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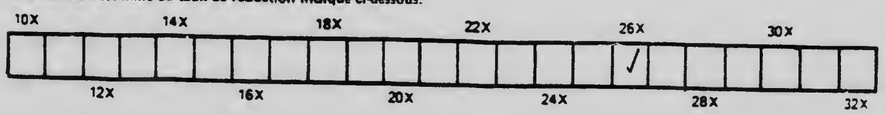

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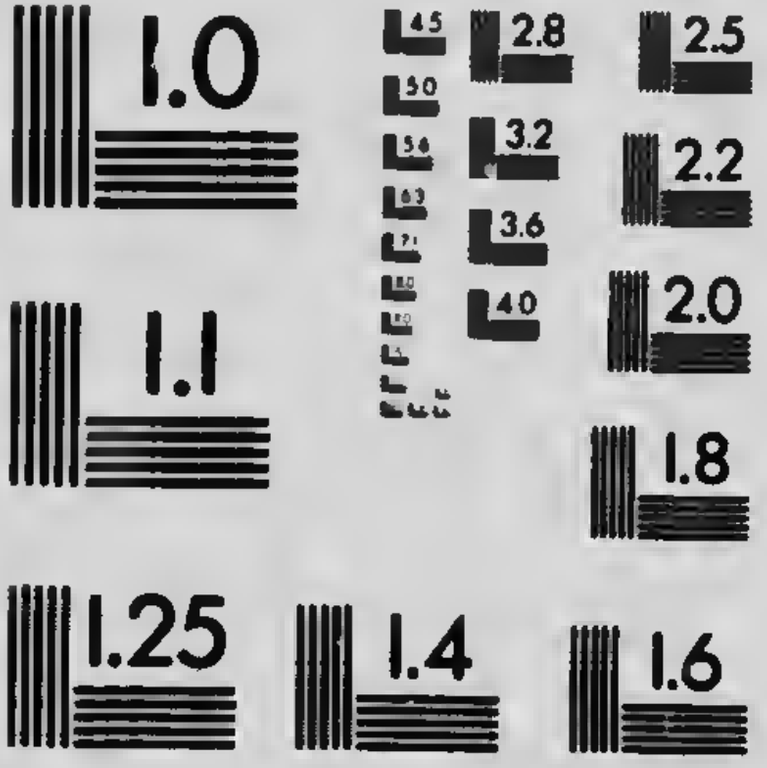

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WORLD RELATIONS
AND
THE CONTINENTS

AN ELEMENTARY GEOGRAPHY FOR THE JUNIOR AND MIDDLE GRADES OF THE PUBLIC SCHOOLS

BY
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VICE-PRINCIPAL OF THE NORMAL SCHOOL, WINNIPEG

PART I. WORLD RELATIONS

PART II THE CONTINENTS

Authorized for use in the Schools of Manitoba
Authorized for use in the Schools of Saskatchewan
Authorized for use in the Schools of Alberta
Authorized for use in the Schools of British Columbia

THE EDUCATIONAL BOOK CO., LIMITED
TORONTO

PREFACE

A course in scientific Geography, that is, a natural method of presenting geography, should commence with the child's physical environment, pass on to a study of the earth as a whole, supplement this by a study of the continents, and end with the advanced geography of the entrance and high school classes.

Home Geography, though recognized by the majority of teachers as the natural foundation of the science, has not yielded the results claimed for it by its most earnest promoters. This, however, is not the fault of the subject. Courses cannot put themselves into practice, and teachers, at present, have not fully grasped the matter, method, and spirit of the Nature-Study idea. Without this spirit, Home Geography will never fill the place which it alone is capable of filling.

Again, the study of the "earth as a whole," in other words, the study which was to furnish the child with a standard of geographical reference, has meant various things to different teachers. This want of uniformity was due in large measure to the fact that the geography of the Junior grades was outlined in the programme of studies, and the interpretation of the meaning of the course was left entirely to the teachers, who, in the majority of instances, were teachers of meagre experience, and often most incompetent in geographical knowledge. Even where the teacher had this experience, it was no easy task to provide the right matter and the right method. The inevitable result has been that the geography of this grade has been but poorly taught, and the children have gone on feeling to the end their want of a proper geographical foundation. To meet the needs of the children and of the teacher is the main reason for the appearance of this book. The first few pages should be passed over hurriedly, as they are intended as a test of the children's knowledge of their surroundings. The real work—perhaps the most difficult work of geography—begins with the treatment of the "earth as a whole," the matter and method of which has been tested time and time again in Normal School classes and also in various classes in the Model School. As a manual will be issued within a few months, teachers are asked to make themselves thoroughly familiar with the course as a whole, since, by so doing, much of the author's method and the spirit which should characterize the presentation of the work may be discovered.

The second portion of the text deals with the geography of Grades V and VI, the middle grades of the elementary school. For many years teachers have been attempting the impossible by trying to cover this in a single year. No wonder that the results were far from being satisfactory. This is an element in successful geography teaching. How could any teacher hope that a large and distinct picture of each continent should stand out for all time in the minds of the pupils? The geography of Grade IV is complete in itself, and of immense value to the pupil leaving school at the end of this grade. Such a pupil, however, misses all the pleasure of reading from the larger and more intense geographical pictures of Grades V and VI.

The work is so arranged as to permit Grades V and VI studying the same continents in the same year. Much map-work is demanded, and each continent is approached from the hemisphere of which it is the centre. The illustrations have been carefully chosen; they should therefore be considered as illuminations of the text, and should be studied most carefully. The whole subject-matter emphasizes the fact that we are a part of the greatest nation the world has ever seen. This fact the teacher should bear in mind, for geography is one of the best means by which patriotism may be advanced. Hitherto, teachers in the junior and middle grades have had to gather about them a small library of geographical references, from which to glean facts and stories suitable to the minds of the children. The author trusts that the present text may be the means of lessening much of this; but the task of selecting from the infinity of geographical facts those of greatest educational value and practical utility, has been difficult, and the author and publisher will be grateful to the teachers for drawing to their attention any serious errors or omissions.

Winnipeg, September 1st, 1911.

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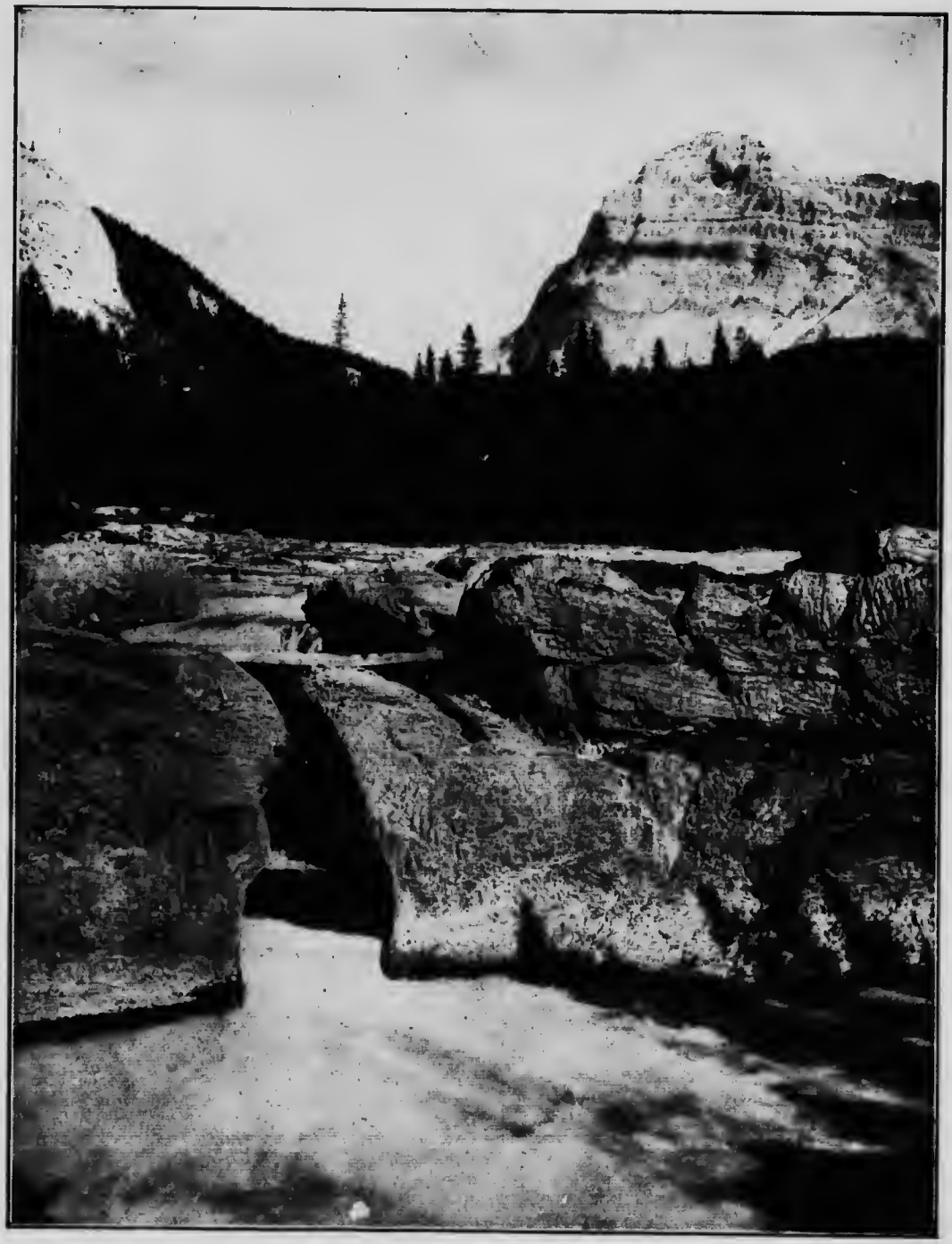
PART II. A STUDY OF THE CONTINENTS

COLORED MAPS



Natural Bridge on the Kicking Horse River, British Columbia.

PRIMARY GEOGRAPHY

PART I

WORLD RELATIONS

DIRECTION

If you were asked the question: "Which is the way to your home," what would you say? The way to a place is called *direction*. In order to find a place, we must know in what direction from us it lies. To help us in this, we have the direction names, north, east, west, and south, the first letters of which spell out the word *news*, and news is but the world's happenings, gathered from every corner of the earth.

Did you ever see the sun rise? Point out the spot where you saw it rise. What do you call this direction? What point is opposite the east? When coming to school this morning, in which direction did you see the sun? If we walk so that the morning sun shines in our faces, in which direction are we going? Stretch out your arms so that your right hand points towards the east, and your left hand towards the west. What direction are you now facing? What direction is behind you?

It may be very easy for us to tell the north, south, east, and west in the daytime, but how can these directions be found at night? Ask someone to point out to you a group of seven bright stars in the northern part of the sky. The chart may help you to find these stars. Some people think that the seven stars look like a wagon drawn by three horses. Can you see the horses? Others see a plough, while others see a great big dipper. The right name of the group containing these seven stars is the Great Bear, because people long ago thought it looked like a bear with a very long tail.

The North Star and the Big Dipper, with the two pointers on the right.

While it is a good thing to know all these names, we shall, I think, go on calling the group the Big Dipper, and we shall learn how to find the north point of the sky whenever the stars are shining. The two outer stars of the bowl of the Dipper are called the *Pointers*, because they point to a bright star called the North Star, or Polaris.

Sailors often find their position on the sea by noticing the situations of the north star and of other stars. Indians and many other people in different parts of the world use the same means; and boys and girls should be expected to take enough interest in the sky to be able in a short time to tell the east, the west, the north, and the south even at night.

But there are times when the sky is cloudy, and neither the sun, the moon, nor the stars can be seen. How may one tell direction then? Have you ever seen a compass? It is a small box in which is a little steel bar or needle that swings on the top of a pin. When the needle is at rest, one end of it points to the north and the other end points to the south. Knowing these, how may the remaining points be found?

What would you call the point half way between the east and the north? Where are the south-east, the north-west, and the south-west?

If I were to go out of doors, how can I find the north? How can I find it at night, the stars being in the sky? How can I find it in the afternoon, the day being pleasant? If you were lost and knew that your home was south, how would you find it? In what direction does your shadow fall at sunrise? At sunset? At noon? When, during the day, is your shadow longest? Shortest? What time of day is noon? How can you tell from your shadow that it is noon? When is the sun highest in the sky? Is the sun higher at noon in the summer than it is in the winter? What do A.M. and P.M. mean? What is the twilight? What the dawn? In what direction do the birds go in the autumn time? What can you tell by watching the direction of smoke from the chimneys?

QUESTIONS. 1. How long does it take you to walk a mile? 2. How far do you live from the school house? the post office? 3. If you live in the city, how many blocks are there to a mile? 4. Find out as many ways as you can how to tell which way the wind is blowing. 5. Draw a map of your route from home to school. 6. As the needle of the compass points both south and north, how can you tell which is which? 7. The shortest shadow made by a post is the noon-shadow; how should you find this shadow? 8. If you had the noon-shadow, how should you find the one-o'clock shadow? 9. Find the real noon and compare the clock with this. 10. The sun is near the horizon; how can you tell whether you are looking toward the east or toward the west?

THE WEATHER

The air, or atmosphere, is about us everywhere. We cannot see it and yet we know that it is there, for we can feel it blowing against our faces sometimes and often we can see it moving the dust and the trees. When the air is moving along so that we can feel it, we call it the *wind*. Sometimes the wind is so strong that one can scarcely walk against it. Sometimes it may blow so hard as to blow down chimneys, and even lift the roofs of houses. Most of us forget all about the air unless it is moving rapidly. But air is of very great value to us. We breathe it. We sometimes make it do work for us in windmills. It is the air that carries the clouds, and the clouds bring the rain and the snow.

A windmill used for pumping water to supply a farm.

Air may be warm or cold, wet or dry, quiet or moving. When we are telling of these things we are said to be speaking of the *weather*.

In the summer we sometimes have heavy rains, perhaps with thunder and lightning and wind. These storms may often give us a great deal of rainfall in a short time, so that the streets are full of water and the ground is well soaked. Sometimes during these storms some of the water falls as solid pieces of ice, or hail stones. These may do great damage by way of flattening and even threshing the grain, breaking window panes, and destroying garden stuff.

Trees weighted down after a heavy snowstorm.

Sometimes we have heavy rain storms that are cold. The wind may blow and the water may freeze as it falls, so that the trees and the telegraph and telephone poles, the roads and the sidewalks are covered with a thin layer of ice.

Snowstorms come in the winter. If the air is calm and it is not too cold, the snow comes down in large feathery flakes, which soon cover the ground, the chimney tops, and fences with a mantle of white. The unpleasant snowstorms are those which come when it is cold and windy. Then the snow particles are very small, and they fill the air so full of specks that one cannot see far. Such storms of fine snow often cover railroad tracks so that the strongest engines cannot get through.

One should also know the winds. One should learn how to watch the changing of the wind from point to point of the horizon and to make a note of the kind of weather following the settling of the wind in either the north, west, south, or east.

QUESTIONS. 1. Find out some uses of the wind that have not been mentioned. 2. Describe some cases where the wind has done damage. 3. Open a window in a warm room and find out what happens. 4. Describe the weather to-day. 5. What happens when wet clothes are hung on a line on a windy day? On a fair day? On a damp day? Explain in each case. 6. Mention all the ways you can by which you can keep warm in the winter season. 7. How can you tell that there is moisture in the air even when it is not raining? 8. Why is it often dangerous to sit on the ground in the spring or fall? 9. Why do farmers like to place their barnyards on the south side of the barn? 10. Why do evergreens get bent over in winter while other trees escape? 11. Describe some hailstorm you have seen. 12. Draw the shapes of some snowflakes. 13. On what kind of day can you best make snow-men? Why? 14. Find out how snow protects plants. 15. What does "forty below" mean? 16. What do you mean by "ninety in the shade"?

STUDY THERMOMETER

OCCUPATIONS

A long time ago, when nearly everyone lived on small farms, it was possible for a family to get their food, shelter, and

clothing from their own land. The timber was used to build the log house and even to make the rough tables, beds, and chairs. The wool was spun and then woven into cloth at home. The meat was smoked so that it would keep. In some parts of our country people still live in this way. As a rule, our bread, butter, tea, coffee, milk, sugar, oatmeal, and a great many other articles of food are brought to us from a shorter or a longer distance. At one time the skins were tanned at home and the leather was then made into shoes for the family by some travelling shoemaker. It was the same with the clothing. Now our boots and shoes, our clothing, hats and caps and other things, are made on a great scale in factories.

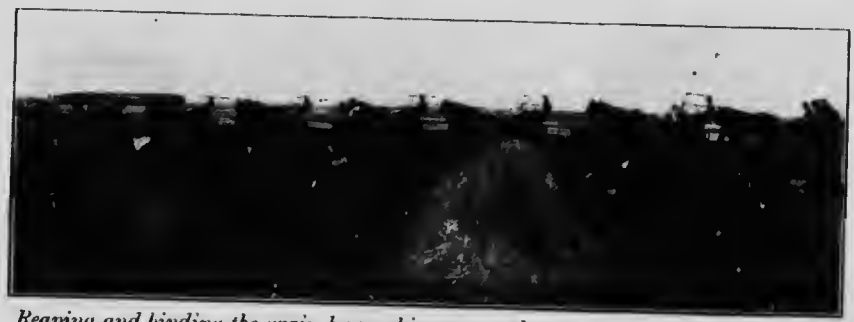
A planting scene on a large farm on the western prairies. Large numbers of men are often employed on a single farm during the planting and harvesting seasons.

There are to-day many kinds of work or many occupations, all of which may be useful to us. Let us note a few of the more important of these.

The raising of plants for materials for food, clothing, or other useful things, we call agriculture. Agriculture is the work of the farmer. Most of our food is raised on the farm. In all the settled parts of Canada cattle are raised for their milk or their flesh, horses for work or for pleasure, sheep for wool or mutton, hogs for meat, and chickens, geese, turkeys, and ducks for eggs, flesh, or feathers.

All lands are not good wheat lands. One district may be good for raising wheat, another district for oats, and so on. Again, one district may be good for cattle, while another district may be better suited to sheep.

The wood for our houses and our furniture, for paper-making and for firewood comes from our forests, where



Reaping and binding the grain by machinery on a large western farm. Each reaper does the work of five men in one-half the time.

lumbering, or the cutting of trees, is carried on.

Logs ready to be sawed into lumber. They are brought to the mill by teams or floated down a river.

MINING

Stone is quarried from the ground. Other things, such as iron, coal, silver, and gold, are also taken from the ground. The coal helps to keep us warm in the winter-time and to drive our engines. From iron we make our knives, tools for the farm, nails for building, machinery and many other useful things. Silver and gold we use as money.

FISHING

In some parts of the world people get their living by catching fish from the water, or by hunting wild animals for their skins or their flesh. Before our country was settled by white people, hunting was the great occupation of the Indians. Now hunting is important only in those parts which cannot be used, or which have not yet been opened to our people for farming lands.

HUNTING

Few of the things taken from the ground or the forest are ready for use when first secured. Many things have to be done to them while they are being made into the articles people want. This changing of the rough material into the finished product is called manufacturing. Manufacturing is seen when wheat is changed in the mill to flour, and when flour is changed in the house or in the bakery to bread. Manufacturing is also seen in the changing of cotton as it is found in the field to cotton cloth and cotton clothes. The cotton has first to be picked from the cotton plant. It has to be cleaned, and then separated from the seeds. Next it is packed into great bundles like hay bales, and sent to the factory, where it is spun into thread, woven into cloth, and it may be that this cloth is afterward colored or printed. In the last place it has to be taken by trains or by ships to such parts of the world as require it.

From agriculture, lumbering, fishing and other great occupations we get most of the things we need in order to be comfortable. If we have to buy these things from other people we have to give them something in return. Their goods have to be brought to us and our goods have to be sent to them. This buying, selling, and transportation of goods we call commerce.

To change one thing for another is not always easy. Farmers sometimes carry their butter, eggs, and hay or other crops

Unloading stone brought from a quarry, where it was cut into blocks, placed on flat cars, and shipped to its destination.

TRANSPORTATION

Transportation by stage-coach. In many hilly and mountainous regions the stage-coach has to be used. Notice the ridges which aid the horses in getting a firm footing.

to a store where they can get sugar, tea, cloth, and shoes in return. Usually, however, it is easier for a person having things to sell to get money for them. Money is easily carried about and easily changed for the things needed.

We have seen that many people are at work helping to make us comfortable. We have hundreds of servants working for us. Ships may now be carrying some article of food or clothing for us. Trains may also be doing the same thing. No person can very well live alone. People, whether they know us or not, are, all the same, working for us in many different parts of the world. Who these people are, how and where they live, and what they do, is the story this book is going to tell.

In order to carry on business it must be possible to move goods quickly from place to place. Roads and streets, if they are good, permit this. Horses and wagons may do for short distances, but there must be some other way of moving heavier loads more rapidly if business is to be carried on between persons far apart. People and goods may be carried by land or by water. On land we need railroads where steam, gas, or electricity may be used. As these roads require steel rails for tracks they cannot be built as easily as carriage roads. By water, goods are carried by steamships or by sailing vessels. These are used on our larger lakes and rivers and on the ocean.

In some countries the roads are poor, and everything has to be carried on horseback. In some other countries goods and occasionally people have to be carried on the backs of native carriers.

A passenger train crossing a river by means of an iron bridge. Railroads are used extensively for land transportation.

Miners use pack-horses to carry their outfits over the rough country and through the rivers.

QUESTIONS. 1. Why are freight trains usually slower than passenger trains? 2. Why has the mail wagon the right of way over other rigs? 3. Why are electric cars taking the place of horse cars? 4. Why are railroads sometimes double-tracked? 5. What are express companies and what do they do? 6. How are railroads kept in repair? 7. Name the railroads near your home. 8. What have you ever seen at a freight station? 9. What does the post-mark on the front of a letter mean? 10. Tell all that happens to a letter from the time you stamp it until it reaches its destination.

MAPS

If we know the direction and the distance from each other of a number of places or points, we may make a drawing showing how these would look if we could get above them far enough to see them all at once. Such a plan or drawing is called a *map*. Maps may show a small region, such as a school yard or a farm. Maps may also show a larger region, such as the whole of our land.

Maps help us to study the distance and direction, or, as we say, the position of many things at the same time, and hence are of very great use when we are learning about distant countries and places. They are also of use in showing whether we have a right or a wrong idea of a country.

Map reading is much the same as other reading. Instead of letters and words, we have signs which stand for mountains, valleys, streams, cities, towns, etc. These signs we must know just as well as we know our letters, should we wish to see the pictures which the map attempts to present. To learn how to read a map well is almost as valuable as to learn to read a book well.

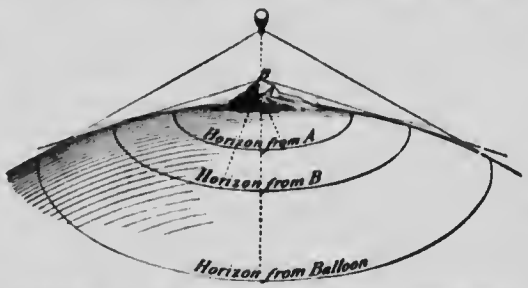
WHAT THE WORLD IS*

We sometimes say of a distant country in which we are interested that it is in a certain part of the world. But before we can know much about the different countries, their products, their people, and their occupations, we must know about the *world as a whole*, of which the land about our homes forms but a very small part.

Primitive transportation in Greece. A horse, cow, and donkey hitched to the same wagon.

*The real work of Grade 4 begins with this topic. All previous work should be viewed as a test of pupils' work in Home Geography.

The world is really a great ball or globe made up of rock, water and air, and called the *Earth*. This globe is so large that there is room on it for many millions of people; so large that one could not possibly visit every part of it even if he travelled all his life. The globe is indeed so large that it would take about sixty days, or two months, to go once around it, and then we would have to go as fast as the swiftest trains and the fastest steamboats could take us. If we were to take a large orange and hold it up so that the stem end is at the top, we may think of it as a small globe that will tell us something about the much larger globe on which we live. Let us think of the north as toward the stem and the south as toward the blossom end. No matter where we start from on our orange-earth, if we carry our finger north along the surface of the orange it will reach the stem end, or most northern point, and this point on the real earth is called the *North Pole*. In the same way, if we go south from any spot we shall reach the most southern spot, or *South Pole*. The South Pole is exactly half-way around the world from the North Pole. By remembering what we learned about east and west on a map, and east and west, north and south, in our own neighborhood, we can see which way east and west are on the orange.



A diagram showing the different horizons which may be seen from different elevations.

Let us now take some spot on the orange to stand for our home on the earth. We can move our finger around the orange in any direction and come back to where we started, but the nearer our starting point is to the North or South Pole of the orange, the shorter is the distance around in an east and west direction.

Oranges are so small that it is better to have larger balls or *globes* to represent the earth. Globes, like maps, may be made of different sizes and may show much or little of the world, according to their scale. Whenever we use the school globe, we must remember that it is but a model of the earth and not the earth itself.

The *horizon* is the line showing where the earth and the sky appear to meet. Should we look at the horizon in as many directions as we may, we shall see a circular line, no matter where we may be on the earth's surface, whether on the sea, in our own land, or in any other land. Were we to ask the people who have come from other countries what the shape of the horizon is in their native land, we should always find the same answer, namely, *round*. Those of the boys and girls who have looked at a landscape from the top of a high building, hill or mountain, will know that the horizon widens as we ascend. In other words, the taller we are the farther away does our horizon appear. Now, if we could only see the earth from, say, the surface of the moon, we should be able to see how big a ball it is.

THE EARTH SPINS ON ITS AXIS

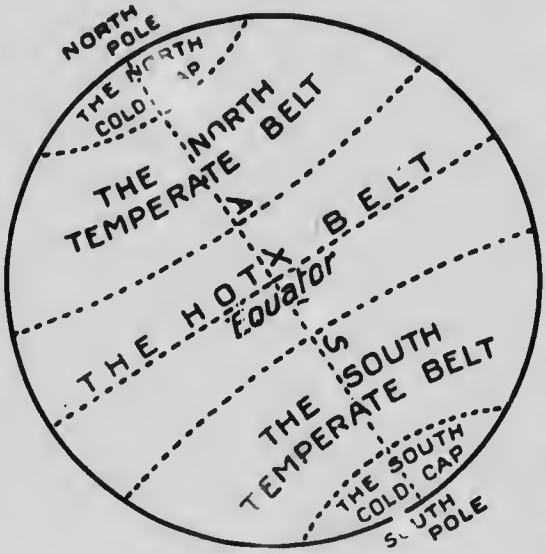
To everyone the earth appears to be motionless. This, however, is not the case. The earth keeps turning constantly from west to east, making a turn in a day, or, as we say, *rotates* in twenty-four hours. This is hard to believe, but great men who have studied the earth, have told us that this is really the case. Why should we not feel this motion? Have you ever ridden in a lumber-wagon over a very rough road? Do you think you would know whether the wagon were moving or at rest? Would the journey be more pleasant were the roughnesses of the road made better and the wagon set aside for a fine carriage with rubber tires on the wheels and the best of springs under the box? If so, can you understand why no jolting should take place in the case of the earth? What is the earth's road-bed like? Does not the earth turn so evenly that no jolting can take place? What a wonderful thing this spinning is! Always on time, not a second behindhand any day. Not a second ahead of time. Hold the school globe and turn it as the earth turns. Point toward the direction the earth is turning.

How we get daylight. The globe represents the earth, the lamp the sun.

No doubt you have thought all along that the sun rose in the east and set in the west. Will you be surprised to know that this is not the case? Stick a hat-pin, or something that may be easily seen, in the school globe. Stand with the globe in the west aisle of the room, and turn the globe very slowly from west to east. To the pupil at the seats, the pin will come into view, pass over the front face of the globe, and disappear again at the lower edge. Could the pin speak, it would say, "The class rose in the east, passed across the sky, and set in the west," or just what we continually say of the sun, moon and stars, in their movements across the sky. If you were to think of your eyes as the sun, the globe as the earth, and the pin as a person on the earth, you can easily understand the meaning of day, morning, forenoon, noon, afternoon, sunset, midnight, and night. Endeavor to show all these with the globe and the hat-pin. You will now see why we say that the sun moves. The sun moves no more than the telegraph pole you thought flew as your train passed it. We cannot see our earth turning, nor feel it turn, but we know that we are changing our position to the sun, and this is the sign that the earth is turning, but need not be a sign that the sun is moving.

The earth gets most of its light and its

heat from the sun, but the sun can shine on but half of the earth at a time. See that this is so by using the globe. The half that is in the sunlight is said to have day, while the half in the shade has night. As the earth turns you will find that one edge is constantly passing from sunshine into darkness, while the opposite edge is passing from darkness into light. Which of these edges is the sunset, or evening edge, and which the morning, or sunrise edge? You also know that night does not come on just when the sun drops behind the western horizon. There is a short time between sunset and night that we call the *twilight*, and a short time between night and sunrise that we call the *dawn*. The cause of these you may easily enough discover if you are a little thoughtful.



Belts of Heat and Cold.

But the earth gets its heat as well as its light from the sun. Everybody knows that the night is cooler than the day; that the day becomes hotter and hotter as the sun mounts the sky; and that it is hotter to be in the sun than in the shade.

In our study of home geography we learned that the sun seldom rises and sets in the true east and west, that it rises nearer and yet nearer the north as the summer season is coming on, and sets nearer and nearer the north during the same time. Again, that it rises nearer and nearer the south, and sets nearer and nearer the south as the winter is approaching. The sun does more, however; the sun at noon rises higher and higher in the sky as the summer is coming on, and falls lower and lower as the winter is approaching. This movement of the sun is a sign that the earth has another motion besides that of spinning.

THE EARTH REVOLVES ABOUT THE SUN

The ends of the earth are called the *poles*. The North Pole is the point almost directly under the North Star; the South Pole is the opposite end, or the end under a cluster of stars called the Southern Cross. The line passing through the earth and joining the North and South Poles, or ends of the earth, is called the earth's *Axis*.

During the year the earth makes a great journey around the sun, in the course of which we have the seasons, spring, summer, autumn, and winter. This motion of the earth is called its *revolution*.

Few of the discoveries ever made by man have gone more against early human beliefs than that the earth turns on its axis once a day, and that it moves around

the sun once a year; for nothing is more natural than to suppose that the solid earth stands still, and that the sun, the moon, and the stars move across the sky. If the axis of the earth were lengthened both ways, the south end would go through the Southern Cross, and the north end through or very near the North Star. Hold the globe so that its axis points to the North Star; turn it so that it will rotate from west to east. Carry it around the room so that its motion about the sun may be shown. Think of a line now that goes around the earth midway between the poles. This is also an imaginary line, but a convenient one, for were the earth divided at this line, we should have a northern hemisphere and a southern hemisphere; and something is gained when we can say of a country or a place, "It is in the northern hemisphere, or it is in the southern hemisphere." The line midway between the poles is called the *equator*. Places north of this line are said to be in the northern hemisphere or have a north latitude, while all other places are said to be in the southern hemisphere or to have a south latitude.

Every boy and girl living in the northern hemisphere knows that the cold winds come from the direction of the North Pole. Were we living in the southern hemisphere, we should say that the cold winds came from the direction of the South Pole.

For a great many years the regions about the poles have been an attraction to the explorer. Lieutenant Shackleton, an Englishman, came within 111 miles of the South Pole, and Captain Peary, an American, actually stood on the North Pole. Both explorers agree in describing these great areas as regions of ice and snow. To these the names *North Cold Cap* and *South Cold Cap* have been given.

That there is a region of great heat toward the south is readily believed when we come to think why birds and even people go in that direction at the approach of cold weather. The *Hot Belt*, as this region is called, forms a great broad band about the earth at the equator.

Between the Hot Belt and the South Cold Cap is the *South Temperate Belt*, and between the Hot Belt and the North Cold Cap is the *North Temperate Belt*.

In the Temperate Belts we have spring, summer, autumn, and winter, whereas, in the Cold Caps we have an eternal winter, and in the Hot Belt an unending summer. In which belt should you like to live, and why?

CLIMATE

If heat, and we may also say, rainfall, decrease as we go north and south from the equator, no wonder that different products should be found in different regions, for products requiring much heat and abundant moisture could not be expected to thrive where these were wanting. Climate, then, has much to do with what is grown, and by *climate* we mean the kind of weather a region has during a period of years. We know, for instance, that in our own home region, the heat of the summer and the cold of the winter never go beyond certain bounds. There are, as a rule, a certain number of cloudy days, and the rainfall is nearly the same in amount year after year. In the same

way the wind blows from the west more than from the east, and there is more good than bad weather on the whole. By putting all these things together, we can describe the climate of our home region.

The most important feature of climate and of weather, the feature we speak of most, is *temperature*, that is, the degree of heat or of cold. If it is too cold for comfort, we try to warm our houses; if it is too hot, we shut out the sun's heat and do everything we can to keep cool.

We have seen from this brief glimpse at the belts of heat, that the climate grows colder, as a rule, as one passes north or south from the equator toward the Cold Caps. It is possible, however, to get the same changes in climate by going up a high mountain in any part of the world. The upper air is colder than the lower air. This has been proved by experience time and again. Snow lies all summer on the tops of high mountains. Men have gone up in balloons and have nearly perished with the cold, even in the summer time. Mountain climbers always take extra wraps with them. This is a fact the boys and girls should keep in mind in their future study of geography.

THE AIR

Finally, we must not think of our earth as being made up of land and water, and nothing else. Our earth is enveloped in a great mantle of air many miles in thickness. The highest mountain top is not high enough to reach beyond this air, and no balloon can rise so high that it should leave the air. Air carries the clouds which bear moisture for the earth. Without air we should have no dawn, no twilight, no beautiful sunset; without air, the earth, wonderful as it is, would be without the faintest sign of life.

QUESTIONS. 1. What is the difference between the *earth* and the *world*? 2. Make a picture of the earth surrounded by the sky and the heavenly bodies in the sky. 3. Make a drawing showing the heat belts. 4. Describe a journey from the equator to the north pole; from the equator to the south pole. 5. Why should you say a cold *cap* rather than a cold *belt*? 6. Describe the position of the axis of the globe. 7. How much of the earth's surface is under the sun at a time? 8. Show on the globe the line separating sunlight from darkness. 9. Point out the eastern and western horizons on the globe. 10. What is meant by the scale of a map? 11. What way does your shadow point at noon? At sunset? In the morning? 12. Name the movements of the earth, and state what is the result of each. 13. How does a map differ from a globe? 14. What do *up* and *down* mean? 15. What keeps us from falling off the earth?

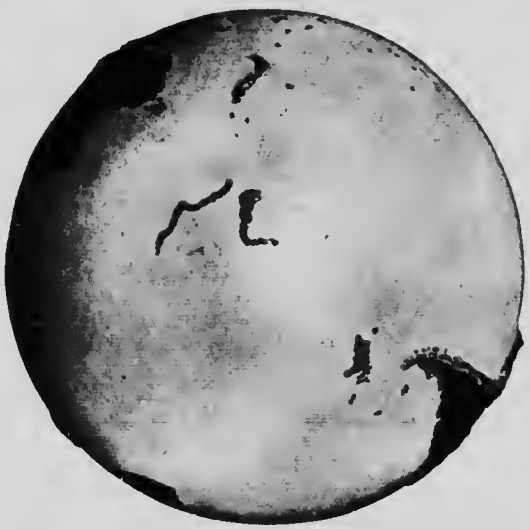
THE CONTINENTS AND OCEANS

On a fair-sized school globe we may see how the great land and water masses are arranged over the world. The best globe for this purpose is one which has the sea one color and the land another color. Hold the globe so that the eyes may be directly over the North Pole. What does the edge of this circle represent? What hemisphere is shown? Where is the North Pole situated? What portion of this hemisphere is land? Is the land all connected? What may be said in this respect of the water? May we say that *the land of the northern hemisphere is massed about the North Pole?* Now turn the school globe so that the eyes are directly over the South Pole. The diagram is that on page 19. Which hemisphere is this? Where is the South Pole in the diagram? What may be said of the land? What portion of the whole earth-surface is water? What portion is land? *It has*

The Northern Hemisphere, which contains the greater part of the land of the world.

been said that water covers much more than three-fourths of the world. Turn the school globe so as to get the view shown in illustration, page 20. This view shows two great blocks of land, or *continents*, connected by a narrow neck or *isthmus*. Find out if one of these continents is entirely in the northern hemisphere. How much of the other continent is also in the same hemisphere? Is the southern continent directly south of the northern continent? What direction is it? Compare the two continents and note that they are both widest at the north and also that they taper to a point at the south. Notice also that the sea has entered the northern continent in two regions, one at the north and the other at the southeast. To what extent has the sea entered the southern continent? Which has the more irregular coast, the northern or the southern continent? Which continent is likely to have the greater number of good harbors? Which the greater number of islands, peninsulas, bays, etc.? The northern continent is our own North America, the southern continent is called South America, and both together are called the New World. Find out from your teacher why the name "New World" was given.

Look at the upper figure on page 20. Place your school globe so that the same view may be seen. Here also are two immense continents connected by an isthmus. To the south-east is a smaller continent connected with the larger of the two continents just mentioned by a group of islands. The largest continent is known as Eurasia, the smallest is called Australia, while the third is called Africa. Eurasia is so large that we shall afterward have to divide it into a western part, Europe, and an eastern part, Asia. Like North America, Eurasia possesses a very irregular coast line; Africa, on the other hand, is like South America. Looking again at the southern hemisphere you will see that all



The Southern Hemisphere, which is largely composed of water.

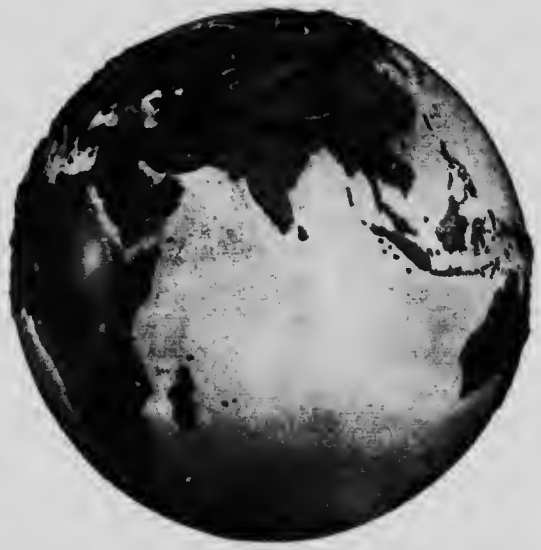
The Western Hemisphere, which contains North and South America.

Australia, a small portion of southern Africa, and a part of South America are to be seen. You will also notice that all these point directly to the South Pole. It would thus seem that the great land mass surrounding the North Pole ends toward the South Pole in three great points or tongues of land. It would also appear that the great water mass centres about the South Pole and extends northward in three great stretches. One of these is called the Atlantic Ocean. You will observe that this ocean separates the Americas, or New World, from Africa and Eurasia, the Old World. Notice, too, that the eastern part of South America would fit into the great bend on the western coast of Africa were the Old and the New Worlds moved so as to touch one another. Again, the western extension of Africa would fit into the curve between the Americas. The Atlantic is the ocean people had to cross on their way to North and to South America. The northern portion is often spoken of as the North Atlantic, and the southern part as the South Atlantic.

The second great northern stretch of water is called the Pacific Ocean, so named from its peaceful behaviour during the voyage across it of its discoverer, Magellan. What a great ocean the Pacific is! It covers half the surface of the world. Notice its shape, and name the continents around its borders.

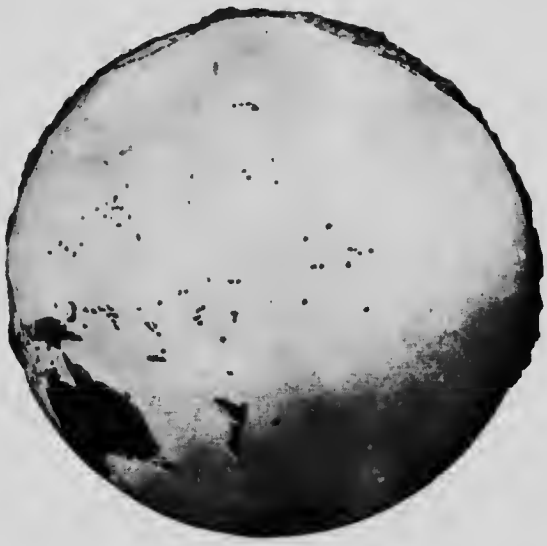
The third great ocean is called the Indian, which lies enclosed by Australia, Africa and Eurasia. This ocean stretches but a short distance north of the equator.

It would appear from our study of the land and water masses so far, that the greater portion of the land lies in the northern hemisphere, and that the southern hemisphere is largely a water hemisphere. It would also seem that the land extends a little south of the equator in three great points, and that the water extends northward in three great stretches.



The Eastern Hemisphere. It contains Eurasia, Africa, and Australia.

The Atlantic Ocean.



The Pacific Ocean.

It would furt' more seem that the eastern side of the A. ericas would fit the western side of the Old World, and that the northern continents have irregular outlines, whereas the southern continents have a very even coast line. These observations show that the land and water divisions are placed on our earth after some well-formed plan. There is another thing we must notice. It is this—there is such a balancing, as it were, of the land and water, that no great block of land will be found to be balanced on the opposite side of the earth by a great block of land.

If we now examine the surface of each continent, we shall not find the land everywhere level, as it sometimes is on the pra' ies. Starting with the southern point of South America and keeping to the Pacific Ocean coast, we shall find a great, rugged, highland country several hundred miles wide in some places, and extending all the way to the isthmus connecting North and South America. This region bears the name of the Andes. In North America a similar ridge, known as the Rockies, extends from the isthmus to the peninsula at the north-west of the continent. In Eurasia, another great series of highlands extends from the north-east to the south-west. Highlands of a similar character pass along eastern Africa and eastern Australia. One result of these great highland regions, so near the coast, is to divide the land surface of each continent usually into two great slopes, a short steep slope toward the nearer ocean, and a long gradual slope toward the more distant ocean.

QUESTIONS. 1. What is a continent? An ocean? 2. What is the shape of the Atlantic Ocean? The Pacific? 3. What continents are separated by the Atlantic? By the Pacific? 4. What continents have coast lines on the Indian Ocean? 5. Which is likely to be the more useful land, a land having an even coast-line, or a land having an uneven coast-line? Why? 6. Make the best outline you can of South America, Africa, and Australia on the blackboard. 7. How far is the nearest point in South America from the nearest point in Africa? 8. How wide is the Pacific Ocean?

NORTH AMERICA

Taking the continents one by one we shall find by looking at this diagram, or from a map made by the teacher on the blackboard, that the coast-line of North America is much more uneven than would appear from the school globe. At the north we shall notice a great group of islands. These are largely ice-bound, but they help to fill in, as it were, the broad northern coast of our own continent. To the sea surrounding the North Pole the name Arctic Ocean has been given, as a convenience in naming this body of water. The great sea-arm at the north-east is Hudson Bay, a body of water that may be very useful some day to the Canadian prairie country lying a few hundred miles to the south-west of it. The southern end of Hudson Bay is James Bay, and the Strait leading to the Atlantic is called Hudson Strait. At the south-east of the continent is another great sea-arm, the Gulf of Mexico. At the entrance of the Gulf are the peninsulas of Florida and of Yucatan, which help to give the gulf shore the appearance of a great letter G. The bay at the north and the gulf at the south permit the Atlantic to get a long way into the continent, a good thing when you remember how useful the sea is for the carriage of goods.

North America.

Montreal from Mount Royal.

The Atlantic also enters the eastern coast a little south of the elbow of Labrador, a great peninsula lying between Hudson Bay and the ocean. This opening, called the Gulf of St. Lawrence, is guarded on the north by the Island of Newfoundland, while the southern side is formed by the peninsula of Nova Scotia and the Island of Cape Breton.

Emptying into the Gulf by a very wide mouth is the great St. Lawrence River, which drains Lakes Superior, Huron, Michigan, Erie, and Ontario, five of the greatest fresh water bodies in the world. The St. Lawrence is Canada's chief sea outlet. Ships from the ocean can steam a thousand miles up the river, and lake boats can go westward another thousand miles. It was the St. Lawrence that enabled Cartier, Champlain, La Salle and other early explorers to push so far and so easily into the heart of our continent. It was up the St. Lawrence that General Wolfe came to fight the battle that gave Canada to the British. Ask your teacher to tell you of these men.

To the south-east are the West Indian Islands. Find three of the largest. Connecting the two Americas is the Isthmus of Panama, across which the Americans are building a ship canal, which they hope to have completed by 1914.

At the north-western corner of North America is the Peninsula of Alaska. Between Alaska and Asia is Bering Strait, a channel about forty miles in width.

The western, or Pacific coast, takes the form of a double curve, the northern part of which is full of fine bays and good harbors. About the centre is Vancouver Island, in the neighborhood of which are fine salmon fisheries. To the south-west is the long, narrow peninsula of Lower California, and in the valley between this peninsula and the coast is the Gulf of California.

The Congressional Library at Washington.

To sum up, Alaska and Labrador; Hudson Bay and the Gulf of Mexico; Vancouver and Newfoundland; Lower California and Florida, all balance each other.

The main Highlands of North America are in the western portion of the continent. Notice their width and their name. Notice also their direction from Bering Strait to the Isthmus of Panama. The eastern Highlands are called the Appalachians. These commence a short distance north of the Gulf of Mexico and run in a north-easterly direction toward the St. Lawrence River. A third highland country much lower and much more worn than those mentioned, forms a horse-shoe about Hudson Bay.

A steam shovel at work in Culebra Cut, Panama Canal.

Between the eastern and the western highlands is a great plain or lowland stretching all the way from the Arctic Ocean to the Gulf of Mexico. This plain is divided into two slopes by a divide running west of Lake Superior. In the southern plain is the Mississippi River emptying into the Gulf of Mexico. In the northern plain are the Mackenzie flowing north-west into the Arctic, and the Saskatchewan-Nelson flowing a little toward the north-east into Hudson Bay. The latter river drains the region now spoken of as the Canadian prairie country.

As the northern part of North America lies in the North Cold Cap, and the southern part in the Hot Belt, our continent has a climate ranging from an eternal winter to an endless summer. In such a climate we are able to grow all the fruits, grains, and roots known to man. We are also able to rear cattle, horses, and sheep in great numbers. What do you now know of the animals and plants of your own continent?

The chief countries of North America are: Canada, capital Ottawa; the United States, capital Washington; Mexico, capital Mexico; and Central America. Alaska is a part of the United States. Canada and the Island of Newfoundland are called British North America. Central America is made up of several small countries seldom at peace with each other. To the north-east is Greenland, a region over which an enormous ice-sheet is spread. Why should it be called *Greenland?*

Canada, our own land, lies between the Atlantic and Pacific and between the Arctic Ocean and the United States. In the early days Canada was both a great fur land and a great lumbering region. Thousands and thousands of beaver and other skins were collected yearly and sent across the sea to Europe. Ship-load after ship-load of the finest timber went in the same direction. Now much of the timber is gone, but the land is bearing fine crops of wheat, oats, barley, fruit, roots, cattle, and horses. The Canadian West, or Canada west of

the lakes, is filling up fast, and the rich soil of the prairies is growing millions of bushels of wheat with which to feed the hungry world. Coal to warm our homes and to drive our engines is found in great abundance to the east and to the west, and gold and silver among the more mountainous parts of the country.

The Canadian provinces beginning at the east are: Nova Scotia, capital Halifax; Prince Edward Island, capital Charlottetown; New Brunswick, capital Fredericton; Quebec with a capital of the same name; Ontario, capital Toronto; Manitoba, capital Winnipeg; Saskatchewan, capital Regina; Alberta, capital Edmonton; and British Columbia, capital Victoria.

QUESTIONS. 1. Make an outline map of North America from memory. On it print neatly the highlands, bays, gulfs, straits, islands, oceans, and peninsulas mentioned. 2. Mark in the St. Lawrence and the Great Lakes, the Mississippi, Mackenzie and Saskatchewan-Nelson. 3. The countries and their capitals. 4. The positions of the Canadian provinces and their capitals. 5. Find out on the school map of Canada what and where Montreal, Fundy, Belle Isle, St. John's, Fraser, Vancouver City, Klondyke, and Red are. 6. What provinces are to the far east and the far west? What province is in the centre? What province is divided by the St. Lawrence River? 7. What are the situations of New Brunswick, Alberta, Ontario, and Saskatchewan? 8. On a map of North America point out New York, the Mississippi, Alaska, Yucatan, Bering Strait, and Cuba. 9. Into what bodies of water do the rivers of North America empty?

EUROPE

The western peninsular portion of the great land mass Eurasia, is called Europe. Because of its importance in the world and for convenience, it is considered a separate continent. Though scarcely half the size of our own continent, Europe surpasses North America in population, wealth and almost everything else. Europe is the native home of the people who have come to Canada to live. If you examine the map you will see such names as England, Scotland, Ireland, Wales, France, Germany, Holland, Spain, Portugal, Russia, Switzerland, and other European coun-

Westminster Abbey, London. The most widely known church in the British Empire.

tries which you must have heard mentioned many a time. Next to our own land, Europe should be of very great interest to Canadians.

The coast line of Europe, you will observe, is very irregular. With the exception of some parts of Russia, all points in Europe are close to the sea, a condition which, no doubt, has helped to develop the love of Europeans for the sea and for a life on the sea.

Beginning at the north and following the coast, notice the White Sea, the Baltic,

Europe.

the North Sea, Biscay Bay, Gibraltar Strait, the Mediterranean, the Black, and the Caspian seas. Following the same route, notice the peninsula at the northwest of the continent. It is called Scandinavia, and is the home land of the people we call Norwegians and Swedes. Look at the shape of this peninsula. Does it not look like an animal about to spring on western Europe? Now look at the peninsula of Denmark, the home of the Dane. It points directly north and separates the Baltic from the North Sea. The square-shaped peninsula at the southwest is called the Iberian peninsula. It is the home of the Portuguese and the Spaniards. Extending into the Mediterranean is the boot-shaped peninsula of Italy. In Italy you will see the position of Rome, a city visited yearly by thousands of tourists. The small peninsula which spreads out like the fingers of the hand is the peninsula of Greece. The city marked is Athens, once the most famous city in the world.

In the Atlantic Ocean you will take note of the most wonderful islands in the world. These are the British Islands, comprising Great Britain, Ireland, and hundreds of smaller islands. In Great Britain are Scotland, England, and Wales. The city marked at the south is London;

that at the north is Glasgow, while the one in the centre is Liverpool, all places you have often heard of.

While the various nations on the mainland of Europe were warring with each other for a mastery of the land, the people of Great Britain and Ireland, our Mother country, were safe behind the "Wooden walls of England," and free to develop the arts of peace. No wonder that the Mother land became so successful in adding countries beyond the seas. No wonder that the Greater Britain, the British possessions all over the world, have become so great that the sun never sets on British lands.

The Highlands of Europe spread well along the south and are most rugged in the region of Switzerland, where they are called the Alps. It is to Switzerland that many travellers from North America and from Britain go to spend the hot summer months.

The important rivers of Europe are the Volga, the Danube and the Rhine. The Volga, the longest river in Europe, flows into the Caspian Sea, a large inland body of salt water. The Danube and the Rhine rise in the Alps. The Rhine empties into the North Sea after flowing by many fine cities, vineyards and ancient castles. The Danube empties into the Black Sea.

The famous Rheinstein Castle on the Rhine.

Calais, the French port nearest England.

QUESTIONS. 1. What and where are the Alps, the Caspian, and the Volga? 2. Find out the names of the city marked at the south-west end of the Black Sea. 3. What city is marked in Germany, in France and in Russia? 4. Make an outline of Europe on the blackboard from memory. 5. Place on this the following: Germany, Italy, Denmark, Greece and Turkey; the Black, Baltic, North, and Mediterranean Seas; the Volga, Rhine, and Danube; the British Isles; and five large cities.

SOUTH AMERICA

Looking now at South America, we shall find the same triangular shape noticed in our study of North America. Both continents are broadest at the north, and both taper toward the south.

South America

The coast-line of South America is very even, but an opening in the north-east coast shows the wide mouth of the Amazon, the greatest river in the world. Another opening is on the south-east coast where you will find the La Plata or Plate River, into which flows the River Parana. The Amazon valley is largely covered by forest growth. In this forest are to be found the Brazil-nut tree and the rubber tree, both of which are valuable enough to give employment to thousands of people.

The country about the La Plata and the lower Parana is much the same as our Canadian prairies. In this region you will find great cattle, sheep, and horse ranches, and great fields of wheat. Buenos Aires (good breezes) is the principal city.

Off one of the islands at the south is Cape Horn. Off the eastern elbow is Cape St. Roque. Cape Horn is a rocky promontory around which sailing vessels must pass in going from the Atlantic to the Pacific or the reverse. Between the Island of Tierra del Fuego (Land of Fire) and the mainland is the Strait of Magellan.

The Andean Highlands, or Andes, as they are most often named, are toward the Pacific coast. They form a great wall of rock from two to four miles high and at least five thousand miles long. In the Andes are some of the world's greatest volcanoes.

Asia

QUESTIONS. 1. Is South America more in the southern or more in the northern hemisphere? 2. Find out the length of South America from north to south; from east to west. 3. On an outline map place the equator, Cape Horn, and the Andes. 4. In what belt of heat is the greater part of South America? 5. What would you see in the Amazon forest? 6. Describe a journey up the Andes.

ASIA

Asia is the remaining portion of the great land mass of Eurasia, the largest block of land in the world. Asia is more than twice the size of our own continent and over four times the size of Europe. It is separated from North America by Bering Strait and from Australia by a bridge of islands, the East Indies. It is connected with Africa by the Suez isthmus, and with Europe, being a part of the same large land mass. South America is the only continent remote from Asia. A study of the coast line of Asia shows us an irregular coast. The sea, however, does not extend, except in a few cases, far into the land. This means that there are regions in Asia far away from the influence of the sea. It also means that portions of Asia are likely to be desert.

As we name and locate the peninsulas and islands of eastern Asia, it may be well to keep in mind the western, or Atlantic coast of Europe. Kamchatka and Scandinavia; Korea and Denmark;

the Japan Islands and the British Islands seem to balance each other. Southern Asia, or Asia on the Indian Ocean, and southern Europe, or Europe on the Mediterranean Sea, have also features in common, namely, Arabia and the Iberian peninsula; India and Italy; the Malay peninsula and Greece; the East Indies and the islands of south-eastern Europe. At the north of each continent is the Arctic Ocean.

The harbor of Calcutta. The foreign steamers are being loaded from small native boats.

The peninsula of India separates the Arabian Sea to the west from the Bay of Bengal on the east. Arabia is separated from Africa by the Red Sea and from Persia by the Persian Gulf, an arm of the Arabian Sea. Japan is separated from the mainland by the Japan Sea, while the China Sea lies between south-eastern Asia and the East Indies.

All the peninsulas of Asia, with the exception of the one on the far west, between the Mediterranean and Black seas, point due south. Find out the name of this exception and compare the European peninsulas with those of Asia to see whether the south direction is a common thing.

The highlands of Asia are of immense area. Spreading out toward the west they narrow between the Caspian Sea and the Arabian Sea and then spread out again toward the east. A branch from the Asiatic highlands goes south by way of the Malay peninsula, across the islands to eastern Australia. The northern country of Siberia, or Russia in Asia, is a great lowland. Where are other lowlands? The Himalayas north of India are the highest and most rugged mountains in Asia.

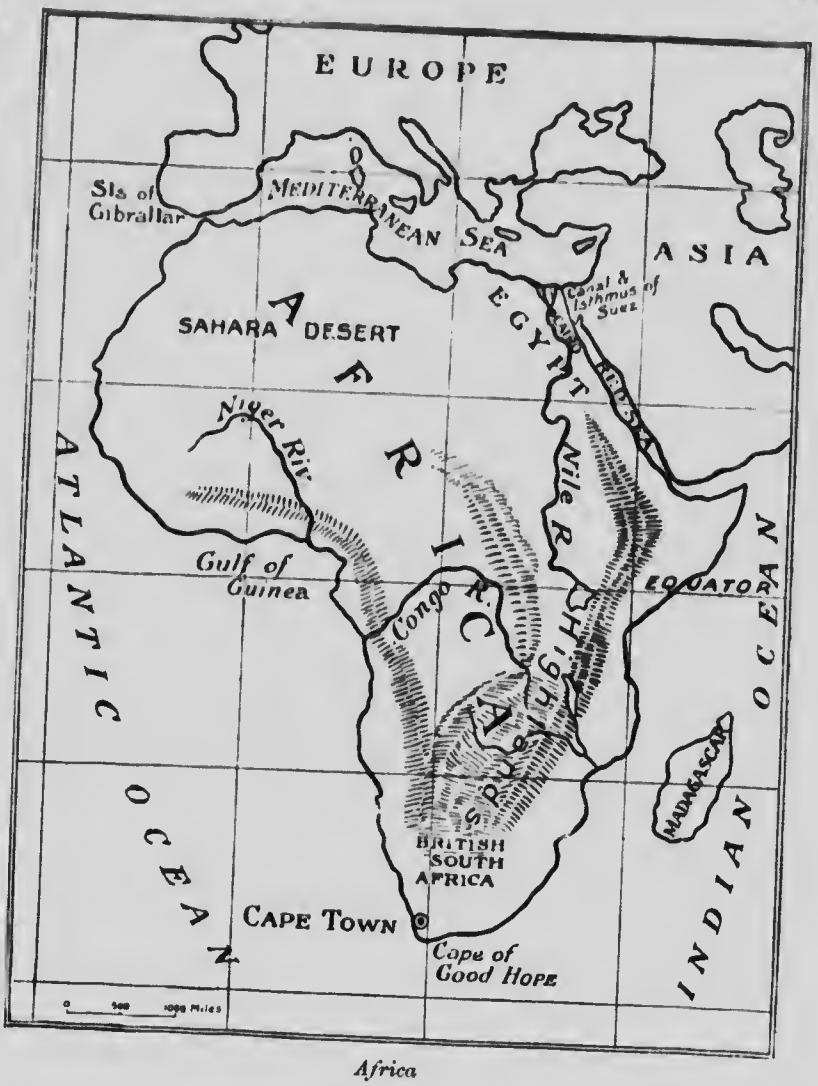
Several large rivers may be seen emptying into the Arctic Ocean. The Hoang Ho and Yangtse-Kiang are two large rivers emptying into the Pacific from China. The river marked in India is the Ganges, the sacred river of this country.

The countries of importance to us at this time are Siberia on the north, China and Japan on the east, India, belonging to Britain, on the south, Arabia on the south-west, and Persia. The Holy Land is situated along the eastern end of the Mediterranean. The cities to be remembered are Jerusalem in the Holy Land, Mecca in Arabia, Bombay, Madras, and

Calcutta in India, Peking in China, and Tokio in Japan.

Southern Asia touches the equator. Northern Asia lies in the North Cold Cap. The great mass of Asia lies in the North Temperate Belt. As the greatest rainfall is in the south-east, millions of people are found in this part of the continent.

QUESTIONS. 1. What do the Chinese work at? 2. Why should you expect but a scattered population in northern and in interior Asia? 3. Draw the eastern coast of Asia and locate the coast waters, islands and peninsulas. 4. Do the same with the south coast. 5. Look at the outline of Asia closely and make an outline map from memory. 6. On this map place the highland regions. Name the neighboring continents and mark in the important countries, cities, and rivers. Find Delhi, the new capital of India.



Africa

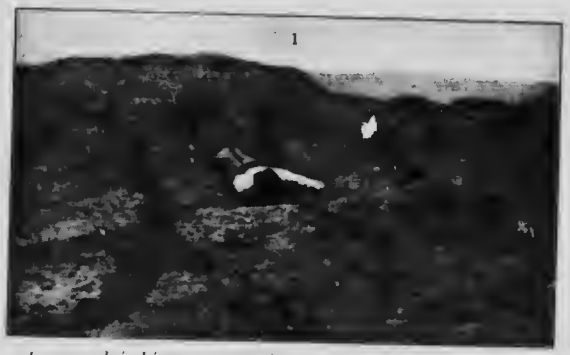
AFRICA

Africa is a pear-shaped continent, with its greatest width toward the north, and ending toward the south in a rounding point which is much nearer the equator than the southern end of South America is. Comparing Africa and South America we shall find the same unbroken coast line. Northern Africa, however, extends westward, thus forming with the southern extension, a great square-shaped curve, the Gulf of Guinea. Africa is separated from Europe by the Mediterranean Sea, which connects with the Atlantic by the Strait of Gibraltar. The Isthmus of Suez, across which is the Suez Canal, connects Africa and Asia on the north-east. The Suez Canal provides a short route for vessels passing backward and forward

from the Indian and the Atlantic Oceans. Before this canal was built all vessels had to double, or pass around the Cape of Good Hope at the south. The only important features off the eastern coast are the Red Sea, separating Asia from Africa and the large island of Madagascar.

The Highlands of Africa are highest along the coast of the Indian Ocean. These highlands seem to cover the whole of the southern peninsula and spread north of the equator into three branches, a west branch, a central branch, and a north-easterly branch.

The African rivers rise near the equator, where we are told that a heavy rainfall takes place. As these rivers fall quickly in passing from the highland to the lowland country, long stretches of rapids and numerous waterfalls and cascades are to be expected. The only rivers marked on the map are the Nile, which flows through Egypt, and thus changes a desert into a garden, and the Congo, which, second only to the Amazon, flows through deep woods and across great grassy plains. Near Cairo on the Nile are the pyramids of Egypt, built long, long ago as tombs for the Egyptian kings.



A man drinking at a spring in a desert. Notice the absence of grass and trees.

The northern part of Africa, with the exception of the land bordering the Mediterranean Sea coast, forms the great Desert of Sahara, across which a considerable trade is carried on.

British South Africa is the country where the British and the Boers fought so long for the mastery. Cape Town is the principal city.

QUESTIONS. 1. How wide is Africa at its greatest width? How long? 2. On a map of Africa place the main facts. 3. In which, North Africa or South Africa, would you prefer to live? Why? 4. Where is the Mediterranean Sea? 5. What can you say of the African climate? 6. What do you know of the African people?

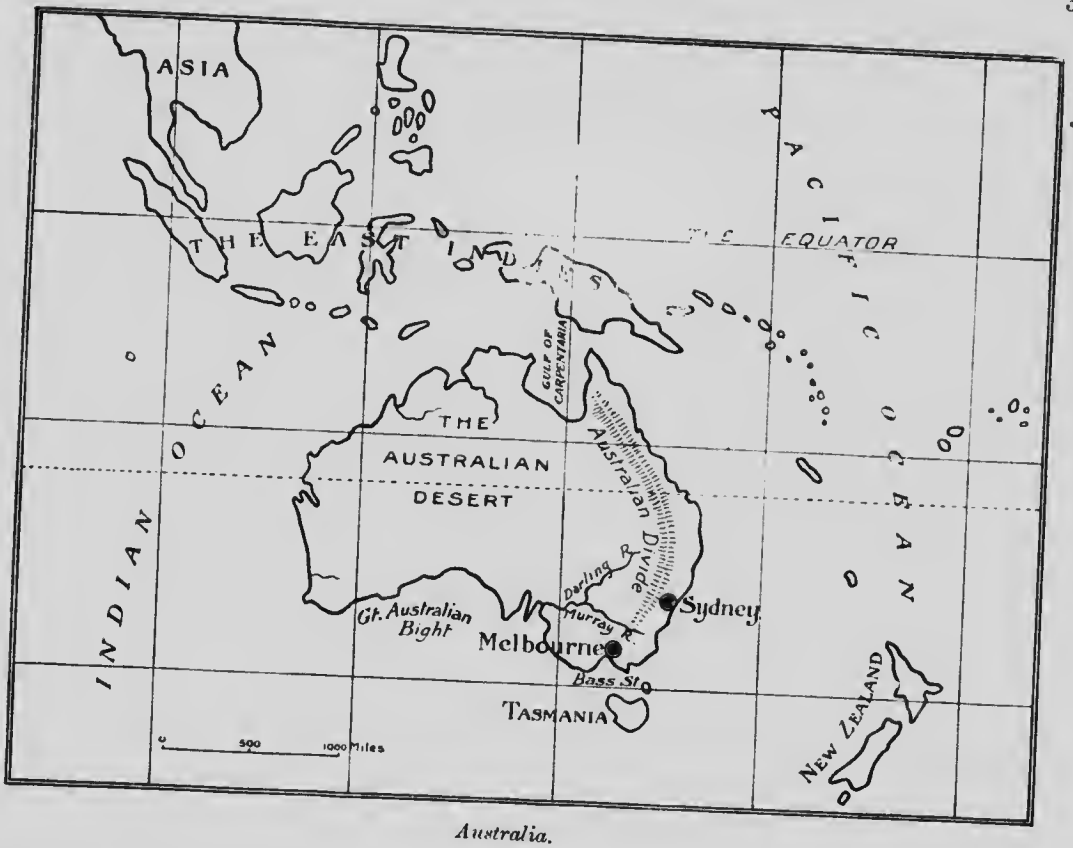
AUSTRALIA

Australia is the smallest continent in the world. On account of the many islands forming a sort of broken bridge to the north and the north-west, it would seem that Australia is not entirely separated from the rest of the world.

