

# **Colonial Soap Making—Its History and Techniques**

**By Marietta and Arthur Ellis**

## **Introduction**

This booklet will provide persons interested in the ways of early American life some information about soap and soap making. Soap making is a homestead skill often forgotten in discussions of colonial days. Soap was of great value in keeping the household a far better place to live and work.

The manufacture of soap by the hard-working colonists from wood ashes and waste fats give testimony to early American self-sufficiency and resourcefulness. Soap, an easy item for us to obtain, was produced by boiling wood ash lye and fats together. Soap's desirability and procurement wrote its own pages in the history of early America.

The soap, in use during the years when the United States was a colony of England and then a young republic, was made from potash or pearlashes. This soap, which was potassium based, was generally the only kind made from the first discovery of soap making until the first half of the 19th century. Then the LeBlanc method of obtaining caustic soda, a sodium based alkali, from a brine solution was implemented on the industrial level.

Through out the centuries, there have been other times when people were able to make soap using a form of sodium alkali as is done presently. The Egyptians are thought to have employed local soda deposits for their source of alkali as the Spaniards did during the 8th century. Also people in various coastal regions burned seaweed producing sodium based barilla for their alkali.

But by far the most common soap was made from potash and pearlash. Potash and pearlash are forms of the potassium based alkali present in plant and wood material. Potash and pearlash soaps were used by everyone from the reigning monarchs to the peasant or cottager, who made their own soap from the waste fats and ashes they saved.

Most people who have made soap down thru the centuries had no idea what occurred. They just made soap by trial and error, by having lots of luck, and believing in many superstitions in how to make soap. When people learned that saponification was the reaction that made soap, we will tell you later.

## **The First Soap**

This certainly cannot be documented; but it is quite possible soap could have been discovered even in prehistoric times. Early people cooking their meats over fires might have noticed after a rainstorm there was a strange foam around the remains of the fire and its ashes. They might have even noticed when water was put in a pot that had been used for cooking meats and then got ashes in it, which often happens with outdoors cooking, also had this strange foamy substance. This women, most likely who was doing the washing, might have also observed the pot became cleaner or at least her hands became cleaner then usual.

It is recorded that the Babylonians were making soap around 2800 B.C. and that it was known to the Phoenicians around 600 B.C. These early references to soap and soap making were for the use of soap in the cleaning of textile fibers such as wool and cotton in preparation for weaving into cloth.

### **The Romans and Celts**

The first definite and tangible proofs of soap making are found in the history of ancient Rome. Pliny, the Roman historian, described soap being made from goat's tallow and causticized wood ashes. He also wrote of common salt being added to make the soap hard. The ruins at Pompeii revealed a soap factory complete with finished bars.

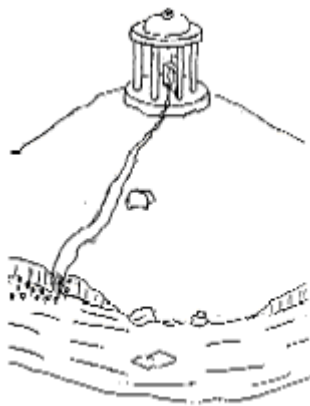
While the Romans are well known for their public baths, generally soap was not used for personal cleaning. To clean the body the Greeks and then the Romans would rub the body with olive oil and sand. A scraper, called a strigil, was then used to scrape off the sand and olive oil also removing dirt, grease, and dead cells from the skin leaving it clean. Afterwards the skin was rubbed down with salves prepared from herbs.

Throughout history people were also known to take baths in herb waters and other additions to the bathing medium thought to be beneficial. It is well known that Cleopatra, who captivated the leaders of the Roman world, attributed her beauty to her baths in mare's milk. During the early century of the common era soap was used by physicians in the treatment of disease. Galen, a 2nd century physician, recommended bathing with soap would be beneficial for some skin conditions. Soap for personal washing became popular during the later centuries of the Roman era.

