



CANDLES AND CANDLE MAKING

Candles have been in existence since the Stone Age. There are Biblical references about candle use as early as the tenth century BCE. The Chinese and Japanese used wicked candles in the third century BCE. In India, candles made from the wax of cinnamon bark provided both light and a pleasant fragrance for temple ceremonies. In North America during the first century CE, Native Americans living along the northwestern coasts of present-day Oregon and Washington, dried an oily fish, impaled it on a forked stick and lit it. This “candle fish” provided light in a northern latitude where daylight became more limited as fall and winter set in. While candles have existed for a long time, candle making has generally remained the same through the centuries. What have changed significantly over time have been the ingredients used to make candles.

Candle making consists of covering a cloth wick with a fuel source, usually fat or wax. Tallow, a rendered animal fat, served as the fuel for early candles. Families carefully saved the fat from butchering and cooking sheep, pigs or beef. Once a year, usually in the Fall, women placed the fat in large cauldrons and boiled it to remove most of the impurities. Once rendered, the tallow was poured into a vat to cool. Wicks, flax or cotton strands braided together, were placed over a long bar and dipped repeatedly into the vat of cooling tallow. Each layer was allowed to dry before the next layer was added. At the end of the process, pairs of “tapers” – candles with a narrower diameter at the top than at the base – were removed from the dipping bar and stored for use. Because the rendering process could not remove all of the glycerin from the fat, tallow candles burned with a smoky flame and a foul smell. Candle makers were called “chandlers.” Because theirs was a smelly and messy business, chandlers’ businesses were often banned from locating inside the boundaries of towns, villages and cities. Tallow candles and candle making remained essentially the same from the first century CE until the Middle Ages.

Changes in chandlery have dealt mainly with the fuel used to feed the candle flame. In the Middle Ages, beeswax replaced tallow for some candles. Because of its limited supply, beeswax candles were very expensive and reserved for religious services or in aristocratic homes. Native Americans on the East Coast of North America showed Colonial women how to make fragrant candles from the wax of bay berries. The growth of the whaling industry in the 18th century made *spermaceti*, a wax obtained by crystallizing the oil found in the head of a sperm whale, readily available. Spermaceti candles burned brighter and did not give off a foul smell. Spermaceti was also harder than tallow, so some of the problems of storing candles in warm seasons were alleviated. At the beginning of the 19th century, French chemists Michel Chevreul and Joseph-Louis Gay-Lussac patented stearin, a form of stearic



acid. It was like tallow, but contained no glycerin so it burned more clearly and with no odor. Around 1850, the first paraffin, a waxy substance distilled from the refining of petroleum, was mixed with stearic acid to produce candles. This new mixture burned brightly, emitted no odor and was cheap to produce. Paraffin-stearin candles quickly became the standard.

Advances in the production of candles also occurred in the 19th century. While candle molds that made six to twelve candles at a time had been in existence since the 17th century, Joseph Morgan obtained a patent on a machine that allowed for the continuous production of 1500 candles per hour. As a result, better candles became more readily available for a growing society. Poorer families and those on the frontier with little access to markets and stores continued to make candles themselves throughout the 19th century.

The demise of the candle as the principal source of light emerged from the same industry that had finally solved the “tallow problem.” In the late 19th century, the refinement of petroleum became a major industry. The main product was not gasoline, but kerosene for heating and lighting. The kerosene lamp replaced the candle in most homes. With the invention of the electric light bulb in 1879, candles, a light source for centuries, were extinguished. Candles, however, did not disappear.

The 20th century has been good for candles. Since the mid-1980s, candles have enjoyed a tremendous revival as decorative items and gifts. Who could have a birthday without candles? In the United States in the 1990s, agricultural chemists began to explore the use of soybean wax as a fuel, while other nations have been experimenting with palm wax for fuel. Candles continue to light our way in emergencies, brighten our birthday celebrations, enhance religious ceremonies and set the mood for special occasions, as they have for centuries.