

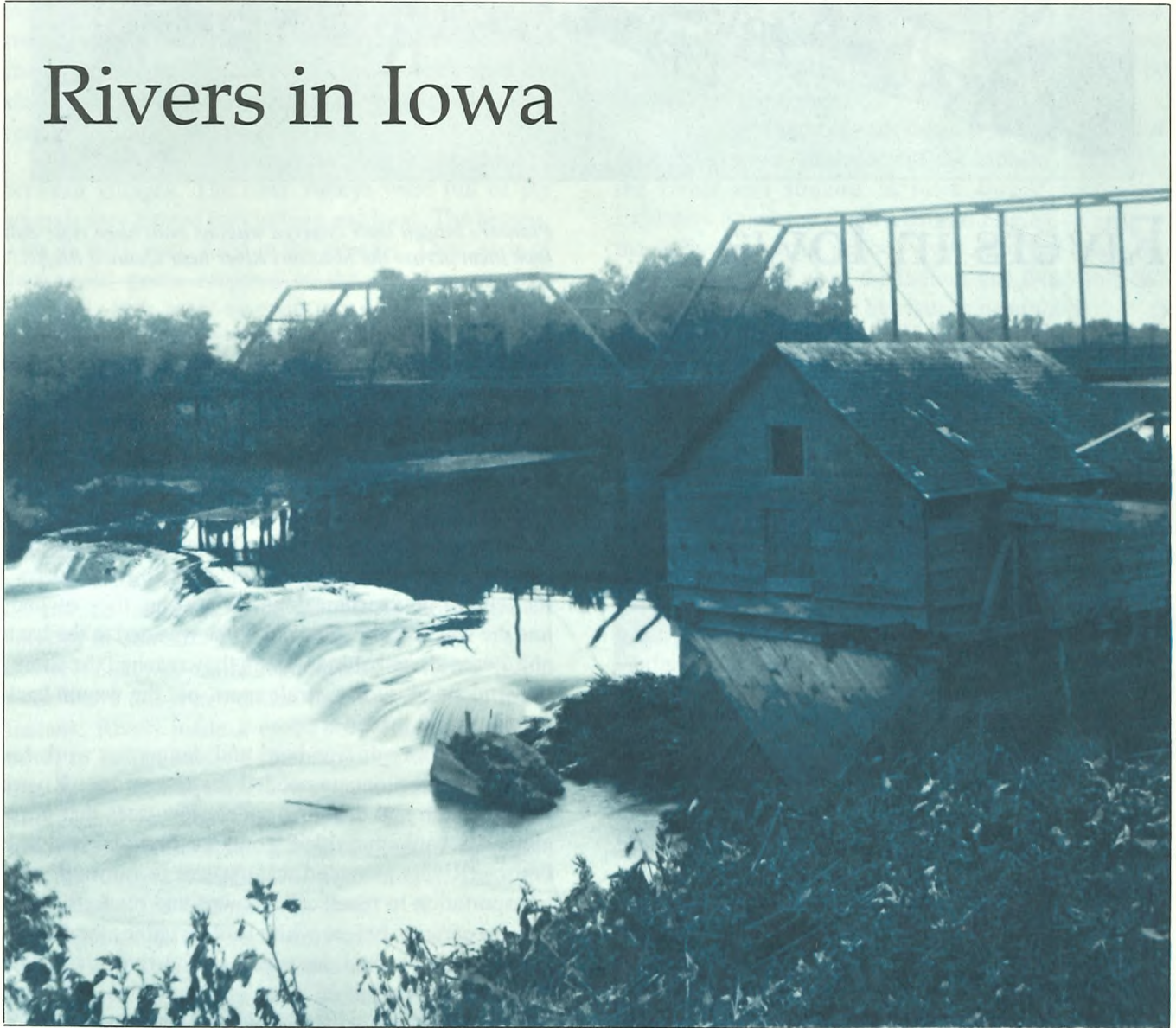
# THE Goldfinch

Volume 6, Number 4

The Iowa History Magazine for Young People

April 1985

## Rivers in Iowa





## Rivers in Iowa

*Pioneers loaded their covered wagons onto huge rafts that took them across the Missouri River near Council Bluffs.*

**I**N THE SPRING of 1837 the Duffield family was moving to Iowa. Everything they owned was packed in a covered wagon pulled by two oxen. When they reached the wide Mississippi River, many other pioneer families were already lined up on the Illinois side. The Duffields waited until it was finally their turn to ride the ferry across the river.

The oxen pulled the wagon onto the flatboat that was the ferry. The eight Duffield children hopped aboard. The men rowed hard, but the boat still drifted downstream in the current. When it reached the Iowa side, the men jumped ashore and pulled the flatboat back up to the landing. Crossing the river had taken almost all day.

“Going to the Ioway settlement?” someone asked.

“Yes; where might the trail be?” Mr. Duffield replied.

“Leading out between the big bluffs, there,” the man answered, pointing west.

The Duffields followed the trail. They passed near the camp of Chief Keokuk. The Indians were busy making maple syrup from the trees that grew along the streams.

Next the Duffields had to cross the Des Moines River. But there was no ferry, and of course, no bridge. The water was too high and the current too swift to *ford*

it (letting the oxen swim across, pulling the wagon).

From across the river several Indians watched the Duffields. Mr. Duffield borrowed two large canoes from them. He lashed the canoes together and tied rough boards across the top. Then he took everything out of the covered wagon and loaded it onto the raft. He took the wagon apart and loaded the pieces.

Everyone climbed on. The Indians helped paddle. Slowly the raft crossed the river, carrying the Indians, the ten Duffields, their dogs, everything they owned, and the wagon parts. The old horse was tied to the back and swam along behind. When they reached the shore, they unloaded, took the raft apart, put the wagon back together, and loaded it up.

Crossing a river was hard and dangerous work for pioneers. But pioneers needed the rivers, too. Rivers provided fish and drinking water. The trees that grew along the banks provided wood for fuel and building houses. Rivers provided waterpower to run mills and transportation to reach other towns and markets.

For centuries before white settlers came, the Native American tribes had depended on the rivers, too, for food and transportation.

This *Goldfinch* will take a journey down some of Iowa’s rivers and streams. Keep track of our river travels on the map on page 12. □

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# The first Iowans to use the rivers

**T**HE FIRST Native Americans (or Indians) came to Iowa by following the river valleys. Many of the things they needed to live could be found by the rivers and streams. A village by a stream always had water for cooking and drinking. Natives used the trees along the shores for building shelters and canoes. They used the stone and clay found along some river banks to make ceremonial pipes and paint.

Indians traveled on the rivers on long hunting trips or between villages. The river valleys were full of the animals they hunted for clothing and food. The beaver, with its thick coat, lived in the streams. Thousands of ducks and geese stopped at the marshes as they migrated. Fish grew to great size in the rivers, and freshwater clams lay on the muddy bottoms. Deer and buffalo came to the water's edge to drink.