The Celtic peoples are also thought by some historians to have discovered soap making and were using it for bathing and washing. Maybe due to increased contact with the Celts by the Romans, using soap for personal washing care became popular.

It is also important to remember when writing a history of life styles there are no grand trends that get disseminated throughout the globe via mass communications such as we have today. Usage and knowledge of common skills and arts can vary from one locale to the next. When they are starting to use soap in the public baths in 3rd century A.D. in the major cities, the people in small villages are likely to be using the olive oil, sand, and strigil method. The Celts might have been washing their faces daily with soap long before the Romans even went over the Italian Alps. Dates can be exact when dealing with events such as battles, births, and deaths. But not usage of every day items. "The state of the art" varies depending both on time and location.

There is an interesting legend surrounding the discovery of soap making. This legend accords the discovery of soap to the Romans so it must be a Roman legend to confront the Celtic claim to soap making. Probably both of these inventive peoples discovered soap making independently. The legend says soap was first discovered by women washing clothes along the Tiber River at the bottom of Sapo Hill. The women noticed the clothes became cleaner with far less effort at that particular location. What was happening? The ashes and the grease of animals from the sacrificial fires of the temples situated on the top of Sapo Hill mixed with the rain,



making soap which ran down the slope in the streams of rain water giving the women a wash day bonus. You can see at a glance saponification, the chemical name for the soap making reaction, bears the name of that hill in Rome long ago, which caused one Roman washer women to comment to another, "My wash is cleaner than yours".

### **The European Dark Ages**

After the fall of the Roman Empire in Western Europe, there was little soap making done or use of it in the European Dark Ages. In the Byzantine Empire, the remains of the Roman world in the eastern Mediterranean area, and in the expanding Arab world soap was made and used. Around the 8th century soap making was revived in Italy and Spain. By the 13th century, France also became a producer of soap for the European market. During the 14th century, soap making was started in England. Soaps produced in the south of Europe, Italy, Spain, and the southern ports of France (Marseilles and Castile soaps) were made from olive oils. These soaps made using olive oils were of a higher quality than those made by the soap producers of England and northern France. These northern soap makers, not being able to obtain the olive oil, made their soaps with only animal fats. Tallow, the fat from cattle, was the chief fat used. Northern European soap makers even resorted to making soap from fish oils. Soaps made from the poor quality animal fats and oils, while adequate for laundry and textile usage, were not desirable for bathing and washing. The soap from southern Europe with their olive oils were superior. This resulted in a lively trade of exporting fine soaps from southern Europe.

Wait a minute you say, people did not take baths in the Middle Ages. That is a popular misconception. They did. There were public bath houses, called stews, where the patrons bathe in large wooden tubs and were given bars of soap to use. Nobles and rich merchants had their own private baths. It was during the later Medieval Times, when bathing fell out of favor. Public baths were closed because the authorities of the time thought these baths promoted the spread of the Plague. In general people of the Renaissance moved away from the idea of keeping the body clean. They preferred to cover the body with heavy scents.

Soap, however, did remain a useful item for cleaning and washing clothes. Soap also was still used for personal washing as well but by our standards far less frequently than was needed. The fact that soap was a valuable item in the 17th and 18th centuries even though the idea of bathing was not popular is shown by the efforts the settlers to the New World took to make it. While maybe bathing the whole body was out of fashion keeping you and your surroundings clean was not.

### **Soap in the American Colonies**

At first the earliest settlers simply brought a plentiful supply of soap along with them. The Talbot, a ship chartered by the Massachusetts Bay Company to carry persons and supplies from England to its colonies at Naumbeak now known as Salem and Boston, listed among its cargo 2 firkins of soap. A firkin is an old measurement which was a wooden, hooped barrel of about

nine gallon capacity. John Winthrop, who was to become the first governor of the Massachusetts Bay Colony, when writing to his wife in 1630 from Boston included soap in a list of necessities to be brought on her crossing to the New world.

