



THE GRAND CANYON OF THE COLORADO RIVER

Fig. A. The four travelers in this picture with their guide have been down to the bottom of the Grand Canyon of the Colorado River in Arizona. They are winding their way up the narrow path to the rim of the canyon. The layers of many-colored rocks—pale buffs and grays, delicate greens and pinks, dull reds, chocolate browns, slate grays, and other colors—in the canyon walls, lit by the afternoon sun against the

deep blue of the sky, form one of the most beautiful views to be found anywhere in the world. In some places this canyon is more than a mile deep. At its bottom is the Colorado River busily at work wearing away the rocks, carrying away the particles, and making the canyon still deeper. The most beautiful section of the canyon has been set aside by our government as Grand Canyon National Park.

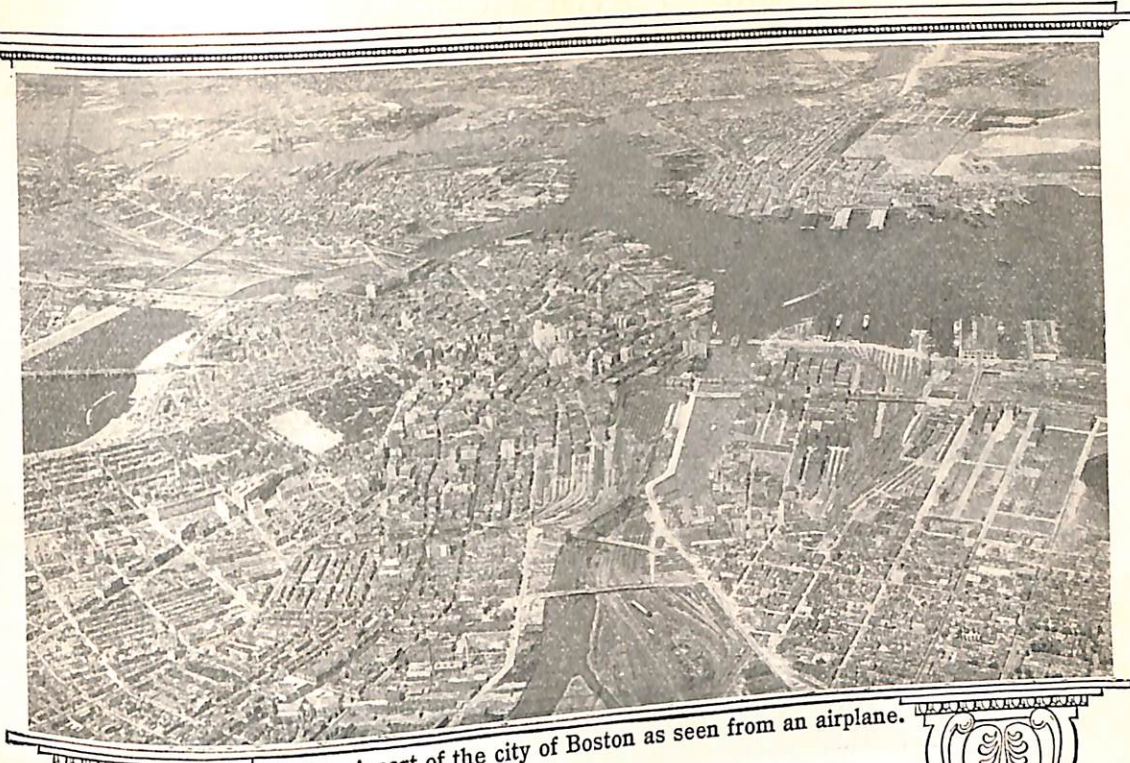


Fig. A. A part of the city of Boston as seen from an airplane.

CROSSING OUR COUNTRY FROM EAST TO WEST

BOSTON TO NEW YORK BY THE BOSTON POST ROAD

We are going to take a wonderful *make-believe* trip. Some day, when we take the *real* trip, we shall have a camera. So now, while we are traveling *make-believe*, we are going to make a list of all the scenes which we want to snap on our *real* trip. Our list of pictures will show all the different kinds of country we have seen and the different ways in which people make their living in each.

An old road made new. Let us imagine that we are crossing the United States from ocean to ocean in an automobile early in June. We shall start from Boston and follow the Boston Post Road to New York. Before there were automobiles or trains in our country, stagecoaches (Fig. 240-A) carried passengers and mail over the old Post Road between Boston and New

York. In that day most of the few roads were very bad indeed. The first stagecoaches on the Boston Post Road bumped over ruts and splashed through mud puddles day after day. Sometimes it took a week to go from Boston to New York. Now the Boston Post Road is smooth and hard. Our automobile can go from Boston to New York in less than a day, with time to spare for looking at things along the way.

As we ride over the smooth, hard Boston Post Road, we should think about the hard work that our forefathers had in making their roads. It took a great deal of their time to make even a fairly good road when there was no cement or asphalt and when stone was broken with a hammer

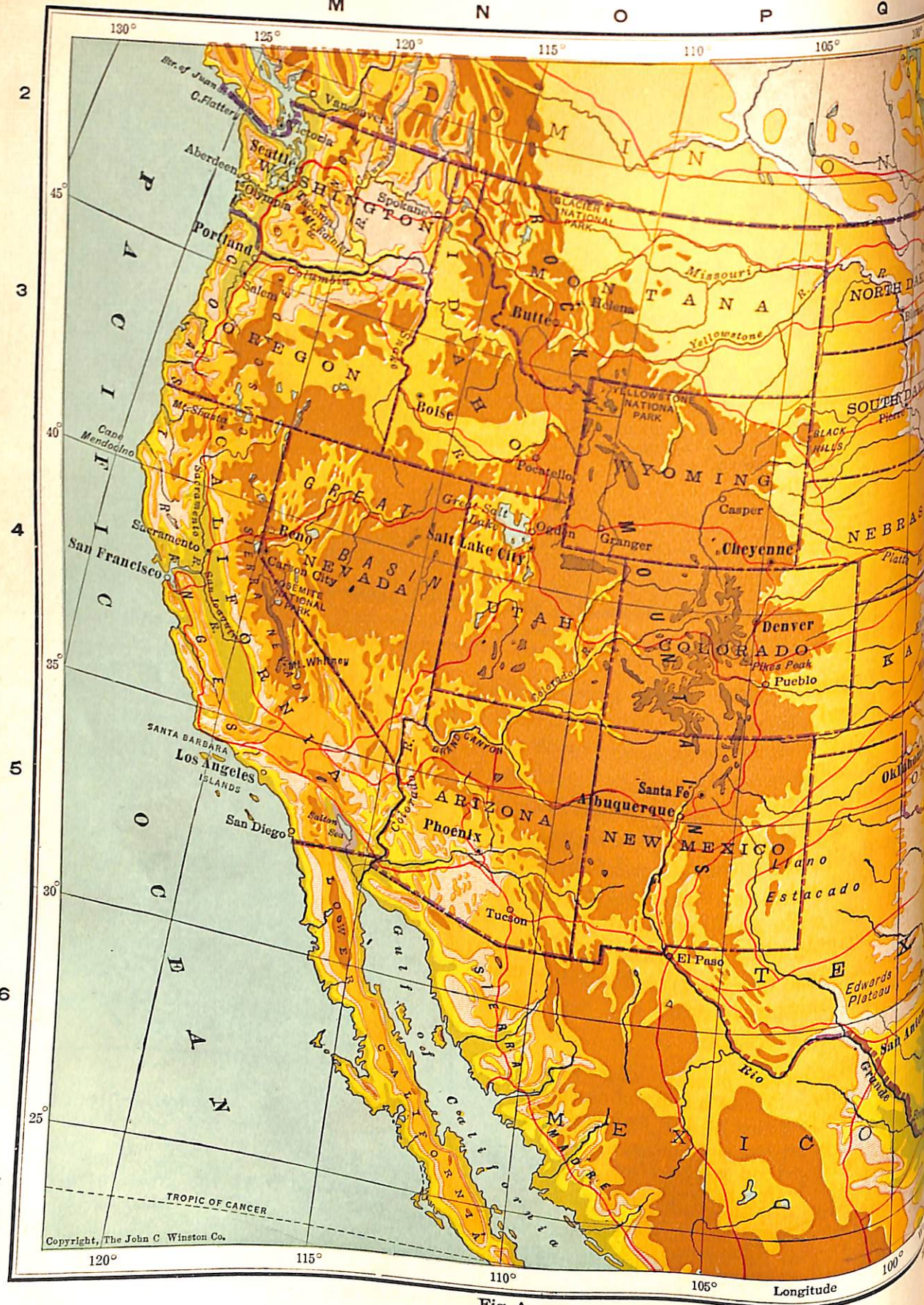


Fig. A.



HC-1



Fig. A. As our ferryboat is crossing the Hudson River from Manhattan to Jersey City, we look back and see the tall buildings of lower Manhattan. They form a part of what is called the *sky line* of New York City. Point out on each picture in Figure 187-A the place from which you think this picture was taken.

NEW YORK TO PHILADELPHIA BY WAY OF ATLANTIC CITY

Crossing a large river. We start early in the morning from New York City. The streets are full of automobiles and trucks, and our car must go very slowly. We might get across the river that is west of Manhattan Island by going through a great tunnel that men have built far down beneath the river (Fig. 404-A). We choose, instead, to go in a ferryboat because we can see more. We turn aside and drive through a wide doorway into a long building. At the other side of the building is the Hudson River. We drive right on the boat, with many other automobiles and many trucks. The boatmen fasten an iron gate at the end of the boat in front of the automobiles; the engine starts and the boat moves slowly out into the river. We look back and see the tall buildings of the city. This view thrills every traveler who sees it. Many visitors photograph this famous

group of the giants of lower Manhattan. New York has many, many thousands of people. That is why we say it has a large population. Can you think of reasons why the buildings are so high?

Port and harbor. We say that New York has a *harbor* because the big ships can come in there from the ocean and lie in quiet water. We call a harbor a port if vessels load and unload freight there. If they are ocean vessels, we call the port a *seaport*.

As our ferryboat crosses the Hudson, we see a large steamer with three smokestacks going up the river. People on it look very small indeed. This ship has come across the Atlantic Ocean, bringing people and freight to New York City.

In a few minutes our ferryboat runs into another shed on the other side of the Hudson River. We have crossed from New York City to Jersey City. We have crossed from New York State to the State

HU-1

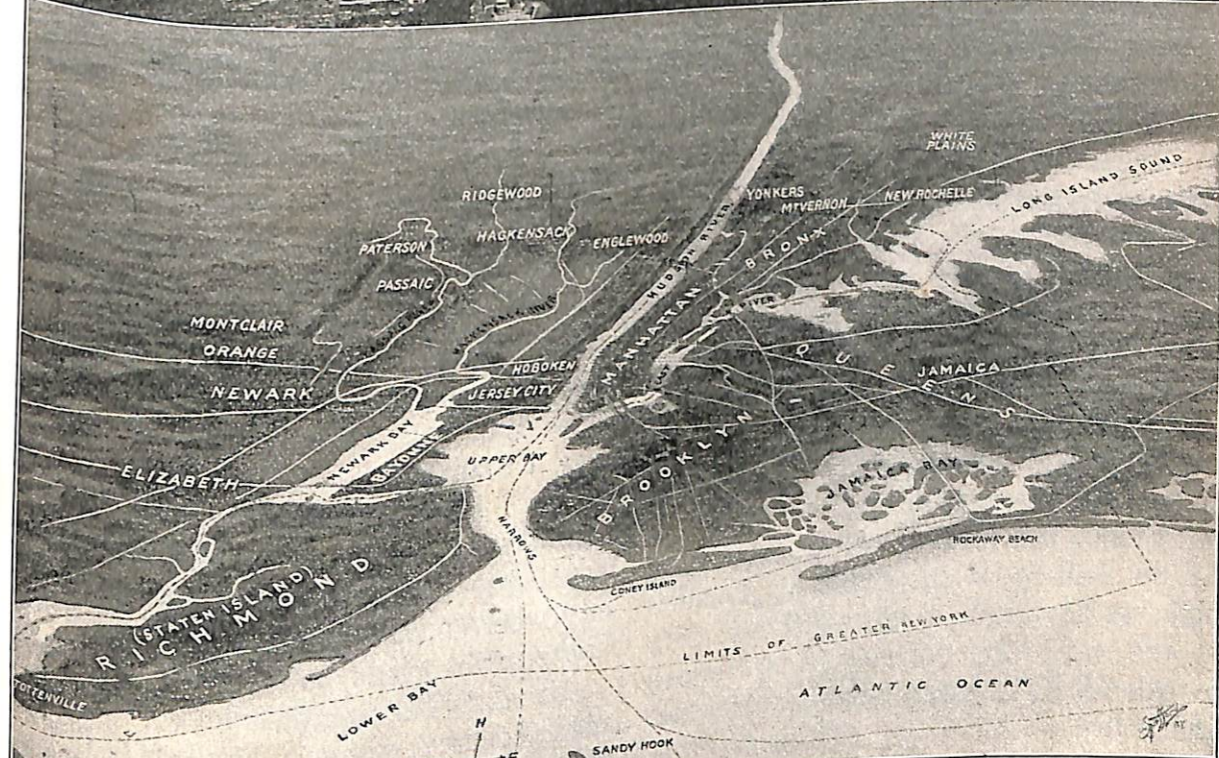
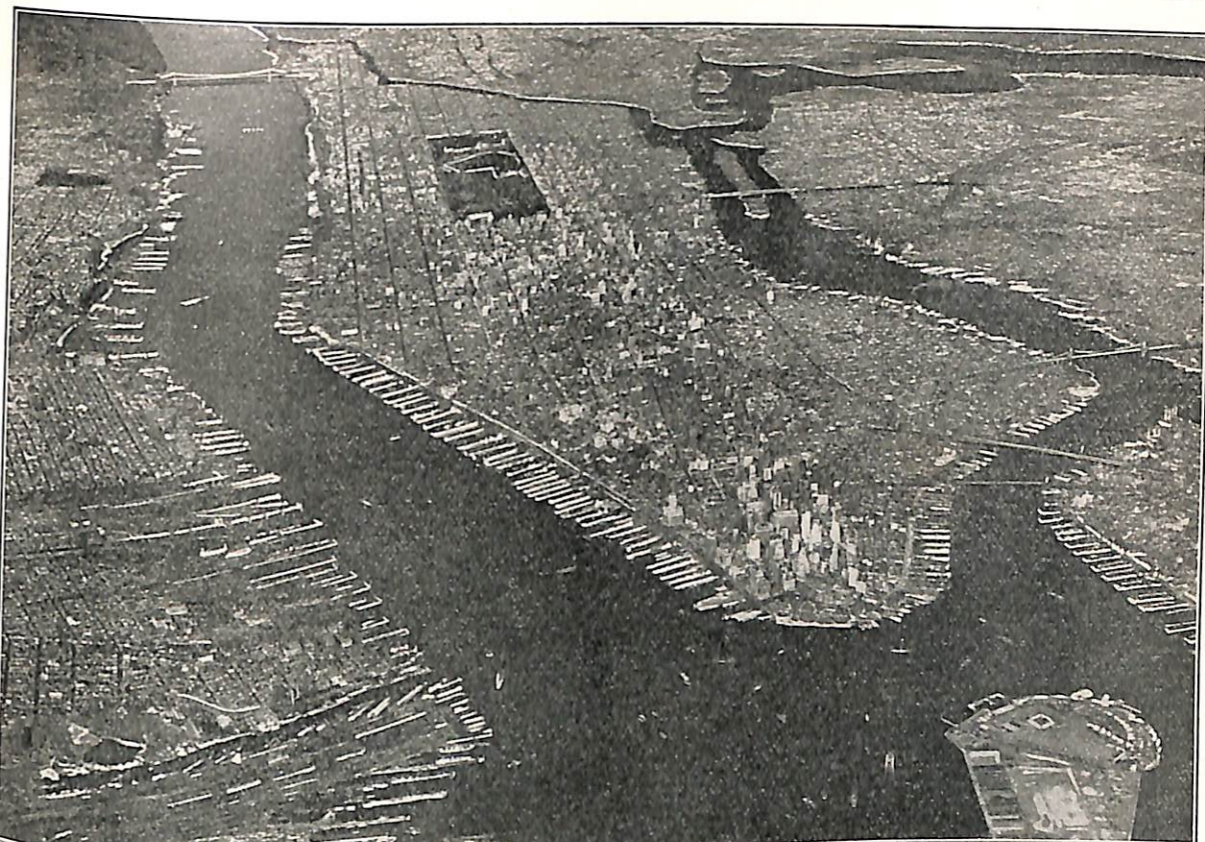


Fig. A. New York City is made up of five parts, or boroughs, as they are called: Bronx, Manhattan, Queens, Brooklyn, Richmond. Find these boroughs on the map. In the upper picture is the Borough of Manhattan. It is an island. It has more tall buildings than all the other boroughs. In our journey we crossed from Manhattan to Jersey City and continued through Newark, Elizabeth, and Atlantic City to Philadelphia. These cities, except Philadelphia and Atlantic City, are on the map. See the George Washington Bridge across the Hudson River.