Although the river valleys were good hunting places, the Indians took only what they needed to survive. Indians believed that all parts of nature had souls or spirits, and people had to cooperate with those spirits. Indians told myths and legends about the rivers and streams. Some tribes buried their dead near the rivers. On the bluffs along the Mississippi and Turkey rivers, the Indians made the burial mounds in the shapes (or *effigies*) of animals.

The Indian way of life depended on the rivers. But in some ways the rivers ended that way of life for the Indians. Rivers made it easier for white explorers to travel to Indian lands. Some explorers were friendly, like Julien Dubuque. He was searching along the Mississippi for deposits of lead. The Mesquakies welcomed him and let him mine the lead. Nearby, on Catfish Creek, Julien Dubuque began the first permanent white settlement in Iowa.

Rivers brought European and American fur traders to the Indians. Trappers and *voyageurs* paddled canoes full of furs downriver to the traders. Boats carried the iron tools, blankets, and guns that the Indians accepted in trade. The fur trade brought the Indians things they needed and wanted. But it also changed their way of life.

Europeans and Americans used rivers in their struggle to control the land. They built forts along the rivers. They talked tribes into giving up sections of

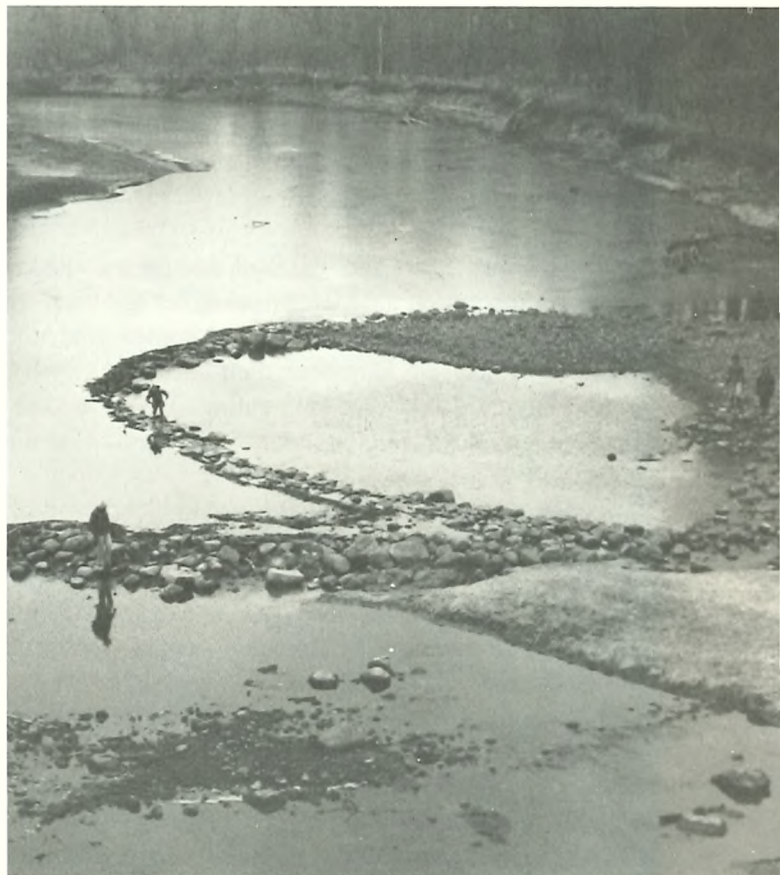
land. Rivers were often the boundaries of the sections. The tribes were forced to move beyond the river. They were told they could never cross the boundary again.

Thousands of settlers poured into the land that had been the Indians' home. Some came in covered wagons pulled by oxen. Some settlers came in steamboats or flatboats on the rivers.

The rivers brought change to the Indians and the land now called Iowa. But many of the Indians' names for the rivers and streams in Iowa stayed the same. Explorers translated the words into English or spelled the Indian words in various ways. But the names of rivers still remind us of the Indians that lived here and the explorers who came by river to meet them. □

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*The Mesquakie tribe built this fish trap dam on the Iowa River near Homestead. The low stone walls trapped the fish as they swam into the shallow places.*



# A matching game of river names

Can you match the Iowa river names with the meanings behind those names?

Name	Meaning
1. Panther Creek	A. Natives made paint from the blue soil along its shore.
2. Maquoketa River	B. Name of a tribe that lived in the area.
3. Floyd River	C. A member of the cat family was killed nearby.
4. Mississippi River	D. Native word for <i>snake</i> .
5. Skunk River	E. Lewis and Clark named it after Charles Floyd, who died on their expedition.
6. Medicine River	F. The father's name was Daniel. The son explored Iowa in 1835 with Albert Lea.
7. Nodaway River	G. Translation of <i>chicaqua</i> , a native word for a smelly, striped animal.
8. Missouri River	H. Means <i>spiritual power</i> to Native Americans.
9. Boone River	I. Native word for <i>the great river</i> .
10. Blue Earth River	J. <i>Makwok</i> means <i>bear</i> . <i>Eteg</i> means <i>there are</i> . Say the words together.

The answers are on the back page of the *Goldfinch*.

## The Wapsipinicon: A love story or a swan's potato?

NO ONE is sure where certain Iowa rivers got their names. Some people believe the following legend about the Wapsipinicon River (but not all legends are true stories). Other people think the name came from a plant. Here are both explanations.

**The legend:** Years ago, the Sauk and the Mesquakie tribes lived between the Mississippi River and what we now call the Wapsipinicon River. Another tribe, the Dakotah Sioux, had long been their enemy.

One day the Sauk were out hunting. They found the body of one of their young men, Swift Deer. Had the Sioux killed him?

The leader Black Wing sent his son Pinnekon and six others to look for clues. When they returned, the Sauk decided the Sioux were to blame. But the Sauk needed help attacking the Sioux. They asked their friend Good Heart if his tribe, the Mesquakies, would fight with them. Good Heart agreed.

Together, the Sauk and Mesquakie warriors won the battle against the Sioux. When it was over, Good Heart invited the Sauk warriors to his village. Black Wing sent his son, Pinnekon.

In Good Heart's village, Pinnekon met the chief's

daughter, Wapsie. Pinnekon and Wapsie fell in love. Good Heart agreed that the two could be married.

Everyone seemed glad about the coming wedding except a Mesquakie warrior named Fleet Foot. He had wanted to marry Wapsie himself.

One day Wapsie and Pinnekon were canoeing on the river. Suddenly an arrow shot through Pinnekon's chest. Wapsie screamed and jumped up to help him. The canoe overturned. Wapsie and Pinnekon sank below the water.

Was it the jealous Fleet Foot who shot the arrow? No one knows. But ever since the day when the two lovers died, the river has carried their names joined together—Wapsipinicon.

**The plant:** The Wapsipinicon was named after the *arrowhead plant* that grows along streams. The Indians ate the white root of the plant. *Waubessa* was a native word for *white* or *swan-like*. *Pinne-ac* meant a root like a potato. Over the years the spelling changed from *waubessa pinne-ac* to Wapsipinicon.