After the colonists were settled and had been able to survive the first years of hardships, they found it more advantageous to make soap themselves using the copious amount of wood ashes, a natural result of their homesteading activities. With also a plentiful supply of animal fat from the butchering of the animals they used for food, the colonists had on hand all the ingredients for soap making. They did not have to rely on waiting for soap to be shipped from England and waste their goods or few pieces of currency in trade for soap.



Soap with some work and luck could be made for free. Soap making was performed as a yearly or semiannual event on the homesteads of the early settlers. As the butchering of animals took place in the fall, soap was made at that time on many homesteads and farms to utilize the large supply of tallow and lard that resulted. On the homes or farms where butchering was not done, soap was generally made in the spring using the ashes from the winter fires and the waste cooking grease, that had accumulated throughout the year.

### **The Chemistry of Soap**

Before we discuss the soap making process we should explain what soap is and the chemical reaction that makes soap. No, this is not a chemical textbook. Some understanding of the chemistry involved, however, will enhance the story of soap's history.

Soap, in very simple chemical terms, is the sodium or potassium salt of a fatty acid. Sounds simple. And it is.

#### **What is a salt?**

Common salt, which we all know as table salt, is not the only salt in the chemical world. There are many salts all being the result of an acid and an alkali reacting together.

#### **What is an acid or an alkali?**

Acids are solutions that tend to burn or smart. Acids range from weak ones like acetic acid, the chief ingredient in vinegar, to hydrosulfuric acid, an extremely strong and dangerous acid in the battery of your car.

Alkali also called bases are solutions that corrode rather than burn. They too range from weak to strong. An example of a weak one is sodium bicarbonate, baking soda, used to settle your upset stomach caused by your over active stomach acid. A strong alkali is sodium hydroxide which is the chief ingredient in oven and drain cleaners. Actually oven and drain cleaners work by doing the very reaction we are discussing. They convert the grease blocking your drain or messing up your oven into soap so that you can flush or wipe it away.

## **What is a fatty acid?**

Now let's go back to those fatty acids. Fatty acids are found in foods we call fats and oils. Today we hear much about fatty acids, as they are the substances effecting the nature of the fats and oils we eat and the action these foods have on our health.

## **Modern Soap**

Most products on the market today are not real soaps by the true definition but rather are detergents which have been created from petroleum based products. Other products, which called themselves soap, contain ingredients found in nature; but these ingredients have been radically changed by high energy processes. The resulting soap bears little similarity to the soap made historically down thru the ages.

## **A Chemical Reaction**

Soap is not found in nature; but it can be created by very simple processes. In this way it is similar to bread, wine, glass, cheese, and pottery, other useful items produced by early peoples most likely by accident at first then by design.

Saponification is a very big chemical word for the rather complex but easy to create soap making reaction. Saponification is what happens when a fatty acid meets an alkali. When fats or oils, which contain fatty acids are mixed with a strong alkali, the alkali first splits the fats or oils into their two major parts fatty acids and glycerin. After this splitting of the fats or oils, the sodium or potassium part of the alkali joins with the fatty acid part of the fat or oils. This combination is then the potassium or sodium salt of the fatty acid. As we said at the start, this is soap.

## **Soap Making Takes Three Basic Steps.**

1. Making of the wood ash lye.
2. Rendering or cleaning the fats.

## **Mixing the fats and lye solution together and boiling the mixture to make the soap.**

### **First Let's Make The Lye.**

In making soap the first ingredient required was a liquid solution of potash commonly called lye.

The lye solution was obtained by placing wood ashes in a bottomless barrel set on a stone slab with a groove and a lip carved in it. The stone in turn rested on a pile of rocks. To prevent the ashes from getting in the solution a layer of straw and small sticks was placed in the barrel then the ashes were put on top. The lye was produced by slowly pouring water over the ashes until a brownish liquid oozed out the bottom of the barrel. This solution of potash lye was collected by allowing it to flow into the groove around the stone slab and drip down into a clay vessel at the lip of the groove.



