The silence that pervades South Jersey is musical to one upon whose sympathetic imagination the past plays keenly. It seems to echo the humming of the mill wheels, the ringing anvils and the rattling sails of the boats that plied the Mullica.

The Mullica, known to the Indians by the poetic name of Minne-lo-la, or Little Water, has its ancestral tree. It descends directly to the Ocean through the medium of Great Bay. Four generations are represented by the Ocean, the Bay, Little Egg Harbor River and the three parent rivers, the Mullica, Wading and Batsto. These waters might be likened to the veins that carry the blood through the human system from the capillaries to the pulsating heart. Into the Mullica four hundred and seventy-six square miles of territory drain, and emptying into it at a point known as the Forks are smaller streams, the Batsto and Atsion Rivers, Nesco or Jackson Stream and West Mill Creek. But not only do they drain the land. In the old days they replenished it. Their service was threefold, for aside from irrigating it naturally they were the means of bringing necessary supplies into the country and carrying out its products. They were the chief means
of transportation, and sailing ships, built by the inhabitants of native iron and timber, sailed briskly up and down. Iron, glass, wood, timber and charcoal were sent to the markets, and the needed commodities received in exchange were brought back by these same ships.

Where Little Egg Harbor crosses the head of the lake are the time-worn remains of the home of the first known inhabitant. It is not known whether he was a predecessor or a contemporary of the Manahawkin, Shamong and Nacut tribes of the Lenni-Lenapes, who lived here ruled over by their beloved chief and prophet, Tamanend. The date of his residence cannot be fixed with any certainty but some aged title deeds suggest how long it must have been.

The original title to the land passed from Charles the second, King of England, to his brother James, the Duke of York, and from him as follows:

"In the following year, 1664, the said Duke of York, in consideration of the sum of ten shillings lawful English money to him in hand paid, did grant and convey to John Lord Berkeley and Sir George Carteret all that tract of land lying to the westward of Long Island, to be called New Cesarea or New Jersey."

Berkeley and Carteret transferred their holdings to Fenwick and Bellinge, from whom they passed to the West Jersey Proprietors and then to the land owners who developed and lived upon their estates. Among these was Israel Pemberton, who lived on an estate called Whitcomb Manor, now known as Batsto. By him it was sold to a relative by marriage, one Charles Read, owner of Sweetwater, an estate on the other side of the stream. Batsto lies in Washington Township, Burlington County, on the bank of the Mullica. Here in 1767 came Colonel John Cox to disturb its
peace by casting cannon and shot for the Continental Army, thereby precipitating the battle at Chestnut Neck. After only a year he was succeeded by Thomas Mayberry, and then the furnace fell into the possession of a rich Quaker merchant of Philadelphia, one Joseph Ball.

Mary Richards became the wife of John Ball of Berks County, Pennsylvania, and it was her son, Joseph, at one time manager for Colonel Cox, who bought the estate from Mayberry for $275,000.00. After the battle of Yorktown in 1781, William Richards, who had received his commission as colonel from General Washington, came to Batsto as manager for his relative, Joseph Ball, who died without issue. Records show that in 1781 Richards had charge of the furnace, representing the then owner, Colonel Cox. At the death of Ball his estate was divided among his six uncles and six aunts, and William, one of the uncles, soon became sole owner of Batsto, where he lived in lordly fashion. He brought immigrants to work on the estate which he built up in every way. He improved the furnace, which had been in operation a decade before the Revolution, being the second in New Jersey to make use of the bog iron that abounded thereof. Richards, who died in 1823, married twice and had nineteen children.

Jesse, the oldest son of William Richards, ruled Batsto for thirty years. He enlarged the estate and under his regime prosperity increased. The village streets were beautified with shade trees and the people's needs were supplied from the stores and mills, several of which were kept busy with domestic products. The mansion overlooked the village, whose inhabitants were occupied in the making of iron products, glass and pottery, in saw mills, farming and shipbuilding.

The discovery of anthracite coal in western Penn-
sylvania and the northern part of New Jersey, the opening of iron mines in the former state as well as in the latter, and the introduction of better transportation facilities in the form of railroads and steam power in both these States, all combined to overwhelm the bog iron industry and to spell ruin for Batsto. The fires were allowed to die out finally in 1848 and Jesse Richards never quite recovered from the blow. He died six years later, at the age of seventy-two. This veritable "father of his people" was a man of great physical as well as mental strength and weighed nearly three hundred pounds. He is buried in the old graveyard at Pleasant Mills, close to the church, where the pine needles fall upon his grave. The monument is unique and dignified, being three great oblong blocks of granite, graduated in size and laid one upon another. The inscription, "Beloved, Honored, Mourned," perpetuates the sentiments he inspired.

With progress in other places the general decay of industry came to Batsto. The glass works closed and the Belgian artisans moved away from the wooden houses that even in their simplicity showed the touch of a foreign hand. The bottle-shaped brick chimney is now a memorial to the industry it served. The pool beside the ruined furnace has been made an ornament. Its last use was as a carp pond. The furnace itself has finally crumbled and almost disappeared. The mills are idle and the canals that fed them are choked by their own growths. Many of the old families moved away and the farmers from Mount Holly, who had found so ready a market at Batsto, went further afield.

