

South Florida's First Industry

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Manufacturing starch from the coontie root is probably the earliest known industry in Dade County. The Indians are credited with the discovery that starch could be extracted from these roots which once grew so abundantly on South Florida's high pine land. However, it has been established that white settlers engaged in this industry some time prior to 1840.

The coontie root, a species of *Zamia*, was also known as Florida Arrowroot. The early settlers called the root and the starch obtained from it "comptie." It is believed this name was derived from the Indian pronunciation. Northern biscuit makers, principal users of the product, called it Florida Arrowroot Starch.

The roots of this cycadaceous plant are found one or two inches below the surface of the ground and resemble a large sweet potato in appearance. Each plant puts out several red stems bearing small fern-like leaves. There is a male and a female plant, the latter being distinguished by a cone-shaped seed pod which grows just above the ground. The coontie root itself is quite poisonous. Therefore, it was necessary to crush the root and wash the starch entirely free from the poisonous pulp. Historians have reported instances where men, who were lost and starving, ate the roots in the mistaken idea they were edible. The results were usually fatal.

Birds are the chief planters of coontie roots, plucking the seeds, eating the meat therefrom, and then dropping the seeds while in flight. Because of their slow growth, it was not practical to cultivate these plants commercially. This, coupled with the gradual disappearance of the forests, was an important factor in bringing about the industry's eventual demise.

The process employed by the Indians was crude and it remained for the early white settlers to improve on these primitive methods. Long before Miami came into existence, nearly every family living in this area had its own little starch mill. Whenever any extra money was needed, the whole family would get together and make starch. Some mills were operated entirely by hand, while others employed mule and horse power. In later years, there were a few motor driven mills, including at least one large steam driven mill located in the vicinity of Little River. This mill was owned by

A. B. Hurst, and remained in operation until 1919, when it was moved to the southern part of the county near Kendall. It continued in operation at this new location until 1925.

In order to describe the type of starch mill being used in South Florida just prior to and shortly after the turn of the Century, the writer personally interviewed Mr. John B. Hurst, son of the aforementioned A. B. Hurst, and Mr. Willie Mettair of North Miami, Florida. The latter was actively engaged in the manufacture of starch before 1900.

These early mills consisted of a wooden cylinder, usually a section of pine log, about 12 inches thick and 18 inches long. Diagonal lines approximately 1 inch apart were drawn lengthwise all around the cylinder. These lines followed the general pattern of a lawn mower blade. Shoemaker's nails were then driven into the cylinder along these lines. The nails were $\frac{3}{4}$ inch apart in the row and about $\frac{1}{8}$ inch was left exposed. A shaft was driven through the center of the cylinder which was then mounted on a wooden hopper. A container underneath the hopper caught the pulp as it came through. A settling tank with a large sieve was placed nearby. The rest of the equipment included drying racks which were usually 30 inches wide and 6 feet long. These racks were made of horizontal poles raised several feet above the ground and covered with muslin.

If the mill was to be powered by hand, a crank was attached to one end of the cylinder shaft. Horse or mule power could be used by hitching the animal to a 20-foot sweep. This sweep turned a gear resembling a universal joint which was joined to a large vertical wheel by a rod approximately 25 feet long known as a tumble rod. A belt running from the wheel to a small pulley on the cylinder shaft turned the cylinder at a rapid rate of speed because of the high ratio achieved by this ingenious hook-up.

The process used by the white man in the manufacture of starch was quite an improvement over the method employed by the Indians and resulted in a more highly refined product. The starch manufactured by the Indians was slightly yellow in color while the starch made by the settlers was pure white.

The roots were dug out of the ground with a tool similar to a mattock. It was customary to soak them in water overnight. This not only washed the roots clean, but made them considerably softer and, therefore, easier to work with. They were usually cut in half before being thrown into the hopper where they were crushed to a pulp by the whirling cylinder. The pulp was placed in the sieve atop the settling tank and water was used to wash the

starch out of the pulp and into the tank. In order to remove small bits of pulp and other foreign particles which may have washed through the sieve, there was a series of drain holes at one end of the tank. The starch being the heaviest had a tendency to settle to the bottom of the tank. As it settled below the level of one of the holes, a plug was removed and the water with the bits of pulp and dirt was drained off. As the starch continued to settle, the next plug was removed and so on until all of the water was drained off and nothing remained in the bottom of the tank except starch. It was sometimes necessary to repeat this washing and draining process several times to obtain the desired results. The starch, while still damp, was then placed on the drying racks. Although it was already white, the sun had a tendency to bleach it even more.

As soon as the starch was thoroughly dry, it was placed in barrels which held approximately 250 lbs. It is estimated that it took 500 lbs. of roots to make 100 lbs. of starch. A family of three or four could make about one barrel or 250 lbs. in a week.

The starch was sold at prices ranging from three to eight cents per pound to shippers who operated several schooners between here and Key West. From there, it was shipped to the northern markets. As a general rule, these transactions between the starch manufacturers and the schooner captains were not on a cash basis, the starch being traded for groceries, clothing and other necessities of life. These goods were delivered on the return trip from Key West.

In addition to being used in the manufacture of biscuits, this starch was excellent as a staple food for use aboard ships. It was found that it would keep indefinitely as long as it remained dry, whereas flour would spoil after a certain length of time. A by-product of the industry was discovered in the pulp. After the starch was extracted, the pulp was left to decay. This made an excellent fertilizer which was widely used throughout the area.

An unpleasant feature of this early South Florida industry was a most objectionable odor which was always present wherever starch was being made. This, plus the fact that the price paid for the starch was small in proportion to the amount of labor involved in its manufacture, may have helped to bring about the eventual end of South Florida's first industry.