



The Brown Company: From North Country Sawmill to World's Leading Paper Producer

Presented by John Rule

The short history of the Brown Paper Company of Berlin, NH presented here is based primarily on the records in the collection of the NH Historical Society. Several of the historical photographs are from the Plymouth State University Collection and can be accessed through the website beyondbrownpaper.plymouth.edu

In the early 1800s the upper Androscoggin valley had just a few small farms, sawmills, grist mills and camps for lumbering and making potash from hard wood ashes, but in 1851, the Grand Trunk railroad from Portland completed tracks into Berlin. Now products and materials could be transported quickly and efficiently to southern markets and the lumber industry flourished.

With axes and crosscut saws, spruce and pine were cut in winter, hauled over the frozen ground by horses to collection points on the Androscoggin, its tributaries and connecting lakes.



Come spring the logs were rolled into the high water and driven downstream to the mills.



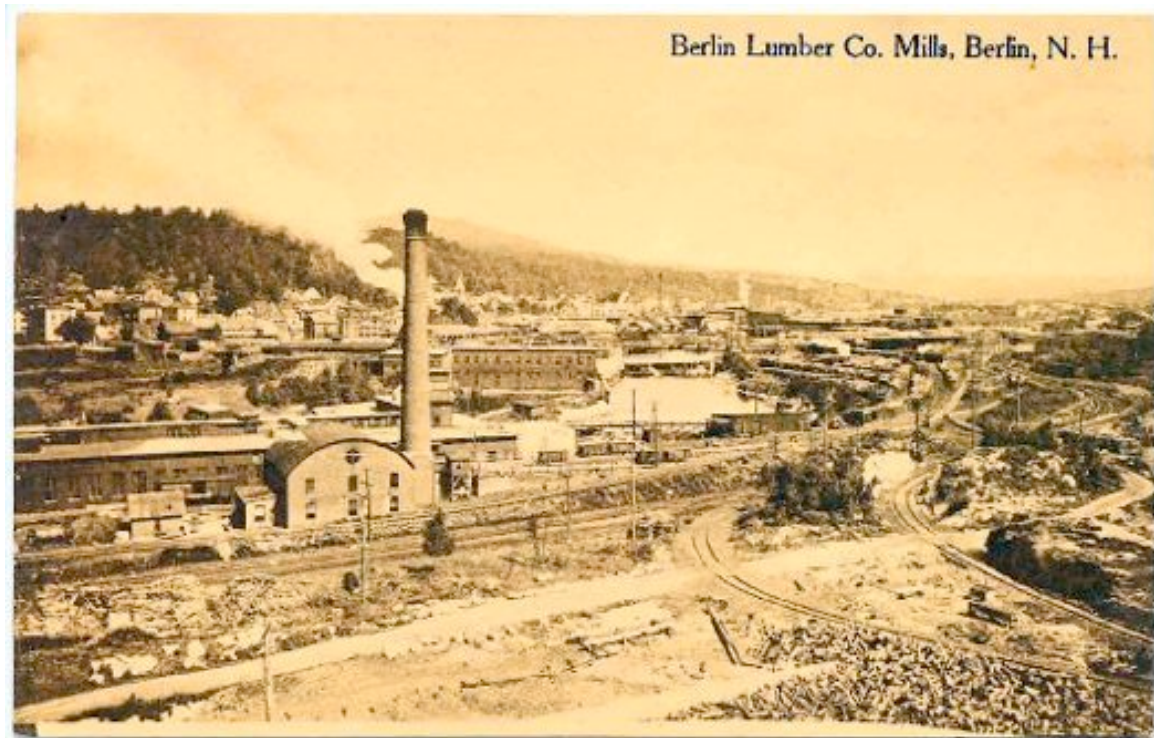
Taking advantage of the arrival of the railroad, H. Winslow Co., a small Maine partnership, acquired timber and water rights in Berlin and surrounds and built a sawmill at the head of the falls on the Androscoggin.

