

The GOLDFINCH

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Iowa City, Iowa

Early Manufacturing

man u fac ture (măn ū fāk tūr) v. to
make something, by hand or by
machinery, into a useful form.

Iowa's earliest kinds of manufacturing are not among those most important today, even though they all still exist — including a button factory in Muscatine.

Most early settlers in Iowa farmed the good rich land. It was natural, then, for early manufacturing to grow up around wheat, corn, hogs, and other products of the farm.

Manufacturers also found ways to use the natural resources of the neighboring forests and rivers. Huge logs floated down the Mississippi. Shimmering pearl buttons were cut out of shells fished from the Ohio and Arkansas Rivers.

The life of a business, like the life of a person, is affected by what happens around it. The end of the Civil War signalled a tremendous “boom” in railroad construction all over the nation. A shining network of rails sprawled over Iowa, and the picture for manufacturers changed. It was no longer necessary to build a plant close to the source of raw materials. Larger plants thrived, and smaller ones were forced to close down. More and more factories were built in the cities.

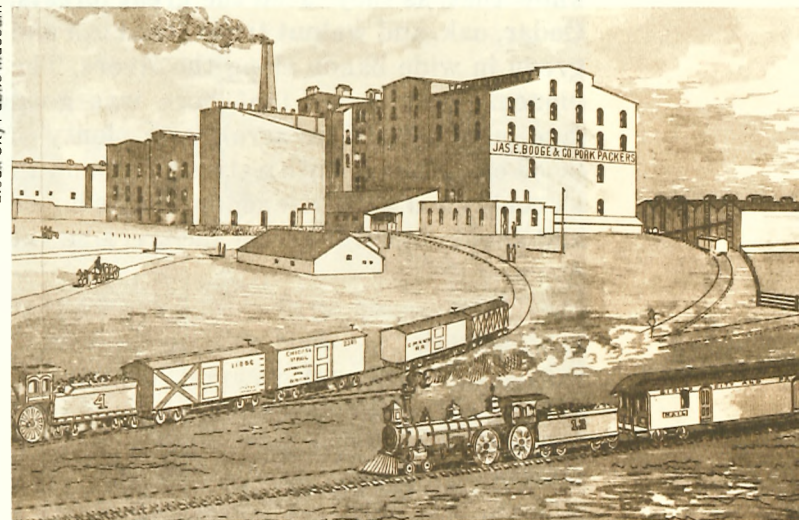
In this issue we will look at five early and important kinds of manufacturing, how they worked, the people who started them, and why they met with success. While you are reading, consider the following questions.

1) What natural resources (soil, plant, animal, mineral) does each manufacturer use? How does he affect his supply? How does the supply end up affecting him?

2) What patterns can you find in the growth and development of manufacturing? What events and inventions affect more than one kind of manufacturing?

Thinking about these questions will help you get a wider picture of the growth of manufacturing in Iowa, and a better understanding of how manufacturing works today.

Sioux City Public Museum



James E. Booge's Sioux City pork packing house in the 1890s.



This early steam-powered sawmill was busy even before a roof could be put up.

Days of the Sawmills

In 1833 the early settlers crossed the Mississippi into a newly opened section of wilderness, purchased from the Sauk and Mesquakie (Fox) Indians the year before. In less than ten years most of this land would be settled. But the pioneers did not know that, as they faced the great forests. Cedar, oak, and walnut trees stood tall and green in wide bands along the rivers. The pioneers only knew that here was good land, cheap (\$1.25 an acre), with plenty of wood on it. A man with a strong arm and an ax could clear a bit of land, building a house and simple furniture from the trees he cut down.

Wagons halted by the small creeks that ran through the woodland, and unloaded the basic pieces of sawmill machinery. Where the settler went, the miller soon followed, knowing there would be business for him. He piled a dam of branches, logs, or even stones across a creek to create a

pond. The pent-up water from the pond was channelled through the mill run and pushed the flat boards of a wooden water wheel. The wheel turned gears, providing the power to run the saw machinery. The water wheel was an ancient source of power, relied on by man as early as 200 B.C. It was equally important to these settlers, who could now haul their cut trees to the mill and come away with boards for roofs, tables, and chairs.

As the settlers moved across Iowa, large patches of prairie interrupted the forests pioneers so depended on. Here and there a grove of cottonwood rose from the tall prairie grass. The forests of Iowa were not going to be able to provide for everyone's needs. Towns were being built, calling for new sources of milled lumber.

power *n.* — force or energy applied to make something work.

The water power of creek mills could not meet the growing demand. Those millers who could afford to brought steam engines in by boat from Pittsburgh or St. Louis. Short of logs, they looked hungrily to the huge, almost untouched pine forests of Minnesota and Wisconsin. It did not take them long to convince the northern lumbermen that Iowa sawmills would pay a good price for their lumber.