ASH HOPPER

Some colonists used an ash hopper for the making of lye instead of the barrel method. The ash hopper, was kept in a shed to protect the ashes from being leached unintentionally by a rain fall. Ashes were added periodically and water was poured over at intervals to insure a continuous supply of lye. The lye dripped into a collecting vessel located beneath the hopper.

### **Now The Fats Are Prepared.**

The preparation of the fats or grease to be used in forming the soap was the next step. This consists of cleaning the fats and grease of all other impurities contained in them.

The cleaning of fats is called rendering and is the smelliest part of the soap making operation. Animal fat, when removed from the animals during butchering, must be rendered before soap of any satisfactory quality can be made from it. This rendering removes all meat tissues that still remain in the fat sections. Fat obtained from cattle is called tallow while fat obtained from pigs is called lard.

If soap was being made from grease saved from cooking fires, it was also rendered to remove all impurities that had collected in it. The waste cooking grease being saved over a period of time without the benefits of refrigeration usually became rancid, This cleaning step was very important to make the grease sweeter. It would result in a better smelling soap. The soap made from rancid fats or grease would work just as well as soap made from sweet and clean fats but not be as pleasant to have around and use.

To render, fats and waste cooking grease were placed in a large kettle and an equal amount of water was added. Then the kettle was placed over the open fire outdoors. Soap making was an outside activity. The smell from rendering the fats was too strong to wish in anyone's house. The mixture of fats and water were boiled until all the fats had melted. After a longer period of boiling to insure completion of melting the fats. The fire was stopped and into the kettle was placed another amount of water about equal to the first amount of water. The solution was allowed to cool down and left over night. By the next day the fats had solidified and floated to the top forming a layer of clean fat. All the impurities being not as light as the fat remained in water underneath the fat.

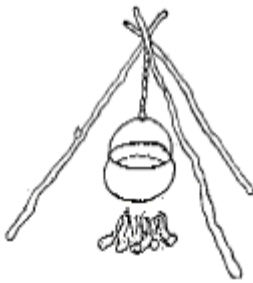
You can observed this today in your own kitchen. When a stew or casserole containing meat has been put in the refrigerator, you can see the next day the same fat layer the colonists got on the top of their rendering kettle.

### **Finally The Soap Making Can Begin.**

In another large kettle or pot the fat was placed with the amount of lye solution determined to be the correct amount. This is easier said than done. We will discuss it more later. Then this pot was placed over a fire again outdoors and boiled. This mixture was boiled until the soap was formed. This was determined when the mixture boiled up into a thick frothy mass, and a small amount placed on the tongue caused no noticeable "bite". This boiling process could take up to

six to eight hours depending on the amount of the mixture and the strength of the lye.

### Soft and Hard Soap



SOAP  
MAKING

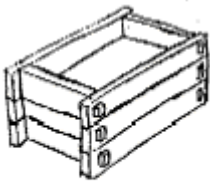
Soap made with wood ash lye does not make a hard soap but only a soft soap. When the fire was put out and the soap mixture was allowed to cool, the next day revealed a brown jelly like substance that felt slippery to the touch, made foam when mixed with water, and cleaned. This is the soft soap the colonists had done all their hard to produce. The soft soap was then poured into a wooden barrel and ladled out with a wooden dipper when needed.

To make hard soap, common salt was thrown in at the end of the boiling. If this was done a hard cake of soap formed in a layer at the top of the pot. As common salt was expensive and hard to get, it was not usually wasted to make hard soap. Common salt was more valuable to give to the livestock and the preserving of foods. Soft soap worked just as well as hard and for these reasons the colonists, making their own soap, did not make hard soap bars.

In towns and cities where there were soap makers making soap for sale, the soap would be converted to the hard soap by the addition of salt. As hard bars it would be easier to store and transport. Hard bars produced by the soap maker were often scented with oils such as lavender, wintergreen, or caraway and were sold as toilet soap to persons living in the cities or towns.