HU-1



Fig. A. A part of Atlantic City as seen from an airplane. See the hotels, the piers, the surf breaking on the sandy shore. Away at the top of the picture you see a part of the inlet where boats sail in and out.

of New Jersey. We drive through Jersey City, and soon afterward through Newark (Fig. 186-A).

Atlantic City. The next big city on our route is Philadelphia. The distance from New York to Philadelphia is ninety miles. How long would it take us to walk that far if we went three miles an hour and walked five hours a day? Express trains travel this distance in two hours. Our automobile can easily do it in four hours. As we shall spend the night in Philadelphia, we have time to go to Atlantic City on the way. The journey from Newark to Atlantic City takes only two and one half hours.

We shall have time to bathe in the ocean before lunch. Did you ever see the ocean? As far as you can see, there is

only water. The water rises and falls in waves. The waves run up on the shore. At Atlantic City the shore, or beach, is low and sandy. People walking near the water's edge often get their feet wet because now and then a wave runs up farther than the other waves.

If a man walks out into strong waves, they will knock him down as easily as you can blow a feather with your breath.

Atlantic City is a health and pleasure city where people go to be by the sea, to bathe in the ocean, to rest, and to have a vacation. The weather here is usually much cooler in summer than it is at places that are far away from the seashore. This is because the breeze on warm days usually blows in from the sea, and in hot weather the sea is cooler than the land.

188-1

We go to a bathhouse, where we rent bathing suits. There are little dressing rooms where we can put on the bathing suits. Soon we join the hundreds of other people who are swimming or playing in the water or on the sand.

Inlet, bay, and ocean. After lunch we go to the inlet. The beach ends at the inlet, for the inlet is a narrow body of water connecting the ocean with the bay. On the ocean side of the beach the waves are beating, and the water is too rough for boats to go out through the waves. The bay is too small to have big waves. It is a quiet harbor, and small boats sail from the quiet bay into the inlet and on out into the ocean.

The water in the bay is shallow. The inlet is shallow. Many small boats come into this little harbor, but big boats cannot come in. Far out in the ocean we see a big steamer. It is so far away that it looks almost like a burnt match with smoke curling up from it. It is miles away. If we were near, we would see that many people are on the boat, and that it is larger than many houses. The steamer is going to New York. The inlet to New York Bay is wide and deep, and large ships can enter. The bay is also deep, and large ships can float without touching bottom. This makes New York Bay a fine harbor. Find New York Bay on Figure 186-A.

Truck farms. At three o'clock we leave for Philadelphia. Soon we are driving through pine woods. This land is so sandy that little grows here except pine trees. Does that suggest the reason why there are very few houses indeed? Soon we pass out of the pine woods into a land of farms. In one field we see fifty people bending over to pick strawberries. Beside the road is a little shed where a boy and a girl are selling fresh, ripe strawberries.

The earth here is sandy, but mixed with finer particles of earth. Such soil makes good gardens. As we ride along, we see whole fields of beans, peas, beets, potatoes, raspberries, and blackberries. The people grow fruits and vegetables on this good garden soil and send them to New York and other city markets. This is called *market gardening* or *truck farming*.

Atlantic Coastal Plain. The road is as straight as a line and as level as a floor. We do not see a single hill in all the sixty miles between Atlantic City and Philadelphia. Flat land like this is called a *plain*. This flat, sandy plain is called the North Atlantic Coastal Plain. For hundreds of miles up and down the shores of the Atlantic Ocean we find this coastal plain. For hundreds of miles it is level and sandy, and it is a good place to grow vegetables and fruit. This plain is not many feet above the surface of the sea. We call it a *low plain*.

Two cities beside a river. We soon see smokestacks ahead and the tall buildings of a big city. Our car goes toward the tall piers of a very high bridge. At the entrance to the bridge we stop, and the driver pays twenty-five cents to a man in uniform. This is the price we have to pay for using the bridge. To drive on to the bridge, our car seems to climb a hill. The bridge was built high enough to allow ships to go under it. From the highest part of the bridge we look down on the river far below us. Boats are going up and down the river, and ferryboats are crossing it. On one side of the river is a large city — Philadelphia. On the other side of the river is a much smaller city; its name is Camden. On this river we find two cities, just as there is a city on each side of the Hudson. The river separates two states; so we call it a *boundary*. Look at the map (Fig. 185-A)

189-1

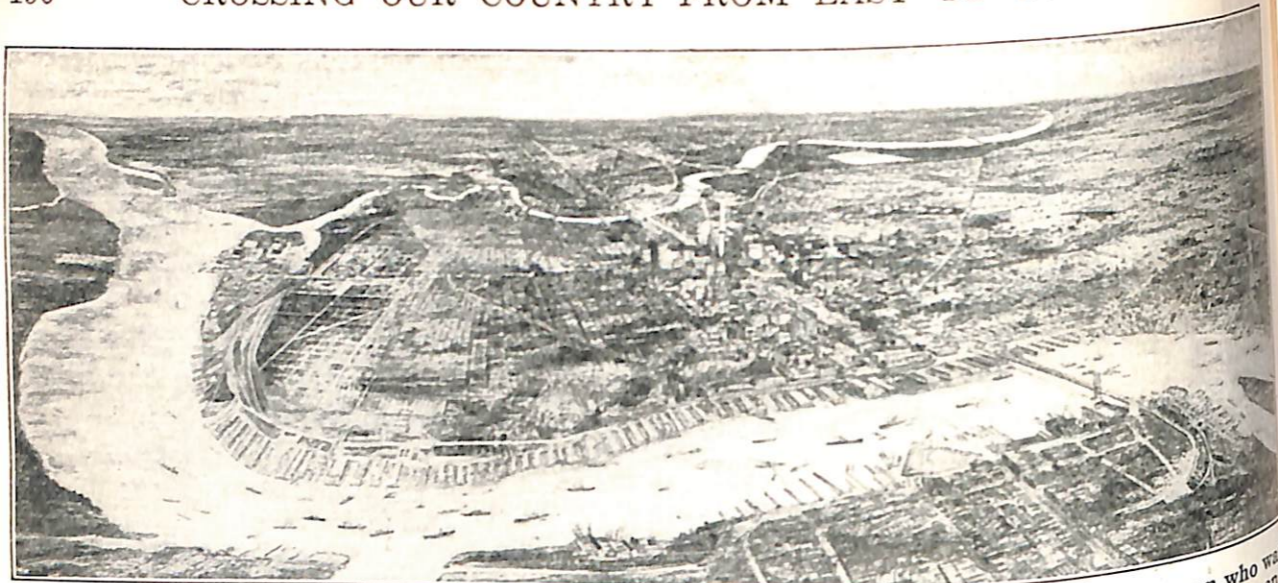


Fig. A. In this picture you see almost all of the city of Philadelphia as it would look to an airman who was flying very high indeed. Point to the Delaware River, Camden, Philadelphia, the Delaware River Bridge, and to the Schuylkill River, which flows into the Delaware River.

and find the name of this river, and the names of the states.

On Figure 183-A find New York City; Philadelphia; the piece of the Lincoln Highway which joins these two cities. Find the Hudson River; the Delaware River. Find the cities and rivers also on Figure 185-A.

Make your own map. Using the scale 6 inches for each 200 miles, begin a map of the journey. Draw the map on the floor with chalk; on the blackboard; or on pieces of paper. Near the right-hand edge make a dot for New York City. Add to your map as you finish each part of the journey. Put in cities, mountains, and rivers crossed, and any other things which you may wish to show.

Using words. In a short letter about your trip, use the following words: ferry, smokestack, harbor, port, inlet, beach, plain.

Playing lecturer on a sight-seeing tour.
1. Play that you are the lecturer and the rest of the children are passengers on a sight-seeing bus. Using Figures 181-A to 190-A, tell about the places seen from the bus windows. Be sure to use the pictures in the right order. The lecturer may use a megaphone; the passengers may ask questions.

2. Tell about the difference between the soil along the Boston Post Road and that

between Atlantic City and Philadelphia. Tell about the difference in their crops.

Distances and directions. 1. What part of a mile do you travel from your home to school? Point in the direction we should have to travel to reach Philadelphia from your school. If we walked a mile in that direction, where would we be? If we walked ten miles in that direction, where would we be? ninety miles?

2. Pretend that it is about nine o'clock in the morning. We are in an automobile on our way from New York to Atlantic City. I am driving and you are sitting on my right. In whose window is the sun shining? We reach Atlantic City and keep right on to Philadelphia. Shall we continue straight ahead or must we face in a different direction? Which direction?

Giving reasons. 1. Why is Atlantic City a summer resort?
2. Why is it not a seaport?
3. Why did we not travel to Atlantic City by sea?

Reading a drawing. At the right is a drawing. It shows three letters and lines connecting them. One letter is supposed to stand for New York; another, for Philadelphia; and the third, for Atlantic City. Which is A? Which is B? Which is C? How do you know?

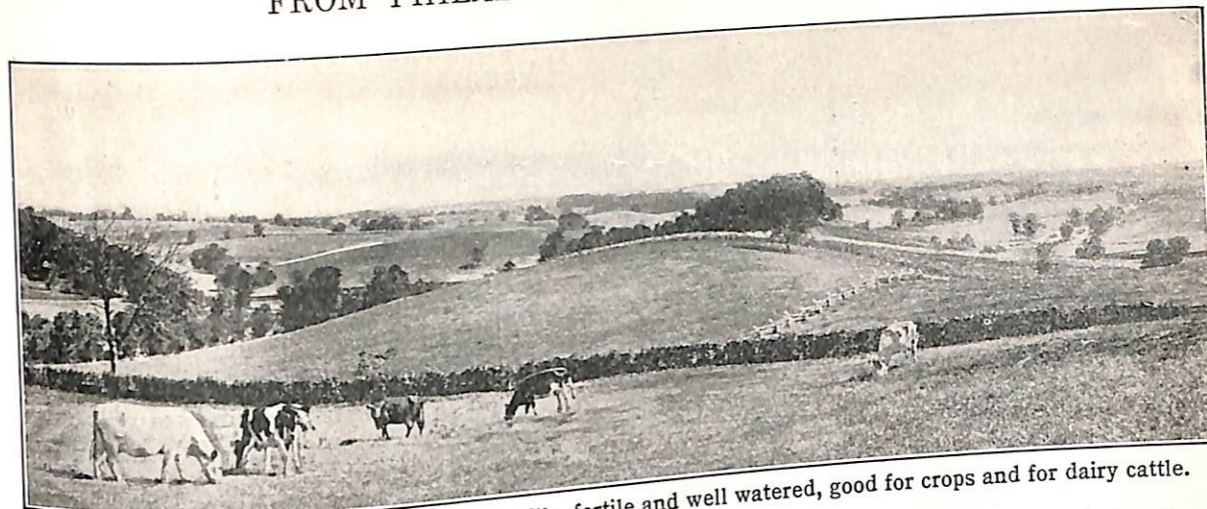
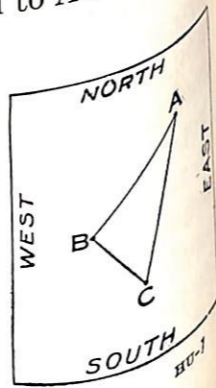


Fig. A. The Piedmont is a land of rolling hills, fertile and well watered, good for crops and for dairy cattle.

FROM PHILADELPHIA TO PITTSBURGH

Lincoln Highway. Before leaving Philadelphia we study the map and see that we shall follow the Lincoln Highway to San Francisco. We find that the distance from Philadelphia to San Francisco is about thirty times as far as from New York to Philadelphia. If we should walk over the Lincoln Highway from Philadelphia to San Francisco and go fifteen miles each day, we would arrive at San Francisco in about two hundred days. If we had a horse and went thirty miles a day, one hundred days would be required. If we went by train, we could leave New York on Monday morning and be in San Francisco Thursday night. An airliner can make the journey in less than one day. It will be fine to go by automobile, and since we want to see as much as we can, we shall travel only about 200 miles a day. If we are not delayed, we should go from Philadelphia to San Francisco in fifteen days.

As we leave Philadelphia, we pass for several miles through small towns. Many of the people of these towns near Philadelphia go to the city every day to work. Leaving Philadelphia behind, we look at the wide, smooth surface of the Lincoln Highway and try to imagine how the

Indians felt who traveled here long, long ago. They had only a footpath through the woods. Later the white settlers went on horseback. Then they cut down the underbrush and made the footpath wide enough for wagons. Still later, other men graded the road, others put gravel and broken stone on the surface and straightened some of the curves. Later, other groups of men made it wider, paved the long, long road with solid cement, and put signs or flashing signals in dangerous places. As our car speeds over a smooth cement surface wide enough for four cars abreast, we try to imagine that the road was once a path that ran through a dark forest where the traveler had to wade swamps and risk falling over rocky ledges.

Hilly land—the Appalachian Highlands. These Appalachian Highlands include three main divisions: the Piedmont, the Appalachian Mountains, and the Appalachian Plateau. Our journey takes us through all three of these divisions.

The Piedmont. The country west of Philadelphia is hilly. It is called the *Piedmont*. The coastal plain east of Philadelphia has no stones, not even one as big as your fist in twenty miles. West of Philadelphia solid rock sticks out of the banks in many places beside the road.



Fig. A. Westward a few hours' drive from Philadelphia are the Appalachian Mountains. Find forest-clad slopes, valley farm, stream, road, and upland farm. Find these mountains in Figures 183-A, 183-B, and 185-A.

The farms on the rolling hills have big barns — not small barns like those on the truck farms of the sandy plains. These big barns are the winter homes of cows, for these farms are dairy farms; the farmers sell milk to the people in cities and towns.

After a few hours we see far ahead something long and blue spread out across the country. It is a low range of mountains. As we come near it, the color changes, and when we reach the long mountain, we see only the green of the trees. It is a high, steep land covered with trees. For some reason, green trees seem to be blue when they are many miles away.

Appalachian Mountains. We are now in the Appalachian Mountains. The road here is never level. Our car is either going uphill or downhill. Most of the land is

covered with trees. Few people live in this mountainous country. We see only a few small houses, and very few big barns.

We climb to the top of a high hill. Several automobiles have stopped; the people are looking at the beautiful scenery. We get out. We notice that it is cooler here in the mountains than it was in Philadelphia. Mountains are always cooler than the neighboring lowlands. We see many mountains, one beyond the other, and some are far away.