Being one of the southern continents, Australia resembles Africa and South America in the even character of its coast line. You will, however, note two indentations—the northern, or Gulf of Carpentaria, and the southern, or Great Australian Bight. Off the south-east angle is the Island of Tasmania, while away off to the south-east are the Islands of New Zealand.

In shape, Australia is like an inverted heart, with the apex toward the north and the broad end toward the south. Some of you will no doubt discover that Australia is really a five-sided figure.

The equator is far to the north, and the south pole far toward the south.



Australia.

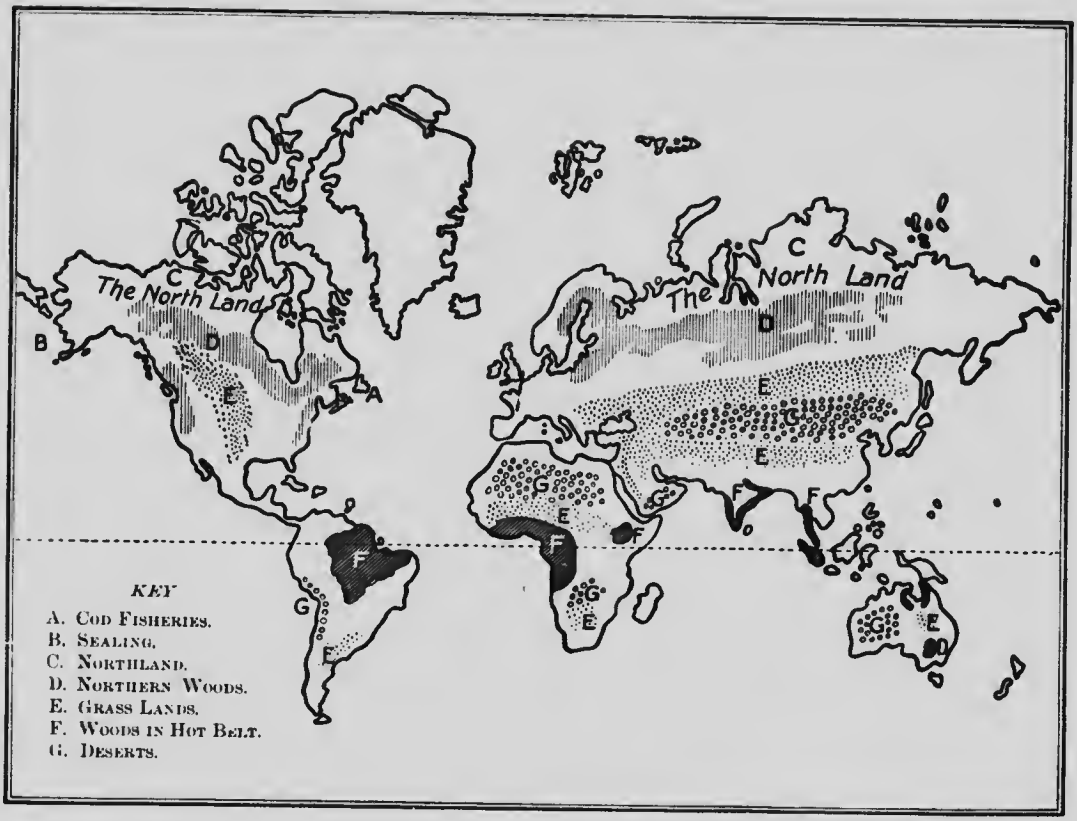
Part of Australia, the northern third, lies in the Hot Belt. The remainder lies in the warmer part of the South Temperate Belt.

The highland country lies along the east. A great desert covers much of the west. As in the case of Asia, the rains come from the south-east, so that the majority of the people are to be found in eastern and south-eastern Australia. The Murray is the principal river. Sydney and Melbourne are large and fine cities.

QUESTIONS. 1. Make a map of Australia on the board from memory. 2. Mark in the Indian and the Pacific Oceans, the Gulf of Carpentaria and the Great Australian Bight. 3. Place in the highlands, and show Tasmania, New Zealand, and some of the East Indies. 4. What continent lies across the Indian Ocean? What continent lies to the north-west? In what direction are South America and North America?

THE EARTH, THE HOME OF MAN

The earth we have described is the home of man. All that was said about the land and water masses, air, the sun, etc., are important because they have to do with man's comfort or the opposite. Of the various things mentioned, nothing has more to do with man's home than climate. We know the world has several climates and therefore must have many kinds of homes. In the regions of the North Cold Cap where plant and animal



life are either wanting entirely or very rare; where food and shelter and clothing must be difficult to obtain; where the land is covered for the greater part of the year by the snow and the ice; where the night lasts for months—in such a region the home must be a different home from ours. Think now of the hot and moist Hot Belt, where animals and plants reach their greatest strength and height; where summer never leaves, and where fruit and flowers are always to be had. In such a region man must find a different home from that already described. Think again of the Temperate Belts, where life need not be one long fight for food, shelter, and clothing as it is in the north, nor yet one of idleness, as in the warm, Hot Belt. The seasons of the Temperate Belt bring variety. The spring-time is the season of planting and sowing. During the long summer days everything is growing. Autumn is the time of gathering, and winter, with its ice and snow, brings a cheer of its own, and a leisure during which there is plenty of time to improve the mind. Surely a home in such a region must be superior to either of the homes already described.

Continents, too, have their own peculiar home features. North America must be a better home continent than South America,

for the greater part of it lies in the Temperate Belt, and the sea enters the land much more freely than is the case of the southern continent. Europe is also in the Temperate Belt. Asia stretches farther to the north and farther to the south than either Europe or North America: Asia, too, is very compact, so that much of it is at a great distance from the tempering ocean. Africa and Australia lie mainly in the Hot Belt. These continents have also very regular coast-lines. From what has been said regarding the continents we should be inclined to place Europe and North America in the foremost place as homes of men.

The world is man's home, but as all parts of the world are not alike, it will be necessary for us to study separate home pictures so that we may have some idea how people live. We shall therefore try to picture home-life in the north land, home-life in the forests of the Hot Belt, home-life on the sandy deserts, home-life on the grassy plains, home-life in the northern woods, home-life on the sea coast, among the mountains and on the great farming lands. To assist you, we shall have to ask you to use the map shown on the preceding page.

HOW PEOPLE LIVE IN THE COLD NORTH LAND

Parts of North America, Europe and Asia reach into the southern edge of the North Cold Cap. In Northern Europe and Asia these frozen regions are called *tundras*. In North America the name given to the greater part of the cold north land is the Barren Grounds.

There are but two seasons in the north land, a long dreary winter, and a short bright summer. During the winter the sun is never seen above the horizon. During the summer the sun moves round and round the sky a short distance above the horizon. On the approach of summer, birds, flowers and mosquitoes are in abundance.

The surface of the land is hilly here and flat there, and everywhere are to be found numerous lakes where wild ducks and geese may be seen in season.

Many north-flowing rivers cross the country. In spring these rivers overflow and cover the country for miles on each side. The rivers abound in fish, and the neighboring Arctic Ocean supplies, in America at any rate, the walrus, the seal and the polar bear. Land animal life includes the caribou, the musk-ox, and various fur-bearers in America, and the reindeer in Europe.

In spite of many drawbacks, these northern lands are inhabited by Eskimo, Lapps and other races, the Lapps living in northern Europe. Fishing and hunting are the occupations of the people, the men attending to the procuring of the supplies, and the women to seeing that these are not wasted. So serious is the struggle for food, shelter, and clothing that every part of the animal is put to use. The flesh supplies food, the horns are made into weapons and implements, the skins are used for clothing and for

A dog train of "huskies" used in carrying furs from distant inland points along Hudson Bay. These dogs are half wolf and have a remarkable power of endurance.

shelter, and the sinews provide the household thread.

The only animal domesticated by the Eskimo is the huskie. The Eskimo can raise nothing from the frozen soil, but must look to the rivers, the sea, and the land for the animal food upon which he subsists. The Lapps are more fortunate, for they carry on a sort of reindeer farming. They have, therefore, the animals under control for milk and flesh whenever these are wanted.

The food of the Eskimo and Lapp must of necessity be largely flesh and must often be eaten raw. Tea and coffee are used in some cases, and tobacco seems to be liked by all. To obtain these, furs must be given in exchange. Of late these people have been asking for guns, knives, and other hunting weapons.

The clothing is obtained from the animals slain in the hunt, or from the reindeer of the herd. The women prepare the skins and make them into boots, hut covers, and other things. As manufacturers, the people of the north land also make bows and arrows, axes of stone, and knives of hoop-iron.

The Eskimo is at home on the sea in his *kayak*, in the handling of which and in the use of the harpoon he is very expert.

THE FORESTS OF THE HOT BELT

As we approach the equator heat and moisture increase, so that great forests cover portions of South America, Africa, and south-eastern Asia. These forests are a mass of trees and creepers all struggling for the air and for the light of the sun. So dense are these woods that no one should enter them without a compass to guide him back again to the clearing.

The forests of the Hot Belt furnish men with certain products. Some trees bear a juice from which India-rubber is made; others produce dye woods, *e.g.*,

A road cut through banyan trees on the banks of the Ganges.

A captive elephant.

the logwood tree; and still others are valuable as cabinet woods, *e.g.*, mahogany.

Such a profusion of wild vegetation suggests the possibility of the growing of such plants as have been found suitable for food. In the Amazon valley there are several Indian tribes who attempt a very crude sort of agriculture. The finest results attend the slightest effort in the way of preparing the ground, and Indian corn, sweet potatoes, manioc, and bananas grow readily, but the climate and the rich ground stand in the way of any steady effort on the part of the people. Nature, in fact, is too ready with an abundant harvest, and man, a naturally lazy animal, has not to exert himself in order to provide a living. Were these regions properly cultivated, great quantities of cocoa, tobacco, sugar-cane, coffee, etc., could be raised. As it is, the natives plant a few manioc slips and other plants in what answers to the spring season, and then go off into the cooler woods to hunt and to fish while their garden stuff is growing. How different is life here from that of the north land!

Wherever vegetation is abundant, there also we should expect an abundance of wild animal life. On the borders of the African forest region of the Congo the elephant, the lion, the zebra, and various kinds of antelope are to be found, while in the Amazon valley are the tapir, the puma, and other animals.

To understand the conditions of human life in these forests we must remember that the task of clearing away jungles

A giant bamboo tree.

and forest tangles is very great. If a garden is to remain, the owner must fight the advancing forest. If a path through the bush is to be kept open the same constant struggle is necessary.

The inhabitants of a part of the Congo forest are a race of men and women averaging four feet in height. These are the Pygmies, a nation of very skilful wood folk. The Pygmies are not an agricultural people. The forest is their home and they know their home well. They are expert in the making of weapons, nets and traps, but in no sense must they be looked upon as very intelligent men and women. Being fond of the products of the garden and the field, they will plunder these, or exchange furs, feathers, and other things procured in the hunt, for the bananas, tobacco, and knives of the settlements.

Scene on a cattle range. A bunch of cattle being driven from one range to another in search of better grazing.

THE GRASSY COUNTRY

If you examine the map on page 34, you will find great areas remote from the sea. These are the great grass plains, or steppes, regions watered by a much lighter rainfall than a forest country requires.

The steppes extend south-westward from north-eastern Asia to the Atlantic Ocean in Eurasia. In North America they are situated well toward the western half of the continent. In South America they are found north and south of the Amazon forest country. In Africa they are north and south of the equator, and to the east of the Congo woods, and in Australia they lie largely to the west of the Divide.

As a rule, when we pass from the woods of the Hot Belt, where trees grow in abundance, and where there is little or no grass, we get to a region of park-like lands called *savannas*, where both trees and grasses grow. Beyond these savannas are the steppe lands, where there is grass and no trees, and beyond the steppes are the deserts, where there are neither trees nor grass. Like the steppe regions, savannas have a long season of dry weather and death, and a short season of rain and life; and it is during the short, wet season that plants like grass grow.

The steppes of the Old World have always been of very great interest. Many references are made of them in the Old Testament. Can you quote any of these references? From these we may gather that the Asiatic pasture lands offered a variety of rolling plains, highland country, rather dry toward the interior where the steppes begin to mingle with the desert, and becoming wooded toward the forested country. Western Canadian boys and girls will understand the character of the

scenery better if they will but look at the prairie surrounding them. The Canadian prairie country is a steppe country. The prairies have not a heavy rainfall, and the grass does not cover the ground completely; some regions look to be almost arid or barren; and the forest line is not far to the north.

Spring-time on the steppes is a season of great beauty, grass and flowers springing up everywhere. Summer brings a scorching sun that browns the landscape somewhat, while autumn sees the grass well yellowed, the trees casting their leaves, and nature generally preparing for the winter with its frost and its snow.

The animal life of the steppes is largely confined to grass-eating animals, particularly the domestic cattle, horses, and sheep of America; and horses, cattle, the camel, the goat, the ass, and the sheep of the Old World steppes.

A watering place in the very Hot Belt region of Egypt.

While a very great deal of the land of the steppes is now devoted to the growing of grains and to mixed farming, the earliest occupations are those connected with the care of flocks and herds, occupations that help to put people out of sympathy with a farming, commercial, or business life, and cause them to despise these pursuits as wanting in freedom and independence. This position is natural when we come to think how much flocks and herds contribute to the well-being of the shepherd people,—the wool, the hides, the flesh, the milk, etc. What else should man require to make him perfectly happy?

The life of the shepherd and the herdsman is one of constant moving from place to place, as grass and water are needed. A wandering life means a tent, and horses to carry the herdsman and his family. The winter season usually finds the stock sheltered in the valleys, and either fed from the hay gathered during the summer, or allowed to range where the ground will permit of this.

The steppes of Western Canada have been occupied by the descendants of European settlers. Large horse, cattle, and sheep ranches have been established, but there is no separation between ranching and the other occupations of the country. In other words, the rancher keeps himself in touch with the eastern markets and with the general life outside by means of the post office, the telegraph, and the newspaper. This wandering life is left by the ranch-owner to the cowboys,

usually men attached to a free life in the open air.

DESERT LIFE

Looking again at the map on page 34, you will see the locations of a number of rainless, hot deserts situated on both sides of the equator, and affecting more or less all the continents.

Deserts are caused by cold, as in the case of the tundras. Deserts are also caused in hot countries by a want of moisture. The desert soil in both cases may be very fertile, and usually is, but a frozen soil is valueless for the rearing of plants, and a parched or dried soil is no better. Hot deserts lie far away from the sea and out of the reach of rain-bearing winds.

Camels used for travelling in deserts.

Hot deserts are dry areas where little or no vegetation exists. Life in one great desert region should serve to give us a fair idea of what it means to make a home under such circumstances. The desert we shall take as a type is the great *Sahara*, which occupies the greater portion of northern Africa. The surface of the Sahara is not uniform. In one district it is sandy, in another rocky; mountains bring in a little variety in a third, while a fourth may be a *plateau* or high plain. Wherever in the desert water is obtainable, the soil is so rich that a remarkable vegetation is the result. Such fertile spots, or *oases*, are found about natural springs, along the banks of rivers that may never reach an outlet but that filter away in the sands, and in any part where water may be reached by driving wells.

The vegetation of the desert is divided into what we may call true desert vegetation and the vegetation of the oases. Desert plants are usually prickly or thorny shrubs, coarse grasses, etc. The oases grow the wonderful date palm, the olive, and rice.

The only animal life adapted to a desert country is the camel. On the oases cattle, sheep, and goats may be reared.

If we look upon the Sahara as a great sea of sand with fertile districts north and south of it, we shall understand how it is possible for man to make the desert his home. Settled life is possible only on the oases, and as these are not numerous nor large, human life in the Sahara is not counted by millions. Communication must be kept up between the scattered oases and between the fertile lands north and south of the desert. Caravan after caravan passes backward and forward across the hot sands. The owners of these caravans are merchants who find it profitable to gather the resins, gums, ostrich feathers and ivory of the south country and take these to the north. In exchange the merchants give cotton, beads, knives, and other things.

The real dweller of the desert lives a wandering life and is engaged either in acting as a camel driver, a desert raider, or else as trying to eke out a very meagre existence by raising domesticated animals on the poorly grassed lands of the desert edges. True, these people have much in the date palm and the camel. Their country does not exact much in the way of clothing or shelter, and on the whole the people of the desert may be said to have a somewhat similar but still a much less troublesome life than that of the shivering people of the frozen north land.

A winter scene in the northern woods.

THE NORTHERN WOODS

South of the cold north lands are the temperate forests of the northern hemisphere. On the map, page 34, you will see that much of North America, nearly all of Europe, a great deal of Asia and parts of South America and of Australia are covered, or were once covered, with a growth of such trees as are shown on this page.

Much of the surface shown on the map as forest-covered, has been cleared of its trees, and agriculture of all kinds is now being carried on where the forest used to be. The uncleared forests are largely in our own country, in north-eastern Europe, and in northern Asia.

The occupations of a forest country are those of hunting, trapping, and lumbering. The animal life of the northern woods is fairly abundant, and the furs obtained by the hunter and the trapper are much sought after. Among the most common animals are the beaver, mink, muskrat, several kinds of fox, the wolf, and the bear. In Canada the hunting of animals for their furs is usually carried on by the Indians and the natives of French and Indian blood. The winter catch is taken to one of the many Hudson's Bay trading posts and exchanged for guns, blankets, traps, nets, tea, tobacco, etc.

Lumbering is carried on in the winter months as a rule, for then the ground is covered with snow which helps to make work in the woods much easier than it could be in the summer season. In the late autumn or early winter, gangs of men go to the bush where trees are felled, cut into logs, and hauled on sleds to the nearest river, so that the spring floods may float them to the saw-mills down the stream.

Various industries grow out of the lumbering business. Spruce wood is made into paper; logs are sawn into boards; planing mills dress the boards, and, in some cases, manufacture a portion of the lumber into sashes, doors and other fixings.

In the forest clearings, that is, in the small farms or fields lately cleared of trees, the settler has a variety of work to do. After felling the timber, the branches must be cut off, piled in bunches and afterwards burned. The long trunks must be cut into lengths easily handled and the logs dragged into heaps by oxen or horses. After gathering the small chips and other rubbish and piling them on the heaps, the heaps are burned and the first planting begun. In the course of a few years the greater number of the stumps will have rotted enough to permit of their removal, but the larger stumps may remain in the ground for a long time: and it is only after long years that the settler can use labor-saving farm implements.

A large lumber mill. Thousands of logs are brought here by rail, sawed and planed, loaded into boats, and carried to all the principal lake ports.

The houses of the forest pioneers were built of such materials as were convenient. These earliest houses were built of logs squared at the ends and chinked with wood, clay, and moss. The interior of the house was as plain as the outside, the home-made beds, table, and chairs answering their purposes well enough.

The hunter and the trapper seldom improved their way of living, and seldom made more than a bare existence. The pioneer farmer endured many privations at the beginning, but as the country was cleared and as his farm became more easily worked, better buildings, greater comforts and a more leisurely life followed. The hunter's time is spent in wandering from place to place, and in destroying animal life he cannot replace. With the farmer comes the saving up of material, the addition of more material, wealth, ease, and leisure in which to develop all the arts of life.

THE FARM LANDS

No one knows how or when farming began. The people of the north land know nothing of the raising of grains and fruits, and very little of how to rear animal life. In the Hot Belt, where nature provides abundant heat and moisture, the earth smiles and yields great quantities of fruits and roots. In the Hot Belt are the banana, the sago palm, the cocoa palm, the manioc, from which we get tapioca, the pineapple, sugar-cane, Indian corn, tea, coffee, rice, and many other

valuable foods. The oases of the desert yield the date palm, the olive, wheat, and corn.

In temperate regions where the seasons are marked and the rainfall not too great, most careful farming has to be done. The prairies of Canada and much of the country to the south yield large quantities of wheat, oats, barley, and peas. To the south of this region we have lands well adapted to the growing of corn.

Cutting and gathering sugar-cane on a plantation in the West Indies.

Most of Europe has been cleared for generations, and the land is carefully tilled. Europe, north of the highlands, produces various grains; southern Europe is better adapted to fruit. In South America, about the region of the La Plata, much wheat is raised. Here also, but nearer the Andes, the vine is cultivated, a feature also to be noticed in southern Africa and south-eastern Australia.

A coffee tree in the West Indies. These trees grow to a height of about ten feet; a full-grown tree yields two to four pounds of berries a year.

The more we study the value of agriculture, that is, soil culture, the more we are convinced that it is the greatest of the arts. Agriculture leads to a permanent home. The hunter's home can never be more than a makeshift; the Eskimo must be satisfied with a snow house or a sort of smack; the Indians of the Amazon and the Pygmies of the Congo have what is no better than a temporary shelter.

The clothing of the Canadian farmer is much superior to that worn by hunting tribes. In the matter of food he fares better than any others. He has many things on the farm, and he is in touch with the food supplies that come from every corner of the world.

FISHING

Man does not depend entirely upon the land for his food. The rivers, lakes, and the sea are also explored, and fish procured.

Unloading salmon on the banks of the Fraser River.

Off the eastern coast of Newfoundland are the Banks, a region where the Atlantic is not very deep, and where great numbers of codfish feed upon the caplin and other small fish found in these waters. These fishing grounds have been used for over three hundred years; still the supply seems to be about as plentiful as ever. Although far out of the sight of land, the water on the Banks is so shallow that ships can ride at anchor while the crew put off in small boats to fish with hook and line. On the western coast of Canada, the rivers are the spawning ground of the salmon. As a result, this region is noted for the number of people engaged in the catching and canning of salmon. Off the Alaskan coast are famous seal rookeries, which used to tempt many vessels and scores of hunters every year.

These are but a few of the localities adapted to the great fisheries, but they will give some idea of the number of people employed and also may help to show the character of the men thus engaged. Fishing on the open sea is not for men wanting in courage. Fishermen are constantly exposed to danger. They must act quickly when an emergency arises. No wonder that the great navies of the world are recruited largely from the fisher folk.

MOUNTAIN LIFE

Farmers and ranchers have chosen the plains for their home. Other people have gone into the mountains; for example, the Highlanders of Scotland and the Swiss of Switzerland. Good soil is scarce in a mountain country, and the mountain farmers may have to grow their grain and roots low in the valley, obtain their hay and pasture higher up, and even carry on their hunting much higher still. Shut out as they are from the rest of the world, no wonder that highland people are old-fashioned and cling to manners and customs long since set aside by the people of the plains.

A mountain village in Switzerland. Cows are pastured on the stony slopes, and cheese is made in the huts.

MANUFACTURING

People must do more than hunt, fish, and farm. People must make things for others. This is seen in the case of the Indian arrow maker in Hiawatha. As men's work took them away from home, the business of looking after the family, the garden, and the small fields fell to the women. May it not have been a woman who invented the churn, the spinning wheel, and the first crude weaving loom? Man has added to these, and to-day manufacturing is a sign of the greatness of any country.

Scene in a farm kitchen, showing a hand churn.

No manufacturing concern will succeed without raw material near at hand. Cheap driving power, that is, cheap coal, gas, or water power, is another essential. A third necessity is an easy and cheap outlet for the goods to the markets of the world.

As an example of a great manufacturing centre, let us take Great Britain. Great Britain has abundant coal. Great Britain can also take the raw materials of the world by her own ships. The British workmen are skilful, and the finished goods may be sent over the world cheaply.

TRADE

Trade arises when men require something they cannot get at home, but may get by exchanging something else for this. Different things are found in different regions. To gather these things requires what we may call a system of transportation. Transportation may be on land or it may be by water. If on land, trails, wagon roads, and railroads are needed. If on sea, sailing and steam ships are required. On land, men have had to play the part of beasts of burden. Dogs may have to be employed. Horses, camels, and other animals have often been used.

A steam churn in a large dairying establishment.

Carriage by means of animals is slow and often expensive. It is also unsuitable for perishable goods. In these days things move quickly, so we have great lines of steel crossing continents. We have branch lines joining these. We have boats on

Haying in the Swiss Tyrol Alps. The man has to carry the hay half a mile to his home.

our rivers and great freight and passenger boats on our lakes, seas, and oceans. It is by means of these great railway and ship lines, and by telegraph lines over land and under the sea that the world's trade is managed and the separate continents bound together.

QUESTIONS. 1. Describe an Eskimo's home. 2. Which is the better life, a farmer's life or a hunter's life? Why? 3. Describe home making in the forest and home making on the prairie. 4. Describe a journey from New York to Tokio by way of the Horn; by way of the Cape of Good Hope; by way of the Mediterranean. 5. Through what continents does the equator pass? How does it divide each continent? 6. What do we get from Asia, Africa, and Europe? 7. What have we to give Europe? 8. What means of transportation have you in your district?

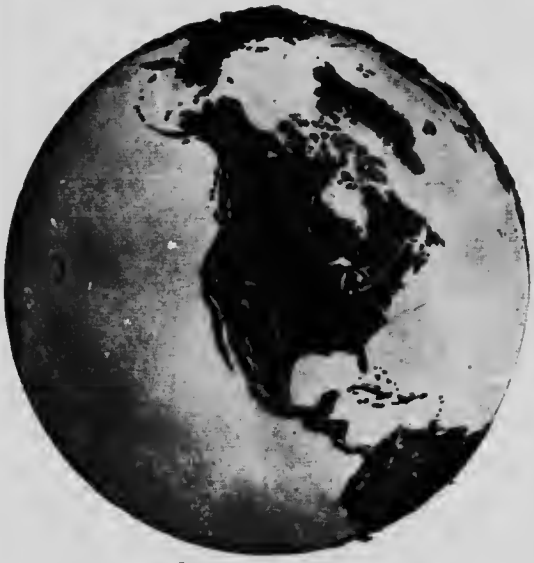
REVIEW QUESTIONS

1. Make on the board a diagram of the new moon, the moon in its last quarter, and the moon as it would be seen a little before sunrise. 2. Make a diagram showing the earth, sun, moon, and stars. 3. On a circle representing the earth, show the poles, the equator, and the positions of the North Star and the Southern Cross. 4. Make a diagram showing the positions of the earth, sun, and moon at the time of (*a*) the new moon; (*b*) the full moon; and (*c*) the quarters. If the students cannot do this, allow them several weeks in which to make observations. 5. The Little Dipper or Little Bear swings about the North Star, the star being at the end of the Little Bear's tail. Find the stars making up this cluster; make a drawing. 6. Describe how one may obtain the noon shadow. How may this shadow be used to find directions? 7. Make a diagram of the earth and show on it the poles, equator, and belts of heat. 8. Where would you look for snow at the equator? 9. What kind of night is the best for dew? for frost? 10. Why is there no dew following a cloudy or a windy night? 11. On which of the following things would dew settle:—a painted board, an unpainted board, a dusty road, a grassy path, a straw hat, a stone, the iron on the pump, the grass under a tree? 12. If a kettle of water is left on a fire very long the water disappears. Why? 13. Pitchers into which cold water is placed are said to "sweat" sometimes. What causes this? 14. For what reasons could we say that the air takes up water? 15. What is the difference between dew and frost, and between a mist and a cloud? 16. What makes a brook- or a beach-stone smooth? 17. Make a diagram showing the difference between a water-fall, a rapid, and a cataract. 18. In which hemisphere is the most of the land situated? 19. What ocean lies about the North Pole? What continents touch this ocean? 20. What continents lie to the east and what to the west of (*a*) the Atlantic, (*b*) the Pacific? 21. What continents are entirely in the Northern Hemisphere? In the Southern Hemisphere? 22. Through what continents does the equator pass? 23. What continent is divided into Europe and Asia? 24. Draw from memory outlines of all the southern continents. Place on these the Equator, the Gulf of Guinea, Cape Horn, the Gulf of Carpentaria, the Andes, the Sahara desert, Australia, the Indian, Pacific, and Atlantic Oceans, the Amazon, Nile, La Plata and Congo, and the Cape of Good Hope. 25. What and where are Hudson, Florida, Japan, the British Home Land, Sahara, Mexico, Vancouver, Korea, Italy, Baltic, Red, Great Australian Bight, New York, London, the Mediterranean, India, Russia, Egypt, Madagascar, Bengal, Horn, Suez, Buenos Ayres, Saskatchewan, and Bering? 26. Describe a dinner in the tundras, a dinner in the northern forests, a dinner on the grass lands, and a dinner in the Sahara.

PART II.

THE CONTINENTS

A STUDY OF THE CONTINENTS



North America.

OUR OWN CONTINENT

In what way is North America like South America? In what hemisphere is it? How are North and South America connected? What ocean lies to the east and what to the west of North America? In what direction is Asia from North America? What Strait separates these continents? Point out the position of the North Pole on the map. What ocean circles this pole? How is this ocean connected with the Pacific? Point out Europe. What great arm of the Atlantic is found on the northern coast of America? Describe the position of the Gulf of Mexico. What opening is situated on the Atlantic coast a little south of the eastern elbow of North America? What great river empties into this opening? Point out Alaska, Newfoundland, Vancouver Island and Florida. What is the situation of the West Indies? Where is the coast of North America most irregular? Point out the chief centres of the cod and salmon industries. Which is the larger, North or South America? Name the great highlands of North America. America was made known to the world by Christopher Columbus. Why was it not called Columbia? Make a memory map of our continent, marking in the main features.

How North America was Settled. After the discovery of the West Indies by Columbus, Spanish and Portuguese adventurers and explorers poured into Central and Southern America in great numbers and enriched themselves by plundering the natives of their gold and their silver. As the entrances to these regions through the West Indies were few and easily guarded, Spain and Portugal held the land until a few years ago when their colonies rebelled one by one and formed themselves into independent countries. To-day neither Spain nor Portugal owns a foot of American land, yet the names, languages, and customs remain to show the character of the people by whom the colonies were founded.

While Spain and Portugal were making the south their own, France and England were trying to secure a footing in North America. Newfoundland was settled by some English sailors in 1583, and in 1584 Sir Walter Raleigh tried to settle the country about Chesapeake Bay, and named the settlement Virginia in honor of the Virgin Queen of England. From that time large numbers of people continued to leave Britain and to form new homes for themselves in America, so that settlement after settlement sprang up along the eastern side of our continent.

The most famous of these settlements was that founded by the Pilgrim Fathers in 1620. The Pilgrim Fathers were English people who had to leave the home land in order to practise their religion in their own way. They sailed in a ship called the "Mayflower," and after crossing the Atlantic, landed and settled near Boston. This was the first of six settlements on


NORTH AMERICA
(Physical)
SCALE
700 Statute Miles to one inch
EXPLANATION
SEA LEVEL
Ft. 0 to 1000 ft.
Ft. 1000 to 3000 ft.
below 13,000 ft.
Latitude North
Longitude West from Greenwich
ARCTIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
BERING SEA
BAFFIN BAY
GREENLAND
HUDSON BAY
LABRADOR PENINSULA AND PLATEAU
NEWFOUNDLAND
NOVA SCOTIA PENINSULA
CORDILLERAN HIGHLAND
ROCKY MOUNTAINS
CENTRAL LOWLAND
GREAT BASIN
COLORADO PLATEAU
SIERRA NEVADA MTS.
CASCADE MTS.
COAST RANGE
APPALACHIAN MTS.
ALLEGHENY PLATEAU
ATLANTIC AND GULF COASTAL PLAIN
MEXICAN PLATEAU
GULF OF MEXICO
CARIBBEAN SEA
JAMAICA
WEST INDIES
SOUTH AMERICA
EQUATOR
Mt. McKinley
Mt. St. Elias
Mt. Logan
Mt. Rainier
Mt. Whitney
Peak of Orizaba
Great Bear L.
Great Slave L.
Great Salt Lake
Lake Winnipeg
L. Athabasca
Lake of the Woods
THE GREAT LAKES
Mississippi R.
Missouri R.
Rio Grande
Columbia R.
Colorado R.
Arkansas R.
Red R.
Hudson Strait
Davis Strait
Baffin Land
Queen Charlotte Is.
Vancouver I.
C. Flattery
C. Mendocino
C. San Lucas
C. Hatteras
C. Race
C. Sable
Bermuda Is.
Yukon
Alaska
Alaska Pen.
Aleutian Is.
Prince of Wales I.
Ft. Barrow
Behring Strait
Parry Islands
Boothia Pen.
Melville Pen.
Labrador
Grand Banks
Yucatan Peninsula
Tropic of Cancer
Height of Land
Continental Divide
Columbian Plateau
Great Basin
Sierra Nevada Mts.
Lower California
Mexican Plateau
Rio Grande
Gulf of Mexico
Caribbean Sea
Jamaica
West Indies
South America
Equator
120°
100°
80°
60°
40°
20°

this particular coast, and, later on, the whole of these came to be generally known as the New England colonies. Other settlements were formed to the south, and slaves imported from Africa were employed to do the work on the farms.

Farther north, the French were at work opening out the country we love to speak of to-day as our own land of Canada. Cartier had sailed up the St. Lawrence to the site of Montreal in 1535. In 1608 Champlain founded Quebec, the Gibraltar of Canada. Other settlements were founded from year to year, and the whole St. Lawrence basin was carefully explored. It was not a very difficult task to do this, as the river St. Lawrence was the natural highway into the heart of the continent. On the other hand, the English settlers having no great rivers by which to penetrate into the country, had to content themselves with the slow process of cutting away the forests which covered the plain between the Atlantic and the highlands of Eastern America. For over a century the English-speaking settlers were content to stay at home, till their farms, and let the rest of the world alone, while French explorers were traversing the mighty forests and rivers of the west, and claiming them all for France and the Church. But France had failed to fill in the great gap between the Canadian lakes and the mouth of the Mississippi with forts and settlements, as La Salle, the French explorer, had advised. Had this been done, France might have been a great power on the North American continent to-day. In the struggle which followed, both French and English made use of the Indian tribes occupying the disputed country, and a most cruel warfare was carried on for years, until the battle of the Plains of Abraham near Quebec city was won by the British under General Wolfe in 1759, and shortly after Canada was formally handed over to the British.

Plains of Abraham.

This victory gave Britain practically the whole of the great North American continent, and now that peace had come, thousands of emigrants came across the Atlantic. The settlements prospered, the French-Canadians were happy, and the whole land settled down to a prosperity that the continent had never before known. Everything was going on well, until the home country decided to tax the new land in order to help to pay the debt which had been incurred on account of the wars in defence of the colonies. The colonists objected to the tax when they had no voice in the British Parliament. Indeed, the whole affair was a most unfortunate business, and the end of it was the loss of Britain's finest possession beyond the seas. The United States declared for independence in 1776, and this was granted in 1783.

In the struggle, Canada stood firmly by Britain, and Canada has shown herself ever since to be most loyal to the British throne.

Coast Line. What can you say of the coast line of North America as compared

with that of South America? North America has more coast in proportion to its size than any other continent except Europe. The two most important sea arms are Hudson Bay and the Gulf of Mexico. The North coast is ice-bound for the greater part of the year. There are many islands in this region bearing the names of some of the brave men who risked their lives in attempting to explore this dreary sea. The largest opening is Hudson Bay, so named after a Dutchman, Henry Hudson, who discovered it. No one knows how Hudson died. He was cast adrift by his crew and left to perish. Hudson Bay communicates with the Atlantic by Hudson Strait, a channel locked by ice for more than half of each year. As much is said to-day regarding a Hudson Bay railroad, it will be well to bear this in mind.

Neglecting the great north land of Greenland, we shall, if we pass eastward, come to the peninsula of Labrador, with its bleak, rocky coast. At the elbow is Newfoundland, guarding the northern shore of the Gulf of St. Lawrence. On the southern side of the Gulf is the peninsula of Nova Scotia, one of the provinces of our own country. South of Nova Scotia, the coast runs to the south-west in three great curves ending with the peninsula of Florida at the northern edge of the Gulf of Mexico. The Gulf coast swings away to the west and south toward the peninsula of Yucatan. Blocking the eastern side of the Gulf and separating the Atlantic from the sea known as the Caribbean, are the West Indies, behind which the Spaniards were so long able to withstand all attempts to drive them out of Central and South America. The Pacific coast forms a sweeping double curve extending from Alaska, the north-western shoulder, to the Isthmus of Panama. Study this coast carefully, noting the irregular northern half, the islands skirting the shore, and the great extension known as the Peninsula of Lower California.

Surface. A study of the map on Page 50 will show two highland regions. Notice what the deep yellow, the lighter yellow, and the green stand for on this map. The larger, higher, and broader of the highland regions is near the Pacific coast, and the lower, shorter, and narrower along the Atlantic. Besides these, a third highland region, nowhere more than a quarter of a mile high, and consisting of very old mountains worn down by the storms of ages into round-topped hills, is situated around Hudson Bay.

The most important feature of the western highlands is the range of the Rocky Mountains which slope eastward gradually and meet the western slope of the Appalachians, the principal mountains of the eastern highlands.

As both highland regions run in a northward direction they form a barrier to the winds from the Atlantic and the Pacific oceans, but no obstacle to the winds from the Gulf of Mexico and from the Arctic Ocean. Again, the inland slopes meet to form the Great Central Plain, a huge area shut in on the east and on the west. This plain in turn is divided into two parts by a low ridge which crosses the continent from west to east in the latitude of Lake Superior. The presence of this ridge causes the plain to slope northward toward the Arctic Ocean and Hudson Bay, and southward toward the Gulf of Mexico.

The Great Central Plain is made up largely of plain and prairie, and it extends from the tundras of the north to the swampy lands about the Gulf. The prairies cover the regions watered by the Saskatchewan, the Red River, the upper valley of the Mississippi and the lower valley of the Missouri. The plains, being higher and

A scene in the Canadian Rockies.

drier, lie between the prairie country and the Rockies.

Between the Appalachian Mountains and the sea there is a low strip of ground some 900 miles in length by 200 in width, one of the most populous and wealthy regions of the continent.

The great highland of the west, to which the name Cordilleras has been given, begins in Alaska and stretches in a double curve southward to the Isthmus of Panama. It is narrow at the north, but grows broader to the south, and reaches its greatest width when half way across the United States. On the whole it is a serious barrier to the westerly winds, robbing them of their supply of moisture before the Central Plain is reached.

The Cordilleran Highland is made up of many different mountain chains, the Rockies to the east, the Sierra Nevada and the Cascade farther west, and the Coast Range along the Pacific. These mountain ranges naturally enclose great plateaus a mile or more in height, the principal being the Great Basin, in which the surplus water, not amounting to very much, must be got rid of by evaporation. As a result we have such a body of water as Great Salt Lake, which should give you a very good idea of the character of much of this region.

The Rockies are a serious obstacle in the way of easy communication between the east and the west. Fortunately they are broken here and there by water-gaps or river valleys, so that railroads connecting the two sides of the continent have been carried across.

In our study of the surface of our continent we have omitted a very important region, namely, the St. Lawrence River valley. We have said that the northern portion of the Great Central Plain sloped toward the Arctic, and also toward Hudson Bay. At the western end of Lake Superior you will observe dotted lines passing to the north and to the south of the lake and enclosing the great valley mentioned. In a way this valley is simply an eastern entrance to the Great Plains, and formed,

as we have already stated, the natural entrance to the interior of the continent. The principal feature of the valley to be noted at this stage of our work is the presence of a chain of five enormous lakes, whose waters are carried off to the Atlantic by the mighty St. Lawrence. No other lake system on the face of the earth can compare with that of the Great Canadian Lakes.

Climate. In the map on page 50 you will notice a dotted curved line, the Tropic of Cancer, running from west to east across Mexico. There is another line, called the Tropic of Capricorn, corresponding to this, south of the equator. These are important guiding lines in your study of geography, as they represent the most northerly and most southerly points of an overhead sun. North of the northern tropic, the noon sun is seen toward the south. South of the southern tropic, the sun at noon is seen toward the north. The Tropics of Cancer and Capricorn roughly bound the zone or belt of heat which encircles the earth at the equator, and to which the name Hot Belt or Torrid Zone has been applied.

North America has a very varied climate, because it lies in so many heat belts. The Arctic circle surrounding the North Pole shows you where the North Cold Cap is situated. The Tropic of Cancer passing through the centre of the Gulf of Mexico shows that the southern end of our continent extends into the Hot Belt. The remaining portion — in other words, the greater portion of North America — lies in what is called the North Temperate Belt. From this you will readily understand why our continent should have many different climates, ranging from great heat at the south to extreme cold at the north.

Place the school globe so that the North Pole points away from you. Looking at the northern hemisphere you will see half the equator, but less than half of the earth lines running parallel to the equator. This means that our winter season has less than twelve hours of sunlight per day. If you will now turn the globe so as to permit the pole to point toward you, you will see the earth as it appears during our summer season. The equator still has twelve hours per day of sunlight, but we in our northern homes have much more than this. As the sun moves northward, or, as we say, rises higher and higher in the noon-day sky, North America gets more and more sunlight and heat, and winter gives place to summer with its long days and short nights.

The climate of a continent is also affected by the winds which are able to cross the continent. Now, the low, Great Central Plain is open to the cold Arctic winds and also to the warm southern winds from the Gulf of Mexico; and this is the reason why north winds may go so far south as to freeze the fruits of Florida, and warm winds so far north as to cause plants to grow and flowers to blossom about the shores of the Arctic Sea. This is not all, for the warm south winds carry moisture up the Great Central Plain into Canada, a point that should not be forgotten. What difference would there be were there a barrier of mountains across the continent in the neighborhood of the Arctic Ocean?

As the Cordilleran and the Appalachian Highlands run from north to south, they cut off much of the moisture which the Pacific and the Atlantic Oceans would otherwise send to the interior of the continent. The Pacific coast is well watered from Alaska to San Francisco, and there is ample rainfall along the Atlantic from the Isthmus almost to the elbow of Labrador. As a result Pacific Canada has fine timber areas, and the prairie country an abundance of grassy areas.


NORTH AMERICA
(Political)
SCALE
0 100 200 300 400 500 600 700 800
700 Statute Miles to one inch
Capitals of Countries ★ Other Cities •
Comparative Area
80,000
Square Miles
ARCTIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
GREENLAND
(TO DENMARK)
BAFFIN BAY
HUDSON BAY
DOMINION OF CANADA
THE GREAT LAKES
UNITED STATES
GULF OF MEXICO
CARIBBEAN SEA
CENTRAL AMERICA
WEST INDIES
SOUTH AMERICA
ARCTIC CIRCLE
TROPIC OF CANCER
EQUATOR
Chicago
New York
Philadelphia
Latitude North
Longitude 120° West from Greenwich
100°
80°

Drainage. The rivers flowing from the Appalachian Highlands are mostly short, because the plain which they have to cross is but a narrow plain. Some of the rivers of the Pacific coast are worthy of a little attention. Among these we may mention the Yukon, Fraser, Columbia, and Colorado. In the summer time the Yukon has 1,000 miles of navigable water. The upper Fraser winds through deep valleys before reaching the plain. The Columbia rises near the source of the Fraser, and flows first south and then west to the Pacific. The Colorado flows for miles through a region devoid of trees and grass. In one part of its course it flows through the Grand Cañon for more than 200 miles. The banks here are too steep to be climbed, the bottom is dark and gloomy, the valley is so wide that it cannot be bridged, and the roar of the rushing waters is deafening.

The Colorado Cañon from below. Note the great peaks which have resisted the action of the air and the water.

The rivers flowing toward each other down the long interior slopes forming the Great Central Plain, mostly join to form some of the greatest river systems in the world. In the southern portion of the plain, the Missouri from the north-west and the Ohio from the east flow into the great central stream, the Mississippi. The Mississippi has the most important basin in the world. Draining the country from north to south, it has a wonderful variety of climate and a great range of products. Its course leads easily to the European markets, and in winter as well as in summer, the greater portion of the system is in operation. Vessels can ascend the Missouri to the Rockies. Vessels can also pass far up into the country of the Ohio. Along the route are the wheat fields of the north, the corn lands about the mouths of the two main tributaries, and the rich rice, sugar-cane, and cotton lands of the south. In the northern portion of the Great Central Plain are to be found two great river systems, the Mackenzie and the Saskatchewan. The north-flowing Mackenzie is of very little commercial value, as the lower part of its course flows through a most desolate region and suffers from severe floods every summer. These floods are due to the rapid melting of the mountain snows at the headwaters of the river. The river being still ice-bound in its lower course, overflows the banks and inundates the country. Connected with this river are several very large lakes, namely, Athabaska, Great Slave Lake, and Great Bear Lake.

The course of the Saskatchewan is from west to east across the prairie country of Western Canada. Two rivers combine to form the main stream which empties into Lake Winnipeg, the surplus waters of which are carried off by the Nelson into Hudson Bay. The Red River, really a part of the Saskatchewan system, empties into the southern end of Lake Winnipeg.

The St. Lawrence is the principal Cana-

dian river, the eastern entrance to the country and the outlet of the Canadian Greater Lakes. The St. Lawrence opens directly toward Europe, but the river has certain drawbacks. It is ice-bound for four months of the year. The Gulf into which it enters is often foggy. Portions of the channel are full of rapids or falls, making costly canals a necessity. Notwithstanding these difficulties, ocean vessels can go a thousand miles from the sea into the continent, and lake vessels can add another thousand miles to this distance.

The St. Lawrence practically commences with Lake Superior, the biggest body of fresh water in the world. From the eastern end of this lake the St. Mary River flows into Lake Huron, which also receives the waters of Lake Michigan by the Strait of Mackinac. Lake Huron, at its southern end, is connected with Lake Erie by the St. Clair River, St. Clair Lake, and the Detroit River. Lake Erie is connected with Lake Ontario by the Niagara River.

The rivers and lakes mentioned above are not, however, free from obstacles to navigation. The rapids on the St. Mary have to be overcome by a double canal. Lake St. Clair is very shallow and frequent deepening of the channel is necessary; but the greatest fall is between Erie and Ontario, the Erie level being some 300 feet above that of Ontario. The Niagara River sweeps down this descent first by rapids for about a mile, and then with one mighty leap of a hundred and sixty feet, and with a great roar which can be heard for miles away, it plunges over the edge of the precipice forming the world-famed falls of Niagara. One hundred million tons of water pour over these falls every hour, and some of the water is made to furnish electric power by means of which street cars are run, houses provided with light and the machinery of many factories in neighboring cities operated. To overcome these falls a canal has been cut from Lake Erie to Lake Ontario.

The St. Lawrence River leaves Lake Ontario as a broad stream, in the course of which are the beautiful "Lake of a Thousand Islands" and several long rapids down which the steamers have to shoot.

Niagara Falls.

Vegetation. In the tundra region, or the country lying to the north-east of a line connecting the mouth of the Mackenzie with the centre of the western shore of Hudson Bay, the land in season is gay with flowers, mosses, lichens, and dwarf vegetation of many kinds. The summer is warm enough to develop these but too short to grow the grains and roots which we have found good for man and beast. In the winter the tundras are one great, bleak, dreary, white wilderness buried in snow and swept by freezing winds.

South of the tundras is the forest country, which extends further south along the coast than in the interior. The evergreen trees of the north pass into the poplars and finally into the mixed woods of the more southern forest edge. The Canadian forests still cover much of Quebec, New Brunswick, Ontario, and British Columbia; and the numerous rivers of these provinces are useful not only for floating the logs to the mills but also in supplying the power by which the mills are driven. Ottawa, on a river of the same name, has the largest saw-mills on the continent. In the winter season men go to the forest to cut the logs which afterwards are hauled over the snow to the river banks, where they are piled up until the rising waters of spring release them and carry them down stream. The lumber business has been of very great value to the country quite apart from the value of the timber. Lumbermen cleared the land for the farmers following them. They made the first roads and built the first bridges, two very valuable conveniences to those who came to till the land.

Forest area of Canada.

The chief evergreen trees of the northern woods are the red and white pine and the spruce. Other trees are the birch, oak, and maple which cast their leaves in the autumn. The maple not only supplies a fine wood, but from its sap maple syrup and maple sugar are made. Some of the western forest trees are of an enormous size, the giant Californian trees and some of the trees of British Columbia being familiar to us in postal card pictures. British Columbia supplies the prairie dweller with the pine and the cedar with which to build his shelter.

The grass-lands of North America have already been referred to when we were speaking of the plains and prairies of the Great Central Plain. The plains are large areas of rolling grass-lands stretching from the head waters of the Mackenzie to Mexico. On them the air is clear and bracing, the water supply fair, and the grass rich. These are the great North American pastures supporting millions of cattle, sheep, and horses; and capable of supporting as many more. The prairies lie to the east of the plains and

A lumber camp.

are lower, warmer and richer. On them are produced millions of bushels of wheat, oats, and barley of the finest quality.

South of the "Wheat belt" in the region about the mouths of the Ohio and the Missouri, Indian corn is grown in immense quantities. South of the "Corn belt" in the low, damp grounds bordering the Gulf of Mexico, rice, sugar-cane and cotton are the main productions, cotton being the most important. Oranges and pineapples grow well in Florida; oranges, grapes, English walnuts, and prunes are produced in large quantities in California, on the west coast of the United States; peaches and pears grow to great perfection in British Columbia; apples are the principal fruit crop in Nova Scotia and Ontario, and wild fruits are found almost everywhere in Canada and the United States.

A southern cotton plantation. The second picking.

The Cordilleran plateau, which practically

The white polar bear of the Arctic regions.

covers one-fifth of North America, is at present little better than a desert. Much of this region is being reclaimed, and the snow and ice of the mountain valleys are now used for the irrigation of the thirsty lower lands.

Animals. In the far north we have a region of fur-bearing animals. The winters are so long and so cold that the animals require a thick covering of fur to protect them. In these snowy wilds, one of the last reserves in the world, fur-bearing animals abound, and hunters and trappers, both Indians and whites, make a business of collecting and selling furs. In this northern wilderness are to be found the polar bear, the musk-ox, the caribou, and many species of the fox. In the more southerly portion of the forest country are various kinds of deer, the bear, the beaver, the lynx, and the raccoon. The prairie has the badger and the coyote, and the government parks have the remnant of the once numerous bison, or so-called buffalo. Wild ducks and geese frequent the many small lakes of Canada in the summer season. The prairie has the

prairie chicken, and the eastern woods have still a few of the once plentiful wild turkey. In the Rockies of the north-west the big-

A group of bison.

horn sheep and the grizzly bear are hunted. The rivers and swamps of the south abound in alligators. Seals are found off the Alaskan peninsula. The cod and the herring occur in great numbers off eastern Canada, the former on the Newfoundland banks and the latter in the Gulf of St. Lawrence. The various Canadian lakes and rivers abound in fine food fishes. Name some. Salmon ascend the clear, cold Fraser and Columbia rivers of the west to spawn. Whales and walruses are hunted in the Arctic Ocean, and oysters are dredged from the muddy waters along the shores of Chesapeake Bay.

While North America has not given the rest of the world any really valuable domestic animals, the grass-lands of our continent have become the home of millions of the most useful domesticated animals of the Old World.

Wild turkeys.

Occupations. The occupations of North America have already been suggested. In the tundras the Eskimo is engaged summer and winter in trying to get enough to eat, enough to wear, and something to shelter him. In the forest country hunters, trappers and lumbermen are busily at work in season. The work of the hunter and trapper does not appear at first sight to be very important, but it was the fur trade that made the Hudson's Bay Company wealthy. It was the fur trade that was so attractive to the early French settlers. People in northern countries require furs, and furs are more and more difficult to obtain. On the other hand, the lumberman's work appears to be of very great value. Every village has its lumber yard, where shingles, planks and boards may be purchased. Carloads of lumber are constantly moving from British Columbia toward the prairie country. Lake vessels move over the lakes laden with thousands of feet of timber. Sawmills are situated wherever there is easy access to good timber, and an easy outlet for the lumber. Large cities in the east have their furniture fac-

Wild Canada geese.

tories, their sash and door factories, and a dozen other places where lumber is made into the things people need.

The prairie occupations and the occupations of the farming country on the borders of the northern forests, are those connected with the rearing of cattle, horses, sheep,

pigs, or the raising of grain, or both. These occupations are well known. Do we appreciate them as we should? What does it mean to the Canadian west to have a bad harvest? What will this mean to the whole of Canada? How will it affect the Mother Land?

In the "corn belt" corn is grown and hogs are raised. In the "cotton belt" the wool has to be picked from the pod, cleared from seeds, and then sent perhaps thousands of miles away to the mills to be woven into cotton yarn and spun into cotton fabrics.

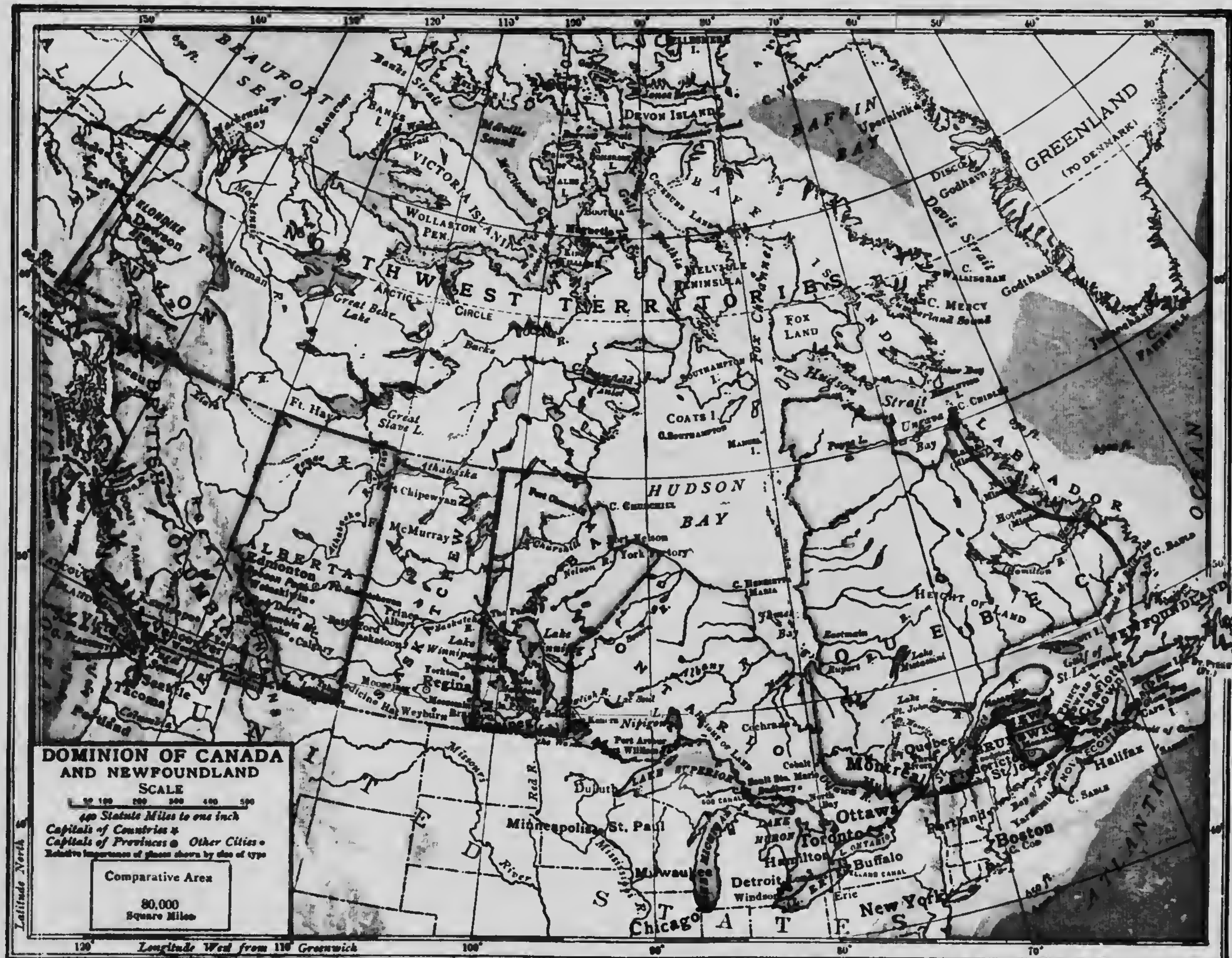
Space will not allow us to mention all the industries of our continent. We could speak of the thousands of men at work in the gold lands of the Yukon and of California, the coal fields of the north-eastern States and Canada, the tobacco plantations south of Chesapeake Bay, the fisheries of the Atlantic and the Pacific, and the manufacturing carried on on an immense scale in the older sections of the continent. We could also speak of the network of railroads, some of them going across the continent, the hundreds of ocean and lake vessels, the telegraph and telephone lines, all necessary to carry on the enormous business of the North American continent.

Brailing salmon from a trap.

The People. With the exception of the Eskimo of the tundras, the whole North American continent was once occupied by Indians. These were of many tribes, speaking different languages, and ranging all the way from real savages decked out in war paint and feathers, to the more or less civilized tribes who dwelt in cities and engaged in agricultural pursuits.

To-day the Indian is on the reserves set apart by the governments of our continent, and efforts are being made to teach him to look to the soil more and to the hunting ground less for his living.

While the great majority of the Indian races of the two Americas were nothing more than hunters, the Aztecs of the Mexican plains, and the Incas of the Central Andes of South America made some progress toward a higher civilization. Neither of these peoples had discovered how to use rivers as we now use them. Neither had made much of a success in the taming of wild animals for food or for work. Yet both peoples excelled in tilling the ground, road making, temple building, and in picture writing. In other parts of North America there are evidences of mounds, mines, and rock cities, all pointing to a wonderful advance among some of the native American peoples.


DOMINION OF CANADA
AND NEWFOUNDLAND
SCALE
440 Statute Miles to one inch
Capitals of Countries
Capitals of Provinces
Other Cities
Relative importance of places shown by size of type
Comparative Area
80,000
Square Miles
Longitude West from Greenwich
Latitude North
BEAUFORT SEA
NORTHWEST TERRITORIES
YUKON
BRITISH COLUMBIA
ALBERTA
HUDSON BAY
LABRADOR
QUEBEC
ONTARIO
NEWFOUNDLAND
GREENLAND
(TO DENMARK)
BAFFIN BAY
Davis Strait
Hudson Strait
Fox Channel
FOX LAND
DEVON ISLAND
VICTORIA ISLAND
WOLLASTON PEN.
ARCTIC CIRCLE
Great Bear Lake
Great Slave L.
Ft. Norman
Ft. Hay
Athabaska
Chipewyan
McMurray
Edmonton
Calgary
Regina
Medicine Hat
Weyburn
Prince Albert
Lake Winnipeg
Nelson R.
York Factory
Port Nelson
C. Churchill
COATS I.
SOUTHAMPTON I.
Cumberland Sound
C. Mercy
Godhavn
Godthaab
Disco
Upernivik
James Bay
Albany R.
Nipigon
Port Arthur
Lake Superior
Duluth
Minneapolis
St. Paul
Milwaukee
Chicago
Detroit
Windsor
Toronto
Hamilton
Buffalo
Erie
Ottawa
Montreal
Quebec
Portland
Boston
New York
Halifax
St. Johns
Gulf of St. Lawrence
Seattle
Tacoma
Portland
Dawson
Klondike
Red R.
Missouri
Mississippi R.
UNITED STATES
PACIFIC OCEAN
ATLANTIC OCEAN

In his hunt for wealth, Cortez, the Spanish leader, and his followers plundered and destroyed the Aztec country and burned every record they could find in order that the people might forget their own religion and take the foreign religion instead.

America is largely peopled by the descendants of the early colonists sent out by the various European nations, and by immigrants who have come more recently from across the Atlantic. The population is greatest along the Atlantic coast. Why? English is the general language spoken, but French prevails in Quebec, and Spanish in Mexico, Central America, and the West Indies. Why?

Within recent years there has been a great migration of people from Europe. Some of the new-comers have settled in the cities and towns, but great numbers have made their homes in the rich farming lands of Western Canada and the Western States.

In that portion of the United States bordering the Gulf of Mexico, and also in the West Indies and in Central America—in other words, in the regions where a hot climate makes it difficult for Europeans to carry on continuous labor—there are great numbers of colored people, mostly descended from slaves brought from Africa in order to work on the southern plantations. The early Spaniards who came to Mexico and to Central America married with the Indians; and their descendants, known as Mexicans, are now the most powerful people in these regions.

QUESTIONS. 1. What was the first part of North America visited by white men? 2. Why is hunting important in the north? What animals are hunted? 3. Find out what you can of the Hudson Bay Co. 4. Who were the first to plant colonies in eastern Canada? In the eastern States? 5. Make a memory map of North America and mark carefully on it (*a*) the coast waters and peninsulas referred to in the text; (*b*) the highlands and the lowlands; (*c*) the ridge separating the northern from the southern plain; (*d*) the river basins. 6. On another map show the highlands and lowlands, the rivers, the tundras, forest country, grass-lands, and areas best suited for oranges, apples, cotton, and corn. 7. Find by using the map scale how far the mouth of the Mississippi is from the mouth of the Mackenzie, Newfoundland from Vancouver, and Bering Strait from Florida. 8. On a small outline show the Arctic circle, the Tropic of Cancer, and the directions of the winds most common to the continent. 9. Describe a northern forest, a southern cotton field, a sugar bush, cod fishing on the Banks, and rounding-up cattle on a western ranch. 10. What coasts of North America correspond in direction to the three coasts of South America? 11. In what part of each continent is its highest mountain range? Name these. 12. What South American river is similar to the Mississippi in position and in the direction which it and its tributaries flow. 13. What river of South America is nearly in the same location as the St. Lawrence? How does it differ from the St. Lawrence? 14. What month is the month of coldest weather in Argentina? 15. If wheat is harvested in August in Manitoba, in what month should the harvest come on in South America? 16. What continents are separated from North America by the Atlantic? By the Pacific? 17. What part of North America lies nearest Europe? Asia? 18. Describe a day with a trapper; an old time buffalo hunt; hunting seals off Alaska; and driving logs on a Canadian river.

CANADA

Canada, our own land, stretches across the northern half of North America. So wide is our country that it takes the greater part of a week to cross it by the fastest trains, and it is so long that weeks would have to be spent on train, canoe, and dog sleigh were one to travel from Winnipeg to the mouth of the Mackenzie. Canada is so vast that one might spend a lifetime wandering over it without seeing it all. It is almost as big as the whole of Europe; and the British Islands, the mother-land, might easily be packed away into a corner of one of the great provinces. Canada is so roomy that there is plenty of space for millions of people, all of whom may make a good living provided they have no fear of soiling their hands.