Hard soap was not cut into small bars and wrapped as soap is sold today. Soap made by the soap makers was poured into large wooden frames and removed when cooled and hard.

The amount of soap a customer wanted was cut from the large bar. Soap was sold usually by the pound. Small wrapped bars were not available until the middle of the 19th century.



SOAP  
FRAMES

Another thought to remember is the soap making procedure described is not only how the homesteading colonial women made their soap. Soap making was generally a task the women did. This was essentially the method used by all soap makers of the period. Soap making was always considered one of the most difficult jobs on the farm or homestead.

### Difficulties in Making Soap

The hardest part was in determining if the lye was of the correct strength, as we have said. In order to learn this, the soap maker floated either a potato or an egg in the lye. If the object floated with a specified amount of its surface above the lye solution, the lye was declared fit for soap making. Most of the colonists felt that lye of the correct strength would float a potato or an egg with an area the size of a ninepence (about the size of a modern quarter) above the surface. To make a weak lye stronger, the solution could either be boiled down more or the lye solution could be poured through a new batch of ashes. To make a solution weaker, water was added.

The difficulties in making soap the colonists endured arose from the lack of knowledge of the chemical processes involved and the inability to obtain lye's of known and dependable strengths. There were many superstitions which the colonist believe caused success or failure. For making good soap, the tide and the phases of the moon among other things were taken in account. A Pennsylvania Dutch recipe carefully warned that a sassafras stick was the only kind of implement suitable for stirring the soap and the stirring must be done always in the same direction.

In later colonial times, when the trade of soap making was well established in the cities and towns, many of these trades people became very astute observers of the process and were able to produce their soap with dependable high quality. However, many house holders, particularly in rural areas, made their own potash soap until the middle of the 19th century. There the difficulties and the related folklore still existed around the soap making process.

From the diary of Elizabeth Ranch Norton, a niece of President John Adams, written in 1799, we learn how an exasperating job soap making could be. On one occasion Mrs. Norton had to make three batches of soap before she was able to make one barrel of soap fit for her family's needs.

### **Not Always Done Down On The Farm.**

Soap making as a trade had grown in direct proportion with the growth of the colonies. Even in the very early days there were tradesmen making and selling soap, who were called soapboilers. Since tallow was the main ingredient for both soap and candles, many tradesmen were producers of both. These tradesmen were called chandlers. The first soapboilers arrived with the settling of Jamestown in 1609.

In New England also, we find signs of the early soap making trade. Christopher Gipson, who landed at Dorchester, Massachusetts in 1630, and then later in 1649 was elected Surveyor of the Highways of the Town of Boston, was a soapboiler. It is logical to conclude since it probably required then as now a source of money and influence to engage in politics Mr. Gipson's soap trade was keeping him in a comfortable style.

### **Potash and Pearlash Trade**

**Soap making and the manufacture of potash and pearlashes were closely related trades of colonial America. Pearlash, purified potash, because of its many industrial uses, was an important item of export for the colonies. Pearlash, in addition to soap making, it was used for making glass both in the colonies and in Europe.**

Potash and later also pearlash were valuable items of the export trade to England being one of the few items produced by the American colonies that could be traded directly to England for cash. Most other items of colonial export were traded to the other British Colonies in the West Indies for an second item of greater value that then could be traded for a wanted item from England itself. This is the so called triangular trade system of the colonial era. Pearlash was such a valuable article to the economy that the British government when forcing its policy of colonial financial dependence to England listed pearlash as an enumeration commodity. Under this Act



commodities listed could not be exported by the American colonies to ports outside the British realm.

There are other references to support the importance of potash and pearlash to the economy. The Governor of Massachusetts in 1765 is recorded to have stated the best business ventures for the colonies were the production of potash and hemp, and the transporting of lumber to England. In 1755 the Massachusetts General Court had recognized the importance of these items by establishing a code for assaying and standardization of potash and pearlash.

