

# 1 MEET MICHIGAN!

## Chapter 1 Section 1

### *Learn the Basics*

*Here are the key concepts you will find in this section:*

**How the Great Lakes affect Michigan.**

**Information on the state's size and location.**

**Facts about the ethnic groups in Michigan.**

**An overview of Michigan's counties.**

**Cities and population distribution.**



### **You Live in a Unique State**

A quick glance at any map shows Michigan is unique. Why? Because it is the only state made of two large *peninsulas*. A *peninsula* is a portion of land nearly surrounded by water. This is the only state on the mainland of the United States which is divided into two large parts by water.

In the past, each peninsula was more on its own. The water of the Straits of Mackinac (MACK in aw) kept the people apart. Today this problem is not as great since the Mackinac Bridge connects the Upper and Lower Peninsulas. Air travel and modern communications make it much easier to keep in touch. Before, the only direct connection to the other peninsula was by boat.

### **The Great Lakes Affect Us In Many Ways**

What else is unique about Michigan? This state is in the center of several large bodies of freshwater known as the Great Lakes. Because of these lakes, Michigan has the longest coastline of any state except Alaska! Michigan's 3,100 miles of coastline border on four of the five Great Lakes. Lake Ontario is the only one not touching Michigan. The Great Lakes are quite important to the environment because they hold one-fifth of the world's supply of freshwater.

The St. Lawrence River is our connection with the Atlantic Ocean. It drains water from the Great Lakes into the ocean, which is at a lower level. It also allows ships from the Atlantic to reach Michigan. Michigan has ports which receive ships from many foreign countries.

Even the name Michigan relates to the Great Lakes. It comes from the Native American words for great or big lake. Michi, mishi, or kitchi mean great quantity. Gami is one word for lake. Over the years these different words were combined and the spelling changed until, finally, the word Michigan was officially used in 1805.

The Great Lakes even affect the climate. Winds from the west are warmed as they pass over the Lakes in the winter and are cooled by them in the summer. Moisture is picked up by the winds as they pass over the water and this gives extra rain and snow to areas along the western parts of both peninsulas.

Michigan's actual boundaries go through four of the Great Lakes. Large parts of Lakes Michigan, Superior and Huron are in the state of Michigan plus a bit of Lake Erie. There are over 38,000 square miles of Great Lakes water within our borders. Altogether, Michigan is about 60 percent land and 40 percent water, including parts of the Great Lakes.

## Michigan's Land

Of course, most people think about the land in Michigan instead of the water. Michigan's land covers 56,800 square miles or 58,200 if the inland lakes and rivers are included. The Lower Peninsula has nearly three-fourths of the land area and most of it is gently rolling hills.

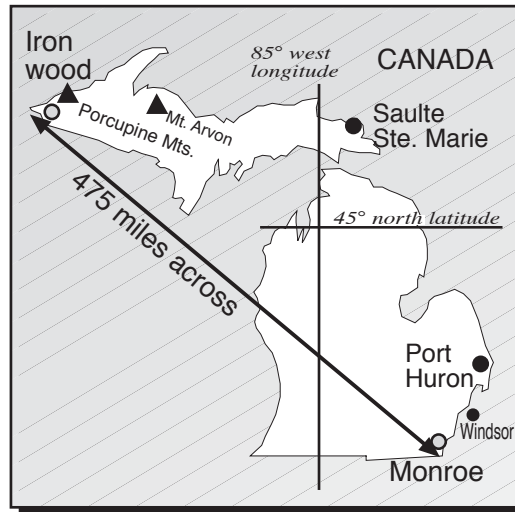
The Upper Peninsula has higher places. Mt. Arvon is the highest point in the state at 1,979 feet. Nearby, Mt. Curwood is listed at only a few feet less. The Porcupine Mountains in the western U.P. are another high point at 1850 feet. But Michigan has nothing as high as the Rocky Mountains. Most of the state is between 500 and 1,000 feet above sea level. Study the color maps on pages M-4, M-5, and M-6 found after page 26. Learn how these maps show the elevation of the land.