History. South America was explored and annexed by Spain and Portugal; Central America by Spain; and North America largely by Britain, France, and Holland. The St. Lawrence River was the entry which the French explored, and the St. Lawrence Valley became the site of the earliest French settlements. Quebec was founded by Champlain in 1608, and his countrymen made their way up the river to the Great Lakes, then across to the Mississippi, and down this stream to the Gulf of Mexico. The Dutch had settlements along the Hudson River in the present State of New York, but these

Indians of the Tsimpshean Tribe

settlements soon passed into the possession of the British, who from 1587 onward had made colonies at several points along the coast between the St. Lawrence and Florida, and had, in time, come to occupy the lowlands between the Atlantic and the Appalachians. Conflicts between the British and the French took place, the result being that Canada passed forever from the hands of the original settlers into the hands of the British.

British settlements gradually occupied the Ohio and Mississippi Valleys. British settlements were also made across the lakes in the country now known as the Dominion of Canada. In 1776 the original colonies rebelled against the mother-land, gained their independence and formed a nation of their own, the United States of America. Canadians, both French and British, refused to join in this conflict, remained loyal to the British flag, and at the close of the rebellion were joined by many south people who, unwilling to join in the revolt, gave up their all and came to live in Canada where they were known as the United Empire Loyalists. The Loyalists settled in Nova Scotia, New Brunswick, and Ontario, and before many years had passed great numbers of people from the British Islands came to make their homes in Canada.

The present provinces of Nova Scotia and New Brunswick, originally united under the name of Acadia, were acquired by Britain in 1713. Cape Breton Island, now a part of Nova Scotia, and Prince Edward Island, still a separate province, became British in 1763, together with the great region comprising the St. Lawrence Valley and the region lying north of the Great Lakes.

The Central part of Canada early passed into British hands, for toward the close of the seventeenth century the Hudson's Bay Company was formed to trade in the furs from the forests and plains of the interior. This company held the land for upward of two hundred years, or until it was surrendered to the Dominion. Manitoba was created a province in 1870, and Saskatchewan and Alberta became provinces in 1905. British Columbia was settled much later than most of the other provinces. Possession was taken of the coast portions as early as 1790, but there was little immigration until the discovery of gold about 1855.

Canada at first was merely a number of scattered settlements, widely separated. In time provinces were organized, and in 1867 four of them, namely Quebec, Ontario, Nova Scotia, and New Brunswick were united

under one Government and called the Dominion of Canada. To-day the Island of Newfoundland and a narrow strip along the coast of Labrador are the only portions of British territory in the north of our continent that are not included in the Dominion.

As Canada is a British Colony, our sovereign is the sovereign of the British Empire. Our Governor-General, who lives at Ottawa, the capital of our country, is the sovereign's representative. Canada collects her own taxes, spends her own money, and is, in fact, mistress of all her own resources, and one of the world's freest and best countries.

Position and Coastline. With the exception of Alaska to the north-west, and Newfoundland to the east, Canada occupies the northern half of the Continent of North America. Can you mention any disadvantages due to such a position? In what ways would Canada be improved were our country one thousand miles or so farther south? Would anything be lost, do you think? The Canadian coast borders on three great oceans. Name these oceans and locate each. The eastern coast is not far from Europe, our natural market, and a part of the west coast is quite near the eastern coast of Asia. Point out any advantages that should come from such neighborship. South of Canada is the splendid English-speaking country of the United States. What results should attend this fact?

The coast-line of Canada is very irregular. The north coast is ice-bound for the greater part of the year, but magnificent harbors on the two more important oceans give every advantage to trade. Some of the Atlantic harbors are closed for a few months each winter by ice. The Pacific harbors are always open, and these harbors are bound to become more and more valuable as the country is developed and as our trade with the lands across the Pacific is increased.

Many large islands lie off the northern coast of Canada. Of what use are these? Newfoundland guards the Gulf of the St. Lawrence on the northern side, while Cape Breton and Prince Edward Island guard its southern side. At the entrance of the St. Lawrence River lies the Island of Anticosti. The chief islands on the Pacific coast are Vancouver and the Queen Charlotte Islands. Guarding the entrance of Hudson Bay, the Canadian Mediterranean, are the peninsulas of Melville and Labrador. Connecting this great bay with the Atlantic ocean is Hudson Strait.

Newfoundland is separated from Canada by Belle Isle Strait, and from Cape Breton Island by the Strait of Cabot. The Strait of Canso separates Cape Breton from the peninsula of Nova Scotia, while Queen Charlotte Sound, Georgia Strait, and the Strait of Juan de Fuca separate Vancouver Island from the main land of the continent.

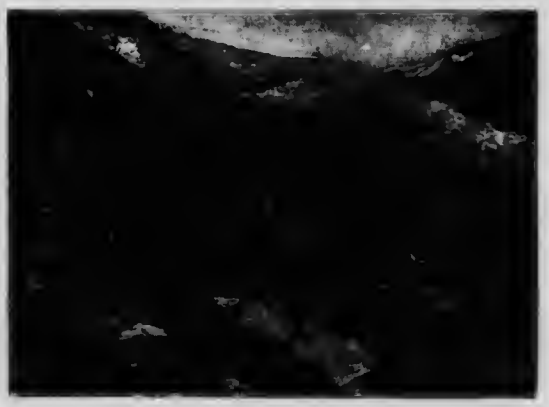
The important capes are—Race on Newfoundland, and Sable on Nova Scotia.

Surface. The surface of Canada may be considered as falling into five well-marked divisions. These are the Acadian region, the St. Lawrence lowlands, the Laurentian highlands, the Central plain, and the Mountain region. As these features will be the easier understood when we come to consider the separate provinces, it may be better at this step to think of the Canadian surface as falling into three great regions, an eastern area of low mountains, a great central plain, and a western area of high mountains.

Canada has one of the great mountain chains of the world, immense highlands with huge snow-capped peaks and mighty glaciers. It has also thousands of square miles of fertile plains, and the greatest forests outside of the tropics. The structure of the land is simple and a few minutes' study of the map will make it clear. Beginning at the east there is a region made up of a

succession of uneven ridges, divided by river-valleys, lakes, and swamps. In the southern parts and in the valleys, especially in that of the St. Lawrence, there is a fine rich soil and a heavy growth of timber. In the region extending from Labrador westward to the Great Lakes and northward to Hudson Bay there is more or less forest growth and considerable waste land.

Next come the Great Central Plains, the region of the prairies. This is one of the finest grain-growing areas in the world, and as yet only the southern edge of it has been opened up by the railways. It ranges in elevation from about 800 feet at the east to over 3,000 feet at the foothills of the Rockies



A glacier in British Columbia.

The third division is the mountain region, some four or five hundred miles in width. This is a vast area of parallel mountain ridges enclosing deep and fertile river-valleys, and containing numerous snow-clad peaks, immense glaciers, mountain lakes, waterfalls, and canons.

Climate. The Canadian climate, like the Canadian surface, is varied. On the west the warm moisture-laden winds of the Pacific are chilled by the mountains and made to yield the abundant rainfall of the British Columbian coast and to store up vast supplies in the many glaciers of the Canadian Rockies. The eastern section, or that part of Canada occupying the St. Lawrence River basin and the Atlantic coast, has a great range of temperature and usually an abundant rainfall during the summer months.

The central plain rises in three great steppes from a little east of the Red River to the foothills of the Rockies. The first steppe is the Red River valley. The second covers the western half of Manitoba and the eastern half of Saskatchewan. The last steppe extends from central Saskatchewan to the Rockies. As these steppes represent an increasing elevation or altitude, the temperature will also vary with the elevation. The Alberta steppe, though the highest, has its winters modified by the Chinook winds, warm south-west winds which come over the mountains in the winter and the early spring, and make it possible for stock to graze in these regions during the entire winter. The whole of this area may be said to have an *extreme* climate, that is, a cold climate in winter and a warm climate in summer. In the far north there are practically but two seasons, a long, dreary, almost endless winter, and a short, brilliant summer. For eight months of the year all vegetable life is hidden beneath the snow, and the only traces of animal life are often but the footprints of the caribou, the fox, the musk-ox, and the polar bear.

Drainage. The principal Canadian river is the St. Lawrence, which drains the five great lakes. Name these. The St. Lawrence valley is not broad like that of the Mississippi, but it extends far into the land, and in this way provides a splendid highway for the country; while its deep and broad lakes are among the great navigable waters of the world. It is said that more freight is carried upon these lakes in the seven or eight summer months than is brought into London, England, in a whole year. An almost endless fleet of all kinds of vessels moves over these inland waters, carrying

thousands of people, millions of tons of coal, copper and iron ore and general merchandise, millions of feet of lumber, and millions of bushels of wheat and corn.

A strange feature of the St. Lawrence River channel is seen in the plunges taken between the head waters and the Gulf. The St. Lawrence basin is really formed of three great terraces or steppes lying one above the other. The uppermost terrace is Lake Superior, whose level is some 600 feet above that of the Gulf. From this lake to Lake Huron, the second terrace, there is a drop of 20 feet. The second drop to the level of Lake Ontario is about 300 feet, and the last drop between Lake Ontario and the Atlantic Ocean is about 150 feet, this drop taking place in a series of rapids.

The principal tributary of the St. Lawrence is the river Ottawa, lying between the provinces of Ontario and Quebec.

The Mackenzie River has already been described. The commercial importance of this immense stream so far has been connected with the rich fur lands of the Canadian North. What its value may be in the future no one at present can foresee.

The Saskatchewan is the great river system of the prairie region of the Canadian West. Saskatchewan is an Indian word meaning a rapid stream, and it is well named. Rapids near its mouth and sand bars along the channel interfere with the navigation of the river; but a growing country and a more careful attention on the part of the government will help to remove these obstacles and make this one of the most important transportation routes in the Dominion.

The Red River is the principal stream in Manitoba. This river rises south of the Canadian boundary and flows northward through the fertile Red River valley into the southern end of Lake Winnipeg. From the west the Red River receives the waters of the crooked Assiniboine, which rises in eastern Saskatchewan and joins the Red at the city of Winnipeg. Being a north-flowing river the Red is subject in a small degree to the difficulty mentioned in connection with the Mackenzie. What is this?

Connected with the Saskatchewan system are the so-called Manitoba lakes. Lake Dauphin empties into Lake Winnipegosis, Lake Winnipegosis in turn is connected with Lake Manitoba, and Lake Manitoba with Lake Winnipeg. The common outlet is the Nelson River, flowing into Hudson Bay.

The Manitoba lakes run parallel to each other, have as a general rule low shores, and are looked upon as the deeper hollows at the bottom of an old lake called Agassiz, whose waters flowed southward into the Mississippi River. Those who seem to know the story of this lake tell us that a great glacier covered the whole northern portion of the Great Central Plains, that the southern edge of this ice-sheet at one time reached the mouth of the Missouri, that in its retreat to the north, a great wall of ice barred the natural outlet of the Red River valley and caused an overflow to take place down the valley of the Mississippi, and that when the ice finally disappeared the lake subsided to what we now see about us in Manitoba.

Plants and Animals. The tundra region of Canada, with its low shrubs and its mosses, lichens, and wild flowers, is commonly spoken of as the Barren Lands, a region stretching from the Arctic coast to the forest country. The Canadian forest area is a great belt running right across the country from ocean to ocean south of the tundras. The best timber comes from the rainy west coast and the snowy eastern section, where the importance of the St. Lawrence and its many tributaries is of the greatest value. In these forests the

valuable Canadian fur-bearers are found in more or less abundance. Indeed, the earliest story of the Canadian West is the story of the trade in furs. To-day the whole country is covered by scores of trading posts, each the natural centre of a fur district, and all in touch with certain central stations from which the furs are most readily shipped to Europe. It was these early fur traders who first explored north-western Canada.

Canadian furs and forests are becoming scarcer and scarcer, and thinner and thinner. The careless handling of fire and the presence of great transcontinental lines of railways

Forest Scene in British Columbia.

have helped to lessen the forests, while senseless slaughtering without any thought of possible extinction has killed off the buffalo and sadly reduced the beaver colonies. The same thing may be said of our supply of lake fish, and of our game animals and birds. We have been using up two of the most valuable resources of our land very thoughtlessly. Something, however, is being done on a small scale to preserve our animal life and our fish. Forest preserves where animals may find a safe retreat have been set apart here and there. Fish hatcheries, by replenishing the supply in our streams and lakes, have done something toward checking the wasteful slaughter of fish.

Both the East and the West have splendid fishing grounds. Cod, herring, and lobsters are the most important products of the eastern coast waters. In the western rivers salmon are numerous, and fine halibut is caught off some of the western islands.

Agriculture, Lumbering, and Fishing. Although agriculture is the chief occupation of the people of Canada, only a very small part of the land is under cultivation. In the north and north-east the climate is too cold; around Hudson Bay the hard rock is unfavorable; in the west the mountains largely prohibit the cultivation of the soil; nevertheless vast areas remain which may be brought under the plough. As the railways extend and workers are supplied, the amount of cultivated land will increase. This will be greatest in the region covered by the prairie provinces of Manitoba, Saskatchewan, and Alberta. In the end the most of the land between the Great Lakes and the Rockies will become productive. Wherever the rainfall is light, improvements in the method of cultivation will make up for this deficiency.

Oats are grown wherever wheat can grow. Fruit, especially apples, is grown east and west. Almost everywhere dairy farming is carried on, cheese being an important product, and great numbers of both sheep and cattle are reared on the drier western plains.

The forested portions amount to nearly one-third of the total area of Canada, and in nearly all these, lumbering is an industry of very great importance.

The shallow waters of the Atlantic coast yield great quantities of fish, cod being particularly valuable. The Canadian lakes are well stocked with whitefish and other fishes, and there are large establishments in British Columbia where salmon are canned.

Mining and Manufacturing. Coal is found in great quantities in Nova Scotia, Western

Alberta, and in British Columbia. Iron ore is mined near the coal in both Nova Scotia and British Columbia. What will this mean to Canada? Gold is widely distributed but is especially productive in the western highlands in the region known as the Klondike.

Manufacturing is yet in its infancy. The sawing of timber, the making of wooden articles, the making of paper pulp, the manufacture of leather and leather goods, of cotton, and woollen goods, and the making of machinery of various kinds, are at present the industries of greatest importance.

When people lived mostly in small villages, as they did in early times in Canada, every family produced most of the food and clothing that was needed at home, and few things had to be bought from others. The farmers raised grain, vegetables, sheep, cattle, and hogs. The women dried the fruits, made the butter and the cheese, cured the meat for winter use, and made clothing from the wool of the sheep. As the country has developed, much of this has been given up, and organized industries are now supplying what the farmer's wife at one time made for the household. Certain regions have been found better than others for agriculture, or for grazing, or for manufacturing or for other occupations. Eastern Canada is becoming more and more a manufacturing region; the prairies are better suited to agriculture and to stock-raising; the wooded districts of British Columbia and Northern Quebec to lumbering, and so on.

But the stores of coal and iron, and the presence of so many rapids and falls providing at once the materials and the power, point to a time in the near future when Canada will take a place among the great manufacturing nations of the world.

Transportation and Commerce. The drowned coasts of eastern and western Canada afford many fine harbors. The western shores are ice-free, but the only two ports which have as yet been developed are Vancouver and Victoria. On the east, the mouth of the St. Lawrence is blocked by ice in the winter season, and Halifax, a fine open harbor, becomes, for the winter, the principal eastern port of the Dominion. For the remainder of the year, however, the great entry is the St. Lawrence.

Canada is well situated for the exchange of goods with other parts of the world. Goods landed on our shores are readily carried east and west by the St. Lawrence, the Great Lakes, and the numerous Canadian railway lines. Goods for export just as readily find conveyance to lake and ocean ports to be carried to the mother-country, the United States, Australia, South Africa, China, and Japan.

Canada is a prosperous and growing land, a land of law-abiding citizens. The Canadian people have the name of being sturdy, ready to do hard work, and willing to depend upon themselves. The country has great resources in fish, farm products, minerals, and timber. Since the opening up of Western Canada the country has been settled so rapidly with people from Eastern Canada, the United States, Europe, and even with people from across the Pacific, that far-seeing Canadians believe that in a few years there will be more people living west than east of Lake Superior. Eastern Canada is growing rapidly in the line of manufacturing. The West will need to purchase a great many things, but where? The United States to the south has many things to sell that prairie Canada requires. The United States has also railroads leading into our country. Europe also wishes as great a market here as possible. With whom shall we deal? If we wish to build up our own country and make of it a great nation; if we wish to bind together Canada to the East, and Canada to the West, we shall do all we can to make it easy for the West to trade

with the East. The great Canadian railways running from the west to the east have been built for the purpose of binding East and West together, and they have succeeded in this better than anything else could. The Canadian Pacific, the Canadian Northern, and the Grand Trunk Pacific have done and are doing much to maintain the oneness of Canada from the Atlantic to the Pacific.

We shall now make a special study of each of the Canadian provinces, and shall learn what the people of each are doing; how commerce is carried on, and why some parts of our country are likely to be better settled than other parts.

QUESTIONS. 1. Make a map of Canada and mark in the Rockies, the Laurentians, the Central Plain, the three great river systems, the largest islands to the east and to the west, Hudson Bay, James Bay, the Gulf of St. Lawrence, Labrador, the names of the Great Lakes, the nine provinces, and the positions of Alaska, the United States, Iceland, and Greenland. 2. Why are the provinces of Canada strung out along southern Canada? Which is the largest and which the smallest of the provinces? 3. Name from memory the provinces in order, beginning with Nova Scotia. 4. Do the same, beginning with British Columbia. 5. Which province is the fifth from the east and the fifth from the west? 6. Which province lies midway between east and west? 7. Name in their order the lakes of the Mackenzie River, beginning up the river. 8. Name the Manitoba lakes, beginning with Dauphin Lake; with Lake Winnipeg. 9. Measure the distance from Halifax in Nova Scotia to Vancouver City in British Columbia, and the distance of Winnipeg from the mouths of the Nelson and the Mackenzie. 10. Describe a trip by boat from Fort William on Lake Superior to Montreal. 11. What and where are Ottawa, Halifax, Winnipeg, Great Bear, Yukon, Fraser, and Belle Isle?

* THE CANADIAN PROVINCES

When Great Britain, our mother-country, lost the United States, Canada remained British. For a long time there were several separate colonies or provinces, each having its own government. In 1867, on the first day of July, a union of provinces took place and the Dominion of Canada was formed. To-day there are in this union the provinces of Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia, each having a local government to look after the affairs of the province, and all having a central government at Ottawa, the capital of the Dominion, to superintend the general business of the whole country.

Besides the provinces there are what are called territories; such regions as the Yukon and the North-West Territories, areas at present managed by the government of the Dominion.

British warships at anchor in Halifax harbor.

Nova Scotia *(New Scotland).* The province of Nova Scotia is made up of the peninsula of Nova Scotia and the neighboring island of Cape Breton. Cape Breton is separated from the peninsula by Canso Strait, and almost divided by the long Atlantic inlet known as Bras d'Or Lake, i.e., *arm of gold.* Nova Scotia proper is separated from New Brunswick by the Bay of Fundy and from Prince Edward Island by Northumberland Strait, and joined to New Brunswick by the Isthmus of Chignecto. This province is about 320 miles long, by from 60 to 100 miles wide, and is, with the exception of

* Pupils at this stage should be given a fairly complete account of the character, resources, etc., of *their own province.* A map on the blackboard is suggested.

the island province to the north, the smallest of the provinces. The coast line is some 1,500 miles long, and contains a great many bays and harbors, the majority of which are very useful for navigation.

A watershed runs through the whole length of Nova Scotia. The slope facing the Atlantic is in general rocky and infertile, and its broken rocky uplands are covered by many small streams and lakes. The slope facing the Bay of Fundy and the Gulf of St. Lawrence is on the whole fertile. This slope consists of rolling hills covered with hardwood. In the north, these hills are called the Cobequid Mountains and they extend from the isthmus to Cape Canso. Northern Cape Breton is mountainous. The southern part is low and level. No idea can be formed of the beauty and the fertility of the interior from the bold and barren appearance of the sea coast.

From the long and narrow character of the province it is easily seen that there are no rivers of any great size. The Nova Scotian streams, however, are many, their mouths as a rule form great harbors, and their swift currents point to the presence of abundant water power. The principal rivers are the Annapolis flowing into the Annapolis Basin, an arm of the Bay of Fundy, and the Shubenacadie flowing into Minas Basin, also connected with the same bay.

The interior contains many fine stretches of agricultural land where cattle, hay, oats, apples, and potatoes are raised for the markets of Great Britain and the United States. The land bordering the head of the Bay of Fundy contains fertile areas protected by dikes which enable the farmers to irrigate these sea meadows and yet prevent them from being drowned by the high tides.

The chief industries are farming, fishing, mining, lumbering, and manufacturing. The forests supply an abundance of timber, and ship building is carried on at many places. Nova Scotian ships and sailors are found in every great world port and on every great sea. The Annapolis Valley in Nova Scotia produces some of the finest apples in the world. In this locality fogs and north-eastern storms are kept off by forest-covered hills. Cold and late springs prevent extra wood being formed, while the short autumn season prevents a waste of sap. The dry climate is favorable to the ripening and handling of the fruit, and the markets of the United States and Great Britain are always open and eager to obtain the crop.

Coal and iron are found on the main land and on Cape Breton Island, and in both places are either on or near navigable water. The island field is about Sydney, and the peninsular field along Northumberland Strait and at Pictou and Springhill, where the coal seams are from twenty-five to seventy-five feet thick and the coal of excellent quality.

Cod, herring, and lobsters are the most important fish products, but shad, mackerel, and haddock are all plentiful. The chief fishing centres are Yarmouth and Lunenburg, which are never frozen, and which are conveniently situated for exporting the fish to Brazil, the West Indies, and to Europe. The Nova Scotian fisheries yield from six to eight million dollars' worth a year, and employ 14,000 boats and ships and over 30,000 men. What a fine Marine Reserve when we shall own a Canadian Navy!

The chief manufacturing industries are:—Sugar refining, tanning of leather, the manufacture of furniture, agricultural implements, boots and shoes, cottons, woollens, and the great iron and steel products of Sydney, Glasgow, and Londonderry.

Nova Scotia was first settled by the French, and formed a part of the region described as Acadia, that is, *plenty*. After its conquest by Britain in 1713, great num-

bers of Scotch, Irish, and English settlers flocked in and gave it the name which it now bears, viz., Nova Scotia, or New Scotland.

On the eastern coast of Cape Breton Island are the ruins of the once famous stronghold of New France, the fortress of Louisburg. In the Minas Basin we have the Land of Evangeline. Directly south of Cape Breton is a low, sandy island, Sable Island, noted for its wild ponies and its dangerous position. Many vessels have been wrecked on its coast, and men are stationed on the island to give aid to any that may be shipwrecked.

Halifax, the capital of this province, is situated on Halifax harbor. Lines of steamships connect it with the mother-land and with the United States, while the Intercolonial Railway connects it with St. John, Quebec, and Montreal. The beauty and safety of Halifax harbor are well known; of commodious size, well sheltered from storms, open during the entire year, deep enough to float the largest ships built, and large enough to shelter at one time the greatest navy in the world. The city stands on the western side of the inlet, and is built on the slopes of a hill. It is strongly fortified and garrisoned by a regiment of Canadian troops. In the summer time the inlet is alive with pleasure boats. The city is beautiful when seen from an elevation, and picturesque when viewed from the water. No wonder that its 40,000 inhabitants are proud of this splendid entrance to a splendid country.

Other towns of importance are Sydney, noted for its coal trade and for its iron and steel works; Yarmouth, noted for its fishing interests and shipping trade; and Truro, noted for its Normal School and for its rich farming surroundings.

New Brunswick. New Brunswick, lying north-west of Nova Scotia and south of Quebec, was originally a part of the French Acadia. In 1713 the country passed into the hands of the British, and on the conclusion of the revolutionary war between the United States and Great Britain, the United Empire Loyalists, who rather than give up their British connection and become citizens of the United States, left their New England homes and settled, some in New Brunswick and some in other provinces of Canada.

This province is roughly square-shaped with Quebec on the north, the State of Maine on the west, the Bay of Fundy on the south, and the Gulf of St. Lawrence, or its western arm, Chaleur Bay, on the east and half the north.

The waterfront at St. John, N.B.

The surface of New Brunswick may be said to be one of rolling plains and hills. There are no mountains. The southern side is protected by ridges of rock some 30 miles wide, and from the south-west corner a similar rocky ridge stretches to the northern bay. These two ridges form an immense V, and between them the country is a wide, flat plain.

This is a province of large and numerous rivers. The St. John, the Rhine of America, rises in the State of Maine, and after a winding course empties into the Bay of Fundy. For some 20 or 30 miles above its mouth the river flows between wooded hills,

bold bluffs, and fine upland farms. Beyond this, twice the distance, the banks are low and the lands on either side subject to flooding during high water. About 225 miles from the river's mouth are the Grand Falls, 74 feet high. Large steamers may use the St. John as far up as the city of Fredericton, or to a point some 84 miles from the Bay. The Restigouche and the Miramichi flow eastward, the latter into the Gulf of St. Lawrence, and the former into Chaleur Bay. As the mouths of these and of the other numerous streams expand into fine bays and harbors of great advantage to shipping, the importance of these rivers may be readily understood.

The most fertile areas are the lands along the rivers. Why so? The uplands are generally fertile and fine crops of hay and oats are produced. Much of the land consists of swamps and barren plains of no value to the farmer. The interior is but sparsely settled, but is free from the fogs which prevail on the coasts. The rainfall is abundant and the snow lies deep in the winter time, providing good facilities for lumbering.

The chief industry of New Brunswick is agriculture, the principal crops being hay, oats, turnips, potatoes, carrots, peas, and barley. There being excellent pasturage, fine butter and cheese are made, and cattle-rearing receives considerable attention.

Next in importance is lumbering. The middle and northern portions are heavily timbered. The principal wood is spruce, large quantities of which are sawn into lumber and sent to Great Britain and to the United States. The rivers supply abundant water power, and the numerous saw mills cut some five million dollars' worth of lumber every year.

The fisheries employ 5,000 boats and 10,000 men, and yield from four to five million dollars' worth of salmon, cod, mackerel, herring, and lobster; and the Dominion Government has provided a number of hatcheries to stock the neighboring waters.

The following minerals are known to exist in considerable quantities: Coal, iron, asbestos, granite, lime, and gypsum, but none of these are mined to any great extent.

There are several large cotton and woollen mills, besides foundries, nail factories, edge-tool factories, and tanneries, all manufactories connected with wood, cotton, wool, iron, and leather. Game abounds, and at least one-third of the province is good hunting ground, where the moose, caribou, bear, beaver, marten, mink, and other fur-bearing animals are plentiful. Nearly all the streams and rivers provide good fishing, the salmon being the most important fish caught.

The Cathedral, Fredericton, N.B.

Fredericton, the capital, is situated on the right-hand side of the St. John River. This city has a history dating back to the latter part of the seventeenth century. At present Fredericton is an important railway centre. It is also the centre of a large lumber trade, has valuable cotton and leather manufactories, extensive canneries, and is surrounded by a rich farming country.

St. John, the largest and busiest city in New Brunswick, is situated at the mouth of the St. John River. This is the principal

port of Canada, standing fourth in the whole Empire, so far as amount of shipping is concerned. St. John contains numerous saw mills, factories, foundries, and pulp mills. Among the sights worth seeing are the far-famed reversible falls, which are spanned by two bridges. At low water the river flows through a narrow gorge and over a ridge of rocks, forming a waterfall several feet in height. When the high tide of the Bay fills the harbor the sea water flows back through this gorge, forming a cascade up the river instead of down it.

Moncton, the second largest city in the province, is the eastern terminus of the Grand Trunk Pacific, and the headquarters of the Intercolonial Railway.

Chatham on the Miramichi, and Woodstock on the St. John, are other important towns.

Prince Edward Island. Prince Edward Island was called St. Jean until about the year 1800, when it received its present name in honor of Prince Edward, Duke of Kent, father of the late beloved Queen Victoria. Northumberland Strait divides the island from Nova Scotia and New Brunswick. This low, beautiful, and crescent-shaped island forms the smallest province of the Dominion. The reddish color of the rocks and sand on the shore, and of the soil in the fields, makes the rich vegetation look all the more green. Both soil and climate are well suited to farming and the irregular coast line to good harbors and good fishing. Under the strait, between Cape Tormentine of south-eastern New Brunswick, and Cape Traverse on the island just opposite, a submarine cable is laid, and communication with the rest of Canada is further maintained by lines of steamers connecting with the Canadian Pacific and Intercolonial railways. Furthermore, a powerful ice-breaking steamer especially built for navigating the strait in winter, plies between Georgetown and Pictou.

All the island rivers are necessarily short, but the land being low, the tides flow far inland, thus making sea-arms of all these streams and adding much to their usefulness.

Farming is the chief occupation of this "Garden Province," and wheat, oats, barley, potatoes, and turnips are grown with great success. Indeed, the three provinces mentioned are admirably suited to butter-making and for preparing live animals for export. Cattle from the interior of Canada are always the better for a short stay among the sweeter grasses of the Atlantic provinces,

Fort Edward, near Charlottetown.

before being shipped across the sea. Fine horses, cattle, sheep, and hogs are raised, and the breeding of black foxes has of late years been remarkably successful. The fisheries are said to be the best in the Gulf, for the shallow waters about the island are the feeding grounds of cod, mackerel, herring, lobster, and oysters. The chief manufactures are those having to do with the preparation of preserved meats, cheese, condensed milk, and the making of starch.

The people are descendants of English, Irish, Scotch, and French settlers. The Prince Edward Island railway, owned by the Dominion, runs from end to end of the island, with branch lines to all important points.

Charlottetown, the capital, is situated on the north side of a fine harbor at the mouth of a long arm known as Hillsborough Bay. This city is well laid out, has broad tree-planted streets and fine surroundings. One of the largest pork-packing establishments in the Dominion is located here.

Other towns are Summerside in the west, and Georgetown in the east.

Quebec. Quebec is the largest province of the Dominion. It lies between the United States and New Brunswick on the south, and Hudson Strait on the north, and stretches from Ontario eastward a thousand miles to the Gulf of St. Lawrence and Labrador.

Quebec, the oldest colony in the Dominion, was settled by the French, who gave it the name of Canada. France had a fine opportunity in North America but lost it. The failure, however, cannot be laid upon Cartier, Champlain, Maisonneuve, Frontenac, La Salle, and Montcalm, nor upon the intrepid missionaries who kept pace with these pioneers, and did their utmost to subdue the greater part of the new continent in the interests of the home land. The fault lies at the door of the French kings and their advisers, who were usually too much interested in European affairs to trouble themselves greatly over the "fifteen thousand acres of snow," as Canada was pictured.

The southern portion of Quebec is the more valuable, being situated in a better climate, and having the noble St. Lawrence with its many tributaries flowing across it. South of the river, a spur of the Appalachians enters Quebec to the east of Lake Champlain and passes to the north-east across the country in a chain of rolling hills known as the Notre Dame Mountains, and on to form the table land of the Gaspe Peninsula and the Shickshock Mountains. North of the river, and east of the Ottawa, the valley is fairly level and fertile, and is bounded on the north by a low range of mountains called the Laurentians which strike the river about 20 miles below Quebec city. The country to the north of the St. Lawrence valley is covered by many lakes and streams, the beginnings of rivers which flow into the St. Lawrence and Ottawa from this direction.

The principal tributaries from the south-east are those draining the fertile, triangular plain between Montreal and Quebec, namely, the Richelieu, the St. Francis, and the Chaudiere. It was down the Richelieu that the fierce Iroquois came to attack the young and weak French settlements. This river also played an important part in all the troubles which arose between New France and New England. Its position is therefore worth studying well. North of the St. Lawrence are the Saguenay, the St. Maurice, and the Ottawa. For the last sixty miles of its course the Saguenay flows between cliffs which rise from a thousand to eighteen hundred feet above the black waters of the river at their base. This channel is without shoal or rock, is very deep, and about a mile wide. There is no landing-place until Ha-Ha Bay is reached. The river rises in Lake St. John. These northern rivers cut their way through the Laurentian range and often form waterfalls where they descend to the river plain. Among these falls are the Chaudiere on the Ottawa, and the Shawenegan on the St. Maurice.

The St. Lawrence proper is the greatest feature of the province. Leaving Ontario it expands into Lake St. Francis and Lake St. Louis, and below the mouth of the Richelieu, into Lake St. Peter. Above Montreal are the Lachine and other rapids overcome by a system of canals. Below Montreal the river is blue and clear, the scenery on each bank fine, and the water deep enough for the largest ocean steam-

ship. From Quebec the river gradually widens into a huge estuary over 150 miles across. The river islands are Montreal, Orleans, and Anticosti.

The French-Canadian inhabitants of Quebec are known as habitants. These are a quiet, contented people, with no great ambition, but quite pleased with their lot if they can make enough money in summer to keep them fairly comfortable during the winter. Everywhere one will see the old-fashioned habitant villages, and the church with its tall spire. The people retain many old French customs, and they are fond of dancing, and of singing the old French songs. Time and again they have given evidence of their devotion to the flag which now protects them.

A view of the city of Quebec from the river.

The French settlements consist of narrow strips along both banks of the St. Lawrence and of other Quebec streams. The English settlements of the Eastern Townships, as southern Quebec has been called, are much like similar settlements in other portions of the Dominion.

The Quebec climate, in consequence of the great size of the province, is naturally varied. The summer heat in the St. Lawrence valley often exceeds 80 degrees, so that wheat, oats, corn, tomatoes, and grapes are successfully grown. The long, hard winter begins in December, when heavy snow covers the ground. Every river, even the St. Lawrence itself, is frozen over. The Quebec winter has, however, many advantages. The air is dry and bracing, and there is plenty of fine sunshine. Indeed, the winter season here and in Canada generally is the season when the Canadian people set to work to enjoy themselves. What with skating, snow-shoeing, hockey, football, tobogganning, curling, and sleigh-riding, the winters are thoroughly enjoyed. Is it any wonder that Canada should be a land of beautiful women and brave men?

Agriculture is the chief occupation, the main crops being hay, oats, potatoes, peas, and beans. The hay is shipped largely to the United States. Thoroughbred sheep and cattle, particularly in the Eastern Townships, are becoming more and more valuable. Quantities of butter and cheese are made, a large number of horses raised, and thousands of gallons of prime maple syrup manufactured. Tobacco is grown in some parts, apples are largely exported, and excellent plums grow in several counties.

The forest wealth of Quebec is enormous, and the timber-trade comes next to agriculture as a source of wealth. The most important woods are the red and the white pine of the Ottawa and the upper St. Maurice valley. Other woods are maple, spruce, birch, and cedar. Almost every district has still supplies of timber, and the whole Laurentian plateau is a vast forest, of use either for timber, or for paper pulp. Not only has Quebec enormous forest areas, but there are also a great number of rivers which furnish the water-power to carry the logs to the saw mills, drive the saws, and

turn the machines which can change the rough wood into pulp for paper-making.

Early in the fall gangs of men start for the lumber shanties; huts are built where the trees are to be cut. These men are divided into various companies, each of which has a special work to do. Some fell the trees and cut the trunks into logs. Others drive the teams by which these logs are pulled to a central spot or hauled to the nearest river. The swamps and the ground are frozen hard and there is an abundance of snow, so that great loads may be easily drawn. When the spring floods come on the river-men get to work and the logs are floated down to the mills. A log-drive sometimes numbers tens of thousands of logs, and covers the river for miles. When the logs reach the mills they are caught in huge booms and kept there until the saws are ready for them. These logs are pushed toward an endless chain which grips them, hauls them out of the water, and feeds them to the great saws.

The making of pulp-wood, an industry unknown a few years ago, is now of great importance, and Quebec, with its fine spruce forests and its unlimited water-power, is ready to take full advantage of its opportunities.

Throughout the province there are many saw mills, flour mills, paper mills, all run by water-power. The leading industries are the manufacture of boots and shoes carried on at Montreal, St. Hyacinthe, and Quebec; iron at Sherbrooke and Three Rivers; sugar at Montreal; hats and furs at Quebec and Montreal; woollens at Sherbrooke and Valleyfield; cotton at Montreal and Valleyfield and paper and paper-pulp at Hull and St. Hyacinthe. The total value of the manufactured products is over 350 millions of dollars a year.

Quebec is also rich in minerals. Asbestos, from a commercial point of view, is the most valuable. This mineral is composed of fibres that can be woven into sheets like coarse cloth. Fire will not burn it and heat will not readily pass through it. It is used for the covering of boilers and steam pipes, in the manufacture of fire-proof paints and for other purposes. It is obtained chiefly in Megantic County. Near Ottawa are beds of black lead or graphite of superior quality. What is done with this mineral? Copper is found in the Eastern Townships, and mica, now of special importance for electrical purposes, is found in the valleys of the Gatineau and the Lievre, tributaries of the Ottawa River.

The St. Lawrence is the main road of Canada to the European and other eastern markets. Great steamships move up and down its waters, and lighthouses and numerous buoys make its navigation safe even at night. The province is also well supplied with railways. The Intercolonial connects Montreal and Quebec with Halifax and St. John; the Grand Trunk joins Quebec and Montreal with Ontario; the Canadian Pacific links Quebec province with the entire West; and the Grand Trunk Pacific which will cross the St. Lawrence at Quebec, will unite the northern and southern parts of the province as well as the provinces to the east and to the west.

Quebec City, the capital of the province, stands on the left bank of the St. Lawrence, where the river begins to widen to form the mouth. The situation is a noble one. Before it was seen by white men the Indians had chosen this site for a home, and had built at the base of the great rock a village known as Stadacona. Naturally, therefore, this place became the chief centre of Canadian civilization. The grandeur of Quebec lies first in its situation, and in the splendid citadel crowning the cliff, and making it the Gibraltar of Canada. Quebec is the oldest city in the Dominion, and one of the oldest

in North America. The city consists of the Upper Town covering Cape Diamond, and the Lower Town spread out at the foot of the rock. The harbor is deep and large, and, like Halifax harbor, there is room enough to float the greatest navy of the world. For many a year, Quebec was the largest city in Canada. Large ocean vessels can now proceed further up the river, and as the country further west became settled, the natural place for the commercial centre was placed as far up the river as these vessels could go, namely, at Montreal. Quebec, however, is the great timber market of eastern Canada,

Place d'Armes Square, Montreal.

and possesses extensive boot and shoe factories, ship-building, and other industries. Owing to its historic associations, beautiful situation, easy communication with the outside world, and fine healthy climate, this city has become a favorite resort for tourists.

Montreal, a much larger and a more important city than the capital, and indeed the largest and busiest city in the whole Dominion, stands on an island in the upper St. Lawrence. This city was founded by Maisonneuve in 1641, and for years the settlers had to till their fields under the eyes of soldiers ready at a moment's notice to defend them against prowling Indians. In 1692, at a point some ten miles from Montreal, Madeleine de Verchères, a young girl 14 years old, with the aid of a few persons, defended her father's house for a week against a large band of Indians. It is difficult to understand such things to-day when one sees a city of 500,000 people, splendid buildings, busy factories, and all other things that go to make a modern city like Montreal. Situated on the east side of Montreal Island, at the head of ocean navigation, commanding the greater part of the trade of western Canada, no wonder that Montreal has gone ahead. Its manufactories include rolling mills, sugar refineries, tobacco factories, boot and shoe and rubber factories, and many others. Its commercial greatness, its great wealth, its fine situation, its splendid parks, and beautiful public buildings all combine to make of Montreal the first city of Canada. Although a thousand miles inland, Montreal is 300 miles nearer Liverpool than New York is. To its disadvantage the St. Lawrence is frozen over in winter, and then its communication with Europe is by way of Portland on the coast of the State of Maine, or by Halifax or St. John.

Three Rivers, near the triple mouth of the St. Maurice, carries on a trade in iron and lumber. Near Three Rivers, Count Frontenac established iron forges, and the manufacture of iron has been carried on there ever since.

Hull, opposite the city of Ottawa, is an important lumbering and manufacturing centre. Power is supplied by the Chaudiere Falls, and matches, woodenware of all descriptions, wood pulp, paper, etc., are manufactured and carried to all points in Canada.

St. Hyacinthe, 30 miles east of Montreal, has leather, woollen, and other factories.

Sherbrooke, situated on the St. Francis, has splendid water power, good railway connections, and extensive cotton, woollen and hardware works.

Valleyfield, at the foot of the Cotean Rapids of the St. Lawrence, has important cotton, paper and other mills.

The power generated at Lachine and at Chambly provides light and motor power for Montreal; the Montmorency Falls supply the same for Quebec City, and the Shawenegan Falls furnish the power used in the operation of important pulp works.

Ontario. Ontario, the largest English-speaking province, the wealthiest, the most populous, ranks next to Quebec in size and extends from the Ottawa on the east a thousand miles westward to Manitoba, and from Lake Erie on the south, more than one thousand miles northward to Hudson Bay.

There are in reality two Ontarios, the *New* and the *Old*. Southern, or Old Ontario, is a triangular-shaped region lying between the Ottawa River and Lake Nipissing, on the north, Lake Huron on the west, and Lakes Erie, Ontario and the St. Lawrence on the south. Nearly all this area is fine farming land, but the peninsular portion surrounded by Lakes Huron, St. Clair, Erie and Ontario is especially worthy of the name of the *Garden of Ontario*. Northern, or New Ontario, is of a different character. Within the Laurentian country the land is a mixture of worn-down rocks, numerous small lakes and peaty swamps, and fertile valleys. Between this region and Hudson Bay is the *Great Clay Belt*, a country well covered by pine, spruce, and poplar woods, and seemingly well adapted to purposes of grazing. Is not this region too far to the north?

Of very great importance to Ontario is the wonderful chain of waterways known as the Great Lakes, and the many canals built at enormous expense in order to overcome the obstructions mentioned on a previous page. The Rideau Canal extends from Ottawa to Kingston. Why was this canal built? The falls in the Niagara are overcome by the great Welland Canal which connects Lakes Ontario and Erie, and was built at a cost of some twenty-four million dollars. Through the centre of the shallow Lake St. Clair a channel 300 feet wide and 16 feet deep is kept open by dredging. Why should this be necessary? The rapids in the St. Mary's River are avoided by two canals, one on the Canadian side of the river, and the other on the American side. These are the important canals now existing, but other canals may be added in the near future. Recently it has been suggested that Lakes Huron and Ontario might very well be linked together by a canal. Where should such a canal be placed, and of what value should it be to the country?

But the Great Lakes are not the only lakes. To the east of Georgian Bay is the region of the beautiful Muskoka lakes, a chain of inland waters dotted with rocky islands, and surrounded by forests. Here in the summer season hundreds of city people gather, the island cottages are again occupied, the shores and beaches frequented by bathers, and the surface of the lakes covered with canoes, rowboats, and pleasure steamers of all kinds. Between these lakes and Lake Ontario is another group, the Trent Valley lakes to which the same description may be applied.

The climate of Ontario in the west, the north and the east is much the same as that of Quebec. Southern Ontario has a much milder and more favorable climate.

Many of the people are descendants of the United Empire Loyalists, but most of them are either settlers from the British Isles or descendants of British settlers. French and German communities are found in various localities, and what remains of the once numerous Indian tribes may now be found on the various Indian reserves.

Ontario owes its wealth to its wonderfully fertile soil, to its nearness to the great Canadian lakes, to its immense timber areas, and to its mineral resources. Owing

to the ease with which the land can be tilled and grain grown on the great central plain of Canada and the United States, the Ontario farmer has turned his attention to better paying labor than that of grain growing. Still the province produces large quantities of wheat, oats, barley, and peas for home use. Better results have attended the growing of fruit, the making of butter and cheese, the raising of high class farm stock, and the raising of turkeys, geese, ducks, and poultry.

The western part of Southern Ontario is perhaps the choicest portion of Canada.

A fruit farm in southern Ontario.

This great peninsula contains the larger part of the Ontario population, the most important cities and towns, the best developed industries, and the finest farms. In the Niagara district, between Lakes Ontario and Erie, in fact, in the whole north coast of Lake Erie, we have the best fruit-growing region in the whole Dominion, and Western Canada would lose much were the tomatoes, grapes, strawberries, peaches, plums and pears, which this garden supplies so bounteously, cut off. Associated with fruit-growing is the canning industry.

Originally a tree-covered country, the pioneer had to clear the land of its first huge covering of plants, a task we can scarcely realize to-day. The southern part had many valuable wood trees such as walnut, oak, hard maple, hickory, elm and others. Try to imagine a settler having to destroy beautiful walnut logs because he could not sell them and required the land to give him space to plant his crops. These fine forests have all but disappeared and the work of the lumberman is now confined to the more northern and newer portions of the province, those about the Upper Ottawa, Georgian Bay, and west of Lake Superior.

With the single exception of coal, Ontario is rich in minerals. Natural gas, petroleum, salt, nickel, silver, and iron are abundant. Gas, petroleum and salt are found in the western peninsula, the first near Lake Erie, the second further inland, and the third north of the second. Of what use is each of these minerals and how is each obtained? The Canadian cobalt and silver district, in which the new mining town of Cobalt has sprung up, is situated in the Nipissing country about a hundred miles north of North Bay. These valuable metals were discovered by Indian hunters, but white people soon profited by the discovery. The Indians, who were accustomed to paddle along the shore of a small lake, left their canoes and searched for a mineral substance from which they made bullets. Some white men learning of this, investigated the movements of the Indians and at once staked out claims. Such is the story of the discovery. At all events, the early French explorers knew something of the silver traces of this region, and this knowledge possibly came from an Indian source.

From the nickel mines of Sudbury the world is furnished with most of its supply. Nickel is used in making cooking utensils, and in a number of other things.

Copper is found in the area extending from Parry Sound to Lake Superior, and iron in the counties north of the eastern end of Lake Ontario.

View in Queen's Park, Toronto.

The Great Lakes afford the most extensive freshwater fisheries in the world. The principal fish taken are lake trout, in Lakes Huron and Superior, and herring in Lakes Erie and Ontario. The fisheries are about equal to those of Quebec, and employ over 3,000 men.

For years the great drawback to the development of Ontario manufacturing was due to the fact that the coal had all to be imported. The country is, fortunately, well supplied with another source of power, that obtained from numerous waterfalls. Great plants for developing electrical power are built in various parts of the province, especially at Niagara and at Ottawa; and since the use of such power has become general, Ontario has made great advances along the lines of manufacturing agricultural implements, wagons and carriages, furniture, pianos and organs, heating apparatus, machinery, electrical apparatus, paper, etc.

Besides its great waterways, Ontario has many great railway lines. Among the foremost of these are the Canadian Pacific, the Canadian Northern, the Michigan Central, and the Grand Trunk. The development of abundant electrical power has also led to the building of many electric railways now connecting the larger centres of the province.

Toronto, the capital of Ontario, and the second city in size in the Dominion, is situated on a fine harbor on Lake Ontario. The streets are long, broad, and well planted with trees in the residential portion. The population exceeds 450,000. Toronto has its great university, its splendid city hall, its parliament and other public buildings, its beautiful parks, and its fine statues to the makers of Ontario and to those who fought its battles. The Queen City, as it is called, is one of the most beautiful on the continent; the citizens are proud of their city, and it is the chief manufacturing and distributing centre of the province.

Ottawa, the capital of the Dominion, and the second city in Ontario in population, is situated on the Ottawa River. High up on a bold cliff 160 feet above the river stand the grand pile of buildings known as the House of Parliament. Away to the east is Rideau Hall, the Governor's residence. In the opposite direction are the *Narrows*, where the river is spanned by a bridge connecting Ottawa and Hull. Beyond this bridge are the Chaudiere Falls, where the river plunges over a rocky ledge. The power of this cataract is used to drive a host of saw mills and factories, run the electric cars, and supply light to the city.

Hamilton, the third city, is situated on Burlington Bay at the west end of Lake

Parliament Hill, Ottawa.

Ontario. The city is clean, its streets are broad and well shaded, and the limestone ridge to the rear, the "*Mountain*," forms a suitable setting. Hamilton is the largest centre of the Niagara peninsula, and, because of its numerous metal industries, it has been called the *Canadian Birmingham*.

London, on the Thames, is the centre of a fine agricultural district, and is the seat of Western University. It has many important factories, and has good railway facilities.

Kingston, situated where Lake Ontario merges into the St. Lawrence, is the seat of Queen's University and the Royal Military College. West of the city is one of the Dominion penitentiaries, and one of the provincial asylums for the insane.

Brantford, on the Grand River, is surrounded by a rich country, has fine railway connections, has manufactures including machinery, agricultural implements, and stoves, and is the seat of a provincial institute for the blind.

Peterborough, on the Otonabee River, which furnishes electrical power to operate its factories, manufactures electrical machinery and appliances.

Windsor, opposite Detroit, has several flourishing industries connected with the manufacture of tobacco, salt, wire fencing, etc.

St. Catharines, on the Welland Canal, is the centre of a fine fruit-growing district.

Guelph, west of Toronto, is the seat of the Ontario Agricultural College and the Macdonald Institute.

Belleville, on the Bay of Quinte, an arm of Lake Ontario, has an institution for the training of the deaf and dumb.

Niagara Falls, on the Niagara River, has developed on account of being the centre of great electrical plants.

Fort William and Port Arthur, situated on the north shore of Lake Superior at the head of lake navigation, are growing as the West grows. Abundance of electrical power is provided by the Kakabeka Falls on the River Kaministikwia, and immense elevators, large flour mills, and various manufactories are in evidence.

Stratford is a railway centre situated in the midst of a fine farming district.

Chatham is situated at the intersection of the Grand Trunk, Canadian Pacific, and Pere Marquette railways, and is the centre of a rich agricultural district.

Woodstock, the centre of a district noted for its dairy products, is an important manufacturing city.

St. Thomas is a railway centre. The Michigan Central has its workshops here.

Sault Ste. Marie on the St. Mary's River has great iron and steel plants and pulp mills.

Berlin is a busy manufacturing centre, turning out leather goods, pianos, woodworking machinery, etc.

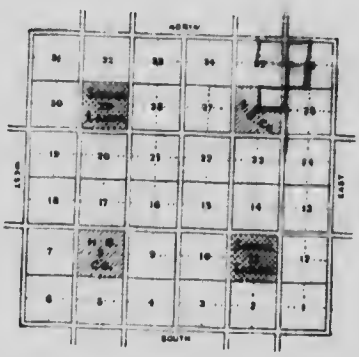
The important towns in Ontario are the following:—

Cornwall with large cotton, pulp, and paper mills; Owen Sound, with its fine harbor and important manufactures of cement and agricultural implements; Sarnia, the site of the tunnel under the St. Clair River, connecting the railway systems of Ontario and Michigan; Brockville, the centre of an important dairying district; Galt, an important centre for manufacturing woollen goods and edge tools; Collingwood, with its great steel shipbuilding plant and grain elevators; Oshawa, with its malleable iron works and the largest carriage plant in Canada; Lindsay, an important railway centre; and Kenora, a summer resort, on the Lake of the Woods, with its flour and lumber mills.

Manitoba *(A Spirit in the West)*. The Canadian portion of the Great Central Plain of the American continent is occupied by three great provinces, Manitoba, Saskatche-

wan, and Alberta, all having a somewhat similar surface and history. Hudson Bay, we have said, was named after the unfortunate Henry Hudson, who explored it in 1609. About the year 1670 a company of British traders calling themselves the Hudson's Bay Company, obtained the King's permission to trade in this part of North America. For more than two hundred years this company has done a very large business in collecting Canadian furs. Trading posts of the company are located here and there, long distances apart, over a wild and lonely region. An agent at each of these posts keeps a store of supplies to be given to hunters and trappers in exchange for furs brought in. At Fort Garry (Winnipeg) at the junction of the Assiniboine and the Red Rivers, one of these trading posts was placed. No other spot could better command so great a length of river and lake and prairie. Another post was placed on the present site of the city of Edmonton, and other posts at convenient centres throughout the length and breadth of the land. Travelling agents, usually Indians or half breeds, are sent out from the posts to collect furs from the hunters. Sometimes the hunters bring their furs to the post, using dog-sleighs and canoes to make the journey. Ships of the company at one time entered Hudson Bay annually with the supplies for the posts. On the return trip these ships were well laden with wolf, fox, bear, beaver, badger, mink, otter, muskrat and other furs, for the great lone land was a hunter's paradise.

In the year 1812 a band of sturdy pioneers entered the Red River valley by way of Hudson Bay, the only road by which the prairie country was reached in those far-away days. These were the so-called *Selkirk Settlers*, who were afterward to take such a prominent place in the development of the new land. A farming, and not a hunting class, these people were to experiment on the agricultural possibilities of the land about Winnipeg, and were to do this in the face of great opposition, for farming and collecting the furs of wild animals did not fit each other very well. By and by the reports of the suitability of the country for farming gradually leaked out. In 1870 the Dominion took possession of the region over which the company held sway, and out of it Manitoba, Saskatchewan, and Alberta have been formed.



There are three systems of survey followed in the *prairie provinces*. These are practically the same, the difference being in the width of road allowances and the number of such roads. In all the systems, the land is laid out in townships each six miles square, containing thirty-six sections each one mile square, and certain allowances for roads, as in the figure. An exception to the system described above was made in the case of certain settlements along the Saskatchewan, Red and other rivers and lakes in the different provinces in which the land was laid out in long narrow strips fronting the water. These narrow farms are called "*river lots*."

Previous to the year 1912, the province of Manitoba ranked next to Prince Edward Island in size. But in this year the Dominion Government, by extending the boundaries, gave to Manitoba a frontage on Hudson Bay, and an area almost the same

as that of each of the sister provinces of Saskatchewan and Alberta.

In shape the province is like a keystone, a suitable form, when one thinks of the position of Manitoba with respect to the eastern and western oceans. To the west, along the whole line, is Saskatchewan; to the east Ontario and Hudson Bay; to the south the States of North Dakota and Minnesota; and to the north the great unorganized region called the North-West Territories.

The Manitoba of older days occupied the first and part of the second prairie steppes or levels. In the Red River valley, which runs north and south, are the Manitoba lakes, the lower end of the River Saskatchewan, and the northern end of the Red. The added portion of the province is as yet a land of possibilities. No one knows all that it contains. This much we may depend upon, however, it is a region of numerous lakes and water-courses; it is said to be well furnished with waterfalls and rapids, which will mean the development of needed electrical power; it is fairly well timbered; the hunting is good; and there are many fertile valleys where some form of agriculture may be profitably carried on. Besides all these, the addition of a sea-coast points plainly to a time when the grain products of the prairie lands will be carried by rail to Hudson Bay posts, stored in great elevators, and finally shipped through Hudson Strait to the British markets.

The second prairie steppe commences with a range or series of ranges of so-called mountains taking a north-west course from the United States boundary line. These hills bear the names of Pembina, Riding and Duck Mountains, and the Porcupine Hills.

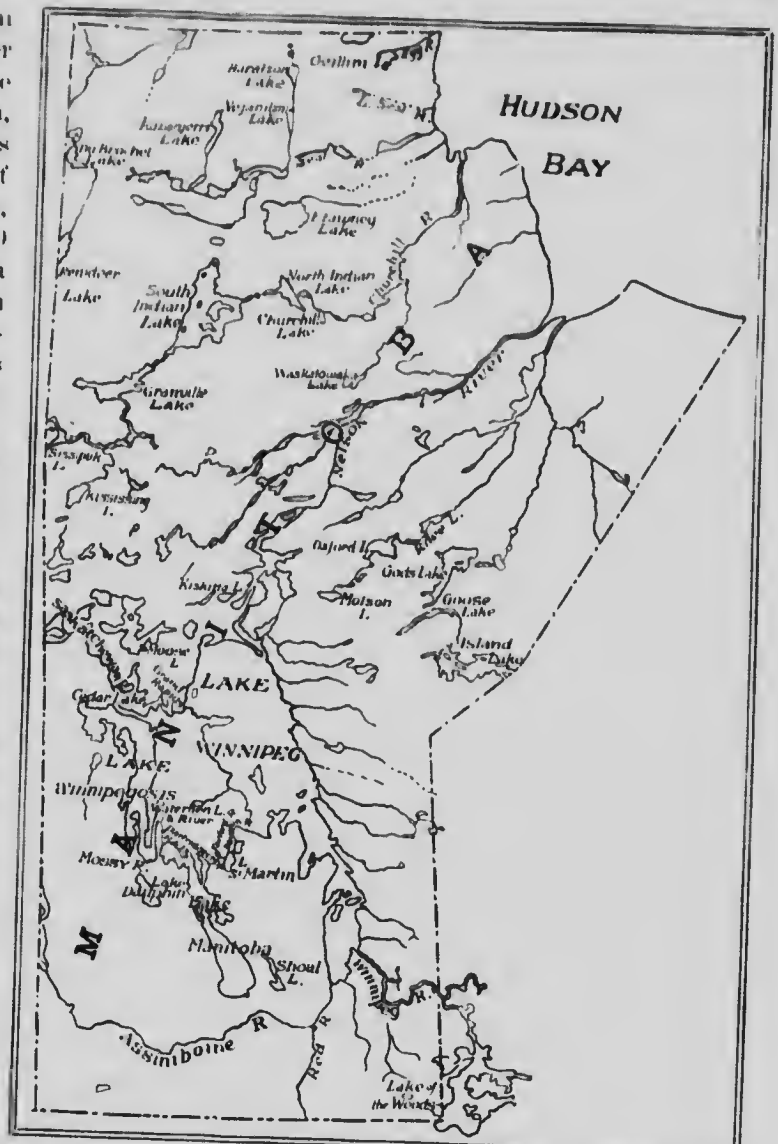
Manitoba lies largely in the basin of the Saskatchewan-Nelson system of lakes and rivers, the plan of which may be easily understood from the accompanying map. The great receiving body of all these waters is Hudson Bay, but before being discharged into the Bay, these waters are first collected by Lake Winnipeg, an immense body of fresh water whose length is 280 miles and whose greatest breadth is 65 miles. The larger northern portion of this lake is cut off from the southern by the narrows or straits containing many islands. The southern part is shallow, being loaded by the silt brought down continually by the muddy Red. The general course of this lake is in a north-west and south-east direction, and there is considerable difference between the eastern and the western shores. What is this difference? Lake Winnipeg receives the Saskatchewan from the west, the Red from the south, the Winnipeg from the south-east and the waters of the lakes to the west. The Saskatchewan enters the province to the west of the town of Le Pas, passes east, and after falling over the incline known as Grand Rapids, where a plunge of 43 feet is made in less than three miles, flows on into the wider end of Lake Winnipeg. These rapids are the great barrier to the easy navigation of this stream, but this obstruction no doubt will be met and overcome when the need is real. At present one sees an immense amount of electric power going to waste. Some day in the near future we may be using some of this power to do much of our work.

The Red River rises among the hills of Northern Minnesota, 13 miles from the source of the Mississippi, and about 720 miles from the southern end of Lake Winnipeg. The Assiniboine, the principal tributary of the Red, drains an area 400 miles long and 300 miles wide. Throughout its upper course, or as far as Brandon City, it flows through a deep, wide valley. From this point eastward its banks are low and its valley narrow. Its chief tributaries are the Souris, the Qu'-Appelle, and the Little Saskatchewan. The

Souris rises in south-eastern Saskatchewan, and after making a loop through the State of North Dakota, returns to Canada and joins the Assiniboine east of Brandon. The Qu'Appelle, now a small stream 200 miles long, flows through a valley a mile wide and from a hundred to three hundred feet in depth. In this valley are several beautiful lakes. The Little Saskatchewan rises among the Riding Mountains and joins the Assiniboine to the west of Brandon.

The Winnipeg River is the outlet of Lake of the Woods, a *lake of a thousand islands*, situated between Ontario, Manitoba and Minnesota State. In the course of this river are many rapids and small falls, some of which are being used for the purpose of supplying light and power to Winnipeg.

The Manitoba lakes comprise Lakes Dauphin, Winnipegosis, Manitoba, and Winnipeg. The Mossy River is the outlet of Dauphin Lake. Lakes Winnipegosis and Manitoba are connected by the two Waterhen Rivers and Waterhen Lake. The overflow of Lake Manitoba is taken by the Fairford River, which empties into Partridge Crop Lake, which in turn is emptied into Lake St. Martin by the Partridge Crop River. Lake Martin drains into Lake Winnipeg by the Dauphin River.



The Lake System of Manitoba.

Manitoba has what is called a *continental* climate. The winters are clear, cold and exhilarating, and the snowfall is usually of generous amount. The summers are hot, but the nights are cool and refreshing. June is looked upon as the month of rains; August and September are the harvest months. With the exception of a few days

now and again the skies are wonderfully blue, and the air dry and bracing. No province in the Dominion provides better conditions for work and for play, and of both Manitobans take their full share.

Only a small part of the western farming land has, thus far, been occupied and cultivated. Recently, many thousands of immigrants have been coming to make new homes on the prairies. Some of these people come from the countries of Europe. Others have come from the United States, being attracted to our country by the cheapness of the land, its fertility, and our excellent climate, and government. It has been estimated that the great agricultural territory of Western Canada, which was once regarded as nearly worthless, will yield enough food, when fully developed, to support a population as large as the present population of the United States.

Both the soil and the climate of Manitoba are favorable to agriculture, so that the most important industries of the country are connected with farming. The principal grain is wheat, and *Manitoba No. 1 Hard* is famous the world over. In addition to wheat, oats and barley are grown; Indian corn for garden purposes is successfully raised, and a considerable acreage of flax is cultivated. Root crops and garden stuffs of all kinds are grown in large quantities. The larger fruits such as apples are being experimented upon with much success. The small fruits such as domestic currants and gooseberries and wild strawberries, high bush cranberries, pin cherries, wild plums, and raspberries ripen everywhere. After threshing, the wheat and other grains are taken to town, stored in high buildings called elevators, and afterward shipped by rail to the flour mills of the province or to Fort William and Port Arthur.

Mixed farming is becoming more and more general and dairy farming and cattle raising are receiving more attention.

The Manitoba lakes abound in whitefish, pickerel, and sturgeon. The annual catch is large and a profitable trade with the New York and Chicago markets has been established.

Much of the northern country is covered by spruce forests, and large numbers of lumbermen are employed in the saw mills at Winnipeg, Selkirk and other places.

Manitoba is not rich in minerals. Limestone for building purposes is found in abundance at Stonewall, Stony Mountain, and at Tyndall. Lime kilns are kept busy burning the limestone into quicklime. Good gypsum is found north of Lake St. Martin; and many brick yards give evidence of excellent brick clays.

The manufactures of Manitoba are only in their infancy and are largely those connected with the chief industry of the province. Almost every other village has a flour mill. Machine shops for the manufacture of farming implements are established at Winnipeg and Brandon, and good sand for the production of glass is obtained at Beausejour.

At the present time there are four great railway systems operating in Manitoba—The Canadian Pacific connecting Winnipeg, Portage la Prairie and Brandon, with branch lines to many other important centres; the Canadian Northern, with many of the same connections; the Grand Trunk Pacific, and the Great Northern.