Appalachian Plateau. In the valley below us a river is shining in the sunlight. Beside the river are a road and a railroad. Beside the railroad is a little town of wooden houses built in straight rows. We see a queer-shaped building called a coal tippie (Fig. 193-A). At the top of the coal tippie is a black hole in the hillside, and as we look, a train of little cars comes

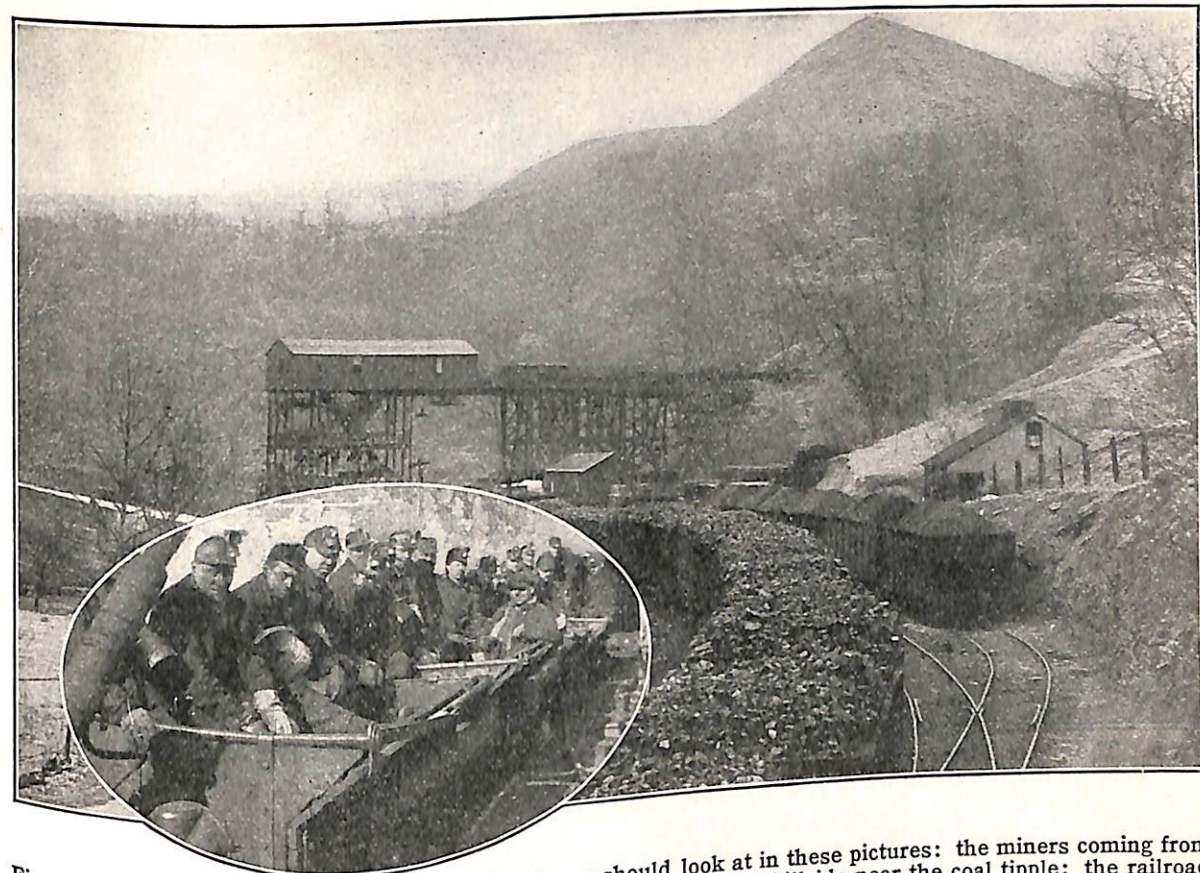


Fig. A. There are many interesting things which you should look at in these pictures: the miners coming from the mine; their lamps; the coal tippie; the railroad with tracks and cars under the tippie. Point in the larger picture to where you think the mouth of the mine is.

out of the hole. The hole is the entrance to a coal mine. We watch the cars bring the coal out of the mine and take it to the coal tippie. Here it is loaded into the freight cars that stand beside the railroad. Just then an automobile with four men in it passes. They are wearing overalls, and their faces are black with coal dust. The men are miners going home from work. In the Appalachian Plateau hundreds and thousands of men make their living by digging coal which lies in layers between the layers of stone of which these mountains are made. Other hundreds and thousands of men work on the railroads that carry the coal to Philadelphia, New York, and to many other cities and country towns.

Going down to Pittsburgh. The road now follows down a stream for miles and

miles. On one side of the stream is the Lincoln Highway, and on the other side is a railroad. Soon we begin to pass villages and towns, and over beside the railroad are factories and tall, black blast furnaces where iron is separated from the ore. There are factories as big as several baseball fields. In the factories is much machinery used in making the rails for railroads, the plates of steel for engine boilers, and many other things that men make of iron.

We are now coming to the city of Pittsburgh, 296 miles from Philadelphia. Pittsburgh is an iron-manufacturing city, with many coal mines near it. The city is set in several little valleys that streams have worn in the Appalachian Plateau. Pittsburgh stands at the place where two rivers come together to form a greater river

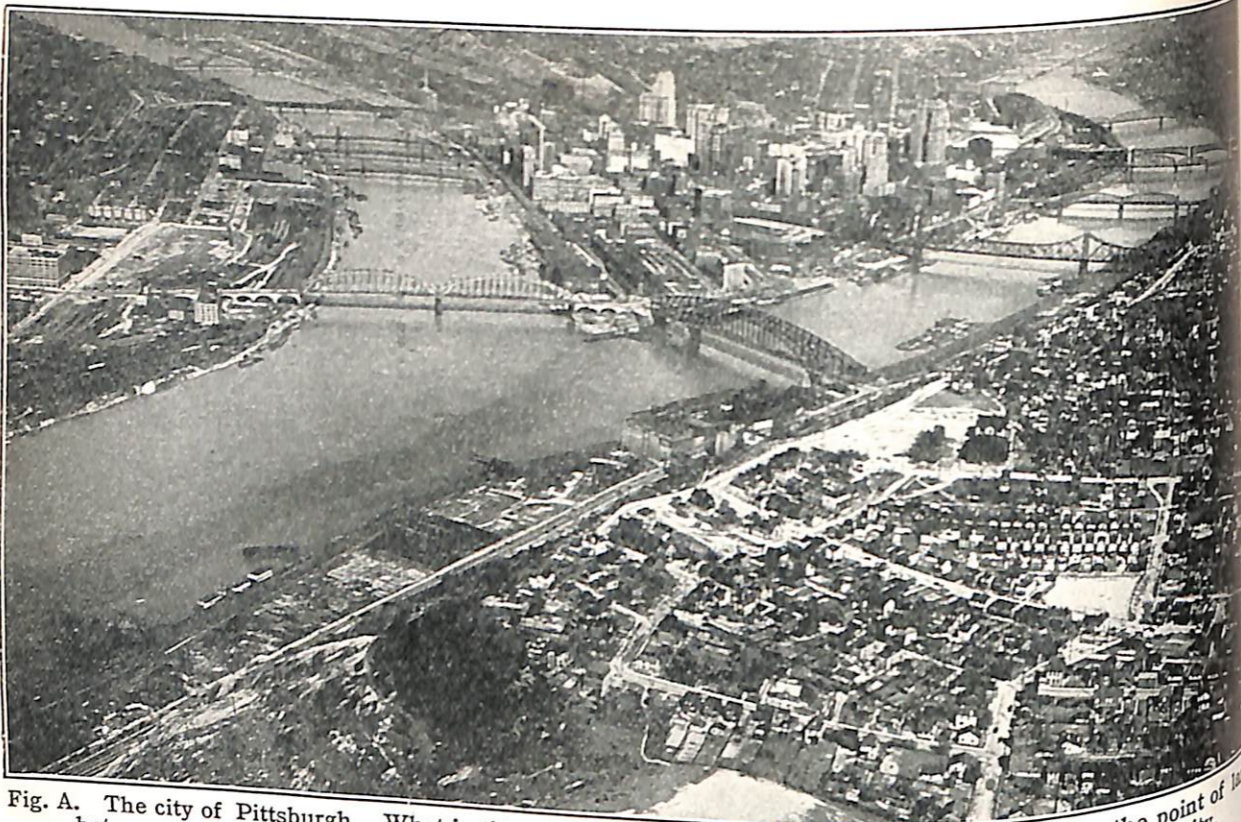


Fig. A. The city of Pittsburgh. What in this picture shows that the main part of the city is on the point of land between the two rivers which join to form a third river? In the foreground are suburbs of the city.

called the Ohio. As we cross this river, we notice that the bridge is not so high as was the bridge over the Delaware River. That is because ocean steamers cannot go up the Ohio. It has only river steamers, tugs, and barges, such as we see in Figure 194-A.

Draw your own. 1. Make a free-hand drawing to show the city of Pittsburgh, its rivers, and the near-by hills.

2. Underneath write a few sentences to tell important facts about the things which you drew.

3. Look carefully at Figure 192-A. Draw a picture of two mountains with a valley between. Draw a stream in the valley. Draw a road in the valley. Draw railroad tracks beside the stream. Draw railroad and railroads follow along the stream in narrow valleys?

Writing sentences. 1. Look carefully at Figure 193-A. Write sentences telling about each of the following: miners; their lamps; the coal cars; the tippie.

2. Here are some words: trackless forest, Indian footpath, wagon trail, mud road,

gravel, macadam or cement. Write a sentence about each word. Combine the sentences into a paragraph which will tell something of the "Life Story of a Road."

How much do you remember? 1. What is the level land east of Philadelphia called?

2. What is the name of the hilly land west of Philadelphia?

3. What mountains are a few hours' ride west of Philadelphia?

4. Find the southern end of these mountains on Figure 185-A. Find the northern end.

5. What mineral product is found in these mountains?

6. What is the first large city on the Lincoln Highway west of Philadelphia?

7. How far is this city from Philadelphia?

8. What is the chief industry in this city?

9. What two rivers join at this city?

10. What river is formed by the joining of these two rivers?

Picture talks. Each of four pupils may choose a picture on page 191, 192, 193, or 194. From the picture and the story in the book be prepared to make the picture tell the picture its story. Begin by saying, "I am the picture on page —." Then tell its story.



Fig. A. West of Pittsburgh on the Lincoln Highway the land becomes level. We are in the country of "King Corn." The man is cultivating the soil between several rows of corn.

FROM PITTSBURGH TO OMAHA

The Central Plain of North America. For several hours after we leave Pittsburgh, we are among the hills, but late in the day we come to a very different kind of country. We have reached the Central Plain of North America. This Central Plain is a part of the great Interior Plains region of North America which extends from the Appalachians to the foothills of the Rocky Mountains (pages 182-183). There are no hills. Often we drive for miles and do not see a stone. There is no forest. We see only a few trees here and there clustered around the houses or along the streams. All the land is in farms. Almost every field has a fence around it. Every farm has a big barn. We pass several towns. Tonight we shall not stay in a town, but in the open country. We stop at a house which bears a sign, *Rooms for Tourists*. The people who live here earn some money by taking care of travelers.

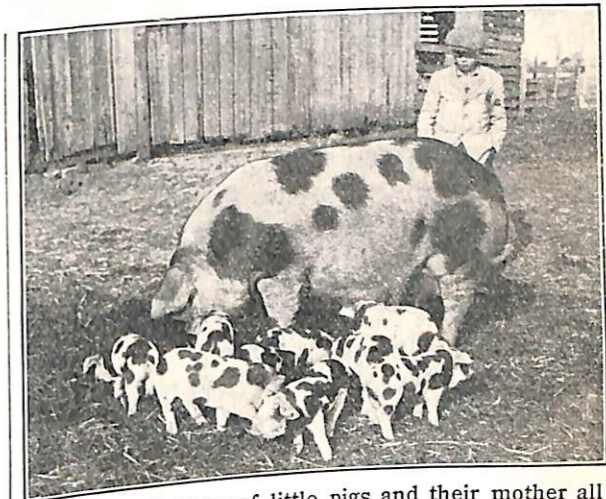


Fig. B. This litter of little pigs and their mother all belong to the farmer boy whom we visited.

Across the road is a farmhouse with a big barn near it. A boy with a shepherd dog at his heels comes out to ask if we want to see his pigs. The boy goes to a country high school. One of the clubs of this high school is a pig club. Every boy in his class is a member, and every boy has a pig. Some have several pigs.



Fig. A. A very small part of the downtown business section of Chicago. Off in the distance is Lake Michigan. Find the Chicago River which runs through this part of the city.

This boy's father has a hundred pigs on his farm. He also has twenty big, fat cattle. They will soon be beef in the butcher's shop.

The Corn Belt. On this farm are two large fields of corn. Here every farmer has a field of corn. For that reason, this central part of the country is often called the *Corn Belt*.

The next day we drive on, hour after hour, through small towns and past farms where we see corn fields, oat fields, hay fields, pasture fields, droves of hogs, herds of cattle, and big barns. Men are driving back and forth across the corn fields, cultivating corn. Others are out with mowing machines cutting grass to make hay. In the late afternoon we cross many railroads. It is easy to guess that we are near Chicago. This is a great city, with

many railroads coming into it from all directions.

We pass a freight train standing at a station. It has several cars filled with live cattle and other cars full of live hogs. They are going to the great market for cattle and hogs at Chicago.

Some cars in another freight train are marked "Refrigerator." These cars have big boxes of ice in each end and are filled with hundreds of pieces of dressed beef. Chicago, the great meat-packing city, is near Pittsburgh, New York, and many other places.

We spend the night in a hotel in Chicago, 477 miles from Pittsburgh. To come from Pittsburgh to Chicago has taken us two and one half days.

Cities and highways. The Lincoln

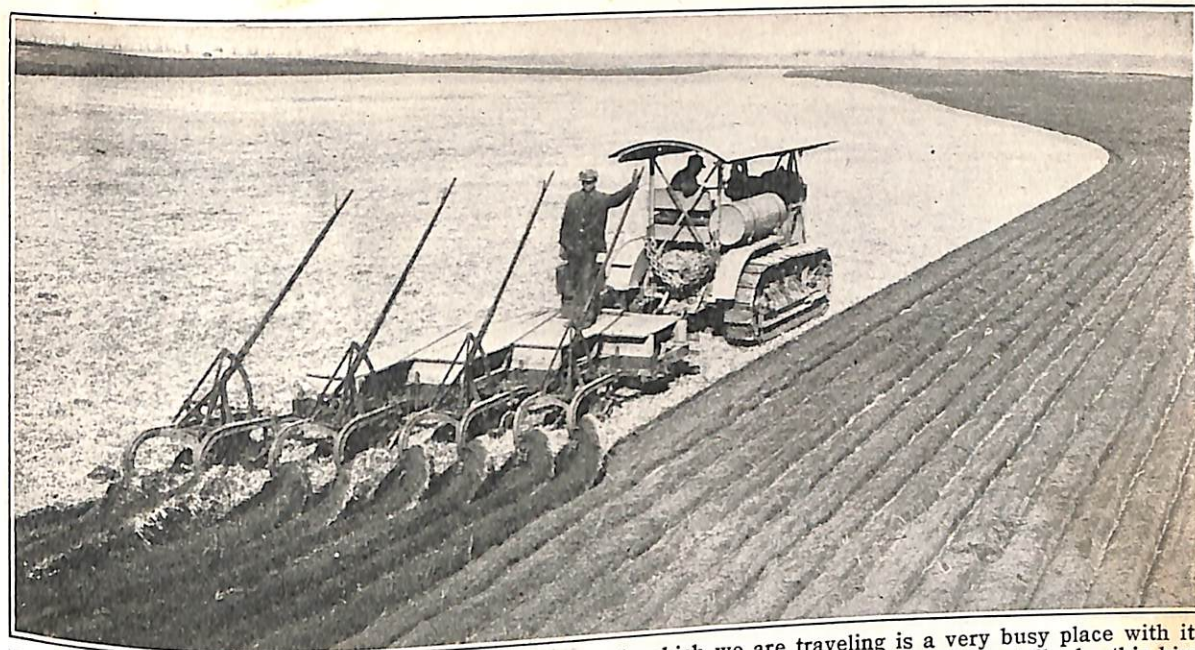


Fig. A. In the spring this big farming country through which we are traveling is a very busy place with its plowing and planting. The tractor is pulling a gang plow. Look closely and see if you can tell why this kind of plow is called a *gang plow*. How many furrows is it turning at one time?

Highway from New York to Philadelphia, Pittsburgh, and on past Chicago is sometimes called a *trunk route* because it is like the trunk of a tree with many branches. From this trunk line many branch roads go to the north and to the south. The branch roads connect many towns and cities with the Lincoln Highway. Perhaps you know the name of one of these cities where many automobiles are made. You can easily find the names of several large cities that are not far from the Lincoln Highway. Good roads connect the Lincoln Highway with almost every city and town anywhere near it.

The Lincoln Highway does not pass through the city of Chicago. If you have ever gone in an automobile through the streets of a great city, you can guess the reason. The city of Chicago is nearly twenty miles across. Automobiles can make much better speed by going around the city. We shall tell about Chicago on page 374. When we leave Chicago, we drive south to get back to the Lincoln Highway. Then we turn west again to

go on across the level or gently rolling farm country.

Rivers. In the afternoon we come to a wide river having muddy water. The Indians called the river *Father of Waters* because it is such a broad, long river. For many years people who crossed it had to go in boats. Sometimes they could not cross at all because the river was frozen over with ice thick enough to stop the boats, but not thick enough to use for crossing. We cross easily on a fine bridge.

If we should go down this river in a boat, we would come to the Ohio River. The Ohio, which is a branch of the *Father of Waters*, is also a big river. Find a large branch of the Mississippi that comes in from the west; from the east. What are their names?

Western part of the Corn Belt. Three days after leaving Chicago we are still in the Corn Belt, for it is a very large region. Most of the land is farms, and the farms and buildings and crops and animals are very much like those in the eastern part of the Corn Belt.



Fig. A. As we travel westward from Omaha the rainfall becomes less and less. Sometimes at low water sandbars appear in the stream bed. See the bluffs along the bank of the Missouri River.

On the afternoon of the third day after leaving Chicago, we find ourselves beside steep hills, but there are no stones. These hills are called *bluffs* — the Missouri River bluffs. We soon see the yellow, winding Missouri River. It is so filled with sand and mud that it is very shallow, and there are sandbars in the stream. It is sometimes called *Big Muddy*. Would this be a good river for boats?

Beside the yellow river is the city of Omaha, 524 miles from Chicago. Omaha is another city of the corn and cattle and hog country. It is not so large as Chicago or Philadelphia, but its meat-packing plants send much food to people in the eastern states. We sleep this night one hundred miles beyond Omaha. This is the end of our eighth day, and we are near the middle of the United States; half of our country is east of us, and half of it is west of us.

Telling about farming. Prepare a talk about farms in the Corn Belt. Use the following words: pigs, cattle, corn, hay, flat, level, railroad, refrigerator car, barns, river.