The growing lumber industry caught the attention of William Wentworth Brown, a Portland manufacturer of wooden parts for the shipbuilding trade, who in 1868 bought an interest in the sawmill and holdings, by now renamed the Berlin Mills Company. He went on to buy out the partners and

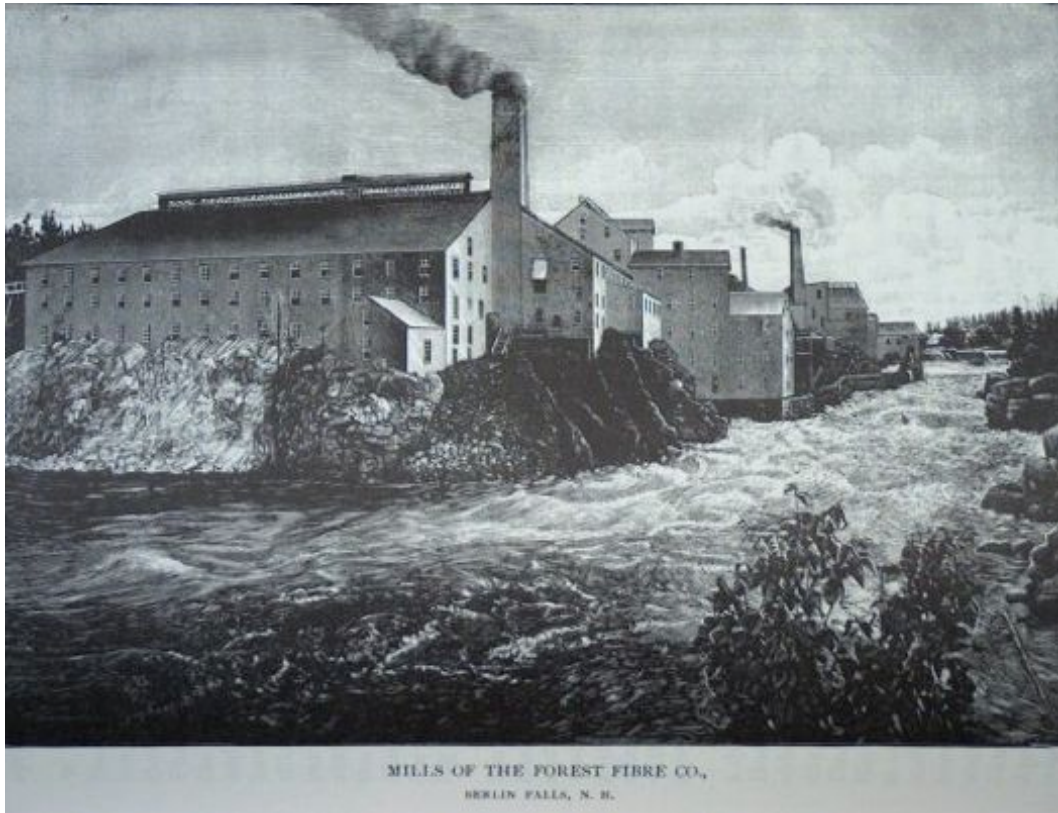


appoint himself manager, and a business partner, Lewis Brown (no relation) its superintendent.

The company rapidly expanded its landholdings in northern NH, Vt and northwestern Maine. It shipped products by steam locomotive to Portland via Grand Trunk and, later, to Boston via B&M. Schooners bound for more distant destinations picked up Berlin Mills lumber products at Portland wharfs.



In 1877 a new technology began to impact the economy of the region. That year, Henry Furbish having perfected a process of using caustic soda to dissolve the lignin between the wood's cellulose fibers, founded the Forest Fibre Company and built the area's first chemical pulp mill the following year.