So huge rafts of pine logs were floated down the Mississippi, and landed at the steam-powered mills that sprang up from Lansing to Keokuk. As soon as the ice broke up in the spring, the first raft moved out onto the river. These giant rafts were sometimes as big as two-thirds of a football field! The logs, laid side by side, were pinned by wooden pegs to poles laid across. A crew rode on the raft, and used oars bigger than a man to push away from the shallow places. A tent or small cabin was set up where the crew slept, after tying up for the night on the river bank. Around the time of the Civil War, log rafts were as common a sight on the Mississippi as steamboats.

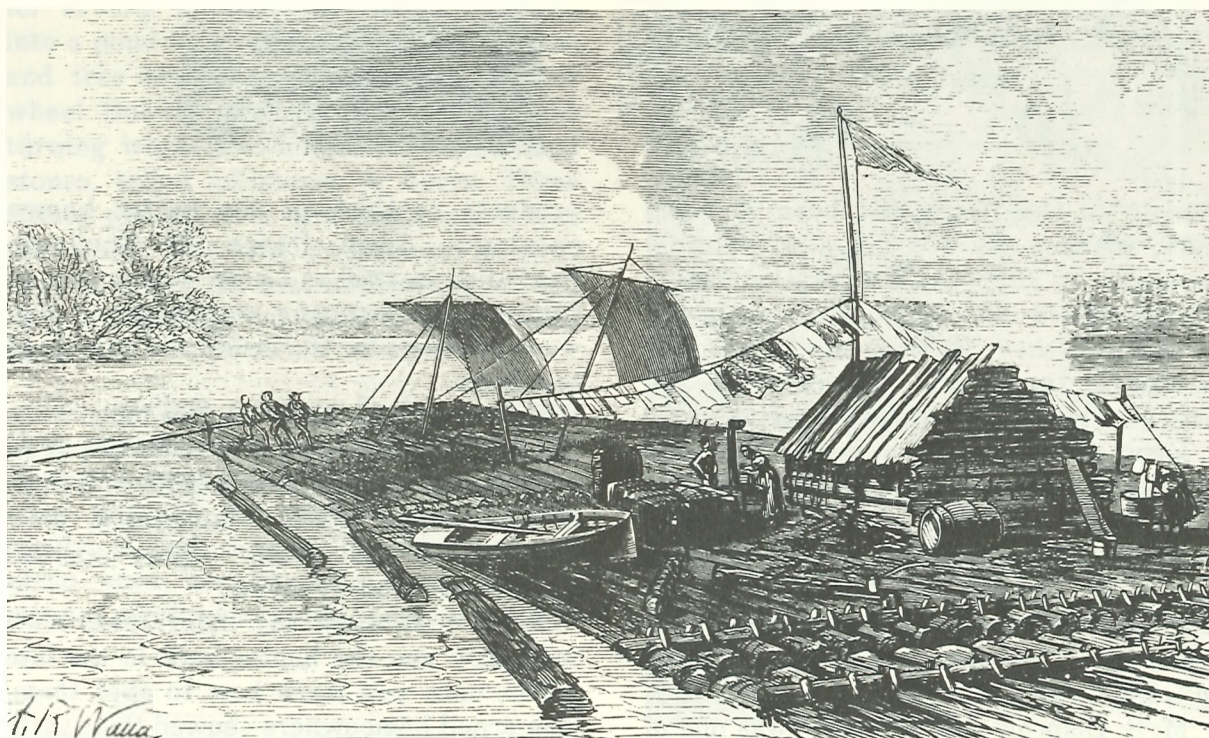
It was not long before streamboats replaced the clumsy oars in steering the raft. Too often these oars had been unable to keep the raft from crashing, yards deep, into a muddy river bank! Steamboats, placed in the front and back of the raft, were a better way to guide the logs.

As the flow of logs increased, mills became larger businesses, making constant improvements in their machinery, and supplying lumber for homes, barns, and stores. When railroads pushed across the state, eastern mills of Iowa were linked with Sioux City and western states beyond. Lumber products could then be shipped by rail to any major city in the nation, and from there out to smaller towns.

From 1859 to 1889 the sawmill business on the Mississippi River boomed. Along with flour milling and meat packing, it was one of Iowa's three top sources of income. But the sawmilling boom carried its own death within it. By the 1890s the flow of logs had slowed to a trickle. The great

income n. — money earned by a person or business.

America Illustrated



Artist's drawing of a log raft on the Mississippi (1880).