Michigan spans quite a distance corner to corner. Traveling from the southeast corner to the northwest corner the distance is 475 miles. Using state highways it is even further—620 miles from Ironwood to Monroe. Going 475 miles south from Detroit will take a person to the Smoky Mountains in Tennessee, after crossing all of Ohio and Kentucky! Heading east from Detroit and traveling 475 miles almost reaches New York City.

The western tip of the Upper Peninsula is as far west as St. Louis, Missouri. The eastern edge of the Lower Peninsula is directly north of Tampa, Florida. Some towns in the western end of the Upper Peninsula are actually closer to the capitals of Wisconsin,

Minnesota, and Iowa than they are to Lansing, the capital of Michigan.

Georgia is the only state east of the Mississippi River which is larger than Michigan. Michigan is even larger than several foreign countries including Greece and Nicaragua. On the other hand, it is smaller than England or France.



## Finding Michigan

Michigan can be spotted easily on a map or globe by looking for the Great Lakes. But, let's be more precise. There is a sign south of Gaylord on I-75 which shows where 45 degrees north *latitude* crosses Michigan. This spot is exactly halfway between the equator and the North Pole. *Latitude is a measurement going north and south from the equator. If you look on a globe or map you will see lines of latitude. In a sense, they are like the rungs of a ladder, going across the globe or map.*

Another line, 85 degrees west *longitude*, passes near Sault Ste. Marie. *Longitude is a measurement going east or west from Greenwich, England. This*

## Land Area Comparison

Land area in square miles *without* inland lakes and rivers.

Georgia	57,919
Michigan	56,809
Iowa	55,875
Illinois	55,593
Wisconsin	54,314



Source: U.S. Statistical Abstract

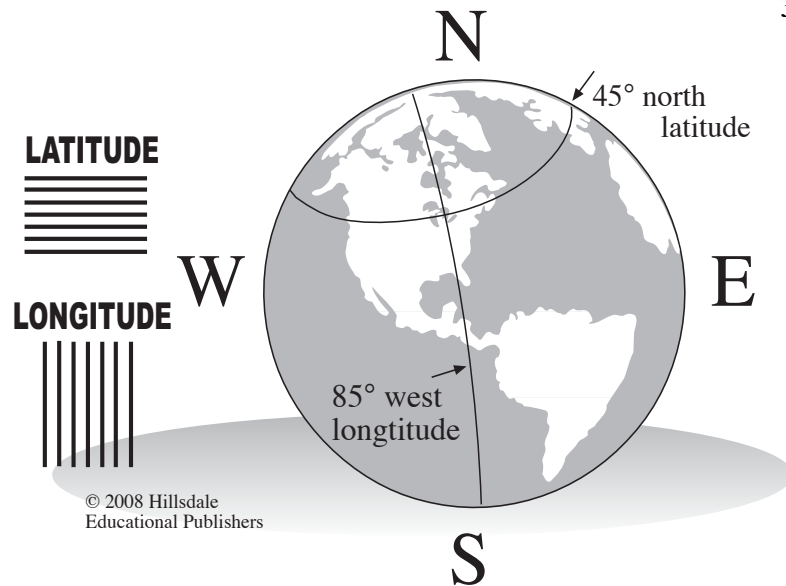
city has been given the location zero (0) degrees longitude and everything else is measured from there.

Follow the latitude and longitude lines which cross Michigan as they pass other places in the world. An easy way to find 45 degrees north latitude as it crosses Michigan is to look for the tip of the little peninsula in Grand Traverse Bay. Moving east, the line 45 degrees north latitude goes through France and eventually crosses just north of Japan. Look at the globe above. If you follow the 85 degrees west longitude line to the south, you pass through Central America, finally ending in the Pacific Ocean off the west coast of South America.

