, tea sets, etc. were very common during the Victorian era.



Popular majolica English manufacturers were Minton, Wedgwood, George Jones & Sons, Joseph Holdcroft and popular American manufacturers were Griffin, Smith and Hill and Eureka Potteries.

Delftware was made in the Dutch community of Delft in the 1600's. It is a tin-glaze pottery (similar to majolica) made out of three clays and blue and white glazes (popular Chinese porcelain colors). Delft potters used native Dutch scenes such as windmills and fishing scenes as well as oriental scenes.

Finally, English jasperware was developed in 1774 by Josiah Wedgwood. It is made of local clay which is white in its natural state, tinted in various colors with metallic oxide coloring agents, and is unglazed. The most common color was pale blue with white raised decorations. Some other colors used in production were dark blue, lilac, sage green, yellow, and black. Markings on objects from 1891-1908 are "Wedgwood" and "England" and from 1909-1969 are "Wedgwood" and "Made in England". As an aside, it was a requirement of the McKinley Tariff Act of 1890 that all imports carry the name of the country of the manufacturer such as "Bavaria", "England", "Nippon", etc.

The last half of the "The American China Cased Clocks" DVD shows various types of ceramic clocks along with descriptions of manufacturers' marks.