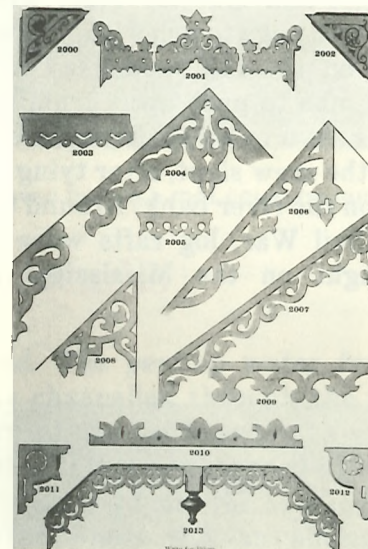
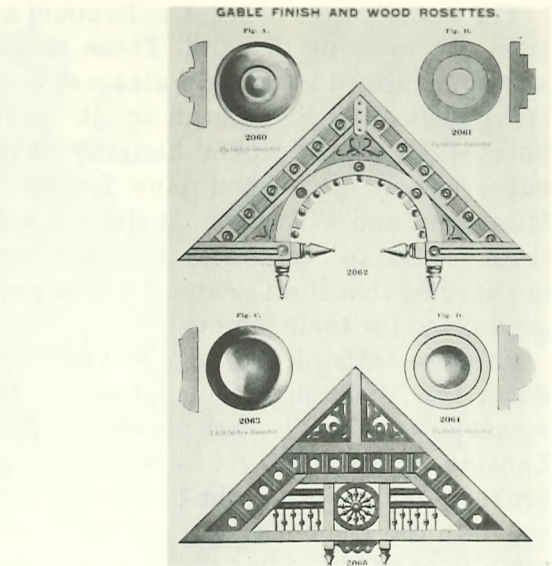


This house in Red Oak shows how milled wood products were used on homes.

Milled wood house trim from the Disbrow Company Catalogue.



2389
Price per lineal foot (without brackets), 83c. Brackets, each, 24c.



forests to the north had been stripped bare, without any attempt at replanting. Sawmills all over Iowa were abandoned. Those millers who wanted to stay in the business packed up their machinery and moved to the Pacific Northwest or the South — where forests still stood.

Even a business that grows and dies within fifty years, as the sawmills of Iowa did, leaves some lasting effects. Woodworking companies grew up around the mills, to manufacture wood doors, window frames, stair railings, and porches. Some such companies are still in business in Iowa today.

M. S. Disbrow and Company was one of the most successful of the early companies, sending out a fancy catalogue of their wood

products as thick as the better known catalogue from Sears & Roebuck. Beginning in 1856 at Lyons (now a part of Clinton), the company manufactured fine wood products for the inside and outside of buildings.

Especially popular in the late 1800s were the wooden ornaments that could be put on porches, gables, and over windows. Homes in Mississippi, Idaho, Washington, New York, Ohio, and closer states sported decorations from Disbrow.

A drive through any older Iowa town will show you the homes built in the late 1800s, once you learn how to spot them. The proud homeowners showed their taste by putting up as many wooden curls and spindles as they could afford.

Grist for the Mill

It was the year 1837, and times were hard all over the country. Thousands of people were leaving the civilized comforts of Pennsylvania and Ohio to make a new start in the recently opened Iowa country. Already towns had been laid out along the western bank of the Mississippi, and settlers were pushing up the Des Moines River.

Rivers were the paths of civilization into the untamed country, which was often difficult to travel by foot or wagon. The smaller streams that fed the rivers were also very important as a source of power for mills. It is no wonder that the lower Des Moines Valley, with its many streams, was quickly settled.

Samuel Clayton had built his cabin at the mouth of Chequest Creek, in this valley, the year before. Now his two grown sons, Henry and James, travelled from Ohio to help him. Together they built the first mill in Iowa west of the Des Moines River.

But the Clayton mill would not be used for sawing lumber. The stream, backed into a pond by a solid dam of clay, stones, and tree branches, still pushed a water wheel. But the machinery powered by the turning wheel was a pair of large round stones, called millstones or burrs. These stones ground corn into meal, and wheat into flour. This was a necessary step in making bread. To best understand the art of grain milling, we need to take a step back.

The earliest settlers in Iowa ground their corn by hand, as the pioneers in the East had done before them. This job was often done by the children of a frontier family. It took a long time to crack and grind corn kernels into meal using a wooden mortar and pestle. Luckier families

owned a hand grinder, which made the job easier. Others used a carpenter's plane to grate the corn off the cob (called "jinted" corn). But a mill was by far the best way to grind corn, if there was one in the area.

While the Claytons were putting a building up around the mill, and shaping millstones from boulders found nearby, word of the new mill spread. Farmers came from as far as twenty miles away to have their grain ground. Because few people on the frontier had money, Mr. Clayton usually kept part of the ground grain as pay.



Many Iowa cities had flour mills. This is a Cedar Rapids flour mill advertisement.

mortar and pestle *n.* — a heavy bowl (mortar) in which something is pounded or ground with a short, fat stick or stone (pestle).



Creek mills like the Claytons' did not run all the time, because the water in the pond was not always high enough to provide power. When the mill did not run, the farmers just had to wait to have their corn ground.

In their first years on new land, farm families raised just enough grain to meet their needs. But as farmers planted more land, they looked for a larger mill than Claytons' — one that could buy their extra flour. Such mills were usually built on a river, where the water supply was more dependable and where there were wagon roads or steamboats to carry the flour to other cities.

As soon as they could get them shipped in, the millers bought steam engines. Steam power did not depend on the height of the water, and one engine could turn several sets of stones at the same time.

It took special care and skill on the part of a miller to produce fine flour. For two thousand years millstones — or burrs, as

we shall call them here — had been used to grind flour for bread. The kind of stone used for burrs was important, and they had to be kept in good condition. The grooves in the stone must be carefully carved and fitted.