Which story do you think is true? What do the stories tell us about how Indians lived? □

# “I can’t paddle now—I’m writing”

**M**OSQUITOES bothered early explorers in Iowa as much as they bother us on camping trips. How do we know? In their daily journals explorers wrote about mosquitoes. They also wrote about the Indian tribes they met and the unusual plants and animals they saw. Here is what several explorers wrote as they traveled on Iowa rivers. (Spelling and punctuation have been changed here to match the way we write today.)

**JOLIET AND MARQUETTE** were Frenchmen who explored the Mississippi River in 1673. As they canoed along the border of present-day Iowa, Marquette wrote: *“From time to time, we came upon monstrous fish, one of which struck our canoe with such violence that I thought that it was a great tree, about to break the canoe to pieces. . . . Finally, on the 25th of June, we perceived on the water’s edge some tracks of men, and a narrow and somewhat beaten path leading to a fine prairie.”*

Joliet and Marquette followed the path to three Indian villages. The natives welcomed them. They smoked the peace pipe together and shared a feast.

**ZEBULON PIKE** traveled up the Mississippi in 1805. He was searching for the river’s source and for places to build forts. Near present-day Keokuk he came to a 12-mile stretch of rough water called the Des Moines Rapids. Getting through the rocks and shallow water was difficult, especially for heavy boats. Early in the morning Pike started up the rapids. Then two white men and several Indians arrived to help: *“They came down to give me assistance up the rapids, and took out 13 of my heaviest barrels, and put two of their men in the barge, to pilot us up.”* [Crossing the rapids took the entire day. A week later (near Davenport) travel was still slow.] *“Wind so hard ahead we are obliged to tow the boat all day.”*

**LEWIS AND CLARK** started exploring the huge Louisiana Purchase in 1804. Traveling up the Missouri River was dangerous. The river was full of *snags*. (Snags were dead trees sticking up from the river bottom.) The current was fast and tricky. In places the water was shallow. Boats could get caught on the sandbars or ripped open by the hidden snags. As they canoed between Nebraska and Iowa, William Clark wrote: *“Passed through between snags. . . . One side of the river is a sand point, the other a bend. The banks [are]*

*washing away and trees falling in constantly for one mile.”*

Lewis and Clark sent messengers to Indian villages to invite chiefs to meet them and hold *council*. (Settlers later named the city of Council Bluffs after the bluffs where the meeting was held.) Clark wrote:

*“The party returned and informed us that they could not find the Indians, nor any fresh sign. Those people have not returned from their buffalo hunt. Those people have no houses nor corn or anything more than the graves of their ancestors to attach them to the old village.”*

Another man in the group, Charles Floyd, was very sick, but he still wrote in his journal:

*“Captain Lewis and 12 of his men went to the creek a’fishing. Caught 709 fish of different kinds.”*

Four days later Floyd died. He was buried on the bluffs above the Missouri River. Lewis and Clark named a nearby river after him.

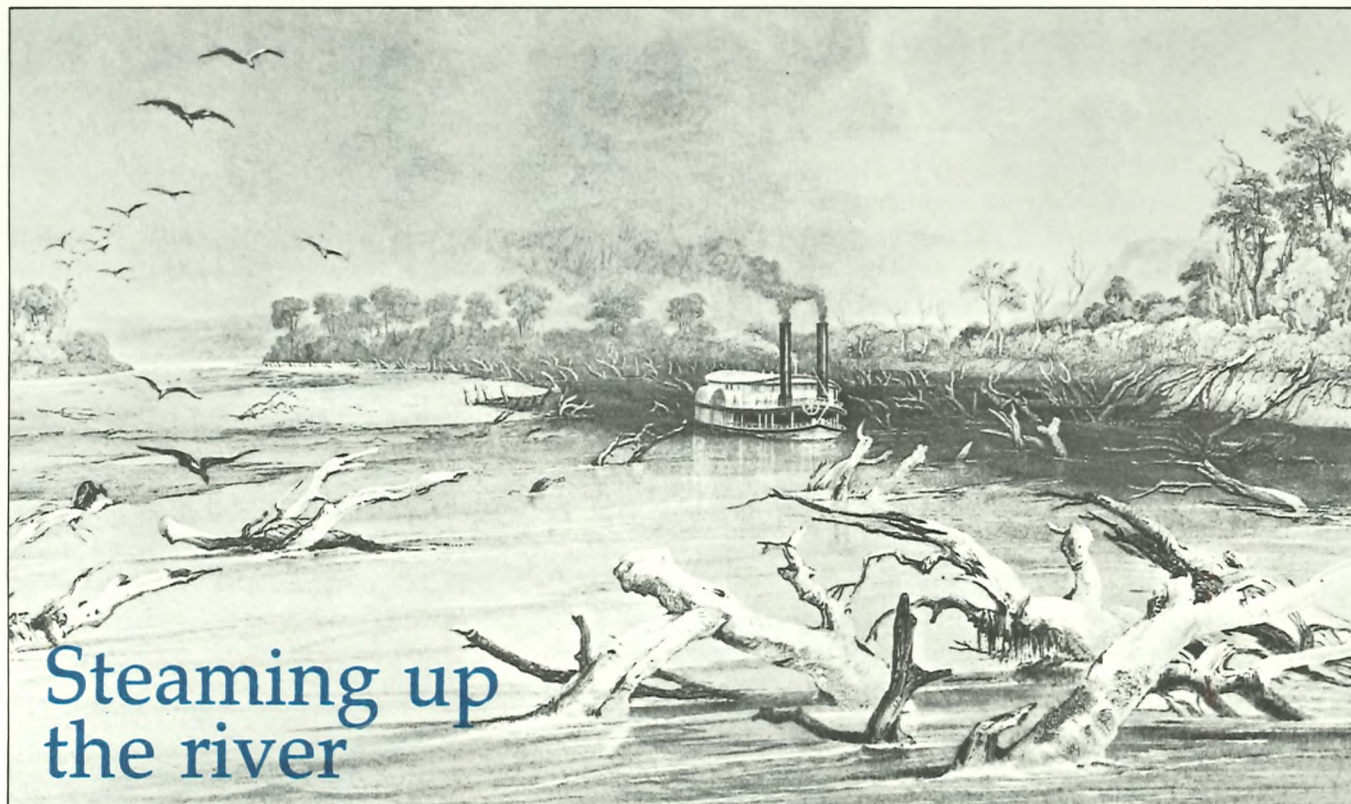
**MAXIMILIAN** was a German prince who traveled up the Missouri River in 1833. He took along a talented artist named Karl Bodmer. Bodmer’s paintings and Maximilian’s journals recorded many details about the western United States. This is how Prince Maximilian described their travels along Iowa:

May 1: *“About noon a white catfish was caught. . . . We soon took another weighing 65 pounds, and a third weighing 100 pounds.”*

May 4: *“The noise and smoke of our steamer frightened all living creatures; geese and ducks flew off in all directions.”*