Winnipeg, the capital and chief commercial centre of the province, was, thirty years ago, simply the Red River Settlement, consisting of a walled fort at the junction of the Assiniboine and the Red, and a straggling line of farms fronting both streams. To-day Winnipeg has a population of 150,000. Numerous railway lines radiate from it; electric cars rush along its streets; sky-scrapers are beginning to lift their heads; the stores are fine, the banks palatial, and the

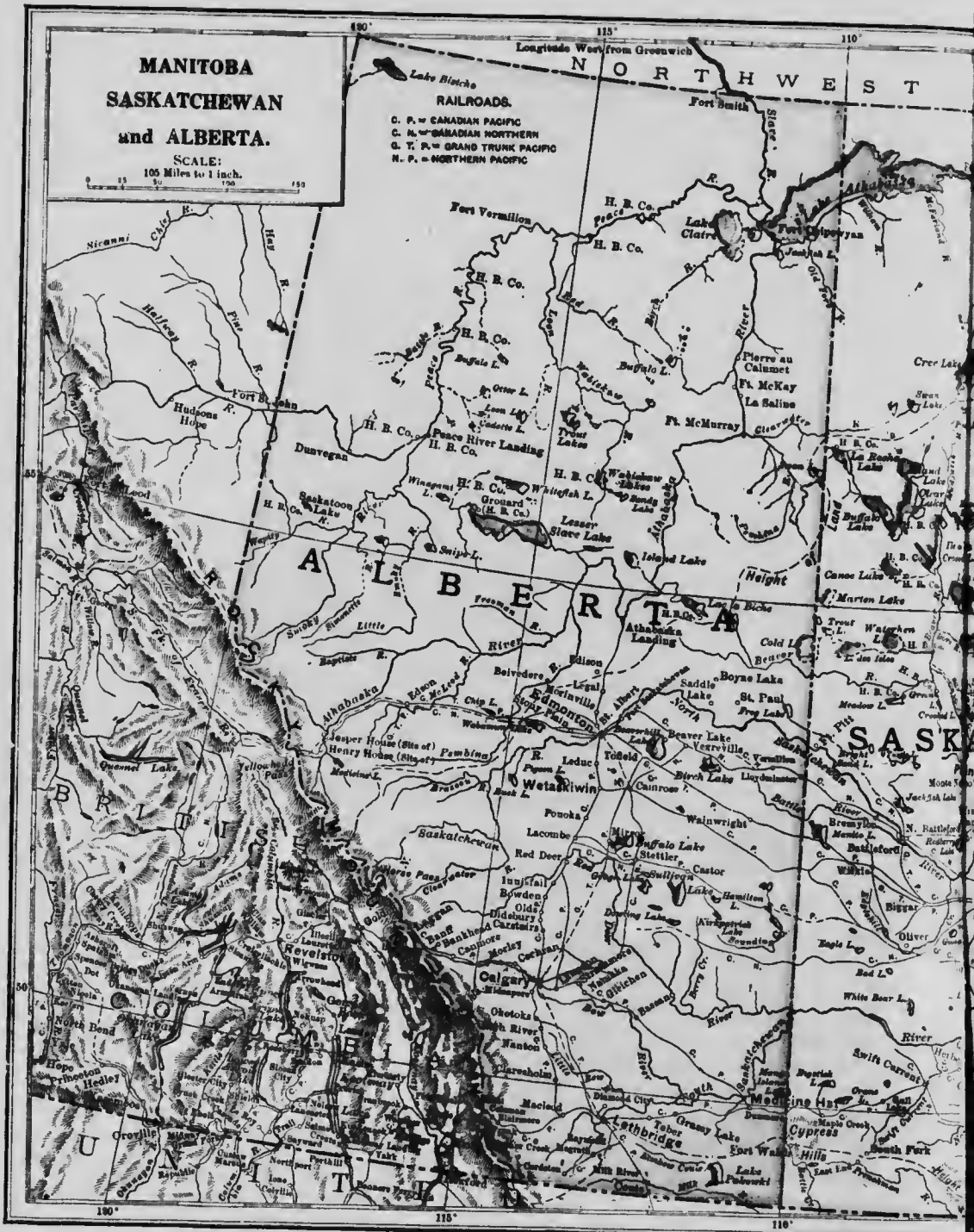
public buildings in keeping with the hopeful spirit of the West. Fort Garry was well placed for trade in the old days of the Hudson's Bay Company. Winnipeg is equally well situated for the growing commerce of to-day. The city lies in a narrow neck between the Manitoba lakes and the International boundary line. To the west is the great and growing prairie country broadening toward the Rockies. To the east are the older provinces of Canada, with their wealth and their goods awaiting a market. All transcontinental lines must pass through this point. Winnipeg is the seat of the Manitoba University, the Institute for the Deaf and Dumb, the Normal School, the Legislative Buildings, and the Agricultural College. St. Boniface, the distinctively French city of Manitoba, is situated on the Red River, opposite Winnipeg.

A portion of the City of Winnipeg.

Brandon, the second city in the province, is situated on the south bank of the Assiniboine, some 133 miles to the west of Winnipeg. It is surrounded by a fine farming country, is the centre of important railway activities, is the seat of Brandon College, a provincial Normal School, an Indian Industrial School, a Dominion Experimental Farm, and one of the provincial asylums for the insane.

Portage la Prairie, on the main lines of the Canadian Pacific and the Canadian Northern, is the centre of one of the garden spots of the province, the *Portage Plains*. It is situated a little to the north of the Assiniboine River, and ranks third in point of population. So called because it was at this point that the traders in the early days portaged their goods over the prairie between the Assiniboine River and Lake Manitoba. Portage la Prairie is 56 miles to the west of Winnipeg. In it are the provincial Home for Incurables, and an Indian Industrial School.

There are many other important towns which are well worthy of passing mention. All of these cater to the wants of the surrounding communities; all have a number of elevators; and all have some distinctive local feature. Birtle, to the north-west, is in the valley of the Birdtail River. Russell, on the uplands, has a good farming country about it. Minnedosa lies on each side of the Little Saskatchewan and is surrounded by hills. Virden, south and west of the Assiniboine, boasts of its beautiful lawns, the home-character of the town, the fertile farm lands, and the sand hills to the east. Boissevain is surrounded by splendid farm lands. Deloraine, near Turtle Mountain, points to the same fine surroundings. Killarney has its beautiful lake. Souris, on the Souris River, is an


MANITOBA
SASKATCHEWAN
and ALBERTA.
SCALE:
105 Miles to 1 inch.
RAILROADS.
C. P. R. = CANADIAN PACIFIC
C. N. R. = CANADIAN NORTHERN
G. T. P. = GRAND TRUNK PACIFIC
N. P. = NORTHERN PACIFIC
Longitude West from Greenwich
120°
115°
110°
55°
50°
NORTHWEST
ALBERTA
SASK
Lake Bloiche
Fort Smith
Athabasca
Fort Vermilion
Lake Claire
Fort Chipewyan
Peace R.
Slave R.
Hay R.
Chief R.
Halfway R.
Fort St. John
Hudsons Hope
Dunvegan
Peace River Landing
Grouard
Lesser Slave Lake
Whitefish L.
Sandy Lake
Wabiskaw Lakes
Buffalo L.
Otter L.
Loon L.
Cadotte L.
Trout Lakes
Pierre au Calumet
Ft. McKay
La Saline
Ft. McMurray
Athabasca R.
Peace R.
Birch River
Buffalo Lake
Cree Lake
Canoe Lake
Marten Lake
Height
Trout L.
Waterhen L.
Cold L.
Beaver
Boyne Lake
St. Paul
Saddle Lake
Meadow L.
Crooked L.
Pelican Mts.
Athabasca Landing
Belvedere
Edmonton
Strathcona
Legal
Beaverhill Lake
Vermilion
Lloydminster
Saskatoon Lake
Snipe L.
Isle of Lake
Freeman R.
Little Smoky R.
Smoky R.
Baptiste R.
Pembina R.
Jasper House (Site of)
Henry House (Site of)
Yellowhead Pass
Quaret Lake
Leduc
Pigeon L.
Todfield
Wetaskiwin
Cairnrose
Birch Lake
Ponoka
Lacombe
Red Deer
Saskatchewan R.
Wainwright
Battle R.
Battleford
Buffalo Lake Settler
Sullivan Lake
Castor
Hamilton L.
Oliver
Eagle L.
Bad L.
White Bear L.
Swift Current
Medicine Hat
Maple Creek
Cypress Hills
South Fork
Lake Pakowki
Lethbridge
Tober
Stettler
Calgary
Okotoks
High River
Gleichen
Bassano
Macleod
Diamond City
Crowsnest Pass
Revelstoke
Glacier
Laggan
Banff
Canmore
Morley
Cochrane
Exshaw
Mountain Park
Golden
Field
Hope
Princeton
Hedley
Greenwood
Grand Forks
Phoenix
Midway
Rossland
Trail
Nelson
Kaslo
Slocan
Sandon
New Denver
Nakusp
Arrowhead
Lardeau
Ainsworth
Kootenay Lake
Kootenay R.
Columbia R.
Elk R.
Crowsnest Lake
Waterton Lakes
Cardston
Milk River
Writing-on-Stone
Lake Pakowki
Medicine Hat
Swift Current
Battleford
Biggar
Wilkie
Redberry L.
Meota
Jackfish Lake
Meadow Lake
Pitt
Athabasca
Wilson R.
Fort Wilson
Fort Assiniboine
Fort Dunvegan
Fort Saskatchewan
Fort Edmonton
Fort Albert
Fort Pitt
Fort Battleford
Fort Walsh
Fort Macleod
Fort Whoop-up
Fort Calgary
Fort Kipp
Fort Whoop-up
Fort Benton
Fort Shaw
Fort Missoula
Fort Steele
Fort Sheppard
Fort Colville
Fort Spokane
Fort Walla Walla
Fort Hall
Fort Boise
Fort Lapwai
Fort Simpson
Fort Resolution
Fort Chipewyan
Fort Vermilion
Fort Dunvegan
Fort St. John
Fort Fraser
Fort George
Fort Alexandria
Fort Kamloops
Fort Langley
Fort Victoria
Fort Nisqually
Fort Vancouver
Fort Okanogan
Fort Colville
Fort Walla Walla
Fort Hall
Fort Boise
Fort Lapwai
Fort Benton
Fort Shaw
Fort Missoula
Fort Steele
Fort Sheppard
Fort Colville
Fort Spokane
Fort Walla Walla
Fort Hall
Fort Boise
Fort Lapwai


HUDSON BAY
C. Churchill
Hubbart Pt.
Fort Churchill
Churchill R.
Port Nelson
York Factory
Flamborough Head
C. Tatnam
Nelson R.
Hayes R.
Gillam L.
Baralzon Lake
Nejanilini Lake
Kasmere Lake
Du Brochet Lake
Wollaston Lake
Etawney Lake
North Indian Lake
South Indian Lake
Churchill Lake
Granville Lake
Reindeer Lake
Stanley Mission
Lac la Ronge
Montreal Lake
Candle L.
Prince Albert
Fort a la Corne
Carrot R.
Saskatchewan R.
Duck Lake
Battleford
Melfort
Kinistino
Porcupine Mtn.
Saskatoon
Humboldt
Big Quill Lake
Little Quill Lake
Wakaw
Watrous
Ranley
Wishart
Touchwood
Insinger
Craik
Moose Jaw
Qu'Appelle
Regina
Yellow Grass
Weyburn
Arcola
Estevan
Norway Ho.
Oxford L.
Oxford Ho.
Pipestone Lake
Playgreen L.
Moose L.
Cedar Lake
Long Pt.
Lake Winnipeg
Winnipegosis
Lake Manitoba
Dauphin
Grand View
Russell
Minnedosa
Brandon
Portage la Prairie
Winnipeg
St. Boniface
Selkirk
Lake of the Woods
Kenora
Fort Frances
Rainy R.
Rainy Lake
Berens R.
Poplar R.
Pigeon R.
Trout Lake
Lac Seul
Sandy Lake
Island Lake
Gods Lake
Gods R.
Severn R.
Winisk R.
Black Bear R.
Sachigo R.
Sachigo Lake
Cat Lake
Deer Lake
Favourable Lake
Polecoon Lake
Split L.
Far L.
Tea L.
Dow Lake
Bear L.
Trout L.
Setting Lake
Kiskittogisu L.
Wekusko L.
Pipestone L.
Molson L.
Gunisao Lake
Gunisao R.
Norway House
Moose L.
Cedar Lake
Waterhen L.
Waterhen Post
Fairford R.
Dog Lake
Lake St. Martin
Lake Dauphin
Shoal Lake
Manitoba
Saskatchewan
Ontario
STATE
TERRITORIES
Selwyn Lake
Kasba Lake
Nueltin Lake
Tadzaerra L.
Black Lake
Reindeer L.
Wollaston L.
Dunlop L.
Deschambault L.
Montreal L.
Candle L.
Cumberland L.
Cumberland House
Pelican L.
Little Pelican L.
Moose L.
Bittern L.
Swan L.
Swan R.
Porcupine Hills
Touchwood Hills
Qu'Appelle R.
Assiniboine R.
Souris R.
Turtle Mts.
Pembina Mts.
Riding Mts.
Duck Mts.
Porcupine Mts.
Moosomin
Broadview
Wapella
Carnduff
Oxbow
Estevan
Bienfait
Lemberg
Weyburn
Arcola
Yellow Grass
Milestone
Montgomery
Fleming
Grenfell
Broadview
Whitewood
Wolseley
Indian Head
Qu'Appelle
Lipton
Strasburg
Balcarres
Fort Qu'Appelle
Katepwa L.
Crooked L.
Round L.
Pasqua L.
Last Mountain L.
Last Mountain Lake
Touchwood Hills
Humboldt
Watrous
Manitou Lake
Wishart
Insinger
Craik
Mortlach
Moose Jaw
Regina
Pilot Butte
Lumsden
Qu'Appelle
Lipton
Strasburg
Balcarres
Fort Qu'Appelle
Indian Head
Wolseley
Broadview
Grenfell
Whitewood
Wapella
Carnduff
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Yellow Grass
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Montgomery
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Pasqua L.
Last Mountain L.
Last Mountain Lake
Touchwood Hills
Humboldt
Watrous
Manitou Lake
Wishart
Insinger
Craik
Mortlach
Moose Jaw
Regina
Pilot Butte
Lumsden
105°
101½°
100°
95°
49°
50°

important railway centre. Manitou, Morden, Gretna, Emerson, and Dominion City have fertile lands contri ng to their comfort. West Selkirk has a government fish-hatchery, a cold-storage plant for fish, lumbering interests, and an important river-port for vessels plying between Norway House at the foot of Lake Winnipeg and Winnipeg City. North of Selkirk, at the south-west corner of the lake, are the summer resorts of many Winnipeg people. Port Nelson and Port Churchill, on Hudson Bay, may some day become important seaports of the Canadian West. Neepawa, at the northern border of the *Beautiful Plains*, and south of the blue-colored Riding Mountains, is a town of considerable size. Dauphin, on the Canadian Northern, west of Dauphin Lake, is surrounded by a very fertile farming country. This is one of the most promising of the northern centres.

Le Pas on the Saskatchewan, Carberry to the east of Brandon, Carman, half way between Portage la Prairie and the boundary, Melita, Hartney, Elkhorn, Binscarth, Gladstone, Beausejour, all these are prominent Manitoba centres, contributing to the surrounding farming areas, and growing as these areas grow.

Saskatchewan *(Rapid River)*. The province of Saskatchewan is the middle one of the three *prairie provinces*. On the east is Manitoba, Alberta is on the west, the States of Montana and North Dakota are at the south and the North-West Territories at the north. In length Saskatchewan is about 750 miles; its breadth varies from 400 miles at the south, to about 250 miles at the north.

Saskatchewan is midway between the sister provinces east and west with respect to surface and to altitude. Its average height is about 1,600 feet, and its surface is slightly more rolling than is the surface of Manitoba. Its rivers show deeper channels, and groups of scattered hills give the province considerable diversity of surface. The second prairie steppe ends about half-way across the province, while the third, or Albertan steppe, continues the rest of the way. The chief elevations of the southern portion of the province are situated on the edges of the second prairie level—those to the east being the Porcupine Mountains and the Pasquia Hills, and those to the west the Dirt Hills, the Cotean, Bear Hills and Eagle Hills. Other detached hills are Moose Mountain, Touchwood Hills, Wood Mountain, and the Cypress Hills. North of the North Saskatchewan River the land is more diversified. Wooded areas become more common, the timber is larger, and a glance at the map will show how well the country is watered by lakes and rivers. Comparing the south with the north, the lakes are few and are outside of the general drainage. Many of these lakes are alkaline, and some of the more important are Johnston, Last Mountain and Big Quill. At the head of the Churchill, a river flowing through Manitoba, and emptying into Hudson Bay is a chain of lakes, chief of which is Lake Clear. To the north are portions of Athabaska and Reindeer Lakes, and all of Lake Wollaston. With the exception of the alkaline lakes, all are usually well stocked with fish.

The province slopes easterly, or a little north-easterly. The Hudson Bay receives the greater amount of the drainage. The northern part lies in the basin of the Mackenzie, and a small strip to the south forms a part of the Mississippi basin. The chief rivers flowing east are the Souris and Qu'Appelle; the North and South Saskatchewan, rising in Alberta, and flowing into Lake Winnipeg; and the Churchill. The Battle River and the Red Deer rise in Alberta, and flow into the north and south branches of the Saskatchewan respectively.

Saskatchewan, because of its situation in the interior of the continent, and because it is in the temperate zone, has an extreme climate. The south-western part of the province comes under the influence of the Chinook winds. The winter season is usually steady and the snowfall fairly heavy. High winds are not common in winter, but when they do come, severe blizzardy storms are the result. The average rainfall, perhaps a little less than that of Manitoba, is between 15 and 20 inches, and the bulk of it falls between April and September. The climate on the whole is much the same as that of Manitoba. Crops develop rapidly and the ripening process is helped by the long, bright sunshine and the dry weather of the harvest season.

Like Manitoba, Saskatchewan is a great agricultural country, four people out of every five being engaged in some form of farming. This farming is usually carried on on a large scale, and steam and gasoline are commonly used. In general the soil is wonderfully fertile, and, with the exception of certain alkaline wastes peculiar to all the prairie provinces, yields large crops of grains, roots, and grasses. Threshing is done in the open, and the quality of the wheat is *No. 1 Hard*. Barley, oats, and flax grow well; the yield of domestic hay is large, and the low places of the prairie furnish great quantities of excellent native hay. Naturally, most of the farms are still south of the Saskatchewan, but the open stretches to the north, where the soil is good, indicate the greater farming operations of the near future. The *park districts*, or tree-covered lands, are not as easily broken as the open prairie, and stock-raising is at present best suited to these areas. The south-west corner of the province was for many years looked upon as adapted to grazing and to this alone, but a better knowledge of the country and the introduction of *dry-farming*, and, where possible, of irrigation, have changed even this region until the *open range* is disappearing and the homesteader is taking possession. Ranges still exist, but large holdings are becoming less and less possible.

The south land is almost entirely open prairie. Patches of brush and light timber grow south of the North Saskatchewan. North of the river splendid timber is found and the lumber industry has become a very important one indeed. The timber is white and black spruce, jack pine, tamarack, and birch. The centre of the timber industry is Prince Albert.

Sheep ranching in Saskatchewan.

The northern lakes abound with a good quality of whitefish, pickerel, pike, and sturgeon. The fishing takes place largely in the winter season. After the province is supplied, the surplus is shipped to the south and to the east.

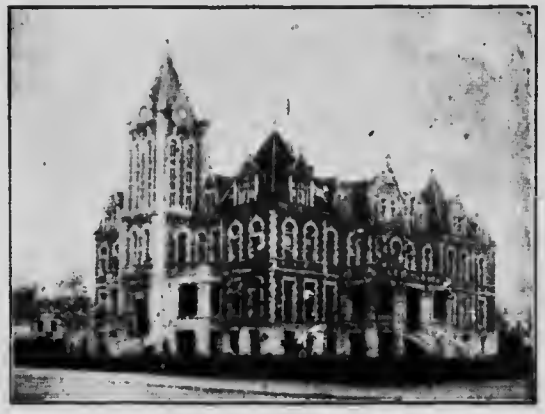
The fur trade of Saskatchewan is still important. Prince Albert and Battleford are the principal fur centres, and the chief furs are those of the otter, beaver, mink, wolf, bear, and musk-ox.

The Souris district in the south-eastern part of the province contains lignite coal, which is mined in paying quantities. There are flour mills in almost every town, and pressed brick works and cement works are common.

Three railway companies operate lines in Saskatchewan. The Canadian Pacific main

line and the Portage la Prairie-Wetaskiwin branch cross the province. The Canadian Northern and the Grand Trunk Pacific main lines run almost parallel to each other to the north-west. All these great trunk lines have numerous branches, but there is great need of other roads by which the northern resources might become available to the southern portion of the province.

Regina, on the main line of the Canadian Pacific Railway, is the capital of Saskatchewan and the distributing centre of a wide stretch of country. Its schools, churches, and other public buildings are excellent.



City Hall, Regina.

On the banks of a partly artificial lake are the New Parliament Buildings of the province. The city is well paved, owns its own utilities, and is the headquarters of the Royal North-West Mounted Police.

Saskatoon is an important railway centre on the South Saskatchewan. The facilities of this centre for distribution could scarcely be improved, and its growth from a village to an important city has all taken place in a few years. Around Saskatoon is a fine farming district, and here is located the Provincial University.

Moosejaw, on the main line of the Canadian Pacific Railway, is also a railway centre of great importance. The country surrounding this city is well settled and noted as a wheat-producing region.

Prince Albert, on the north branch of the Saskatchewan, is beautifully situated, and is the centre of the trade in lumber, fish, and furs. Power is being developed from the Saskatchewan rapids east of the city. The surrounding country has a deep black soil of great fertility.

Indian Head, on the main line of the Canadian Pacific, east of Regina, is one of the oldest and wealthiest towns of the province. Here is situated the Dominion Government Experimental Farm.

Swift Current and Maple Creek are the most important towns west of Moosejaw.

Estevan, Alameda, Oxbow, and Carnduff are growing towns in the rich south-eastern part of the province. Other Saskatchewan towns are—Weyburn, Arcola, Carlyle, Watrous, Outlook, Yorkton, Battleford, North Battleford (now a city), Kamsack, and Melfort.

Alberta. This, the farthest west of the *prairie provinces*, lies between Saskatchewan and British Columbia, and extends some 750 miles from the United States boundary to the North-West Territories. At the south Alberta has a width of 200 miles. At the north it is double this width. Southern Alberta, or that portion of the province lying south of the north branch of the Saskatchewan River, lies largely in the third prairie level. Outside of the mountain district, this part has an altitude ranging from 2,000 to 4,000 feet. The surface is more deeply cut by its rivers than is the surface of Saskatchewan, or the surface of Manitoba. Why should this be the case? Groups of hills, such as the Hand, Beaver, Blackfoot, and part of the Cypress Hills occur as in the neighboring province, and *coulees* run back at right angles from the rivers far into the prairie land.

The mountain area covers a strip about

sixty miles wide in the south-western part of the province. The eastern slope of the Rockies is abrupt and the surface is irregular. The chief mountain-peaks are Brown, Hooker, and Murchison; and the important mountain channels or passes are the Crowsnest, Kicking Horse, and Yellowhead. The first and second of these enable the C.P.R. to reach the Pacific. The remaining pass is the gateway of the Canadian Northern and the Grand Trunk Pacific to the same goal.

The Dominion has reserved large areas in the Mountain region for game and recreation parks. The chief reservations so far are Rocky Mountain and Jasper Parks. The former, situated on the Bow River, contains two important resorts, viz., Laggan and Banff, and is noted for its beautiful scenery and for its hot springs. The latter is on the Athabaska not far from the Yellowhead Pass.

The country to the north of the North Saskatchewan is, for the most part, an undulating plain. Groups of hills, similar to those in the south, appear here and there. The interior, or the region lying between the Peace and the Athabaska rivers, is well watered, and when properly drained, will become valuable farming lands.

There are no lakes of importance in the south. The few that exist are simply shallow basins which rise and fall according to the wetness or the dryness of the season. The lakes of Central Alberta are more important and will become, no doubt, of considerable value as summer resorts. The northern lakes are mostly connected with the general drainage and form a part of the Athabaska basin.

Southern Alberta is treeless except in the mountains and along the river bottom lands. Central Alberta has areas of light timber alternating with large stretches of prairie. In the northern part of the province the timber is heavier and the forest areas larger. The country north and west of the Peace, and south of the Peace and west of the Smoky is open prairie.

Like Saskatchewan, Alberta lies in three great drainage basins—the Saskatchewan-Nelson, the Mackenzie, and the Mississippi. The Peace and Athabaska rivers drain the northern part. The North and South Saskatchewan rivers drain most of the southern part. The Milk River flows along the southern margin of the province, and finally joins the Missouri River in the State of Montana. The chief tributary of the North Saskatchewan is the Battle; those of the south branch are the Bow, the Red Deer, and the Belly.

The climate of Alberta is usually spoken of as extreme, but the range of temperature is not as great as that of Saskatchewan and Manitoba. The summer seasons are not attended by excessive heat, the nights are cool, and the winters broken by the Chinook winds. The rainfall is from 16 to 18 inches annually, and the greater part of this takes place during the months of May, June and July.

Alberta is a great agricultural land, with interests suited to the rancher, the stock-grower, the dairyman, the grain-grower, the irrigator, and the market-gardener. The country south of the Canadian Pacific main line, and to a lesser degree for a hundred or more miles north of it, was formerly an exclusive ranching land where the nature-sowed short grasses supplied food for the stock summer and winter. For some years this region has been gradually invaded by the settler and the land changed to a grain-producing area. Here is [illegible] e dry-farming is followed with marked success. A few small ranch lands still exist, but the growing of winter wheat, spring wheat, oats, and barley is general. Sugar beets and alfalfa are important crops on irrigated farms, and

stock-raising on the various farms is becoming of greater and greater concern.

Central Alberta is a region devoted to choice dairying, herds of cattle, and good horses. Winter and spring wheat and barley yield well, and oats grow to great perfection.

Northern Alberta has its agricultural future before it. The lands of the upper Peace River valley are being settled, good roads will follow, and grains, vegetables, and stock-food will be grown to the northern boundary of the province.

A round-up of horses on the Canadian prairie.

Sawlogs of spruce, pine, and birch are floated down the Saskatchewan to Edmonton. The northern part of the province in the area east of the Athabaska, and between the Peace and the Athabaska has rich timber limits producing spruce, balsam, birch, poplar, and jack pine.

Large parts of the province are underlaid with coal, which is found a few feet below the surface, and frequently "crops out" on the banks of creeks and rivers. Coal mining is largely carried on in the south at Taber, Lethbridge, Frank, etc., and large coal fields have been discovered recently in the district adjoining the Grand Trunk Pacific. Gold is found in the North Saskatchewan sands; oil wells have been sunk both in the south and in the north; and gas for fuel, light, and power is found at Medicine Hat.

The most important fur district of Western Canada is in the northern interior between the Peace and the Athabaska rivers. A large herd of wood buffalo to the number of several hundred [illegible] their feeding grounds in the north-west[illegible] the province.

Fishing in relation [illegible] local supplies, in the centre and in the north, is becoming more and more important.

Stern-wheel steamers ply on the Athabaska, Peace, and North Saskatchewan. The Canadian Pacific, the Canadian Northern, and the Grand Trunk Pacific connect all the chief Albertan centres with each other, and with the rest of Canada east and west.

Edmonton, the capital, is situated on the North Saskatchewan, about two hundred feet above the level of the river. The site is one of great beauty. The vast lands which spread out in every direction from Edmonton formed, a short time ago, one of the last of the great Canadian fur preserves. To-day Edmonton is the entrance to a new Alberta which will rival the old as a farming and ranching land. This important railway centre has great wi[illegible]sale interests. Its industries include flour and lumber mills, a meat-packing plant, brick yards, &c. It is one of the largest fur centres in the country, the seat of the provincial government and the Provincial University, commands the basins of the Mackenzie and the Saskatchewan, and shares with Calgary in controlling the mining and lumbering of British Columbia and the movement of trade from the east. The Dominion Government has formed two great parks in the prairie area east and south-east of Edmonton. These are largely for the accommodation of a herd of 800 buffalo purchased in Montana.

Calgary, the largest city in Alberta, is situated in a valley between the Elbow and the Bow rivers. A centre where many railway lines meet, Calgary, naturally, has large wholesale houses, and serves as a

distributer for the south, the west, and the north. The city is well built of local sandstone, contains the provincial Normal School, and is the headquarters of one of the largest irrigation concerns on the continent.

Lethbridge, on the Belly River, is a divisional point on the Crowsnest Railway. Near it is a Dominion Experimental Farm. Galt coal is mined here, and the irrigated lands of the vicinity produce grain, roots, and other crops abundantly.

Parliament Buildings, Edmonton.

Medicine Hat, or the "*Hat*," is situated on the South Saskatchewan a little east of the Crowsnest junction. Formerly this was a great ranching centre, but the ranching character has disappeared and the surrounding country has developed into a grain-growing and mixed farming land. The presence of a generous supply of natural gas should add greatly to the manufacturing interests already quite important.

Wetaskiwin, on the Battle River, about forty miles south of Edmonton, is the centre of a fine grain and stock-growing country.

Red Deer, the largest town between Calgary and Edmonton, has mills and brickyards, and a farming region much the same as that about Wetaskiwin.

Lacombe, twenty miles to the north, is important on account of the excellent quality of its live-stock, and its fine grain and grass crops.

Innisfail, Olds, etc., are dairy centres. Okotoks and High River are noted for their winter wheat and their horses.

Canmore is a mining centre. Macleod, on the Old Man River, has great stock interests. Raymond, south of Lethbridge, has a large sugar refinery. Other Albertan towns are—Fort Saskatchewan, Tofield, Edson, Camrose, Pincher Creek, and Magrath.

British Columbia. British Columbia is the third province in size, being exceeded by both Quebec and Ontario. Originally a part of the Hudson Bay country, it was used for years only as a fur preserve, and sparsely peopled by trappers and Indians. Gold was discovered in 1858, and with this discovery there was a rush of miners and speculators, and the Dominion recognized it as a province in 1871.

For a long time British Columbia had no railway connection with the eastern part of Canada. The only route to this land was by the Horn, or overland by buckboard and canoe. The opening of the Canadian Pacific did everything to develop the country, and this railroad has been followed by other trans-continental lines, such as the Canadian Northern and the Grand Trunk Pacific, both of which are now under construction. The total length of the Canadian Pacific main line is some 3,000 miles. With its numerous branches it has 10,000 miles of steel from east to west. People often say hard things of the railways of our land, but they helped more than anything else to make the Canadian West and British Columbia what they are to-day.

British Columbia is a province of mountains and plains. Between the Rockies and the coast there are lofty mountain chains, deep gorges, and broad open valleys. Close to the coast is the Cascade range, penetrated here and there by the sea. Off the coast is Vancouver Island, which is thickly wooded with pine and fir in its

northern part. Every well-watered western slope throughout the province is thickly wooded, and British Columbia has come to be looked upon as possessing the finest wooded country in America, if not the very finest in the whole world. There are other things than timber. British Columbia has abundant coal on the islands and throughout portions of the Rockies. Gold, silver, and copper are also mined.

Another great source of wealth lies in the fisheries. Halibut is found off the Queen Charlotte Islands, and salmon in the Fraser, Skeena, and Nass rivers, and in the

The Gorge, Victoria, B.C.

inlets along the coast. When the salmon are landed they are handled by Chinese, who clean them and chop them up with wonderful rapidity. In 1897 the salmon-canning factories along the rivers of British Columbia shipped forty-eight million cans. Such an industry must be a great boon to any province. British Columbia can never be a very great grazing or farming country. The province, however, is already noted for its production of fruit, particularly pears.

Victoria, at the south of Vancouver Island, is the capital. It is said to be a thoroughly English city. Vancouver, the terminus of the Canadian Pacific Railway, is the metropolis of Western Canada. Lines of steamships ply between Vancouver and the countries across the Pacific. Prince Rupert, near Port Simpson, in the north-western part of the province, is the Pacific terminus of the Grand Trunk Pacific, which enters the coast lands through the Yellowhead Pass in the Rockies. New Westminster, on the Fraser River, 12 miles from Vancouver, is the centre of the salmon-canning industry on the Fraser River, the distributing point for a fine farming country, and the headquarters of a large lumber trade.

Nanaimo, on the east coast of Vancouver Island, is the western coal city.

Nelson and Rossland in the Kootenay country are centres, the one of important mining, lumbering, and fruit-growing activities, the latter of huge deposits of iron and copper ore taken from the surrounding hills.

Other towns are Revelstoke, Kamloops, Trail, and Fernie, the last mentioned being famous for its production of coke.

Away to the north of British Columbia is the Yukon country, about the centre of which is the now famous Klondike region, to which such a mad rush for gold was made a few years ago. Dawson City, on the Yukon, is the principal centre.

QUESTIONS. 1. Name three great Canadian harbors. 2. The Canadian coast is very irregular. Why are there not more harbors? 3. Which is the better harbor, Montreal or Vancouver? Why? 4. Make from memory a map of Canada, and place on it the nine provinces and their capitals. 5. On another map of Canada mark the areas best suited for grazing, wheat growing, fruits, lumbering, fishing, and manufacturing. 6. Make a map of the St. Lawrence basin. On this map print the names of the Great Lakes, the connecting rivers, the places where canals are required, and the lake ports of Fort William, Hamilton, Toronto, Montreal, and Quebec. 7. Compare winter life in Vancouver with that in Montreal. 8. On a map of Canada place the Canadian Pacific and Grand Trunk Pacific main lines. On the first mark in Vancouver, Calgary, Regina, Brandon, Winnipeg, Fort William, Ottawa, and Montreal. 9. Find

out how these lines get through the Rockies. 10. How would you get from Winnipeg to Melbourne, Australia? 11. What and where are Cape Breton, Queen Charlotte, Canso, St. John, and the Klondike? 12. Compare farm life in Manitoba with farm life in south-western Ontario. 13. What has the Canadian West for the Canadian East? 14. What has the East for the West? 15. On an outline map of your own province, mark in the names of (*a*) all the important lakes and rivers; (*b*) all principal mountains; (*c*) the main lines of railway; (*d*) the larger branch lines; (*e*) the chief provincial telephone lines; (*f*) the cities and most important towns. 16. Over what railways would you have to go to get from your home to any of the towns named in your answer to question 15? 17. Commencing at Halifax, name the great cities you would likely pass through on a railway journey to the Pacific. 18. There are two cities on Lake Superior known as the twin cities. Give their names and explain the term, twin cities. 19. Where is Iceland situated? 20. For what is it noted? 21. Why is fishing the chief industry of Newfoundland?

NEWFOUNDLAND

Newfoundland is the oldest colony in the British Empire. As yet it has not joined the Dominion. The broken coast line of Newfoundland suggests many good harbours. The Island is separated from Labrador by Belle Isle Strait, the steamer route from Montreal and Quebec to Europe. To the south-east is the Avalon peninsula, the home of the majority of the islanders. The interior is well wooded and full of rivers and lakes, a capital place for the hunter and trapper.

The climate is not so severe as is that of Quebec. Why not? Fogs occur in the spring and early summer on account of the numerous icebergs brought down from the northern ocean by the Arctic current, a cold stream in the ocean. The people are strong and hardy, the result of an active life and an invigorating climate.

Why so many people should love to live in such a fog-covered spot is easily answered. There is abundant wealth in the waters about the island. The sea almost swarms with cod, mackerel, herring, and salmon. To the south-east are the Newfoundland Banks, a great plateau on the floor of the sea, and this bank is one of the richest fishing grounds in the world. Fleets of fishing boats come here from France, the United States, and Nova Scotia, as well as from the island. The seal fishery comes next in importance, the hunting grounds being the ice floes along the coast of Labrador.

St. John's Harbor, Newfoundland.

These, however, are not the fur seals, but a kind of seal that is valued for its oil.

St. John's, the capital, stands on a fine harbor on the east coast. It is the centre of the fishing trade.

THE UNITED STATES

The low plain east of the Appalachians was the first part settled by white men. Here the early settlers made their homes in the most desirable spots near the coast. Later settlers spread farther inland, and small towns grew up rapidly. In less than three hundred years after the country was first discovered, thirteen colonies had been settled along the Atlantic coast, all belonging to England.

In 1776, these colonies began the war which made them a new nation. From this small beginning the United States have grown to be the large and prosperous nation of to-day.

What are some of the great features which

Harvesting wheat on one of the great farms of North Dakota.

have helped to make of the American people a great nation? First, there is the character of the people themselves. The Americans may be considered as among the most inventive and the most progressive peoples of the world. But even inventive people must have had a good chance. Their country gave them this chance. Let us see what this means.

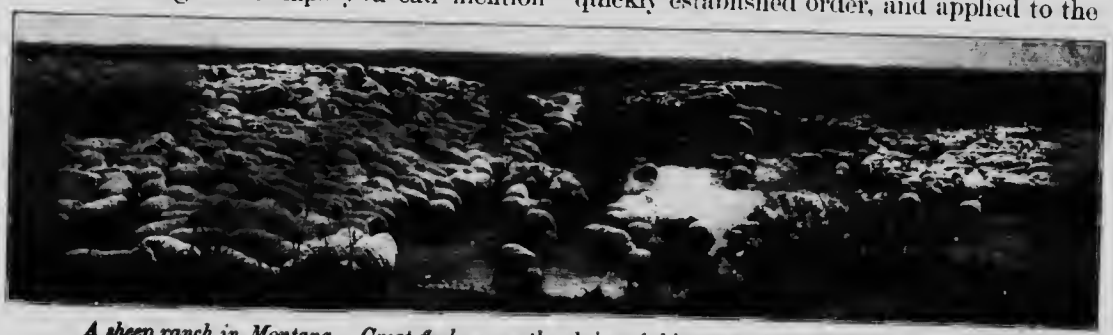
The United States occupies the centre of the North American continent, and is therefore free from much of the severe winter weather of Canada. How may this help? It is compact in form and covers an area extending from Canada to Mexico, and from the Atlantic to the Pacific. It is well situated for trade, for on the Atlantic side the country is within a few days' sail of the chief European ports, while on the Pacific it has easy access to China, India, Japan, and Australia. Between these coasts is such a wonderfully productive territory, and the commerce of the country has grown so rapidly, that the United States may soon stand as the first commercial country in the world. What are some of these products? Between the Cordilleran highlands of the west and the Appalachian highlands of the east, is the wide and fertile valley of the Mississippi. Into this great stream the Missouri from the north-west and the Ohio from the north-east empty. East of the Appalachian range is the fertile Atlantic plain. Beyond the Rockies to the west are the Pacific states, with their mild climate and their fertile fields.

Like Canada, the United States is a land of many homes. Its plains and its valleys are dotted with towns and cities, and the whole land from east to west, and from north to south, is bound together by a network of railroads.

To the north-east, in the states bordering Lakes Huron, Michigan, and Superior, and to the south of British Columbia, are the fine forest lands of the United States. What industries will likely be carried on in these parts? The Appalachians are rich in coal, iron, and petroleum. Petroleum was discovered about sixty years ago in the state of Pennsylvania (Penn's woods). Your teacher will tell you about William Penn and his dealings with the Indians. Since then hundreds of wells have been bored and the oil refined, and either shipped by rail over the country or taken by iron pipes to Philadelphia and sent abroad by ships. Pennsylvanian hard coal is taken by the boat-load up the lakes from Buffalo, and from Cleveland on Lake Erie to Fort William, and afterward by trains to Winnipeg and the West. Without coal and iron how could we provide the machinery so needful on the farm? Pittsburg, in Pennsylvania, is the greatest iron manufacturing centre in the New World.

The New England States, that is, the states to the north-east, are largely given to manufacturing. They are also situated near the Canadian fishing grounds. Where are these, and what fish are the most valuable? The oyster beds about Chesapeake Bay make Baltimore an important centre. How are oysters taken? Virginia and other states are noted for their fine tobacco plantations. What is a tobacco farm like? Who do the work? Where does the tobacco go? St. Paul and Minneapolis are the centres of the great wheat fields of Minnesota and the Dakotas, west of the lakes. The cotton belt lies between the lower Mississippi and the Atlantic. North of this belt is an area famous for corn and hogs. Nearly every nation has some particular plant or crop upon which much of the importance of the nation rests. The Chinese have rice and the Highlanders of Scotland have oatmeal, but corn is a North American plant; and corn has made Iowa, Illinois, Missouri, Nebraska, and Kansas wealthy states. Year by year the output is growing greater, until corn is now the greatest crop in the world. Corn meal is made into bread, and is used as porridge. Corn cobs are used as pipes and as fuel. Corn oil is used in the preparation of a cheap kind of rubber. Corn stalks and corn grain make good food, the former for cattle and the latter for hogs. Perhaps you can mention other uses of this remarkable plant. In the rolling country to the west of the grain areas, a region extending from the Mississippi to the Rockies, and from Canada to Mexico, 40,000,000 head of cattle find abundant pasture. In the higher and drier plains of this region great flocks of sheep are reared. Southern California is desert-like, excepting where the mountain waters are conveyed over the fields. Where this is done, peaches, grapes, oranges, English walnuts, prunes, and early vegetables of every sort are grown in abundance and shipped even into prairie Canada. From the dry area northward to British Columbia there are to be found immense timbered areas, fine wheat fields, and splendid strawberry districts.

In 1847 the people of California were ranchers and small farmers, and the population was very small. Then gold was found, and a hundred thousand settlers entered the country during the following three years, many of them coming in prairie schooners across the country from the east. In those days gold was everything. Things were paid for in gold-dust. There were no police to keep order; every man guarded his own property with his gun. Many lawless characters—thieves, toughs, and gamblers—had come to the country with the immigrants, and there was a period of lawlessness and crime. But the better classes of the people quickly established order, and applied to the



A sheep ranch in Montana. Great flocks roam the plains of this state, which surpasses every other in its wool product, and since the introduction of alfalfa fattens increasing numbers of sheep for market yearly.

A view of Washington from Washington Monument, looking toward the Capitol. On the right can be seen the Smithsonian Institution and the buildings of the Department of Agriculture.

authorities at the capital, Washington, to form the settlement into a state.

Washington, the capital of the United States, has neither commerce nor manufacturing. The city is, however, all that the nation intended the capital to be, namely, the most beautiful city in the country, a city of fine residences, splendid streets, and lovely gardens; a city free from stray dogs and all things favoring disorder. Here the representatives of the people meet. Here also is the "White House," the home of the President. Where is Washington situated? Why was not a more central site selected?

New York, situated on Manhattan Island at the mouth of the Hudson River, is the greatest commercial centre on the continent. Is it well situated for European trade? Are there great mines and great manufacturing centres within easy reach? Is the situation such as to command the Great Lakes and the Mississippi Valley? New York has a very great population. City property is very dear, hence "skyscrapers" are quite common. What are these, and what is gained by such buildings? Study the picture illustrating a busy part of New York city.

Boston is the oldest of the great cities and the second best port in the country. Which is the best? The people of Boston look upon their city as the chief educational centre of the country.

The importance of Philadelphia is due to its nearness to the Pennsylvanian coal fields.

A glimpse over the roofs in the commercial section of New York City. The district has grown so crowded and business so great that very tall buildings have been erected. The tallest building in the picture is twenty-six stories in height, the highest in the world, and houses 4,000 people.

Here is situated the United States mint, the place where American gold, silver, and copper money is made. Philadelphia is a very busy city. Thousands of operatives are employed in weaving woollen cloths and making clothing. Thousands more are busy building ships. What is shown on the map that may help this city?

Chicago is one of the many great lake ports. On what lake is it situated? Where? Less than a hundred years ago Chicago had not a hundred of a population. About forty years ago 25,000 houses were swept away by a great fire. To-day Chicago has a population of over two millions. A city having such a wonderful growth must be advantageously situated for trade. How has Lake Michigan helped Chicago? All the great railroads from the west, the south and the east must pass this point. Why? These railways give the city the control of the wheat of the north-west, the cattle of the plains, the corn and hogs of the south, and the timber of the states on the upper lakes.

Along the Chicago River. Chicago has fifty miles of wharfage, from which is distributed the freight brought by the railroads.

What is the situation of St. Louis? In what way is the site favorable for a great centre? What products naturally reach St. Louis? In the early days St. Louis was situated at the lowest point on the river where a bridge could be placed. As a result St. Louis is a great railway centre.

New Orleans, situated on swampy ground at the great bend of the southern Mississippi, is the chief centre of the sugar-cane, rice, and cotton fields. New Orleans also commands the shipping of the river from source to mouth.

Buffalo, Cleveland, Detroit, Milwaukee, and Duluth are all great lake ports. What is each likely to be noted for?

There are few more beautiful cities than Salt

Lake City, the Mormon centre of the world. What do you know of the Mormons? The city lies in a valley, surrounded by snow-capped mountains. A few miles to the north-west is Great Salt Lake. Meadows, vineyards, gardens, and orchards are to be seen to the north and to the south, all due to the snow waters which are taken from the hill sides and carried over the fields.

San Francisco is the largest city of the Pacific coast. South of it is Los Angeles, the "City of the Angels." San Francisco

The magnificent volcano, Popocatepetl, as seen from the city of Puebla, Mexico.

does most of the manufacturing and shipping for the Pacific coast. Here ships that have crossed the Pacific from Australia and from Asia can be seen. Here too are to be seen ships that have rounded the Horn, from New York and from Europe.

There are more Chinese in San Francisco than in any other city on the American continent. Most of these have come to make money and then go back to live a life of leisure in China. All are industrious, and all live on next to nothing. Is this a good thing for the United States? Do you know whether the Chinese are allowed to come and go as they please to Canada and to the United States?

San Francisco was partly destroyed by earthquake and fire in the year 1906. Since then it has been rebuilt, and no doubt will soon again take its place as a great seaport and business centre.

Alaska, the peninsula of north-western America, was bought from Russia by the United States in 1867. Owing to the climate and the difficulty of travelling, it is as yet but partly explored. Besides the gold found in this region, Alaska is of interest for two other reasons. It has many glaciers among the mountains, some of which reach the very edge of the sea, and are visited by hundreds of summer tourists. Its coast waters are the home of the fur seal. Alaska is also of interest because of its two high mountain peaks, St. Elias and McKinley. The native people are Indians and Eskimo. Sitka is the capital.

QUESTIONS. 1. On a map of the United States place (*a*) the Cordilleran and Appalachian highlands; (*b*) the Columbia, Colorado, and Mississippi Rivers; (*c*) St. Louis, San Francisco, New Orleans, Washington, New York, and Kansas City. 2. Outline the Great Lakes region; name the lakes and show the exact situation of Chicago, Buffalo, Toronto, Cleveland, Fort William, Duluth, and Detroit. 3. Why is the summer short in Alaska? 4. Give an account of seal-hunting off the coast of Alaska. 5. What harbors on the Pacific coast used to send out the sealing vessels from Canada and from the United States? 6. Compare a winter in Florida with a winter in Quebec. 7. On an outline map of the United States, show the wheat, corn, and cotton belts and the ranching lands. 8. Give a reason for the immense growth of Chicago, New York, and San

Francisco. 9. Locate Milwaukee, St. Paul, Hudson River, Seattle, Hawaii, Honolulu, Long Island, Capes Cod and Hatteras, Los Angeles, Salt Lake City, Denver, Pike's Peak, and Baltimore.

MEXICO

Which is the longer, the western or the eastern Mexican coast? What peninsula is at the north-west? How is this separated from the rest of Mexico? Where are the Gulf of Mexico and the peninsula of Yucatan situated? Mexico is the most important country of southern North America. Though in a warm region (How do we know this?), Mexico has a varied climate, because a great part of the country is a high plateau rising over a mile in height. The low coast regions on the east are very hot, and palms, rubber trees, and valuable rosewood and mahogany are abundant. So also are sugar-cane, coffee, and the vanilla bean.

When Mexico was discovered by the Spaniards it was inhabited by Indians, some tribes being fairly civilized. The early Spanish settlers mingled with the native race, and their descendants are now known as Mexicans. Mexico City is the capital. What is its situation?

CENTRAL AMERICA

Central America is the name given to British Honduras, a possession of Great Britain, and to six republics, Guatemala, Honduras, San Salvador, Nicaragua, Costa Rica, and Panama. All these countries, with the exception of the last, are but poor imitations of the United States of America.

This whole country is subject to earthquakes, volcanic eruptions, heavy thunderstorms and almost annual revolutions. The intense heat and heavy rainfall make the climate very unhealthy, but also make the rich soil yield a most luxuriant vegetation. The people find the highlands and the west coast more healthful than the eastern coast. The forests yield valuable mahogany, rosewood, and logwood. From logwood is made a valuable dye. Coffee, sugar-cane, bananas, tobacco, and maize grow almost everywhere. Most of our bananas come from this locality.

The larger number of the people of Central America are Indians and negroes. The tropical climate causes many food plants to grow without much labor, a condition that produces a lazy people. Why so? What does tropical mean?

British Honduras is a small area covered with valuable forests. To avoid the unhealthy moist heat of the coast, the few Europeans repair to the hill-country in the interior, where the climate is cooler and drier.

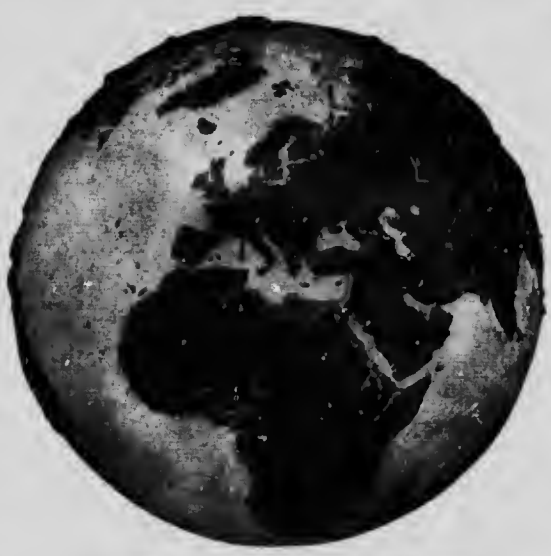
THE WEST INDIES

The West Indies are a series of islands between the Atlantic Ocean and the Caribbean Sea. These islands are arranged into three groups: the Bahamas, the Greater Antilles, and the Lesser Antilles. The Bahamas are noted for their sponges. The Greater Antilles comprise Cuba, the largest island, Haiti, Jamaica, and Puerto Rico. Jamaica, belonging to Great Britain, produces fine bananas, pineapples, oranges, sugar-cane, coffee, and cotton. Jamaica is often called the "Land of Wood and Water." The Lesser Antilles remained for a long time in the possession of Spain. Now the majority of the islands belong to Great Britain. Havana, situated on Cuba, is the chief city in the West Indies.

QUESTIONS. 1. At what time of the year should one visit Mexico and the West Indies? Why? 2. Where is the Panama Canal? 3. Find out anything you can about sponges and sponge gathering. 4. Name all the British possessions on the American continent. 5. What would you see on a sugar plantation; in a Central American forest; and on a pineapple farm? 6. Find out what you can about Cortez in Mexico. 7. Who is President of Mexico? Of the United States? 8. Make a map of the Gulf of Mexico and the Caribbean Sea. Place on it the important features.

EUROPE

How many continents are shown here? Name them. State the directions of Africa and South America from Europe. What is the name of the sea between Europe and Africa? What three continents touch on this sea? Point out the Arctic Ocean. In what direction is it from Europe? What ocean lies to the west of Europe? What two large islands lie a little off the western coast? What peninsula lies to the north-west of these islands? What is the shape of this peninsula? How is it separated from the British Isles? What sea does it enclose? What is the name of the square-shaped peninsula to the south-west? Point out Italy and Greece. What great highlands are shown in southern Europe? In what direction do they run? In what directions should the rivers of Europe run? What is the direction of the main highlands of the Americas? Where are the great plains of Europe situated? Of North America? Go around the coast of Europe with a pencil. What can you say of the length of the coast for the size of the continent?



The position of Europe among the continents.

Europe is so situated with reference to other lands that its people have excellent chances to manufacture, and to do business with other continents. It is the most central of the great land masses of the world, and it has an enormous coast line, with many inland seas and many peninsulas, so that there is no wonder that its people have taken such a place in the world's commerce. Europe contains about one-quarter of the world's people, and these on the whole live better, are more learned, and have risen higher in civilization than the inhabitants of any other continent.

Situation. On the map on page 105 you will notice certain curved lines running from right to left across the map. At the ends of these lines you will observe the figures 40, 50, 60, etc. These are lines of *latitude* running east and west and marking the distance of places north of the equator. All points on the line marked 50, for example, are at the same distance northward. If you will now turn to your map of North America you will see just where the line 50 runs. There is also a dotted line through northern Europe marking the position of the Arctic circle. What does this line mean? You will now see that the greater portion of Europe lies in the North Temperate Belt, and that but a small part is situated in the North Cold Cap

Coast Line. The coast line of Europe may be studied best from the map. Let us suppose that we are on an imaginary journey, and that our journey commences in the White Sea. Where is the White Sea? The shores of this sea are low and marshy. Passing into the Arctic we sail round North Cape, the most northern point of Europe. This cape is about a thousand feet high. From May to July at this point there is one long day, the sun all this time never sinking below the horizon. Next we shall skirt along the Atlantic side of the Scandinavian Peninsula, where we shall find a coast very much like the Pacific coast of Canada. The Atlantic has found many entrances into the mountains of the peninsula. These are called *Fiords*, and they are very beautiful. Their sides are steep and dark, their summits are snow-covered, and here and there waterfalls dash

EUROPE
(Physical)
SCALE
EXPLANATION
ARCTIC OCEAN
ATLANTIC OCEAN
NORTH SEA
BALTIC SEA
BLACK SEA
CASPIAN SEA
MEDITERRANEAN SEA
ADRIATIC SEA
ASIA
AFRICA
ICELAND
BRITISH ISLES
SCANDINAVIAN MOUNTAINS
CAUCASUS MOUNTAINS
BAY OF BISCAY
IBERIAN PENINSULA
ITALIAN PEN.
BALKAN PENINSULA
GREAT BRITAIN
CENTRAL PLATEAU
HUNGARIAN PLAIN
PLATEAU OF BOHEMIA
CARPATHIANS
ALPS
PYRENEES
ENGLISH CHANNEL
STRAITS OF GIBRALTAR
GULF OF BOTHNIA
SHETLAND Is.
ORKNEY Is.
FAROE Is.
LOFOTEN Is.
BALEARIC Is.
SARDINIA
CORSICA
CRETE
CYPRUS
Mt. Ararat
Mt. Elbrus
Mt. Hecla
Mt. Vesuvius
Mt. Etna
Mt. Olympus
Mt. Parnassus
Mt. Athos
Mt. Sinai
Mt. Ida
Mt. Taygetus
Mt. Pindus
Mt. Balkan
Mt. Rhodope
Mt. Olympus
Mt. Ossa
Mt. Pelion
Mt. Cithaeron
Mt. Helicon
Mt. Hymettus
Mt. Pentelicus
Mt. Parnes
Mt. Cithaeron
Mt. Helicon
Mt. Hymettus
Mt. Pentelicus
Mt. Parnes
Mt. Cithaeron
Mt. Helicon
Mt. Hymettus
Mt. Pentelicus
Mt. Parnes

down the rocky walls. Passing along, we shall round the Naze, or nose of the peninsula, and enter the Baltic Sea through what has been called the *Arm*. What two gulfs are situated at the northern end of this sea? Returning, we shall again pass around the peninsula of Jutland (Denmark), cross the North Sea, and pass through the Strait of Dover into the English Channel. As we cross the Bay of Biscay we shall probably find some rough water, for there is no shelter from the Atlantic here. Next we

North Cape, Norway. The land of the midnight sun.

round the Iberian peninsula and enter the Mediterranean Sea through the Strait of Gibraltar. You will notice on your map at this point how near Africa and Europe are to each other. People at one time were afraid to pass beyond these points into the unknown Atlantic. The Strait gets its name from a lofty promontory, the Rock of Gibraltar, which stretches out into the sea on this part of the peninsula. This rocky place belongs to Great Britain; in fact, it is Britain's only possession on the mainland of Europe. It commands the entrance to the Mediterranean and has often been called the *key* to this great sea. On the land side the rock rises almost perpendicularly to a height of 1,400 feet. On the water side it has been cut into a great number of passages and galleries provided with port-holes through which a thousand heavy guns may point.

Gibraltar was taken by Sir George Rooke in 1704 and, though once besieged by an enemy for three years, has remained in our possession ever since.

In ancient days the Mediterranean was the most important sea in the world. Along its shores many of the great nations of history rose into glory and sank into oblivion. The Mediterranean separates and yet connects Europe, Africa, and Asia. It is divided by the Italian Peninsula into two regions, an eastern and a western. The "blue sea" is a term often applied to the Mediterranean.

Leaving Gibraltar, we shall coast along the great curve between the Iberian and Italian peninsulas, and pass between the toe of the boot and the Island of Sicily. What is the name of the Strait separating these? We shall sail to the south of Sicily to the little group of islands of which Malta is chief. These islands have belonged to Britain since the year 1800. They are quite small but are yet of the utmost importance to us. The whole sea-front of Malta is strongly fortified, and powerful guns look out in every direction. British men-of-war, needed to patrol the Mediterranean, have their headquarters here. Why this point is so important may be readily seen when you think of our very valuable possessions in the Indian Ocean. Name any of these.

Look closely at the shape of the Italian peninsula. What sea lies between Italy and the east? Notice the peculiar shape of the

Grecian peninsula. South of this peninsula is the most southerly point of Europe. Look now at the sea to the east of Greece. The Greeks called it the Archipelago, or chief Sea, but we now apply the name to the group of islands, and we call the sea the Aegean. The islands of the archipelago are very beautiful, are free from snow and frost, and are noted for their flowers and fruit.

We wish now to enter the Black Sea. We shall find the current in the Dardanelles Strait quite strong. To what small sea does this Strait lead? The Bosphorus is the eastern entrance of this sea and the outlet of the Black Sea.

Notice the little peninsula called the Crimea. What is its situation? It was here our soldiers did so many brave deeds in 1855. Your teacher will tell you of the Crimean war.

The rock of Gibraltar, which guards the entrance to the Mediterranean Sea.

The great inland sea, the Caspian, was once, it is supposed, connected with the Mediterranean. Now its surface is much lower than the latter sea, and the water is very salt except where rivers enter it.

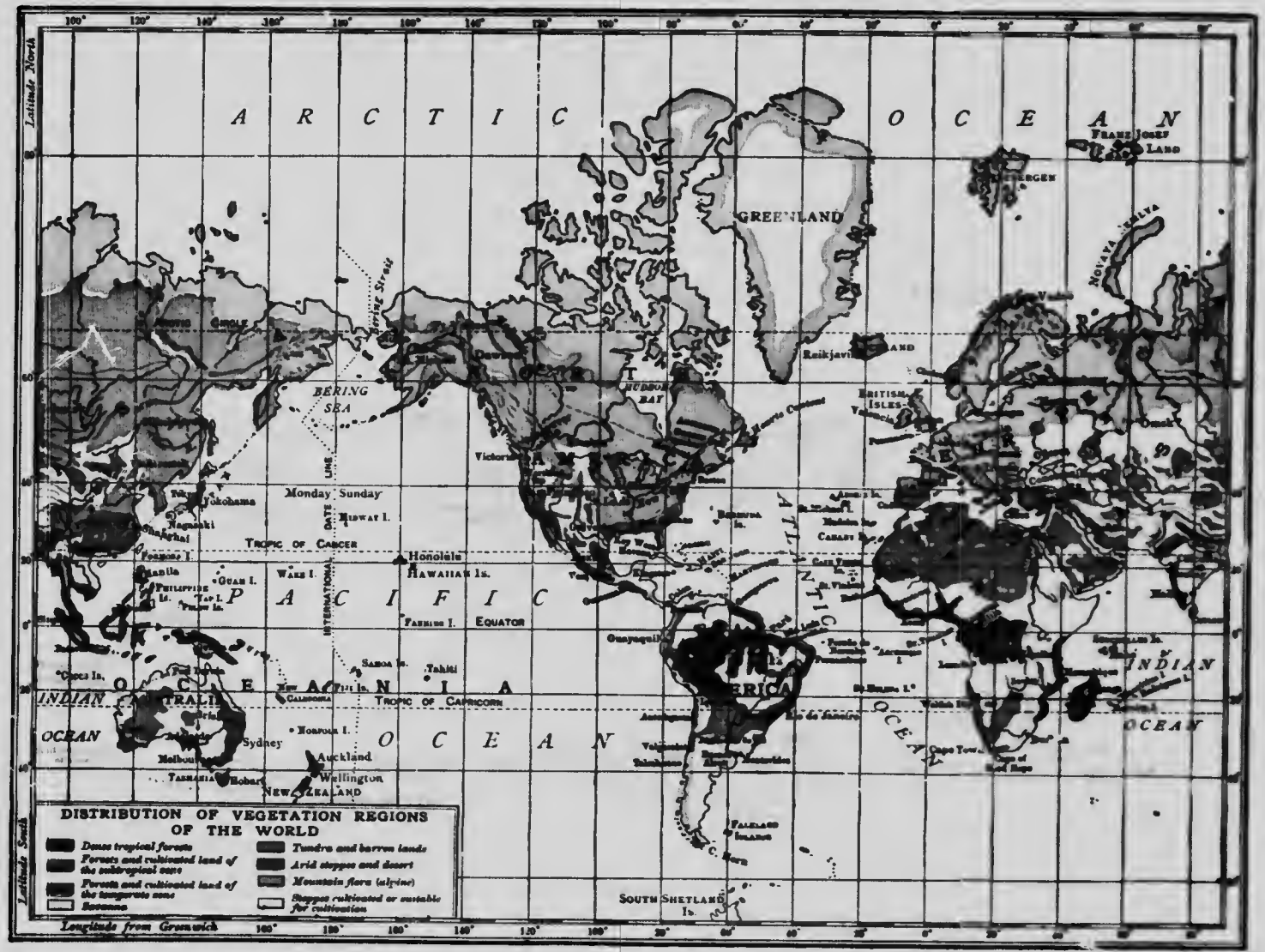
Surface. An examination of the map will show that, with the exception of a portion of the peninsula of Scandinavia, the northern and eastern parts of Europe are an immense lowland plain with gentle slopes and great areas of fertile soil.

Southern Europe is largely an area of mountains, of which the Alps are the most important. The Alps lie in five countries. Can you name these? They do not form a single chain, but a series of ranges of a width varying from 30 to 160 miles. On the north side are wooded hills. In the centre lie higher hills. Farther south lie still higher ranges, where some of the peaks reach a height of nearly three miles. Snow lies forever on the highest mountains, and the higher valleys are filled with glaciers. What are glaciers? On which side are the Alps the steeper?

These ranges of mountains have many passes, but for railways many tunnels are necessary. Two of these are the longest in the world, the St. Gothard, 9½ miles, and the Simplon, 12¼ miles in length. Through these tunnels trains run north and south. One of the passes is called the Great St. Bernard, a pass not easily crossed by foot-travellers in the winter when it is covered with snow and ice. Here the monks of St. Bernard have built a monastery where people can obtain shelter at night. The monks have also trained their famous dogs to search for wanderers. At the western end of the Alps is the great Mont Blanc, the white mountain.

Climate. What portion of Europe lies north of the Arctic circle? What is the climate of this region? In what belt of heat is the greater part of Europe? Is this part in the colder or in the warmer portion of this belt?

The main European winds come from the warm south-west. What obstacles prevent these winds from crossing the great plain? What effect have the Scandinavian Mountains? Do the main highlands cross these winds? Would you say that Europe has a


ARCTIC OCEAN
GREENLAND
BERING SEA
Monday
Sunday
DATE LINE
INTERNATIONAL
TROPIC OF CANCER
Honolulu
HAWAIIAN Is.
EQUATOR
TROPIC OF CAPRICORN
PACIFIC OCEAN
INDIAN OCEAN
ATLANTIC OCEAN
Sydney
Melbourne
Auckland
Wellington
NEW ZEALAND
Yokohama
Nagasaki
Manila
Guam I.
Wake I.
Samoa Is.
Tahiti
Honolulu
Reikjavik
Bergen
Cape Town
Rio de Janeiro
Montevideo
Valparaiso
Guayaquil
Panama
Bermuda Is.
Azores Is.
Canary Is.
Cape Verde Is.
St. Helena I.
Falkland Islands
South Shetland Is.
DISTRIBUTION OF VEGETATION REGIONS OF THE WORLD
Dense tropical forests
Forests and cultivated land of the subtropical zone
Forests and cultivated land of the temperate zone
Savanna
Tundra and barren lands
Arid steppe and desert
Mountain flora (alpine)
Steppe cultivated or suitable for cultivation
Latitude North
Latitude South
Longitude from Greenwich

good rainfall? Eastern Europe being far inland and exposed to the cold north winds, has but a moderate rainfall on the whole. Here are to be found lands that are half desert in character. What sea supplies Europe with rain south of the main highlands?