### Michigan's Foreign Neighbor

People often forget Michigan is next to a foreign country, Canada. A large part of our border is international because of this. Three bridges and a tunnel connect Michigan to Canada as all of the boundary between us is water. Three rivers form this border at the nearest crossings. The Detroit River is between Detroit, Michigan and Windsor, Ontario; the St. Clair River is between Port Huron, Michigan, and Sarnia, Ontario; and the St. Mary's River is between Sault Ste. Marie, (Soo Saint ma REE) Michigan, and Sault Ste. Marie, Ontario. Check the maps on pages M5-M7. Ontario is the Canadian *province* next to Michigan. A *province* is much like a state in the United States.

It is not hard to cross the border to Canada, but everyone has to stop and answer questions at check points. Each government is concerned with those crossing the border and what they might be carrying with them. It is against the law to carry handguns or illegal drugs into Canada. Also, people are often asked where they were born or to show identifi-



cation. They may be asked if they have anything besides their personal belongings with them. Even with the North American Free Trade Agreement (NAFTA), customs forms are needed to carry merchandise which can be sold.

The people of Canada and Michigan have been friends for many years and many Michiganians take vacations in Canada. We have other things in common with the people of Canada. One of these is sports as the Detroit Tigers play baseball with the team from Toronto, Canada.

There is considerable trade between Michigan and Canada. Many imports and exports flow between them. Canada and the United States have more trade between them than any other two countries in the world.

### Michigan's People

One of the most exciting things concerning a state is learning about its people. Each of us and the things we do are a little part of Michigan's history. In the beginning this was the land of the Native Americans, the first Michiganians.

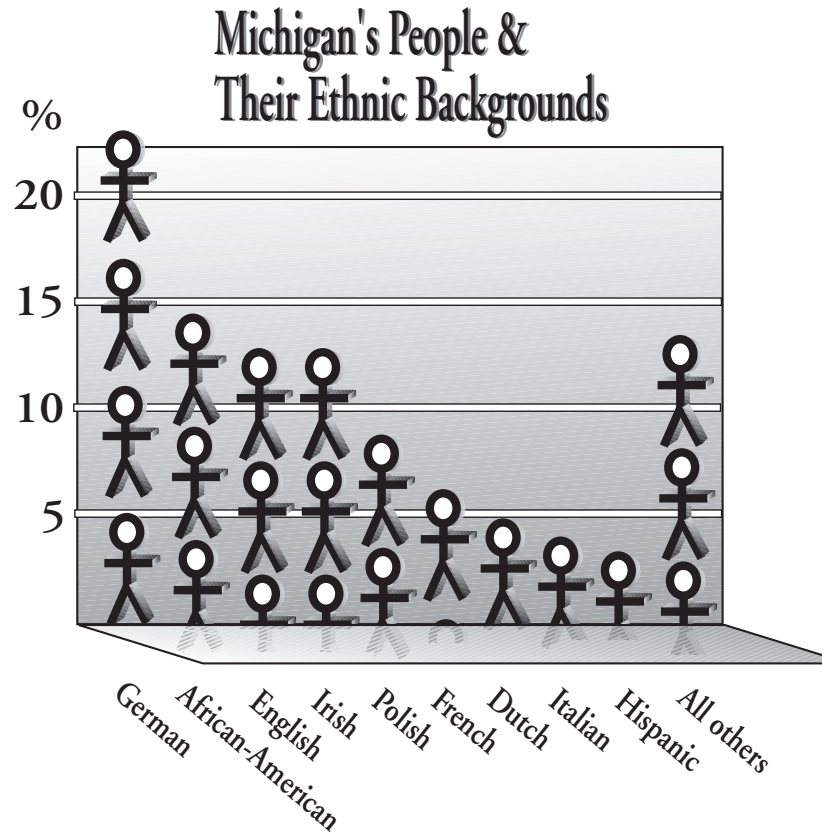
Today, Michigan is a mixture of over 20 ethnic groups. Michigan has more *ethnic groups* than many other states. An *ethnic group* is one based on race or place of origin. People in the same ethnic group

have similar customs. These people came from the far corners of the world.

Even as you read this, new people are arriving from Mexico, China, the Philippines, India, Iraq and other places. Perhaps they came to escape war or poverty. Maybe they moved to find a new sense of freedom or a chance to worship as they choose. Many of them are discovering Michigan for the first time. People who have lived here for generations are still proud of their roots and can tell you from where they originally came. Their ancestors may be from Africa, Asia, Europe, or Canada.