May 5: *“At twelve at noon, we ran aground, but happily sustained no damage, at a dangerous place, where the left bank was blocked up with many snags, and which is called the ‘Devil’s Race-ground.’”*

**ALBERT LEA** explored central Iowa along the Des Moines River in 1835. Later he described the area: *“The grass and streams were beautiful, and strawberries so abundant as to make the whole track red for miles together. . . . Not far from the head of Skunk (Chicaqua) River, in the midst of an ocean of fine native grass, such as only Iowa produces, we encountered a small herd of buffalo. . . . Meat was plentiful in camp that night. . . . [Another night] after my tent was pitched we killed four rattlesnakes within it, and the next day I had a bath in a pool, occupied by mosquitoes so large that I pressed one in my journal.”*



*Dead trees wait to snag steamboats heading up the shallow Missouri River. Karl Bodmer drew this scene as he explored the river with Prince Maximilian in 1833.*

**T**HE CREW threw more wood on the fire. The steamboat needed a lot of steampower to pull away from the shore. The giant paddle wheel started turning faster. As the crew made sure the cargo was packed tightly, the captain blew the whistle. On the decks the passengers cheered as the boat headed up the river.

Traveling by steamboat on the Missouri and Mississippi was common in the 1800s. The huge boats could carry many passengers and enormous amounts of freight.

As early as the 1820s steamboats on the Mississippi carried lead from Julien Dubuque's lead mines near Dubuque. During the Civil War, steamboats carried Iowa soldiers, weapons, and food supplies to army posts. In later years, the steamboats pushed huge rafts of logs from the forests of Wisconsin and Minnesota to sawmills farther down the river.

The steamboats were busy on the Missouri River, too. When gold was discovered in California and Colorado around 1850, steamboats took gold miners and supplies out west. Steamboats carried plows and seed to new farmers settling in Nebraska in the 1850s and 1860s. During the gold rush to Montana in the 1860s, steamboats traveled far up the Missouri to early mining towns. But steamboats were not the smoothest

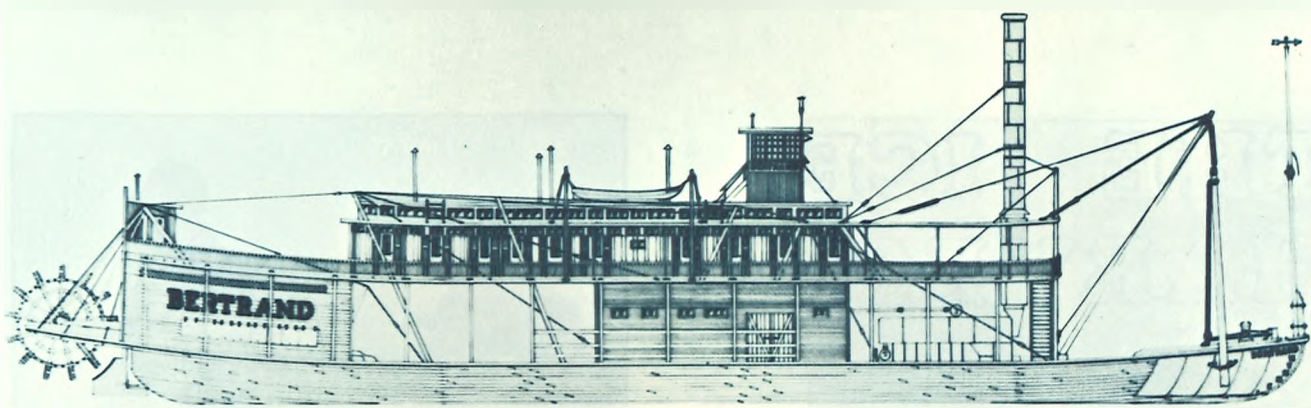
or safest way to travel, especially on the Missouri.

The Missouri was a treacherous river. Dead trees fell into the river and got stuck on the bottom. Sometimes these *snags* stuck out of the water. Then the captain did his best to steer around the dead trees. But sometimes they were hidden underwater. The jagged limbs could rip open the bottom of a steamboat.

The current on the Missouri was fast, and the channel (or deepest part of the river) shifted from place to place. Sometimes captains accidentally ran their boats up onto the sandbars. Bad storms hit the river in the summer. Hundreds of steamboats were wrecked on the Missouri.

The Mississippi was not as treacherous. The current was calmer and the channel was deeper. But terrible accidents happened there, too. Steamboats collided or caught on fire. Sometimes the boilers exploded. Passengers were blown apart or scalded by the hot water.

When railroads started carrying freight across the country, the days of the steamboats were over. Barges still carry some goods on the river, but trains and trucks carry most of the freight in America. The few steamboats still gliding along the rivers today are usually carrying tourists on short trips. □



Department of the Interior, U.S. Fish and Wildlife Service

## The tricky Missouri

ON APRIL FOOL'S Day in 1865, the Missouri River played a trick on a steamboat named the *Bertrand*. The boat had left St. Louis two weeks earlier. It was headed toward the Montana Territory, where gold had been discovered.

About 25 miles north of Council Bluffs and Omaha there was a big U-shaped bend in the river. The bend was thick with snags of dead trees. Somewhere along that bend the *Bertrand* hit a snag. Within five minutes the boat sank. All the passengers were saved, but thousands of dollars worth of cargo was lost.

Over the years the shifting sands and the mud in the river buried the *Bertrand*. The course of the Missouri River changed, too. No one could be quite sure where the steamboat had sunk. A hundred years went by.

Then around 1968, two men in Omaha decided they would search for the *Bertrand*. They read old newspaper stories about the accident. They looked at old maps and tried to find where the river had flowed a hundred years earlier. Then they found evidence of a wooden boat buried under 25 feet of dirt, clay, and logs. Could it be the *Bertrand*?

Digging down to the boat was an enormous job. As they dug the huge pit, groundwater filled the hole (as it does when you dig holes in the sand at the beach). Scuba divers tried to reach the boat, but the water was too muddy to see much. The water and mud had to be pumped out.

Finally they reached the boat's storage compartments. They lifted out a crate labeled "Bertrand." Then they found a chalk board with the name "Fannie" carved around the outside. Fannie Campbell had been a little girl on the *Bertrand*. The size of the boat matched the size of the *Bertrand*. Everyone was sure that this was the steamboat that sank on April Fool's Day.

The next summer archaeologists set to work digging up the cargo. Most of it was covered with a hard blue

clay. The archaeologists had to wash or chip off the clay without damaging the items. But the clay had also preserved the cargo for a century. If the cargo had been exposed to air, much of it would have rotted away.

What did the archaeologists find? Just about everything! There were barrels of flour and nuts, jars of honey, catsup, and mustard, and cans of pineapples and powdered lemonade. Bottles of alcohol and patent medicines still had paper labels on them. Rolls of silk cloth, shirts, coats, and 3,000 shoes and boots were dug up. There were clocks and combs, lamps and mirrors, candy dishes and waffle irons. Crates held axes and hammers, doorknobs and washboards, plows and sleighbells. There were pick axes and blasting powder for gold miners. The artifacts were clues to what miners and settlers used in 1865.