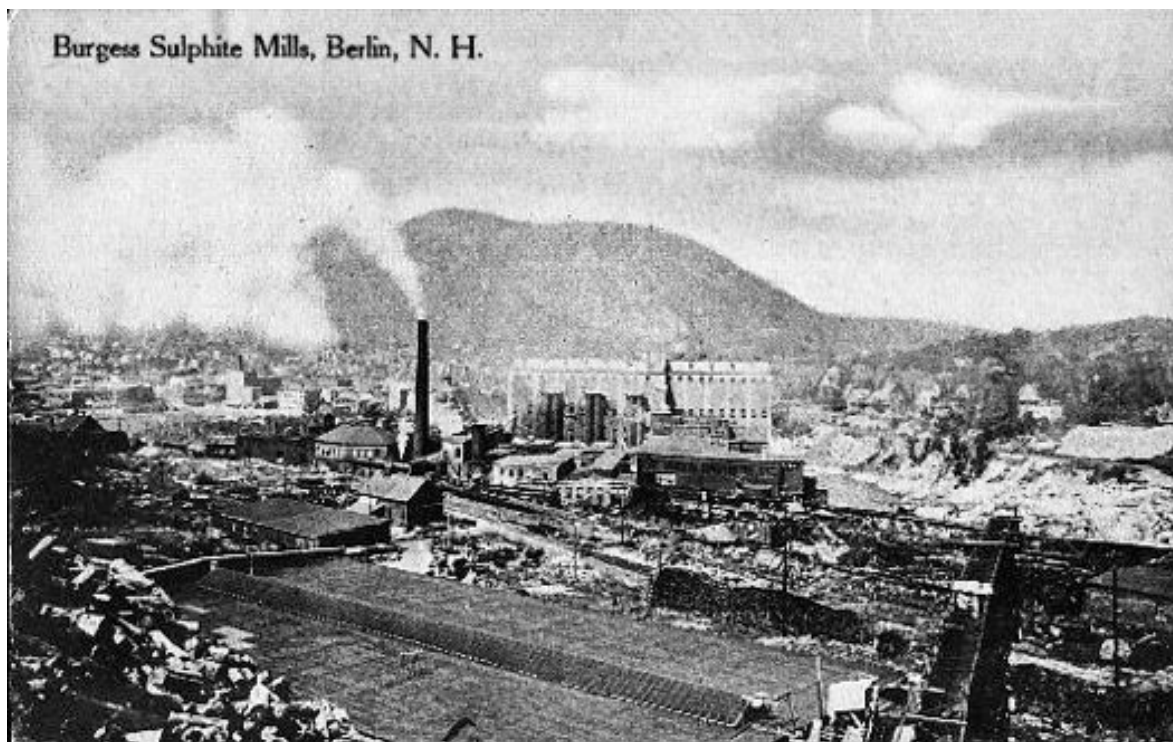
Brown and his partners, having invested in the Furbish enterprise watched with interest as Furbish built a second mill to accommodate a business that had increased ten fold in two years.

By 1888 Berlin Mills was ripe for incorporation. WW Brown, his oldest son, Herbert, and two others formed the Board of Directors with WW as company president. Likely influenced by Furbish's success, they built a pulp mill near their saw mill. The mill produced ground wood pulp by mechanically grinding wood to individual fibers. Three years later, their pulp mill a success, they built their first combination pulp and paper mill on the opposite side of the river from the Forest Fibre Company. At first, the Riverside Pulp and Paper Mill produced ground wood for use in making low grade newsprint.



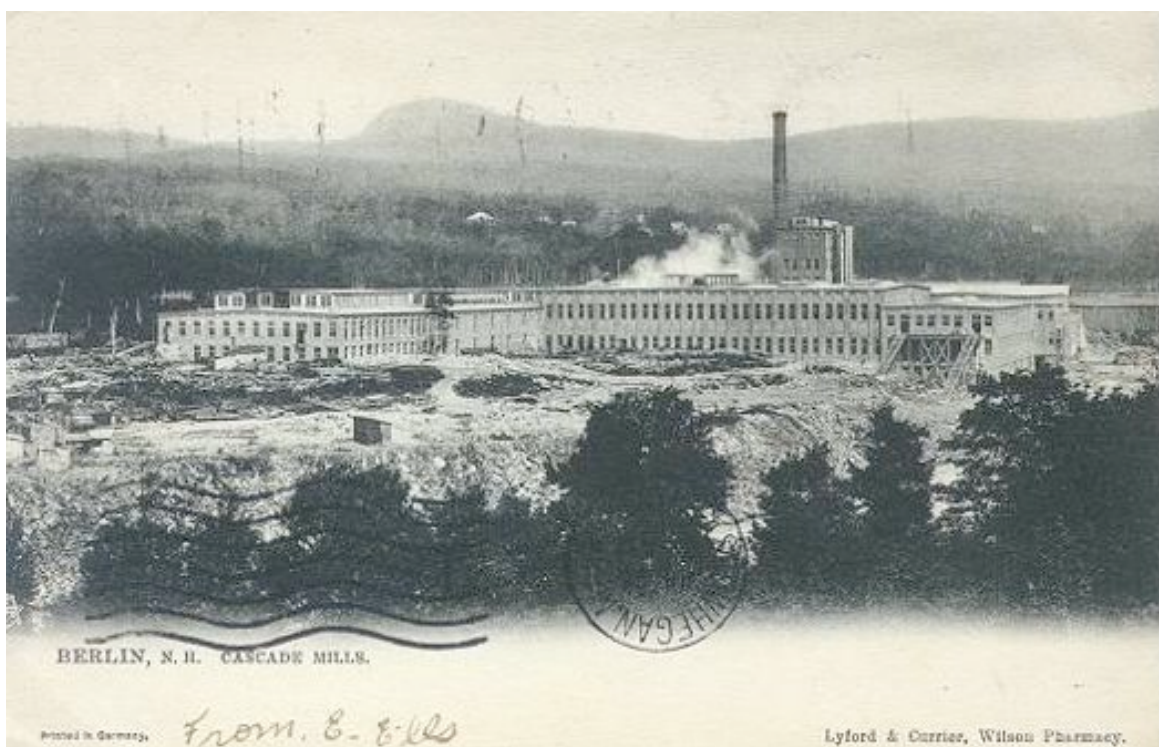
The new mill added significant new markets for company products. By 1892 Berlin Mills was purchasing sulphite pulp on the open market for use in improving the quality of its paper. A chemical pulp, it used compounds of sulfurous acid to dissolve the lignin in soft wood, and was rapidly supplanting soda pulp as the industry standard. At Riverside this sulphite pulp was substituted for the rag pulp that would normally have been blended with ground wood pulp to make newsprint.