Even when he had good stones, wheat gave the miller special problems. Inside the grain of wheat is a soft oily part, called the germ. When the burrs crushed all of the wheat grain at once, the oily germ could cause other parts of the wheat, grist, to stick together. Then only a small amount of fine flour was produced. The rest had to be sold for animal feed, or as cheaper flour.

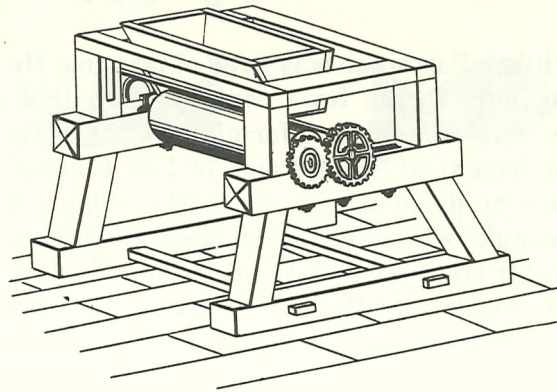
The invention of the roller mill by a Wisconsin man solved this problem. The wheat was run through five or six sets of rollers. After going through each set, the grist was cleaned and separated. In this way, the germ could be separated out, and more fine flour was produced from the wheat than ever before. Roller mills replaced the ancient millstones.

With the arrival of railroads, milling was taken over by large milling companies in the cities of Iowa, and most local millers went out of business.

But the planting of wheat year after year had begun to wear out the land. Iowa wheat crops did not produce as many bushels per acre as they once had. Worse, in the 1870s and 1880s chinch bugs and grasshoppers invaded midwestern farmlands, wiping out the wheat crop in those years.

Discouraged by thin crops and disasters, Iowa farmers turned away from wheat, and planted more corn and oats. By 1890 Iowa was set on its future course, having taken first place in national corn production. In 1900 it became first in oat production as well. By this time most of Iowa's smaller mills were empty and silent. There was no longer any use for them. The corn was fed to cattle and hogs, and the oats were made into cereal by a different method. Only a few large milling centers continued to work.

The Growth of Industrial Art



Rollers like these replaced the ancient millstones to grind grains of wheat into flour.

Early grain milling left its mark on the face of Iowa. Rivers and streams are still haunted by the half-standing remains of old mills, ghosts of a time that rang with the splash and creak of their water wheels.

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Farmers with grain filled wagons wait their turn at the mill.

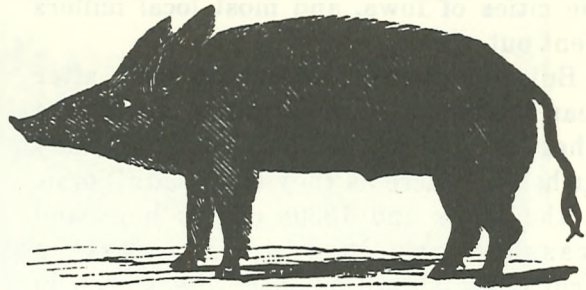
From Razorbacks to Refrigerated Steaks: Early Meat Packing

William Patterson was tired of farming. He had been in the Iowa country since 1836, running a hotel and farming at the little settlement of West Point in Lee County. Now he decided to move to the village of Keokuk, where he could open a store to supply river boats with provisions. Keokuk was located on the Mississippi River, the main transportation route for the still new Iowa Territory.

Business was as good as William Patterson had hoped. Boats going up and down river stopped at Keokuk and bought provisions. Farmers from miles around travelled by horse and wagon to trade at Patterson's. Because there was little paper or coin money on the frontier, people were in the habit of trading one thing for another. So it was natural for many farmers to bring their hogs to Mr. Patterson to trade for coffee, sugar, and other things they couldn't grow or make at home. Some of the hogs were brought in alive. Others already had been killed, and the meat salted or smoked to keep it from spoiling on the trip.

provisions *n.* — a supply of food.

The Cultivator



A razorback hog.

The hogs raised on the frontier were different from the rounded, short-legged hogs seen in Iowa today. The frontier hog was half-wild and skinny, with long, strong legs. These razorback hogs were just right for the times. Farmers let them run loose in the woods and fields, where they ate nuts and roots. In the fall, after the corn ripened, the razorbacks were rounded up and fattened for slaughter.

Farmers who had many hogs to sell drove them in a herd to the nearest town with a meat packer — sometimes more than a hundred miles away. Hog drives

slaughter *n.* — the killing of an animal for food.



In 1873 *Harper's Weekly* ran this illustration showing workers inside a packing plant.

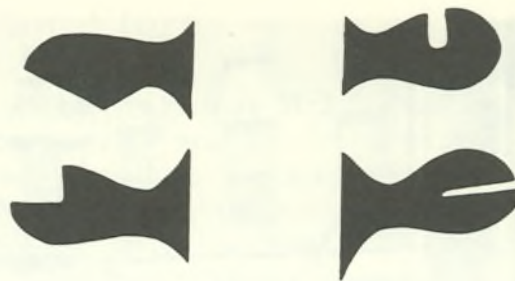
were much like cattle drives. But the razorbacks were more unruly and wild than any cattle. To keep the animals from running off, the drovers often stitched the hogs' eyelids shut. Some men made a business of buying up hogs at the farms and driving them to the packer.