Today you can see the artifacts and drawings of the *Bertrand* on display at the DeSoto National Wildlife Refuge. Find out about the animals that live at the refuge on page 15. □



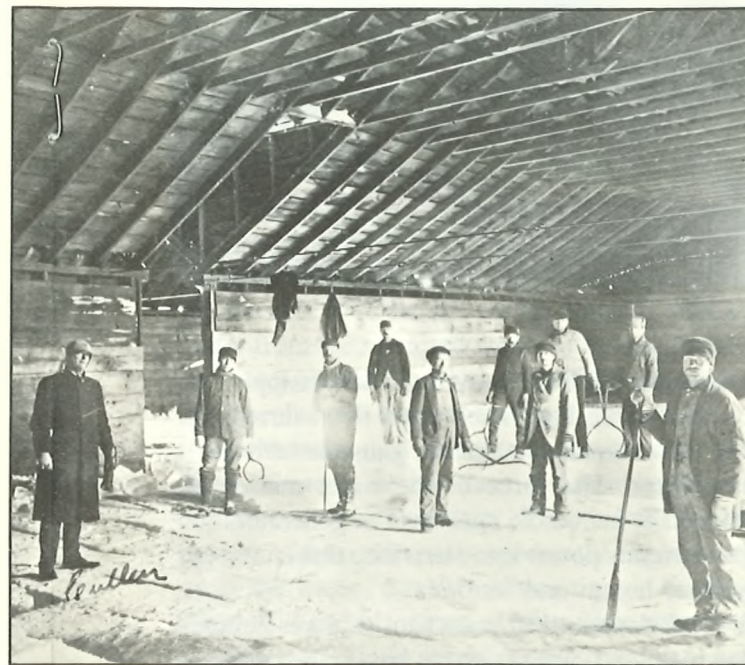
Woodmen of the World Magazine, Omaha, Nebraska

It took months to dig down to the boat. Compare its size with the size of the crane in the upper right corner of this picture.

# THE ICE HARVEST

1

When winter came, the lakes and rivers of Iowa froze over, and most boating and fishing ended for the year. But in January the ice harvest began. Before people had electric refrigerators, they used blocks of ice in iceboxes to keep their food cold. The blocks of ice came from the rivers and lakes. The best spots in rivers for cutting ice were just above dams. There the water was deep and still, and the ice froze to the right thickness—about ten inches. Ice harvesters cut the blocks with big saws. At first they used handsaws, but later they used horses or motors to move larger saws.



Roger Nette

2

The blocks of ice weighed two or three hundred pounds each. The ice harvesters pushed the ice up chutes to a wagon that carried them to the ice house. The ice house was a big storage building near the shore of the lake or river. Inside, workers packed the ice in sawdust to keep it frozen. Most towns had at least one ice company that would cut, store, and sell the ice.



E.M. Clark Collection, ISHD



Library of Congress

3

The ice stayed frozen all year round in the ice house. Hotels, railroads, and meat-packing plants bought ice from the company. Families ordered ice for their iceboxes from the ice man. The family would put a card in their front window that said how much ice they needed. Then the ice man delivered it in his ice wagon. As the ice man drove through town, children followed the wagon. They thought it was great fun to get chips of ice and suck on them on hot summer days.



E.M. Clark Collection, ISHD



# Water turns the wheels

**W**ATERPOWER does a lot of work for Iowans. A century ago, there were about one thousand mills along the streams and rivers of the state. Even small streams had enough power to run a mill.

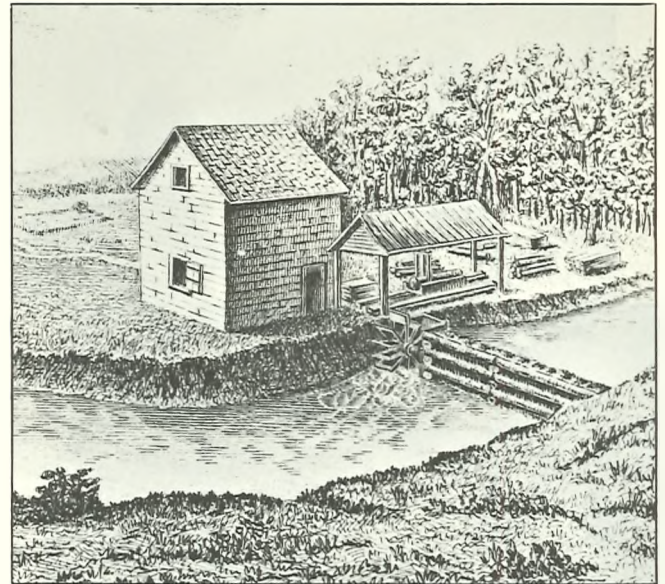
The Pottawattamie Mill (shown on the right) was built in the 1840s on Mosquito Creek, near Council Bluffs. The dam slowed the current, forcing some of it to flow against the huge, wooden waterwheel. The turning wheel provided energy to run the saw (under the small roof). The saw cut rough logs into boards for building houses, stores, and furniture.

The turning waterwheel also powered the gristmill in the larger building, where corn was ground into meal. Gristmills also ground wheat into flour.

Small streams like Mosquito Creek sometimes ran low or dry. Then there was not enough waterpower to run the mill. People could not get their grain ground or logs sawed until the water level rose. Too much water caused problems, too. Spring floods often washed away dams and damaged the waterwheels.

Over the years, steam engines replaced waterwheels. Inventors found new ways to grind grain. Farmers grew less wheat and more corn. No one needed the mills on Iowa's small streams. Today most of the mills are gone.

But the rivers still turn wheels—in the five hydroelectric plants built on Iowa rivers. The pictures



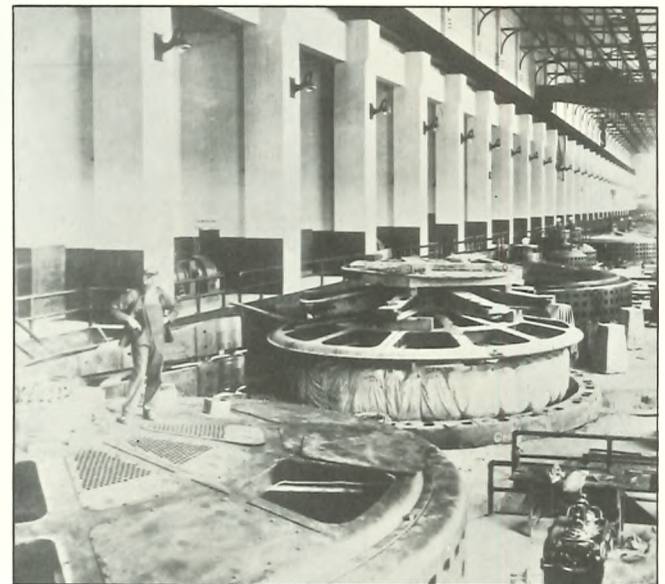
below show the Keokuk dam on the Mississippi.