Make little sketches to illustrate your talk, or find pictures to make it more interesting.

Questions for you. 1. Why are there so many barns in the Corn Belt? 2. In what ways are the railroads useful to farmers?

3. If you were a salesman for automobiles or machinery, would you choose to canvass here or in the Allegheny Highlands? Why?

Blindman's buff. I shall tell you where I see around the blindman and you will tell me where he is lost.

1. There is a big city on a big lake. Roads carry cattle and meat to and from the city. Where is the blindman lost?

2. The blindman is in the country. There are fenced fields, and many houses and cattle, and large barns. Where is the blindman lost?

3. Now, lose the blindman on the bluff of the Missouri River; on a trunk-line road; in the home of a pig-club boy; in some other places we have been on our journey. From your descriptions, see if the class can find your blindman.

Trip the traveler. Let someone review for the class the section "From Pittsburgh to Omaha." At the end, let the class be ready to trip the traveler by telling important things that he may have omitted. Do not forget to use the pictures in your review.



Fig. A. After you have read the story on pages 199 and 200, tell what this picture shows.

FROM OMAHA TO SALT LAKE CITY

Little rain and few people. It is a long, long way from Omaha to Salt Lake City. On the Lincoln Highway the distance is 1,008 miles. There is not a large city in all that long distance. As you read, see if you can find why this is so.

For two days as we travel westward from Omaha, the road follows beside a branch of the Missouri River called the *Platte*. It is not a big stream; sometimes there is almost no water in it. In many places the river is full of sandbars. It does not rain here as much as it does near New York or Chicago.

After we leave the Platte River, the road goes off across a great plain. The small towns are often many miles apart. There are no trees for miles and miles, except sometimes a few little bushy ones around a house. Water is scarce. We travel miles and miles without seeing a stream. But on this modern highway are filling stations where we can get gas, oil, water, and supplies. These stations insure travel in comfort and without worry.

Irrigation and a ranch. Finally we cross a small stream. Beside it a farmer is busy watering his hay field. He has dammed the stream, carried the water across his field in a little ditch, and with a shovel he is making a dam across the ditch so that the ditch will fill with water. When the ditch is full, the farmer will let the water flow out into his field.

This way of watering crops is called *irrigation*. The farmer is irrigating his field so that grass will grow. He will cut the grass and dry it to make hay for his cattle to eat next winter. This part of the Great Plains, near the Rocky Mountains, has so little rain that there is not enough water to make trees grow well or to make corn grow well.

The man who is irrigating his hay field has a very large farm called a *cattle ranch*. All of his ranch except the hay field is in pasture, and his farm is as big as twenty farms near Chicago. This big farm, or ranch, has only one family on it, and it has no more cattle than we found on the farm near Chicago.



Fig. A. A shepherd, his dogs, and a flock of sheep on the Great Plains just east of the Rocky Mountains.

We decide to camp out for the night at this ranch. The ground is dry, the weather is clear. The farmer lets us spread some of his hay on the ground beside our automobile. We wrap up in blankets and sleep on the hay under the open sky. We like this. The next time we come we shall bring a tent and sleep in our tent every night, as thousands of automobile travelers do.

Great Plains and sheep. This treeless plain east of the Rocky Mountains, where the rancher is irrigating his hay field, is called the *Great Plains*. The surface of the Great Plains is much higher than the surface of the ocean. Indeed, at the foot of the Rocky Mountains the surface of the plain is twice as high above the sea as are the tops of the highest mountains near Pittsburgh.

We are surprised at this because, as we came over the road, our car did not seem to be climbing so much. We notice that the nights here are much cooler than they

were on the lower land near the Mississippi River. It is too cool for corn to grow well. Plateaus are like mountains in being cooler than the lowlands near them. The next day we travel many miles and when evening is near we stop near a stream of water. We are not far from the Rocky Mountains. A sheep herder is coming down to the stream from the plain with his flock of two thousand sheep. As the sheep come near the stream, they run to get a drink.

When the flock has eaten all the grass in one place, the man moves the entire outfit to some other place where there is more grass. Many such herders and flocks are roaming far up and down the Great Plains for hundreds of miles north of the Lincoln Highway and hundreds of miles south of the Lincoln Highway.

High mountains. In this country of the sheep herder, we can see blue mountains in the distance. Sometimes their tops shine with snow because the tops

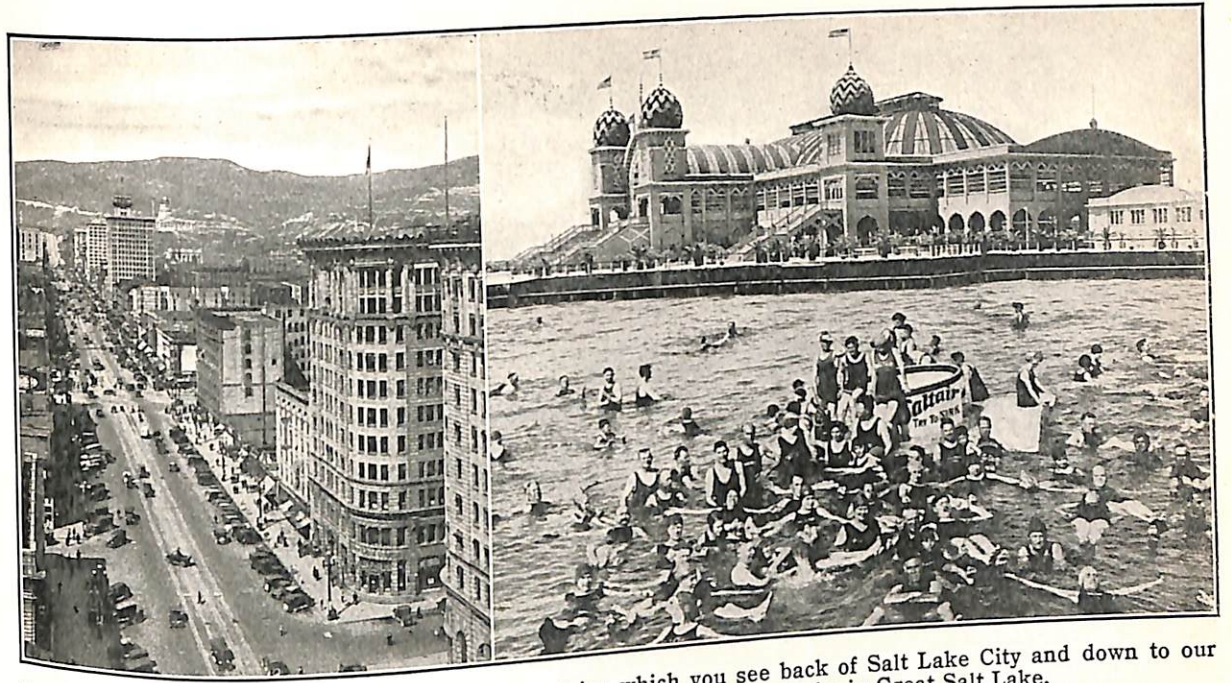


Fig. A. On our trip we drove through the mountains which you see back of Salt Lake City and down to our hotel in the business section of the city. Then we drove out to bathe in Great Salt Lake.

mountains are much colder than the lower land near them. In the mountains we see steep, rocky land and forests of pine trees. Streams of clear cold water gurgle and roar and foam as they come tumbling down over the stones and rocks in their river beds.

Trees and treeless land. At last we are approaching Salt Lake City. We are still in the mountains, with trees all about us. The automobile makes a turn in the road and we see a strange view. In front of us and far below is the plain. At the foot of the mountains is a band of green fields and Salt Lake City with many beautiful shade trees. Beyond the city is a wide plain without trees or fields or houses or green grass. This barren land is called *Great Salt Lake Desert*. It is a desert because it is so dry. The city has green shade trees and green fields near it because the land is irrigated by water that comes down from mountain streams.

Great Salt Lake. As we look from the mountains across the plain, we see the

blue water of Great Salt Lake. This is a strange lake. Its water is very heavy.

An Experiment. If you will try this experiment, you will understand why the water of Great Salt Lake is so heavy. Take a glass and fill it almost full of water. Drop a teaspoonful of salt into the glass of water. Wait until you cannot see the salt. It goes into the water. We say that the salt *dissolves*. Dissolve another spoonful of salt in the water. You can put in several spoonfuls of salt, and the glass seems to be no more full than it was before, but of course the water is much heavier. It is interesting to begin with a glass in which an egg has been sunk to the bottom of the water. Tell what happens to the egg as more and more salt is added to the water.

Great Salt Lake has much salt in it — more salt than the sea — so much salt that swimmers, like the egg in the glass of salt water, could not sink if they tried. That makes swimming very safe. Many travelers stop to swim in the lake.

Important words: Ranch, irrigation, plateau, lowland, desert, dissolve. Your teacher will call a word and the name of a pupil. If the pupil gives the correct meaning.



Fig. A. In parts of the desert where there is some moisture, bunch grass grows. You can see this grass in the picture. Here and there also are stunted trees which have learned to live without much water. The large tree in the picture has bunches of needle-shaped leaves. Why did it not grow broad, flat leaves?

ing, he may call the next word and the name of a child, and so on until the entire class is tested.

Something to explain. Look at Great Salt Lake on a map. Do you see any large streams flowing into or away from it? Now look at Lake Michigan. What do you find there? Then try to explain why Lake Michigan has fresh water and why Great Salt Lake has salty water.

Making a model. Suppose you were a farmer, west of Omaha; show how you would irrigate a field by using your sand table, clay, sawdust, or flour paste. Or you may use cardboard, paper, scissors, and paste. It would be better still to use a corner of your playground. Model a mountain, a mountain stream, a dam, a ditch, and a field. Use Figure 199-A to help you in this work.

Making word pictures. Choose six pupils to make the word pictures. The first pupil takes the section called "Little rain and few people." Study your section very carefully and be able to "paint a word picture" of it. The next pupil takes the second section, "Irrigation and a ranch," and so on until the six sections are given out. The class will vote for the best and the second best "picture."

ACROSS THE BASIN AND OVER THE SIERRAS TO SAN FRANCISCO

The Great Basin and the mountains. If you will look at the map you will see that there are high ranges of mountains near the Pacific Ocean, not far from San Francisco. Their name is Sierra Nevada. Going over these mountains is the hardest climb we have in the whole journey from New York to San Francisco. You remember we found beautiful trees and green fields at the foot of the mountains near Salt Lake City, because the mountain streams water them. This happens also at the eastern foot of the Sierra Nevadas near towns called Truckee and Carson City. The country between the Wasatch Mountains at Salt Lake City and the Sierra Nevadas is much lower than these mountains. In fact, it is surrounded on all sides by higher mountains. For that reason it is called the Great Basin. Very little rain falls in the Great Basin. Some parts are so dry that it

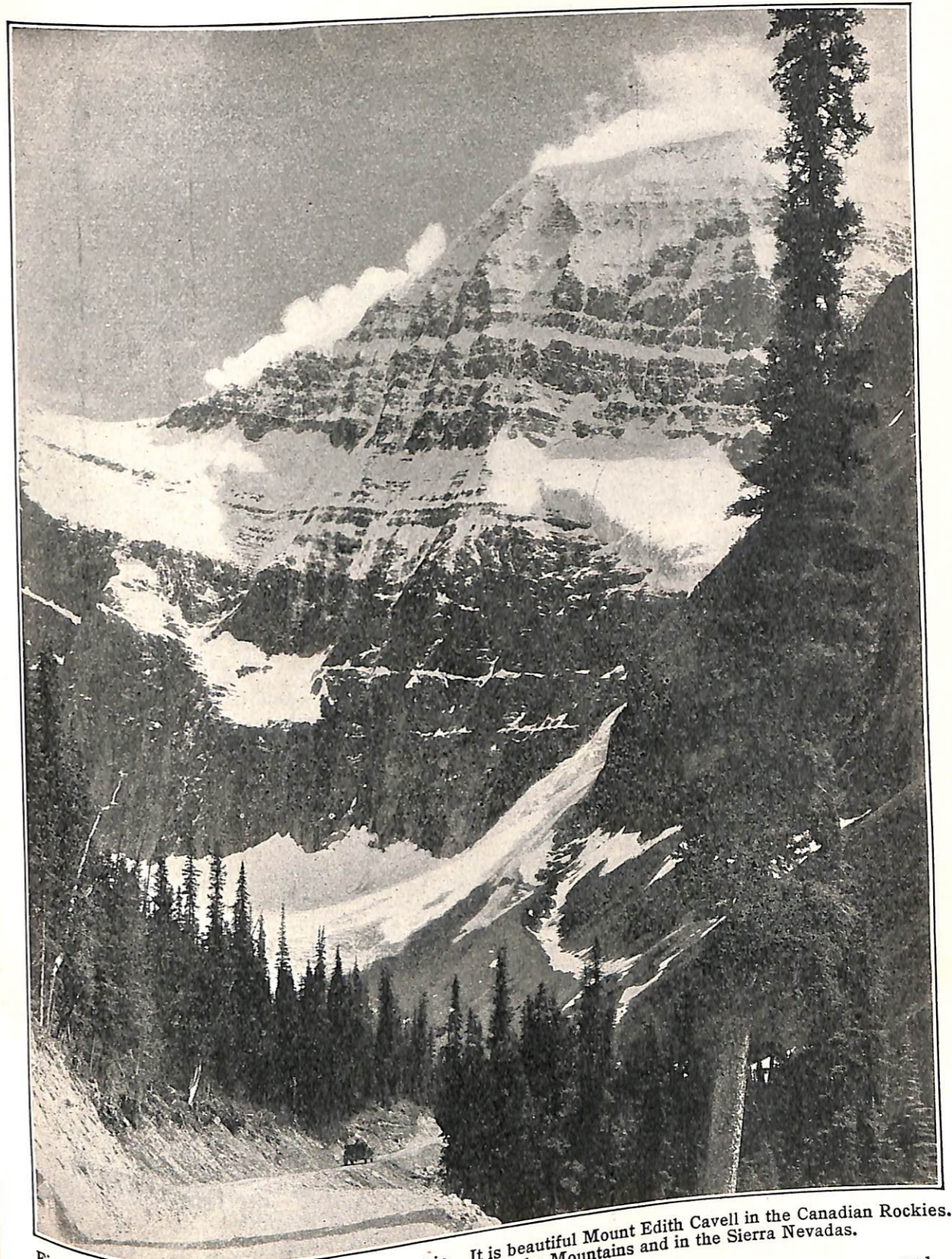


Fig. A. We did not see this mountain on our trip. It is beautiful Mount Edith Cavell in the Canadian Rockies. There are hundreds of peaks like this in the Rocky Mountains and in the Sierra Nevadas.

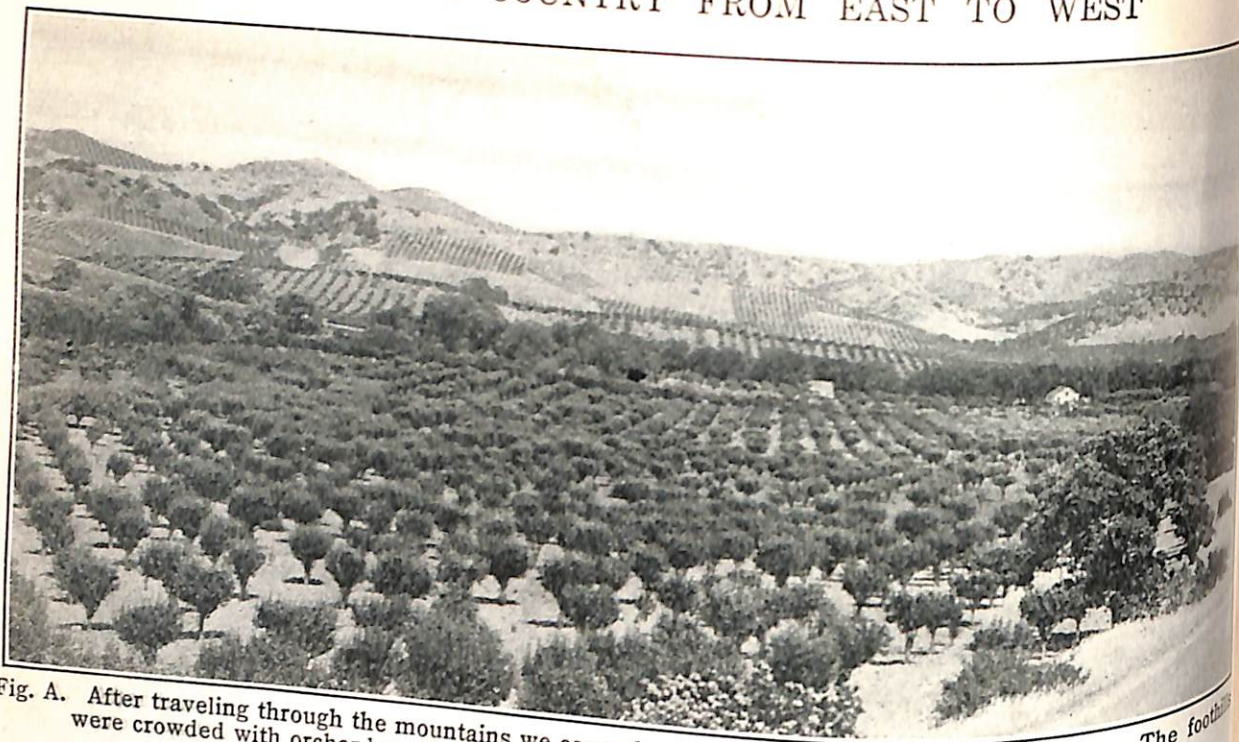


Fig. A. After traveling through the mountains we came down into the Great Valley of California. The foothills were crowded with orchards. Find some fruit-wrapping papers with the word *California* on them.

called *desert*. There is no forest here and there is very little grass, nor do we see fields with crops in them. In most places we see only scattered bushes as high as your knee or your waist. The ground in the Great Basin is often white and bare, and the glare of the sun hurts our eyes. Here and there we see the home of a ranchman who has some sheep or cattle that pick a living by eating the desert bushes. The next ranch house may be miles away. It is nearly six hundred miles across the Basin. The country is dry and dusty; and in the middle of the day, it gets very hot. We are in a hurry to get away from the heat and dust, and so we make this part of our journey in a day and a half.

