

Beginning with Candle Making A History of the Whaling Museum

By Patty Jo Rice

It remains an enigma. In the same way the basic design of its spermaceti press belies the intricate nature of colonial candle manufacturing, the simplicity of the Richard Mitchell and Sons manufactory (today known as the Whaling Museum) belies the role Nantucket played in Colonial America, Great Britain, and, to a lesser degree, France. To put it simply, when Nantucket spoke, people on both sides of the Atlantic listened. Those listening ranged from common citizens to national leaders. The speakers were whaling merchants, referred to as Nantucketers, or, as Thomas Jefferson called them, Nantucketois.

Whaling merchants were savvy businessmen, among the first in the colonies to recognize the value of expanding business interests vertically as well as horizontally. By the turn of the nineteenth century, several were either directly or indirectly involved in all aspects of the whaling industry.

The art of manufacturing candles from the headmatter of sperm whales began in America around 1748. It is generally agreed that Jacob Rodriques Rivera, a Sephardic Jew living in Newport, Rhode Island, introduced the process after immigrating either directly or indirectly from Portugal (Hedges 1968, p. 89). In 1749, Benjamin Crabb petitioned the Massachusetts General Court for the sole privilege of making Candles of Coarse Sperma Caeti Oyle. The petition was granted, but Crabb never acted on his grant. Instead, he moved to Rhode Island and by August of 1751 was involved in the manufacture of candles. It is believed Crabb's manufactory burned and by 1753 he was involved in the construction and operation of a manufactory for Obadiah Brown, in Tockwotton, now India Point, Providence (Macy 1972, p. 78). This arrangement lasted approximately three years, after which Obadiah Brown and Co. became a leader in the manufacture of spermaceti candles and Benjamin Crabb dropped from view. By 1760, at least seven works were in operation: five in Newport, Obadiah Brown and Co. in Providence, and Joseph Cranch and Co. in Braintree, Massachusetts (Kugler 1980, p. 163).

Once the manufacture of candles began, headmatter, sperm oil (oil from the blubber of the sperm whale), and whale oil (from all other whales) became separate products in the marketplace with headmatter commanding an average of three times the price of standard whale oil. Candles were considered a specialized element of the whale-oil trade and were priced as a luxury item. However, competition for headmatter made the cost of doing business equally high. In 1763, it was estimated that three-to-four manufactories operating at capacity could easily consume the average amount of headmatter brought in annually (Hedges 1968, p. 93). Complicating the picture, whaling merchants often mixed headmatter with sperm oil for shipment to Great Britain to avoid heavy English duties on the former. As a result, producers, i.e., whaling merchants, held the key to trade. They had the ability to evade the American market and ship directly to Great Britain, they could conspire to deny needed headmatter, or they could erect their own candleworks.

The need to be circumspect with Nantucketers was recognized as early as 1756. In that year, Henry Lloyd, a Boston factor, wrote to Aaron Lopez, a Newport candle manufacturer and merchant, warning against being too nice and critical with the Nantucket men for I can assure you that nothing can be done with them in that case; the only way is to make the best terms possible with them whenever you have occasion to purchase, but 'tis vain to attempt to tie them down to any measures they do not like." (Byers 1987, p. 157).

Realizing their tenuous position in the marketplace, the candle manufacturers sought to do two things: prevent interested parties from entering into business and prevent Nantucket whalers from artificially inflating the price of headmatter. To do so they formed the United Company of Spermaceti Chandlers, generally referred to as the "Spermaceti Trust". The trust provided for eighteenth-century America its foremost example of attempted monopoly and price fixing (Kugler 1980, p. 168). At best, adherence to trust agreements was tenuous. By 1763 there were as many as twelve manufacturers in the colonies and accusation of pricing violations was commonplace. During this period, an unsuccessful attempt by John Hancock to wrest control of the oil market from Joseph and William Rotch kept the price of headmatter relatively stable. However, once Rotch secured his position prices rose as he turned his eye toward vertically expanding his business empire. Rumors circulated that he was in the process of building a candle manufactory.

William Rotch built Nantucket's first manufactory in 1770 at the head of Straight Wharf and began processing oil that winter. Trust agreements for 1774 bear his signature and show Rotch being allocated thirteen of every hundred and eighty-one parts of headmatter (Hedges 1968, p. 112). The entry of Nantucket whaling merchants into the candle market afforded them an advantage that was both strong and unique. Several were now directly involved in everything from building and fitting out ships to manufacturing raw materials into finished goods. The point was not lost on William Rotch, who, by 1775, was leveraging for a significantly larger annual allocation of headmatter.