The dam controls how much water flows through it. Some of the water flows against giant metal wheels called *turbines*. The force of the water makes the turbines spin at incredible speeds. The generators (on the right) turn this power into electricity that is sent out over wires to homes and factories.

Near Keokuk about 180 years ago, explorer Zebulon Pike had to unload cargo from his boat so he could get through the rough and shallow waters called the Des Moines Rapids. The rapids were always a problem for river traffic. Because the dam at Keokuk raised the water level, the treacherous rapids were gone. Boats and barges travel up and down the river by passing through a special place at the dam called a lock. □



Anshutz Collection, ISHD



Anshutz Collection, ISHD

## Will was a river man

**W**ILL CHANDLER loved the river and he loved machines. His hometown was Waverly, Iowa, on the Red Cedar River. Will used waterpower from the river to make his machines work. He used his machines to help Waverly use the river.

Waverly was a growing town in the late 1890s. People needed lumber to build new houses and businesses. Will cut timber from the Big Woods in the next county. Before there were dams on the Cedar River, Will floated the logs straight down the river to his sawmill in Waverly. At the sawmill Will pumped water from the river and heated it in huge boilers. The hot water turned into steam, and the steam powered the big circular saw that cut the logs into boards.

As the town grew, it depended on the river more and more. Soon it had a dam and powerplant to turn waterpower into electricity. People built factories on the river, and used water to power the engines and carry away the waste. By 1914 it was time to build a better dam. Will and his steam engines were there to help.

Will and his workers used dynamite to blast limestone rock loose from the cliffs along the Cedar River. A rock-crushing machine run by steampower crushed the limestone into gravel and powder to make concrete for the dam.

Will had other river jobs, too. He caught fish to eat and to sell in town. He caught minnows and river clams to sell for bait.

Sometimes when Will opened the clam shells he found beautiful freshwater pearls. He saved the pearls but a button factory might have bought the shells. At button factories, workers cut circles out of the shells, and punched holes in them to make mother-of-pearl buttons.

Will taught his children all about the river. They enjoyed swimming, rowing, and fishing. His daughter Maybelle especially liked to collect the fossils and arrowheads she found along the river.

After Will's wife died, Will decided to live in his river cabin instead of in town. His children and grandchildren visited him there, and he could fish from his front yard. He died in 1949. The place where Will had his sawmill is now a city park. The dam made of the limestone he crushed now keeps part of the river deep for boating and waterskiing. His last cabin still stands by the river he loved. □

## Are you a family detective?

**C**AN YOU SOLVE "The Mystery of the Missing Family History"?

Your family has a history. It may be hiding in attics, in china cupboards, and in the memories of your relatives. Are you the detective who can find it?

The story about Will Chandler is a *family history*. A family history is the true story of your family and how they lived. Will's story might have stayed a mystery. But Maybelle had saved a lot of clues.

Maybelle had kept her father's tools. She had his letters and photographs. She had the fossils and arrowheads found along the river and the pearls from the clams.

Maybelle also had a grandson who asked a lot of questions and who enjoyed hearing stories. When he visited her, she showed him Will's old things. Each time the boy learned a little more about his great-grandfather and his family's history. What Maybelle had saved and remembered made it easy for the boy to be a family detective.

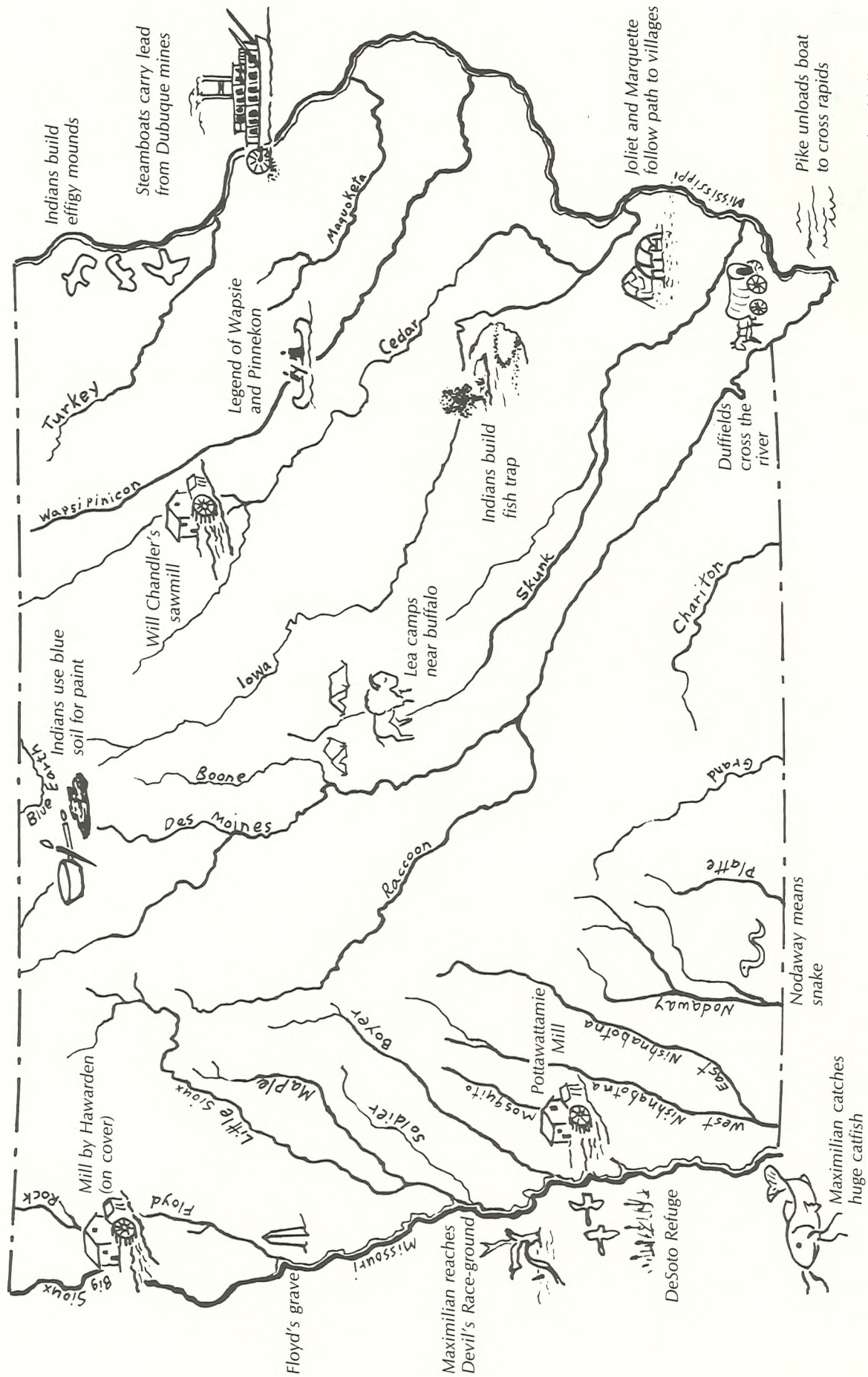
To be a family detective you will need lots of questions to ask, and then lots of paper and pencils (or a tape recorder) to record the answers. Begin by asking your relatives about their childhoods. What games did they play? How big was their school? How did they celebrate holidays? What jobs did the adults have? What did they do on weekends? What made them laugh? What made them angry? Write everything down.