As Lee County grew more populated, Mr. Patterson received more and more hogs. At the same time, the demand for pork in the eastern and southern states was increasing. Mr. Patterson decided that the best business would be just buying hogs and selling the meat. So he set up a slaughtering and packing shed and began to buy all the hogs he could find.

The early meat packers built plain wooden sheds at the edge of town. There the hogs were slaughtered and dressed. The meat was soaked in brine and salted down or smoked to keep it from spoiling. Then it was packed for shipping in wooden barrels. All this work was done during the cold winter months so that the meat would not spoil. When the river thawed in the spring, the barrels were shipped out on river boats.

Mr. Patterson was right about his chance for success in Keokuk. Soon there were several packers in each of the towns

drovers *n.* — people who herd or drive cattle or other livestock to where they will be slaughtered.



Ears of hogs that ran free were marked with cuts so the owners could identify them.

along the Mississippi River. Packers built larger buildings of stone and brick to replace the small, smelly shacks on the edge of town.

On Iowa's western border the packing business began in a different way. In 1870 a steamboat loaded with wheat ran aground near Sioux City on the Missouri River. The wheat became wet and was useless for flour. A general merchant, James E. Booge, bought the wheat to feed to hogs. Mr. Booge didn't own enough hogs to eat up all the wheat, so he travelled around and bought as many hogs as he could.

When the hogs were fattened, Mr. Booge built a small slaughter house and killed and dressed 870 hogs. He packed and shipped

dress(ed) *v.* — to cut up a dead animal for use as food.





Barrels of pork and boxes of bacon leave the Morrell Packing Plant.

most of them down the Missouri River. In 1873, Mr. Booge killed and sold 13,000 animals. By the 1890s several Chicago packing companies had built plants in Sioux City, which was on its way to becoming the largest packing center in Iowa.

The post-Civil War railroad boom pushed rails into every part of Iowa. By the 1880s there was no town in the state more than 25 miles from a depot. Railroads were changing the way people lived and did business all over the nation. Once a railroad line arrived in town, the farmer no longer had to drive his hogs or cattle to market. He simply took his animals to the nearest depot and put them on a train to the packer. With railroad transportation available, the packing houses no longer had to be on a river to ship out their barrels of meat. Packers could build their plants closer to where the livestock was being raised. Ottumwa, Waterloo, Cedar Rapids, Des Moines, Mason City, Atlantic, and Marshalltown all became busy meat packing centers. Even small towns like Red Oak often had a couple of packing plants.

Another event which boosted Iowa meat

production was the wheat failures of the 1870s. Most Iowa farmers switched their land to corn, a surer crop, which could then be fed to their own livestock. The more corn raised, the more hogs got fattened. During the 1880s the amount of pork packing in Iowa doubled. Pork from Iowa was shipped as far as England.

It was only with the development of mechanical ice-making that meat packing became a year round business. Ice was used to cool the buildings where meat was stored, and put in the railroad cars to keep the meat good during its journey from packing house to buyer.

In the 1880s fresh meat replaced salted pork and beef in the diet of Americans. Larger meat packers built their own refrigerated cars to be sure the meat arrived unspoiled at the buyer's end. Changing an old packing plant to refrigeration methods was expensive. Many of the older and smaller packers sold their plants to larger companies.

Meat packing had come a long way since a farmer slaughtered a couple of razorbacks and brought the meat to Patterson's general store to trade.

The Pearl Button Story

John Boepple was a master craftsman in Hamburg, Germany. He was skilled at making buttons from animal horn and hooves, bone, and sea shells. Mr. Boepple had heard about the fresh-water mussels in the Mississippi River. He was convinced there was a fortune to be earned in making buttons from these shells, with their pearl-like inside coating.