The Revolutionary War ended large-scale candle manufacturing on the mainland and shifted the center of activity to Nantucket. By 1792, there were ten candleworks on island; within ten years the number jumped to nineteen (Starbuck 1964, p. 153; Byers 1987, p. 249). Among the early manufacturers was Richard Mitchell, Jr.

Born in Newport, the island's first Richard Mitchell moved to Nantucket around 1731 after marrying Mary Starbuck. He quickly became recognized as a prominent leader in both the Quaker and business communities. His son, Richard Mitchell Jr. also rose to prominence as whaler, merchant, and leader in the Quaker meeting. With the removal of William Rotch to France in 1785, Richard Mitchell, Jr. became Nat leading whaling merchant, owning more than twice as many vessels as any other island ship owner. Among his many land holdings was a triangular piece of land at the corner of what is known today as Broad and South Beach streets. It was here, at the base of "new north wharf" he established his manufactory. Upon his death, the manufactory passed to his son Paul. In March of 1846, Paul's sons, Frederick and Paul Jr., inherited the manufactory; that July it was destroyed in the great fire.

Late that same year, Richard Mitchell purchased the remains of the firm from his brothers. He constructed the current building and opened for business as Richard Mitchell and Son. In 1848, William Hadwen and Nathaniel Barney purchased the building and incorporated it into their operation. Few traces of its original purpose remain today. The largest artifacts are a press and the original tryworks foundation. To learn about the building and understand its purpose one must rely primarily on archival documentation. While the general nature of converting headmatter into spermaceti candles is documented, the exact process remains elusive. What is known is that it was a fairly lengthy process lasting from fall until the following summer. Nature played a role in the process and the work force floated between candlemaking and other island industries.

An average candleworks was capable of refining at least six hundred barrels of headmatter annually. Manufactories were often made of wood and generally measured 900 square feet with an adjacent storage shed averaging 720 square feet (Kugler 1980, p. 164). The purchase of the

year.s supply of headmatter was made in the fall. At that time, a work force would be recruited to transport barrels to the works and begin the manufacturing process.

Unlike oil from whale blubber, headmatter was not tried out aboard ship. Upon arrival at the works, it would be poured into a large iron kettle and heated to remove any impurities and/or water. The remaining mixture was drawn off, stored in casks, and removed to a shed. A letter to Tench Francis, in Philadelphia, from Nicholas Brown and Co., Providence, describes the care given the mixture: .[The] manner we keep our Oil is this, when it Comes to us we Carefully Trim it, for which purpose we keep a Cooper whose Constant Business is when aney [sic] leaks to over hall it and Trim it anew. (Brown 1968, p. 92). During the ensuing winter, natural climatic cold would congeal the matter into a spongy and viscous mass.

On a "favorable day in winter when the weather slackened and the temperature rose" the congealed headmatter was shoveled into strong woolen bags and placed between the heavy wooden leaves of the spermaceti press. The post end of the press beam was lowered until it rested on the topmost leaf and locked into place with an iron pin. The free end of the press beam was lowered and pressing began. The oil drawn off "winter-strained sperm oil" was clear and considered to be the finest of all spermaceti oils. The material remaining in the bags was then reheated and molded into forty-pound chunks, called black cake.

In the spring, generally around April, the black cake would begin to show the presence of oil. Once again, it was shoveled into bags and placed in the press. The result was "spring-strained oil" considered to be inferior to winter-strained oil as it could not be used in the cold winter months. This pressing left the black cake compressed and waxy. The cakes were stored again, but this time in a warm rather than cool location until summer, when they were shaved or ground into flakes, placed in bags, and pressed a third time. What remained after this pressing was spermaceti; but despite being nearly pure, it was brown in color.

Again the spermaceti was ground. Shavings were then placed in a kettle and heated until liquefied. Water and an alkali, generally potash, were added. The mixture clarified and whitened the spermaceti; eventually, vapors from the hot mixture removed any residue from both the water and potash. Occasionally, beeswax was added to prevent granulation as the spermaceti cooled. Once cleaned, the mix was transformed into candles in only two days.