The mountains. The last day of our journey is wonderful. This is the day we go over the Sierra Nevadas and reach San Francisco. Up we climb — up from the Great Basin — up, up, up the side of the Sierras. We follow a stream which splashes over the rocks and runs swiftly. As we see the clear water and the beautiful

pinus and feel the cool air, we are very happy. We talk about the difference between this place and the dusty Basin we were in yesterday. At the foot of the mountain are small trees. As our automobile, winding in and out, climbs higher and higher, the trees get larger, for it rains more here in the mountains. If we had time, it would be interesting to visit the lumbermen who are sawing down trees in this forest. After the trees are cut down, the logs are taken to a sawmill. There an engine runs a wonderful saw that slices the logs into boards almost as easily as you can slice a loaf of bread. There are gold mines here, too, where men go far down into the ground to dig for gold. It would be interesting to climb to the tops of some of the peaks and set up camp for a few days in the mountains. Near the top of the mountain we see the railroad which also crosses the mountain. It is entirely covered with a shed called a *snow shed*. The snow gets eight or ten feet deep here in winter. Trains cannot

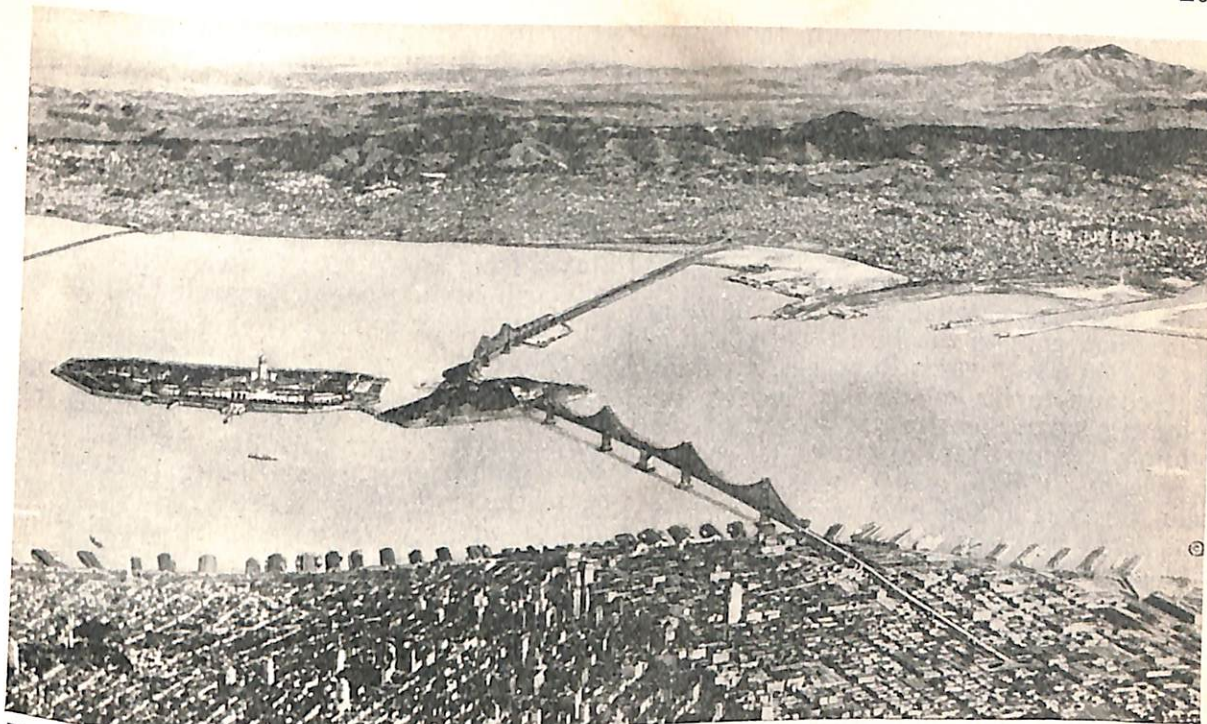


Fig. A. The San Francisco-Oakland Bay Bridge as it will appear when completed. In the distance are the cities of Oakland, Berkeley, Alameda, and Piedmont. The great bridge which will connect these cities will be about $7\frac{1}{2}$ miles long.

pass in deep snow, and so the shed is built to keep the snow from covering the tracks. We are glad to be in the automobile, from which we can see the beautiful trees and the countryside.

The orchards on the slope. As we go down the west side of the Sierra Nevadas, we come at last to the land where man can plow and make orchards. Close to the edge of the forest we see hundreds of orchards, small farms with houses close together, and packing houses where farmers bring peaches and pears and plums and apples to be sorted and packed into boxes for market. The fruit belt on the slopes of the Sierra Nevadas is indeed a busy place.

San Francisco. Now we cross a wide, flat valley. We ride for miles through hay fields, grain fields, pasture fields, and truck farms, and then we see San Francisco. We have to cross the bay on a ferryboat to reach the city; but before long

automobiles will be driving over the great bridge which will span the bay between San Francisco and Oakland. San Francisco reminds us of New York and Atlantic City: it is on a sheltered bay with an inlet. San Francisco Bay is deep, and so the big ships can enter it. Hundreds of ocean steamers come here every year, for San Francisco is a great port from which you may take ships for dozens of foreign countries. In another way, San Francisco is not at all like Atlantic City or New York. It is built on high hills, and the shore, instead of being sandy, low, and flat, like that near Atlantic City, is high, and the waves beat and splash upon the rocks.

San Francisco is much cooler in summer than New York or Atlantic City. This is because the Pacific Ocean here is cooler than the Atlantic Ocean is at New York or at Atlantic City. The cool ocean makes the sea breezes cool, and the sea breezes make the city cool.

Tell a story. "My Day in the Great Basin"; "My Day in the Sierra Nevadas." Are the two days very much alike or very different? Who will tell the better story?

A relay race. Divide the class into four groups. Divide a blackboard into four columns headed as follows: 1. Through the Great Basin; 2. Over the Sierras; 3. The Western Side of the Sierras; 4. Into San Francisco. At a signal, the first child from each group goes to the board and places in his column a few words to suggest a picture that comes to his mind when he sees the column heading, as: hot days or dusty, for column 1; snowy tops or forests, for column 2. Score 10, 8, 6, and 4 for speed in finishing; score 5 for each correct picture. The group with the highest score wins. Or this game may be played at your seats by writing.

A free-hand map. 1. Look at the picture (Fig. 205-A). Make a drawing that will show San Francisco, the harbor, the bridge, and anything else that you think is important. 2. Compare your map with New York and its harbor and be ready to give a talk, "Two harbors I have seen."

LOOKING BACKWARD AT THE JOURNEY

Is your map complete? 1. To answer this question, review quickly pages 181-205. Add to your map things you may have overlooked.

2. **Using maps.** On Figure 182-183-A, point to the part of Lincoln Highway that is in the Interior Plains. These plains extend north of the highway and south of the highway. Pass your fingers over their extent. You have passed your fingers over what is called a *natural region*. Do the same for lands, Atlantic Coastal Plain, Rocky Mountains, Great Basin, Sierra Nevada and slopes.

3. Find these natural regions on the map, pages 168-169.

4. Do you think the natural regions through which we passed on our journey are the same now as when America was first discovered? Give some reasons for your answer.

Making a picture notebook. As you have completed the reading of the first chapter in your book, you might begin a picture notebook to pass on to the next fifth-grade class; or to send to a foreign Red Cross cousin. Choose pictures that show typical

scenes from each of the different kinds of country (natural regions) you saw on your journey. Paste the pictures in order in your picture notebook, and under each write a few sentences to tell what the people do there. Look for pictures in old magazines or in railroad folders. Your notebook might be cut in the shape of the United States, from heavy paper. Continue your notebook as you complete each chapter in your geography book.

Acting occupations. In your journey you have seen people doing many kinds of work. Divide your class into small groups. Each group may act an occupation, using speeches, motions, or scenery. The other groups will try to guess each occupation acted and its natural region.

Make-believe realtors. Choose six pupils for real-estate agents. Each agent tries to sell his or her classmates a new home in one of the regions listed below. Bring forward all the facts and points as a true realtor would and ask your teacher to tell you who makes the best and next best salesman. Then let the pupils who bought homes give reasons for their choice, as follows:

1. I choose a home in the Atlantic Coastal Plain because.....
2. I choose a home in the Appalachian Highlands because.....
3. I choose a home in the Central Plains because.....
4. I choose a home in the Great Plains because.....
5. I choose a home on the Sierra Nevada slopes because.....
6. I choose a home in San Francisco because.....

The hardest words in the whole chapter. Below are the hardest words in this chapter:

- | | | |
|-------------|--------|---------------|
| sandbars | inlet | seaport |
| port | harbor | irrigation |
| plateau | plain | coastal plain |
| trunk route | bluff | bay |

Copy from the book a sentence about each of these words. Now, make up a sentence of your own about each word.

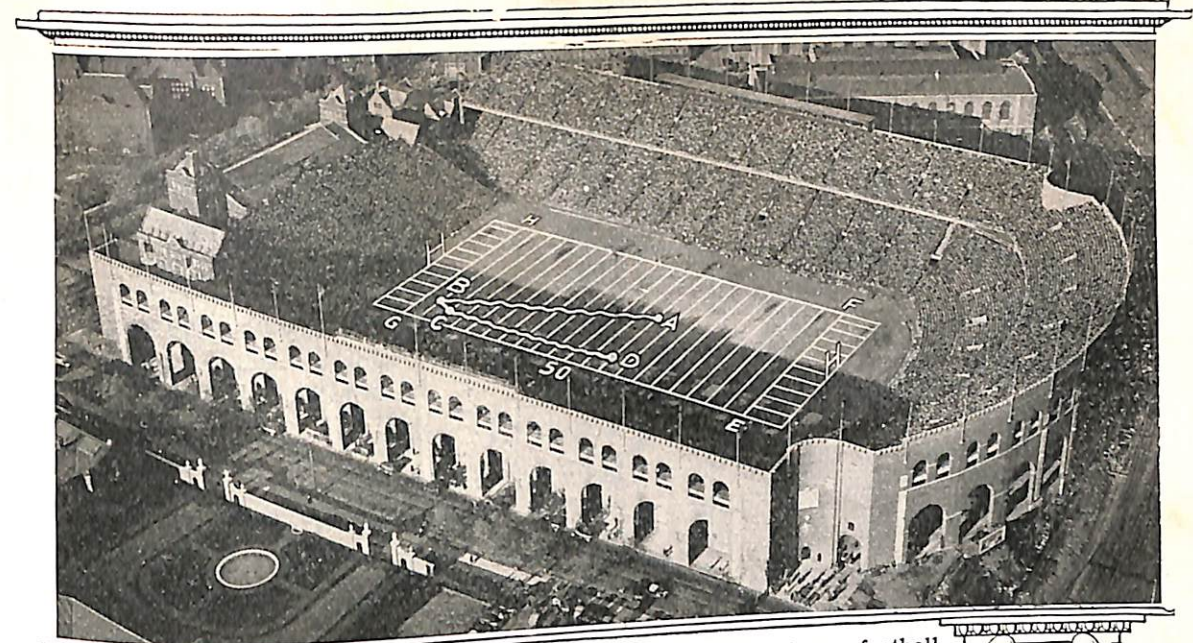


Fig. A. Franklin Field, Philadelphia, just before a football game between the University of Pennsylvania and the University of Notre Dame. After you have read this page, you will understand the lines, figures, and letters painted on the playing field.

TELLING WHERE PLACES ARE

LATITUDE AND LONGITUDE

Locating places on a football field. How do you tell a person where something is? Let us see how it is done on a football field (Fig. 207-A). We shall imagine a few plays in a football game between the University of Notre Dame team and the University of Pennsylvania team. The ball is put into play at A, near the center of the field. This point is 40 yards from the line EF. How long is the playing field? The field is usually marked off with white lines every 5 or 10 yards so that the players can tell just where they are, and so that the spectators can tell how the game is going. How far apart are the lines on Figure 207-A?

To score, the Notre Dame team must carry the ball across the line GH, which is called Pennsylvania's goal line. That

makes a touchdown and counts six points. The Pennsylvania team wishes to carry the ball across the line EF, which is Notre Dame's goal line. The ball is put into play by being kicked from the point A, which is said to be on Notre Dame's 40-yard line because it is 40 yards from her goal line, EF. Point A is also Pennsylvania's 60-yard line for the same reason. The first kick sends the ball to B. How far is that from Pennsylvania's goal? A man catches it and carries it back to C. How far is that from Pennsylvania's goal? A Pennsylvania player kicks it from C to D, where a Notre Dame player catches it. How far is that from Notre Dame's goal line? The players would say that the ball is on Notre Dame's 40-yard line. The point C is on Pennsylvania's 10-yard line.

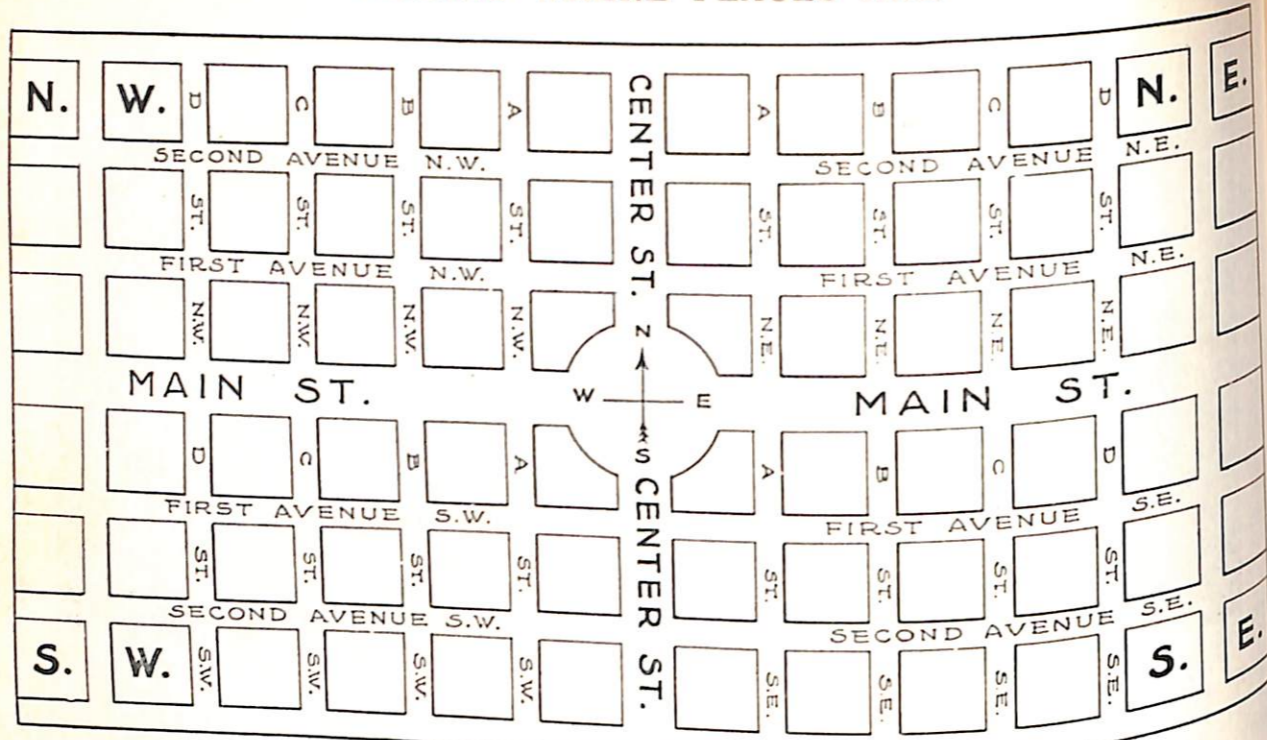


Fig. A. This is the street plan of the town which you will read about on this page.