To understand the value of the south-west winds, it is necessary to speak of the Gulf Stream, a river flowing across the Atlantic Ocean. The movement causing this strange river is first observed off the coast of Western Africa (see map). A warm current crosses the Atlantic, strikes the eastern elbow of South America and is divided. The northern portion of the stream flows along the north-eastern coast of South America, and enters the Gulf of Mexico after crossing the Caribbean Sea. The stream circles about the Gulf, and after passing between Florida and Cuba flows off to the north-east in an ever-widening river. The prevailing south-west wind carries heat from the warm waters of the Atlantic, and prevents ice from blocking the harbors.

The climate of western Europe is such that the people can work almost every day in the year. Why cannot our people do this?

Rivers. Most of the rivers of Europe flow either to the north-west, or to the south-east. Why is this? Again, nearly all these rivers are navigable for great distances, since their courses lie so largely through low plains. Added to this there are many canals, so that trade by water is readily carried on.

The rivers of Europe are easily learned if you study the map. There are three things, however, to be remembered. The first is that the greater number of the rivers flow either to the north-west, or to the south-east. The second is that the majority of these rivers rise either in [illegible] or in the Valdai plateau, a plateau [illegible] to the east of the southern end of the Baltic. A third feature is seen when the outlets are studied. European rivers empty into the White, Baltic, North, Mediterranean, Black, or Caspian seas, and into the Atlantic Ocean. The Alps are high, the Valdai hills are low. The Alps face several seas. The Valdai hills are far from the sea. The Alps have a heavy rainfall, the Valdai hills a light rainfall. The rivers rising in the hills are longer and slower than those rising in the mountains. The Rhine and the Danube rise near each other in the Alps. The Volga rises in the Valdai plateau. These are the greatest rivers.

The rivers flowing into the White Sea should remind you of our Mackenzie. For seven months each year this sea is frozen. This prevents the rivers flowing into it from being of much use to traders. The Baltic Sea receives a number of rivers, the Vistula being the most important. Name two large gulfs in this sea. The northern end of the Baltic is often frozen for three or four months in the year. The Russians, however, have a number of strong and heavy steamers which are able to break their way through. The Elbe, the Rhine, and the Thames empty into the North Sea. Where is the Thames? The North Sea is, like the Baltic, shallow. It contains a famous submerged sandbank, known as the Dogger Bank, a capital fishing spot. The Elbe is a German river of very great value. The Rhine is one of the most important rivers in Europe. Where does it rise? This river flows through the busiest part of the continent. Its springs are found in the glaciers of the Alps. It is fed by many an ice-cold stream as it flows along toward and into the beautiful Lake Constance. It enters this lake muddy. It leaves it clear and plunges down the greatest fall in Europe, the Schaffhausen. It then turns to the north and finally enters the North Sea.

On the Rhine are boats carrying grain, wine, and merchandise for all parts of the world. Down the Rhine also pass rafts of timber from the forests of Central Europe.

Rather strange this, is it not, when we come to think that Europe was old before the world ever heard of America! Evidently timber is better looked after in the old land than it is with us.

A voyage up the Rh. will show us many things. We shall see dozens of great cities in the valley. One of these is Cologne. We shall see ancient castles where the barons of several centuries ago lived with their soldiers, ground down the poor people about them, and perhaps robbed the merchants going up and down the river. Almost every hill could tell a sto y. In some hills fairies were said to live; in others great dragons were supposed to dwell. We shall also see fine vineyards lining both banks of the river. Every dwelling house has its grape-vines, and the hillsides are green with the same vine. During the growing season men, women and even children are at work weeding, hoeing, or picking. We shall see the great rock on which stands the German fortress of Ehrenbreitstein, the strongest point on the Rhine valley. The rock is four hundred feet above the river, and the fortress on it can give room enough to a hundred thousand soldiers, should there be any occasion to require it.

Cologne Cathedral. This cathedral, begun in the year 1248, was completed in 1880.

Another important city is Strassburg, with its fine cathedral of red stone. This cathedral has a clock which not only shows the minute and the hour, but also tells the year, the month, and the day of the week. At twelve o'clock twelve apostles circle about an image of the Saviour. The hours are struck by a skeleton and the quarters by an angel.

Farther up stream at a point where the river courses between narrow banks, we shall see the echoing rock. Up farther still is the famous Mans Tower, on an island in the river. Ask your teacher to tell you the story connected with this.

Into the Atlantic, the Seine and the Tagus rivers flow. On the former is Paris, said to be the most beautiful city in the world.

The rivers flowing into the Mediterranean, or into its connecting seas, are the Rhone, the Po, and the Danube. The Danube is the second largest river in Europe, and was at one time one of the two great trade routes from Asia to Europe. To-day the Danube is used as much as ever, but not for conveying goods from Asia. It flows through rich lands. Cities and towns have grown up in its valleys and along its banks, and the river is the natural highway for the trade of this region.

Near the headwaters of this river, several miles to the north, we shall find Nuremberg, with its old-fashioned houses and its ancient wall. To-day Nuremberg is known far and wide for its manufacture of toys of all descriptions. Indeed, there is no other city where so many toys are made, and no place where toys can be bought so cheaply. Continuing our journey down the river, we shall shortly reach the point opposite Salzburg. In the mountains near Salzburg some of the finest salt mines in the world are located. To see the mines we shall have to

go down many feet into the earth by means of ladders. We shall then have to go through great long hallways cut out of salt rock, until we finally reach the great salt lake in the very heart of the mountains. This lake is bitter with salt. The lake water is conducted through pipes through the ground and down the sides of the mountain to great pans, where the water is evaporated and the good salt used on some European tables procured. What a busy stream the Danube is. See the rafts of timber and the barges loaded with grain. What should these tell you of the river valley? But we must hurry on past Vienna and Budapest to tell you of the lower Danube. The lower Danube passes through a great area somewhat like our western wheat lands. On all sides are to be seen fields of golden grain. A wheat country means flour-mills; but what strange mills are these on the river? Two boats are anchored in a line across the stream. Between these a great water-wheel is fixed. One of the boats has the milling machinery, and the power comes from the motion of the water.

A chamois.

Farther down we note great herds of cattle and horses, droves of pigs, and flocks of sheep. By and by the Danube begins to show many rapids in its course. Here and there the river runs through deep gorges in the mountains, and at the Iron Gate (see Map) the stream breaks through the mountains and enters the plain. This is one of the most dangerous spots on the river, and hundreds of good boats have been wrecked here. A canal at this point has removed the danger. From the Iron Gate the Danube flows in a great curve and empties into the Black Sea. The Don flows into the Sea of Azof, an arm of the Black Sea. The Volga is the longest river in Europe. Where does it rise? How far from the Baltic Sea? In its journey towards the Caspian Sea the river flows in a great double curve. Describe this curve. The Volga is entirely in Russia, and serves Russia as a convenient highway for the products about the Caspian Sea and the agricultural products along its valley. The Caspian being entirely surrounded by land, is not as valuable an outlet for such a river as the Black Sea would have been. How so?

Plants and Animals. Great forests at one time covered large areas of Europe. The most important forests to-day are those of northern Russia, those of the Scandinavian peninsula, and the forests of portions of Germany. These forests are largely of pine, oak, elm, ash, and linden trees. The more northern woods extend to the tundra country with its moss and lichens. In the southern countries, such as Portugal, Spain, and Italy, the more common trees are the olive, the lemon, and the orange. Spain and Portugal also grow the famous cork oak, from the bark of which bottle stoppers, cork limbs, etc., are made. In parts of south-eastern Europe grass is the chief covering of the ground. Why should not trees grow in such an area? Almost every European country grows wheat, oats, and barley, and fruit is abundant.

The most interesting animals are the chamois of the higher Alps, and the reindeer of the tundras. Find out all you can about these. Europe is so well-cultivated that most of the wild animals have disappeared, and it is only in the Russian and other great forests that it is possible to hunt wolves, bears, deer, etc. Many of the wild animals of Russia, such as the wolf, bear,

sable, and ermine, are hunted or trapped, for the sake of their furs, which are sold at huge fairs at various Russian centres. One of these is held at Nizhni-Novgorod, on the Volga. For two months of the year, thousands of people gather from all parts of Asia and Europe to dispose of all kinds of produce. When the two flags before the house of the governor of the place are pulled down it is a sign that the fair has ended. The people then return to their homes and the place remains deserted until the time of the opening of the next fair.

The domestic animals reared in Europe are largely those we have found suitable to our own continent, namely, cattle, sheep, horses, pigs, and poultry. It is said that the Russian Empire owns half the horses in the world. It is also known that our best cattle, sheep, and pigs have come from the British Islands. Spain is noted for its horses and merino sheep. Reindeer are the beasts of burden about the White Sea, camels about the Caspian, donkeys about the Mediterranean, and horses elsewhere.

Bees are found in the central and southern countries, and silkworms in Italy, southern France and in south-eastern Spain. Over half a million persons are employed in Italy alone in raising silkworms.

The countries bordering the North Sea share in the fisheries of this body of water. The Dogger Bank will remind you of what other Bank? Here the codfish are caught on hand lines and the catch dried, salted, and sent over the continent.

The People. Long, long ago there was in Asia an agricultural people called the Aryan, or *noble* family. These people were attacked and driven out of Asia toward the west. In turn they drove away the people found along the shores of the Mediterranean Sea, but were again driven farther to the west of Europe by new invaders from Asia. Their descendants, called Kelts, are to-day found in Wales, the Highlands of Scotland, and the West of Ireland. The people who drove the Kelts out and took their place in southern Europe were called the Romance people. Their descendants now live in Portugal, Spain, parts of France, and in Italy. After the Romance tribes, another horde, the Teutons, a race of tall, fair people, came and settled in north-western Europe in the countries now called Norway, Sweden, Germany, Holland, Belgium, Switzerland, and portions of the British Isles. While the Teutons were settling, another Aryan tribe, the Slavs, spread out across Russia, Greece, Servia, Bulgaria, and Montenegro. A warlike tribe of the yellow type settled in Turkey. The Magyars, an Asiatic race, settled in Hungary; and the Finns, another branch of the yellow race, settled in northern Europe. The great race of Europe and the great race of the world to-day is the white race.

With this glimpse of Europe as a whole, let us now study the different countries separately and learn more of the people and of what they are doing.

GREAT BRITAIN AND IRELAND

The United Kingdom of Great Britain and Ireland is the name given to the region commonly known as the British Isles; but this long name is often shortened into the *United Kingdom*, which we shall use. The United Kingdom is made up of the large islands of Great Britain and Ireland, and about five thousand smaller islands near their shores.

Though small in size, these islands are the heart of the greatest empire the world has ever seen, an empire which has been built up by Englishmen, Scotchmen, Irishmen, and Welshmen; it covers about one-fifth of the land surface of the world; and it has under its rule one out of every four persons of the whole human race.

The four races mentioned did not always


EUROPE
(Political)
SCALE
Statute Miles to one inch
Capitals of Countries
Other Cities
Comparative Area
ARCTIC OCEAN
ATLANTIC OCEAN
NORTH SEA
BALTIC SEA
CASPIAN SEA
BLACK SEA
ADRIATIC SEA
MEDITERRANEAN SEA
BAY OF BISCAY
ASIA
AFRICA
FRANCE
AUSTRIA-HUNGARY
FINLAND
BULGARIA
DENMARK
CRETE
CYPRUS
Longitude West from Greenwich
Longitude East from Greenwich
Latitude North

live in harmony. Indeed, the British Isles were for centuries the battleground of English and Welsh, English and Irish, and English and Scotch. Ireland became a part of the British dominions in 1172, but the complete union took place in 1801. Wales entered in 1282, England and Scotland came under one sovereign in 1603, and the parliaments

British Isles.

of both countries were united in 1707. Now all these countries send members to a common parliament at London, and all recognize a common sovereign, King George the Fifth.

The Union Jack, the national flag of the United Kingdom, has been formed out of the flags of England, Scotland, and Ireland, and now waves over all our fortresses and on all our ships of war. Our merchant ships carry it to show that they are British ships, and many of our schools float it to teach our children that it stands for fair play and even-handed justice.

At peace at home, Britain started out to build an empire. Other nations, notably Portugal, Spain, France, and Holland, had already taken to the sea. Columbus, acting in the service of Spain, had discovered a New World. Portuguese sailors had pushed their ships farther and yet farther down the west coast of Africa. Bartholomew Diaz had at last rounded the southern end of Africa in 1486, and King John of Portugal had called the Cape thus rounded, the Cape of Good Hope. In 1497 Vasco da Gama rounded the Cape and reached India, the Maryland of those days. France and Holland had followed Spain and Portugal in the business of getting new lands. In the course of time England also became interested, and soon had a good grip of America and a footing in India. But England had to win the control of the seas before she could feel free to devote herself to the settlement of new countries. In 1588 Drake helped to defeat the Spanish attempt to conquer England by sending a great fleet which they called the "Invincible Armada." Since then the Spanish navy has been but a small thing on the waters of the world. In the seventeenth century Admiral Blake destroyed the Dutch fleet, and in 1805, at Trafalgar, Nelson overcame the fleets of France and of Spain in a crushing victory. These three men lived for England, loved their native land with an intense devotion, knew her, believed in her, and made her greatness their own. The United Kingdom has since been the mistress of the seas, and has thus been able to extend her dominions by purchase, by treaty, by settlement, and by conquest.

What the British navy means to-day may be readily understood if you take the school globe and locate Canada, Australia, Southern Africa, India, New Zealand, and a hundred other districts, all of which have grown under the sheltering care of Britain's 500 ships of war. Take the globe again and place it so that the British Isles are in the centre of the hemisphere. Nearly all the land of the world is here shown, and Britain is at the centre and able to reach almost every part by sea. This is one reason of Britain's progress. Look at the map of Europe. The Mother Country is separated from all the petty quarrels of the mainland by her water-guarded shores. She stands out from the continent and receives the best the south-west winds can bestow. As a result Ireland is the "Green Isle," and Great Britain is also noted for her lovely green fields. The climate of the British Isles is such as to keep all its harbors open summer and winter, and to permit its people to work at least 300 days in every year. The surrounding sea is rich in fish, and the mines of England and Scotland yield great quantities of coal and iron.

Eddystone Lighthouse marks a dangerous rock off the south-west coast of England.

How is Great Britain separated from the continent? How from Ireland? What body of water lies to the east? What to the west? What is the distance from Land's End to John O'Groat's House? Find the Hebrides, the Thames, the Clyde, Killarney Lakes, and the Giant's Causeway. Find the name of the Irish river marked on the map. Locate England, Wales, and Scotland.

Southern and eastern England is a broad, low plain with occasional ranges of hills. In southern Scotland is another lowland region, in which are the leading Scottish cities.

The mountains of Great Britain are nowhere very high, but they skirt the western coast and thus get the heaviest share of the rainfall of the island. The most rugged part of the island is in northern Scotland, the Scottish Highlands it is called. Here are many beautiful lakes or lochs, which make travelling through this picturesque land very pleasant and easy. The larger portion of the highlands is now divided into great private hunting estates, on which deer and other game animals are allowed to run wild. The coast of Great Britain in places is rocky and dangerous, but there are many fine harbors. The most irregular coast is naturally in northern Scotland, where the land is bordered by a great many large and small islands. What name is applied to the group of islands along the west?

The rivers are all short, the longest being those that flow across the plains of southern England. Why so? The lower valleys of

several of these rivers have been drowned, so that they are navigable and form fine harbors. What does *drowned* mean? The Thames and the Clyde are examples of such valleys.

The chief occupations of the people of Great Britain are agriculture, grazing, mining, fishing, manufacturing, and commerce, and these occupations are found wherever conditions are at all favorable. Great Britain feeds one and one-half million horses, six and one-half million cattle, twenty-five million sheep, and a great multitude of pigs. Grain lands have been steadily growing

A Highland cottage in Scotland.

smaller, for various reasons. Now nearly all the wheat comes from abroad. Name countries in America that have wheat to spare. The famous old English forests could not now shelter a Robin Hood and his band of robbers. The growing cities have changed the character of much of British farming. There is great demand now for fresh milk, good butter and eggs, and garden stuff, and many of the farmers are trying to supply this demand. England is still noted for its apple, pear, plum, and cherry orchards, and its famous hop fields, Scotland still leads in high class oatmeal and turnips, and Ireland in butter and potatoes.

Sheep are found all over the country, but particularly on the *downs* of England and on the highlands of Scotland and Wales. Cattle are numerous in the lower and milder parts of the country. Southern Scotland and northern England excel in horses, and the cod fisheries of the Dogger Bank not only supply food for the table, but also blue-jackets for the navy.

Most of the land in Great Britain is held by a few noble-born persons who rent it to the farmers at from five to twenty dollars per acre, a sum sufficient to *buy* good land in the Canadian West. The owner of an estate lives in a fine mansion surrounded by a beautiful park. His woodlands are probably well stocked with game birds, but these are not for his tenants' shooting. What can you see in the picture of a home among the Highlands of Scotland?

England is a beautiful land to live in. Everything looks so fresh and green. Moss covers the roofs of the barns and ivy mantles the farm houses. There are fine orchards and beautiful flower and vegetable gardens connected with each English home. The hedges and the roads look as if they had always been there, and numerous paths across fields show how fond the people are of walking.

Great Britain has many places noted in history. No matter where you may be in England, Wales, or Scotland, there is sure to be some interesting spot near you; it may be a battlefield, or a ruined castle, or something else. It is little wonder, then, that thousands of wealthy American tourists find Great Britain such interesting ground to travel over. But Great Britain is also one of the world's workshops, and it is this we shall speak of now. Great Britain can make anything from a steel pen to a man-of-war and from a shoe-string to the

finest lace-work. The situation of the island, its fine climate and great resources of coal and iron have done much to place Britain in the first rank as a manufacturing country. British goods are also reliable goods, a very important thing to remember.

The great manufacturing centres stretch from Glasgow to within a few miles of London, the world's greatest city. On what river is Glasgow? How is this river connected with the Atlantic? Glasgow is the Scottish cotton centre. Where does the raw cotton come from? Glasgow is also noted for its machinery, engines, and ships. Indeed, the Clyde is the greatest ship-building river in the world, everything in this line being constructed, from the small launch to the iron-clad battleship.

The Houses of Parliament of the United Kingdom, situated on the Thames River, London.

The cotton centre of England is Manchester. Raw cotton from the southern states comes to Liverpool, the port second in size to London. After reaching the fine docks of Liverpool, the cotton is either unloaded and shipped by rail to Manchester, or else it is taken there through the Manchester canal connecting Liverpool and Manchester. This city is the largest manufacturing centre in the world, and its chief industry is cotton. Manchester has coal and a good water-supply. It has good shipping connections with the principal countries of the world. It has also the moist atmosphere that makes cotton spinning possible.

Leeds is the woollen centre of the world. What countries will supply the wool? How may it be brought from each of these? In the neighborhood of Sheffield there is an abundance of stone suited for grinding purposes. Sheffield, therefore, makes most of our cutlery. There are other centres where carpets, laces, shoes, chinaware, and scores of other things are made; but we have not time to mention these at present, for we wish you to know something of London and Edinburgh.

London is as large as New York and Chicago put together. There are almost as many people in London as in the whole of Canada. London is growing so fast that a new house is built every hour. It has thousands of factories which cause clouds of smoke to hang over the city, and the fogs which rise from the Thames at times turn the day into night. Were you to go to London, what places of interest would you go to see? London is the greatest commercial port in the world, and the Thames for miles is lined with wharves. Hundreds of vessels supply the fish markets, for London consumes five hundred tons of fish per day. All the members from England, Wales, Scotland, and Ireland meet in parliament in London. In Westminster Abbey the illustrious dead are buried. It would take one several months to get acquainted even with these noted places. In the Tower of London, a gloomy building on the bank of the Thames, we shall see the

room where the Crown jewels are carefully guarded. We shall cross the Thames on the famous old London Bridge, the busiest of the score of bridges spanning the river. No wonder that London is annually visited by so many people from other countries.

An Irish farm kitchen with its open grate in which peat is burned.

Edinburgh, situated near the Firth of Forth, is a very beautiful city and is the centre of Scottish culture and learning. A Sunday in Edinburgh will show you how well the Scotch keep the day of rest. You will find no Sunday newspapers and no street cars running. The churches are filled and the streets almost deserted. It was here that John Knox, the religious reformer of Scotland, lived and did what he could to make his country better. Edinburgh is one of the greatest book-making centres in the world. Crossing the Forth is the great bridge made of stone and steel. This bridge is a mile and a half long and is one of the world's wonders.

Ireland, the Emerald Island, is a mass of mountains and rolling land, with a low central plain containing many small lakes, swamps, and peat bogs. The country lies in the path of the water-laden Atlantic winds, hence the wonderful greenness of the pasture lands. The land is divided into great estates and rented out often in small parcels to tenants. There are thousands of Irish farms containing not more than an acre of land each, a very small patch on which to pay rent and rear a family. On the larger farms, particularly those of central Ireland, the land is cultivated like a garden and the people are very prosperous. What can you see in the picture of an Irish kitchen?

Potatoes and oats are still the most valuable of all the Irish crops. Irish pastures support half a million horses, between four and five million cattle, four million sheep, and a great many pigs.

The Killarney Lakes in Ireland, famous for their beauty and much visited by travellers.

The potato is the staple food of the Irish, and the crop is so important that failure means famine. In 1846 a potato blight destroyed the crop and caused a million of people to die of starvation.

There are some beautiful spots in Ireland. While crossing the country we shall often have to pass through great bogs filled with peat, a kind of turf which is dug with spades and piled in heaps to dry. At the north-east is the Giant's Causeway, a great mass of huge stone pillars rising out of the sea. They are so close that one may readily walk on them; and there is a story connected with them of a quarrel between an Irish and a Scottish giant. The Scotchman agreed to come across provided there was a dry road. This the Irish giant built and after defeating his rival, he threw the bridge into the sea.

Dublin, the capital of Ireland, is a very fine city. What is its situation? In Dublin one may obtain specimens of Irish lace, hand-made lace of very great value. One may also see the famous Phœnix Park, said to be the finest in the world.

Belfast, situated on an excellent harbor, is the chief manufacturing city on the island. The linen mills are especially fine, for the firm, moist land of this locality is well fitted for flax. Near the mills are the bleaching fields, upon which the cloth is spread. This linen commands a high price in all parts of the world, and Ireland has been noted for the last six hundred years for the manufacture of all kinds of linen cloth.

Spreading linen on a bleaching green at Belfast, Ireland.

QUESTIONS. 1. Find Land's End, Isle of Man, the Wash, Bristol, and the Orkney Islands. 2. Make a map of the British Isles and mark in (*a*) the countries; (*b*) the coast waters, capes, and islands; (*c*) the Thames, Severn, Clyde, and Shannon; (*d*) the Highlands of Scotland and the Killarney lakes; (*e*) the principal cities. 3. Why is eastern Great Britain drier than western Great Britain? 4. Mention several things that have helped to make the British successful.

FRANCE

The French coasts face in three directions. What are these and of what advantage may this be? The surface is hilly in the east and level toward the west. As a whole France has a warm, moist climate, a fertile soil and a thrifty people, all of which aid in making France a very wealthy land. In France the farms are small, but most of them belong to the common people. Is this a good thing? In northern and central France wheat, oats, and barley are raised. In this region sugar-beets, potatoes, and other root crops are cultivated, and fine orchards of apples and pears are on every side. In the warmer south the olive, the mulberry, the orange, and the lemon trees thrive, and vineyards covering great areas are scattered throughout the country. Indeed, France leads the world in the production of wine. Nearly every one has wine with his meals, and even small children are not ignorant of the taste of this liquor.

Paris, the capital of France, is, according to many, the most beautiful city in the world. It is the centre of European fashion and art, and buyers from all nations go there for fine, fashionable dress goods. The streets are wide and clean, and beautiful shade trees grow along the boulevards. Marseilles, on the coast, at the end of the Rhone valley, is the greatest port on the Mediterranean Sea. The city is built round a harbor always thronged with ships from all parts of the world. On the top of a great church, standing on a rock above

Looking over Paris. Notice the seven bridges crossing the Seine, and the Eiffel Tower in the distance.

the city, is a huge gilded figure of the Virgin, which glitters in the sunshine and serves as a landmark to those on the sea.

GERMANY

What two seas border on Germany? Which is the better for Germany? The German Empire is made up of twenty-six states, of which Prussia is the largest. The greater part of Germany is one great farm divided up into small fields which are kept like gardens. There are acres and acres of vineyards, pastures, and grain fields. Wheat, oats, rye, and barley, sugar-beets and potatoes, and great herds of fine cattle are among the farm products.

Besides possessing a rich soil and a favorable climate, Germany has rich mines of coal and iron, and as a result the country has gone into manufacturing on so large a scale that "made in Germany" are words known to almost everybody. Again, Germany is well situated in Europe. About it are nations with whom trade may be carried on. To the north is the sea, inviting foreign commerce. Germany has some fine rivers. Name one of these. Into what body of water does it empty? All these rivers are navigable and many of them are connected by canals, so that Germany is brought into close touch with its own centres and with the countries beyond the sea.

A country, however, may have all these things and still be an inferior country. The Germans are like the English. They have a talent for trade, they are very industrious, and above all they are thrifty. So great is the trade of Germany becoming that the country has trading houses in every part of the world. The Germans are fond of their homes, of art, and of music. They are big eaters and drinkers, but their beer is light and their food is plain.

Berlin. This avenue, "Unter den Linden," is one of the famous streets of the world.

Germany has also what is said to be the finest body of soldiers in the world. Every young German must serve in the army for a few years. Hence all Germans are well drilled, and can shoulder arms should there ever be occasion to do so. Great fortifications guard the land at every point where a foe might attack. Great men-of-war form the German navy, a navy that has been growing very rapidly during the past quarter of a century.

Berlin city, the capital of the Empire, is situated in a sandy and rather worthless part of the country. Before 1870, the year the Germans conquered the French, Berlin was but a small city. Since then the German States have united into the Empire, and Berlin has been made the capital. Berlin is now one of the greatest cities on the continent. The city is wonderfully clean and orderly, for the Germans are noted for doing things properly. Should any one throw torn papers on the street a policeman would soon ask him to pick up the pieces. Even the dogs are watched, and no dog must be on the streets after ten o'clock. Would this be a good rule in some of our Canadian cities? The great seaport of this country is Hamburg, near the mouth of the Elbe.

A square in Rome, showing the Pantheon, built in 27 B.C. The finest and best preserved work of Roman architecture.

ITALY

What great mountains are to the north of Italy? What sea lies to the east? What island lies off the toe of the boot? How is this island separated from Italy? What sea lies to the west? What is the name of the larger of the two islands lying to the west?

If we travel from the Alps to southern Italy, we shall find a most agreeable climate and a very fertile soil. We shall pass by rice fields, cotton plantations, grain fields, vineyards, and orchards. There are rich valleys on both sides of the Apennines, as the mountains of Italy are called; and these valleys and the plains between them provide pasture for cattle, donkeys, sheep, and goats. The vineyards place Italy next to France in the production of wine. The olive orchards, mulberry trees, and orchards of oranges and lemon trees are found in almost every part of the land.

Italy is a farming country, and much of the land is owned in large tracts and let on shares. The peasant farmers or farmers of small areas live in small houses consisting perhaps of but two rooms, a kitchen and a bedroom. The furniture is of the poorest sort, and often the only bed is but a heap of straw on the floor. The food of these people is often as meagre as their dwellings, and in some parts of the country great quantities of chestnuts are eaten, either roasted or ground into a cheap meal.

But what do you know of the silkworm and the mulberry trees? Italy has a large industry in silk, which is grown and

The city of Naples, with the smoking cone of the volcano Vesuvius beyond.

manufactured at home. When the eggs, which are placed on the mulberry trees hatch, the caterpillars, or so-called silk-worms, feed on the leaves until the time has arrived for them to spin their cocoons. These cocoons are simply small round houses where the caterpillars remain until they come out as moths. After the cocoons are formed they are dipped in boiling water to kill the life within. The silk is then unwound and the thread woven into cloth or wound into spools.

A hundred years ago there were nine separate States in the country now called Italy. A great Italian leader by the name of Garibaldi succeeded after many struggles in putting an end to this state of affairs, and Rome has been the capital of a united Italy ever since 1870.

Rome, the Eternal City, is situated on the river Tiber in western Italy. The race which founded the city was strong and it soon conquered the whole peninsula and afterward added nation after nation until Rome became the mistress of the world, and the centre of all that was great in art and in learning. In time the Empire was destroyed, but there are still to be seen many things that remind us of Rome's ancient greatness. Rome contains the Vatican, the palace of the Pope, and the finest church in the world, St. Peter's. It is crowded with ancient monuments and with memories of the great people who once lived there. One may see at Rome the ruins of the Colisenm, the greatest show grounds the world has ever seen. It was here that the Roman people came to see wild beasts and men fight with one another. It was here, too, where Christian men, women, and even helpless children were thrown to be mangled by wild beasts, that heathen Rome might have something wherewith to amuse itself. Not far from the city

The Grand Canal, Venice. The Rialto bridge is shown in the background under the roof of which are merchants' stores.

are the catacombs, great caves and passage-ways cut out of the rock. What do you suppose these were for?

To the north is the city of Florence, with its stately buildings, art treasures, and picture galleries. Florence was the birth-place of the sculptor and painter, Michael Angelo, the poet Dante, the sailor Amerigo Vespucci, and the astronomer Galileo, some of the greatest men the world has known.

Naples, on the Mediterranean, is beautifully placed. Over it is the bright blue sky, back of it are the mountains; before it is the lovely Bay of Naples, and a little to the south is the famous volcano of Vesuvius. A little more than 1,800 years ago vineyards covered the sides of Vesuvius, and beautiful Roman villas nestled at its base. Two fashionable cities, Pompeii and Herculaneum, stood a short distance from the foot of the mountain, and not a single inhabitant dreamt of danger. Without warning, the mountain poured out volcanic ashes, melted rocks and mud, and buried these towns from sight. Long years after, a peasant digging a well struck his spade against a statue. This led to the uncovering of Pompeii, so that the traveller to-day can have a very good idea of how the old Romans lived.

At the head of the Adriatic Sea is Venice. The city is built on about a hundred small islands connected by bridges. Houses cover the islands, canals form the roadways, and gondolas the cabs.

AUSTRIA-HUNGARY

The double state of Austria-Hungary is, with the exception of Russia, the largest country in Europe. In this country we shall find many strange tongues and as many different peoples as there are different languages. From the map you will see that this is a land of two great plains and much mountainous country. On the west are the Alps. Across the centre are the Carpathians.

The plain of Hungary has been called the granary of Europe. What other granaries has Europe? Wheat, rye, and barley are extensively cultivated, and millions of sheep, cattle, and hogs are raised. Austria-Hungary not only feeds its own people, it also helps to feed the nations already mentioned. What are these?

Austria-Hungary has a very great frontier to defend, hence a huge army is necessary. Its coast line is but meagre and its position somewhat inland. In spite of all this, the country has made great progress.

Vienna, the capital of Austria-Hungary, is at one of the great continental cross roads, the meeting place of eight great railways, and is, next to Paris, the gayest city in Europe. One hundred and thirty miles lower down the Danube is Budapest, the capital of Hungary, and centre of the grain-growing district. Budapest is really two towns, one on each side of the river. To the north-east is the district of Galicia. In Galicia is situated one of the most interesting salt towns in the world. For eight hundred years rock salt has been mined and still there is abundance. In one of the largest rooms cut out of the solid salt far below the surface of the ground, a small village has been built, but the miners are not allowed now to remain underground for more than a week at a time. What else do you know of Galicia?

RUSSIA

Russia contains half of the whole area of Europe. The greater part of this huge expanse is a great plain sloping gradually down to the four seas. Name these. All the bordering seas may be looked upon as inland. One is entirely so, and the most important of the rest are connected with the ocean by narrow passages not under the control of Russia. How is this an obstacle?

The great plains of Russia are the coldest parts of Europe in the winter, for the country is, like Manitoba, far removed from the tempering ocean, and swept, now and again, by north winds which have no obstacles in the shape of mountains to check their violence. Russia also extends from the shores of the Arctic far south, so that a variety of climate may be expected. The summer season of central Russia is much the same as in Manitoba, a clear sky, a long day, a warm summer, and refreshing summer nights. The northern coast lies in the tundra country of the Cold Cap. The south-eastern part is a plain that is green for only a short time in the spring. If we travel from the Arctic coast to the Black Sea we first pass through tundras in every respect like those of our own Arctic lands. We next have to go through a magnificent forest hundreds of miles in width, and for the most part free from the woodman's axe. Coming out of the forest country, we enter a farming district where flax, rye, and hemp are cultivated in great quantities. This district lies in a region from which the forest has in part been cleared away. South of this is the strip of country known as the Black Earth belt, where the soil is a rich black to the depth of several feet, and where immense quantities of wheat, rye, and oats are raised. South-east of this is the Russian ranching country.

St. Petersburg. A view along the water front.

In the neighborhood of Moscow, coal and iron are found. Salt is found on the north-west shore of the Caspian, and coal oil on the south-west coast of the same sea. So great is the flow of oil that the southern Russian railroads use coal oil to fire their engines.

As lumbering, mining, and farming are the most important occupations of this country, only a very few of the Russian people live in cities and large towns. Russia, in fact, is a great farming nation; so great, that if all the people in the world could be gathered together, one out of every fifteen would be a Russian farmer.

In Russia farmers do not live on their farms as they do in Canada. Russian farmers are a village people, and the most important part of Russia is Village-Russia. The land about the village belongs to the village, and is divided among the various families at stated periods. Should a man leave his village for the city, or should he leave the country, his place in the village system will not be kept for him.

Warsaw, Moscow, and St. Petersburg are important manufacturing centres. Warsaw

and St. Petersburg manufacture cotton and linen cloth. Moscow has important iron and steel factories. Manufacturing is also carried on in the homes of the people, each village looking after some special line: it may be the making of Russian leather, or the making of concertinas.

For a long time Russia was slow in railway building. Now Warsaw and Moscow are great railway centres. Trade by water is carried on in the surrounding seas, and on the Volga and other navigable rivers. The great drawback to commerce has been the want of a good harbor free from ice, and Russia has been trying to obtain such a harbor ever since the time of Peter the Great, the Russian ruler who laid the foundations of St. Petersburg in the woods and swamps near the Baltic Sea. The Black Sea ports are good, but the outlet is guarded by Turkey. What is this outlet? Russian territory has been added rapidly to the east, the hope being that a desirable port on the Pacific would be found. This was stopped by the late Russian-Japanese war, when Port Arthur was taken from the Russians.

St. Petersburg is the Russian capital. What is its situation? Moscow is an older capital. Find out what you can of Napoleon's flight from Moscow. Warsaw is the capital of Poland, a country once independent but now divided among Austria-Hungary, Russia, and Germany.

BELGIUM

Belgium lies between France and Holland, and has often been called the "Buffer State." Can you give any reason for such a name? Here, again, we meet with small farms, with the farmhouses dotting the land so thickly that one would think that there was but one town, and that Belgium. Everybody is working,—men, women, and children. The people of this small country are fine farmers, the best in Europe, it is said. Belgium is a busy workshop too, and there are thousands of women and girls who do nothing but make lace. Brussels is the capital. Near Brussels is the battlefield of Waterloo, where the French under Napoleon Bonaparte were defeated by the armies under the Duke of Wellington in 1815.

HOLLAND

Holland, the Netherlands, or the Lowlands, is a land that has to be banked by great dikes of earth and stone to keep out the sea. Scarcely half the area is high enough above the level of the sea as not to require these embankments. The balance of the land the Dutch obtained from the sea after a long fight. Acre by acre, and farm by farm they got it, and they have in it one of the best garden spots in the world.

Look at the map of Europe. Notice the great bend in the Dutch coast. This is called the Zuider Zee, a great bed of shallow water which the people are now trying to drain. This area was once covered by farms, but the sea broke down the dike and flooded the country, drowning hundreds of people.

The canals of Holland if placed end to end would stretch a couple of thousand miles. As we go through Holland, we shall sometimes see ships sailing as it were through the green fields. In the winter season these ditches are used by skaters, either for business or for pleasure. Look at the figure on page 126. There are four Dutch features in this picture you should remember: the canals, the flat country, the windmills, and the cattle. As it is such a flat country, most of it being below the level of the sea, the western winds have a fine sweep; hence every farmer has his windmill to help him in his work. These windmills are also of great service in helping to pump out the

water that gathers on the land after every heavy fall of rain.

The green pastures of Holland feed thousands of cattle. Much butter is made, and both milk and butter find a ready market in England. The Dutch gardens are also worth seeing. What markets have they for vegetables? Their flower gardens, particularly their tulips, hyacinths, and other bulbous plants, are world-known. Many of the bulbs bought in our seed stores come from the Netherlands.

Grazing on the lowlands of the Netherlands. The picturesque windmills are very common in this region.

Three things more should be mentioned, namely, the storks, which sometimes build their nests in the chimney tops, the wooden shoes used by the children and even by those grown up, and the wonderfully clean condition of everything in the whole country. The capital of Holland is called The Hague.

DENMARK

Denmark has been called the "Keeper of the Baltic." Can you give any reason for this? Denmark is almost entirely a farming land. Its position favors a mild, moist air during the growing season, and the fertile level country of Denmark grows roots of all kinds, and pasture sufficient for an enormous number of horses, milch cows, and sheep. The country as a whole is suitable for dairying and poultry-raising, so that tons of the best butter in the world and millions of really fresh eggs are exported every year. If the people of London should give up buttering their bread or using eggs, Denmark would be a great loser. Copenhagen is the capital. What is its situation?

NORWAY AND SWEDEN

These countries occupy the peninsula of Scandinavia. What sea lies to the east? What to the west? Where are North Cape and the Naze? What have you to say of the Atlantic coast of Norway and of the Baltic coast of Sweden?

Norway is a mountainous region with many long, narrow, steep-sided river valleys, the lower portions of which are often drowned by the sea for more than one hundred miles inland. These valleys, known as fiords, are very beautiful and make excellent harbors, so that Norway is a country where the people naturally take to a seafaring life. Norwegian merchant ships are found in all parts of the world. The chief industries are connected with the forests which cover the sides of the mild, moist, mountainous west, and with fishing. What fish should you expect here? Christiania at the south is the capital.

On the Swedish side the land falls to the Baltic in three great steppes. The northern end of the highest steppe is a belt of forest. In the second steppe, minerals, particularly iron, are found. The lowest is the farming steppe, though the short summer in the north is not very favorable to this industry.

As the climate of forested Sweden is much like that of Canada, lumbering is carried on

The landing place for a Norwegian fishing village.

in the same manner. What is this? Several thousand saw-mills run by the water-power of the Swedish streams give us some idea of this industry. Pine and fir are the principal trees of Sweden. Stockholm is the capital. What is its position?

In the northern portion of the peninsula, and situated more in Russia than in either Norway or Sweden, is the home of the Lapplanders, a people much like the Eskimo. Some of the Lapps live in tents made of skins stretched upon poles, with a hole at the top for the smoke to go out. Others have huts of stone, earth, in fact of anything that can be made to stick together. These people belong to the yellow race. The Lapps roam about the country, for they have to follow their herds of half-wild reindeer from pasture to pasture. The reindeer supplies them with milk, flesh, and covering, and is used as a beast of draught.

SWITZERLAND

This is the most mountainous country in Europe. Switzerland contains the highest range of the Alps. In Switzerland a traveller may see peaks between two and three miles in height, and some of these are covered with snow in summer as well as in winter. The higher valleys are the channels of the great glaciers which come down into the forest edges and even into the pasture lands. Under such circumstances, the higher and more exposed areas are devoted to forests and pastures, and the more sheltered and lower lands are used for growing grapes, a small quantity of grain, and garden stuff.

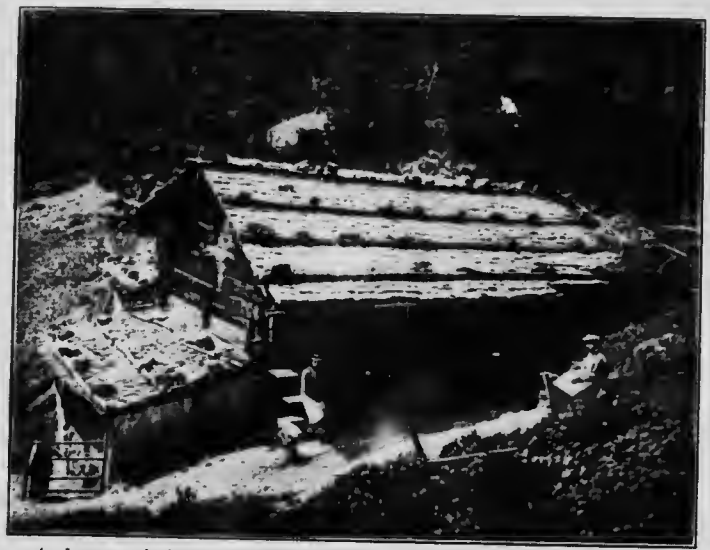
Switzerland is entirely inland. What countries surround it? What languages should be spoken in various parts of the country? Can you see how dependent the Swiss are upon these outside nations? Will Switzerland be in favor of war or of peace?

The people are always busy. Their little country is surrounded by wealthy nations with whom they carry on a trade in watches, clocks, music boxes, lace, and many

Climbing over the ice on Mont Blanc. The ladder bridges an ice crack over a hundred feet deep.

other things all made by themselves with the aid of the many mountain streams which furnish the power to run the machinery. How is this done?

Swiss farms are very small, and some of them are far from being level. The cattle feed high up on the mountain sides. Hay is grown on small patches of land, and has often to be carried down the mountains on the backs of men and women. Even timber



A characteristic house in Switzerland. The roof is held down by the weight of the rocks.

has to be cut away up the mountains, and bundles of faggots are carried to the homes lower down.

Many tourists go to Switzerland every year to climb the mountains and to enjoy the magnificent scenery. So much is this country given to this sort of thing that it has come to be called the "playground of Europe." The Swiss are a brave, strong, and liberty-loving race. Once the country was held by Austria, but the Swiss struggled until the hated yoke was removed. What do you know of the story of William Tell? Berne, an old-fashioned town, lying under the shadow of the Alps, is the capital.

SPAIN AND PORTUGAL

The Iberian peninsula touches several bodies of water. Name them. What mountains separate the peninsula from France? What British possession lies in the south?

Spain and Portugal are crossed by many ranges of mountains, with rich valleys and dreary plains lying between them. Although the coast is quite long, it is so steep and h, a that there are very few harbors. On the plateau portion, the summers are very hot and the winters very cold. In the south, particularly the south-east, the soil and climate are very favorable to fruit-growing, so that oranges, grapes, prunes, and raisins are extremely plentiful.

Spain is a fine sheep country, and great flocks of Merino sheep are raised. In Portugal the woods contain the cork oak, from the bark of which many useful cork articles are made. Name several of these.

More than half of the Spanish population are farmers, but, as a rule, they use poor methods. A great part of Spain has to be irrigated. Where this is done Spain grows the finest olives, oranges, grapes, and all sorts of vegetables. Grape growing is the most important industry in both Spain and Portugal. The grapes are packed in cork-dust and sent all over the world. Some varieties are dried and made into raisins. Malaga, on the southern coast, is noted for its raisins. The Spaniards are proud and lazy, but brave and very devoted to their country. Their chief sport is the bull-fight. Tell how this is conducted.

Madrid, the Spanish capital, is a great square city surrounded by a wall. Its climate is too hot for comfort in summer and too cold in winter. Lisbon, at the

A distant view of the Acropolis at Athens, with the ruins of the Temple of Jupiter in the foreground.

month of the Tagus, is the capital of Portugal. The town is built on hills encircling the splendid harbor. Lisbon was all but destroyed in 1755 by an earthquake. Portugal is noted for its fine fruits, its great vineyards, its cattle, sheep, and hogs, and its lovely roses. The Portuguese are somewhat like the Spaniards in appearance, but are not so large.

GREECE

en the rest of Europe was inhabited by wild beasts and wilder men, Greece had cities and towns and cultivated farms. The ancient Greeks were noted for their beauty and their strength. They were highly cultured, and they built some of the finest temples and carved the most beautiful statues that the world has ever looked upon.

The coast-line of Greece is very long for the size of the little country. The surface is covered with masses of mountains, most of which have spurs running out to the sea, forming good harbors. Such surroundings naturally produced a race of sailors, and ancient Greece was as strong at sea as she was on land. On the western coast are a number of small islands noted for years for their production of store-currants. Athens is the capital. Where is it situated?

Natives of Wallachia, a province of Roumania showing the native style of dress.

THE BALKAN COUNTRIES

Europe seems strange to us after our study of North America. Why are there so many countries in such a small continent? The answer is simple if you remember the number of different races coming to Europe from Asia. Had this occurred within the last hundred years, the chances are that Europe would have been divided into a few large countries. As it was, the various settlements were well protected by mountains and by the sea, and so were left alone. Now, neither mountains nor seas are impassable to a conqueror.

The small countries of the Balkan peninsula remind us of the numerous small states of Central America. At one time Turkey was mistress of the countries of this peninsula, but Turkish government was not the kind of rule the people of Roumania, Servia, Montenegro, and Bulgaria desired, and there was a separation just as soon as favorable circumstances arose.

The Turks are a yellow race which conquered western Asia, northern Africa, and the Balkan peninsula of Europe many years ago.

In religion they are Mohammedans, that is, followers of Mohammed, a religious leader and author who lived in Arabia near the close of the sixth century.

Roumania grows maize and wheat. Describe the Roumanian dress from the picture. Servia is a mass of forest-clad mountains. Plums and figs are the chief products. Bulgaria is largely mountainous, but agriculture of an inferior kind is carried on in the south. Attar of roses, one of the most expensive perfumes known, is a product of Bulgaria. The mild climate south of the Balkan mountains permits the cultivation of immense numbers of roses. Montenegro is a small and barren land, from which a hardy, thrifty people are constantly emigrating. Turkey is one of the most backward countries in Europe, because it is badly governed, and the Mohammedans are not favorable to the settlement of races having more modern ideas of progress. In Turkey there are vast rose farms. The roses are picked when in full bloom and from their leaves attar of roses, a sort of oil, is extracted.

A view of the Golden Horn, the beautiful harbor of Constantinople, which is the principal city of the Balkan Peninsula.

The ruler of Turkey is the head of the Mohammedan religion, and is called the "Sultan." His revenue is obtained by taxing his people, each of whom has to give a tenth of all he grows. How will this affect the Turkish farmers?

Constantinople, the capital of Turkey, is said to be one of the most beautiful cities in the world. Its site is so central that a great city was founded here between two and three thousand years ago. Then, when the Roman Empire was greatest, the Emperor Constantine selected this city as his capital and called it by its present name. Constantinople is situated on a beautiful harbor called the Golden Horn. In the city are magnificent mosques, or Mohammedan churches. One of these, Saint Sophia, was built as a Christian church centuries ago. To-day this church is one of the largest and most beautiful mosques in the world. At the building of Saint Sophia ten thousand masons were employed for ten years. Its doors are of ivory and cedar, and its altar is embedded with precious stones.

QUESTIONS. 1. What and where are Malaga, Venice, Athens, Manchester, and Moscow? 2. Beginning at the north, mention the bodies of water you would pass through, the capes you would pass, the river-mouths you would see, and the coast cities you might visit on a coasting trip from the southern end of the White Sea to the eastern end of the Black Sea. 3. Find out what you can of mountain-climbing in Switzerland. 4. On a map of Europe show (*a*) the positions of all the countries (no boundaries asked); (*b*) the capitals of the more important countries;

(*c*) the Alps, Scandinavian Mountains, Carpathians, and Pyrenees; (*d*) three important rivers; (*e*) the British Isles. 5. What countries border on (*a*) the Baltic, (*b*) the North Sea, (*c*) the Mediterranean Sea? 6. Describe a visit to a Russian farming community. What would you probably have to eat were you asked to stay to dinner? 7. Describe a vineyard scene during the grape-picking season. 8. What European countries produce wine, wheat, butter, raisins, silk, and toys? 9. Describe a journey up the Rhine and down the Danube. 10. Make a map of the British Isles and show (*a*) the coast-waters, (*b*) the countries, (*c*) the principal cities. 11. Who is king of the British Empire? What is the German Emperor's name? What do you mean by Greater Britain? 12. Why do the people of Holland and Denmark engage in dairying? Why are matches made in Sweden and not in Greece? Why are the people of Hungary farmers? Why is there so much manufacturing in England?

The position of South America among the continents.

SOUTH AMERICA

What continent is shown here? What is its shape? Is it larger or smaller than North America? What oceans are separated by it? Which of these lies to the east? What continent is seen at the north? What continent lies to the east? What is the name of the isthmus connecting North and South America? Point out the "elbow" of Brazil, Cape Horn, and Magellan Strait. What great highlands lie along the western side? How many highland regions are to be seen? Where is each situated? How many great rivers should there be on account of these three highlands? On which side of North America are the main highlands? On which side of the Andes have we the longer slope? The steeper slope? The longest rivers? The most rapid rivers? What coast opening is seen between the isthmus and Cape St. Roque? What do you know of the river emptying into this opening? What opening is found on the south-eastern coast? What do you remember of the region drained into this opening? Describe the west coast. What causes the curve about the centre of this coast? On what continent would you land were you to sail across the Pacific Ocean from the middle of the western coast? Outline South America on the blackboard and in your exercise book.

Surface. Keeping the map before you, note that from Cape Horn to the Isthmus of Panama, the Andes, the main highlands of South America, run in an almost unbroken chain. From the southern end of the mainland these highlands run for about 2,000 miles in a single line until the great curve in the western coast is reached. From this point they become a double chain, and at the equator a triple chain. Throughout their entire course they are practically unbroken by water gaps. They rise above the line of perpetual snow; contain many active volcanoes; and are the scenes of almost daily earthquakes. Some of the peaks are four miles in height. The width of the Andes north of the great bend in the coast is several hundred miles. In no other continent have we a wall of rock quite so long, so high, and so uneven as we have here in the Andes of South America.

Note also on the map two other highland regions. You will see a great triangular mass to the east, and another mass to the north. The former is called the Brazilian, and the latter the Guiana Highlands. The Brazilian Highlands explain the eastern projection of South America. They cover a large area of country and are of considerable height near the coast. The Guiana Highlands at the north, the Brazilian Highlands on the south, and the Andean High-

SOUTH AMERICA
(Physical)
SCALE
640 Statute Miles to one inch
EXPLANATION
CARIBBEAN SEA
TRINIDAD
Gulf of Darien
ISTHMUS OF PANAMA
Lake Maracaibo
LLANOS OF THE ORINOCO
GUIANA HIGHLANDS
TUMUC-HUMAC MTS.
Mouths of the Amazon R.
GALÁPAGOS Is.
EQUATOR
Cotopaxi Vol.
Mt. Chimborazo
Gulf of Guayaquil
PUNTA PARIÑA
SELVAS OF THE AMAZON
Rio Negro
Amazon
Madeira R.
Tapajos
Xingu R.
Tocantins R.
Huascan Pk.
ANDES
RAINLESS COAST
Drainage Divide
Misti Vol.
Titicaca
Mt. Illampu (Sorata)
Illimani
PLATEAU OF BOLIVIA
MATTO GROSSO
CAMPOS
XARAYES MARSH
GRAN CHACO
Paraguay R.
Paraná R.
BRAZILIAN HIGHLANDS
SERRA DO MAR
SERRA DO ESPINHAÇO
C. FRIO
Tropic of Capricorn
ATACAMA DESERT
DESPOBLADO PLATEAU
Pilcomayo R.
SALINAS
Uruguay R.
Rio de la Plata
JUAN FERNANDEZ Is.
Aconcagua Vol.
Uspallata Pass
PAMPAS
6500 ft.
Colorado R.
Bahia Blanca
Gulf of San Matias
CHILOE I.
CHONOS ARCHIPELAGO
Bay of San Jorge
PATAGONIA
WELLINGTON I.
FALKLAND Is.
Strait of Magellan
TIERRA DEL FUEGO
SOUTH GEORGIA
C. HORN
PACIFIC OCEAN
ATLANTIC OCEAN
Latitude North
Latitude South
Longitude 80° West from Greenwich

lands on the west, form one of the greatest river valleys in the world—the valley of the Amazon. Again, the Brazilian Highlands and the Andes of the south form another great valley, that of the La Plata. The Guiana Highlands and the northern Andes form, at the north, the third great South American valley, that of the Orinoco. Study the locations of the three great highland regions and the three great river valleys mentioned, and place them on the maps outlined in your exercise book.

If you will again examine the map you will see two land colors, yellow and green. The yellow pictures all the land above a mile in height, while the green shows the land under 650 feet in height. The meaning of the remaining colors may be found from the color-key on the map. A study of the colors mentioned shows us something of the land-surface we should not forget. Fully half of the land is below 650 feet, and much of the remainder is about 10,000 feet, too high for human habitation.

Would you expect the climate of South America as a whole to be warmer or colder than that of North America? Through what part of South America does the equator pass? What portion of South America lies in the Hot Belt, or Torrid Zone? What is the position of the Tropic of Capricorn? How much of South America lies in the south Temperate Zone? What portions of the continent are likely to be covered by snow? Why do you think so? From what direction does the principal wind of Australia come? South America, north of the La Plata, is under the influence of two sets of winds. The Amazon valley and the country to the north is exposed to what are called the *North-East Trades*, or winds from the north-east, while the Brazilian Highlands to the south-east are under the influence of the *South-East Trades*. As these winds are warm and moisture-laden, the greater portion of the eastern slope of South America is well watered. Is the western coast as well watered? What you saw true of North America regarding the Pacific winds should be true here as to the Atlantic winds, namely, that the highlands of the west will drain the air passing over them from the east, and that the air will move down the western slopes as warm, dry air. As a result the middle coast region of South America is occupied by the desert of Atacama which stretches from the neighborhood of the equator to a point far south of the Tropic of Capricorn. The western coast, however, is well watered beyond the desert ends. At the north the rainfall is very heavy. At the south the rain-bearing winds come from the north-west and pass to the east of the Andes as dry winds. What should you expect is the character of the region marked as the Plateau of Patagonia?

The Great River Valleys. The valley of the Amazon is mostly a tropical forest jungle, called the Selvas, and it supports the densest mass of vegetation on the globe, a huge dark, dense, hot, damp jungle where the natives have little chance to be anything else than lazy, shiftless savages. Out of sight of the clearings, a traveller without a compass would be helpless in the Amazon woods.

Though not the longest river in the world, the Amazon has the largest basin and the greatest volume of water. The rainfall of the valley averages six feet per year, enough to drown one, if the water did not flow away. At flood-time the valley for a thousand miles back from the Atlantic is a great inland sea from fifteen to a hundred miles in width. The greater part of the valley is a pathless forest. There are so many streams, however, that most of it may be reached by water. The funnel-shaped mouth of the Amazon is almost as large as Scotland. Up this wide estuary for nearly five hundred miles, a tidal wave or wall of water from six to twelve feet high rushes at the rate of ten miles an hour.

Think of a river whose current is felt two hundred miles at sea, whose mouth is so wide that the opposite banks for the greater part of the course are not in sight of each other, and whose main stream is watered by over a hundred tributaries, into each of which scores of smaller streams flow. Is there any wonder that such a stream should be said to have 25,000 miles of navigable water, seeing that after the first great plunges are made in the highlands of the Andes, the remainder of the river drops

but a few inches to the mile? Two tributaries should be remembered. One of these is a stream from the north, the *Negro*; the other comes from the south, and is called the *Madeira*. In the basin of the Negro are to be found some of the finest Brazil nuts, or "nigger toes," in the Amazon valley. The upper waters of this river have their rise in the divide separating the Orinoco from the Amazon. At high water a real union of the two great river-systems is said to take place. The Madeira river also effects a union with the Parana of the south, when the low divide separating these streams becomes flooded during high water.

In the lower Amazon valley, palms, figs, and bamboo are the principal trees, around which enormous creepers twine, and from the branches of which beautiful orchids hang. Wild rubber trees are also found in this valley, and from this a very important industry arises, an industry of very great value to people forced to use rubber goods of various kinds. Crude rubber is gathered by the Indians here and there throughout the valley. The rubber tree grows best where the land is flooded a part of the year. It is a large tree, with leaves somewhat like ash leaves and with a smooth bark. The gatherer makes a gash in the tree and collects the thick milky juice in a tin cup or a gourd. In each cup a few tablespoonfuls of liquid collect. This is all gathered and taken to a place where it is smoked over a fire of palm nuts. The nuts are placed under a sheet-iron cone with a hole in the top, and several holes in the side to let out the dense smoke and let in the air to keep the fire burning. A small paddle is then dipped into the white liquid, immersed in the dense smoke, and constantly turned about so that every bit of the liquid will come under the astringent effects of the smoke. The liquid rubber hardens, blackens and thickens. Fresh liquid is added and the process is continued until the mass of rubber becomes unwieldy and is removed by slitting the rubber and sliding down one side of the paddle. Crude rubber is made at various places hundreds of miles up the river and taken finally to Para, quite a modern city, situated near the mouth of the river. From Para the rubber finds its way to all the important northern countries, where it is made into rubber boots, coats, bicycle tubes, etc.

In the upper Amazon valley the cinchona tree is found. This is the tree which produces the quinine of commerce. Indians gather the bark of the wild trees and carry it on their backs to the markets. Plantations of cinchona have been started in various countries where the climate and soil are similar to this part of South America.

Why is the Amazon valley not covered with beautiful farms, where the banana, the manioc, maize, the sweet potato, and many other useful food plants will grow? Think of the work required to clear away such a tangle of trees. Think of a region where the sun beats down all day so that even the natives do not care to work during the noon hours. Think of a land having such an abundance of rain that the forest floor becomes one great endless swamp. Is such a region a suitable home for the people we are acquainted with? Many spots in this valley yield the things mentioned, but the valley as a whole is left almost as nature made it, a great mass of trees and climbing plants, a suitable home for numberless alligators, boa-constrictors, long-tailed monkeys, birds of splendid colors, and insects of all descriptions.

The Orinoco is about 1,500 miles long and the main stream is navigable for upwards of 1,000 miles. On the upper waters are immense grassy plains upon which thousands of cattle feed. These are reared for their flesh and their hides, which are

shipped largely to Europe and to North America.

The valley of the La Plata is the most important valley in South America, for its climate and its soil favor the growth of such products as northern nations have found profitable. While studying this region, do not forget that *north* means nearer the equator, while *south* means the opposite.

As we go south from the equator the rains lessen, so that the northern portion of the La Plata valley is much warmer and moister than the southern. Indeed, towards the far south the land becomes less and less able to feed flocks and herds, until, finally, it passes into a desert-like country where plant life is barely enough to nourish such an animal as the rhea, or South American ostrich, a bird resembling the Australian emu in many particulars. This bird furnishes rare sport to the natives, who chase it on horseback and capture it with the *bolos*, a long leathern rope to the end of which an iron ball is attached. The bolos is swung a few times around the horseman's head and then flung at the bird with the hope of breaking its legs or of winding the rope-end about the neck or the legs in such a way as to check its running and thus lead to its capture. From the coarser feathers of this bird, feather dusters are made.

Alligators.

The outlet of this great southern valley is the Rio de la Plata, or Plate River. This is simply the estuary or sea-mouth of the River Parana, which throws into it every year such an immense quantity of sediment that the La Plata water looks almost as thick as rich soup. The Parana has a peculiar course. Notice the great bends as you come down the river. Describe them. Are there many tributaries? Name the principal tributary.

The Argentine Republic, Uruguay, and Paraguay. The greater portion of the Parana valley lies in what is called the Argentine Republic, that is, the Silver State. The part directly to the south of the La Plata and to the west is prairie land, or *pampas*. The country to the north becomes more and more wooded until it finally mingles with the great forest country already described. One of the chief grasses is the tall, feathery pampas grass, which grows to a height of eight feet. On the grassy plains immense herds of cattle and horses, and great flocks of sheep are to be found, the sheep lands being toward the south. Why? The cattle of the Argentine ranches cannot profitably be shipped alive to Europe, but large quantities of hides, tallow, hoofs, and bones are sent. What is done with each of these products? North of the La Plata, in the country of Uruguay, similar conditions are to be met with. Rosario, on the Parana, is the great wheat port of the country on both sides of the river. The banks of the river are high, so that farmers driving in with their loads of wheat have nothing to do but empty the bags into a large hopper at the top of the bank and let the wheat slide down a long chute into the holds of the vessels.

The farms in this prairie country are large. In this respect they are like those of the Canadian West. The Argentine Republic, however, has its drawbacks. Some years are too dry and a short crop is

the result. Sometimes the grasshoppers are a nuisance. On the whole, the farmers of the Argentine Republic send great quantities of wheat to Europe, use the most up-to-date machinery, and year by year are becoming more and more wealthy.

Toward the foot-hills, in the neighborhood of Mendoza, is one of the largest of South America's grape centres, and trainloads of the luscious fruit and many gallons of wine are shipped to Buenos Ayres and to other Argentine cities. To the north is the country of the maize, the sugar-cane, and the orange.

What a splendid country for people not afraid of hard work! The shepherds are largely Italians, who live with their families in small, poor-looking shacks on the pampas. The cowboys are the famous *gauchos*, some of the finest horsemen in the world. The gauchos are the descendants of Spanish and Indian ancestors. Many of them wear slouch hats; each carries a whip, and all are armed with knives and know how to use them. In the cities the Spanish language is commonly spoken, and Spanish customs are usually the customs of South America. Still there are many foreigners, including large numbers of British and German settlers.

In the valley just outside of Cordoba.

What city controls this fertile valley, and where is this city situated? Why should it be placed near the lower end of the valley? This city is called Buenos Ayres (good winds), and it well deserves its name, for it is considered among the healthiest cities of the world. The population of Buenos Ayres more than a million. The picture will give you some idea of one of its principal corners. At Buenos Ayres all the foreign stuff coming into the country is collected and distributed by the numerous railways leading west, north-west, and north, and also by the Parana river. In no portion of South America is railway progress more advanced than in the Argentine Republic, a fact no doubt due to the level character of the land and therefore the absence of deep cuttings and heavy embankments. These railways collect the wool, beef, hides, bones, tallow, etc., meant for export. The great drawback to the city is the amount of sediment poured into the La Plata. Quantities of this are constantly settling in the harbor, and steady dredging is necessary to keep the water deep enough to float the larger ocean boats safely.