How has this affected the makeup of our people? If a survey were made of everyone living in the state, it would show the largest ethnic group is German. The second largest group has ancestors from Africa. Those from England come in third. The Irish are the next largest group and there are many more groups as well. Each has brought its own special culture with it.

Each group has added its own unique heritage and produced its own outstanding individuals. They have all had an impact on Michigan. The Dutch, those originally from the country of Holland, are a major portion of the people living around Grand Rapids and Holland, Michigan. Today, there are more Arabic people living near Detroit and Dearborn than anywhere else in the United States. One Arab-American from Michigan is Spencer Abraham who served in the U.S. Senate. The people from all of these nations and places add *ethnic diversity* to



Michigan. *The concept of diversity is one of our core democratic values. Ethnic diversity provides a variety of customs, ideas, and artistic styles. The merging of these many talents and customs makes our state a more interesting and productive place to live.*

Michigan is the eighth largest state in population with over 10,000,000. However, the people are not evenly distributed. Most live in the southern third of the Lower Peninsula. In fact, just three counties have 41 percent of the whole population! They are Wayne, Oakland, and Macomb. See the color graph on page M8 (before page 27). Comparing the combined population of these three counties to the number of people living in some states is interesting. Twenty-seven states actually have smaller populations than this three county area! Obviously, these counties influence much of what happens in Michigan.



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### The Purpose of Counties

What is a *county*? It is a unit of state government. Having counties is one of the ideas brought to this country by the early pioneers. The county system was developed in England. Each state in the United States, except Louisiana, has counties. A state is usually a large area and it is hard to be in touch with all the people. Counties make it easier to govern.

Each county has its own county seat, like a miniature state capital. A court-

house replaces the capitol building. The courthouse has a court and several offices to keep county records.

Much personal information, such as birth records, is kept at the courthouse. When real estate (a home, a farm, an office building, etc.) is sold, records known as deeds are filed in the courthouse. These records are used to see who will pay property taxes and how much they owe. When you marry, you must go to the courthouse to get a marriage license.

Michigan has 83 counties. Each is an area of land, usually shaped like a square. Keweenaw County is farthest north. Marquette County has the most land. Benzie County is the smallest in size and is about one-sixth the size of Marquette County. It is a good idea to know in which county you live and the counties next to it.

Why do the counties of Wayne, Oakland, and Macomb have so many people? At one time most Michiganians worked on farms or in small villages. The expan-

sion of the automobile industry in the 1910-1925 period caused many people to move off the farms into the cities. Soon, Detroit, Dearborn, Livonia, Pontiac, Sterling Heights, and Warren grew to be among the largest cities in the state. These cities are all located in the *tri-county* area of Wayne, Oakland, and Macomb counties. As time passed, more cities started in between the larger ones. *Suburbs* developed as the cities became too crowded. *Suburbs* are smaller towns on the edge of

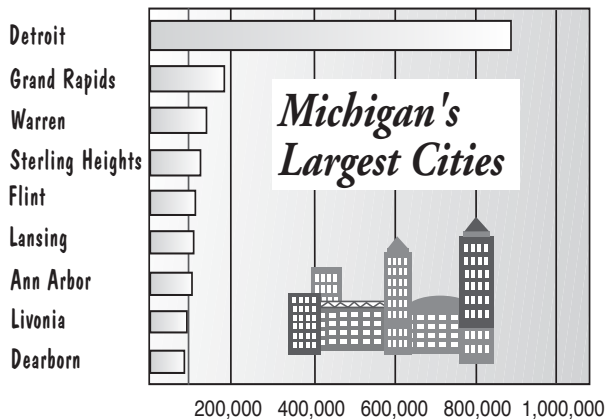


a large city. Now, most of these three counties are “wall to wall” cities and towns.

moved to the suburbs and smaller towns. Land once used for farms now often has large homes on large lots.