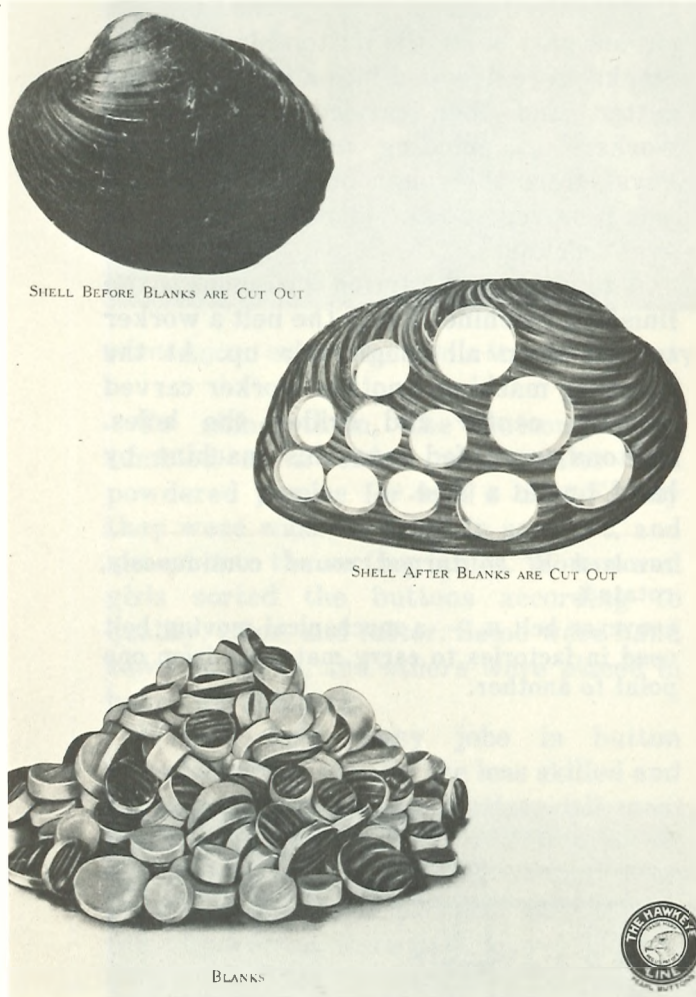
In his spare time Mr. Boepple built a foot-powered machine, based on what he had learned in Germany. He gathered shells from the river, cut buttons, polished, and sold them.

A few people became interested enough to put up the money for starting a button factory. In 1891 Boepple Button Company opened a one room factory in Muscatine, where the supply of mussels was good. By the next year the company was doing so well that it moved to a larger building, where it ran for four years.

As button manufacturing caught on in Muscatine, business just seemed to slip away from Mr. Boepple. Other people took his ideas and made money with them. The craftsman from Hamburg was a good button maker, but not such a good businessman, and his company failed.

Meanwhile John Boepple's method for making buttons had been taken up in cities all along the Mississippi. Within ten years the Pearl City (Muscatine) became the largest manufacturer of fresh-water pearl buttons in the world. In 1898 Iowa turned out one hundred thirty-eight million, six hundred fifteen thousand, six hundred ninety-six buttons!

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SHELL BEFORE BLANKS ARE CUT OUT

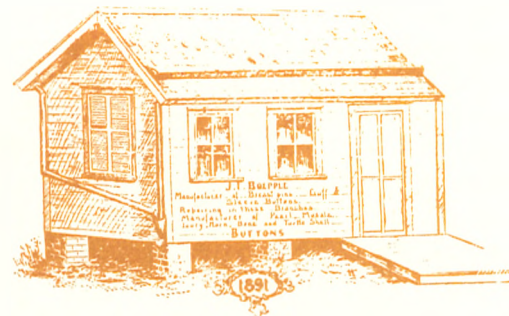
SHELL AFTER BLANKS ARE CUT OUT

BLANKS

In 1888 John Boepple, already 32 years old, set sail for the New World with his idea. But when he arrived he found no one willing to loan him money to start such a business. So he took work as a farm hand in Iowa.

mussel n. — a soft-bodied animal covered by a hinged double shell and found in fresh or salt water. A clam.

Division of the State Historical Society



John F. Boepple's first button factory. The sign painted on the side read:

J. F. Boepple
 Manufacture of Breast pins Cuff &
 Sleeve Buttons
 Repairing in these branches
 Manufacturers of Pearl Mussel
 Ivory, Horn, Bone and Turtle Shell
 BUTTONS



A pile of discarded mussel shells.

Even a fairly simple kind of manufacturing, like button making, creates many jobs. Clam fishermen in small boats dragged sets of hooks along the river bottom where, as the *History of Muscatine County* (1912) tells us:

It is the habit of the clam to lie with his mouth open upstream, to catch little morsels of food that are carried down . . . and when one of those wire hooks touches his tender lips, the wretched fool grabs it, closes his shell upon it and holds on

The fishermen then brought in their catch, and the clams were thrown into big pots of boiling water to kill them. Men and

women pried the loosened shells apart and cleaned out the whitish meat.

From the river bank, wagoners hauled the shells to the factory, where they were soaked in water for about a week. This softened the shells so that they didn't break so easily while being sawed.

The cutters were the highest paid workers in the button factory, and were always men. It was a skilled job, because a good cutter got as many button blanks out of each shell as possible. He used a saw that revolved and cut a hole in the shell, the cut-out part being the button blank. These blanks were dropped into a bucket by the cutter, and then carried to a line of workers at grinding machines (usually boys). Here the rough outer side of shell was removed and the blanks ground to an even thickness.

A conveyer belt carried the blanks to the finishing machine. Along the belt a worker turned them all rough side up. At the finishing machine, another worker carved out the center and drilled the holes. Buttons were fed into this machine by hand, one at a time.

revolved *v.* — turned round continuously, rotated.

conveyor belt *n.* — a mechanical moving belt used in factories to carry materials from one point to another.



Fishermen caught mussels by dragging the river bottom with a bar filled with crowfoot hooks. Here a man removes the mussels he has caught.