Paraguay, a state entirely inland but lying for the most part in the valley of the La Plata, is badly handicapped for want of railways. The country between the Parana and the Paraguay rivers is wonderfully fertile, producing oranges of fine flavor, and also such quantities of tobacco that even the children smoke cigars. The northern country, the region marked on the map as El Gran Chaco, is the "wild west" of Paraguay. This is a forest country well filled with wild animals, valuable timber, and an abundance of a shrub called "Paraguay tea," which is collected by the native Indians and distributed over a great portion of South America. This tea is said to be very refreshing,


SOUTH AMERICA
(Political)
SCALE
0 100 300 500 700
640 Statute Miles to one inch
Capitals of Countries & Other Cities
Comparative Area
80,000
Square Miles
CARIBBEAN SEA
VENEZUELA
COLOMBIA
GUIANA
ECUADOR
PERU
BOLIVIA
BRAZIL
PARAGUAY
URUGUAY
ARGENTINE
REPUBLIC
CHILE
PACIFIC
OCEAN
ATLANTIC
OCEAN
NICARAGUA
MANAGUA
COSTA RICA
SAN JOSE
CARACAS
Maracaibo
Merida
Buenaventura
Esmeraldas
GALAPAGOS Is.
Guayaquil
Payta
Chiclayo
Trujillo
Huaraz
Lima
Callao
Ayacucho
Cuzco
Puno
Arequipa
Mollendo
Tacna
Iquique
Antofagasta
Tropic of Capricorn
Copiapo
La Serena
Coquimbo
Valparaiso
Santiago
Talca
Talcahuano
Chillan
La Concepcion
Valdivia
Puerto Montt
Chiloe I.
CHONOS
ARCHIPELAGO
Taytao Penin.
G. of Peñas
Wellington I.
Hanover I.
Strait of Magellan
Punta Arenas
TIERRA DEL FUEGO
Staten I.
C. Horn
Santa Cruz
C. Blanco
Bay of San Jorge
Chubut
Gulf of San Matias
San Jose Penin.
Bahia Blanca
C. San Antonio
Rio de la Plata
MONTEVIDEO
BUENOS AIRES
La Plata
Rosario
Parana
Santa Fe
Cordoba
San Juan
Mendoza
Tucuman
Santiago del Estero
Corrientes
Jujuy
Salta
ASUNCION
Villa Rica
Salto
Paysandu
Colonia
Pelotas
Rio Grande do Sul
Porto Alegre
Lagoa dos Patos
Desterro
Paranagua
Santos
Sao Paulo
RIO DE JANEIRO
Nictheroy
C. Frio
Campos
Ouro Preto
Diamantina
Goyaz
Cuyaba
Matto Grosso
Trinidad
Santa Cruz
SUCRE OR CHUQUISACA
Potosi
Bahia
Bahia de Todos os Santos
Aracaju
Recife
Pernambuco
Theresina
Santarem
Para
Belem
Manaos
Amazon R.
FALKLAND Is. (Br.)
Port Stanley
E. Falkland
W. Falkland
SOUTH GEORGIA (Br.)
SAN AMBROSIO Y SAN FELIX (To Chile)
JUAN FERNANDEZ Is. (To Chile)
Longitude 100° West from Greenwich
Latitude North
Latitude South
20°
40°
60°
80°

and many South Americans take no other beverage for their breakfast.

In the Chaco are to be found alligators, jaguars, peccaries, wild dogs, and the curious tapir, with a head like a pig and a body as large as a pony. The jaguar is the South American leopard, and there are jaguars so large and so powerful that they can carry off an ox. The peccary is a small wild pig which will not hesitate to attack even man. Many a traveller in the South American forest has had to climb a tree in order to be secure from these ferocious little porkers. Peccaries live on roots and fruits and are usually found in small herds. To the east of the Chaco is the Matto Grosso, or great forest. The Matto Grosso is one of the great South American hunting grounds. In this region are to be found wild animals and even wilder Indians. One sees here the beautiful red and blue toucan, or billbird. One may also see great troops of long-tailed monkeys, swinging from tree to tree; alligators are found by the numerous swampy rivers; and herds of cattle in the forest glades. West of the Matto Grosso, Paraguay tea grows in great abundance.

Brazil. The country of greatest extent in South America is Brazil, which covers the whole eastern elbow of the continent, and is noted not only for its wonderful Amazon valley, but also for its coffee and sugar plantations, and its diamond mines. Find the situation of Rio de Janeiro on the map. This is the greatest coffee town in the world. Indeed, without the coffee plantations stretching out several hundred miles in every direction, the *Queen of the South* as it is called, would be but a small place.

To reach the coffee plantations we must go through a very rugged country, over plains covered with grass, through clumps of palms and through forests of hardwood trees; past banana plantations and orange and lemon orchards until we reach the red lands of Brazil, the famous coffee soil of South America.

Most of the coffee is grown on large plantations, some estates having millions of trees set out. The whole farm is covered with a mantle of green, the bushes are laid out in straight lines, and the coffee plants are in different stages of growth. A great deal of labor is required to raise coffee successfully, and upon one farm may be found four or five thousand men, women, and children at work. A good tree produces three or four pounds of coffee beans in a year, and such a tree, if cared for, will live to bear crops for a quarter of a century and more. The trees blossom in December and the berries are ready for picking by April or May. What a busy season the picking is! Everybody is at work, some picking, others carrying the well-filled baskets to wagons and cars which convey them to the coffee machines. These are very complex pieces of machinery for removing the the pulp and setting the seeds free. After the seeds come from these machines, they are scoured clean and most carefully dried in the sun for several weeks. After drying, each bean has its tough outer coat removed and also its thinner inner coat, before it is ready for shipment. Brazil supplies almost the whole of our continent with coffee.

Rio de Janeiro (January River) is the second largest city in South America. What is the name of the largest city? Rio is beautifully situated on a wonderful harbor. Into this harbor vessels come from all parts of the world, and gangs of men of all colors are busily engaged in loading them with sacks of coffee.

Portuguese is the language spoken in Brazil, and Spanish the language spoken almost everywhere else in South America. How this came about is very interesting.

His Holiness, the Pope, fearing that the Spanish and Portuguese might come to blows during their early occupation of this continent, divided South America by a north and south line so that Spain should have the full control of the country to the west and Portugal the full control to the east of it. It will be interesting for the boys and girls to debate the question: Who got the better of this arrangement?

The Pacific Coast. There are several things we should bear in mind in our study

A view of the city and harbor of Rio de Janeiro.

of the Pacific Coast lands. In the first place there is but a narrow strip of land lying between the sea edge and the Andean Highlands. This suggests a variety of climate from the sea inwards. Again, a great deal of this land is but a sandy desert, the situation of which has already been pointed out.

Beginning with the desert as the easiest area to study on this coast, we shall touch upon two or three features which, we think, should be known. The country about Lima, the capital of the country marked Peru, is a fair type of many desert areas in this portion of the world. Lima is situated on a river which obtains its supply of water from the snow-covered Andes. These mountains are so high that the snow falling upon them piles up, is pressed into ice, and this ice, pushing out from the bottom of the great cap of snow, flows slowly down the mountain valley until it reaches the snow-line, where it melts and forms a river. The presence of such a stream in the desert has made this river valley wonderfully fertile. There are plantations of sugar-cane, rice, tobacco, and cotton. Oranges, grapes, bananas, lemons, peaches, plums, cherries, figs, and dates are also grown in great abundance. The cotton grown is a particularly valuable kind, being reddish in color and of so long a fibre that it mixes well with wool. Most of the farming is done in a small way, the fields being cultivated by oxen yoked to ploughs. There are a few large farms owned by people of Spanish and Indian blood. Labor is usually performed by the descendants of those Indians whom Pizarro so treacherously conquered. When the Spaniards took Peru some three hundred and fifty years ago they found that it was a land of precious metals. They robbed the native temples of great heaps of gold stored there. At one place they found so great a mass of gold that fifty horses were required to carry it to the coast.

The houses of Lima are built of mud so prepared that some of the buildings look like marble palaces. What use could one make of an umbrella in such a land? The Peruvian people are very polite. Ask a Peruvian to direct you to a certain street and he will probably go along to show you the way.

From Lima we can go up the Andes by rail. Think of rising a mile high in a few hours! The Peruvian Andes have

long been noted for their silver and gold. No wonder the Spaniards were so anxious to conquer and to hold this part of South America. If we go by rail to the higher plateau country we shall probably become acquainted with the llama, the alpaca, and the condor, which are found in

The condor, the largest flying bird in the world.

the higher lands of South America. The llama is a beast of burden. The alpaca is covered with long silky wool highly prized as a material for shawls, umbrellas, etc. A llama is not much bigger than a sheep; some of them are white, others black or brown, and all are sure footed on the slippery rocks and the narrow mountain paths. The condor is the largest flying bird in the world. Its home is among the highest mountain tops.

If we travel a little to the south-east we shall reach Lake Titicaca, one of the highest lakes in the world. More wonderful still, we may cross this lake on a fine steamer, every part of which was built in Great Britain. How could such a steamer be placed on this lake?

Another feature of the desert country is the presence of great quantities of nitrate of soda, or as it is called, Chili saltpetre. This salt readily dissolves in water, hence a desert region is the only possible spot where soda mines may be found. Nitrate of soda, then, is a salt lying under the sands of southern Atacama. How it got there does not matter. The important thing is that it is to be found in this region, and that it is much sought after by northern countries as a fertilizer and for making nitrate of potash, which is used for making gunpowder. To get the crude nitrate, holes several feet in depth are sunk and the nitrate blocks are then blown up by blasting powder. These mines bring many people into the desert for the same reason that the gold mines of the Klondike have led to the settlement of portions of north-western Canada.

Next to nitrate of soda in importance are the immense quantities of guano found on many of the rocky islands off the west coast of this region. Guano is a mixture of the manure of birds, fish, etc. Pelicans and gulls have made these rocks their homes for ages, one result being that this material has accumulated and is now being used as a fertilizer on some of the best farms in the United States and Europe.

Chili is a long, narrow, mountainous country stretching about half the length of the western coast of South America. The mountains are very high and of great beauty. A range of low mountains toward the south forms with the

Lake Titicaca, one of the few large lakes in the world at a high elevation.

main Andes a valley some 500 miles long and 30 miles wide. This is one of the most important farming areas in Chili. Rains from the Pacific, and mountain rivers from the snow caps of the higher Andes, furnish abundant water.

The northern part of Chili is dry, and,

as we have noted, is valuable for its mines of nitrate of soda. The central portion of the country, in particular the valley mentioned, forms the agricultural area in which

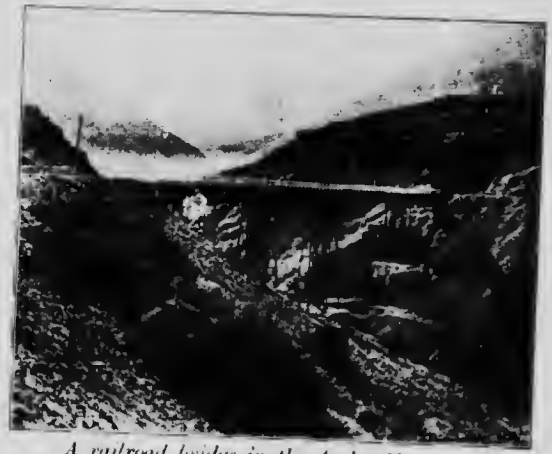
Chilean Carts.

cattle, wheat, and fruit are raised. The southern part has a very rugged coast line and an abundance of forest growth, suggesting the occupations of fishing and of lumber.

Valparaiso is the leading port on the Pacific. The harbor is large and well protected, but so shallow that vessels cannot load from the wharves. Cargoes have therefore to be transferred by means of *lighters*, small boats which carry the goods back and forth between the anchored vessels and the shore. A railroad is being built across the Andes between Valparaiso and Buenos Ayres. On the completion of this line, a trip across the continent may be made in a little more than a day. How long does it take to make the journey across Canada?

Close to the southern end of South America the Atlantic and Pacific oceans are joined by a narrow, irregular strait known as the Strait of Magellan, so named after Magellan, who first passed through it on the memorable first voyage around the world in the year 1520.

Ferdinand Magellan, a Portuguese navigator in the service of Spain, left Spain in September, 1519, with five small ships and crews of 280 men. After crossing the Atlantic, Magellan landed at Rio, entered the La Plata, passed through the Strait and crossed the broad Pacific to the East Indies, where he was slain by the natives. Those of his company who remained crossed the Indian Ocean, rounded the Cape of Good Hope and finally reached Spain, three years from the date of leaving. Of the five ships, the "Victoria," a vessel of 85 tons, reached home, and of the 280 men only 19 remained. Magellan and his crew endured all kinds of hardships in their wonderful voyage. Mutiny had to be met, cold endured, and hunger and thirst borne. Think of these first explorers on the unknown Pacific, with



A railroad bridge in the Andes Mountains in Chile.

the water in the tanks rotten and the food supply reduced to wormy biscuits and the leather of the ropes. Surely when men have endured so much to find

out the unknown spots of the earth and open trails through forest, mountain, plain, and sea,—surely a study of Geography should be worth one's while.

Fifty years after this memorable voyage, Sir Francis Drake covered the same ground and experienced pretty much the same inconveniences; but this is a story you should know for its own sake. Perhaps your teacher will tell you about it. Since those early voyages the world has been circumnavigated, as it is called, very many times, and to-day no one thinks the journey other than a very pleasant trip.

The Strait of Magellan is much used by steam vessels, and Punta Arenas, or Sandy Point, at the extreme southern end of the mainland, is a coaling station for all such ships when on their way from ocean to ocean. Sailing vessels have to go around Cape Horn, usually a rough trip on account of the constant stormy weather of this part of the world.

The large island of Tierra del Fuego, or *Land of Fire*, is one of the many wooded islands off southern South America. Around the island is a rim of mountains, some of which send glaciers down to the sea. The interior is covered with a rich vegetation and the mountain slopes are well wooded with beech and other trees. Wild fruits abound in season, and many large flocks of sheep graze on the rich pastures.

The countries of Colombia and Ecuador at the north are lands of mountains and high plains. The Andes run through Colombia in three high chains enclosing two of the most fertile river valleys in all South America. In Colombia one will see plantations of sugar-cane, coffee, and cocoa; banana fields and large orange orchards. The cacao tree, from the seeds of which chocolate and cocoa for eating and drinking are procured, grows best in hot countries. Cacao trees are grown from fresh seeds planted in rows about five yards apart. The trees, which often reach a height of thirty feet, begin to bear in the sixth year and reach full fruit-bearing about the tenth year. The pod yielding the seeds is of a golden color and contains from twenty to thirty-five seeds.

In 1881, de Lesseps, a Frenchman, organized a company to cut a canal across the Isthmus of Panama. This company failed, and the new company which was formed sold its rights to the United States, which will complete the canal in a few years. When this great work is opened, steamers from the United States,

Cotopaxi, one of the most famous peaks of the Andes.

Canada, and Europe to North American ports on the Pacific will no longer have to sail around the Horn, an extra journey of some 9,000 miles. Such a canal will be to the Americas what the Suez Canal is to the Old World.

Ecuador is the most tropical part of western South America. Along the seacoast fine cocoa (the finest in the world), coffee, and sugar are grown. On the plateau the volcano of Cotopaxi may be seen, and to the north of this, Quito, the highest capital-city in the world. This is a city of perpetual spring.

One of the most important industries of Ecuador is the making of Panama hats,

which are quite common in Canada in the summer season. Panama hats are made of the straw of a special South American plant. The straw is plaited by women and girls between midnight and sunrise of each day. Can you give a reason for this?

The North-eastern Coast. On the north-eastern coast, the coast facing the Caribbean Sea, are situated the Guianas and Venezuela. The Guianas belong to three European nations, Britain, Holland, and France. British Guiana is divided by nature into a northern part consisting of an immense tract of mud, decayed plants, and fine material carried down by the numerous streams of this region. The southern portion is crossed by several mountain chains, which form a series of huge steps leading inland from the flats.

The northern flats are wonderfully fertile but are very unhealthy. Pepper of very great value thrives on the mud flats of French Guiana. Sugar, cotton, and coffee grow readily in all the Guianas.

Guiana is noted for its supposed Eldorado, or Golden City, for which the Spaniards hunted in vain. Even Sir Walter Raleigh, a famous Englishman of Queen Elizabeth's time, seems to have believed the stories concerning the existence of this place.

There is nothing worthy of note in Venezuela other than what has already been said regarding the valley of the Orinoco. Venezuela, like many more of the South American countries, has been in a most unsettled condition since the people threw off the Spanish yoke and began to govern themselves.

Bolivia. At one time Bolivia held a small strip of coast on the Pacific between Chili and Peru. Now there is no coast-line, a serious drawback to any country. How so?

After this loss it seemed that Bolivia would in time be carved up and divided among the surrounding countries. Name these. But Bolivia has gone ahead, until now its educational system is one of the best in South America. If educating its people is the surest means by which a country can advance, then the future of Bolivia is secured.

The mountains of Bolivia are rich in silver, the plateau gives pasture to numerous llamas, alpacas, sheep, and cattle, and the valleys yield splendid crops of wheat, maize, and barley.

The People. On September 1st, 1513, Balboa, a Spanish captain, started to cross the Isthmus of Panama in order to reach the rich gold coast reported beyond. On September 25th of the same year the Pacific was first observed, and was named the South Sea. What had taken Balboa so long to cross is now covered by rail in a few hours. Pizarro, the conqueror of Peru, followed the lead of Balboa, and soon, scattered Spanish settlements extended almost all the way to the Strait.

Not liking the manual work of the farm and the mine, the Spaniards forced the Indian tribes of the conquered country to work for them. The Portuguese, who were securing the land to the east of the Andes, tried to meet the same difficulty by employing African slaves. The native races, which are said to number several million souls, are scattered over the length and breadth of this vast land. Some of the Amazon tribes are cannibals, some of the tribes living in the region of the Strait are among the least intelligent people in the world, and some tribes practically belong to their Spanish masters. Few of the native people have ever been given any chance to make a success of life.

South America is a very large continent, but it is only in the beginning of its development. There is an abundance of fertile soil, but the climate for the greater part is severe on people like those with whom we are best acquainted. Much more would have

been done than has been in the last four hundred years, had a people like the British race settled the land. South America has been too unsettled to make any great progress. What may be done when war is a thing of the past remains for the future to see.

QUESTIONS. 1. What South American countries lie along the equator (memory)? 2. Name from memory the countries along the Pacific beginning (*a*) at the north, (*b*) at the south. 3. What city lies on the equator? What do you know of this city? 4. What and where are Atacama, the Chaco, Para, Lima, and Rio? 5. Draw from memory an outline map of South America. On this map mark (*a*) the coast waters, the highlands, and the river basins, (*b*) the forest country, the grass-covered areas, and the desert lands. 6. On another map made in the same way, mark in the highlands and great river basins, and show the nitrate fields, the Panama canal, the cattle country, the wheat areas, the great coffee district, the guano islands, and the route of the only transcontinental railway in South America. 7. On a third map show the regions best suited to the tapir, condor, llama, South American ostrich, and the alligator. 8. Show on an outline map the position of the equator and tropic of Capricorn and the direction of the winds of most importance to South America. 9. What features have made Buenos Ayres the greatest city in South America? 10. Describe a journey around the Horn, a journey up the Andes, a visit to the Atacama desert, and a trip up the Amazon. 11. What pictures do the following call up: an Argentine sheep farm, hunting in the Matto Grosso, among the rubber trees in the Amazon valley, the harbor of Rio de Janeiro, climbing the Andes mountains, and chasing the rhea in the southern Argentine? 12. What has South America for us? For Europe? 13. Compare my Canadian home with a home in the Argentine Republic. 15. What two South American countries are entirely inland? 16. Compare the sheep and cattle lands of South America and North America as to climate, latitude, character of output, etc. 17. Write notes on railway work in the Andes and the Argentine. 18. Describe the condor, tapir, boa-constrictor, and the alpaca. 19. "Horses are reared in some parts of South America for their hides alone." What can you say of the value of horses in such localities? 20. Describe the gathering of rubber and Brazil nuts in South America. 21. What months make the Argentine summer? 22. Name the great highlands of North America. What highlands of South America are like these? 23. What South American river is situated like the St. Lawrence, and what like the Mississippi? Why has not South America a river like the Mackenzie?

Review Questions

1. What is the season in Europe in January? In South America in June? 2. Over what line is the sun vertical on December 21st? On June 21st? When is the sun vertical over the equator? What do you call such times? 3. In what particulars is northern Europe like northern Canada? 4. In what direction must a person look to see the sun at noon on December 21st if he were at the latitude of Capricorn? Of Cancer? 5. Where do the people of the Hot Belt see the noon-day sun? 6. What line of latitude is directly under the sun half way between December 21st and June 21st? 7. How many times a year is the equator directly under the sun? 8. In what direction must a person look to see the noon sun on March 21st if he were at the equator? 9. Can you tell why the poles are always cold? 10. When have the poles their greatest heat? 11. Show the new moon, the first quarter, and the last quarter. 12. Point to the north and the south poles. 13. What does *up* mean? Where is the zenith? 14. Find out what is meant by a *fixed* star and by a *planet*. 15. Describe as many ways as you can of finding the cardinal points of the compass. 16. On an outline map of Europe mark in (*a*) the seas, islands, peninsulas, straits, gulfs, and bays; (*b*) the principal highlands; (*c*) the three greatest rivers; (*d*) the ten largest cities. 17. Describe a journey by sea from the Black Sea to the White Sea. 18. Why should central Russia be colder than western Europe? 19. What and where are Valdai, Sardinia, and the Crimea? 20. On a map of the Mediterranean, locate the most important features. 21. What has Europe for us? 22. Draw an outline of South America and mark in the highland regions, the lowlands, the great rivers, the forest country, the wheat belt, and the ranching lands. Show also the leading islands, capes, and coast waters. 23. If South America were to sink 700 feet, what would be the shape of the part above the sea? Draw this. 24. What month in South America is the coldest? Why? 25. When is wheat harvested in Canada? In the Argentine? 26. Point out in as many ways as you can wherein South America and North America are alike. 27. On an outline of North America mark in the highlands, great rivers, coast waters, islands, countries, the Canadian provinces and their capitals, and ten of the largest cities. 28. On another map, shade in the tundras, the forest country, the prairies, and the wheat, corn, and cotton belts. 29. On still another map show where the following things are grown: oranges, apples, tobacco, pine, and rice. 30. Commencing at the head of Lake Superior, state how a boat may reach the Atlantic Ocean. 31. Commencing at the elbow of Labrador, state what would be passed in going along the eastern coasts of the Americas, doubling Cape Horn and then coasting along the Pacific to Bering Strait. 32. What is the situation of Detroit, Denver,

Duluth, Los Angeles, Cape Sable, Cape Race, and of the Gulf of California? 33. What railways would you take in order to see the scenery of the Canadian Rockies? 34. In what parts of the world do the fishermen of Newfoundland find a market for their fish? 35. Make a map of the Manitoba lakes. Show the Red and the Assiniboine rivers, and the three cities of greatest size on the Assiniboine. 36. Make a map of the St. Lawrence River and the Great Lakes, and show all connecting waters and the principal lake and river ports. 37. How do you account for so many great streams rising in the Rockies, when there is so much of the west that is dry? 38. What rivers can you name entirely in the Hot Belt? the South Temperate Belt? the North Temperate Belt? 39. Draw the New World continents and show all the important earth-lines running east and west. Locate on this map all the countries you remember and mark in the coast waters. 40. What has made Winnipeg, Montreal, Vancouver, San Francisco, Chicago, New York, Buenos Ayres, Rio de Janeiro, London, Paris, Moscow, and Constantinople great centres? 41. What sea in Europe is the Gulf of Mexico most like? In what way? 42. What ship lines go from our continent (*a*) to Europe and (*b*) to Asia? 43. Find out what you can of the Atlantic and the Pacific cables. 44. How long does it take a traveller from Winnipeg to go to Santiago? to London? to New York? 45. Where do our merchants get their tea, rice, sugar, bananas, woollen cloths, cottons, nails, stoves, boots and shoes, lumber, stone, and lime? 46. Rio de Janeiro is looked upon as the most beautiful city in the New World. Why so?

ASIA

How much of the earth's surface is shown in this figure? Of this amount how much should you say Asia occupies? What continent is seen across from the northern coast of Asia? Point out the North Pole. Who discovered the North Pole? When? What continent lies to the west? Find the name of the mountains separating Europe from Asia. What is the name of the great block of land made up of Europe and Asia? How is Africa connected with Asia? Point out North America. What strait separates north-eastern Asia and north-western North America? What two oceans are connected by this strait? What continent lies to the south-east? How is this continent separated from Asia? Asia lies near what four continents? What ocean lies to the south of Asia? Asia touches on how many oceans? What sea lies between Europe, Asia, and Africa? In the south of Asia there are three great peninsulas, a square-shaped peninsula on the south-west, a triangular-shaped peninsula in the centre, and a small club-shaped peninsula on the south-east. Name each of the peninsulas mentioned and state what peninsulas in southern Europe are similarly situated. Name the extensions of the Indian Ocean to the east and to the west of India. How is Arabia separated from Africa? Which part of Africa? What islands lie to the south-east? What two other continents have islands in the same position? What are these called? Looking at the eastern coast of Asia, point out the Japan Islands, Bering Strait, and the peninsula of Korea. What continent lies across the Pacific Ocean? Where is the great plain of Asia? In what direction do the Asiatic Highlands run? How does this agree with the Americas? In what hemisphere is Asia? Where is the equator? Would you say that the coast of Asia is deeply indented? Is Europe more so for its size? Is much of Asia at a great distance from the ocean? What islands west of Europe are similarly situated to the Japanese Islands? Which is the larger, Asia or Africa? Africa or North America? North America or South America?

The position of Asia among the continents.

Surface. The surface of Asia consists of two regions, a lowland area and a highland area. The lowland area forms the Great Northern Plain, or, as it is sometimes designated, the Great Siberian Plain, a region extending from the Arctic Ocean as far south as a line joining the southern end of the Caspian Sea with Bering Sea on the north-east. This plain is but the eastern extension of the European plain. Notice

that the eastern half of this plain is higher than the western portion. East of the Caspian Sea, and north of the Sea of Aral, are the Kirgiz Steppes, on which the wandering Kirgiz tribes rear immense herds of cattle. In the extreme north are the barren tundras, frozen all winter and changed in summer into swamps and marshes.

South of the lowlands is a vast and high plateau crossed by a series of high mountains running generally in an east and west direction. This belt of high ground may be divided into a Central region containing massive mountain ranges and grand plateaus, an Eastern region and a Western region. The lofty ranges of the Central region spread out to form a central mass, the Pamirs. This mass consist of valleys and ridges, the valleys being higher than the Alps, and the ridges covered eternally with snow. The "Roof of the World" is a fitting name to give this most desolate region.

Extending from the Pamirs to the southeast are the several ranges of the Himalayas, the "Abode of Snow." The highest peak is Everest, which towers up into the air more than five miles. The whole mass of the Himalayas is built on a gigantic pattern. Its passes are the highest and most dangerous in the world to cross. Its glaciers are of great area. Wherever its slopes are forest-clad, these forests are almost impossible to penetrate. The precipices and gorges of the Himalayas are built on a great scale. Great rivers have their sources here. The Himalayas shelter India from the north and provide for it the greatest of natural boundaries. At the bottom of the slope on the southern side is a great swamp fully ten miles broad, the home of wild beasts.

North of the Himalayas is the great plateau of Tibet. This country has been explored by Dr. Sven Hedin, the Swedish explorer. Listen to what he says: "We marched northward to a point near the Kara Korum Pass. The winter was frightfully cold. All the roads were filled with the carcasses of sheep and ponies, which in the pure cold air seemed still alive, so that the dogs would bark at them. Everywhere are to be seen packages, bales of silk, etc., thrown away, just as ships cast overboard their last ballast in dire distress. Next year the owners will come along and gather up these things. It snowed day and night for several weeks, and the snow lay on the ground three feet deep. We could see nothing. Even the nearest pony looked like a ghost."

The eastern region, you will notice, is very broad, but as a rule much lower than the central. The western region comprises the plateau of Iran between the Arabian Sea and the Caspian, the table-land of Arabia, and the table-land of Asia Minor.

The peninsula of India consists of two mountain chains, the Eastern and the Western Ghats. Between these is the plateau of the Deccan, and between this plateau and the southern slope of the Himalayas is a great lowland country sloping eastwards toward the Bay of Bengal and westwards toward the Arabian Sea.

Coast Line. Notice the curve of the Arctic coast. How is Asia separated from North America? What is the general direction of the Pacific coast from the north-east corner of Asia to the southern end of the Malay peninsula? What peninsula lies farthest north on this coast? What sea lies to the south of this peninsula? What sea lies between the Japan Islands and the mainland? In what part of eastern Asia is Korea? What sea lies south of Korea? Where is the East China Sea? Where the South China Sea? Where are the Bay of Bengal and the Arabian Sea? What separates Arabia from the plateau of Iran? Where is the Red Sea? What peninsula lies between the eastern end of the Mediterranean and the Black Sea? Notice the islands along the coast of this peninsula. Some of these are of historic importance. Chios is one of the places claiming the honor of being the birthplace of Homer. St. John wrote the "Book of Revelation" on Patmos. Antony and Cleopatra lived


ASIA
(Physical)
SCALE
800 Statute Miles to one inch
EXPLANATION
Longitude 40° East from Greenwich
Latitude North
EUROPE
AFRICA
ARCTIC OCEAN
INDIAN OCEAN
ARCTIC CIRCLE
NORTH SEA
NORTH CAPE
NOVAYA ZEMLYA
TAIMYR PEN.
NEW SIBERIA IS.
SIBERIAN PLAIN
MOUNTAINS
STANOVOI
SEA OF OKHOTSK
KAMCHATKA PENINSULA
SAKHALIN I.
BERING SEA
YABLONOVOI MTS.
L. BAIKAL
Lena R.
Yenisei R.
Irtysh R.
GREAT TURAN
URAL MTS.
MEDITERRANEAN SEA
BLACK SEA
SEA OF AZOV
Volga
CASPIAN SEA
KIRGHIZ STEPPE
Drainage
Syr-daria
WEST TURKISTAN
PLATEAU OF KOBDO
MONGOLIAN PLATEAU
GOBI
Divide
District
Rainless
TIAN SHAN
PAMIRS
HINDU KUSH
KARAKORAM MTS.
KUENLUN
PLATEAU OF TIBET
HIMALAYAS
Mt. Everest
PLAINS OF INDIA
Ganges
Brahmaputra R.
THAR DESERT
Sutlej
Indus R.
Khaibar Pass
Bolan Pass
IRAN
PLATEAU OF IRAN
ELBURZ MTS.
Kurdistan
Armenia
Mt. Ararat
Highlands
MESOPOTAMIA
Syrian Desert
Dead Sea
Mt. Sinai
NEFUD DESERT
TABLE-LAND OF ARABIA
DAHNA DESERT
PERSIAN GULF
RED SEA
GULF OF ADEN
C. Guardafui
ARABIAN SEA
PLATEAU OF THE DECCAN
WESTERN GHATS
C. Comorin
CEYLON
BAY OF BENGAL
INDO-CHINA PENINSULA
GULF OF SIAM
C. Cambodia
MALAY PEN.
SUMATRA
BORNEO
CELEBES
MINDANAO I.
PHILIPPINE IS.
LUZON I.
SOUTH CHINA SEA
HAINAN
FORMOSA
EAST CHINA SEA
YELLOW SEA
KOREA
JAPAN SEA
GREAT PLAIN
Isotherm of 70°
Isotherm
TROPIC OF CANCER
TABLE-LAND OF ASIA MINOR
CYPRUS
CRETE
6500 ft.

on Samos One of the seven wonders of the world was the Colossus of the island of Rhodes. Measure the distance from the south-west corner of Asia to the north east corner. How far in a straight line is Bering Strait from the south end of the Malay peninsula? In what way is eastern Asia like western Europe? In what particulars is the southern coast of Asia like the southern coast of Europe? Draw the largest circle you can in Asia. What is the radius of this circle? Is there much of Asia far inland? What are some of the disadvantages of being so situated? Commencing in the Arctic Ocean, name the various bodies of water one would pass through, or by, in a trip to the Black Sea.

Climate. Find the Equator, the Tropic of Cancer, and the Arctic circle. Name the regions passed through by the tropic. Is much of Asia within the North Cold Cap? What is the climate of this part? In what belt of heat is that portion of Asia lying south of Cancer? What kind of climate should this region have? In what heat belt is the remainder of Asia? Is there much or little land in this belt? Is much of it far from the sea? What is your latitude? Find this line in Asia. Is much of Asia north of this line? In what direction does Siberia slope? Is this away from or toward the sun? Are there any mountains across the north to shelter this area from the north winds? Are the Canadian prairies similarly situated? What should you say of the winter climate of the northern plain of Asia? Of its summer climate? There are points in north-eastern Siberia where the temperature in winter goes down to 59 degrees below. What is your lowest winter temperature? These same regions have sometimes a summer temperature of 100 degrees in the shade. What have you?

The hot-belt suggests a warm climate and possibly a wet climate. Why? But the latter is only true of the south-east coast and India. In Arabia and Persia the winds blow from the land most of the time, hence there is very little rainfall. Much of these regions are therefore deserts like the Sahara. In the North Temperate belt there is a great variety of climate. Along the middle eastern coast the climate is much like the climate of eastern North America from Nova Scotia, south. The greater part of the interior is dry, because the winds blow largely from the land and not from the sea. This area includes Gobi and Turkestan, which are mostly desert.

How Asia is Drained. The formation of Asia favors long rivers with great basins. Owing, however, to the light rainfall in the interior, the rivers have but small volume and some of them do not reach the ocean at all. From the Central Region the rivers flow in all directions. Those reaching the sea are the rivers that enter the Arctic Ocean, the Pacific rivers, and the rivers of the Indian Ocean. Name the rivers of the Arctic slope. What should happen there in the winter? Notice how these rivers and their tributaries cover the country from east to west. In the summer-time they should be of great importance to commerce. How so? Where will the melting of the ice first take place in the north-flowing rivers? What will be the effect of this upon the lower portions of the course? What Canadian river is similarly situated? Would you expect these areas to be well settled? What has settlement to do with the commerce of rivers?

The two important Pacific rivers are the Hoang-ho, or Yellow River, and the Yangtse-Kiang. Notice where the Hoang-ho rises. Notice the great curve south, then east, then north. Into what Gulf does the river empty? The lower portion of the Hoang-ho crosses the Great Plain of China, one of the most fertile regions in the world. The sediment brought down has raised the bed of the river above the surface of the land, so that heavy embankments have to be made to keep the river in its place. At times these have given away and the country has been flooded. At one time the river flowed into the Yellow Sea. In 1852 the banks were broken down and the river made its present channel to the Gulf of Pecheli. The Hoang-ho has been called "China's Sorrow." Can you see a reason for this name?

Nothing is known of the source of the Yangtse-kiang, with the exception that it rises somewhere among the mountains of

Tibet. In parts of the river gold-dust is found, thus accounting for the name, the "River of the Golden Sand." It is possible that there are valuable mines up the Yangtse-kiang, but the Chinese have peopled the mountains with all kinds of evil spirits, enough surely to prevent any Chinaman from troubling himself about the source. This river has many miles of navigable water. It also flows through many lakes along its course, and through a fine country producing tea, grain, the mulberry tree, cotton, rice, and sugar-cane.

The rivers flowing into the Indian Ocean are the Ganges, Indus, and the Euphrates-Tigris. But for the Himalayas and the warm, moist winds which blow upon them, India would be a parched-up land like the Sahara. As it is, the Indian Plain has two great rivers, the Ganges and the Indus. The Ganges rises on the southern slope of the Himalayas, over two miles above the sea-level. The great cavern of ice out of which the river issues is called the "cow's mouth." From this cave the river rushes down in a foaming torrent until it enters the plain far below. Many tributaries join the main stream along its route, and the whole region drained by the river is thickly settled. Much of the value of the river comes from the irrigation canals which tap the river and conduct some of its water over the thirsty fields. The Ganges forms a great delta called the Sundarbans, the jungle-home of the Bengal tiger and other wild animals. The Brahmapootra, which joins the Ganges at the Sundarbans, rises north of the Himalayas near the source of the Indus. At the eastern end it breaks through a rocky gorge in the mountains and flows toward the Bay of Bengal.

The Indus rises in the northern slope of the Himalayas, fully three miles above the level of the sea. At first it flows for several hundred miles in a north-westerly direction. After passing through a narrow gorge it takes a south-westerly turn and enters the highlands of north-western India. This is the finest portion of the river for scenery, for the river passes through deep ravines and along rocky ledges on its way to the plains lower down. Five great streams join it, and the river flows on as a great broad stream to the Arabian Sea. Its total length is something like 1,800 miles.

At one time the Euphrates-Tigris irrigated thousands of acres of land, and provided bread for one of the greatest nations of ancient times. Now the canals are filled in, and but little remains of the former greatness of this valley. Into what body of water does this river empty?

Besides the rivers reaching the ocean, there are also rivers flowing into inland lakes, seas, or swamps. There are rivers flowing into the Sea of Aral, the Dead Sea, and Lake Balkash. The Sea of Aral is gradually drying away and filling up with the sediment brought into it by its two main rivers. One of these, the Syr Daria, or Jaxartes, is over 1,200 miles in length. This river is fed entirely by the snows of the higher ground, and it rises as regularly as the Nile. Another feature of the Sea of Aral is that its level is much lower than the ocean level. In fact, all this area shows a former connection with the Arctic Ocean and the Black Sea. Your teacher will make a map of Palestine on the blackboard and show the Dead Sea and the River Jordan. The surface of the Dead Sea is far below the sea-level. The sea is so salt that bathers can scarcely sink in it, and fish cannot live in it. The Jordan rises on the western slope of Mount Hermon. But the Jordan of to-day is not the Jordan of Old Testament times. The cedars are gone, and the Jordan valley is now barren and desolate, instead of being a "land flowing with milk and honey."


ASIA
(Political)
SCALE
820 Statute Miles to one inch
Capitals of Countries ★ Other Cities •
Capitals of States ⊙
Comparative Area 80,000 Sq. Miles
Longitude 60° East from Greenwich
Latitude North
EUROPE
AFRICA
RUSSIA IN ASIA
RUSSIAN EMPIRE
CHINESE EMPIRE
JAPAN EMPIRE
TURKISTAN
PERSIA
ARABIA
INDIA
MONGOLIA
MANCHURIA
TIBET
BAY OF BENGAL
ARABIAN SEA
INDIAN OCEAN
SOUTH CHINA SEA
PHILIPPINE ISLANDS
BORNEO
CEYLON
JAPAN SEA
YELLOW SEA
EAST CHINA SEA
ARCTIC OCEAN
BLACK SEA
CASPIAN SEA
RED SEA
MEDITERRANEAN SEA
GULF OF ADEN
PERSIAN GULF
NORTH SEA
BALTIC SEA
SEA OF OKHOTSK
SEA OF JAPAN
TROPIC OF CANCER
Dahna Desert
HADRAMUT
KIRGHIZ STEPPE
TAIMYR PENINSULA
NOVAYA ZEMLIA
ANDAMAN Is.
SUMATRA
Archangel
St. Petersburg
Moscow
Tobolsk
Omsk
Tomsk
Krasnoyarsk
Semipalatinsk
Lake Baikal
Irkutsk
Yakutsk
Verkhoyansk
Vladivostok
Constantinople
Vienna
Paris
Berlin
Madrid
Cairo
Suez
Mecca
Medina
Aden
Bombay
Calcutta
Madras
Pondicherry
Ceylon
Singapore
Hainan
Formosa
Manila
Luzon
Borneo
Celebes
Sumatra
Java
Peking
Hankow
Canton
Shanghai
Nanking
Tientsin
Mukden
Harbin
Kiaochow
Port Arthur
Hongkong
Saigon
Bangkok
Rangoon
Mandalay
Irrawaddy R.
Mekong R.
Yangtze R.
Yellow R.
Amur R.
Lena R.
Ob R.
Yenisei R.
Volga R.
Euphrates R.
Tigris R.
Indus R.
Ganges R.
Brahmaputra R.
Persian Gulf
Gulf of Siam
Gulf of Tonkin
Gulf of Martaban
Gulf of Cambay
Gulf of Manaar
Malacca Strait
Sea of Azov
Sea of Marmora
Dardanelles
Bosporus
Suez Canal
Aral Sea
Lake Balkash
Lake Tali
Lake Tsing Hai
Lake Baikal
Lake Urmia
Lake Van
Lake Tiberias
Dead Sea
Red Sea
Gulf of Aden
Persian Gulf
Arctic Ocean
Pacific Ocean
Indian Ocean
Mediterranean Sea
Black Sea
Caspian Sea
Baltic Sea
North Sea
Sea of Okhotsk
Sea of Japan
Yellow Sea
East China Sea
South China Sea
Bay of Bengal
Arabian Sea
Gulf of Aden
Persian Gulf
Gulf of Siam
Gulf of Tonkin
Gulf of Martaban
Gulf of Cambay
Gulf of Manaar
Malacca Strait
Sea of Azov
Sea of Marmora
Dardanelles
Bosporus
Suez Canal
Aral Sea
Lake Balkash
Lake Tali
Lake Tsing Hai
Lake Baikal
Lake Urmia
Lake Van
Lake Tiberias
Dead Sea
Red Sea
Gulf of Aden
Persian Gulf
Arctic Ocean
Pacific Ocean
Indian Ocean
Mediterranean Sea
Black Sea
Caspian Sea
Baltic Sea
North Sea
Sea of Okhotsk
Sea of Japan
Yellow Sea
East China Sea
South China Sea
Bay of Bengal
Arabian Sea

Vegetation. The tundra vegetation we already know. What is it? South of the tundras in Siberia is a great forest country, the extension of the forest lands of Europe. Another forest region is in the warm, moist south-east, where the trees are so thick that the forests are known in places as jungles. The desert regions which cover much of Asia are bordered by fine grassy plains or steppes.

The Siberian forest stretches from the Urals to the River Amur. These forests are much the same as our own northern woods. What trees would you expect to grow? As the same kind of tree grows over a very wide area, the forest country is a bit monotonous. Portions of the Ob valley are protected by forest, and wheat is grow Indeed, there are those who think that this region will be one of the great wheat belts of the world some day.

The banyan tree, India. The branches drop fibres which take root and become trunks of the tree.

South of the forest land are the steppes. If there is sufficient moisture there is grass; if not we shall have such desert areas as Gobi. Where rivers cross the steppes there is always a fertile land. What are the grassy plains like in the spring-time? What animals will likely be found on them?

The hot deserts of Arabia resemble those of Africa. Compare the temperature of the day and the night in the desert. What is the surface of the desert like? What tree supplies the desert dweller with food? Other desert plants are senna, myrrh, gum-arabic, and frankincense. South-western Arabia is the home of the coffee plant, an evergreen shrub with shiny leaves and white flowers.

Under good government, Asia Minor, the western peninsular country of Asia, might be a wonderful garden producing olives, figs, lemons, oranges, on the warmer and moister coasts, wheat in the valleys, and cedars on the slopes of the mountains.

South-eastern Asia has a fertile soil, abundant moisture, and great heat, conditions most favorable to a heavy growth of vegetation. Wheat is grown in India. Cotton, rice, tea, and opium thrive in India and China. Great forest belts containing teak, bamboo, and ebony cover portions of the southern slope of the Himalayas and south-eastern Asia. Almost any plant of a tropical or of a temperate climate can be grown in this region. Why so?

Animals. Nearly all our domestic animals have come from Asia. Name any that have come from either North America or from Africa. The reindeer belongs to the tundra region. So also do the polar bear and the sable. Whales are seen in the Arctic waters, and wild geese on the Arctic lakes and swamps. In the Siberian forests fur-bearing animals are found. Name some of these. They are about the same as with us.

The steppe country is the home of the camel and the donkey. Here also are an abundance of sheep, horses, cattle, and goats. Of what value is the camel? How is it suited to a desert-life? Goats live in drier and more rocky regions than sheep.

Trained elephants at work carrying timber in an Indian teak yard. They do the work which in America would require cranes or derricks.

Of what value is the Angora goat? Of what value are cattle to the people on the steppes? Arabia is the home of the Arab horse. What do you know of this horse? Arabia is also the home of the Arab donkey and camel. The fine white donkey of Arabia belongs only to the people of high rank. The yak is to the dry, cold uplands, what the reindeer is to the tundras and the camel to the desert. At first sight one might take the yak for a small cow. Its horns are heavy and its long black hair hangs down its sides. It is used as a beast of burden in the high passes of the Himalayas, where its feet are sure.

The Tiger.

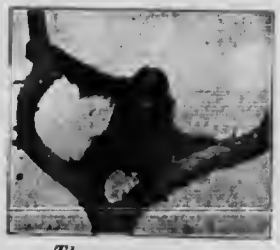
In the south and in the south-east where vegetation is abundant, life is also abundant. Among the wild animals of this region are the elephant, the tiger, the ourang-outang, and the cobra. The Asiatic elephant is used solely for domestic purposes. Herds of wild elephants are driven into a strong pen, where the best animals are picked out and then trained to work. In capturing wild elephants and in taming them, the people make use of tame elephants. Next to the cow, the people of India hold the elephant in very high regard, and they consider every movement of this huge beast as done most gracefully. Why does the elephant need a trunk? What can an elephant be taught to do? What do you suppose the people mean when they say, "May you have an elephant to ride upon!"

A splendid tiger, the Bengal, noted as a great cattle stealer and a good fighter, is found among the jungles of the Sundarbans. Another species lives in the more unsettled parts of the country, but this tiger is very shy.

Ourang-outang means "man of the woods," and the name will tell you something of its habits. The ourang is an animal that people have good reason to shun. It is found in south-eastern Asia.

The cobra is a snake some six feet in length, but so poisonous that few recover from its bite. The cobra is not always to be found in the jungles of the forest and the swamp; he may make his headquarters among the weeds and brush of the yard. Where is the cobra found?

Besides these, there are other animals of a more valuable sort. What would the silk districts of Japan and China be without the silkworm? How are these worms reared? Again, the rivers flowing into the Pacific are rich in fish. In Kamchatka the salmon rivers are like those of our own British



The ourang-outang.

Columbia. In China millions of people fish for their living.

The People. About three-fourths of the people of Asia belong to the yellow race. These people are short, yellowish in color, and have small dark eyes placed a little aslant and straight black hair. People of a white type are found in western Asia and in parts of India. Darker-skinned races are found in the south-east and in the East Indies. Over half the people of the world live in Asia.

Occupations. What are the occupations of the Toodra people? Why have these people to wander about? What is the occupation of the forest country? In what ways are hunting and trapping inferior to cattle and sheep raising? What are the occupations of the grass lands? Is the population of these three areas very large? Why?

A woman from the north of China. Notice the peculiar headdress, the shoes, the sleeves, and the long finger nails.

Agriculture is the leading occupation of the warmer and moister south, south-east, and east. Crops may be grown so easily that great numbers of people may live on a small area. As rice is one of the chief crops, let us see what it means to grow this grain.

Rice needs abundant moisture. As soon as a field is sown the water is allowed to cover it until the seeds have sprouted. It is then drained off and the young rice plants grow rapidly, and by and by the grain forms. The field is again flooded so deeply that the ears alone are above water. In this condition the rice ripens, the water is run off and the grain gathered and threshed. As water is very important, rice fields must either be on the lower grounds or be so situated that they can be irrigated.

Tea is another plant widely cultivated. Tea requires good soil and a sunny slope. The shrub grows to a height of four feet, and the leaves are picked throughout the year. As the flavor is the important thing in tea, it must make a difference whether old leaves or young leaves are collected. Which do you think should make the more valuable tea? The leaves are first dried in the sun and then they are well tramped to get rid of all the moisture. Indian tea is said to be better than Chinese tea.

The Ganges valley and southern China raise immense fields of poppies. What do you know of our own poppy? These poppies, however, are not grown to look at or to make bouquets of. They are grown for the milky juice which the plant produces. When the flowers are ready to drop off, the juice is taken from the plants and opium is made. Opium is used as a medicine to a small extent. It is also smoked by the Chinese to lessen pain or to bring about a pleasant kind of intoxication. So great an evil has it become that the government of China has granted but ten years to clear all the opium out of the country.

Siberia. We have already seen that Siberia has a severe climate, with long, dry, cold winters and short, hot summers. The country

is so large and the people are so few, that it is difficult to know just what Siberia contains. The land may be thought of as lying in three great stretches, all sloping northward toward the Arctic Ocean. The most northerly region lies along the coast. This is a bleak and desolate land during most of the year. There are no trees, but the country is suitable to such animals as the reindeer, polar bear, and the fox. How long is a summer's day at this point? South of the tundras is the forest belt, already described. The third belt borders China and contains the best of the arable land of Siberia.

Boat and boatmen in the harbor of Jaffa. The picture shows the rocky character of the Syrian shores.

The people are generally poor, but their lot is being bettered, as the Russian Government has built a great transcontinental railway stretching all the way from Moscow in Europe to Vladivostock on the Japan Sea.

Western Asia. The countries of western Asia are the Turkish Empire in Asia, Arabia, Persia, and Afghanistan, all countries of very interesting pasts, but now of very little account. The larger portion of Asiatic Turkey is a high plateau, with so little rainfall that grazing is now the only profitable occupation, though there are regions well adapted to fruits and grains. In the lower valley of the Euphrates-Tigris, ancient Babylon, one of the marvels of the world, flourished. But the country is now little better than a fever-breeding swamp. Find Bagdad. Much of the land of Palestine, a small region along the eastern end of the Mediterranean, is now a barren waste, brought about in part by the removal of the protecting forests. The most interesting place in this region is Jerusalem, now connected by railway with Jaffa. The interest of Palestine as a whole, lies in the fact that it was the scene of the life of Christ, and later the battle-ground of the wars of the Crusades.

The interior of Arabia is largely a grazing country inhabited by a shepherd class of people. Hedged in by the sea on three sides and checked on the remaining side by a pathless desert, Arabia had to turn largely to the sea as an outlet. This is one reason why Arab traders have spread over Africa so much. Arabia is the home of the fleet Arabian horse, the Arab camel, and the Arab donkey; and the south-west corner produces the famous Mocha coffee.

Mecca, the chief town, has long been important because it is the birthplace of Mohammed and the holy city of his religious followers. At the south-west corner is Aden, a British station, so placed as to guard India and the Red Sea. Aden is a coaling station for our fleet. Why is this needed? It is also well fortified. Why? The water supply of the city comes entirely from the occasional heavy rains, when rainwater is collected and stored up in great tanks. Aden came into our possession in 1837 because of the treatment of a British ship's passengers by the Arabs when the ship was wrecked on their coast.

Agriculture is carried on in the valleys of Persia wherever irrigation can be employed. The southern coast of the Caspian Sea has also some good land. Persia is a backward country, the only well-known industry being the making of rugs.

Afghanistan is a wild and barren land, where the fight to live is so great that many weaklings die young, and those who survive carry about with them the signs of their great struggle with nature to earn their daily bread. Afghanistan borders north-eastern India. Between the two countries is one of the best mountain passes. It is therefore necessary for Britain to be well acquainted with what is going on in Afghanistan. How so? Find Herat. This town stands on a river that never reaches the sea. This river supplies the water that has made Herat the "city of a hundred thousand gardens." Herat is of great concern to Britain, because it lies on the great caravan route between India and Central Asia. Near it is the only gap in the lofty wall of mountains protecting the north-west frontier of India.

India.

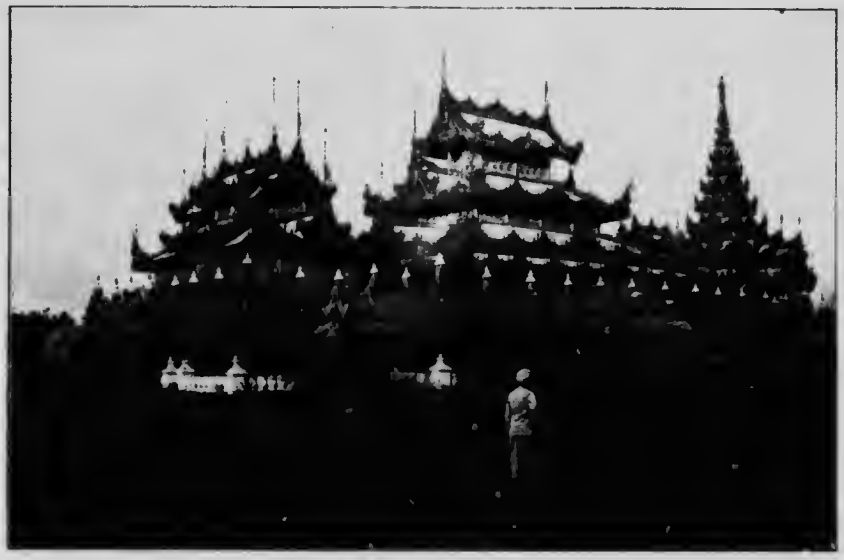
India. India, "the brightest gem in the British Crown," is a vast country stretching south from the Himalayas a distance of 2,000 miles, and sheltering a population almost three times as great as the whole population of North America.

The history of India dates back to a distant past. India has been noted for its manufacture of shawls, carpets, wood, and ivory work, and many other things. Its people are of many races, many religions, and many languages. Its scenery takes in vast mountains, great rivers, spreading forests, and immense plains. No wonder that the people of Europe were so anxious to find a sea-route to India.

The surface features of India are easily described. On the north side are the tremendous Himalayas. In the southern angle between the Ghats is the great highland region of the Deccan. Between the mountains and the Deccan is an immense plain watered by the Ganges and the Indus. To the east is the Bay of Bengal, to the west the Arabian Sea. Ceylon Island is to the south, separated from the mainland by the Gulf of Manaar. Three hundred years ago India was a land of mystery to outside nations. India had always been such a land, and this is one reason why so many different races have made their home here. Let us try to get at this in another way. Many, many years ago a noble race of invaders, the Aryans, came through the north-west passes and took possession of the Indus and Ganges valleys, driving into the forest and mountain fastnesses the races previously occupying the land. The conquerors were not allowed to remain at peace, for the story of

the wealth of India had brought other races, until several different peoples had settled in the land. After Vasco da Gama had discovered a sea-route to India round the Cape of Good Hope, the Dutch, the French, and the British were soon on the ground with the hope of obtaining a foothold.

In 1600 Queen Elizabeth granted a trading charter, or royal permission, to the East India Company to trade with India. This Company soon felt the opposition of the Dutch and other traders who had made an entrance into the peninsula. About the middle of the seventeenth century the British Company founded Fort St. George on the site of the present city of Madras. Later Bombay and Fort William, now Calcutta, were acquired.



A royal palace in Mandalay, the capital of Burma, India. The minarets and decorations are most beautifully carved. In the foreground is one of the palace servants.

The first trouble came from the French who were established south of Fort St. George, and who thought by making a dash at the fort and taking all captive, to break up British trade in India. But this raid turned out otherwise, for it gave Robert Clive, a young clerk in the British service, a chance to make a name for himself by first overcoming the French and afterwards by commencing a series of conquests which led to the foundation of the present Indian Empire under King George V.

India at this time had no one powerful enough to keep the country for the native-born. As a result, native adventurers of every description seized on great areas of country, and these in turn favored either the British or the French. In 1756 Dowlah, native ruler of the country about the mouth of the Ganges, surprised the British at Fort William, or Calcutta, and imprisoned 146 in what has been called the "Black hole of Calcutta," a small room with only two small windows for ventilation. The hot night of an Indian summer killed them all but twenty-three; but Clive revenged this and won Bengal in the great battle of Plassey on the Ganges. At this battle Clive had only a thousand Europeans and 2,000 Sepoys, or natives in the employ of the British. The Nabob, or ruler of Bengal, had fifty thousand foot and eighteen thousand horse.

One after another the Indian possessions fell into our hands, until the natives became alarmed and made a desperate effort to stay the tide of conquest. But they had to have an excuse. This came when the soldiers of the Company were given a new kind of rifle, using cartridges that had been greased.

The cow being a sacred animal, a Hindoo has a great dislike to touching its fat. The error was corrected, but not soon enough to prevent an awful mutiny of the Sepoys and a rebellion in a portion of India. It was a good thing that so much of India remained quiet. As it was, the British there suffered all the horrors of a war in which one side carried on the strife in a way suited to barbarians. Ask your teacher to tell you of the Cawnpore Well and the Relief of Lucknow.

The taking of Delhi, the very centre of the trouble, was a glorious deed. Delhi is situated on a rocky hill on the bank of the Jumna, one of the main streams flowing into the Ganges. The city is surrounded by a high stone wall pierced by several gates. To enter Delhi it was necessary to blow up one of these gates, the weakest, of course, and therefore the best defended. Bags of gunpowder had to be placed at the foot of the gate by the British. Several of those who attempted to do this were shot, but others took their places; the feat was accomplished, an entrance gained and the backbone of the rebellion broken. Why should we not be proud of the flag that stands for such deeds? Britain has a right to be proud of her heroes.

The mutiny ended, the British Government took the whole management of India out of the hands of the East India Company. Now King George the Fifth is Emperor of India.

India is a land of strange customs. Among the Hindoos there are several grades of society, or castes. The Brahmans, or priests, belong to the nobility, and one has no trouble in seeing that they are superior to the other classes. They are intellectual, polite, and well informed. Their place in society is to lead, to make the laws, and to direct in everything that is for the betterment of the land. The next class is that of the soldiers, those who see that the laws are carried out. The third class takes in the workers, or all engaged in trades, manufactures, and commerce. These need a peaceful country, and this is secured by the watchfulness of the soldier class. The next is the servant class, those who have to do the laborious work. The last class are the pariahs, those who have broken away from the other classes, and have thus lost their social standing as it were. Whatever class a Hindoo is born into, in that class he must remain, and all the gold in the world could not purchase a different caste for him. Breaking caste is therefore a serious thing, and the pariahs are looked down upon by those above them.

But all the people of India are not Hindoos. There are, we have said, many races in India, for India was a much sought land. Among these are Mohammedans, Parsees, and others. What is the name of the holy book of the Mohammedans? What is the situation of the Mohammedan holy city? These people never taste strong drink, and they are also taught by their religion to be helpful to those needing help. Were you to go to Bombay you would see the Parsees, or sun-worshippers, a race that came originally from Persia. The Parsees place their dead in great open towers to which the vultures come in flocks. The bones are then placed in a great pit in the centre of the ground enclosed by the walls of the tower. The Hindoos have a peculiar belief. They believe that only the pure and the good can enjoy eternal happiness hereafter; that when an impure man dies, his soul enters some other body, either human or brute, and he goes through life again, and yet again, until he is made fit to enter the eternal resting place.

There are many large cities in the valley of the Ganges. One of these is Benares.

This is the Hindoo educational and religious centre, and is in every way a beautiful city with its many temples and shrines. It stands on high ground sloping toward the river, and the river bank has stairways leading from the water's edge to the top of the bank. From one of these stairways the smoke from the funeral fires ranged along the river may be seen. The Hindoo people burn their dead, and the man is poor indeed who cannot gather enough sticks for his burning. In the river are scores of men and women who may have come from afar to drink of the sacred waters, or to bathe in the same. What Rome is to the devout Roman Catholic, what Jerusalem is to the Hebrew, what Mecca is to the Mohammedan, Benares is to the Hindoo.

A suburban street near Singapore, giving a good idea of the tropical vegetation.

The Tropic of Cancer passes about midway through India. In what heat-belts are the northern and the southern portious of India? Where in India may one have all the climates of the world? Why so?

The winds bringing the moisture-laden clouds to India blow from the south-west for half the year and from the north-east the remainder of the year. Instead of having four seasons, India has but three, a hot, a wet, and a temperate season, the latter lasting from the time the sun crosses the equator on its way south, until it returns again to the equator.

At what time does the sun cross the equator? When is the sun vertical over Cancer? When over Capricorn? In what direction may one in India have to look to see the noon day sun during our summer season? From March to June the sun becomes hotter and hotter in India. From May to September the south-west winds bring rain. Over what sea do these winds come? What mountains in western India lie across their path? What will be the result? When these winds strike the Himalayas, what will be the result? The north-east wind blows from October to May and brings rain to the eastern coast largely. Where does this wind gather the moisture which it leaves on India?

The occupations of the people may be easily inferred from the map. India is a great farming country. What are the chief farm products, and where is each grown abundantly? What is millet? Millet is to the people of India what wheat is to us. In the illustration no cattle are shown. This, however, does not mean that the Hindoo does not raise cattle. It means that cattle cannot be raised in very large numbers where the land supports so great a population as India. Cattle require some range, and the pasturage for a few cattle would support several Hindoo families, if planted with rice or millet. Again, the Hindoo is not a meat-eater. The hot climate forces him to a vegetable diet, and his religion is opposed to flesh-eating. Cows are used, however, for work and for milk.

The principal cities of India are Delhi, Calcutta, Bombay, and Madras. Delhi, the capital of the land, is one of the most noted

cities of India. The Mohammedan invaders made Delhi their capital. Years afterward it was destroyed by the Moguls, who built a new city on the ruins of the former. The present Delhi was built by Shah Jehan some three hundred years ago. It stands on the right bank of the Jumna River, and occupies a rocky hill overlooking the river. Within its high, massive walls are many beautiful buildings. Among the principal are the palace of Shah Jehan and the equally fine Jumma mosque, whose marble domes and minarets may be seen towering above the city miles away. Delhi is now an important manufacturing and trading centre, and lines of railway connect it with all parts of India.

It was at Delhi in December, 1911, that King George the Fifth was proclaimed Emperor of India at a most brilliant coronation Durbar. Words cannot describe the scene presented, when thousands of troops, native and British, the royal party, and the princes of India moved in a mighty procession to the music of massed bands and the roar of artillery. At this Durbar King George uttered the words that have transferred the seat of government from the old capital, Calcutta, to the more imposing and more historic capital, Delhi.

Calcutta, the former capital of India, is situated on a branch of the Ganges called the Hoogly. Where is Madras situated? Madras has no natural harbor, so that ships have to anchor out some distance and discharge their passengers and their cargoes into the boats which put out through the surf from the city. The gardens of Madras are said to be very beautiful. Can you give any reason for calling Madras the "Ocean City?"

Bombay stands on Bombay Island and faces two beautiful bays. It has the finest harbor in India and is in the centre of a very great cotton country. What city in North America is similarly placed? South-east of India is the Island of Ceylon. Colombo, the capital, is situated on the finest and most central port on the Indian Ocean. The Singhalese, as the people of Ceylon are called, think their island must have been where the Garden of Eden was situated. In the Gulf of Manaar are valuable pearl fisheries.

South-eastern Asia consists of several countries, the one of chief interest to us being Burma, a British possession. Upper Burma is almost an unknown region. The forests abound in wild animals. Crocodiles and poisonous snakes inhabit the swamps. The south-flowing rivers flood the country at times, so that the people have to build their homes on piles.

Railways in India have been built to develop trade, to permit of a rapid movement of the troops, and to enable grain and other food products to be hurried to the starving peasants during times of famine. The principal lines run east and west across the northern plains and across the tableland of the Deccan.

Lower Burma was first acquired by Britain, and Upper Burma came into our possession a short time ago when Theebaw, a young king, commenced to celebrate his accession to the throne by a massacre of his people. Some of his subjects fled to southern Burma, where they asked for British protection. This was granted, and Upper Burma became a British possession. Mandalay is the capital of Upper Burma.

The southern end of the Malay peninsula and the neighboring islands contain several small native states and British settlements. Singapore has grown into a very important port, as all vessels plying between Europe, India, and the east coast of Asia must pass this point. In what way is Singapore valuable to Britain? Where is it situated?

China. This great country is made up of China, Mongolia, Tibet, Manchuria, and eastern Turkestan. Of these China is the most important and best known, because the Chinese carry on an active trade with other nations.

The busy "treaty port" of Tientsin-fu.

The boundary of China, as it existed 2,000 years ago, is marked in part by the Great Wall. This wall is still in fair shape and is an object of very great interest to travellers. Find out why it was built, how many people were employed, and how long it took to build it. The great plains of China are situated in the east, along the lower Hoang-ho and Yangtse-kiang. The largest is the Hoang-ho or Great Plain. The interior is largely hilly or mountainous. The land is all for the people and is held by families on the payment of a yearly tax. Agriculture is held in the greatest esteem, the farmer ranking next to the scholar, but the implements of the farm are crude and the farms are very small. The land, however, is tended with such care and patience, and irrigation and fertilization are so well developed, that large quantities of rice, corn, tea, silk, and cotton are raised. The roads are poor and almost impassable, and men do the work of beasts of burden. Tibet and Mongolia are largely grazing countries.

The exports of China, like those of other eastern countries, are such stuffs as take little space and cost a great deal. A shipload of silk is worth many times as much as a shipload of wheat or a train of cattle.