### The Largest Cities

Detroit is by far the largest city in the state. It has almost 900,000 people. Grand Rapids is the second largest, but it is not nearly as big. It has about 194,000 people. Warren has some 135,000 in population while Sterling Heights has about 128,000. Flint has 118,000 people. Lansing is sixth with roughly 115,000 people. Of course, populations change all the time. These figures are based on the U.S. census which is taken every 10 years. Recently, most Michigan cities have lost people who have



Here are some of the basics about Michigan so far:

Michigan is unique because it has two peninsulas.

Michigan is in the center of the Great lakes Region, touching 4 of the 5 Great Lakes.

Michigan is roughly halfway between the north pole and the equator.

Canada is a foreign country which borders Michigan.

Michigan is one of the larger states east of the Mississippi River.

Michigan has a wide variety of ethnic groups.

Michigan's population is concentrated in three of its 83 counties.

The largest cities are Detroit, Grand Rapids, Warren, Sterling Heights, Flint and Lansing.

### Questions

1. Name the four Great Lakes surrounding Michigan. Explain how the Lakes affect Michigan's climate.
2. Explain what the line 45 degrees north latitude has to do with Michigan.
3. How many miles does Michigan span from southeast corner to northwest corner? How does Michigan compare in land size with other states east of the Mississippi River?
4. Using the graph in the book, tell which are the four largest ethnic groups in Michigan.
5. Which three counties have the largest populations? What percentage of Michigan's people live there?
6. Name Michigan's five largest cities in order of their size.

## Chapter 1 Section 2

# What's Underfoot

*Here are some key concepts you will find in this section:*

Several great changes affected the land long ago.

These changes caused valuable minerals to be formed here.

Interesting facts about ancient life can be learned from fossils.

### Our Dirt Has History!

The land of Michigan has not always been as it is today. Since the time the earth formed, this land has gone through some really radical changes!

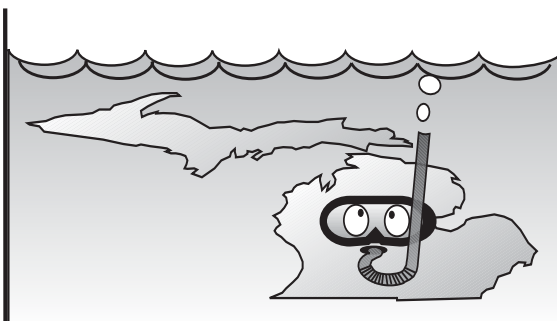
### Michigan Volcanos!

Eons ago the earth began to tear apart in the western Upper Peninsula. A weak spot had developed there and molten rock or lava pushed through the surface and volcanoes formed. It would have been exciting to see these volcanos, but there were no people in Michigan to watch. As far as scientists know, the only living things at that time were algae and bacteria.

### Ancient Seas

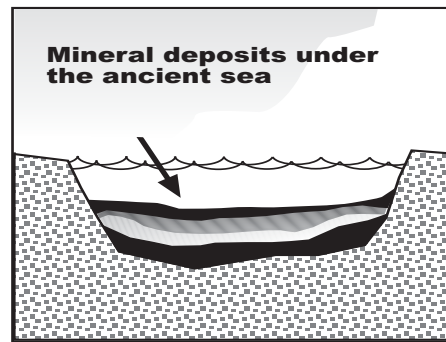
Geologists tell us another of these great changes was when saltwater seas covered Michigan and much of the area around it for an incredibly long time.

**Under a saltwater sea for a long, long time**



### Interesting Deposits

When all of this water covered northern Michigan, an unusual thing happened. Material containing iron began to settle to the bottom. It continued to collect until it was 300 to 750 feet thick in some places. This would become the iron ore which is mined today.



### Giant Mountains Here?

Michigan may have seemed a dull place as it sat under water for all this time, but nature was planning some excitement. The land started to push together from the north and from the south. What was in between was squeezed up to make mountains. Geologists believe these mountains in Michigan may have reached 25,000 feet in height! They stretched through Canada and covered the Upper



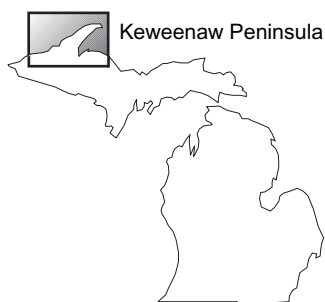
Peninsula. The ancient mountains are known as the Killarney Range.