The old things your relatives have kept are clues, too. Ask why the things are special. Who made it? Who owned it first? Why have they kept it for so many years? Each person may only remember a few details. But slowly the clues will fit together into the history of your family.

Photographs are clues, too. Each picture (even new ones) should be labeled. Write on the back who is in the picture, when it was taken, and anything else about it. Don't label them with felt-tip pens. They will damage the picture. Pencils are best to use, but ballpoint pens are all right.

Your relatives will probably enjoy your questions about the past when they realize you are a family detective. Let them know that you think saving clues to the past is important. Write up what you have discovered and show it to them. With you on the job, your family's history won't be a mystery any longer. □

This map shows many of Iowa's rivers. Find where the stories in the Goldfinch happened. What would you add to the map to show more river history?



# Name it, paint it, shape it

## First come, first name

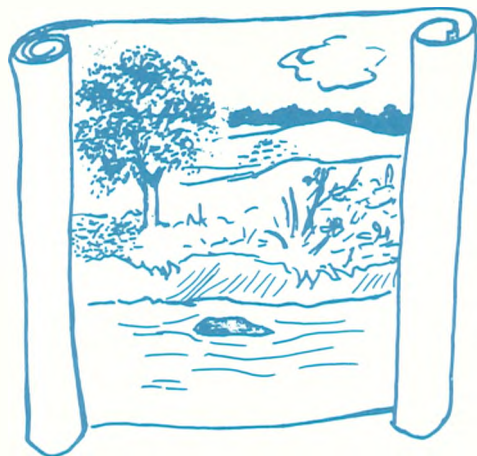
Most of us never get the chance to name streams or rivers. The first people to explore or live near them usually named them. They often chose names of people, animals, or plants that lived in the area, or called them after events that happened nearby.

Pretend that none of the creeks, streams, or rivers near your home have names yet. You can name them whatever you like. You might name them after people (even yourself!) or after something that happened there once to you (like “Thin Ice Creek”).

Draw a map of the waterways and the new names you have chosen. Do the old names still describe the waterways? For example, do maple trees still grow along Maple Creek? But instead of renaming it “Tin Can Creek” (even if that’s how it looks), perhaps you and your parents could organize a clean-up of the creek.



Artwork by Kay Chambers



## Paint a panorama

In the 1850s Europeans—without ever leaving Europe—could watch the Mississippi River roll by in front of them. They were watching Henry Lewis’s moving *panorama*.

Henry Lewis was an American artist who painted the entire Mississippi onto a roll of canvas 12 feet high and three-quarters of a mile long. He showed the panorama to audiences in America and Europe. As he unwound the canvas from one roller to another, the audiences saw scenes of riverboats, Indian villages, bluffs, and towns—from Minnesota to the Gulf of Mexico.

Make your own panorama of a river or creek near your home. Cut an old white bedsheet into strips about two feet high, and sew them together. Use acrylic paints. They work best on cloth. (Instead of cloth you could use paper that comes on a roll. Ask at your butcher shop or art shop. Draw the scenes with felt markers or other paints.) Use cardboard tubes from gift wrapping paper for the rollers.

## Make a salt dough map

The map on the opposite page shows some of the river history from this *Goldfinch*. Choose your favorite part and make a salt dough map of that area.

You will need a large piece of wood or cardboard and a lot of salt dough. (Use the recipe on the right to make the salt dough.) Pat the dough onto the board to form the land. Mound the dough into hills or bluffs, and scoop out the rivers and streams.

Then fill in the details. For the Missouri River you could use sand and twigs to show the sandbars and snags that made the river so treacherous. Use pieces of gravel for the Des Moines Rapids on the Mississippi.

Use your imagination and whatever you can find to show the history of the river. How could you show the *Bertrand* sinking? How could you show Albert Lea’s description of his campsite near the Skunk River (on page 5)?

## Salt Dough

- ☉☉ 2 cups flour
- ☉ 1 cup salt
- Mix. Add water slowly.

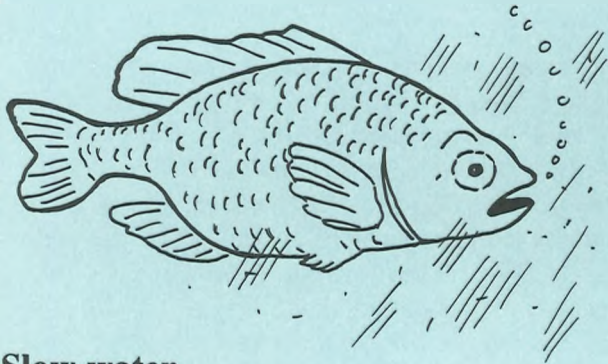
# What happened to the water?

**H**AVE THE RIVERS changed since the explorers canoed up and down them? Yes, they certainly have. Some of the changes are from people *using* the rivers. Some of the changes are from people *abusing* (or harming) the rivers. The changes have been the hardest on the animals, fish, and fowl that live in Iowa. Let's look at some of the changes.



*I'm starving.  
Where's supper?*

*It's so murky  
down here. I  
can't see a thing.*



## Slow water

Iowans have built dams on the Mississippi and some smaller rivers. The dams have many purposes. They help control the water when floods occur. They hold back or save water if a drought, or dry season, is expected. They turn the energy of the running water into electricity for communities. They make the water deep enough for boats to travel easily.

But when you build a dam, you control the speed of the water flowing through it. The water slows down and becomes *murky* (or not clear). Fish that find their food by touch or taste can live in murky water. But some kinds of fish search for food with their eyes. And other kinds of fish need fast-flowing water. These kinds can no longer live in rivers with many dams, like the Mississippi.

## No water

The Missouri and Mississippi valleys are important routes for migrating waterfowl each spring and fall. Along the rivers there once were many marshes where the birds could nest and find food. Years ago, 7 to 10 million ducks stopped on the Upper Mississippi, but

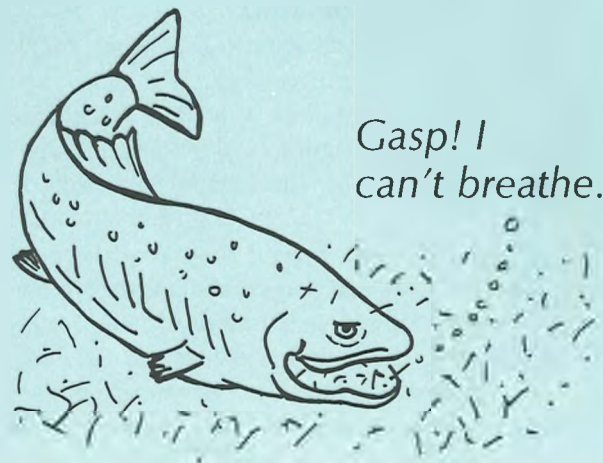
now only about half a million do. People have drained the marshes that attracted the wildlife. They farm the drained land or build on it. The wildlife must search for another place to find food and make nests.