You see that on the football field everything is located in one direction by its distance from the goal line; but the referee would tell you that the point C is also 6 yards from Pennsylvania's right side line, GE, and that the point D is 6 yards from Notre Dame's left side line, EG. Can you point out on this figure a place that is 3 yards from Notre Dame's right side line, and a place that is 3 yards from Pennsylvania's left side line? Can you give a reason why they do not use *east, west, north, south* to locate the ball on a football field?

Locating places in a town. How can you tell where a house is in a town? Figure 208-A shows a good way of doing this. One street, Main Street, goes from east to west and cuts the town into two parts, the northern half and the southern half. Another street, Center Street, goes across Main Street, cutting the town into two other halves, the east half and the west half. Point out the northeast quarter of this city; the northwest quarter. It is

made still more easy for you to find your way by giving number names to all the streets running one way, and letter names to all the streets running the other way. Find B Street Northwest (N.W.); B Street Southwest (S.W.). The map shows that two streets are really one street, with two names in the different quarters of the town. Find such a street. Now find C Street Southwest (S.W.) and A Street Southeast (S.E.) Would you rather go to a strange town and find the streets named A, B, C, D, E, or named Charles, Henry, Poplar, Maple, Euclid, Yale?

When you go east on First Avenue from North Center Street, the first street is named A Street (N.E.); the second is named B Street (N.E.); the third is named C Street (N.E.). Find First Avenue Northwest (N.W.); First Avenue Southwest (S.W.). This system of laying out a city makes it easy for people to find their way about town. In some cities they have another good scheme. All the

numbers on the houses between A Street and B Street are numbered between 100 and 199; between B Street and C Street are numbered between 200 and 299; between First Avenue and Second Avenue are numbered between 100 and 199; between Second Avenue and Third Avenue are numbered between 200 and 299. With this system, where would you expect to find No. 210 A Street (N.E.)?

Locating places on the globe. Hold an apple by the stem or put a string around an orange so that you can hold it up as though it had a stem. Stick a pin in the apple or orange. Your problem is to tell someone where the pin is on the apple, and you must neither point nor touch. Try doing it this way: As you hold the apple by the stem, take a pen or pencil or knife and make a mark around the apple halfway between the stem and the blossom end. If it were a globe instead of an apple, you would say that this line was halfway between the north pole and the south pole. The line marks the middle of the apple between its stem and blossom, or between its poles, if we choose to call them that. Now we can say that our pin is above, or north of, the middle, or the equator, of the apple. How can we tell how far the pin is from the equator? Let us do as the football players do. They start from the goal line, measure distances from the goal line, and mark other lines on the field to show the distances from this starting line. We shall do the same thing, but we shall not use yards as the football players do.

Latitude. Long ago the map makers decided that they would divide the distance around the world into parts, called *degrees*, just as they mark a circle when they wish to talk about it. Every circle may be divided into 360 equal parts called degrees. It makes no difference whether the circle

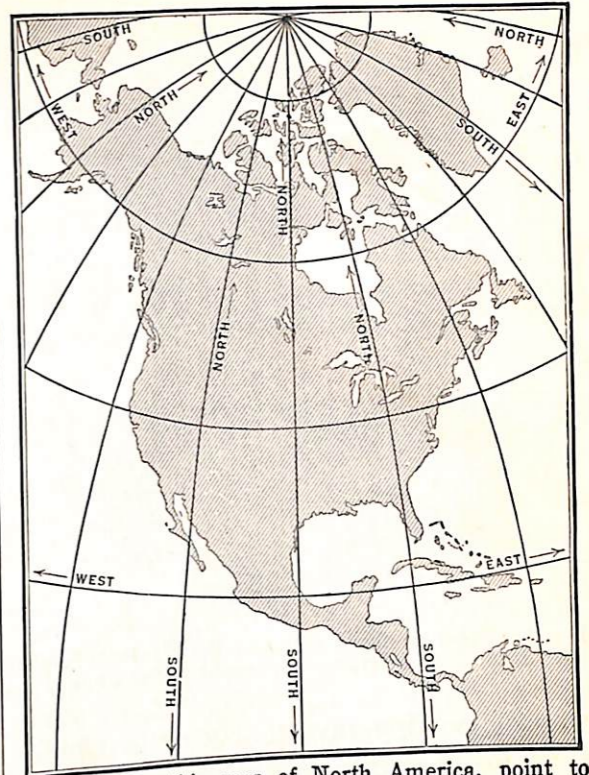


Fig. A. On this map of North America, point to meridians and parallels. Tell how you would use these lines to locate any spot on the map.

is the size of a cent, or the size of a half dollar, or the size of a wheel, or the size of the world. How many degrees are there in a whole pie? in a quarter of a big pie? in a quarter of a small pie? If there are 360 degrees around the world, how many degrees are there from the north pole to the south pole? How many from the north pole to the equator? from the south pole to the equator?

Now look at the map (Fig. 178-A). Find the equator. On the edges of the map as we go away from the equator, notice the lines marked 10, 20, 30, 40. These are much like the yard lines marked off on the football field.

To locate anything on the world, we start with the equator and go both ways, just as we did in the town where we started at Main Street and measured south of it, First Avenue, Second Avenue; and north of it, First Avenue, Second Avenue. This

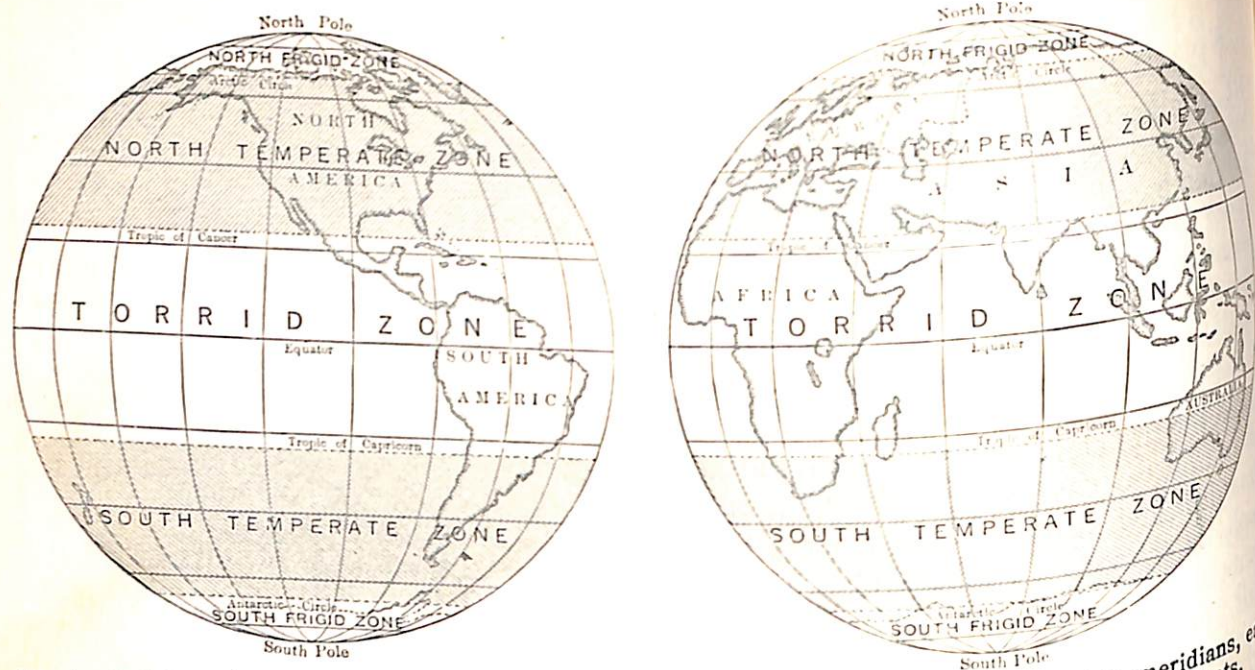


Fig. A. Point on these maps to the Western Hemisphere, the Eastern Hemisphere, parallels, meridians, each of the zones. Name the parallels which bound each zone. Name and point to each of the continents.

way of locating says that a certain place is so many degrees north of the equator, or north latitude; or so many degrees south of the equator, or south latitude. Now stick your pin in the apple in north latitude; in south latitude. Perhaps you can find the latitude of your home.

Longitude. Mark on your apple or point out on the globe several places that are 10 degrees north of its equator; 20 degrees north. Can you tell just where a place is by giving only its latitude? We need something else to help us get the east-west location. Long ago the map makers did very much the same thing that the football players do when they lay down a goal line and measure from that as a starting point or base line. We shall make a base line on the apple. Make a mark on the apple from stem to blossom, from north pole to south pole. Now you can say that you stick your pin in the apple at 10 degrees north latitude and that the pin is to the left, or west, of your north-south line, or to the right, or east, of your north-south line.

These north-south lines on the globe or map are called *meridians*. In this country and in England and in many other countries, the map makers use as the starting meridian line or base line the line that runs from the north pole to the south pole and passes through an observatory in a suburb of London called Greenwich. This is called the *prime meridian*. Now find on your map on page 185 a meridian that is marked 75. That means that this line is 75 degrees from Greenwich. What direction is it from Greenwich? Find other meridian lines on this map. Now we can really locate a place on a map just as the football referee locates a ball on the field. He would say that a ball was on Pennsylvania's 20-yard line, 12 yards from Pennsylvania's right side line. In much the same way can you tell just where your home is? First comes latitude, or distance in degrees from the equator; then comes longitude, or distance in degrees from the prime meridian. Places have east longitude or west longitude.

Zones. We have one more way of locating places. The surface of the earth is divided into five wide belts called *zones*. They reach around the earth east and west, just as do the parallels of latitude.

All the land on which the sun shines directly down at noon at some time in the year is called the *torrid* (or equatorial) zone. The torrid zone extends $23\frac{1}{2}$ degrees, or about 1600 miles, on each side of the equator. The lower lands in this zone are hot, and there is no cold weather there except on high mountains or plateaus.

In Eskimo land the sun shines all night in summer, while in winter there are some days when the sun does not shine at all. All that part of the world in which there are days, or even a single day, when the sun does not rise at all, is called the *frigid* (or polar) zone. Frigid means cold. There is a north frigid zone and a south frigid zone, of which the centers are the north and south poles. The land between the two frigid zones and the torrid zone is called the *temperate* (or intermediate) zone. There is a north temperate and a south temperate zone.

Directions on a map. We learned (pages 21 and 22) that going north means going directly toward the north pole and that going south means going directly toward the south pole. Look at figure 209-A and you will notice that the lines of longitude all lead to the poles. You will also notice, if you study the map, that going directly north, or toward the north pole, does not always mean going directly toward the top of the map. It depends on where you start from and how the map is placed on the paper and what kind of a map it is.

An experiment. Turn to the map, pages 214 and 215. Place your finger on Mexico City. It is right near the 100°

meridian. Follow this meridian through Mexico, the United States, and Canada. You have traveled a line directly toward the north pole. Did you trace a line also directly toward the top of the map? Now find Iceland. The 20° meridian passes through it. Trace a line directly north along the 20° meridian toward the north pole. This time did you trace a line directly toward the top of the map? Can you see now that the one thing that means north on a map is directly toward the north pole? From this experiment you might make two rules:

1. To go north or south from any place on a map, go directly toward the north or south pole.
2. To go east or west from any place follow the parallel of latitude east or west.

Locating places on a map. Turn to the map, pages 184 and 185, and notice that across the top are the letters M, N, O, P, . . . X. Each letter is between two lines of longitude. Down each side of this map are the numbers, 2, 3, . . . 7. Each number is between two parallels of latitude. These letters and numbers help you find places on a map. To find Phoenix, Arizona, (O-5), place your finger on O at the top of the map. Notice it is between the 110° and 115° west longitude. Find the number 5 on the left side of the map. It is between 30° and 35° north latitude. Now follow down O between the lines of longitude and across from 5 between the parallels of latitude until they meet. In this square you will find Phoenix. Find Sacramento (M-4) and Buffalo (V-3). X

How. 1. How do you locate a spot on a football field? a house in a city? a place on the globe? a city on a map?
2. How do you name directions on a map? on the globe?
3. How do you suppose the zones got their names?



Fig. A. Where do you think these two March pictures were taken? This chapter will tell you.

CROSSING THE CONTINENT BY AIRPLANE

MAINE TO MIAMI AND NEW ORLEANS

We have crossed our country from east to west by automobile. Let us do it again by another route and travel faster.

We start from a country town in the northeastern part of the state of Maine. We are explorers going on a trip to find what the weather is like and what people are doing in different parts of our country the first week of March. (*Very important:* Use the maps, pages 184-185 and 214-215, all the time you are studying this chapter.)

Deep snow in Maine. As we start out, the snow is a foot deep in northeastern Maine, the people are wearing overcoats

and mittens, and some have caps pulled over their ears. At the railroad station we see the "Potato Special," a long train which leaves northern Maine every day during the winter. It is loaded with potato toes for the people of Boston, New York and other cities to the southward.

Many farmers have come to the station with sleds and trucks loaded with barrels of potatoes. The potatoes are covered with thick blankets to keep them from freezing as they are being moved from the warm potato cellars to the thickly lined refrigerator



Fig. A. Harvesting celery in Florida. The warm, moist winter and the sandy soil of the Florida Peninsula just suit early vegetables. After you have looked carefully at this picture, write three sentences: (1) about the harvesters; (2) about the wagonload of boxed celery; (3) about the freight car.

ator cars. These refrigerator cars keep fruit and other products cool in summer and warm in winter.

We leave northern Maine in the afternoon and travel day and night. Our train makes only a few important stops. In fifty-two hours we reach Miami, Florida. Trace our journey on the map (Fig. 185-A). What is the latitude of northern Maine? of New York City? of Washington? of Charleston, South Carolina? of Miami?

Miami and Miami Beach remind us of Atlantic City. We see a city on a long, narrow island, with a bay at the back and a fine sandy beach in front.

Sea bathing in Florida. It is the month of March everywhere in the United States, but does March give the same kind of weather everywhere? March gives snow to Massachusetts and Maine, and frozen ground and cold winds to New York and Pennsylvania. March gives warm sunshine to Florida. At Miami Beach hundreds of people are on the beach and bathing in the sea, as they were at Atlantic City in June (page 188).

As we walk about Miami, we see palm

trees and other trees in full leaf. Flowers are in bloom. People are wearing straw hats, and workmen are going about without coats. It will be two months before leaves and flowers and straw hats appear in Maine.

A winter playground. In the morning we take an automobile ride. We pass green golf courses where people from New York, Philadelphia, Montreal, and many other northern cities are playing golf. We pass many fine homes where people from the North spend the winter. There are big hotels, little hotels, and apartment houses and boarding houses where people stay who do not have homes here, but want to enjoy the warm climate. There are camps for people who travel in automobiles and camp out as they go. We count automobile tags. In an hour, in the streets of this one city in Florida, we get a list of tags from twenty-three states.