To control the source of sulphite pulp, W. W. Brown joined Theodore P. Burgess, a businessman from Dedham, Mass., and two others to form the Burgess Sulphite Fibre Company and built a large sulphite pulp mill.



The shift to papermaking brought rapid growth, necessitating large timberland purchases, more mills, and the acquisition or formation of subsidiary companies, funded by leveraging the company's infrastructure and timberlands -- that is, they were mortgaging assets to raise capital by the issue of bonds through the Old Colony Trust Company of Boston.

In 1903, financed by \$2,750,000 in bonds, the company built an integrated mill complex downriver in Gorham. The Cascade Mills produced both ground wood and sulphite pulp and housed a wood yard, pulp dryers,



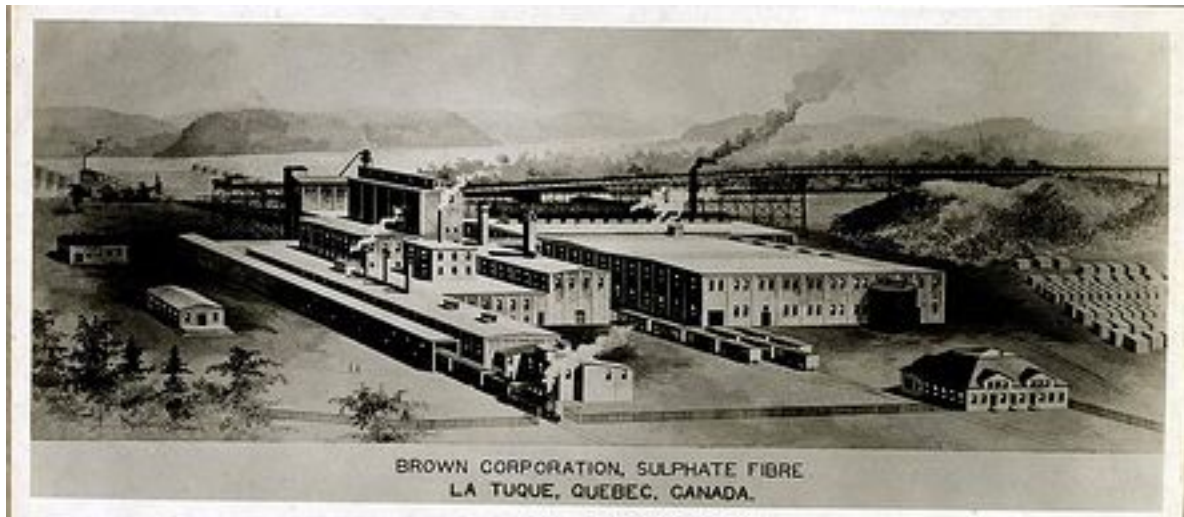
Fourdrinier newsprint machines and a hydro-electric plant. Producing 200 tons of paper per day, Cascade was the largest mill of its type in the world.



To supply its huge demand for pulp wood, the company looked North to Quebec. They formed the Canadian subsidiary, Brown Corporation, which eventually acquired 3,750,000 acres of timberland on the shores of the St. Lawrence.

Among the most important of these timberlands were those in the remote Bersimis River region. To transport the pulp wood, Brown Corporation purchased a 225 foot steel ship, the Itororo, and fitted her out as a pulp carrier. For three years, the Itororo hauled pulp wood on the St. Lawrence from a wharf six miles upriver from the mouth of the Bersimis to docks at Quebec city several hundred miles away. There the wood was loaded on cars of the Canadian Pacific Railroad and transported to Berlin.