## Dirty water

Water becomes polluted when anything harmful enters it. The chlorine in drinking water and the chemicals from factories are harmful to the fish when the used water is flushed back into the river. They are harmful to us when we eat the fish.

But most water pollution in Iowa comes from farming. Farmers use fertilizers to make their crops grow better. They use chemicals that kill weeds and insect pests. But rain can wash the fertilizer and chemicals off the land and into the streams and rivers.

The fertilizer makes water plants (like algae) grow in the water. The algae leaves less open space for boating and swimming. It takes oxygen away from the fish who need it to breathe. Soil washes into the rivers, too, and settles on the bottom. Then the water is not deep enough or clear enough for fish to live in. □



*Gasp! I  
can't breathe.*

# How to care for a river

**H**OW DO YOU save a river? Iowans have found many ways to take good care of the water, the wildlife, and the history of their streams and rivers. Here are some of the ways.

## Save the soil!

Farmers can plow their fields in certain ways to stop the soil and chemicals from *eroding* or washing into streams. After farmers harvest a crop, the old cornstalks or soybean plants are left in the field. If farmers use *moldboard plows*, the stalks are buried as the soil is turned over. But farmers can use *chisel plows* that do not bury the stalks. More of the stalks are left on top of the ground. They help hold the soil in place during rain and winds.

Farmers plow and plant in rows across the hills instead of up and down the hills. Rows running up and down would make little ditches in which the rainwater would run down easily, taking topsoil with it. Rows across the hill make little edges that stop the water from washing away.

Some farmers grow their crops without fertilizers or chemicals that kill insects and weeds. Then there are no chemicals that can wash into the rivers and streams.

## Revive the rivers!

Communities can join the Mississippi River Revival. (A *revival* brings something back to life.) Iowa towns like Lansing, McGregor, Bellevue, and Dubuque have already held festivals. Any town on the Mississippi or on its *tributaries* (rivers that flow into the Mississippi) can join the revival.

A folksinger named Larry Long first had the idea for the revival. In 1981 he had worked on the Clearwater Project in the state of New York. The goal there was to clean up the polluted Hudson River.

When Larry returned to the Midwest he wanted to clean up and revive the Mississippi. So he started the River Revival.

In 1984 over 15,000 people attended the festivals along the river. There were folksingers, rock musicians, puppet shows, children's plays, and canoe rides. People learned about the problems of the river and how they could help solve them. They hauled more than 20 tons of garbage out of the rivers. A lot of the garbage was aluminum cans that factories could recycle.



Ah. . . Food ahead!

## Feed the birds!

In 1960 the Army Corps of Engineers cut a new channel for the Missouri River. That made traveling on the river easier. The new channel blocked off the seven-mile bend in the river where the steamboat *Bertrand* had sunk years ago. This turned the U-shaped loop of river into a U-shaped lake. The federal government set aside almost 8,000 acres and called it the DeSoto National Wildlife Refuge.

The refuge includes the lake, marshes, prairie, woods, and fields. Every autumn, 140,000 snow geese and blue geese and 125,000 ducks stop over at DeSoto on their way south. Loons, pelicans, herons, and hundreds of other birds make their homes at DeSoto. Farmers plant extra crops and leave some for the birds to eat. The staff at the refuge build nesting boxes. They restore sandbars to encourage endangered birds to live there.

Other animals live at DeSoto, too—like bald eagles, raccoons, beaver, muskrat, and mink. Deer and coyote roam the fields of prairie grass.

Visitors are welcome at the DeSoto Refuge. There are places to gather mushrooms in the spring and to ice fish in the winter. In the summer people can camp, swim, and hike on the nature trails. They can visit the museum where the artifacts from the steamboat *Bertrand* are on display.

## Watch the rivers on television!

Iowa Public Television has filmed four special shows on Iowa rivers—the Des Moines, the West Nishnabotna, the Little Sioux, and the Upper Iowa. The broadcast dates are Mondays (May 6, 13, 20, and 27) and again on Sundays (May 12, 19, 26, and June 2). Videotapes of the series, called "The Land Between the Rivers," will be available for use in classrooms.

If you would like to learn more about Iowa history and its rivers, visit your local library or historical society. The people there can help you find out more about the rivers and streams in your part of the state. □

## your turn

1. When Joliet and Marquette followed the path from the river to the Indian villages (page 5), they walked about two *leagues*. Find out how far a league is. How far did they walk?
2. Have you studied the Hopi and Navajo tribes of the American deserts? Compare them with the Indian tribes that lived in Iowa, where there were many rivers and streams. How do rivers make a difference in how a tribe lives? Think about food, travel, and materials for shelter, clothing, and art.
3. In the story named "Will was a river man" (page 11), how many different uses of the river can you find?
4. Sort through the buttons in your family's sewing supplies. Can you find any buttons that were made of clam shell? A clue is a rough area on the back of the button.
5. How do the farmers and townspeople in your area control or stop pollution of the streams and rivers? How do they protect the wildlife that live near water?
6. Did your older relatives ever use an icebox? If they did, find out where the icebox sat in the house, how big it was, who the ice man was, how much a block of ice cost, and how long it lasted. With the information you find out, write a chapter of your family history.
7. Take a summer trip to one of the historic sites in Iowa mentioned in this *Goldfinch* about river history. Here are just a few of them:

Effigy Mounds National Monument (near Marquette)  
Ice House Museum (in Cedar Falls)  
DeSoto National Wildlife Refuge (in Missouri Valley)  
Pine Creek Mill (a restored grist mill in Wild Cat Den State Park, near Fairport)  
The Karl Bodmer Collection in the Joslyn Art Museum (Omaha)  
Sargeant Charles Floyd National Historical Landmark (near Sioux City)  
Keokuk Lock and Dam (in Keokuk)

In your own county there may be an old mill, a steamboat museum, a dam, or a park that was named after an explorer. Find out at your local library.

## this summer

This is the last issue of the *Goldfinch* until school starts again next fall. Would you like to read more about Iowa history this summer? Back issues of the *Goldfinch* may be ordered for \$1.50 plus postage. For a list of the titles of back issues, write to the *Goldfinch* at this address: Iowa State Historical Department, 402 Iowa Avenue, Iowa City, Iowa 52240. See you next fall!

**Answers to matching game on page 4:** 1-C 2-J 3-E 4-I 5-G 6-H 7-D 8-B 9-F 10-A

**Cover:** *The swift waters of the Big Sioux River (near Hawarden) flowed under an iron bridge, past an old mill, and over a small dam in this picture taken around 1910.*

**GINALIE SWAIM, Editor**

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