As with the whaling industry, the island.s candleworks led to the creation of other on-island product-related businesses. Account books show payments to local businesses for paper and boxes used in packaging (AB 402, 1817, n.p.; AB 150, 1783, n.p.). Wicking was also produced (AB 149, 1825, n.p.). After the 1846 fire, the candle industry never regained its earlier prominence. Demise became inevitable with the development of kerosene lighting. By 1869 records show only one works in operation employing two men (Warner 1866, p. 421). The Mitchell and Sons/Hadwen-Barney building was used as a warehouse and storage facility until its purchase by the Nantucket Historical Association in 1930. Today it serves as a constant reminder of Nantucket's early industrial and economic might and a time when her sons ruled the seas.

Patty Jo Rice spent many hours in Nantucket last winter researching the origins of the building that is now the Whaling Museum. Previously associated with Preservation Institute: Nantucket,

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Candle making was developed independently in many places throughout history. Candles were made by the Romans beginning about 500 BCE. These were true dipped candles and made from tallow. Evidence for candles made from whale fat in China dates back to the Qin Dynasty (221–206 BCE). In India, wax from boiling cinnamon was used for temple candles. In parts of Europe, the Middle-East and Africa, where lamp oil made from olives was readily available, candle making remained unknown until the early middle Whaling Museum may occasionally close early due to weather, special events, or maintenance. Thank you to the support of The Community Foundation for Nantucket and the Foundation's Nantucket Fund for Emergency Relief in helping to keep the Whaling Museum open safely for visitors. And do not forget to visit the Museum Shop in the Hadwen & Barney Oil and Candle Factory, where you will find a carefully selected mixture of merchandise relating to Nantucket's present and past. In 2008, the Whaling Museum received accreditation from the American Association of Museums, an honor bestowed upon fewer than one of every twenty-two museums in the country. The museum was reaccredited in 2017. Learn more about the history of the Whaling Museum. The Whale Museum: promoting stewardship of whales and the Salish Sea ecosystem through education & research. In the Pacific Northwest of the United States lives the Southern Resident Community of Orcas, an endangered population of orcas, sometimes known as "killer whales". The Whale Museum, located in beautiful Friday Harbor, Washington, opened to the public in 1979 as the first museum in the country devoted to a species living in the wild. Help support the Southern Resident orcas by making a donation, adopting an orca, or becoming a member of The Whale Museum. Or, simply pay us a visit! Our Gallery of Whales is a great way for individuals, students and families to receive a personal introduction to the whales of the Pacific Northwest. The History of Candle Making. While candles are now predominantly used as decoration or as a means of infusing fragrance. Historically they provided a vital source of light for homes and businesses, and were also used extensively in religious and spiritual worship. In the 18th century, as the global whaling industry began to grow. An oil was discovered in the head of the sperm whale which proved ideal in mass candle making. Known as spermaceti, this oily substance was crystallised to form a solid wax. Like beeswax, didn't produce a horrible smell when burned. Another advantage of spermaceti was that it didn't melt and bend in the summer, making it the world's first mass-market form of candle wax. The Modern History of Candle Making.

This makes it possible for the whale to sense the motion of its prey as well as its position. The changing distance to the prey affects the time interval between the returning clicks reflected by the prey (Doppler effect). This would explain the low density and high compressibility of the spermaceti, which enhance the resonance by the contrast of the acoustic properties of the sea water and of the hard tissue surrounding the spermaceti. Spermaceti processing[edit]. Further information: Sperm whaling.Â ^ ""Beginning with Candle Making A History of the Whaling Museum " Historic Nantucket article from the Nantucket Historical Association". Nha.org. Retrieved 2013-10-30. Candle making was developed independently in many places throughout history. Candles were made by the Romans beginning about 500 BCE. These were true dipped candles and made from tallow. Evidence for candles made from whale fat in China dates back to the Qin Dynasty (221â€“206 BCE). In India, wax from boiling cinnamon was used for temple candles. In parts of Europe, the Middle-East and Africa, where lamp oil made from olives was readily available, candle making remained unknown until the early middle Tallow candles were the common household candle for Europeans, and by the 13th century, candlemaking had become a guild craft in England and France. The candlemakers (chandlers) went from house to house making candles from the kitchen fats saved for that purpose, or made and sold their own candles from small candle shops. Colonial Times.Â The growth of the whaling industry in the late 18th century brought the first major change in candlemaking since the Middle Ages, when spermaceti â€” a wax obtained by crystallizing sperm whale oil â€” became available in quantity. Like beeswax, the spermaceti wax did not elicit a repugnant odor when burned, and produced a significantly brighter light.