Since we no longer have 25,000 foot mountains in the Upper Peninsula, what happened to them? The geologists believe they were destroyed by one of nature's most powerful forces, *erosion*. *Erosion is the wearing away of soil or rock by wind and water.* It works very slowly, but continues for millions of years without stopping. Each drop of rain or breeze carries away a tiny particle. The great mountains were actually blown and washed away!

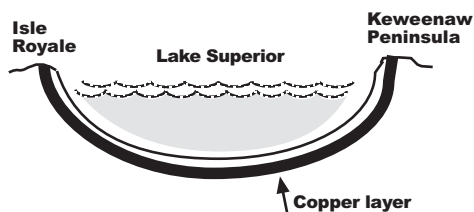
### Valuable Metals

In the distant past copper and silver metal deposits were formed in the Keweenaw Peninsula area.

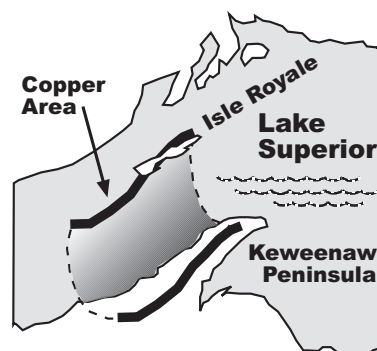
## Michigan's Copper Region



The copper formed here was almost pure, which is quite different from most deposits found in the world. In general, the copper layer is like a sheet which is bent and goes beneath Lake Superior.



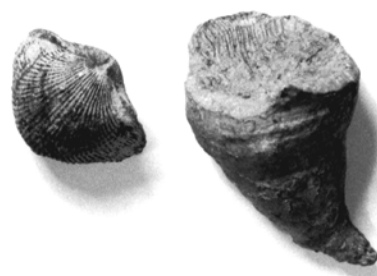
Each end comes back to the surface. One end being in the Keweenaw Peninsula and the other being in Isle Royale.



## Upper Peninsula

### Clues from the Great Seas

How can we prove that great seas once covered Michigan? In the Upper Peninsula there is sandstone which was once under one of these seas. Over a great span of time the pressure and weight from the earth above turned the sand into sandstone. Nature's process of erosion has removed the earth and rock which was once above the sandstone and now it is on the surface in some places.



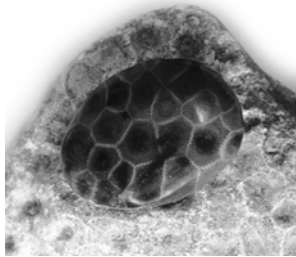
Here are two fossils from the time when Michigan was covered by an ancient sea. *Atrypa Costata* is the shelled creature on the left. The horn-shaped fossil on the right is a *Rugose Coral*.

Much later the sea shrank until it only covered the Lower Peninsula. Because the sea no longer covered the Upper Peninsula, the underground rocks of the two peninsulas are quite different now. Eventually the smaller sea could not hold all of the minerals dissolved in its water and they began to collect at the bottom. Valuable deposits of lime, salt, and gypsum were left behind, mostly under the Lower Peninsula. The existence

of these kinds of mineral deposits is another way to prove there were once great seas which covered Michigan.

During the time of the great seas, fish and other sea creatures lived in the water. Some of the earliest had shells and we can find these shells as fossils. But there may have been other life forms which did not turn into good fossils. We may never know for certain what exactly lived or swam in the seas over Michigan!

One common fossil is a sea coral. Similar corals still live in the oceans of the world, but time turned this coral into a rock which we call the Petoskey stone—the state stone of Michigan. It has this name because it is often found on the shores of Lake Michigan near Petoskey. If you find a Petoskey stone, you are holding something in your hands which is extremely old!



A polished Petoskey stone sitting on an unpolished stone.