In LaTuque, Quebec, on the St. Maurice River Brown Corporation built a mill to use a new process - an improvement over the old soda process - to manufacture unbleached sulphate pulp from softwood. They shipped it to



the ever-expanding mill complex in Berlin to make Kraft paper -- sturdy, brown paper (ex: paper bags are made of unbleached kraft).

By 1917 the Berlin Mills Company with three paper mills and 4,250,000 acres of timberland had become the largest single chemical pulp and paper manufacturer in the world.



Log drives were massive, thousands of cords of spruce pulp wood floating



down river filling the river side to side and as far as the eye could see. The mass of floating logs waiting to be hauled out and onto a log pile could extend five miles upriver.



A company symbol was stamped on the ends of each log to distinguish



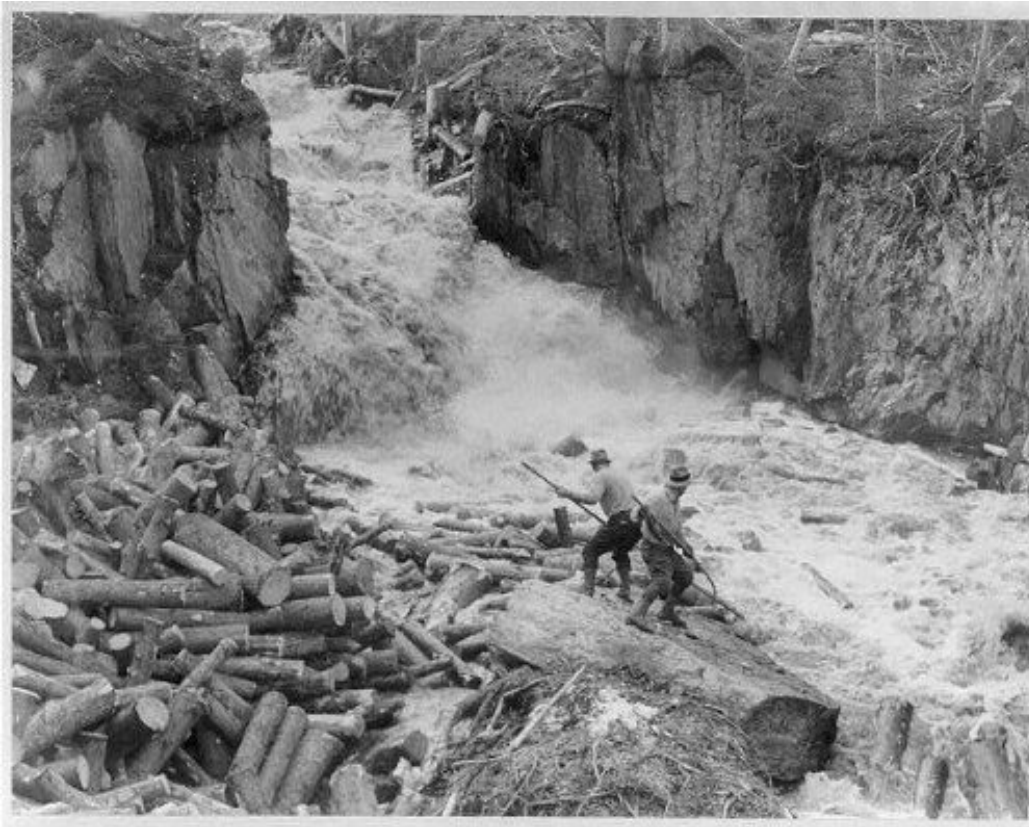
its owner, since the Berlin Mills weren't the only one's cutting in the area.

Upstream of the mills, a series of stone piers were built in the middle of the Androscoggin connected by chains to create a fence that allowed drivers



to separate logs owned by the Berlin Mills Company from those of its main competitor the Glen Manufacturing Company.

Berlin Mills acquired or created at least ten “Dam and Improvement” companies to build and maintain dams and make other changes in the waterway so the logs could pass through. The companies paid for themselves by charging tolls to other companies driving logs over those same waterways.