China has few navigable rivers and few railroads. The ports at which trade is carried on are called "Treaty ports." Tientsin-fu, for example, is the port of the capital, Peking. Hong-Kong, a most valuable British possession, is an island. In 1841 this island was occupied by a few fishermen and pirates. It is now the largest trading post on the Chinese coast. Here large quantities of British cottons are exchanged for tea, silk, and hemp. Canton is one of the largest cities in China, and one of the largest in the world. Canton is the chief silk port of China. Other small ports have been secured by Germany, France, the United States, and Japan; each of these nations has a footing on Chinese territory, and would like to get more but for the watchfulness of Japan.

Japanese girls, showing the method of carrying their baby brothers and sisters.

Lhasa, in Tibet, is the holy city of the Buddhists or religious followers of Gautama Buddha, the son of a Hindoo of high caste. One night Buddha left his father's palace and became a poor man so that he might teach his people how to live so as to enter into the Nirvana of eternal rest. Only a few Europeans have succeeded in getting into Lhasa, because the city

Japanese women spinning and weaving silk. The silk goods made in Japan are often very beautiful and very costly.

and country have been most carefully guarded.

The Empire of Japan. The Island Empire of Japan includes all the islands from Kamchatka to Formosa, with the exception of the northern half of the long island of Saghalien. The principal islands are Niphon (Hondo) and Formosa. The ancient kingdom of Korea is now known as Cho-sen. The 10,000,000 Koreans and their 80,000 square miles of country are now a part of Japan. This is the end of a country that began before David was King of Israel. Since its occupation, Japan has cleaned the Korean cities, built good roads, railways, telegraph lines, introduced good schools, better justice, and has banished torture forever as a punishment of Korean culprits.

The islands of Japan are very mountainous and the coast very irregular. The loftiest and most beautiful mountain is Fujiyama, the sacred mount of Japan. Owing to frequent earthquakes each year, buildings, railway bridges, etc., must be built to stand a severe shaking without being damaged. The climate is moist almost everywhere, and ranges from cold in the north to great heat in the south. Forests abound on the mountain slopes and grass and flowers grow almost everywhere on the lower lands. Japan has been called the "Land of the Chrysanthemum." Can you give a reason for this?

The Japanese people belong to the yellow race. They are more prosperous and more modern than any other yellow people. They are very polite, very cleanly, and very fond of beauty either in art or in natural scenery. Where may the last of these qualities be

Rice fields in one of the low, well-watered valleys of Japan. The terraces are continually being fed by the water.

A native village in Java. Notice the roofs of grass and the fences of matting.

seen? Within the last fifty years they have adopted many European ways and have become an important nation, the so-called "Britain of the Pacific." Some idea of Japanese landscape may be gathered from the illustration. What may be seen in this picture?

There are as yet few railroads in the country owing to its very mountainous character. There are many good harbors, and Japan is rapidly developing a great ocean trade. Tokio, with a population of more than a million, is the capital and great manufacturing centre. Yokohama is the port of Tokio; tea and silk are the chief exports.

The East Indies. The Malay Archipelago, or East Indian Islands, include a countless number of small and of large islands to the south and south-east of Asia. Besides the Philippines, a possession of the United States noted for hemp, tobacco, coffee, and sugar, there are the large islands of Sumatra, Java, Borneo, Celebes, and New Guinea.

The climate is very moist and very warm, and hence vegetation is everywhere abundant. The chief products are coffee, tobacco, spices, and costly woods. The animal life resembles that of southern Asia and north-eastern Australia. Why so? Manilla, on the Philippines, is one of the important cities of this part of the world.

QUESTIONS. 1. Describe from memory the eastern coast of Asia. The southern coast. 2. Make an outline of Asia from memory; mark and print on it the following: (*a*) The great plateau country and the Himalayas; (*b*) The Siberian Plain and the Great Plain of China; (*c*) The rivers Ob, Hoang-ho, Yangtse-kiang, Ganges, Indus, and Euphrates-Tigris; (*d*) The Japan Islands, the Philippines, Sumatra, Celebes, Borneo, New Guinea, Singapore Islands, and the Island of Ceylon; (*e*) The peninsulas and coast-waters of the east, south, and west. 3. On another outline drawn in the same way, mark in (*a*) the equator, Tropic of Cancer, and the Arctic circle; (*b*) The oceans; (*c*) The tundras, steppes, and the Pamirs; (*d*) The location of the Chinese empire, Siberia, India, Burma, Persia, Arabia, and Asia

A marine fishing village in New Guinea. The houses are built on islands or upon piles in shallow water.

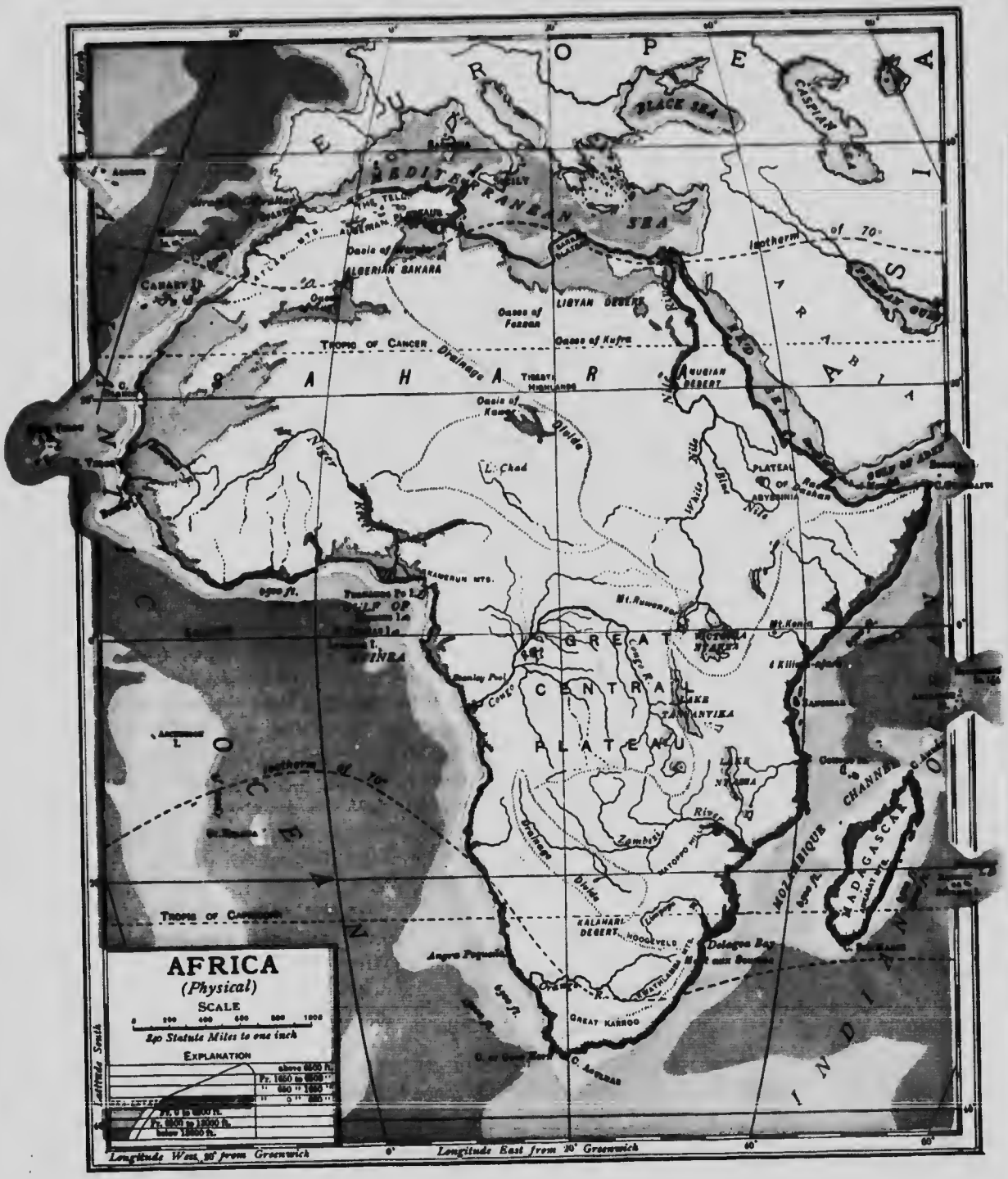
Minor; (*e*) The Caspian Sea, the Sea of Aral, and Lake Balkash; (*f*) The desert of Gobi. 4. Outline the peninsula of India and mark on it (*a*) the Himalayas and the Ghats; (*b*) The Deccan and the valleys of the Ganges and Indus; (*c*) Calcutta, Bombay, Madras, Benares, and Delhi; (*d*) The districts suitable to cotton, wheat, rice, tea, and goats. 5. Show on a map the eastern coast of Asia and print on it the following: Niphon, Formosa, Fujiyama, Tokio, Japan Sea, Port Arthur, Gulf of Pechili, Hoang-ho, Peking, Hong Kong, the Yangtse-kiang, Yellow Sea, Malay Peninsula, Singapore City, the Tropic of Cancer, and the Chinese Seas. 6. On another map of Asia show the forest areas (north and south), the pasture lands, and the districts best suited to cotton, tea, rice, silk, coffee. 7. How does the Asiatic elephant differ from the African elephant? 8. Give a description of the Chinese wall, rice-farming, hunting the Bengal tiger, pearl-fishing, and the yak. 9. What are the capitals of India, the Philippines, Arabia, and China? 10. What are Benares, Mecca, and Jerusalem noted for? 11. What and where are Mocha, Manaar, Colombo, Lhasa, Syr-Darya, Jaffa, Aden and Hooghly? 12. Compare the sizes of Asia, Africa, North America, South America, Europe, and Australia. If these are represented respectively by 18, 11, 8, 7, 3½ and 3, Asia would make how many Europes? How many South Americas? 13. How would you get from Calcutta to New York? From Vancouver to Canton? From Bombay to London? From Singapore to Cape Town? 14. What part of Asia has the greatest number of people? What has climate to do with the population? 15. Why has interior Asia a more extreme climate than coastal Asia? 16. Describe what you think the Himalayas look like. 17. Describe a bamboo tree and a tea plantation. 18. Compare the Indus and the Nile.

AFRICA

What continent is shown here? What is its shape? What can you say of the regularity of its coast line? What ocean lies to the east? What to the west? What continent lies to the north? How is Africa separated from this continent? What continent lies to the north-east? What continent is seen to the south-west? What point in the continent is nearest to Africa? Where is Africa broadest? What is the name of the great curve between the northern and the southern portions of Africa on the west? What island lies off the south eastern coast? Where are the Cape of Good Hope, the Sahara Desert and Egypt? Where are the main highlands of Africa? How does Africa compare in size with North America, and with Europe? In what hemisphere is Africa? Which stretches the farther south, Africa or South America?

The position of Africa among the continents.

Were we to compare a modern map of Africa with a map of fifty or less years ago, we should find some wonderful changes. The Africa of our grandfathers had the words "unexplored regions" covering almost the whole continent except the north, the south and a narrow coast margin. Africa has been called the Dark Continent, and there has been some reason for this name. One would think that Africa should have been explored long before North America was settled, for the northern portion of Africa was well known to the people of southern Europe and western Asia long before people thought of an America. There were great nations on the shores of the Mediterranean two thousand years ago. On the European side there were Greece and Rome. On the African side there were Egypt and Carthage. Why did these nations not lift the veil from Africa south of the desert? The answer is partly seen in the wonderfully regular coast line. Europe has a broken coast, with great openings and great peninsulas showing how fully the sea penetrates into the land and how well the land stretches


AFRICA
(Physical)
SCALE
820 Statute Miles to one inch
EXPLANATION
Longitude West from Greenwich
Longitude East from Greenwich
Latitude South
EUROPE
ASIA
ARABIA
INDIA
MEDITERRANEAN SEA
BLACK SEA
CASPIAN SEA
RED SEA
SAHARA
ATLANTIC OCEAN
INDIAN OCEAN
GREAT CENTRAL PLATEAU
LIBYAN DESERT
NUBIAN DESERT
ARABIAN DESERT
PLATEAU OF ABYSSINIA
KALAHARI DESERT
GREAT KARROO
MADAGASCAR
MOZAMBIQUE CHANNEL
Tropic of Cancer
Tropic of Capricorn
Equator
Isotherm of 70°
Isotherm of 10°
Oasis of Kufra
Oasis of Fezzan
Oasis of Kawar
Oasis of Wargla
ALGERIAN SAHARA
Drainage
L. Chad
Niger
Nile
White Nile
Blue Nile
Zambesi
Orange R.
Congo
Lake Tanganyika
Lake Nyassa
Victoria Nyanza
Mt. Kenia
Mt. Ruwenzori
Kilimanjaro
Cape Verd
Cape of Good Hope
C. Agulhas
Delagoa Bay
Angra Pequena
Walfish Bay
Ascension I.
St. Helena I.
Canary Is.
Madeira Is.
Cape Verd Is.
Fernando Po I.
Annobon I.
Socotra I.
Gulf of Guinea
Gulf of Aden
Gulf of Sidra
Gulf of Cabes
Gulf of Guinea
Table Mts.
Kong Mts.
Kamerun Mts.
Abyssinian Highlands
Atlas Mts.
Tibesti Highlands
Hoogveld
Namaqualand
Bechuanaland
Transvaal
Orange Free State
Natal
Cape Colony
Sierra Leone
Liberia
Ivory Coast
Gold Coast
Dahomey
Togoland
Kamerun
Nigeria
Algeria
Tunis
Tripoli
Egypt
Morocco
Abyssinia
Somaliland
Nubia
Kordofan
Darfur
Wadai
Bornu
Sokoto
Timbuctoo
Senegambia
Sahara
Barbary
Numidia
Mauritania
Cyrenaica
Fezzan
Ghadames
Tuat
Touat
Gadames
Ghat
Ghadames
Tibesti
Ennedi
Borku
Kanem
Bagirmi
Waday
Darfur
Kordofan
Nubia
Abyssinia
Somaliland
Galla
Danakil
Shoa
Harar
Zanzibar
Pemba
Mombasa
Melinda
Zanzibar I.
Pemba I.
Comoro Is.
Mauritius
Reunion
Rodriguez
Seychelles
Amirante Is.
Aldabra Is.
Farquhar Is.
Chagos Is.
Maldive Is.
Laccadive Is.
Andaman Is.
Nicobar Is.
Ceylon
Sumatra
Java
Borneo
Celebes
Timor
Flores
Sumbawa
Lombok
Bali
Java Sea
Banda Sea
Arafura Sea
Timor Sea
Coral Sea
Tasman Sea
New Zealand
Australia
New Guinea
Solomon Is.
New Hebrides
New Caledonia
Fiji Is.
Samoa Is.
Tonga Is.
Society Is.
Marquesas Is.
Tuamotu Is.
Low Archipelago
Hawaiian Is.
Ladrone Is.
Philippine Is.
Luzon
Mindanao
Sulu Archipelago
Celebes Sea
Molucca Sea
Banda Sea
Arafura Sea
Timor Sea
Coral Sea
Tasman Sea
New Zealand
Australia
New Guinea
Solomon Is.
New Hebrides
New Caledonia
Fiji Is.
Samoa Is.
Tonga Is.
Society Is.
Marquesas Is.
Tuamotu Is.
Low Archipelago
Hawaiian Is.
Ladrone Is.
Philippine Is.
Luzon
Mindanao
Sulu Archipelago
Celebes Sea
Molucca Sea

into the sea. Africa is wanting in these things, the result being that the interior in many places is very far away from the sea, and hence difficult of access. Again, the great desert of Sahara, stretching as it does across the northern part of the continent, made it next to impossible to reach the south by crossing these wastes of starving land. But rivers sometimes permit explorers to enter unknown regions. While this was true in the case of the St. Lawrence and the La Plata, it is not so true here. Africa has four very great rivers, but these have rapids near their months,—surely an obstacle in the way of the explorer.

Africa was thus a land of mystery to the sea-loving nations of the fifteenth century. Year after year Portuguese ships crawled farther and farther along the coast of Africa southwards, until the Cape was doubled and a route from Europe to India opened up. What two men were concerned with this, and about what time did it take place?

A short time afterwards Portuguese and Dutch traders established places of call or trading posts on the coast of South Africa, and through these settlements Central Africa came to be known to the world. In other words, the entrance to unexplored Africa was at the south instead of at the north.

Surface. Africa is a great plateau or high plain, which in turn is broken up into many smaller plateaus. In Africa we have no great highlands nor lowlands such as we have seen in the case of the Americas and of Europe. The continent as a whole is high and rises quickly from the coast by a series of steppes or terraces, to a more or less saucer-shaped depression inland. These features may be noticed on the physical map. All around the coast you will see a narrow green strip of low land, a very small fraction of the whole continent. What can you say of the lowlands of North America and of Europe? The presence of this narrow, low coast is something one must not forget about the geography of Africa.

You will next study the three shades of yellow. The deepest shade tells you where the highest land masses lie. Compare Africa and South America in this particular. The lightest yellow shows where saucer-shaped areas lie, and the middle shade of yellow shows the plateau regions. Africa is higher in the east than it is in the west. Highlands stretch all the way from about the centre of the western coast of the Red Sea to the Cape of Good Hope. The most rugged portions of this ridge, which we may consider as forming the main African highlands, are evidently near the southern end of the Red Sea, in the African lake region, and in the south. Close to the equator groups of old volcanoes are seen. These rise to a height of some three miles above the sea-level.

It may help the boys and girls to think of southern Africa as being a highland region from which three great spurs are sent northward, the one on the Atlantic coast circling about the Gulf of Guinea, the one on the Indian Ocean coast extending to the middle of the Red Sea coast and even beyond, and the third stretching in a broad band northward in the centre and crossing the Sahara Desert. The Atlas mountains form two great chains on the north-west.

Climate. Locate the equator. What portion of Africa lies in the northern hemisphere? What do you call the lines running east and west across the map? Find the Tropics of Cancer and Capricorn. When is the sun directly over Cancer? When over Capricorn? When it is midsummer at the Cape, what season is it in northern Africa? In what direction must a resident of South Africa look to see the noon-day sun? In what belt of heat is the greater part of Africa? In what heat-belts are the northern and the southern coasts? Are these in the warmer or in the cooler portions of these belts? What can you say of the temperature of the continent as a whole? Equatorial Africa from the Gulf of Guinea to the Indian Ocean is well supplied with rain. From what direction

do the rain - bearing winds come? Off what ocean? To the north and to the south of this rainy area are areas of little or no rain. Hence we have two desert regions, a very great region along the Tropic of Cancer, and a smaller region along the southern tropic. What are the names of these deserts, and why should the southern desert be the smaller of the two? The extreme north-west and south-west coasts have a fairly heavy rainfall.

Rivers. Into what bodies of water do the Nile, Niger, Congo, and Zambesi flow? Which of these rise in equatorial Africa? Most of the African rivers have falls and rapids along their courses, and these are all near the sea. How will this interfere with the value of these rivers for commerce? How will this affect the usefulness of the rivers as a means of access to the interior? How may these obstructions be overcome? Name the lake source of the Nile. Where is this lake in relation to the equator? Follow the Nile northward to the Mediterranean and notice where the Blue Nile enters from Abyssinia. Notice also the strange double curve of the river below this junction, and the absence of tributaries from the Tropic to the sea. Why are there no tributaries here? Measure with your ruler the distance from Lake Victoria - Nyanza to the mouth of the Nile.

The Nile at Cairo. Cairo, the capital of Egypt, is important commercially and is much visited by tourists.

The Nile is the longest river in Africa and the longest in the Old World, and there is no other river quite so famous anywhere. Without the river there would have been no Egypt, with its pyramids and other remains of ancient days to record. No wonder that the early Egyptians looked upon the river as a marvel. They knew nothing of its source, but they did know that it flooded the parched lands of their country once a year with the rich mud that furnished food to both man and beast. This flood is caused by the heavy June rains on the highlands of Abyssinia and rains on the upper portion of its course. These rains wash down tons of rich soil which is borne down the river and spread over the land. As the river comes down the terraced country south of Cancer, a series of cataracts are formed. Of these there are six. They are numbered, beginning at the north, First, Second, etc. At the first cataract, at a place called Assuan, a great dam costing millions of dollars was built across the river a few years ago by the British people. This dam stores up the water at flood-times and, as it is needed for irrigation, it is let out upon the lower districts.

The Nile provides many hundred miles of excellent navigation on the lower portion of its course. Parts of the upper Nile are also navigable. At the mouth there is a very important fan-shaped piece of land known as the Nile delta, and through this the river flows in several channels.

In what part of Africa is the Niger? Is the source in a dry or in a wet area? Notice the great bend. What town is situated near the bend? Through what kind of region does the middle Niger flow? Has the river a delta? Does this show a rapid or a slow-moving stream? Name the curve at each side of the delta.

The Niger runs through a forest country

of very great value. One of its earlier explorers was a Scotchman named Mungo Park, who spent the years between 1795 and 1805 in trying to remove the darkness overshadowing this corner of Africa. What important tributary does the Niger receive from the east? The Niger and its tributaries command the trade of the Sudan both in the centre and the west.

Find Lake Bangweolo. This is the source of the Congo. Following the course, notice that the river swings north across the equator, then back again and flows south-west into the Atlantic. The current is so strong that it is felt hundreds of miles out at sea. Why has not the Congo a delta? The Congo reminds us of the Amazon in the great area of its basin and in its heavy rain supply. Like the Amazon, the Congo has many tributaries, so many that travellers have reported crossing thirty-two streams in going a journey of a few hours. The basin of this river is walled in by mountains. What are these? Long ago it is supposed that a great sea filled this depression, and that the outlet into the Atlantic gradually wore a path through the western mountains low enough to drain off the water.

Notice the numerous streams on the south bank of the river. The Congo flows through a great forest-clad plain. It crosses the equator first at Stanley Falls, where the river is about a mile in width. From this point to Stanley Pool the river is navigable. From Stanley Pool, named after H. M. Stanley, the explorer of the Congo, to a point one hundred miles from its mouth, it leaps down from the plateau in several cataracts and series of rapids.

The Zambesi, which flows east in a double curve, is a most valuable river because it is the entrance to a plateau well suited to northern Europeans. The river is broken in many places by rapids, and midway in its course it plunges into a great canyon several hundred feet deep. Here are formed the great Victoria Falls, the African Niagara. Think of a stream a mile wide just above the falls. Think of all the water being forced into about one-fifth of this width and plunging down 400 feet into the channel below. The noise is like thunder as the water goes tumbling through the thirty-five miles of gorge. The first white man to witness these wonderful falls was David Livingstone, the explorer of the Zambesi. Livingstone was curious to find out what the "talking smoke" so often mentioned by the natives, really was. When he saw the five columns of mist rising below the falls and heard the noise of the falling waters, he knew what was meant. What tributary enters the Zambesi near its mouth? From what lake? In what direction do most of the tributaries of this river flow? What does this tell you of the slope? Has the river a delta?

The Orange River to the south-west, has the usual number of cataracts, rapids, but has few tributaries. In the dry season it is lost [illegible]. In the rainy season its bar[illegible]

The African Lakes. The Victoria-Nyanza is [illegible] Lake Superior. To the [illegible] great mountains tower [illegible] directly on the equator, [illegible] are covered with eternal snow. No wonder the poor natives thought that there were spirits at the summits, spirits that bit off their fingers and toes.

The region of the African lakes is plateau-like and consists of rolling plains, with great troughs in which the lakes are lying. Tanganyika to the south-west is a long, narrow lake draining at high water into the Congo basin. Lake Nyasa, to the south-east, drains into the delta of the Zambesi. This lake, discovered by Livingstone, is now much used by steamers.

Lake Chad is situated about half way

between the most easterly and westerly points of Africa. This lake, which is on the southern edge of the desert, is large or small according to the season of the year. Heavy rains cause it to overflow. Dry weather reduces it materially. Its waters are fresh.

Islands. Find the positions of the Azores, Madeira, and Canary Islands. The Azores and the Madeiras belong to Portugal; the Canaries belonging to Spain. These islands supply the London markets with grapes, early tomatoes, and potatoes. South of the equator are Ascension and St. Helena, the latter being the place of banishment of Napoleon from 1815 to his death in 1821. Madagascar on the east coast is the third largest island in the world. Fossil bones of a bird that stood ten feet high and laid an egg a foot long have been found on this island. Was the Roc in the story of Sinbad the Sailor a myth?

Vegetation. There is always plenty of rain at the equator. There is also abundant heat. These two conditions are favorable to forest growth. The equatorial forest stretches across the country about the coast of the Gulf of Guinea for twelve hundred miles, and is, next to that of the Amazon, the largest forest area in the world. If you can imagine an area four times as large as Great Britain, crowded with giant trees five feet in diameter and 200 feet in height; trees whose branches are so woven together that the sun can scarcely shine through the dense foliage; where each tree seems to be lashed to others by creepers and twiners ranging in size from the thickness of a piece of twine to that of a great rope; if you can further imagine an undergrowth so dense that walking through it is almost impossible; if you can picture a spongy forest floor, a dim light, thousands of murmuring insects and vapors rising from the ground, you may have some slight idea of what this forest is like. Then you must think of the hundreds of great streams winding this way and that, but always in the forest shade. Into this great area imagine human beings living in total ignorance of the big open world beyond the forest edge, and you have a more complete but still a very imperfect notion of this awful vastness.

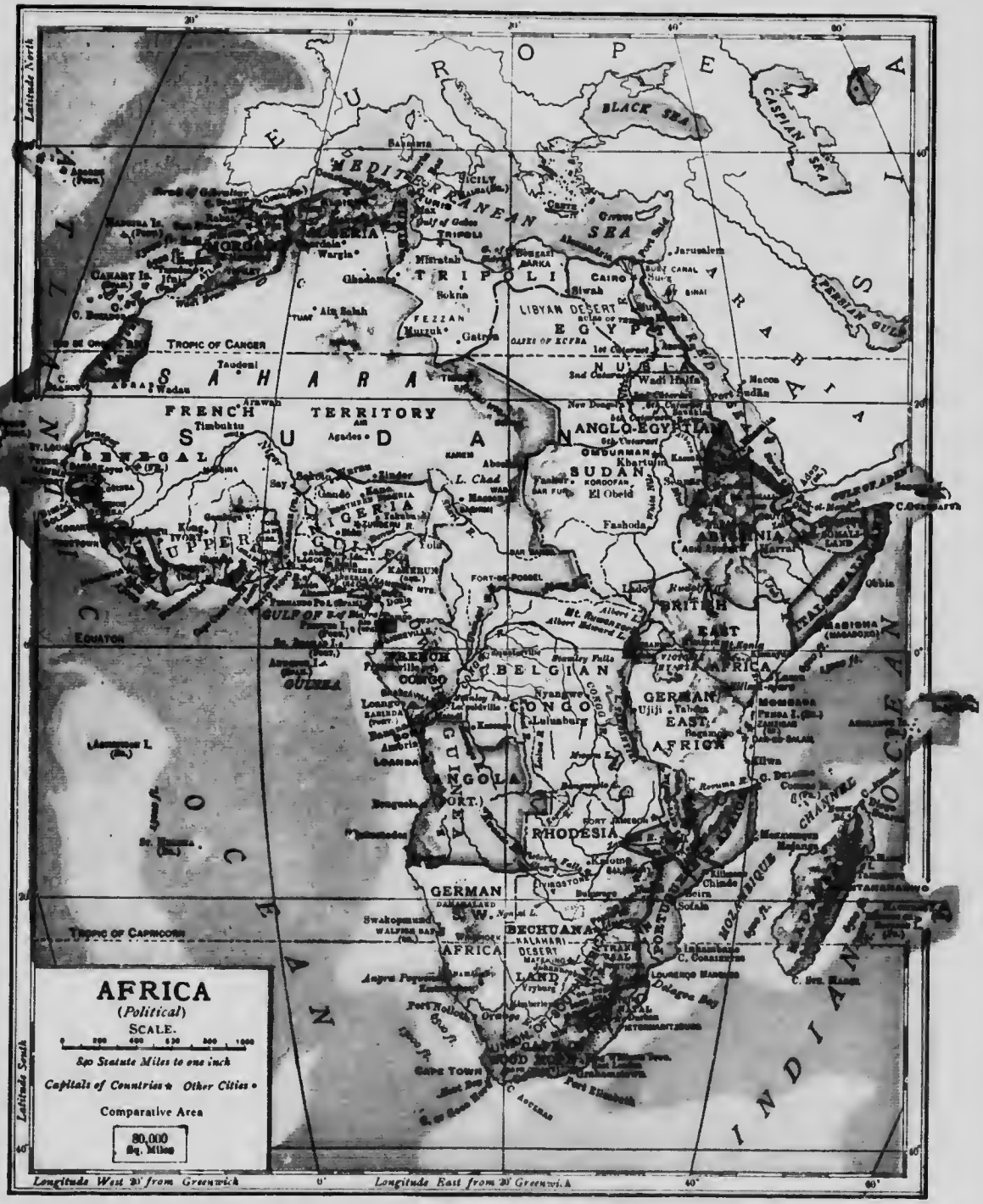
In the African forest are to be found the banana, the rubber plant, the ebony tree yielding a black heavy timber most useful for the handles of table knives, for walking sticks and for piano keys, mahogany valuable in cabinet work, the coffee plant, and the palm.

To the native the banana is most important. He roasts it, makes flour from it, and uses the fibre for making various things about his hut. If he has a few banana plants he is comfortable. Without them he will likely starve.

The rubber plant of Africa is different from that of South America. The African plant is a creeper whose stem is often several inches thick. These creepers plait themselves like twining snakes about the trunks of trees, or hang in great masses from the mighty branches. There is a saying that where the rubber vine is abundant, neither man nor bird will find a good home.

The oil-palm is abundant in the forest along the Guinea shore. The pulp is boiled in water and the oil skimmed off as it rises to the top.

North and south of the forest area are the park-like lands where trees and rank grasses grow. Beyond these are the steppe lands, or grassy plains somewhat like our own prairies. In the park lands the natives pursue a poor class of farming. As these regions are subject to what may be called the wet and the dry seasons, the natives either follow their flocks and herds from pasture to pasture, or remain in the one place and try to do a little farming. One tree


AFRICA
(Political)
SCALE.
0 200 400 600 800 1000
200 Statute Miles to one inch
Capitals of Countries ★ Other Cities ●
Comparative Area
80,000 Sq. Miles
EUROPE
ASIA
ATLANTIC OCEAN
INDIAN OCEAN
MEDITERRANEAN SEA
BLACK SEA
CASPIAN SEA
RED SEA
ARABIA
PERSIAN GULF
SAHARA
SUDAN
FRENCH TERRITORY
ANGLO-EGYPTIAN SUDAN
EGYPT
LIBYAN DESERT
NUBIA
ABYSSINIA
BRITISH EAST AFRICA
GERMAN EAST AFRICA
BELGIAN CONGO
FRENCH CONGO
PORT. GUINEA
GERMAN S.W. AFRICA
BECHUANALAND
RHODESIA
ANGOLA (PORT.)
NIGERIA
GOLD COAST
SIERRA LEONE
GAMBIA
TRIPOLI
MOROCCO
ALGERIA
CAIRO
TIMBUKTU
KHARTUM
EL OBEID
FASHODA
ADDIS ABABA
MOMBASA
ZANZIBAR
CAPE TOWN
PORT ELIZABETH
DURBAN
DELAGOA BAY
LOURENCO MARQUES
BEIRA
TROPIC OF CANCER
TROPIC OF CAPRICORN
EQUATOR
Latitude North
Latitude South
Longitude West from Greenwich
Longitude East from Greenwich

Transportation across the desert. Long caravans or trains of camels carry merchandise over this desert region.

peculiar to this region is the baobab, whose trunk often measures 100 feet in circumference. The fruit of this tree is as big as an orange and is used as food. Beyond the park lands are the steppes, where there is grass and no trees, and beyond the steppe lands are the deserts. No vegetation but prickly plants or plants with tough coverings can live in such a desert as the Sahara. Still there are a few green islands in this wilderness of sand and stones. The Sahara is desert only because there is not enough rainfall. Wherever water comes to the surface as a spring, or where it has been reached by digging or boring, there are the oases of the desert. Their chief product is the date-palm, which produces from 300 to 600 pounds of dates per tree each year. The date-palm provides the traveller through the desert with food, timber, and shade.

The vegetation of Africa along the Mediterranean is much the same as that of southern Europe; whereas, that of southern Africa resembles the vegetation of the Argentine Republic. Why should this be? Describe the products of each of the regions mentioned.

On the island of Zanzibar, on the eastern coast, cocoanuts and cloves are grown. What do you know of the cocoanut palm? Clove trees grow to be thirty or more feet in height. Blossoms appear about the sixth year. These are gathered, cured in smoke, and then shipped to all parts of the civilized world.

Animal Life. Nearly all the animals of Africa are unlike those of any other continent. These would be strange to us except those we may have seen at a circus or in some menagerie. The animals of northern Africa as far south as the Tropic of Cancer, and those of southern Africa, are for the greater part like the animals about our own homes. The rest of Africa has animals peculiar to itself.

The antelope, a species of deer, the zebra, and the giraffe feed upon grass or on the herbage of the smaller trees. In northern and southern Africa, and on the edge of the great forests are found the lion, the hyena, and the leopard, which prey upon the grass eaters. In the forests are the tusked elephants, and the gorilla. Crocodiles, hippopotamuses, and rhinoceroses

The striped, horse-like zebras.

are found in the streams and marshes, and camels and ostriches on the desert and steppe areas.

The giraffe varies in height from 15 to 20 feet, the greater part of the height being due to the great length of its neck. Its tongue is long so that it can easily strip the leaves off the trees upon which it feeds. Some of these animals have a beautifully-spotted body. Others are chestnut-colored, and all in their native wilds may so resemble the trees that the hunts-man, unless an expert, does not even suppose that giraffes are near. The zebra is a small striped horse said to be very difficult to tame. Its home is in the higher park country of central East Africa. What are the colors of the zebra's stripes?

The range of the lion was once from one end of Africa to the other. As the lion feeds on animal food it can live only where other animals are found. It possesses great strength, swiftness, and courage; it is solitary in its habits, and usually hunts alone. To-day, the lion is found only north of the Orange River.

An African lioness.

The elephant.

The hippopotamus.

The double-horned rhinoceros.

The gorilla, the largest and fiercest of the monkey tribe, when full grown is as tall as a man and of enormous strength. The home of this ape is found in the deeper forests of the coast of the Gulf of Guinea. Gorilla life is a family life. Its food consists of nuts, fruits, eggs, etc., found in the forest.

The African elephant, or big-eared elephant, once roamed all over Central Africa. Now there is much danger that before many years the hunter will have shot the last of these fine elephants. This animal, as you know, has enormous ivory tusks, hence the slaughter. Dead ivory, that is, ivory found throughout the forest wherever elephants have died, is not as good as fresh ivory. Dead ivory is, however, collected and taken north along with the fresh ivory. The African elephant cannot be tamed. His home is partly in the woods, where his spoors or trails are readily followed, and partly in the open ground. What do elephants feed upon? How do they gather this? What do they gain by living in herds?

The hippopotamus, or river horse, is a great heavy beast living along and in the swampy rivers and smaller lakes of Africa. How much will a large hippopotamus weigh? What is its color? How many toes has it on each foot? How many toes has an elephant on each foot?

The rhinoceros scratches the earth with its foot, then with two or three blows of its horn, which is kept moving like a pickaxe, it loosens up roots, which its lips seize and its teeth crush. Its ears move with its jaws, its short tail swings away, and numbers of birds cling to its back and sides. What are these birds finding? Of what other service may this be to the animal? Give reasons why the rhinoceros should be the very king of beasts.

An ostrich farm. These birds are raised for their feathers, oil, and eggs.

Young ostriches recently hatched. The little birds will grow to a height of about eight feet.

The camel is the "ship of the desert." It can travel about thirty miles a day and carry a very heavy load.

Its broad flat feet prevent it from sinking in the sand. It can feed on the spiny shrubs of the desert and can go without water for several days. Its eyelashes are long; it can close its nostrils, and is in every way a very desirable beast for the desert.

The ostrich runs along the steppe-lands bordering the desert, and was formerly shot for its beautiful feathers. Now the ostrich is reared on the ranches of southern Africa the same as cattle, horses, and sheep are reared. Tell what you can of a South African ostrich farm, making mention of its size, the hatching of the chicks, danger from the big birds, gathering feathers, etc.

Africa has also dangerous insects as well as dangerous animals. There is the *tsetse* fly of the south-eastern coast. It is no larger than a small house-fly, yet its bite is so poisonous that thousands of horses, sheep, oxen, dogs, and even some of the wild animals have been destroyed within a few years. In other districts the *jigger*, an insect which burrows under the toe-nails and lays its eggs there, is found. What may be the result should an infected toe be neglected? In South Africa and in Africa south of the Sahara, one may see great hills or mounds of earth 10 to 15 feet high, the homes of myriads of ants. The white ant is particularly destructive of wood. The driver, or soldier ants, when on a march will cause all animals to flee before them.

The People. The inhabitants of Africa are either of the black or of the white race. As a rule Europeans live either in the very northern or in the very southern parts of the continent. Northern Africa is peopled in the main by a white race differing from the Canadian because of a darker skin, an oval face, and sharp features, characteristics best seen in the Arab of the desert.

About the Gulf of Guinea, in the interior, and particularly in the Sudan, "the land of the blacks," are to be found the negroes. These people are jet black, good-looking, and well built. The negroes are like overgrown children, given to idleness, fond of

ornament and of pleasure, and are usually very good-natured. Their homes are huts of grass, reeds, mud, or branches. Their clothing is scanty, and they believe that their fetish or home-made god (it may be only a snake's head) can keep away the evil spirit residing behind every rock, tree, and cloud. The Gulf negroes were those brought in ships to America as slaves. South of the equator are the lighter-colored negroes known as the Bantu people. These are divided into a number of tribes, of which the Kaffir, Zulu, Basuto, Matabele, Mashona, and Bechuana are the most important. The Kaffir, Zulu, and Matabele are warriors and hunters. The Bechuanas are warriors and farmers, and the Mashonas and Basutos are more given to agricultural pursuits. The Kaffirs and Zulus are a handsome people whose principal weapons of war are the spear or assegai, the heavy club knobbed at the end, and the tough bull-hide shield.

Scene at a village in Central Africa. A trader is bartering with the natives for ivory. Note the great size of the tusks.

In the south-west corner are the Bushmen and the Hottentots, two of the lowest types of the human race. Both have dark, bilious-looking skins, broad, flat noses, high cheek bones, and short crisp hair growing in tufts. The Bushmen are treacherous and given entirely to hunting. Their chief weapons are the spear and the poisoned arrow. The villages, or *kraals*, of the Hottentots are found on the grass-covered plains where they raise a few sheep and cattle.

The Dutch, whom we have already mentioned, were the first to settle in South Africa. Soon after the first settlement at Cape Town was made, they found that the interior was a good farming country, and horses, sheep, cattle, grain, and grapes were introduced and grown successfully.

A native village, South Africa.

As farm help was often needed, all the early Dutch farmers had to do was to round up some unfortunate Hottentot kraal and enslave all they captured. This went on until 1806 when Britain took over South Africa and began to place English-speaking settlers among the Dutch *Boers*, that is, *farmers*. In 1833 Britain passed a law making it illegal to keep slaves in British territory. To avoid this the Boers trekked, or made tracks into districts farther inland. Most of the trekkers made their way in huge canvas-covered wagons drawn by several yokes of oxen, across the grass-land and into the country beyond the Orange River. Here

was founded the state known as the Orange River Republic. But the more determined Boers pressed on into the country across the Vaal River and settled in what is now known as the Transvaal, or the country beyond the Vaal.

While the trekking Dutch were settling in these regions, British settlers continued to enter the Cape country, or Cape Colony, and soon there was trouble with the native races. Kaffirland to the south-east was first added to Cape Colony. Then Basutoland, the Switzerland of Africa, a region west of Natal. Then came a bitter struggle with the Zulus, the most hopeful and intelligent of all these tribes. Cetewayo, the last king of the Zulus, had succeeded in creating in his subjects a greater fondness for war than was already present in a people naturally given to hunting and fighting. He did this by refusing to allow his young men to marry before they had shown distinction in battle. You will easily understand what this would mean to a lot of savages. It was not until Cetewayo was finally defeated and captured that the Zulus settled down to the more useful work of farming. Their country now forms the northern part of Natal.

Native Zulus. The women dress in blankets and the men in hides of animals. All wear ornaments of beads, feathers, and metal bracelets.

Bechuanaland was added to British territory in 1885 because the whole country was disturbed by bickering among the various chiefs. Beyond Bechuanaland is Rhodesia, called after the great South African, Cecil Rhodes, who devoted his life to the development of his country. Rhodesia is one of the finest areas in South Africa and one well suited for the residence of northern peoples. The grave of Rhodes is on the top of the Mattoppo hills, a range of rolling country in the centre of Rhodesia, a fitting resting place for a truly great patriot. To the south-east is Matabeleland and to the north of this is Mashonaland. After Britain had taken the oversight of Rhodesia, the war-like Matabeles made it anything but pleasant for the Mashonas, a more peaceful and agricultural race. In 1893 a stop was put to this when the British troops defeated the Matabele king Lobengula at Buluwayo, "the place of the killing." Ten years afterward, Buluwayo had a railway station, schools, churches, fine residences, and beautiful parks. They form a striking contrast to the kraal of the Matabele king with its hundreds of savage warriors.

In 1884 gold was discovered in a rocky ridge in the Transvaal, and in a short time a great many British and other mining adventurers entered the land. These newcomers changed a farming community almost unknown, into a busy, bustling centre of population. President Kruger, the last president of the Transvaal, refused to recognize the outlander, or foreigner, as a citizen having any rights in the country. This led to the late Boer war, in which the

Orange River country joined the Transvaal. The result was that both countries were defeated by Great Britain, and the boundaries of British South Africa greatly extended. Since then Boer and British are working hand-in-hand to build up a great South African Union, patterned after Canada and Australia.

The Work of the Explorer. With the coming of the nineteenth century, the curtain of darkness was gradually lifted off the African rivers, lakes, and mountains, and the hidden continent became uncovered. Before this took place the geographical explorer had to press his way through deadly swamps and across torrid deserts, scorched to the marrow by the sun, smitten by nameless fevers, tormented by insects, menaced by wild beasts, and ambushed by wilder men. A Scotchman by the name of Bruce searched for the source of the Nile in 1768. Another Scotchman, Mungo Park, gave up his life in trying to open the way down the Niger. But the man who succeeded in lifting the veil from the Dark Continent was David Livingstone. Livingstone travelled 29,000 miles in Africa and added one-twelfth of its whole area to the known regions of the world. It was Livingstone who discovered the Zambesi River and named the Victoria Falls. It was through the work of Livingstone that the horrible slave trade which the Arabs had carried on, was broken up, and that Central Africa is mainly British.

Livingstone went to Africa as a missionary in 1840. After discovering the Zambesi country, he was anxious to learn some of the secrets of the great Congo River and of the forest country through which it flowed. For years nothing was heard of him; but so great was his work and so much loved was the man that expeditions were organized to go in search of him. Henry M. Stanley, the discoverer of the Congo, was successful in finding him, but he found a man already old and almost worn out with his work. Livingstone died in 1873, and his native friends (he always had the power of attaching the natives to himself) embalmed his body as best they could and carried it to the coast to be sent to his own land. His body now rests in Westminster Abbey among other illustrious British dead.

Irrigation in Egypt. The water is lifted by buckets from one terrace to the other, and is carried by channels to the fields.

After the discoveries of Livingstone, the work of exploration was continued by Baker, Speke, Grant, and others until Africa is now better known than either South America or Asia.

But there was trouble in store when so great an area was made known to European nations anxious to extend their lands. The people of Africa were not strong enough to withstand civilized armies. In the end their

country would have to be given to Britain, Germany, or France. These and other European nations agreed to parcel up the country into what has been called "Spheres of influence." In other words, Britain was given certain great tracts of country over which her control would be freely exercised in the way of developing the land and doing her duty by her black subjects. Germany was given other districts. France and other nations were also given what was considered their share. This is the reason why you find on a modern map of Africa such great British areas, fine German districts, and immense stretches of French country. This partition is intended for the good of Africa, and the successful nations are, as a rule, using it wisely.

Algiers, the principal city of Algeria. Its position on the Mediterranean makes it important as a calling and coaling station.

The Nile Valley. Egypt, the "gift of the Nile," belongs to Turkey, though its affairs are really managed by Britain. How did this come about? Across the Isthmus of Suez is a great canal constructed in 1869 by Egypt, supported by Britain. British interests in India are too great to allow this sea-route to fall into the hands of enemies, or even to be neglected by Egypt. As Egypt was until lately a very badly governed country, Britain took control and at once set to work to improve the condition of the people. The army has been trained by British officers, taxation has been regulated, schools have been introduced, railways have been built, and the wonderful dam at Assuan has been constructed. Without the Nile, Egypt would become a parched up land. With the Nile, the country on each side, for a few miles, is a garden capable of growing rice, cotton, sugar-cane, tobacco, maize, and wheat. Cairo, near the delta, is the principal city, and commands both rail and river. It is well situated to become a very great city. How would you get from Cairo to the pyramids? What would you see when you got there? Alexandria, at the mouth of one of the rivers of the delta, was founded by Alexander the Great. When taken by the Mohammedan Arabs its fine library was burned.

Britain has also done much for the Egyptian Sudan. How Britain came to possess this region is easily told. The Mahdi, a Sudanese religious fanatic, gave much trouble while Britain was endeavoring to improve Egyptian affairs, and General Gordon was sent to Khartoum to restore order. Khartoum fell into the Mahdi's

hands and Gordon was slain. In 1898 General Kitchener crushed the Mahdi's forces at Omdurman, opposite Khartoum, and the Egyptian Sudan became a British "sphere of influence," a region to be developed as only Britain can.

The Barbary States. The countries along the Mediterranean Sea form what are called the Barbary States of Morocco, Algeria, Tunis, and Tripoli. Algeria and Tunis are under French influence. Long ago Algiers, the chief city of Algeria, was a nest of pirates who made shipping in the Mediterranean rather hazardous until the British fleet under Napier early in the nineteenth century bombarded their strong-hold and caused them to cease their piracy. In Tunis are the remains of Carthage, the strong city of the once formidable Carthaginians who fought Rome until the Romans destroyed their city. What do you know of Hannibal?

A street market in Tripoli

Morocco, under its present bigoted Mohammedan people, is a country of bad roads and no progress. The land would produce olives, dates, and figs, if the people were willing to cultivate it. Some day France will likely own Morocco. Notice the street scene in Tripoli. What does it tell you of the country?

The Sahara. The Sahara is a great lone land of sand and rock over which caravans travel like ships on the sea. Here and there an oasis nourishes a clump of date palms, trees whose roots must be moist, but whose tops must be surrounded by the hot, dry, sunny air of the desert. Besides the dwellers on the oases, there are but few residents of the Sahara, and these either live by plundering weak caravans or else labor as camel-drivers. No one seeks the desert for a pleasure ground. Life and business cross it by paths which lead from oasis to oasis, and from well to well, and along which the bones of dead things are strewn.

The Central Sudan. South of the desert is a wide grassy region largely in the possession of France. We have already said something of Lake Chad. Over the country from the east to the west are several caravan-routes. From points in the Sudan to points across the Sahara are other caravan-routes. The inhabitants of the Sudan raise flocks and herds, cotton and even wheat. They also collect ivory, ostrich feathers, and palm oil from the south and from the east. The caravan pilot is an important person in this land. He is supposed

to know the routes across the continent, whether these take him through the desert or across more fruitful land. In his hands the safety of the caravan lies. He is therefore a man to be honored as much as is the pilot on a big ocean liner, or the engineer of a great passenger train.

Abyssinia. Abyssinia, situated near the eastern shoulder of the continent, has been called the African Switzerland. What should this tell you of the nature of the country? Rain is abundant, the soil is rich, but the people are lazy. Abyssinia is a land of big game. It is also the native home of the coffee plant. Where is coffee now grown?

British West Africa. Between the mouths of the Senegal and Niger rivers are four separate British colonies—Gambia, Sierra Leone, Gold Coast, and Lagos. Gambia, founded in 1588, takes its name from the river which flows through it for several hundred miles. Sierra Leone (lion mountain), some 500 miles to the south, is called after the small peninsula at the foot of a rocky hill somewhat the shape of a crouching lion. In 1787 the peninsula of Sierra Leone was given to Britain by the native chiefs as an asylum for liberated negro slaves. Gold Coast consists of a strip of land along the north shore of the Gulf of Guinea, and was so named because of the gold the blacks brought to the trading posts as one of the products of their country.

The four colonies mentioned were originally trading settlements or posts where the products of the surrounding regions could be collected and traded for European goods. In time the majority of these stations existed entirely for the slave trade. They were, in a word, merely establishments from which slaves could be supplied for the West Indian and American plantations. When it was determined to put a stop to this traffic, some of the European nations holding possessions in West Africa, finding their profits reduced, abandoned the country to the British and the French, who now own the greater portion of West Africa.

Since this time British rule has been extended, from time to time, over vast regions adjacent to the original small holdings; but this rule has not always been acquired without bloodshed. When the Dutch in 1872 transferred their posts on the Gold Coast to Britain, Koffee, King of the Ashantee tribes, objected, and declared war. His forces were chased through dense forests and across great swamps by Sir Garnet Wolseley, the British commander. Coomassie, the native capital, was burned to the ground, and the Ashantee power was badly shattered. Some twenty years afterward, Prempeh, another Ashantee king, made war upon the neighboring tribes, with the result that Britain interfered, banished Prempeh to one of the islands of the Indian Ocean, and took the whole Ashantee country under her protection.

To the north-east of the Gulf of Guinea is one of the most important regions under British influence. This area comprises the great Yoruba country, noted at one time for its slave-raiding, several other small native kingdoms, and the large and fertile Nigerian country; in other words, the whole region extending from the Gulf to Lake Chad. Nigeria is the largest and most valuable of the British possessions of West Africa. In area it is about four times the size of the island of Great Britain, and its population is twice that of Canada. The natives are a fine, strong, intelligent race, known as the Hausas, a people in every way superior to the savage tribes around them. The roads throughout this vast region are very bad, and railroads are much needed for opening up the country to trade and civilization. The Niger, however, forms the great highway for the western district, and there is

already a fairly good service of steamers on it. Southern Nigeria is the flat, marshy, and unhealthy coast round the Niger delta and westward as far as Dahomey. Included in it is the old Colony of Lagos. Northern Nigeria, a more healthy region, includes the kingdom of Sokoto. Kano, the capital of Sokoto, has long been famous for its huge market, but the chief commodity bought and sold for years consisted of slaves. All the small kings paid tribute to the Sultan of Sokoto, a kind of king of kings. What this meant you will readily understand, when it is said that one king alone had to pay a tribute of 800 slaves a month.

The method of travelling across the veldt, as the rolling country of South Africa is called.

The Gambia country supplies the ground-nut, the oil of which is used as a substitute for olive oil. The capital is Bathurst. Freetown, the capital of Sierra Leone, is one of the busiest seaports on this coast. It is also a coaling station and the headquarters of the British West African squadron. The great drawback of this and the other settlements mentioned is the hot, damp, malarious climate. Sierra Leone has been called the "white man's grave." Why so? The exports are rubber, ginger, beeswax, and ivory, all of which are carried to the coast on the heads of the black freighters.

The Gulf of Guinea coast has two disadvantages—a bad climate, and a harborless coast. The heavy surf and the want of harbors make it necessary to convey goods backward and forward to the ships in small boats. The chief products are rubber, ivory, and gold dust.

The Congo Valley. It is said that fifty million blacks inhabit the Congo country, and that some of these have considerable skill in iron and pottery work. As a rule, the Congo people are tall and well built. The women are larger than the men, and all have very small hands and feet. Tattooing is common, the hair is worn short, and in some cases families are known by the peculiar way the teeth are filed.

The Pygmies of the Congo woods are merely hunters, whose whole life is spent under the shade of the trees. They are but little more than intelligent animals, who have learned how to make bows and arrows, spears, traps, and nets. They are fond of bananas, tobacco, and other products of the open country, and sometimes barter furs for these. More often they steal what they can get hold of. The Congo country is under the care of Belgium, in whose interests Henry M. Stanley made an exploration into this region. Boma and Leopoldville, near the mouth of the river, are the principal centres. Find out what you can of the way Belgium has governed this land.

South Africa. South Africa rises in a series of terraces from the sea inwards. First is the low plain of the coast; the second is called the "Little Karroo"; the third is the "Great Karroo"; and the highest part of the plateau is called the "High Veldt." The High Veldt stretches out into the Kalahari Desert. The Karroo lands ("Karroo" meaning dry or arid) are famous sheep and goat regions. On the

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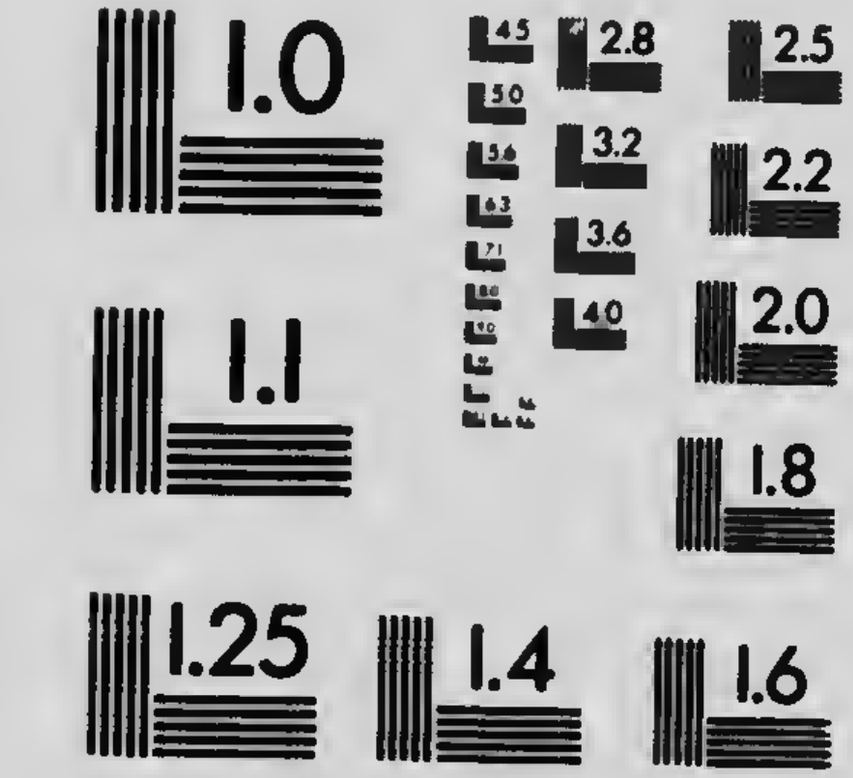

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Karroos are also the ostrich farms. Three South African products are therefore wool, mohair (the long silky hair of the Angora goat), and ostrich feathers. How does South Africa compare with Australia and the Argentine Republic in wool?

On the High Veldt and in the Karroos vast herds of cattle and horses are reared. But while South Africa is largely given to the grazing of horses, cattle, sheep, and goats, a great deal of attention is also paid to the growing of wheat, maize, and grapes.

Hout Bay, South Africa. The farmhouse and buildings are typical of this region.

Natal, on the east coast, is the "garden of South Africa." As one goes up the terraced country from the coast of the Indian Ocean, one passes through ravines, over wooded hills and across rolling meadows where numerous cattle are feeding. On the higher lands maize, oats, and barley thrive. On the lower lands are orchards of peaches and apples. Lower still there are tea and coffee farms. On the coast lands there are fields of tobacco, sugar-cane, and rice, great areas of pineapples, and numerous lemon and orange orchards. Name a region in North America something like Natal. In South Africa the invader supplies the brains, but the native-born do the manual labor.

Cape Town, beautifully situated at the foot of Table Mountain and on Table Bay, is protected by a heavy breakwater from Atlantic storms. From Cape Town the great "Cape to Cairo" railway runs northward, crosses the Zambesi on a mighty steel structure at Victoria Falls, and is being extended from year to year to join the northern road running up the valley of the Nile. What will such a road do for Africa? Other cities in South Africa are Kimberley and Johannesburg; the former was built up because of its diamond mining, the latter because of its gold mining. The diamonds are found in the blue clay several feet below the ground level. This is quarried out, and after an exposure of nearly a

Table Mountain, South Africa, owes its name to its peculiar shape and flat summit. This magnificent mass of rock is very precipitous and can be seen from several miles out at sea.

whole year to the air, the clay crumbles and the diamonds are then washed out by Kaffir workers. These employees are shut up in special houses during the whole time of their engagement. On leaving they are most carefully searched to see that no diamonds have been taken away.

The richest gold region in Africa is found in the Transvaal. The gold-bearing rock is under ground and has to be mined. How is the gold obtained from the quartz rock?

Dars-es-Salam, the Capital of German East Africa. Note its modern appearance.

BRITISH EAST AFRICA

Uganda, in the western part of British East Africa, is one of the most valuable and most interesting of our African possessions. The country is one of great variety in landscape. Here are hills of fine pasture; there, dense woods filled with wild animals enough to delight the heart of the greatest hunter in the world. In one district the grass grows higher than the head of the tallest man. In another part are great swamps choked with papyrus reeds. There are also great meadow lands, dotted with banana plants and trees, which shelter numbers of villages with their little gardens and their well-cultivated fields.

The people of Uganda are polite, clean, modest, and intelligent. Nearly every family has a garden of sweet potatoes, and some have patches of grain, coffee, and sugar-cane. Mombasa is the seaport of this region. From it a railway runs far into British East Africa.

QUESTIONS. 1. With what are the names of Cecil Rhodes, David Livingstone, and Henry M. Stanley connected? 2. Outline Africa from memory. Place on it the equator, tropics, coast waters, the four great rivers, the two deserts, and Cape Town, Cairo, Kimberley, Mombasa, and Algiers. 3. On another outline print the localities best adapted to ivory, gold, diamonds, ostrich feathers, bananas, cotton, the date-palm, the baobab, wool, wine, and rubber. 4. On another outline mark the regions best suited to sheep, goats, camels, the elephant, the crocodile, the ostrich, the hippopotamus, and the pygmies. 5. What do you know of Vasco da Gama and General Gordon? 6. What regions in the continent are suitable for homes for people like ourselves? Why so? 7. Why would you not like to live about the coast of the Gulf of Guinea? 8. Describe an elephant hunt, ostrich farming, crossing the Sahara by caravan, and the Congo Forest. 9. How did the British get South Africa? 10. Who were Lobengula and Cetewayo, Kruger, and General Kitchener? 11. Give a description of Cape Town, Natal, Uganda, and Cairo. 12. Describe the Nile and the Congo. 13. What and where are the Sudan, Good Hope, Victoria-Nyanza, and Khartoum? 14. Which are nearer the equator—Cairo or New Orleans; Cape Town or Rome; the mouth of the Zambesi or the La Plata? 15. Measure from Cape Town to Cairo, and from Cape Verde to Cape Guardafui. 16. Place the point of your pencil on that part of Africa most distant from the ocean. From it draw a line 1,000 miles long. Taking the point as centre and the line drawn as distance, describe a circle. What does this tell you of the size of Africa? Draw a line 500 miles from the coast. Is much of Africa more than 500 miles from the sea?

What is the name of the continent shown in the following figure? What is its shape? What curves are shown on the north and on the south coasts? What island lies a short distance off the south-east angle? How is this island separated from the mainland? What islands lie away to the south-east? What oceans lie east and west? What ocean lies to the south? Where are the highlands of Australia? What do you know of the western slope? What continent is seen to the north-west? Name the two arms of the sea seen in southern Asia. What islands lie between Australia and Asia? In what hemisphere is Australia? What season have the people of Australia this month? Is the climate of Australia cold, hot or just agreeable? Make from memory an outline map of Australia on the blackboard and show the equator, the highlands, and the chief coast waters and islands.

Australia, showing its position in the water hemisphere far from any other continent.

AUSTRALIA

AUSTRALIA, the new world of the southern hemisphere, was probably first visited by the Portuguese and the Dutch. But the land remained unknown until about 1770, when Captain Cook, a famous British sailor, visited the eastern coast and reported the country suitable for settlement. A few years later, in 1788, a number of British colonists landed and commenced the first Australian settlement near what is now called the city of Sydney. New arrivals year after year soon made the settlement prosperous, until the Mother Country began to use far-away Australia as a convict station. This was very hard to endure by the industrious settlers, but the most serious thing was that some of the worst of the convicts escaped from time to time and formed themselves into gangs of bushrangers, who became the terror of the whole settlement. Strange to say, the British Government did not see its way to put a stop to this until 1853. In the meantime, many of the original settlers and nearly all the new comers had gone south and north in quest of a safer and more agreeable situation. In this and in other ways the Australian settlements spread, and Victoria, Queensland, Tasmania, South Australia, and West Australia were added to New South Wales, the original settlement.

Position and Coast Line. Australia, the South Land, lies between the Indian and the Pacific Oceans. It is south of the equator, and numerous islands lie like stepping stones between it and south-eastern Asia. In area it is the smallest continent. Find by using the scale on the map, the greatest length and the greatest width of Australia. Australia is of a compact shape, the two indentations or bends in the coast preserving rather than interfering with the regularity of the outline. What other continents have a similar coast line? Is the coast line great or small for the size of the continent? The northern and western coasts are mostly low, sandy shores with but few openings of value, and few rivers worth the mentioning. The coast along the Australian Bight forms an unbroken cliff from 400 to 600 feet high, while the eastern and south-eastern coasts are mainly bold and rocky, with some fine harbors and navigable rivers.

The most wonderful coast feature is the Great Barrier Reef which extends from near Cape York, the end of the York peninsula, some 1,500 miles to the south. This reef is formed by the coral polyp and rises from the bed of the ocean to the surface of the water at from 20 to 150 miles from the coast. Between the mainland and the reef the sea is usually calm, even when storms are raging and breakers are dashing against the outside of the reef. The channel, however, is difficult to navigate on account of the sunken rocks, and ships using this passage must anchor at night. Opposite the mouths of the larger rivers there are gaps or breaks in the reef, the coral polyp being unable to live in water holding sediment.

Surface. The continent of Australia is shaped like a flat pie-dish, with high land on the edges, and a saucer-like depression in the interior. The highest land is toward the east, where the Great Dividing Range runs parallel to the coast for more than 2,000 miles, or along its entire length.

In the south-east the range is continuous, but farther north it appears as the edge of a table-land, which gradually sinks in the west into plains of great exte[illegible] The coast ranges extending along the nc[illegible] u and west borders are not well known.

Climate. Is Australia north or south of the equator? Does Australia have its hottest or its coldest weather in July? In what other continents do summer and winter occur at the same time as in Australia? What kind of Christmas day would you have in the interior of Australia? What portion of

The towering peaks of the Australian Alps, with a portion of the broad interior plain.

Australia should be the warmest? Why? Has any part of Australia a very cold winter? The temperature of the different parts of Australia depends more on elevation and distance from the sea than upon distance from the equator. In the neighborhood of the ocean there is no very great difference between the temperature at mid-day and mid-night. Inland these differences are often considerable.

As Australia is situated in the southern hemisphere its seasons are in every respect the reverse of ours. The noon-day sun is seen in the north, the south wind is the cold wind, and mid-winter comes in the month of June.

What is the name of the dotted line running east and west across the centre of Australia? What does this line mean? How much of Australia is in the Heat Belt? Is the climate of southern Australia warmer or colder than ours?

Northern Australia, being between the tropics, is of course very hot. The rest of the continent is in the temperate region; hence, the heat diminishes towards the south. One of the most striking features of the Australian climate is the amount of sunshine. Seldom is the sky covered with clouds for a long time.