**Petoskey stones are actually fossils of sea coral rounded by the waves of Lake Michigan. The stone was named after the city of Petoskey where many fossils have been found.**

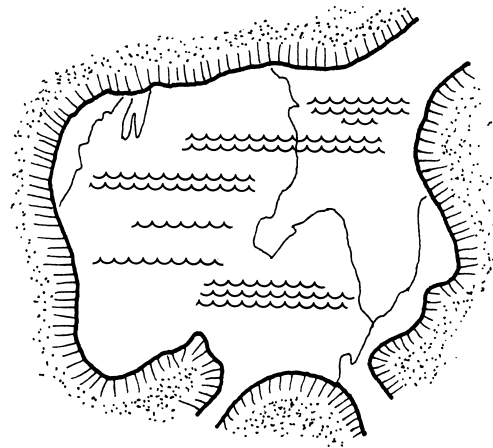
### **Michigan Sharks and Whales!**

Other strange things lived in those seas. Geologists know some of the fish looked like sharks and many of them were larger than a human! Even a few fossil remains of whales have been uncovered in Genesee and Iosco counties.

Besides the coral and fish, there were sea plants. These plants have become another resource for Michigan. Large amounts of them rotted and decayed. After a great amount of time they turned into oil and gas.

Other plants grew along the shore of the sea. We would think these plants looked strange indeed! As they died and

fell to the ground, great quantities piled up and decayed. Over a very long time these shore plants became coal. Some Michigan coal has been mined but it doesn't have the quality of coal from other states and the deposits are smaller.



**A sea once covered the state and left behind important deposits of limestone and salt, especially in the Lower Peninsula. (Art by David B. McConnell)**

### **The Mystery of the Missing Years!**

There is a big mystery in Michigan's past. While there are many fossils of plants, fish and other sea creatures, no one has ever uncovered the older dinosaur fossils. As a matter of fact, almost no fossil or rock exists from a long period of time known as the "Lost Interval." There are very few clues which tell what happened in Michigan during those years which was a very long time ago!

It is a real mystery as to what could have happened to all the material from this time span. Geologists do have some theories. This does not mean that dinosaurs never lived in Michigan, just that there are no fossils to prove it. One explanation is Michigan was thought to have been higher than the land around it at that time. Because of this, the rocks and bones or fossils were worn away by erosion. It is also possible glaciers of ice later scraped away the fossil remains.

### **How Old Is This Rock? Where Is It From?**

The rocks on the surface of the Upper Peninsula are generally older than those in the Lower Peninsula. This is because the lower peninsula rocks were formed from the sea bed which covered that area.

Within the Lower Peninsula the older rocks are on the outside edges. Can you think of a reason why this would be so? The sea covering the land slowly dried up, and as this happened, older deposits were left on the outer edge. Finally the newest rocks were created as the last of the sea disappeared near the center of the Lower Peninsula.

The rocks of Michigan tell the story of the past. They hold clues about what took place in the ancient past. If you were to drill an oil well in the center of the Lower Peninsula and look at the drilling core, you could actually see many layers of rock with the oldest usually being at the bottom.

Why is any of this important today? Michigan is unique among states because the two peninsulas are geologically sepa-

rate and distinct. Understanding rock formations is necessary to find the valuable mineral resources. Knowing what is underground helps geologists discover oil, gas, limestone, gypsum, salt, copper, silver, gold, and iron. All of these have been found in Michigan! It has been said that Michigan has a wider variety of minerals than most places of its size on earth.

All of these minerals have been an important part of Michigan's economy and history. The minerals in our state have affected the lives of many people over the years and will continue to be important to us in the future.



Art by Rasmussen

### **Questions**

1. List three minerals which are in Michigan because the land was once covered by great seas.
2. List two valuable metals left here in ancient rocks along the Keweenaw Peninsula.
3. What is a Petoskey stone and how did it form? Why does it have this name?
4. Why have no fossils of dinosaurs been found in Michigan?
5. Write a paragraph to explain how geological events of the far past are affecting human activities in Michigan today.