Harvesting truck crops. Why do you suppose those people are stooping over again and again in the fields near the city? Do you not see that they are groups of workers gathering radishes, string beans,

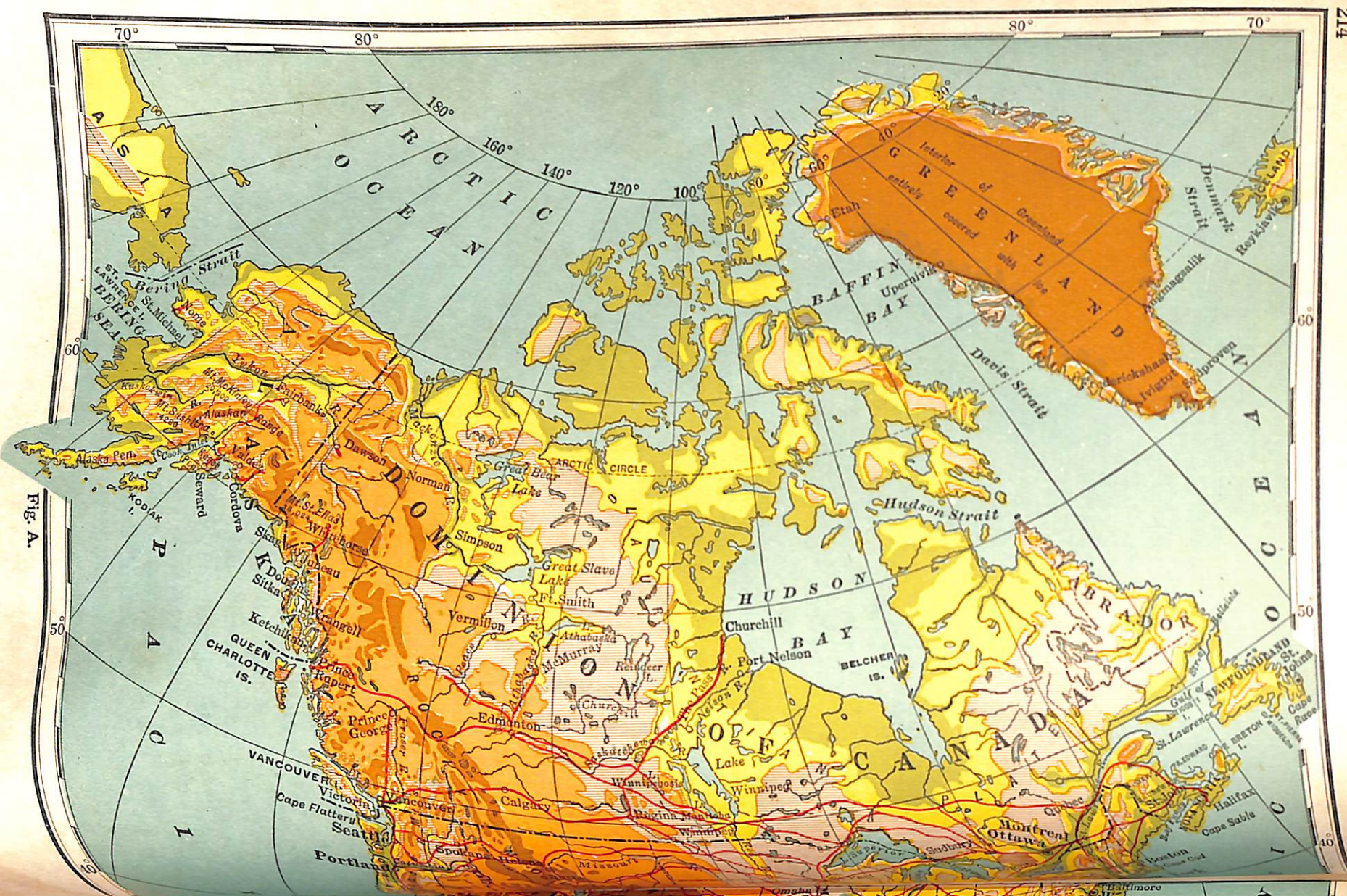


Fig. A.

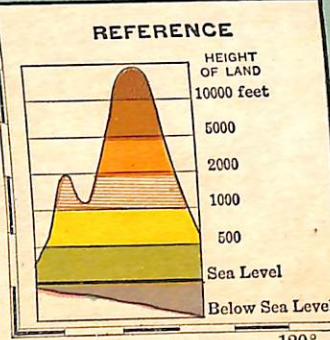


Fig. A.

**PHYSICAL AND POLITICAL MAP
OF
NORTH AMERICA**

SCALE OF MILES
0 100 200 300 400 500 600

Railroads ———



Copyright, The John C. Winston Co.

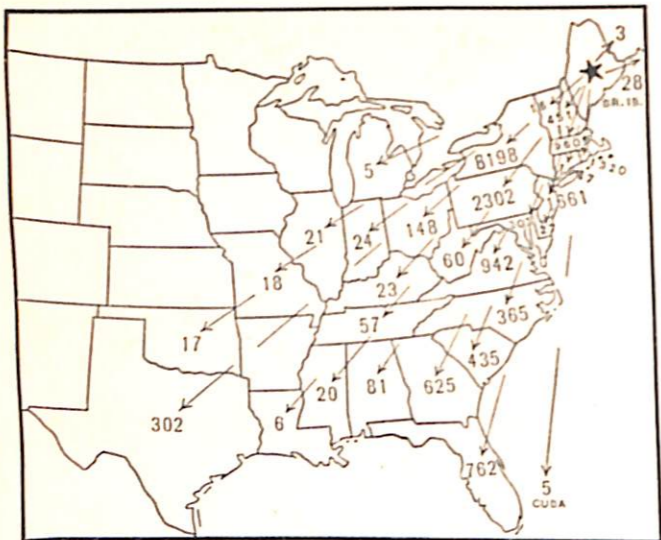


Fig. A. The arrows on this map point to the states which buy most of Maine's potatoes. The figures show the number of carloads bought by each state during a period of six months. Even Florida buys Maine potatoes. How many carloads? How many carloads of Maine potatoes are bought by the state in which you live?



Fig. C. The arrows on the map point to the states which buy most of Florida's early or new potatoes. The figures show the number of carloads bought by each state during a period from April 14 to May 1. Some of Florida's new potatoes are eaten in Canada. How many carloads?

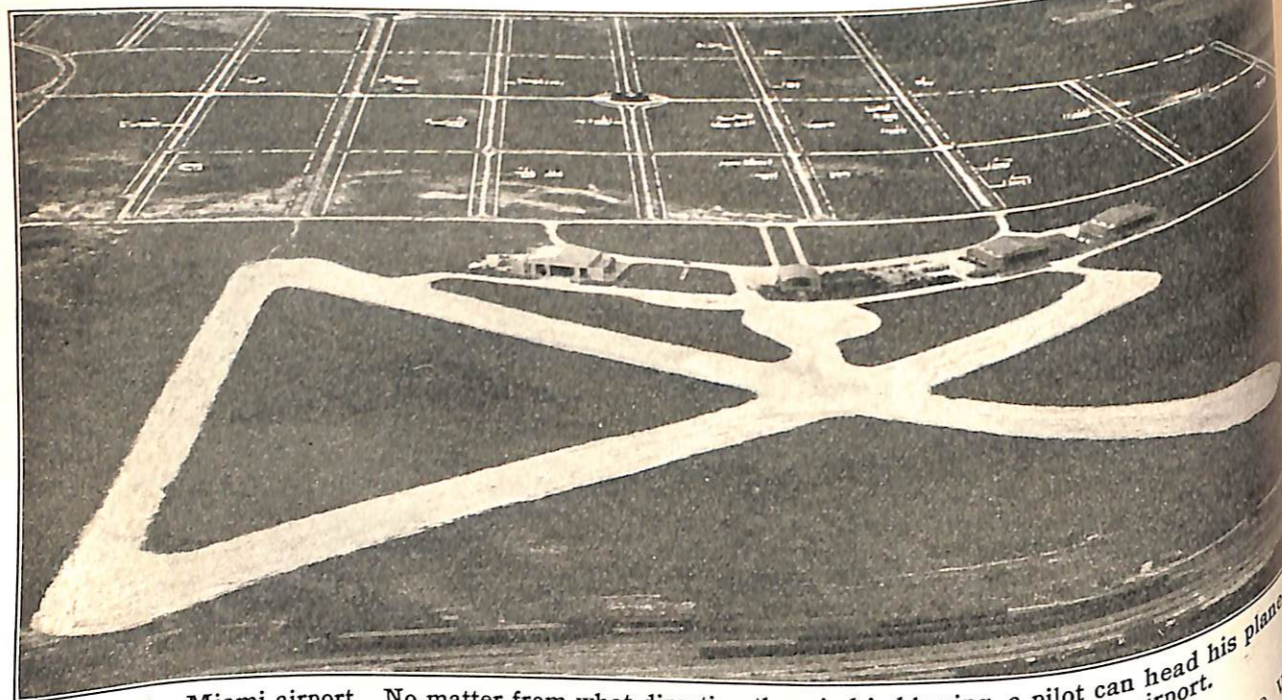


Fig. B. The Miami airport. No matter from what direction the wind is blowing, a pilot can head his plane into the wind and land on one of the broad, level paths. Our plane rose from this airport.

celery, early potatoes, cabbages, strawberries, and other garden crops? These fresh foods are being loaded into trains and boats for shipment to the northern cities. Do you suppose that the potatoes we saw starting their journey in Maine will meet the potatoes now starting northward from Florida? These early potatoes

from Florida are costly. They are what we call *new potatoes*. Some of them go to Maine and some of the cheaper Maine potatoes go to Florida (Fig. 216-A). Strawberries go in refrigerator cars, with ice to keep them cool.

In the afternoon we have a good swim on the sandy beach before we swim.

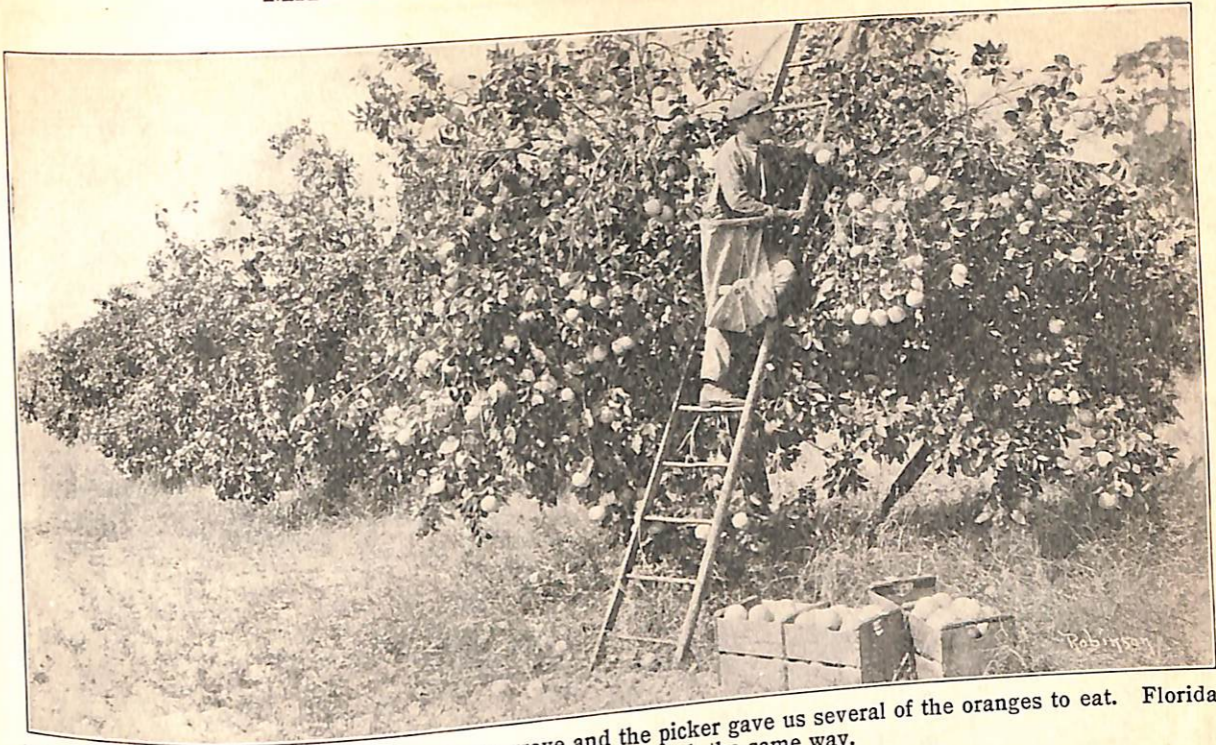


Fig. A. Our plane landed near this orange grove and the picker gave us several of the oranges to eat. Florida grapefruit is picked in much the same way.

We fly. We have now seen the northeastern and the southeastern corners of our country, and are ready for the thrill of going north by airplane. Our plane is waiting at the Miami airport. The small buildings of the airport are in a level, open field outside the city. As we arrive, the mechanic is testing the engine. He tries one motor, then a second, and a third. He then tries the three motors together. Everything is all right, and we step in. With a roar the three motors start. The plane moves forward, rises from the ground, and we look down on the town, the white beach, the blue sea, and the truck farms. The town is spread out under us like a very large map.

In a few minutes Miami fades in the distance and we are crossing a great swamp called the *Everglades*. All the earth as far as we can see is covered with water in which stands tall, coarse grass. The great automobile highway from Miami to Tampa shines out like a white band across the

green. In less than two hours we are looking down on many houses, truck farms, a city on a bay, and a baseball field where a baseball team from New York City is practicing for the summer games in the North. We have now reached Tampa.

Oranges. We look down on truck farms and pine woods. Those many rows of dark-green spots on the light soil are orange trees. The pilot brings the plane down in an open field at the edge of a town. We land beside an orange orchard. Men are picking oranges and putting them into boxes, and loading a truck with the boxes. We pick some oranges just for fun and are given a few to eat. We ask if we may ride in the truck to town to see the orange-packing house. The good-natured driver lets us go with him.

At the packing house the oranges are first put into a machine which rolls them along before a line of girls who pick out the bad oranges. The machine then separates the oranges into different sizes and allows

The connection
County - Reggie
and Educational

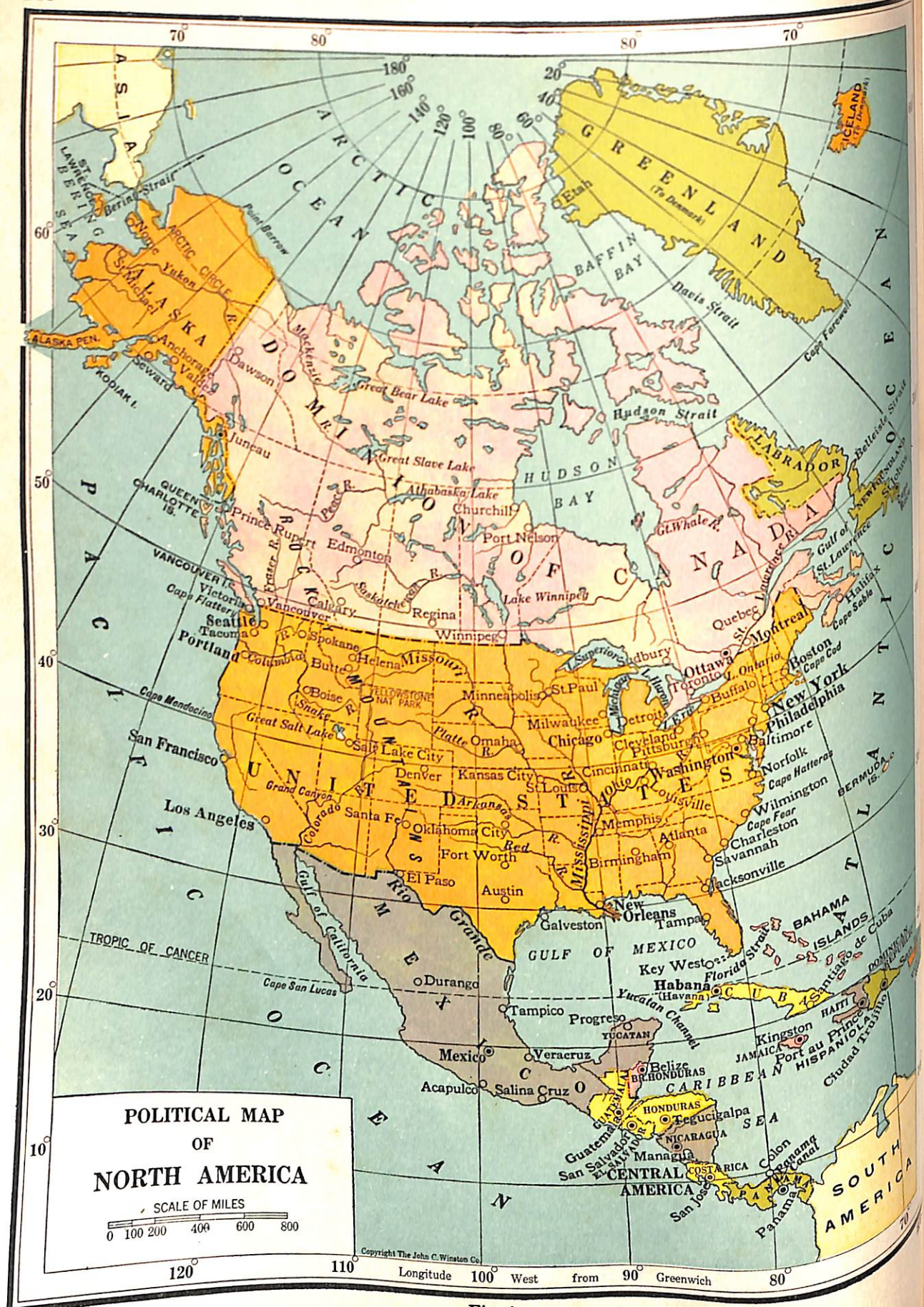


Fig. A.