Women grind button blanks in a Muscatine factory.

To shine them, the buttons were tumbled in a churn with water and powdered pumice for half a day. Finally they were washed, dried in sawdust, and moved onto the sorting tables. Women and girls sorted the buttons according to quality, color, and luster. Some were hand sewn on cards, and others were placed in boxes for shipping.

Women held many jobs in button manufacturing, usually the less skilled and lower paying positions. Cutters (all men) made an average of \$8 to \$10 a week, considered fairly good pay at the time. Facers, drillers, and packers, all positions filled by women, were paid between \$4 and \$6 a week. This was also good wages, but the women could not hope to move up to the best paying job of a cutter. Boys and girls under sixteen also found work in the button factories in other positions.

When Mr. Boepple opened his button factory in 1891, there were thousands of mussels bedded in the mud at the bottom

of the Mississippi. The factories cut, polished, and sold pearl buttons as fast as the fishermen could bring in the shells. By 1900 there were very few clams left "lying with (their) mouths open upstream" to snap up the hooks.

But clam fishermen found new, untouched beds in the Arkansas, Ohio, and Tennessee Rivers. The shells were shipped by barge or rail to Muscatine, and the button business kept going. But eventually button makers would turn to plastics, which were cheaper and easier to work with. They would not need the Mississippi or any other river nearby, and button making would all but disappear from Iowa.

When the clam beds of the Mississippi had been fished out, John Boepple went to work for the federal government to help solve the problem of the disappearing fresh-water mussel. Until he died in 1912, he worked at the clam and mussel hatchery near Fairport, as a shell expert. The hatchery hoped to produce enough mussels to restock the river beds. Unfortunately, rivers became polluted with industrial waste and city sewage. The mussel cannot live in the polluted water.

pumice *n.* — a volcanic stone used in a powdered form for polishing.

From Hand Churn to Creamery

“Come butter come
Come butter come
Peter standing at the gate
Waiting for a butter cake
Come butter come”

traditional chant

“Come butter come,” the pioneer woman would chant in a low voice as she pumped the dasher stick up and down in the wooden churn. “Peter standing at the gate . . .” Inside the churn, butter is gathering, thick and lumpy, to the top of the white splashing cream. “Waiting for a butter cake . . .” If she stops to rest her aching muscles, the butter may be ruined. She must keep the motion of her arm constant for thirty to forty minutes. “Come butter come.” Then, if all has gone right, the butter will be lifted out on the dasher, drained, shaped into short, fat rolls, and wrapped in muslin for storing.

For pioneers in Iowa as elsewhere, homemade butter was a good trade item.

muslin *n.* — a plain cotton cloth.



The Growth of Industrial Art

This drawing shows how the dasher is pushed up and down in a churn. Pans of milk sit in a cool place while the cream rises to the top.

Even a couple of milk cows produced more butter than the family could use. The extra pounds could be traded at the general store for sugar or coffee. What butter the storekeeper couldn't sell to townspeople, he in turn handed over to a butter packer, who shipped it to larger cities.

When butter arrived at the packer's, it was already several days old. The packer reworked (mixed together) all the butter he received, and repacked it in wooden tubs weighing 10 to 60 pounds. These tubs travelled, without refrigeration, by wagon and boat to eastern cities.

It was little wonder that buyers in New York complained Iowa butter had a “wild” flavor and was of poor quality! Even when the butter began to arrive in refrigerated railroad cars in 1868, prejudiced easterners still turned up their noses.

In 1872 John Stewart, a successful butter buyer, brought his knowledge of the business to Iowa. He built a creamery in Manchester and set out to make it as good as any in the East. Matthew Van Dusen, the butter maker Stewart hired, had studied the methods used in the best

prejudiced *adj.* — having a strong feeling for or against something, often an opinion held without much real knowledge on the subject.
creamery *n.* — a place where cream is separated from milk, and butter is made.

Northern Iowa Butter and Cheese Association

creameries. He had farmers deliver fresh milk to the creamery doors. He was careful to keep the milk cool so it didn't sour, ruining the taste of the butter. Mr. Van Dusen used the long-used method of pouring the milk into round shallow pans to allow the cream to rise. Then the thick cream was skimmed off and poured into horse-powered churns, which could produce 100 pounds of butter daily. Mr. Stewart sold the left over milk to farmers, who fed it to their calves and pigs.

Only four years later, Stewart's Iowa butter took a gold medal in competition at the world famous Centennial Exposition in Philadelphia. People in New York and Chicago were convinced that western butter was of "gold medal quality." Soon creameries like John Stewart's appeared all over Iowa.