Troubles never come singly and calamities often follow each other in quick succession. Not only did financial distress overtake Batsto, but on the night of February 23, 1874, a spark flew from the chimney of the house where lived Robert Stewart, one time manager, and set fire to the Richards mansion. It was
reduced almost to ashes. Mortgages accumulated against the property and the culmination was reached in 1876 when Joseph Wharton, of Philadelphia, bought the property at a Master's sale, on a mortgage for $14,000.00 which had been standing for thirty-six years.

Then came an era of prosperity, for Mr. Wharton expended $40,000.00 rebuilding and enlarging the house, which he fitted with the most modern improvements. Its thirty-six rooms are finely finished in hard woods of various kinds and the building is surmounted by a tower one hundred and sixteen feet high. The windows open on a delightful prospect, including the carp pond across the road, the site of the old furnace; the lake; the dam and the road that winds between the trees. Not less picturesque are the grist mill and the old stone store, while utility is represented by the great barns and cattle sheds and the corn cribs where so many golden harvests have been stored.

After the death of Mr. Wharton the property passed into the possession of The Wharton Steel Company, of which he had been the president. An effort has been made to sell it to the State of New Jersey.

In the Philadelphia office of Mr. B. N. Richards is an old iron plate with the dates upon it of the founding of the furnace and its rebuildings. It was rescued from the ruins.

1766

1786

1829

Of the thousand people who, a half century ago, found employment at Batsto and at Pleasant Mills on the other side of the stream, barely two hundred now
remain to struggle for a livelihood. The dearth of occupation has made unnecessary the care of the once splendid water power that was more than sufficient in any of the four streams that form the Forks, to drive a mill during the driest season. Now, by means of a system of canals and dams, there is hardly enough water to run the only one remaining, the paper mill at Pleasant Mills.

The memory of the Richards family lingers in the place that knew them so well. There are still those who recall the heavy family carriage that carried them to church in state. Though the mansion is deserted, Mr. Wharton never having spent much time there, the associations connected with it are all of the Richards family, many of whom sleep quietly at Pleasant Mills.

James, a son of William Richards, moved from Philadelphia to Batsto in 1808 and spent forty years or more manufacturing iron from the bog ore at Weymouth and Old Gloucester furnaces. The Weymouth property comprised seventy-five thousand acres and belonged to Samuel Richards, son of William. John Richards, a second cousin of Samuel, was for seventeen years manager of Weymouth, but in 1830 formed an equal partnership with Thomas S. Richards and bought of Samuel the Old Gloucester estate of seventeen thousand acres of bog and timber lands for $35,000.00. The property included a saw and grist mill. Old Gloucester Iron Works are now a part of Egg Harbor City. The furnace, or bloomary, as it is sometimes called, was capable of producing twenty-five tons of iron weekly and such articles as stoves and lamp posts were made there. In 1854 John Richards sold his interest to Dr. Henry Schmoele of Philadelphia.

Samuel Richards, who was a prominent business man in Philadelphia, living on Arch street above Ninth, was the owner of Atsion furnace. It was his
Batsto and the Bloomaries.

Greatest pride. This property contained seventy-five thousand acres, and on it he built a large dwelling. He was the inventor and owner of several valuable patents and was a man of keen intelligence and lively public spirit. About 1830 he conceived a plan to run a railroad across South Jersey as a spur to the iron and glass industries and to develop large tracts of land in Camden and Atlantic Counties. His foresight and energy resulted in the building of the first railroad that crossed the state, thus establishing the towns of Hammonton, Egg Harbor City, Elwood, Atco and others. In this sense he was their founder, or if not that, at least the guardian of their minority. There can be no question that he was the originator of the second road that leads to Atlantic City, fifty-four miles of which were built under his personal supervision in a period of ninety days. It was later absorbed by the Reading Railroad Company.

Interest in the prevention of forest fires inspired Samuel Richards to endeavor to have the railroad engineers taught to so fire their engines that there would be no danger from flying sparks. In some cases the men had been accused of deliberately causing destructive fires and Mr. Richards attempted to end this practice by subjecting the offenders to severe discipline. With the passing of time the descendants of this broad-minded benefactor of his county have gone their destined ways and his only surviving grandchild, Charles R. Colwell, lives, with the memories that must cling tenaciously to the haunts of such a man, in the old homestead at Weymouth.

Gordon, the geologist, says that in 1830 there were in southern Jersey "fourteen furnaces, including cupolas, and fourteen forges mainly dependent on bog ores for their supplies." He is the authority also for the statement that the origin of the deposits of bog ore in this region can be readily understood by con-
sidering the ferruginous nature of all the strata. The water contains a remarkable quantity of oxide of iron which it acquires in passing through the upper strata. When it reaches the open air it loses the carbonic acid, the agent that enables it to retain the oxide of iron in a dissolved state. This oxide is rapidly precipitated, causing the accumulation of bog ore in all low situations. Some of these contain phosphate of iron and the ore is contaminated by phosphoric acid, producing what is known as a cold short iron.