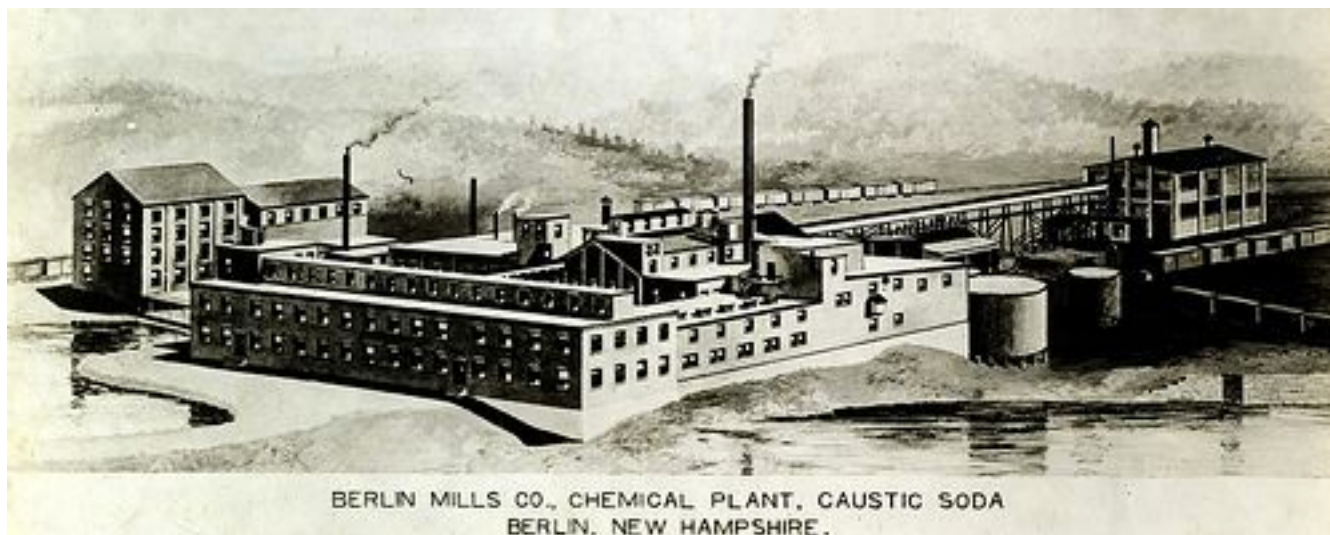
Early on, Berlin Mills acknowledged the finite nature of its timber resources and the need to use those resources efficiently. Between 1894 and 1895 they employed Austin Cary of Bangor, Maine. Cary, an employee of the U.S. Forest Service, became the first private forester employed in America.



In 1902 another of WW's sons, William Robinson Brown, became manager of the company timberlands -- a position he would hold for decades. Under WR Brown the company created a tree nursery on the north shore of Cupsuptic Lake in 1919. The forestry research that began with the creation of this nursery led to sustained-yield practices that changed the industry.

Berlin Mills which would evolve into the Brown Company was always at the forefront of new processes and products. Some took off. Some did not. During the years leading up to World War I the company focused on products derived from wood pulps and pulping processes. In later years less adventurous managers would describe this period as one in which the company involved itself in "extraneous fields of manufacture." However, several product lines were profitable for decades.

Around the turn of the century, with demand for higher grade paper, they began phasing out newsprint. For higher grades of paper, pulp had to be bleached with chlorine gas. They built an electrochemical plant to produce the gas using cutting edge technology.



By 1920 they began to manufacture liquid chlorine, which became a staple.



A plant was built to recover caustic soda from the chlorine-making process and it was sold under the name "White Mountain Caustic Soda."

Excess chloroform was also sold and cornered 60 per cent of the national market.

In 1914 the company built its first Bermico plant (acronym for Berlin Mills Company). Commonly known as “Tube Mill No. 1” the plant produced conduit and later, sewer pipe made of wood fiber impregnated with coal tar pitch.



The company continued innovating. Hugh K. Moore, a prolific inventor and company chemist, supervised consolidation of research and development with the building of a separate research facility.

It was the first such facility in the industry with its own experimental pulp and paper equipment -- including fully functional scale model paper making machines. At its peak it employed 100 scientists and eventually earned 600 US patents.



Tasked to explore the use of by-products of paper making in animal and human food, Moore obtained two patents for the hydrogenation of vegetable oils and the company manufactured a peanut oil based shortening using hydrogen from its electrochemical plant. It was marketed for "domestic cooking" under the name Kream Krisp. Proctor and Gamble, which later secured a patent for the cotton-oil based Crisco, sued Berlin Mills for infringement. In 1920 the case was settled in Berlin's favor by the Supreme Court.



Fully invested in Kream Krisp, in 1923 the company purchased 78,000 acres of land in West Palm Beach Florida known as Shawano Plantation to grow crops, especially peanuts.

Other products included raw peanut oil and “peanut flakes,” from which the oil had been extracted -- marketed as a breakfast cereal.

Eventually, possibly to recoup the costs of litigation, the company sold the Kream Krisp patent to Proctor and Gamble.