In 1882 the first mechanical cream separator was brought to Iowa. This invention replaced the slow method of letting milk sit until the cream rose to the top. Larger amounts of milk could be separated by using this method. Iowa

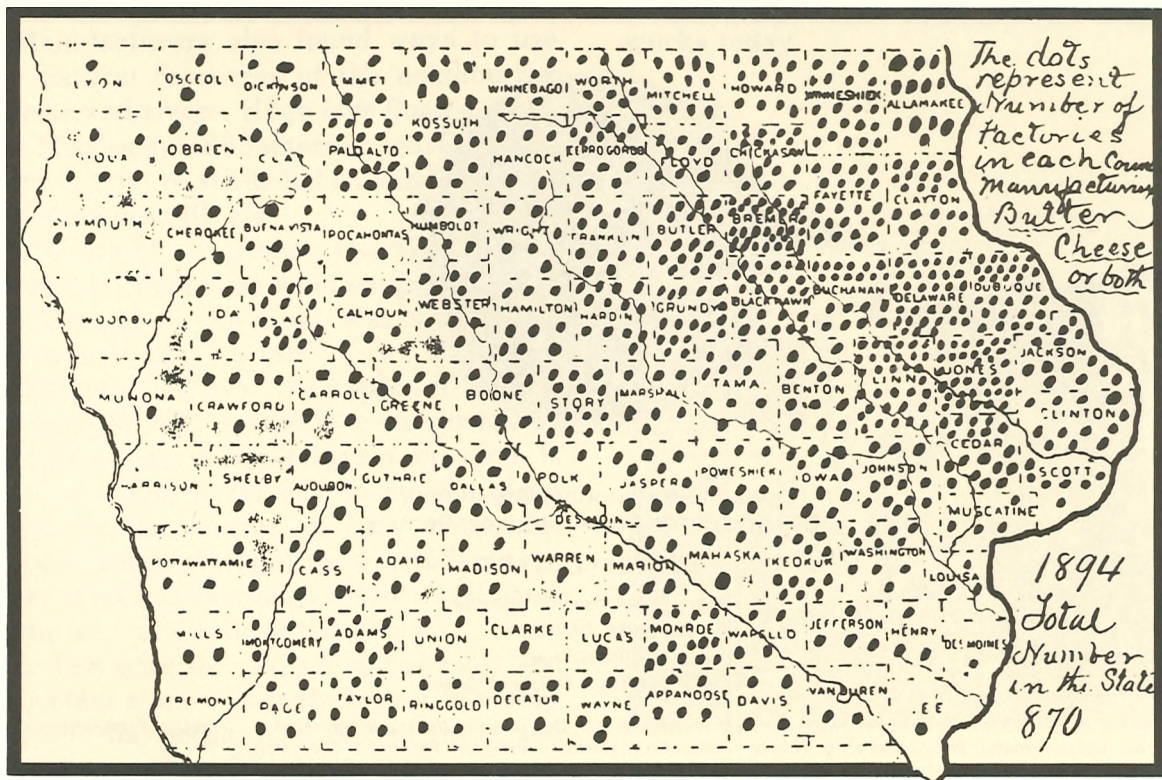
farmers increased their herds of milk cows, confident that the creameries would buy as much as they produced. Butter took an important place in Iowa's manufacturing.

By 1879 Iowa, along with Minnesota and Wisconsin, was shipping tons of creamery butter by refrigerated railroad cars to the East, where it stocked the ice boxes of city families.

Henry Wallace, an Iowan who spoke to and for the farmers of the state, said in a speech made in 1880:

... (T)he bondage of the wife to the churn must be broken. Hence the unusual favor with which the creamery has met in the State, wherever railroads have rendered creameries possible. The creamery takes away half the drudgery of the farmer's wife. What this drudgery has been let the women of Iowa tell. But whilst it removes the drudgery it retains . . . the monthly income — not in store accounts but in creamery checks — good as gold.

ice box *n.* a box cooled by ice in which food is kept to prevent it from spoiling.



An 1894 drawing made for a report to the Iowa Agriculture Department.

ONE STEP FURTHER . . .

1. Can you find out what kinds of trees grow in Iowa today? (Try the library.)
2. Find out what steps the lumber industry takes now to keep its supply of trees from running out. (The library again, or a good encyclopedia.)
3. What are some methods farmers use to keep the soil from getting worn out? What are some methods of making tired soil produce again? (The library, or your local County Extension Service for more complete information.)
4. Where do Iowans get the flour for their bread now? (Check the front of a bag of flour.)
5. Button making created jobs for many people in Muscatine. What kind of manufacturing is done in your area? Is there any one kind that employs a large number of people? (Your local Chamber of Commerce is the best place to go for this.)
6. With your teacher's help, find out the kinds of food Americans had to eat before refrigerator railroad cars came into use. (Keep in mind what foods must be kept in the refrigerator — eggs, meat, milk, and so on.)
7. Discuss with your classmates what kind of "civilized comforts" you enjoy today. Compare them to what your parents had, and what the pioneers had to do without. What would you have missed most?
8. Using what you have read, explain: railroad boom, razorback, water wheel, "jinted" corn, wheat germ.
9. For further investigation, look up and report on: steam engine, railroads, refrigeration.



Iowa State Historical Department
Division of the State Historical Society

EDITORIAL STAFF

Margaret Atherton Bonney
Alan M. Schroder
William Silag
Peter T. Harstad, Editor-in-Chief

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