The young United States also understood the value of potash and pearlash manufacture. The first patent awarded by the United States Patent Office was to Samuel Hopkins for his technique of preparing pearlash.

Potash is the residue remaining after all the water has been driven off from the lye solution obtained from the leaching of wood ashes. Pearlash is then made from the potash by baking it in a kiln until all the carbon impurities were burned off. The fine, white powder remaining was the pearlash.

Peddlers would travel from village to village collecting potash made on the farms and homesteads. For many homesteaders the only cash they received all year would be for the sale of their wood ashes or potash. Then the peddlers would sell the potash to manufacturers who converted it to pearlash at their factories known as "ashies". In early times many manufacturers of pearlash bought their own wood and made their own supply of potash. At these factories in addition to the kiln for converting potash to pearlash, there was a structure called an ashery for burning large quantities of wood. These small structures were made of stone including a roof with a hole in it. There were two openings. One was in the middle of one side for adding the wood to the fire and the other was at the bottom for racking out the ashes. The structure was preferred over outside burning to produce ashes that had a high content of alkali.

In the middle of the 18th century, many "ashies" dotted the countryside. There were at least two "ashies" located at Newport, Rhode Island. In Massachusetts there were several towns that were sites for "ashies". Two of these towns were Haverhill and Charlestown. From "A Typographical and Historical Description of Boston written in 1794, we learn that there was much manufacture of potashes and pearlashes in Boston and been established there for about 40 years before the Revolution.



ASHERY

### **The End of an Era**

When wood became scarcer as the tide of westward movement crept over New England during the end of the 18th century, potash and pearlash manufacture became a decreasing industry. It still remained an important industry on the American frontier until the end of the first third of the 19th century. All during this period pearlash stayed a chief article of American export. When caustic soda could be obtained cheaper and easier from brine using the LeBlanc process, the need for American potash and pearlash began to decrease until it was no more.

The availability of sodium hydroxide, this is what the LeBlanc process produced, changed the

soap making industry in a dramatic way. Sodium alkalis make hard soap without the having to add common salt to effect the change. These hard soaps were of a firmer quality. The other big advantage was the alkali needed for soap making no longer required the arduous task of cutting acres of trees, burning the wood, leaching the ashes, evaporating the water from the wood ash lye, and finally burning off all the impurities in an kiln.

The whole business of soap making became much easier and thus soap became more available to more people. The natural result being more and more people took to using soap, particularly the toilet soaps. The habit of bathing came back into fashion and the consumption of soap increased tremendously in the 19th century. Soap became of age in the Victorian times and the soap making industry turned from part craft and mystery to a fully developed industry.

With the demise of the potash industry ended the manufacture of potash and pearlash soaps. Soap whose soapboilers included among their numbers Josiah Franklin, the father of Benjamin Franklin. Soap that was used by all the famous women of America's early history from Priscilla Mulliens to Dolly Madison.

In the middle of the 18th century when pearlash soap was in its heyday ads like the following one from the Boston Gazette were plentiful.

"TO BE SOLD BY EDWARD LANGDON, IN FLEET STREET, NEAR THE OLD NORTH MEETING HOUSE, A QUANTITY OF HARD SOAP BY THE BOX, SOFT SOAP BY THE BARREL".

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**About the Author**

This booklet has been prepared by The Soap Factory, a small soap making company dedicated to making fine Castile soaps using the traditional methods of the 19th century.

Marietta Ellis, the owner and president of the Soap Factory, has researched soap making techniques and the history of soap making for over 30 years. She first got involved with soap making as a member of VITA (Volunteers in International Technical Assistance). She still works with VITA by providing persons in developing countries with soap making information.

Marietta and her husband, Arthur Ellis, sell their soaps at craft shows, and thru mail order. Their soaps are also for sale in several retail stores.

The Ellises both members of SWEAT (Society of Workers in Early Arts and Trades) are available for lectures or demonstrations on soap making and its history.

The drawings were done by Arthur Ellis.