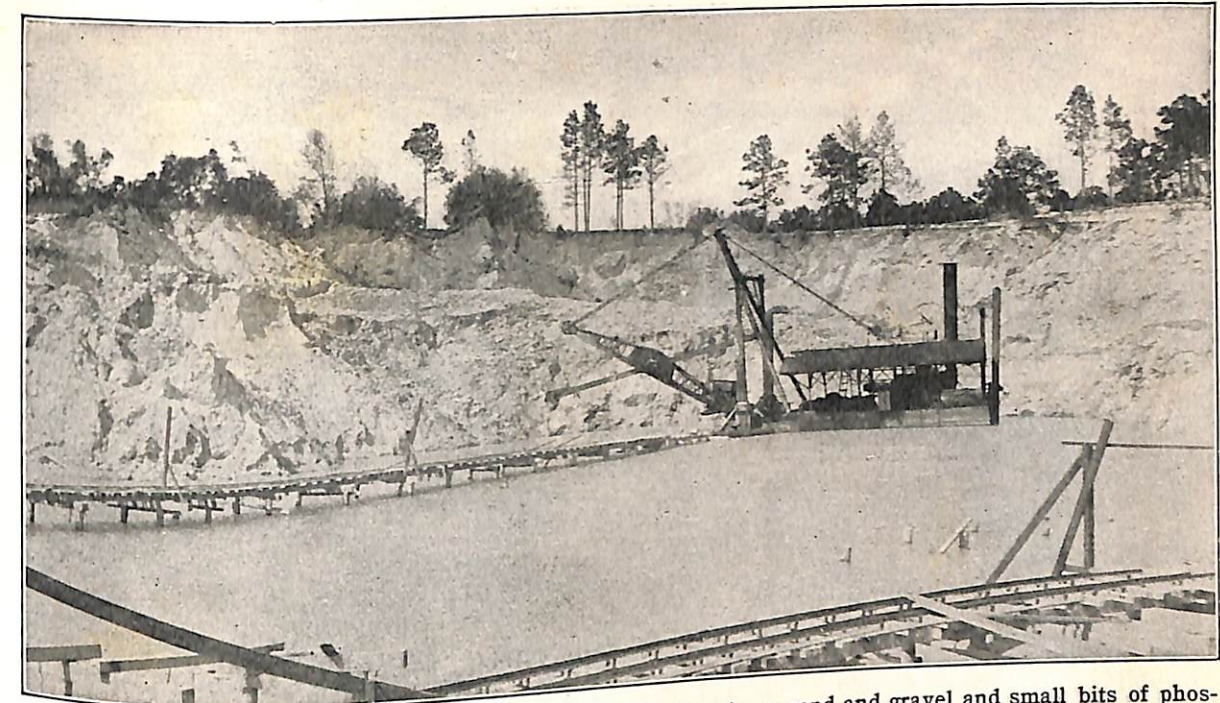


Fig. A. We saw this steam shovel at work in a big pit. It shovels up sand and gravel and small bits of phosphate rock. The phosphate rock is used to fertilize the soil (page 292).

each size to run into its own box in front of the packers. The packers wrap paper around the oranges with a quick twist, and pack the fruit tightly into the kind of boxes that we so often see in fruit stores.

Looking down on industries and forests. After an interesting hour in the packing house, we fly again to the northward. We see in the woods great pits where steam shovels are at work. You will understand what the steam shovels are doing when you have read another story (page 292). We fly over miles and miles of pine woods. The dark green tree tops make the earth seem black. Here and there is a clearing in the forest. We see houses and truck farms. The soil looks white beside the dark green of the pine trees.

Corn planting. Three and a half hours after leaving Tampa, we land in an open field near the boundary of Alabama and Florida. We have flown nearly 600 miles since leaving Tampa. We have left far behind the fields of ripe truck crops and

the orange orchards. Here men are planting corn, but they stop work and come to take a look at our airplane while we look at their mules and plows.

Cotton fields and two seaports. Soon after leaving the corn planters, we look down on a shining body of water. It is a bay, and the city (Fig. 220-A) on its shore has the same name as the bay. We see a steamer coming down the bay toward the Gulf of Mexico. She is bound for Europe with a load of cotton and lumber. As we go over the city, we look down on a large school building and a baseball field. Hundreds of people are watching a championship high-school game. We do not stop, but fly on across southern Mississippi and southern Louisiana, where we see farmers with their teams getting the fields ready for cotton and other spring crops. We cross an arm of the Gulf of Mexico, whose shining water has green forests on both sides. We see a straight, narrow line of water that reaches from



Fig. A. As we flew over Mobile, Alabama, the tall buildings of the city, the water front, and the boats in the harbor looked just as you see them in this picture.



Fig. B. Three men, three mules, and three machines to plant one field with cotton. The machine driven by the first man is depositing fertilizer; by the second man is mixing the earth with the fertilizer; by the third man is planting the cottonseed.

this lake into a city (Fig. 221-A). The line of water is a canal. New Orleans is beside a river that we saw from the Lincoln Highway. The river was muddy when we saw it from the Lincoln Highway. It is muddy here near its mouth, and very much wider. **Blooming roses.** After spending the night at New Orleans, we ride through the

city. Trees are coming into leaf. Roses and dandelions are in bloom, and vegetables are growing in the gardens.

A map — the explorer's record. 1. From Figures 214-A, 215-A, trace an outline map of North America.

2. Put a dot in its correct place on the map for each stop that you made on your journey from Maine to New Orleans. Put its name near the dot.

3. Connect the dots by a line showing the route of your journey.

4. Use the scale of miles to measure distances between stops, and write each distance on the line in the correct place.

5. On this map keep an "explorer's record" of your journey until you reach the snow-covered Arctic lands.

For your notebook. Paste in your notebook a picture of an airplane. Pretend that it is your exploring plane.

Explorer's notes. 1. In your notebook keep a record of things that you see each day — the weather, what people are doing, what the country looks like.

2. If you can find pictures of the places you see, paste them in and write a sentence or two beneath, telling about the picture.

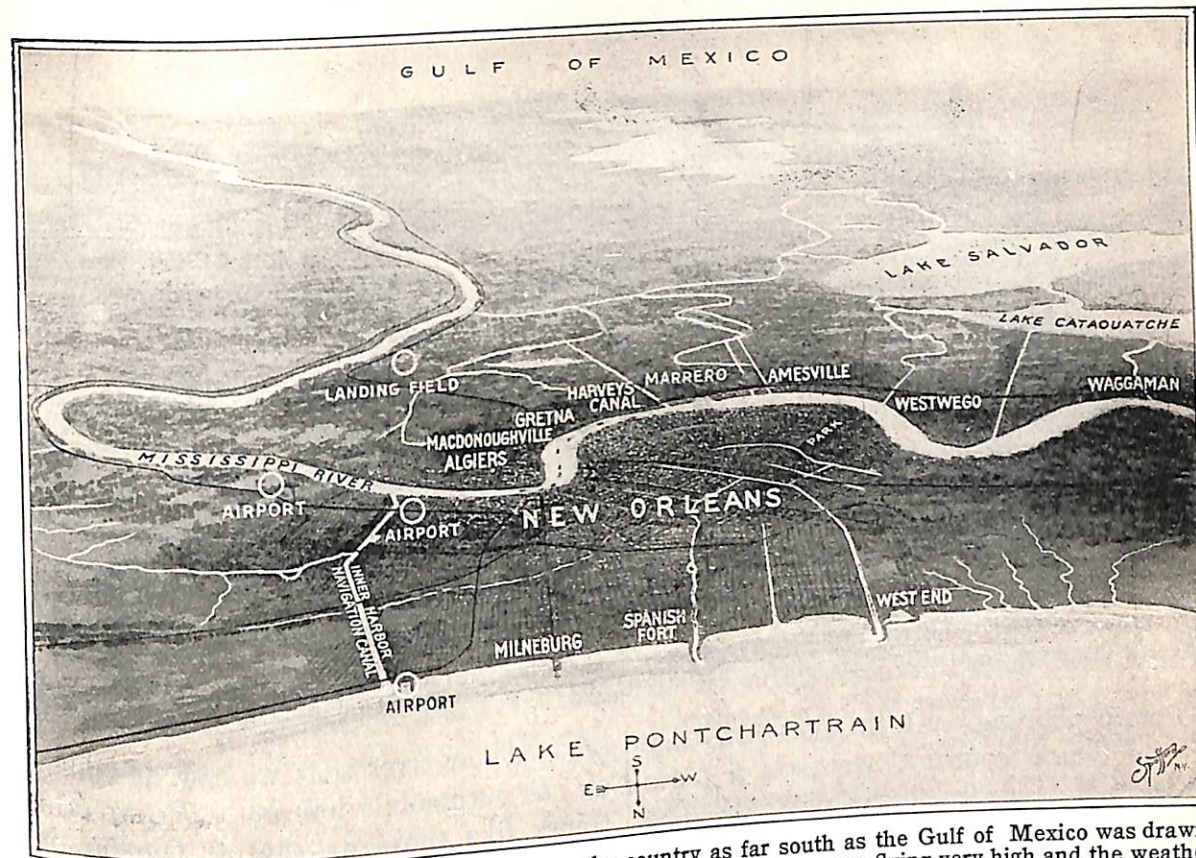


Fig. A. This picture of New Orleans and the near-by country as far south as the Gulf of Mexico was drawn. It shows, however, about what you would see from an airplane if the plane were flying very high and the weather were very clear.

FROM NEW ORLEANS TO THE SNOW-COVERED FARM

A cotton plantation. At New Orleans we change our course. The pilot heads his plane straight for Kansas City. Let us find the distance before we start. Lay a ruler on the map (Fig. 185-A). With one end of the ruler at New Orleans, let the ruler also touch Kansas City. What is the distance in inches? Now use the ruler and the scale of miles shown on the map, and tell how many miles it is between the two cities. Soon after starting, we see a big house with tall white pillars in front. Its owner is a member of Congress at Washington. Back of the mansion are several log cabins, in which live the people who work in the cotton fields. We see a tractor plowing the flat, level fields where

cottonseed will be planted. We are now crossing the Cotton Belt (Fig. 256-A).

The Father of Waters and the Ozark Mountains. Again we see the yellow Mississippi. It winds back and forth as crooked as a huge snake. We cross the river near a city on its east bank. What is the name of the city? Two and a half hours after leaving New Orleans, we see another muddy river. On its banks is the city of Little Rock. In the distance to the left are mountains, and soon we see mountains ahead. For the next hour we look down on the mountainous country of the Ozark Plateau. Find this region on Figure 255-A and on Figure 222-B. There are farms and roads in some places in the valleys along the streams. In some other places there is level upland between the streams and valleys. Roads and farms are on these uplands.

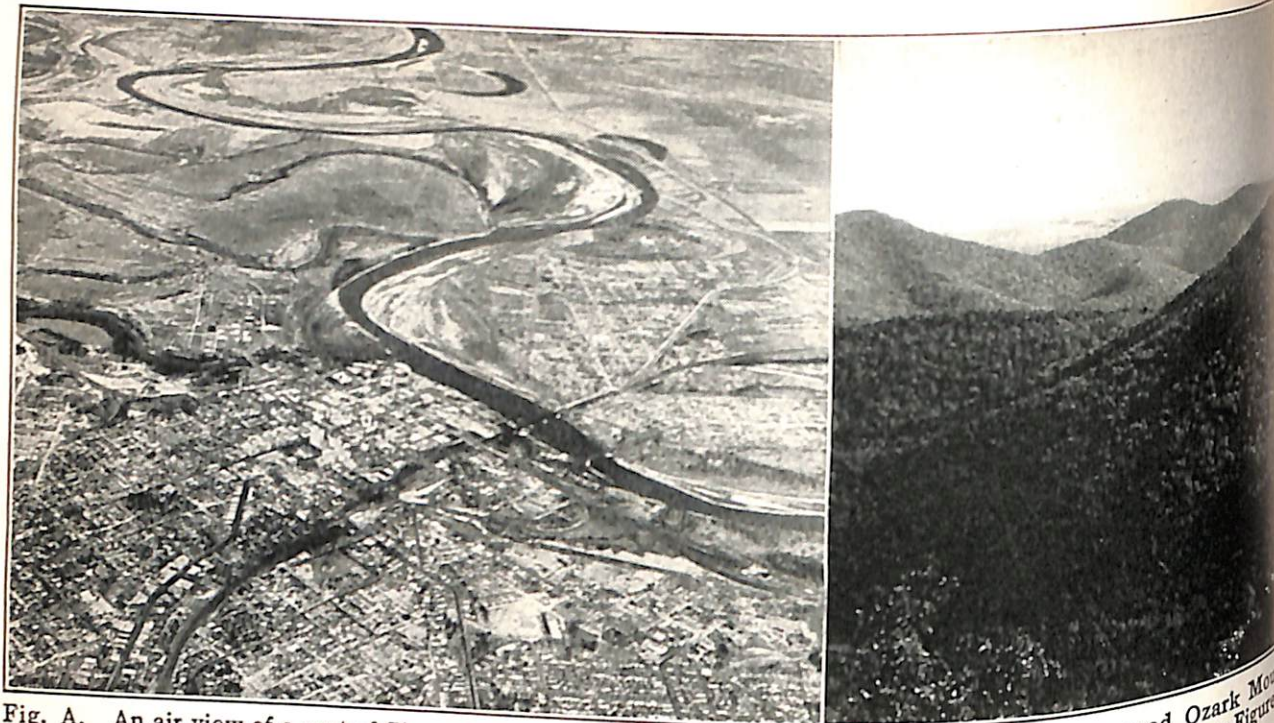


Fig. A. An air view of a part of Shreveport, Louisiana. Because the river at this point winds about, it is called a *meandering stream*.

Fig. B. The forest-covered Ozark Mountains. Find these mountains on Figure 185-A.

Potato planting. At the northern edge of the Ozark country, we pass a place where potatoes are being planted. The men and teams look much like those we saw planting corn yesterday, hundreds of miles to the southward.

Planting oats. In less than an hour after seeing the potato planters, we land in a field in the level country of southwestern Missouri, beside a group of men with tractors, harrows, and seeding machines. The men are planting oats in a field that had corn in it last year. The strong little tractor pulls the harrow, and the sharp, iron teeth of the harrow make the soil fine. The drilling machine then puts the seeds into the earth.

The end of spring. As we fly northward, we see that there is only the faintest tinge of green on the land. This morning, when we left Louisiana, all was green. In half a day we have come to the end of greenness. Spring has not yet come to this part of the country. From here northward all is brown and dead. As we fly over Kansas City, we see the

same yellow river that we saw at Omaha on our automobile journey. We see other things like those we saw at Omaha, for Kansas City, like Omaha, is a Corn Belt city.

After lunch at the Kansas City airport we start for the twin cities of Minneapolis and St. Paul. In which direction do we go? Again lay your ruler on the map, this time on Kansas City and Minneapolis. The scale of miles will tell you how long this leg of our journey will be. We see almost no plows this afternoon as we cross the Corn Belt, for we are getting back toward the land of winter.

Snow again. As we cross the Lincoln Highway, we see drifts of snow behind the fences, patches of snow behind the barns, and in other shady places, and before we reach St. Paul the ground is covered with snow. Those black specks that remind you of pepper on mashed potatoes are boys and girls coasting. As we fly over the Mississippi River; and there is ice on it. When a long river it is, to be seen at so many



Fig. A. Mr. Olsen's farm is on both sides of the road. The farm buildings are at the top center of the picture. What is the tractor doing?

points on our journey! In this part of the river there is a great falls, and large factories and flour mills stand near the falls. Of course you want to stop at the mills and factories, but our pilot wants to spend the night with his father and mother in his boyhood home on a farm a hundred miles north of Minneapolis.

A dairy farm. At sunset we land at an airport near a small town and motor out to the farm. Mr. and Mrs. Olsen make us welcome and give us a very good supper. In the early morning we go with Mr. Olsen to see the barn. Twenty cows stand in their stalls eating breakfast. They have hay from the big mows in the upper part of the barn, corn silage from the round silo, and meal which Mr. Olsen makes by mixing together cottonseed meal from Texas, bran (which is the husks of wheat), and corn that grew on his farm. Taking care of cows is the winter work of Mr. Olsen and his son Jan. In summer they grow crops of corn, hay, oats, and wheat.

In winter they feed to their farm animals everything they have raised except the wheat. They milk the cows and put the milk through a little whirling machine, called a *separator*, which takes out the cream. Jan takes the cream to a creamery two miles distant, and there it is made into butter, with the cream from twenty-five other farms. Every day carloads of butter go from this part of the world to almost every big city that we have seen on our airplane trip. Mr. Olsen says that he feeds pigs with the milk that is left after the cream is taken out. The Olsens sell cream, wheat, and pigs.

Put regions on your map. You have now passed through several natural regions. Within these natural regions are a number of different agricultural belts. Locate each of the following on your map:

- a. Corn Belt.
- b. Truck-Farming Belt.
- c. Cotton Belt.
- d. Dairy Belt.
- e. Wheat Belt.