In 1917, anticipating war with Germany, Berlin Mills changed its name to the Brown Company. During the war 80% of the company's output went to support the war effort. Carbon tetrachloride, a by-product of chlorine manufacture used in cleaning solvents and fire extinguishers, became the basis for the production of poison phosgene gas. A second tube mill was built, in part to produce powder containers for use in guns.

Prosperity continued through the 1920's and research and development flourished. In 1921 the first wet strength towel was developed by W.E. Corbin. These brown Nibroc (Corbin spelled backwards) towels were



folded to fit into wall-mounted metal cabinets and became one of the most recognizable paper products in the country. For years the machines producing these towels were proudly named “Mr” or “Miss Nibroc.”



Highly purified alpha cellulose pulps were also developed which could be dissolved then reconstituted to make a wide range of materials -- rayon, cellophane, cellulose acetate film, celluloid, resins, laquers and explosives.

The first Onco plant produced artificial leather. Used mostly for shoe



innersoles, Onco was made from latex impregnated paper.

Solka Pulp developed into Solka Floc, one of the company's most versatile products. Solka Floc, cellulose fibers mechanically pulverized to the consistency of flour, was (and is) used in

- foods and beverages
- pharmaceuticals
- floor tiles
- plastics and adhesives
- rubber
- welding rod coatings
- and filters - including cigarettes



The Great Depression brought decline. Profits shrank as demand decreased. Through the 1930's the company increasingly relied on short term loans for operating capital. As solvency decreased the loans dried up. By the winter of 1931 and 1932, it could no longer fund its woods operations.

Ironically, that same year the Cascade mill, using the sulphite process, first produced hard wood pulp -- a significant step toward cashing in on the company's vast hard wood reserves.

In 1935, Brown Company filed for bankruptcy. Court appointed trustees developed a reorganization plan. The Brown family lost ownership, although Orton B. Brown, WW's second son remained a company director until 1960. By 1941 new directors had developed a modernization plan, funded mainly through a \$10 million loan from the Reconstruction Finance Corporation. At first this money paid for on-going operations and helped to reverse the deterioration of plants and equipment neglected during the lean depression years.

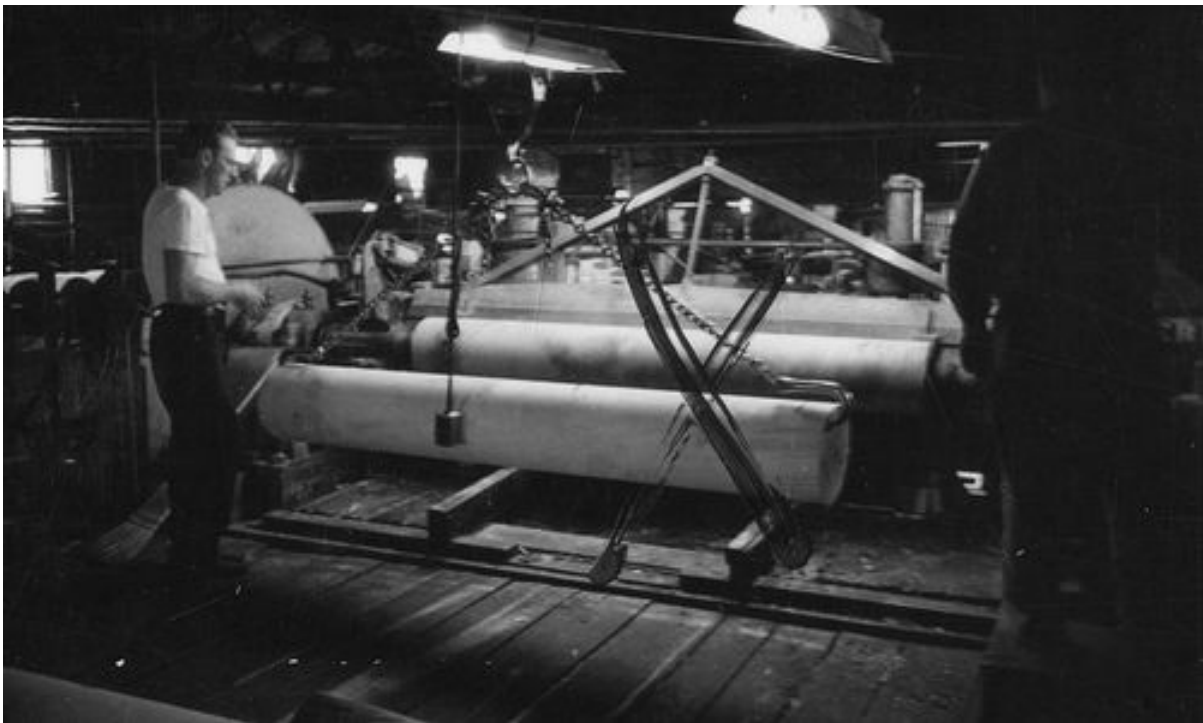
During the 1940's increasing public concern over pollution of the Androscoggin



resulted in a court order to develop and implement a plan of mitigation. Brown Company began a program to eliminate sulphite pulp manufacture in favor of the less-polluting sulphate and other chemical based pulps.