The source of the iron accounts for the interesting fact that after removal the deposit is renewed in about twenty years. It is, however, essential that the soil should not be drained, but on the contrary, washed by ferruginous springs. When the surface of the ore is bared and thus exposed to the rain, the oxide of iron disappears almost as quickly as it accumulated. The cellular structure of the lumps remains, but the matter left is principally earthy in composition, owing to the solvent power of rain water for oxide of iron in the loosely cohering state in which it exists in the ore. This dissolving power of rain water is due to the small amount of carbonic acid collected in its passage through the atmosphere.

Gordon says that from this "We derive an important hint, namely, those who make use of this variety of ore should avoid keeping large accumulations exposed to the weather. It should be dug only as needed."

The iron used for the cylinder of Fitch's steamboat, which was operated on the Delaware on the sixteenth of April, 1790, was taken from the bogs along the Mullica.

Rogers in his Final Report on the Geology of New Jersey, speaking of the mines in the north, states that the beds of iron ore "are unequivocally genuine lodes or veins" and that they are filled with injected matter.
The origin of these iron ores has been much discussed but while some agree with Rogers in every particular, many geologists think them true beds that were deposited as sediments. Dr. Mitchell and all his assistants are of the opinion that the magnetic iron ores of New Jersey are sedimentary and deposited in beds, that they originated from mechanical or chemical deposits in ages past as the hematite and bog ores do now. This would seem to apply to all the deposits in the state.

Bog iron ore, Meadow ore or Hydrous peroxide of iron, as it is variously termed, contains the same chemical compounds as does magnetic iron with the addition of more clay and earth. It is found in swampy meadows and bogs throughout New Jersey. Incomparably the largest deposits border the branches of Little Egg Harbor River, one of these being connected with the Atsion River and its branches, and extending from near their sources in a wide belt southeast to Landing Creek, a territory of about twenty by three miles. The other tract is on Wading River, of about the same extent but of inferior quality.

Within a mile of Long-a-Coming, now unfortunately called New Berlin, the Atsion River has its birth. The greater part of its course is through wide flats or cedar swamps. At its source and at many spots along its length the iron has tinged the snowy sand where the lower layers are seen. The water that oozes from this sand bears oxide of iron derived from upper and exposed stratum, and deposits it as it reaches the air. The ore used at Atsion was obtained from above the furnace and considerable quantities were taken from the bed of the pond during the cold weather when the furnace was not in operation and the water was drained off.

The kinds of ore found were loam, seed and massive. In the extensive swamps are shallow coves from which
the ore was chiefly taken. Excavations eight or ten feet square were made, with thin dikes left between to prevent the water flowing in upon the workmen. In these excavations the three kinds were found, the loam on the surface, then the seed and underneath the massive. Sometimes only one kind was found. The three varieties may be seen in their various stages of maturity. First appears the loam, being actually but the filtering of a ferruginous sediment into the soil of the bog. Although soft at first it gradually becomes heavier and more compact by the accumulation of oxide of iron and many of the lumps contain a mass of regular crystalline formation in the center. The loam in time is completely replaced by oxide of iron which is usually of honeycomb structure, the cavities being filled with clay-like matter. This ore, being partly converted, partly pulverulent or loamy, is called *young ore*.

Abounding in these swamps are stumps and trunks of trees that have been completely converted into oxide of iron, their fibres showing as clearly as in their natural state.

Tests of the metallic iron in bog iron from Atsion showed a percentage of from 45.83 to 47.71.

Of the fourteen furnaces, or bloomaries, of years ago, not one remains to carry on the traditions of the past. They are all abandoned and many if not all have now entirely disappeared. The “leaness” of the ore and the extent to which it is contaminated by sulphur and phosphorus makes it unprofitable. The only available fuel was charcoal, which was costly though of native manufacture. The expense of transportation was increased by competition with the railroads. These disadvantages, the opening of mines elsewhere and the difficulties imposed by nature and by progress combined to force the discontinuance of the industry.

As his ancestors were pioneers in the bog iron in-
dustry, so Augustus Richards was the first to cultivate cranberries extensively in the bogs around Batsto. Peat is the principal food of the cranberry and the young vines grow better in the pure peat bottoms of the cedar and other swamps than elsewhere. The exception to this is the gum swamp, which, as it requires excessive drainage, is a cold bed for the young plants. The necessary complete drainage is difficult to obtain. The porous soil in the other swamps, with a dressing of Silica spread upon the peat, is the ideal combination and forces a threefold yield of hardy plants that throw short, vigorous shoots instead of the weak, rambling ones seen under other conditions. The bogs are surrounded by dikes and are flooded before the temperature drops to freezing. In the springtime, after the cold weather has gone, they are drained and the young plants, having been kept warm all winter by their icy blanket, immediately begin to grow. In the season roving bands of cranberry pickers traverse the country as do the hop gatherers in England, adding a certain picturesqueness to the scene.

Huckleberry gathering is a source of income to the natives. The wild berries are so plentiful during some years that they may be gathered with a rake and a family can earn enough money during the season to support it through the year.