By the early 1950's most of the financial problems from bankruptcy had been solved. However, the company now faced increasing competition from western pulp and paper manufacturers. In addition, an earlier aerial survey of 10,000 square miles of timberlands tributary to Berlin showed a rapidly diminishing soft wood supply. In response the company placed renewed emphasis on developing new hard wood pulps. To better use higher grade hard wood, the company built a sawmill to produced furniture grade lumber.

A year later Brown Company purchased a plywood plant in North Stratford, NH, which made hard wood veneer, to take advantage of its large yellow birch supply.



Also during the 1950's the woods operations underwent accelerated mechanization. As early as 1904, Berlin Mills bought several Lombard steam powered tractors capable of hauling sleds loaded with 56 foot logs over wood roads.



Trucks had been used since the '20s to haul hardwood, which floated poorly, and during the 1930's chain saws began to replace crosscut saws and axes.

Lumbering, however, remained a labor intensive activity -- the cost of labor was low and wood cutters plentiful - the company might employ upwards of 3000 a season. But during World War II, the dynamic changed. As men went to war, the labor shortage forced Brown Company to contract with the U. S. Government for German POW labor.

The company pressed forward in evaluating and streamlining woods operations. A pilot program at its Stag Hollow operation in Jefferson, N. H. saw full mechanization by 1947. In place of men with axes and peaveys, specialized tractors and bulldozers cut, moved and loaded logs,



realizing a savings of 47 cents per cord.

To keep up with more efficient, industry - wide practices, the company



invested in new equipment and began harvesting hard wood in 24 foot rather than four-foot sections.

The relative prosperity of the 1950s and early 1960s resulted in part from reductions in work force and sale of assets that didn't turn enough profit. Contrary to the rosy picture painted in the company's annual reports, directors' records are rife with the details of labor strikes and protracted union negotiations.

The devolution of Brown Company in hindsight seems steady and inevitable:

Brown Corporation was sold in 1954 to Canadian International Paper for \$54 million.

In 1963 the Burgess Mill was closed after years of futile attempts to find

profitable markets for its sulphite pulp and a cure for its pollution problems

Then Bermico, due to the migration of Bermico manufacturing to other parts of the country.

A year later, the electrochemical plant was shut down, its products contracted out.

Some money was reinvested in an attempt to develop new markets and strengthen existing ones: In 1956, Blackfibre Pipe, a west coast Bermico manufacturer and the Stratford veneer plant was purchased, the next year, American Writing Paper, and Resi-Chem Corp., a manufacturer of resins and glues. When European businessmen bought a large share of the company, they bought European businesses -- in England, Wales and Italy - anticipating an expanding European market.

In 1965, the board of directors voted to move the corporate headquarters of the company to Delaware, closer to the large population and industrial centers along the Eastern Seaboard. Brown Company Delaware was created and the company assets were transferred to it. A year later Brown - Delaware merged with KVP Sutherland, a Canadian and mid-west pulp and paper manufacturer and acquired mills in Michigan and Ontario as well as large tracts of Canadian timberland. Initially the enlarged company leveraged its considerable assets to fund a \$54 million expansion of the Berlin and KVP mills. The results were mixed, with increased sales balanced by significant start-up costs.

The history of Brown Paper as an individual company with control over its own destiny effectively ended in 1968 with its purchase by Gulf and Western. Brown became a division of larger corporations: Gulf and Western, James River, Crown Vantage, American Tissue, Fraser Paper. Gradually its assets and timberlands were sold off in failed attempts to achieve profitability in the face of foreign competition and northern New England's characteristically high energy and transportation costs.



American Tissue shut down the Berlin mills in 2001.

A year later Fraser Paper purchased the idle mills and once again began manufacturing pulp and paper, until \$10 million annual losses forced it to shut down the Berlin complex in 2006. This time for good.

In 2007 the mills were demolished, ending the presence of pulp and paper manufacturing in the city of Berlin that had existed since the 1870's.