The climate on the whole is very healthy, but its great drawbacks are the long periods of dry weather, and the dry, hot, dust-laden winds, called "brick-dusters," which sometimes blow from the interior during the summer. When these winds are blowing the streets are deserted, all windows and doors are fastened, and yet the dust gets everywhere. The "brick-dusters" wither the pastures and play havoc generally with vegetation. The principal winds come from the east and the south-east, and are laden with clouds from the Pacific. As these winds ascend the eastern slope of the Dividing Range, the mountains rob them of their moisture and as a result the eastern country has numerous rivers and rich pasture and farm lands. Beyond the highlands, the winds continue their course across the continent, but as they bring little or no rain the interior becomes more and more desert-like, till at last it is nothing but one vast expanse of sandy, stony desert, covered here and there with spinifex and other prickly plants. Western Australia is watered by moisture-bearing winds from the Indian Ocean.

What parts of Australia have the greatest rainfall, and why? If the highlands were in the centre of the continent what difference would it make to the rainfall? If they were along the western instead of the eastern coast what difference would there be? In western Australia the climate of the north is dry

and hot. In the south it is healthy, pleasant, and has an abundant winter rainfall. What other large British colony has summer and winter at the same time as Australia?

Rivers and Lakes. Australian rivers are usually swollen floods in the rainy season and mere threads of water or dry beds in the dry season. There are numerous lakes towards the south, but nearly all of them are salt and little better than shallow, reedy swamps or salt marshes during the dry season. On their surface there is not a single boat, and on their shores not even a small village.

The only long rivers are the Murray and its tributary, the Darling, which receive all the inland streams of the south-east. Though both streams have long courses and numerous tributaries, they cannot be called large rivers. They are not broad, neither are they deep except when swollen by rains. In its lower course the Murray is quite a swift stream, with muddy banks widening near the sea into a lake too shallow for navigation. On portions of the Murray, flat-bottomed boats ply backwards and forwards. The length of the Murray is something more than 2,000 miles. The Darling is often nothing but a series of pools in the summer season. The rivers on the eastern slope are numerous and rapid. Why should you expect this? Near their source the scenery is often very fine. There are no rivers flowing into the western half of the Australian Bight. Why not?

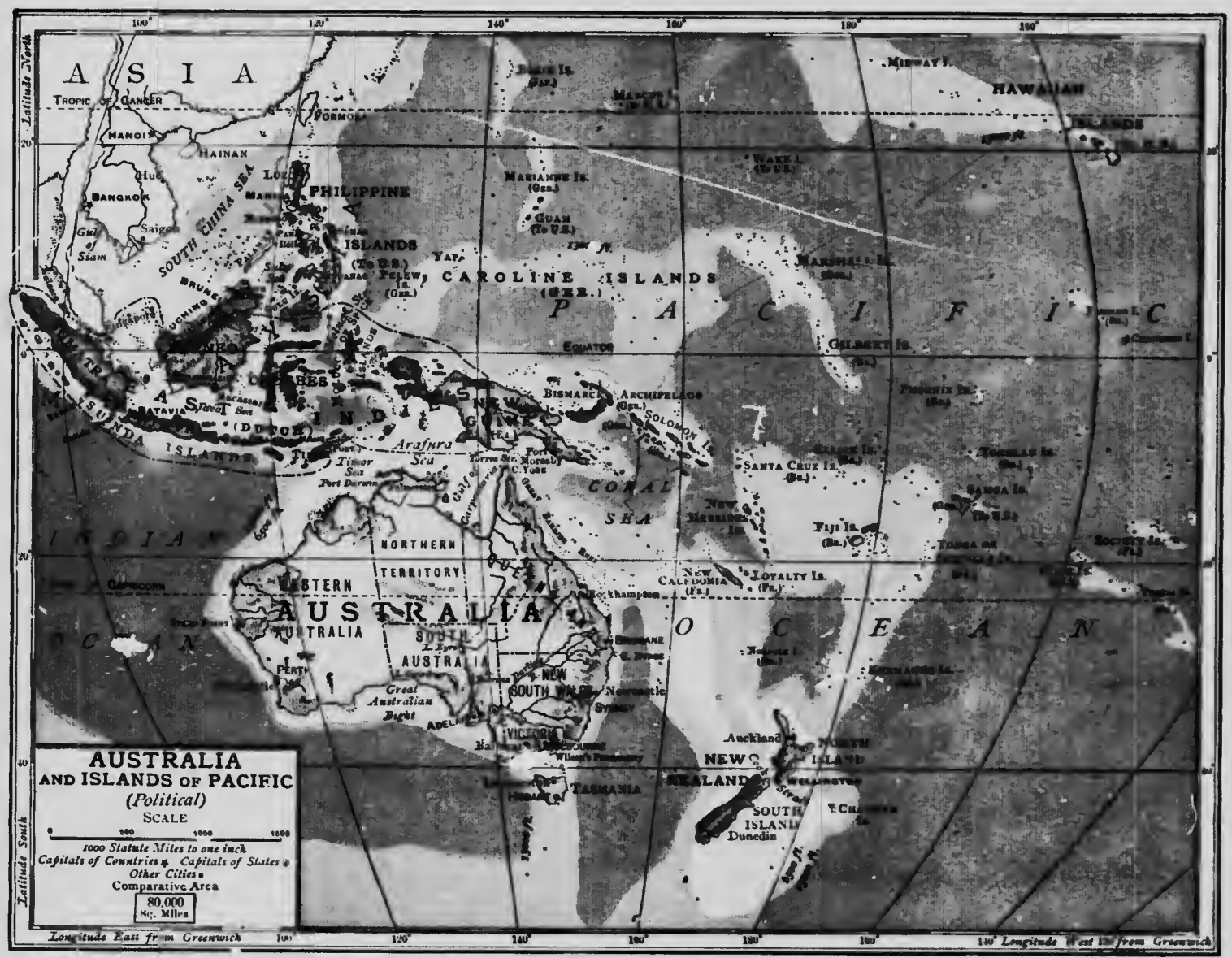
Plant and Animal Life. We have in Australia a dry interior where only plants of a desert character can grow, a belt of grass lands where there is a moderate rainfall, and a belt of forest wherever the rainfall is very abundant.

The scrub lands, that is, the lands covered with vegetation of a stunted character, are mostly in the interior, though in parts of the far interior there is no vegetation worthy of mention. As a means of avoiding the loss of moisture, some plants turn the edges of their leaves toward the sun; others have thick, leathery leaves, and others secrete oil. Sometimes the roots have to go very deep into the ground to obtain moisture enough. In many regions all the moisture comes from the heavy dew. Two plants may be mentioned here, namely, the mulga scrub and the spinifex. The mulga scrub is composed of thorny acacias covered with short, sharp spines which tear both the clothes and the flesh of all who try to cross the region where they grow. Spinifex is the dreaded porcupine grass whose leaves resemble a thousand knitting needles stuck into a large pin-cushion. No horse can enter a spinifex-covered area without wounding his legs and feet, and often these animals have to be killed to put them out of suffering.

The grass lands are found on the plains some distance from the eastern coast. Nearer the coast the country is covered with open, park-like lands gradually passing into the open grass lands. On these areas the kangaroo grass and the salt bush, two very excellent pasturing plants, are found. The grass lands of Australia range from Victoria to the Darling Downs. Western Australia has also similar lands.

The chief points to be remembered about the forest life of this continent are, first, that most of the forest trees are evergreens; and secondly, that they do not, as a rule, grow massed together like the trees in our forests, but in small clumps, the ground between one clump and another being covered with a dense undergrowth, through which it is a difficult matter to make one's way.

The forest regions lie near the coast where there is abundant moisture. The northern forests are tropical, the bamboo and the palm prevailing. In the eastern and south-eastern forests various species of eucalyptus, or gum trees are found. One species of eucalyptus is a giant reaching



AUSTRALIA
AND ISLANDS OF PACIFIC
(Political)
SCALE
0 500 1000 1500
1000 Statute Miles to one inch
Capitals of Countries ★ *Capitals of States* ◉
Other Cities ●
Comparative Area
80,000
Sq. Miles

A sugar-cane farm.

a height of 450 feet. Beautiful tree ferns upwards of fifty feet high abound in these forests; but strange to say there is not a single native fruit other than a small woody sort of pear to be found, a circumstance you must take into account when we come to speak of the native races. In the western Australian woods, the jarrah, the karri and other valuable timber trees flourish. The former tree is used for paving streets, building boats, and for making bridge timbers, furniture, and railroad ties. The karri trees have straight trunks which tower to great heights. The wood is used for the same purposes as jarrah.

To these native plants the settlers have added such grains, roots, and fruits as have found in the new land a suitable home. In tropical Australia, bananas, pineapples, oranges, sugar-cane, rice, and tobacco have been introduced. What do you suppose a banana plantation would look like? A sugar-cane farm looks something like a field of Indian corn. The canes are cut when juicy, bound into great bundles and carted to the press, where the juice is squeezed out and collected. How is sugar made from this juice? What market has the planter for his sugar? A pineapple field is shown in one of the figures. Describe the picture and tell where the pineapples probably find a market. What is a tobacco field like?

A pineapple field.

A field of tobacco.

Grapes grow well in south-eastern, southern, and western Australia. Apples thrive best in the dry heat and constant sunshine of western Australia and in Tasmania. Indeed, Tasmania is noted for fine orchards and fruit gardens. Think of a Christmas table laden with twenty-six different kinds of fruit, and you will understand why Tasmania excels in the canning of fruits.

Oats, barley, peas, corn, and wheat thrive in New South Wales, Victoria, South

Australia, and West Australia; the only drawback being that the farm lands at a distance from the coast must be irrigated. To give some idea of the quantity of grain grown, we may add that Australia occasionally has millions of bushels of wheat for export.

The native Australian animals are stranger even than the native plants. It is said that Australia has some quadrupeds that travel on two feet only, foxes that fly, birds that run, and spiders that whistle.

The kangaroo belongs to the class of animals known as the Marsupials, or animals which carry their young in a pouch of skin on the under side of the body. When the baby kangaroo is born it is very small and very helpless, hence the necessity for the pouch. The kangaroo has short, weak front legs, and strong hind legs, so that it never runs on all fours, but hops about on its hind legs, using its powerful tail to help it to spring. It is hunted with specially bred dogs and provides royal sport for the hunter. As a result the kangaroo has disappeared from the more thickly settled parts of the country. What parts are these? The dingo is the wild dog of Australia. It is as cunning as a fox, and kills sheep whenever it gets a chance. Because of this the dingo has a price on its head, and is hunted much as wolves are hunted in some parts of Canada.

The kangaroo.

The largest bird of Australia is the emu, or Australian ostrich, a large, dark-brown bird having wings so small that they are useless for flight. The [illegible] are much like hair and are valueless [illegible]es. The emu feeds on the plains and [illegible] hunted by the people with almost as great a delight as in the case of the kangaroo. Can you see why it would be a good thing for Australia to get rid of the three animals mentioned?

Along the channels of streams a very strange animal may be seen. This is the duck-bill. The duck-bill has thick soft fur instead of feathers, a bill like a duck's and webbed feet with claws for swimming and for burrowing. It lays eggs like a bird, hatches them, and then suckles its young.

In West Australia there are black swans. In north-eastern Australia there are thousands of beautiful plumaged parrots, and bush turkeys which lay their eggs in a great heap of rubbish and leave the heat of the fermenting pile to do the hatching. The satin bower-bird builds a sort of playhouse near the tree where its nest is. The lyre-bird has a tail shaped like a lyre. English birds, sparrows, larks, thrushes, and other singers have been introduced, though Australia is not without songsters peculiar to itself.

As to Australian reptiles and fish, it may be said that there are alligators in the rivers of northern Australia, sharks off the western coast, and snakes are so common that the schools give instruction as to the best treatment of snake bite. There are many kinds of edible sea fish in the Australian waters. The salmon is large but has not the fine flavor of the northern fish. Among the curious fishes is the dugong, which eats grass and grain though it lives in the water, and the frog fish that walks rather than swims. The pearl oyster is found in the northern waters, and divers are at work whenever there is suitable weather gathering the living oyster for the pearls, and the shells for their mother-of-pearl, which is sent

to Europe to be manufactured into knife handles, buttons, etc.

Settlers in new countries have sometimes introduced animals and plants that have not proved beneficial. The English rabbit has increased to such an extent, that in places it eats up a . the grass, and great efforts are being put forth to keep this animal in check. Pastures are surrounded with wire netting; poison is placed out here and there, and a regular round-up of the rabbits in a particular locality is a common thing. The only return outside of the exercise afforded in rabbit-hunting is owing to the fact that rabbits can now be frozen and sent as food to England.

A group of cattle on a ranch.

Australia, as you know, is wanting in inland rivers and is subject to long periods of dry weather. This interferes with cattle pastures and general farming, but permits the existence of great sheep pastures and the production of immense quantities of wool. Cattle ranches are found in the moister areas along the eastern slope, and frozen beef is shipped in large quantities to England as a result. Sheep, however, have made this continent a prosperous one. In no country has wool raising reached a higher standard than in Australia; and buyers from England, France, Germany, and the United States annually attend the big wool sales at Sydney and at Melbourne.

The first sheep introduced in 1797 came from South Africa, where the Merino sheep have thriven wonderfully. Sheep farms vary in size. Those near the coast are small, but those on the plains removed from the coast are so great that mounted shepherds take a week or ten days to ride around their ranges. Think of a range where 100,000 sheep are feeding. What a busy time there will be shearing such a number! How do you suppose this is done? The Australian sheep feed on the kangaroo grass and the salt bush summer and winter. There is no winter feeding as understood by us. The only great drawbacks are from dry weather and from floods. Artesian wells are now being bored in large numbers, and these wells are among the great blessings that the country has received.

The wool from the Darling Downs and from the country about Sydney generally, finds its way to this great centre, where it is loaded upon ocean boats and taken to Europe and to America. By what routes do these boats go? How long is the journey in each case? The carriage costs about a quarter of a cent a pound. Why is it so cheap?

Horses are raised for pleasure, for farm work and for export to Japan. The camel has been a great success in the dry areas of western Australia.

Minerals. Australia is a land of gold. How would you like to find a lump of gold

weighing 200 pounds? Several such lumps have been found in Victoria; and what an excitement they caused not only in Australia but throughout the world! Towns were deserted by all except the very youngest and the very oldest inhabitants. Thousands of gold-seekers invaded the country to search in the river gravels for the precious metal. When this was exhausted shafts were sunk into the earth to reach the gold-bearing rocks, so that these could be crushed and the gold extracted. This discovery brought thousands of enterprising people to Australia and thus helped to settle the country. New South Wales is said to be one great coal field for hundreds of miles along the coast—a valuable thing. How so?

The Native Races. Australia would appear to have had little more than its healthy climate to recommend it as an abode of man; and yet, in a short period of time, British emigrants have made it a rich and prosperous country.

The natives of Australia, at the time of its discovery by Europeans, were among the most miserable of people; the cause of this lay largely in the character of the small continent itself. Vegetation of a food-giving kind was scarce, and there were no animals that could be employed for domestic purposes; a poor country indeed for a savage people to make even a living in, a poor land to develop farmers and home makers.

The "black fellows," as the natives have been called, are dark-brown in color, with broad, squat noses, high cheek bones, ugly mouths, fine teeth, curly black hair, and large beards. For food they eat anything they can chew, and some of the wilder tribes are even said to devour human beings. Their clothing is scanty, and their houses but poorly constructed bark shelters. Their intelligence may be understood when we are told that they cannot count to five. At the same time they possess certain talents which have made them clever hunters and fishermen. So keen is their sight that they are sometimes used as trackers of men. For weapons they use the spear, club, stone axe, and the boomerang, the latter a curiously cut hardwood club used much as we use quoits. Sometimes these people can be persuaded to do a little herding, but on the whole they cannot be trusted and they have often been a source of great annoyance to the settlers. In what way? So strong is their attachment to the wild life, that native children reared by the settlers escape at the first opportunity to the bush.

The Occupations of the People. In the desert there are no people and therefore no occupations. In the grass-lands the chief occupation is sheep-raising, which employs but few people to the square mile, but which, nevertheless, requires energy and brains on the part of the worker. Why?

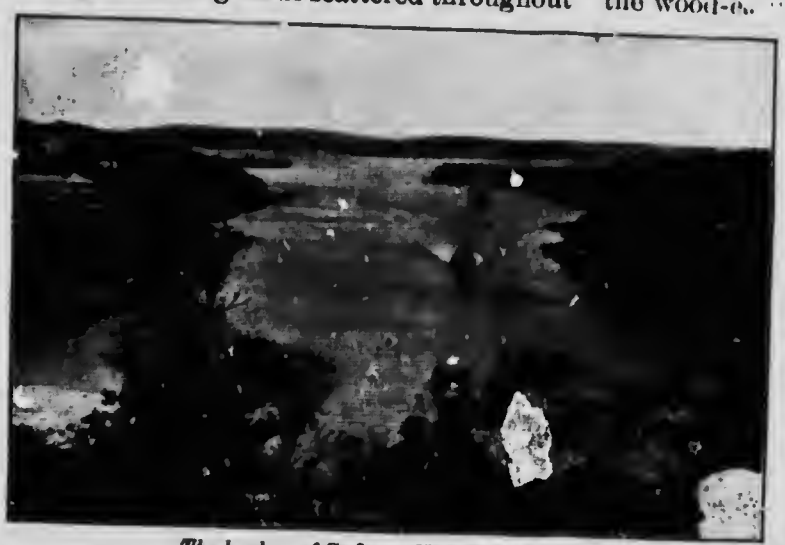
As a rule the sheep ranchers or squatters have fine horses, and live in comfortable homes on their ranches. Their children, who play the games that English-speaking people love, are often educated by a private teacher.

From the cattle ranches great numbers of cattle are taken for shipment to Europe. How can a country where snow is seldom seen on the ground, provide the ice for the cold-storage of beef to Europe? Your teacher will tell you of the great cold-storage plants on the boats plying between Europe and Australia.

If you have followed this account of the geography of Australia carefully, you will readily understand why the population is to be found near the coast and not in the interior. If you now bear in mind that Australia had not a single valuable animal, not a useful grain, and no fruits worth mentioning, you will appreciate more fully the agricultural labors that have reclaimed

thousands of acres of desert land by irrigation; that have introduced and successfully cultivated the more important British grains and fruits; and that have given to the land millions of sheep and thousands of horses and cattle, not only enough for the four or five million people, but wheat and beef in large quantities for export.

The warm northern waters are the centres of the pearl-oyster fishing; the forest lands of the east, the south-east, and the west provide considerable lumbering; and the rich gold-mining fields scattered throughout



The harbor of Sydney, New South Wales.

the length and breadth of the continent give employment to a great many people.

Commerce and Commercial Centres. On January 1st, 1901, the Australian states, namely, New South Wales, Victoria, Queensland, South Australia, West Australia, and the Island of Tasmania, were united to form the Australian Commonwealth, the only case in the world where a whole continent belongs to one people. The flag of the Commonwealth is the Union Jack on a blue or red ground, with a six-pointed star in one quarter. What does this star represent?

The railways of Australia are numerous, but there is no transcontinental line as yet. Why not? What would be the value of such a line? Telegraph lines connect all the important towns, and ocean cables keep Australia in touch with the rest of the world, and the rest of the world in touch with Australia. The construction of these lines was not always an easy matter. A telegraph line runs overland through the desert from Adelaide, the capital of South Australia, north to the shores of the Indian Ocean. The posts on this line are iron for wood would never stand the attacks of the wood-eating ants of this region.

Australia, like all new lands, has had her hero-explorers, and the names Sturt, Burke, Wills, Eyre, and Warburton are names held in reverence and with affection by the Commonwealth.

Sydney and Melbourne are the chief commercial centres. Sydney, the capital of New South Wales, is the oldest city in Australia. It is beautifully situated on Port Jackson, one of the safest, deepest, and most picturesque harbors in the world. The city is well built, and it would be difficult to find more delightful gardens than those of Sydney. What trade has Sydney with European countries?

Melbourne, in size, in wealth, and in population, is the metropolis of Australia. In 1834 the site of this great city was known only to the Australian savages, from whom it was purchased for a few bottles of spirits and a couple of blankets. Melbourne is not beautiful because of the charms of the surrounding landscape. The city makes its own picture. The streets are wide, and large spaces are devoted to public gardens.

TASMANIA

The island of Tasmania is the Switzerland of the south. What does this mean? Tasmania has high mountains in the north and west. Forests adorn the mountain slopes, and numerous lakes nestle in the valleys. The climate is superb. All the fruits of the Temperate Belt grow here in abundance.

NEW ZEALAND

This group of islands lies some 1,200 miles to the south-east of Australia and exactly opposite the British Islands on the other side of the globe. The map of these islands is something like that of Italy turned upside down. North Island is a land of volcanoes and hot springs. Think of washing-day in this island. Think of using boiling water of nature's own heating to cook Christmas puddings! South Island has a range of timber-clad mountains along the west. The highest of these mountains are covered with perpetual snow, and glaciers and glacial lakes and streams abound. The climate is temperate, moist and healthy. The kauri-pine, a fine timber tree, yields a gum used in making varnish. This gum is collected after the tree has lain on the ground several years. The curious birds of New Zealand are the kiwi or apteryx, a wingless, tail-less bird with a long, slender beak; and the parson-bird, with his shining black coat and his white throat feathers.

The natives, called Maoris, belong to the brown race. They spin, weave, and dye flax. They are also skilful fishermen. The settlers are mostly from Scotland. Sheep-farming is the greatest industry, the sheep being reared principally for their mutton, which is sent in great quantities to England. The "Britain of the South," as the Dominion of New Zealand has been called, has a government of its own. Wellington, on Cook Strait, North Island, is the capital.

Melbourne. Across the water is the industrial portion of the city.

QUESTIONS. 1. On an outline map of Australia place the scale, the equator and tropic, the New Zealand Islands with their separating strait, Tasmania, and the Australian coast waters. 2. On another map place the Dividing Range, Murray, and Darling rivers, Australian desert region, lake region, overland telegraph line, and the chief Australian centres. 3. On a third map locate the regions where the kangaroo, emu, dingo, black swan, and the rabbit thrive best. 4. On a fourth map locate the regions best suited to the growing of tobacco, wheat, apples, grapes, cattle, and sheep. 5. Describe a kangaroo hunt, a rabbit round-up, and an emu hunt. 6. Describe a visit to the pearl fisheries, gold-mining in Western Australia, lumbering in the Australian forest country, a visit to a sheep farm, gathering fruit in Tasmania, a New Zealand hot spring, Tasmanian scenery, and a journey from Adelaide to the Indian Ocean. 7. Why does Australia rear sheep for their wool and New Zealand rear sheep for their mutton? 8. In new lands there is little manufacturing in the early years of their settlement. Why? When Australia enters upon a manufacturing career, what are likely to be the first things manufactured, and why? 9. Should a railroad be built to join eastern and western Australia, what would be the difficulties in operating it? 10. Should the capital of the Commonwealth be situated in eastern or in western Australia? Give reasons. What is the capital?

Why was not Melbourne selected? 11. How far is it from Melbourne to Perth (West Australia)? How far from Cape Leeuwin to Cape York, and from Bass Strait to the Gulf of Carpentaria? 12. Describe a typical Australian. What do you know of Australian football and cricket? 13. The Commonwealth is said to be very loyal to the British Crown. What does this mean? What has been done of late years to show this? 14. What is meant by an "all white Australia"? 15. How would you get to Canada from Sydney? 16. Describe New Year's day and Christmas day in Melbourne. 17. Compare a Canadian home with an Australian home. 18. What does Australia import from England? 19. What have we for Australia? 20. Eastern Australia gathers honey and wax. What two things may be inferred from this? 21. Where are Perth, Brisbane, Adelaide, and Hobart situated respectively?

Review Questions

1. If you were to start from your home and travel round the world eastward, what bodies of land and water would you have to pass over, and what great cities would you meet on your way? 2. Starting from your home and travelling around the earth, what directions would you take, and what bodies of land and water would you cross? 3. If you started southward, what directions would you have to take and what countries would you cross? 4. What oceans might we cross in going from North America to Eurasia? Which if going to Europe? 5. Name the ocean boundaries of each continent. In what direction is each continent from our own? 6. What continents are crossed (*a*) by the Equator, (*b*) by the Tropic of Cancer, and (*c*) by Capricorn? 7. Which is the warmest continent? Which has the most irregular coast line? Which have regular coast lines? 8. What line divides the earth into northern and southern hemispheres? What continents are entirely in the northern hemisphere? What continent extends farthest south? 9. Draw from memory the Atlantic Ocean and name the continents on its borders. If the Americas were brought eastward, how would they fit into Europe and Africa? 10. Draw from memory the Pacific Ocean and show on it the bordering continents, the great highlands of the world, and the imaginary lines which show the positions of the most northerly and the most southerly vertical sun. 11. Describe the earth's surface diametrically opposite North America; Asia; and Africa. 12. Make a map of the southern hemisphere and place on it such continents, or such parts of continents and oceans as are found there. 13. Place the school globe so as to divide the earth into land and water hemispheres. 14. If you were at the North Pole where would you see the North Star? What cluster of stars is directly over the South Pole? 15. Make drawings showing the moon at first quarter, at last quarter, at new moon, and between the last quarter and the new moon. 16. What are the positions of the sun, moon, and earth at full moon? at new moon? When does the sun rise in the true east? Is it north or south of this point in our summer? In our winter? 17. When we have summer, what season have the people of South Africa? What other parts of the earth's surface have summer when we have summer? 18. What is the greatest depth of the ocean? What the highest land? 19. Where are wheat, rice, barley, tea, coffee, bananas, oranges, mahogany, bamboo, cattle, sheep, goats, and the ostrich raised best? 20. Where is the home of the elephant, camel, reindeer, polar bear, alligator, crocodile, rhea, emu, tiger, lion, giraffe, parrot, wild turkey, wild goose, and condor? 21. What world regions are best suited to cotton, silk, wool, furs, forests, grazing, and fruit-growing? 22. Describe the winter season of your province. Describe the summer season. 23. What products are shipped out of your province? Where does each go? How does each get to its destination? 24. What things are shipped into your province? Where does each come from? 25. Trace a chest of tea from Ceylon to Winnipeg, a bag of rice from Egypt to Vancouver, a bag of Brazil nuts from South America to London, England, a crate of oranges from southern California to Regina, a case of pears from British Columbia to Toronto, and a case of jack-knives from Sheffield to Edmonton. 26. Name the heat belts. 27. What continents have parts in the Cold Caps? What people live in these regions? 28. Where is the Hot Belt? 29. Which continents have parts in the three belts of heat? In which belt do you live? Are you in the warmer or in the colder portion of this belt? 30. Where is the sun at noon? How can you find the exact sun-noon? 31. How does the noon point of the sun vary from winter to summer, and from summer to winter? When does the sun reach its greatest altitude with us? When is it in its lowest altitude? 32. Draw on the blackboard a curve representing the path the summer sun appears to take from sunrise to sunset. Do the same for the winter path. What does this teach you? 33. Why does it grow dark at night and light in the morning? 34. When does the sun pass from the eastern to the western part of the sky? What do you mean by dawn and twilight? 35. How long does it take the earth to turn on its axis? How long to go around the sun? How long does the moon take to make its orbit? In which direction does the earth turn on its axis? In which direction does the moon go around the earth? 36. Make a drawing of the Great Dipper. Which star of the seven is the faintest? Show how you may use the stars of the Dipper to find the North Star. 37. Which way does the Dipper turn about the North Star? Show

this by drawing a circle on the board or in your exercise book. 38. Do any of the stars of the Dipper rise and set? Where does the new moon rise? When does the moon rise between the last quarter and the new moon? When does the moon put the earth between herself and the sun? When are both on the same side of the earth? Why does an eclipse of the moon happen when the moon and sun are on opposite sides of the earth? What kind of eclipse should happen when both are on the same side of the earth? Make diagrams showing both cases. 39. Do any constellations rise in the east and set in the west? Do you know the names of any of these? Why do the sun and the moon and so many of the stars appear to rise in the east and set in the west? 40. If the earth were to turn from east to west, where should the sun, moon, and stars appear to rise? Why? 41. Is the sun low or high in the sky when the shadows of things are long? When are the sun's rays hottest in the day? At what time of a summer's day is the temperature usually highest? Why not at noon? 42. Why is it warmer in summer than in winter? Why is September hotter than March, although the sun is just as high in the sky and shines just as long in March as in September? 43. Commencing at Bering Strait, name the islands, peninsulas, coast waters, capes, and great cities you would pass through or by in going around the two Americas. 44. Commencing with Bering Strait, name the islands, peninsulas, capes, coast waters, and great cities you would pass by or through in going all around Eurasia. 45. Make a memory map of North America and locate on it the highlands, lowlands, great rivers, and at least fifteen great cities. 46. Where are the North American deserts, and what has made a desert of each region? 47. Give several reasons for thinking the Mississippi the most useful river in North America. 48. What are the advantages of the St. Lawrence River and the lakes connected with it? What are its disadvantages? 49. Make a map of the Great Lakes and the river St. Lawrence, showing all connections, locations of canals, regions of rapids or of waterfalls, and the principal lake ports, American and Canadian. 50. In what country do you live? What is its capital? In what province is your home? What is the capital of the province? 51. What is the capital of the United States? Where is it situated? Why should it not be situated somewhere in the valley of the Mississippi? What manufactories are there in Washington? What kind of city is it? Who is President of the United States? What party selected him? 52. Compare homes in southern California, the Canadian prairies, south-western Ontario, South Africa, and south-eastern Australia. 53. Where do the people of prairie Canada get their oranges, lemons, English walnuts, early cabbages, early lettuce, early cucumbers, tomatoes, strawberries, peaches, plums, pears, binders, threshing machines, boots and shoes, thread, and coal? 54. Make from memory a map of Canada and place on it the highlands, lowlands, great rivers, and lakes, the wooded country, the fishing grounds, the wheat lands, pasture lands, fruit lands, the gold and coal lands, the provinces (localities only), provincial capitals, Dominion capital, and the transcontinental lines of railway. 55. What different peoples are there in your district, town, or city? Where did each nationality come from originally? Do all speak good English? 56. Who is our King? Where does he live? Who is his representative in Canada? 57. Draw from memory a map of South America. Locate on it the highlands, lowlands, great rivers, forests, wheat lands, grazing lands, deserts, countries, ten cities or towns, the islands, straits, capes, the Equator, and the Tropic of Capricorn. 58. What wild animals are found in South America? Where? Why is South America so far behind North America in education and enterprise? 59. In what direction is Europe from North America? In what belts of heat is it? Describe the shore line. Where do the rain-bearing winds come from? Which coast, the east or the west, is the better watered? Why? 60. Make a map of Europe and place on it the coast waters, peninsulas, countries, highlands, lowlands, rivers, and fifteen great cities. 61. Make a map of the United Kingdom and locate the countries, capitals, highlands, rivers, coast waters, manufacturing areas, and the great cities. 62. How does Africa compare with North America in size? Draw Africa and show the deserts, highlands, great rivers, lakes, coast waters, Equator and Tropics, Egypt, South Africa, East Africa, the Congo forest country, Good Hope Cape, the Isthmus of Suez, Cairo, Algiers, Kimberley, Johannesburg, and Cape Town. 63. Name the wild animals of Africa and describe their appearance. 64. Give a description of the Pygmies; crossing the Sahara; and ostrich farming. 65. Make a map of Australia and locate on it its situation regarding the Equator and the Tropic of Capricorn, highlands, desert country, sheep lands, farms, banana plantations, and the gold lands. 66. Name the states of Australia. What do you know of the early settlement of Australia? What do you know of Melbourne and Sydney? 67. Why is western Australia largely desert? 68. Name and describe the wild animals of Australia. Can you give any reason why these animals differ so much from the animals of North America? 69. What has Australia to export? Where do these materials go, and how? 70. Make a map of Asia and show on it the coast waters, peninsulas, highlands, islands, lowlands, countries (not the boundaries), chief productions of farm, forest, and coast, and fifteen large cities. Mark in the important imaginary lines and the belts of heat.

SELECTED LIST OF GEOGRAPHICAL NAMES

KEY TO PRONUNCIATION

ā as *a* in ale.
ă " *a* " am, carry.
ah " *a* " arm, car.
aw " *a* " all.

ē " *e* " eve.
ĕ " *e* " end.

ī as *i* in ice.
ĭ " *i* " ill.

ō " o " old.
ŏ " *o* " odd.

û " *u* " use.

ú as *u* in up.

o͞o " *oo* " food.
o͝o " *oo* " foot.

ow " *ow* " cow.

ch as *ch* in chair.
g " *g* " go.
ng " *ng* " sing.
zh " *z* " azure.

Name	Pronunciation
Aar	ahr.
Abitibi	ah-bē-tib′-bē.
Abyssinia	ab-is-sin′-e-a.
Acapulco	ah-kah-pool′-ko.
Acarai	ah-kah-rē′.
Achill	ak′-il.
Aconcagua	ah-kōn-kah′-gwah.
Adelaide	ad′-e-lād.
Aden	ā′-den.
Adige	ăd′-ē-jā (ah′-de-jā).
Adirondack	ăd-ĭ-ron′-dak.
Adrianople	ād-re ăn-ō′-p'l (ād-rē-a-nō′-pl).
Adriatic	ād-re-ăt-ik (ā-dri-at′-ik).
Ægean	ē-jē′-an.
Afghanistan	ahf-gahn-is-tahn′.
Agassiz	ăg′-as-sē.
Aix-la-Chapelle	ūks-lah-shah-pĕl′.
Ajaccio	ah-yaht′-cho.
Alabama	ăl-ă-bah′ma.
Alaska	ah-las′-kah.
Albany	awl′-bă-nē.
Alberni	ăl-ber′-nē.
Alberta	ăl-ber′-ta.
Albuquerque	ahl′-boo-kar′-ka.
Aleutian	ah-lu′-shan.
Alexandria	ăl-egs-an′-drĭ-ah (ăl-eks).
Algiers	ăl-jeerz′.
Allegheny	ăl′-le-gā-uē.
Allumette	ahl-lū-met′.
Alma	ăl′-mă.
Alsace	ahl-sahs′.
Altai	ahl-tī′.
Amazon	ăm′-ă-zŏn.
Amiens	am′-ĭ-enz.
Amsterdam	ăm′-ster-dăm.
Amur	ah-moor′.
Andes	ăn′-dēz.
Andorra	an-dōr′-ra.
Angers	ahn-zhā′.
Anglesey	ang′-g'l-sē.
Annapolis	ăn-năp-ō-lis.
Antarctic	ant-ark′-tik.
Anticosti	an-tĭ-kos′-tĭ.
Antigonish	ant′-ig-o-nish.
Antigua	ahn-tē′-gwah.
Antilles	ahn-til′-lēz.
Appalachian	ap-pa-lā′-chĭ-an(ap-pa-lăch′-i-an).
Apennines	ăp′-en-ninz.
Apure	ah-pōōr′-ra.
Aral	ăr′-al (ahr-al).
Ararat	ăr′-ă-rat.
Archipelago	ahr-kĭ-pel′-ă-gō.
Ardennes	ahr-dĕn′.
Arequipa	ah-rā-kee′-pah.

Name	Pronunciation
Argenteuil	ahr-zhōn-tū′y′.
Argentina	ahr-jĕn-tee′-na.
Argyle	ahr-gil′.
Arica	ah-rē′-kah.
Arichat	ar′-ĭ-shat.
Arizonu	ar-ĭ-zō′-na.
Arkansas	ahr′-kan-saw.
Armagh	ahr-mah′.
Aroostook	ă-roōs′-tōōk.
Ashtabula	ăsh′-ta-bū′-la.
Asia	ā′-she-a.
Assiniboia	as-sin-ĭ-boi′-a.
Assiniboine	as-sin′-ĭ-boin.
Assuun	ahs-swahn′.
Astrakan	ăs′-tra-kăn′.
Asuncion	a-sōōn′-se-on.
Atacamu	ah-ta-kah′-ma.
Athabaska	ăth-ă-băs′ kă.
Athens	ăth′ ĕnz.
Atlas	ăt′-las.
Australia	aws-trū′-lĭ-a.
Austria	aws′-trĭ-a.
Auvergne	ō′-ver′-nye.
Avon	āv′-ŭn.
Aylmer	āl′-mŭr.
Ayr	air.
Azores	ah-zorz′.
Azov	ā′-zov (ah-zov′).
Baden	bah′-den.
Bagot	bah-gō′.
Bahama	bah-hā′-mah.
Bahia	bah-e′-ah.
Baikal	bĭ′-kahl.
Baku	ba-kōō′.
Balearic	băl-e-ăr′-ik.
Balkan	bahl-kahn′.
Baltimore	bawl′-tĭ-mōre.
Baluchistan	bă-loo′-chis-tahn′.
Banff	bamf.
Bangkok	ban-kŏk′.
Barbados	bahr-bā′-dōz.
Barcelona	bahr-sē-lō′-nah.
Barranquilla	bahr′-ran-kēl′-ya.
Basel	bah′-zĕl.
Batavia	ba-tā′ vĭ-a.
Baton Rouge	bat′-un-roōzh.
Batum	bah-toōm′.
Beauce	bōce.
Beauharnois	bō-hahr-nwa(h′).
Bechuanaland	bētch-oō-ah′-nă-land.
Bedeque	bē-dēk′.
Beirut	bā′root.
Bering	bē′-ring.

NAME	PRONUNCIATION
Belfast	bĕl-fast'.
Belgrade	bĕl-grād'.
Belize	bĕ-leez'.
Bellechasse	bĕl-shahs.
Belle-Isle	bĕl-ile'.
Belleville	bĕl'-vĭl.
Benares	ben-ah'-rēz.
Bengal	ben-gawl'.
Benin	ben-ēn'.
Ben Nevis	ben-nĕv'-is.
Bergen	bĕr'gĕn.
Berlin	bĕr-lin'.
Bermudas	bĕr-mū'-dēz.
Berne	bĕrn.
Berthier	ber-te-ā'.
Bhutan	bōō-tahn'.
Biafra	bē-af'-ra.
Biarritz	bē-ahr-rēts.
Birmingham	ber'-mĭng-am.
Biscay	bis'-ka.
Blanc (Mont)	mong-blong.
Blenheim	blen'-im.
Bloemfontein	bloōm'-fŏn-tin'.
Bluefields	blū'-fēldz'.
Bogotá	bō-gō'-tah.
Bohemia	bō-hē'-mĭa.
Bokhara	bō-kah'-rah.
Bolivia	bō-liv' i-ā.
Bologna	bō-lōn'-ya.
Bonaventure	bŏn-a-vĕnt'-cher.
Bonifacio	bō-nē-faht'-cho.
Bordeaux	bōr-dō'.
Borneo	bōr'-nē-ō.
Bosporus	bŏs'-pō-rŭs.
Boulogne	boo-lōne'.
Bourbon	boor'-bŭn.
Brahmaputra	brah-mă-poo'-trā.
Braich y Pwll	brī'-ke-pool.
Bras d'Or	brah-dōr'.
Brazil	brā-zĭl'.
Brazos	brah'zōs.
Bremen	brĕm'-en.
Breslau	brĕs'-lou.
Breton	brit'-un (brĕt-ŭn).
Brindisi	brĕn'-dē-sē.
Britain	brit'-t'n.
Bnchan Ness	bŭk'-an-ness.
Bndapest	boo'-da-pest.
Buenos Aires	bō-nŭs-ā'-riz.
Bnkarest	bū-ka-rest'.
Bukhara	bō-kah'-ra.
Burma	bur'-ma.
Bntte	hūte.
Caconna	kah-koo-nah'.
Cadiz	kā'-diz.
Caicos	kī-'kōs.
Cairo	kī'-rō.
Calais	kal'-is (kah-lā').
Calcutta	kăl-kut'-ta.
Calgary	kăl'-gab'-rē.
Callao	kahl-lah'-o.
Calnmet	kăl'-u-met.
Cambrian	kăm'-brĭ-en.
Cambridge	kām'-bridge.
Campbellton	kăm'-el-tnn.
Campeche	kahm-pē'-che.
Canaan	kā'-năn.
Canso	kăn'-sō.
Canton	kăn-ton'.
Caracas	kah-rah'-kahs.
Caraquet	kah-rah-ket'.
Cardiff	kahr'-dĭff.

NAME	PRONUNCIATION
Caribbean	kăr-ib-bē'-an.
Carillon	kah-reel-yon'.
Carmarthen	kahr-mahr'-then.
Carolina	kăr-ō-lin'-ă.
Carpatbian	kahr-pā' thĭ-an.
Cassiar	kas'-sĭ-ahr.
Cassiquiari	kah-sē kē-ah'-rē.
Catoche	kah-tō'-che.
Caucasus	kaw'-kah-sŭs.
Canghnawaga	kaw-nah-waw'-gah.
Causses	kōs.
Cavan	kăv'-ăn.
Cayenne	kā-ĕn' (kī-ĕn').
Celebes	sĕl'ē-bēz.
Cenis	sĕh-nē'.
Cettinje	set-tēn'-yā.
Ceuta	sū'-tā.
Cevennes	sā-vĕnn'.
Ceylon	sē-lōn' (sĭl-on').
Chad	chahd.
Chaleur	shab-loor'.
Chambly	shahm'-blē.
Champlain	shăm-plāne'.
Charlevoix	sbahr-lē-voi' (vwa).
Charlo	shahr'lō.
Cbateauguay	shah-tō gā'.
Chatbam	chăt'-am.
Cherbourg	sher-boorg.
Cherra Punji	cbĕr-rah-poon'-jē.
Cbesapeake	ches'-ă-pēk.
Cheshire	chĕsh'-ĭr.
Cheviot	cbĕv'-ē-ŭt.
Cheyenne	shī-enn'.
Chicago	shī-kaw'-go.
Chicoutimi	she-koo'-tē-mē.
Chidley	chid'le.
Chignecto	shig-nĕk'tō.
Chili	chĭl'-lē.
Chilkat	chĭl'-kat.
Chilliwack	chĭl'-lē-wăk.
Cbiltern	chil'-tern.
Chimborazo	cbim-bō-rah'-zō.
Christiania	kris-tē-ah'-nē-ah.
Cienfuegos	sē-ĕn-fwā'-gōce.
Cincinnati	sin-sin-nah'-te.
Cindad Rodrigo	the-ōō-dad' rod-rē gō.
Coaticook	kō-at'-I-kook.
Cobequid	kōh'ē'-kwid.
Cobonrg	kō'-bŭrg.
Cocbin	kō'-chin.
Cologne	kō-lōne'.
Colon	kō-lōne'
Colorado	kŏl-o-rah'-do.
Connecticut	kŏn-net'-I-kŭt.
Constantinople	kŏn-stan-tĭ-nō'-p'l.
Copenhagen	kō-pen-hā'-gen.
Cordova	kōr'-dō-vah.
Corinth	kŏr'-inth.
Corrientes	kŏr-rē-en'-tēs.
Corsica	kōr'-sĭ-kah.
Cotopaxi	kō-tō-pak'-sē.
Cowichan	kow'-itcb-an.
Crimea	krĭm-ē'a.
Cromarty	krŏm'-er-tē.
Curaçao	kū-rā-sah'-o.
Cuzco	koōs'-ko.
Cyclades	sĭk'-lah-dēz.
Dahomey	dab-hō'mi.
Dakota	dă-kō'-tă.
Dalhousie	dăl-hōō'-zē.
Danube	dăn'-ūb.
Danzig	dant'-zig (dăn'tesch).

NAME	PRONUNCIATION
Dardanelles	dahr-dă-nĕlz'.
Darien	dā-rē-ĕn'.
Delaware	dĕl'-ah-ware.
Delhi	del'l (dĕl'-hĭ).
Deloraine	dĕl-o-rān'.
Demerara	dĕm-ĕr-ah'-rā.
Deseronto	dĕs-ĕr-ŏn'-tō.
Des Moines	dĕ-molu'.
Detroit	dĕ-troit'.
Devon	dĕv'-on.
Dieppe	dē-epp'.
Dijon	dē-zhōu'.
Dnieper	nē'-per.
Dniester	nē'-ster.
Dominica	dŏm-i-nee-kah.
Dovrefjeld	dō-vrē-fe-eld'.
Drave	drāve (drah -veh).
Drogheda	drŏh' bo-dah.
Duluth	dū looth'.
Dumfries	dŭm-freece'.
Dundas	dŭn-dăs'.
Duuedlu	dŭn-ē'-din.
Dviua	dve'nah.
Dyea	dī-ē'-ah.
Earn	urn.
Ebro	ē'-brō.
Ecuador	ĕk-wah-dŏr'.
Edinburgh	ĕd'-in-bŭr-roo (ĕd'-in-bŭrg).
Egypt	ē'-jipt.
Elbe	ĕlb.
Eleutbera	ē-lū'-thĕr-ah.
Elgin	ĕl'-gin.
Ellice	ĕl'-lis.
El Paso	ĕl-pah'-sō.
England	ing'-gland.
Erebus	ĕr'-ĕ-bŭs.
Erie	ē'-rē.
Erzgebirge	ĕrts-gĕ-bĕr'-gĕ.
Escuminac	ĕs-kŭ'-miu-ak.
Esquimalt	ĕs-kwĭ'-malt.
Essequibo	ĕs-seh-kwee'-bō'.
Etchemin	ĕt'-chĕ-min.
Etna	ĕt-nah.
Euboea	ū-bē'-ah.
Euphrates	ū-frā'-tēz.
Europe	ū'-rŭp.
Everest	ĕv'-ĕr-ĕst.
Eyre	air.
Falkland	fawk'-land.
Falmouth	făl'-mouth.
Fermanagh	fŭr-man'-ah.
Fiji	fē-jē.
Florence	flŏr'-ence.
Florida	flŏr'-i-dah.
Fredericton	fred'-er-ik-tŭn.
Foochow	foō'-chow.
Funchal	foŏn-shahl'.
Fundy	fŭn'-dĭ.
Fuuen	foō'-nen.
Fuji-yama	foo-jē-yah'-mah.
Gabarus	gah-ba-roos'.
Gaeta	gah-ă'-tah.
Galapagos	găl-a-pā'-gŏs.
Galicia	gah-lish'-i-ah.
Gallinas	gal-lē'nas.
Galway	gawl'-way.
Gananoque	gan-an-ŏk'-kwe.
Ganges	gan'-jēz.
Garonne	gah-rŏn'.
Gaspé	gas'-pē (gahs-pā').
Gatineau	gah-tē-nō'.
Gebirge	gĕ-bĕr'gĕ.
Geuoa	jen'-ō-ah.
Ghent	gĕnt.
Ghizeh	gē'-zēh.
Gibraltar	jĭ brawl'-ter.
Gironde	jĭ-roud'.
Glace	glăce.
Glasgow	glăs'-gō (glaas'-kō).
Gleichen	glī'-ken.
Gloucester	glŏs'-ter.
Gobi	gō'-bē.
Godavery	gō-dah'-ve-re.
Goderich	gōd'-rich.
Gothard	gŏth'-ahrd.
Gothenburg	gŏt'-en-bŭrg.
Gracias-a-Dios	grah'-sē-ahs-ah-dē-ŏos'.
Granada	grah-nah'-dah.
Greenock	green'ock (gren'-uk).
Greenwich	grĭn'-ij (grēn'-ij).
Grenada	grĕn-ā'-dah.
Guadalajara	gwah-dahl ah-hah'-ra.
Guadalquivir	gwah-dahl kwiv'-er.
Guadeloupe	gah-dĕ-loop'.
Guam	gwahm.
Guardafui	gwahr'-dă-fē.
Guatemala	gaw-tē-mah'-la.
Guayaquil	gwī-a-kēl'.
Guayra	gwī'-rah.
Guelph	gwĕlf.
Guernsey	gurn'-zē.
Guiana	gē-ah'-nah.
Haarlem	hahr'-lĕm.
Hague	hāg.
Hainan	hī-nahn'.
Haiti	hā'-tĭ.
Halle	hahl'-leh.
Hanoi	hah-noi'.
Havana	hah-văn'-ah.
Haverhill	hā'-vĕr-ĭl.
Havre	ahvr.
Hawaii	hah-wī'-ē.
Hebrides	hĕb'-ri-dēz.
Hecate	hĕk'-ă-tē.
Heidelberg	hī'-del-bŭrg.
Helena	hĕl'-ē-nah.
Herat	hĕ-rabt'.
Herzegovina	hĕrt-sĕ-gō-vē'-nah.
Himalaya	hĭ-mah'-la-yah (bim-ă-lā'-yah).
Hindo Koosh	hin'-doo koōsh'
Hobart	hō'-bert.
Hochelaga	bŏsh-ĕ-lah'-gah.
Honduras	bou-dū'-ras.
Honolulu	bō-nō-loo'-loo.
Hoogly	hōō'-glē.
Houston	būs'-tŭn.
Howth	hōth.
Hyderabad	bi-dŭr-ah-bad'.
Iberville	ē-bār-vēl'.
Idaho	ī-da-bo.
Illecillewaet	ĭl-lĕ-sil'-lĕ-wet.
Illimani	el-ye-mah'-nē.
Illinois	ĭl-lĭn-oi'.
Indiana	in-de-ăn'-ah.
Indianapolis	in-de-an-ap'-ō-lis.
Indus	in'-dŭs.
Inverness	in-vĕr-ness'.
Iona	ī'-ō'-nah (ē-ō'-nah).
Iowa	ī'-o-wah.
Iquique	ē-kē'-kā.
Irak Arabi	ē-rak' ahr'-a-be.

NAME	PRONUNCIATION
Iran	ē-rahn'.
Irawadi	ĭr'-ah-wah'-dĭ.
Ireland	ĭr-land.
Irkutsk	ĭr-kōōtsk'.
Iser	ē'-zer.
Islay	ī'-lā.
Ismailia	ēs-mah ē'-lē-ah.
Itasca	ī-tas'-kah.
Iviça	ē-vē'-sah.
Ixtaccihuatl	ēs-tak-sē'hwatl.
Jacques Cartier	zhăk-kahr-tē-ā'.
Jacquet	jak'-ĕt.
Jamaica	jăh-mā'-kah.
Java	jah'-vah.
Jedo	ye'-dō.
Jena	yā'-nah.
Jerusalem	jē-rū'-să-lem.
Johanneshurg	yō-hahn'-nes-hnrg.
Joliet	jō'-lĭ-ĕt.
Jnan de Fuca	jū-an-dē-fū'-ka (wan-dā-foo'-ka).
Jnneau	jū-nō'.
Jnngfrau	yoōng'-frow.
Kâhul	kah-bool'.
Kamchatka	kam-chăt'-kah.
Kamouraska	kah-moo-rahs'-ka.
Karachi	kū-rah'-che.
Karakorum	kah-rah-kō'-rum.
Karroo	kah-rōō'.
Kaslo	kaz'-lō.
Kasaala	kahs-sah'-lah.
Katahdin	kah-tah'-din.
Katrine	kăt'-rin.
Keewatin	kē-wah'-tin.
Kelat	ke-laht'.
Kennebecasis	kĕn-nē-bĕk-ă'-sis.
Kenora	kē-nō'-rā.
Khartoum	kahr-toom'.
Khiva	kē'-vah.
Khyber	kī'-hŭr.
Kiel	keel.
Kiev	kē'-ev.
Kilimanjaro	kĭl-e-mahn-jah'-ro.
Kincardine	kin-kahr'-dĭn.
Kirkcudbright	kĭr-koō'-hrē.
Kjölen	ky-ōō'-len.
Kootenay	koō'-ten-ā.
Korea	kō-rē'-ah.
Knen Lnen	kwen-ioōn'.
Kurile	koō'-ril.
Kuro Shiwo	kōō-rō-shē'-wō.
Kyoto	kē-ō'-tō.
La Beance	lah-bōce'.
Labelle	lah-bĕl'.
Labrador	lăh'-rā-dōr.
Lahuan	lah-boō-ahn'.
Laccadive	lak'-kah-dive.
Lachine	lah-shēn'.
Ladoga	lah-dō'-gah.
Ladrones	lah-drōnz'.
La Guayra	lah-gwī'-rah.
Lahave	lah-hăv'.
Lanark	lăn'-ark.
La Paz	lah-pahz'.
La Plata	lah-plah'-tah.
La Prairie	lah-prā'-rē.
L'Assomption	lahs-sōn-se-on'.
Laurentian	law-rĕn'-shi-an.
Lausanne	lō-zahn'.
Laval	lah-vahl'.
Lebanon	lĕb'-ă-nnn.
Leipzig	lip'-sik.
Lepreau	lē-prō'.
Letite	lē-tēt'.
Levant	lē-vănt'.
Levis	lē've.
Leyden	lī'-dĕn.
Lhasa	lhah'-sah'.
Liège	lē-ăzh'.
Lille	lēl.
Lillooet	lil'loō-ĕt.
Lima	lē'mah.
Limoges	lē-mozh'.
Lincoln	link'-ūn.
Lipari	lip'-ah-rē.
Lisbon	liz'-bŭn.
L'Islet	lē-lā'.
Listowel	lis-tō'-ĕl.
Llanelly	lah-neth'-le.
Llanos	lah'-nōz.
Loch Linnhe	lŏk-lĭn'-nē.
Lofoten	lō-fō'-ten.
Loire	lwahr.
Longueuil	long-gŭe' (lon-gā'y).
L'Orignal	lō-reen-yahl'.
Los Angeles	lōs ang'-gĕl-ēs (lōs an'-jel ēs).
Lotbinière	lōt-bē-nĭ ăr'.
Louishurg	loō'-is-hŭrg.
Louisiana	loo ē-zē-ah'-nah.
Lonrenço Marqnes	lō ren'-sō mahr'-kēs.
Louth	lowth.
Lucknow	lŭk'-now.
Luzon	loō-zōn'.
Lyons	lī'-unz.
Macao	mah-kah'-o.
Macon	mā'-kŭn.
Madagascar	mad-ah-găs'-kahr.
Madame	mah-dahm'.
Madawaska	mad-ah-wŏs'-kah.
Madeira	mah-dē'-ra.
Madras	mah-drās'.
Madrid	mah-drid'.
Mafeking	mah-fē-king'.
Magaguadavic	măk-ă-dā'-vē.
Magdalen	măg'-dă-lĕn.
Magellan	mah-jel'-lan.
Maggiore	mahd-jō'-rā.
Magog	mā'-gŏg.
Malacca	mah-lak'-ka.
Malaga	mah-lah-gah.
Malay	mah-lā'.
Manan	man-ăn'.
Manitoba	man-ĭ-tō'-bah.
Manitoulin	man-ĭ-too'-lin.
Maracaibo	mah-rah-kī'-bō.
Marmora	mahr'-mō-rā.
Marqnesas	mahr-kā'-sahs.
Marseilles	mahr-sālz'.
Martinique	mahr-tĭ-nēk'.
Mascareen	măs-ka-rēn'.
Maskinonge	măs-kē-nŏnj'.
Massachnsetts	măs-să-chū'-sĕts.
Massowa	mahs-sow'-ah.
Matamoros	mat-a-mō'-ros.
Matanzas	mah-tăn'-zăs.
Matapedia	măt-ah-pē'-dĭ-ah.
Mattawamkeag	mat-ta-wŏm'-kĕg.
Mangerville	mā'-jĕr-vĭl.
Manna Kea	mou'nah-kā'ah.
Mauritius	maw-rish'-ĭ-us.
Mecca	mĕk'-ka.
Medina	mā-dē'-nah.
Megantic	mē-găn'-tĭk.

Name	Pronunciation
Melbourne	mĕl'bŭrn.
Memphremagog	mĕm-frē-mā'-gŭg.
Menai	mĕn-ī.
Mendocino	mĕn-dō-sē'-nō.
Mer de Glace	mŭr-dē-glăs'.
Merthyr Tydvil	mŭr-thŭr tid'-vĭl.
Messina	mĕs-sē'-nah.
Meteghan	mĕt-ā'-găn.
Meuse	mūz.
Michigan	mish'-ĭ găn.
Michipicoten	mish-ĭ-pĭ-kō'tĕn.
Milan	mĭl'-an (mil-an').
Milwaukee	mil-waw'-kē.
Minas	ml'nas.
Mindanao	mĕn-da-nah'-o.
Minneapolis	mĭn nē-ap'-ō-lis.
Minnesota	min-nē-sō'-ta.
Minorca	min-or'-ka.
Miquelon	mik-ē-lon'.
Miramichi	mĭr-a-mē-shē'.
Miscou	mis'-koō.
Missisquoi	mis-sis'-kwoi.
Mississippi	mis-is-sip'-pē.
Missouri	mis-soo'-rē.
Mitylene	mit-ĭ-lē'-nē.
Mobile	mō-bēl'.
Mocha	mō-kah.
Mohave	mo-hah'-va.
Moluccas	mō-lŭk' kaz.
Mombasa	mŏm-bah'-sah.
Monaco	mŏn'-ah-kō.
Monaghan	mŏn'-ă-han.
Montague	mŏn'-tă-gū.
Monta	mŏn-tah'-nah.
Montauk	mŏn-tawk'.
Montcalm	mŏnt-kahm'.
Montenegro	mon-tă-nă'-grō.
Montevideo	mon-tē-vĭd'-ē-o.
Montmagny	mon-mahn-yē'.
Morocco	mō-rŏk'-kō.
Moscow	mŏs'-kō.
Mozambique	mō-zăm-bēk'.
Mukden	mōōk'-den.
Munich	mū'-nik.
Muskoka	mŭs-kō'-kah.
Musquash	mŭs'-kwosh.
Musquodoboit	mŭsk-ō-dōb'-ĭt.
Nagasaki	nah-gă-sah'-kē.
Nakusp	na-kŭsp'.
Nanaimo	nan-ī'-nō.
Nantes	nănts.
Napanee	nap'-ă-nē.
Nashwaak	năsh'-wawk.
Nassau	nas'-saw.
Natal	nă-tahl'.
Nechako	nē-chak'-o.
Nepal	nē-pawl'.
Nevada	nē-va'-dah.
Newfoundland	nū fŭnd-land'.
New Orleans	nū ŏr'-lē-anz.
New Zealand	nū-zē'-land.
Niagara	nī-ăg'-ă-rā.
Nicaragua	nik-ah-rah'-gwah.
Nice	nēs.
Nicobar	nik-o-bahr'.
Nicolet	nĭk-o-lā'.
Niger	nī'-jĕr.
Nimes	nēm.
Niphon	nī-fon'.
Nipigon	nĭp'-ĭ-gon.
Nipissing	nĭp'-is-sing.
Nizhniy-Novgorod	nyezh'-nye-nov'-go-rot.
Norwich	nor'-rĭj (nor'-ritch).
Nottawasaga	nŏt-tă-wă-saw'-gă.
Nova Scotia	nō'-vă-skō'-shă.
Nova Zembla	nō'-vă-zĕm'-blă.
Nyanza	nē-ahn'-zah.
Nyassa	nē-ahs'-sah.
Oahu	ō ah'-hoo.
Ob-Irtysh	ob-ĭr'-tĭsh.
Obi	ō'-bē.
Oceania	ō-shē-ah'-nĭ-a.
Oder	ō-der.
Odessa	ō-des'-sa.
Oesel	ū'-sel.
Ohio	ō-hī'-ō.
Okanagan	ō-kan-ah'-găn.
Okhotsk	ō-kŏtsk'.
Oklahoma	ōk-lah-hō'-mah.
Omaha	ō'-mah-haw.
Onega	ō-nē'-ga.
Ontario	ŏn-tā'-rĭ ō.
Oregon	ŏr'-e-gon.
Orillia	ō-ril'-lĭ-ah.
Orinoco	ō-rin-ō' kō.
Orleans	or'-lē anz.
Oromocto	or-ō-mŭk'-to.
Orontes	ō-rŏn'-tēz.
Ottawa	ot'-tah-wah.
Ouse	ōōz.
Pacific	pah-sĭf'-ik.
Padua	păd'-ū-a.
Palermo	pā-lĕr'-mō.
Palk	pawk.
Pamir	pah-mēr'.
Panama	pan-a-mah'.
Papua	pap'-oo-a.
Para	pah-rah'.
Paraguay	pah-ra-gwā'.
Paramaribo	păr-a-măr'-ĭ-bō.
Parana	pah rah'-nah (nah).
Paria	pah'-re-ah.
Passamaquoddy	pas-să-mă-kwod'-dy.
Passaro	pahs-sah'-rō.
Patagonia	păt-ă-gō'-nĭ-a.
Pechili	pā-chē-lē'.
Pei-Ho	pā-hō'.
Peking	pē-kin'.
Pembina	pĕm'-bē-na.
Pennine	pen'-nĭn.
Pennsylvania	pen-sĭl-vā'-nĭ-a.
Penobscot	pen-ŏb'-skŏt.
Pensacola	pen-sah-kō'-la.
Peoria	pē-ō'-rĭ-ah.
Perekop	pā-rā-kop'.
Pernambuco	pĕr-năm-bōō'-kō.
Persia	per'-shă (per'-zhă).
Peru	pē-roo'.
Petitcodiac	pet'-ē-kō-dē-ak'.
Philadelphia	fil-ă-del'-fe-a.
Philippine	fil'-ip-pin.
Pico	pē'-kō.
Pictou	pik'-tō.
Pisa	pē'-zah.
Plymouth	plim'-ŭth.
Pomona	pō-mō'-na.
Pompeii	pom-pā'-yē.
Pontiac	pŏn'-te-ak.
Popocatepetl	pō-pō-kah-tā'-pĕt'l.
Portage la Prairie	pōr-tazh' lah prā'-rē.
Port Arthur	pōrt-nŭf'.
Porto Rico	pōr'-tō rē'-kō.
Portugal	pōr'-tū-gal.

Name	Pronunciation
Potomac	pō-tō'-mak.
Potosi	pō-tō-sē', *or* po-tō'se.
Prague	präg.
Pretoria	prē-tō'-re-ah.
Prussia	prŭsh'-a.
Pueblo	pwĕb'-lō.
Punta Arenas	poon'-tah ah-rā'-nahs.
Putumayo	poo-too-mī'-ō.
Pyrenees	pĭr'-ē-nēz.
Quaco	kwaw'-kō.
Qu'Appelle	kăp-pĕl'.
Quebec	kwē-bĕk'.
Quesnel	ken'-nel.
Quinte	kwin'-te.
Quito	kē'-to.
Racine	rah-sēn'.
Raleigh	raw'-lē.
Rangoon	rahn-goon'.
Rappahannock	rap-pah-han'-nŭk.
Reading	rĕd'-ing.
Reggio	rĕd'-jō.
Reikjavik	rī'-kyah-vek.
Reims	rēmz.
Renous	rē-nōōs'.
Restigouche	rĕs-tĭ-gōōsh'.
Rhodes	rōdz.
Richelieu	rē-shē-loo'.
Richibucto	rish i-bŭk'-to.
Rideau	rē-dō'.
Riga	rē'-gah.
Rimouski	rē-mōōs'-kē.
Rio Grande	rē'-o grahn'-dā.
Rio Janeiro	rē'-o zhah-nā'-ro.
Rio Negro	rē'-o nā'-grō.
Ripon	rĭp'-ŭn.
Riviera	rē-vē-ā'-rah.
Rivière da Loup	rē-ve-ār' doo-loo'.
Roanoke	rō-ă-nōk'.
Rochdale	rōtch'-dāle.
Rochefort	rōsh-for'.
Rochelle	rō-shĕl'.
Rochester	rŏtch'-ĕs-tĕr.
Rosario	rō-sah'-rē-o.
Rossignol	rōs-sēn-yōl'.
Rothesay	rŏth'-sā.
Rouen	roo'-ĕn.
Roumania	roo-mā'-nĭ-a.
Russia	rŭsh'-a.
Saale	zah'-leh.
Saco	saw'-kō.
Sacramento	săk-rah-men'-tō.
Saghalien	sah'-gah-lēn'.
Saginaw	sag'-in-aw.
Saguenay	sag-ĕ-nā'.
Sahara	să-hah'-rah.
Saigon	sī-gŏn'.
St. Augustine	sānt aw'-gŭs-tēn.
St. Bernard	sānt bĕr'-nard.
St. Croix	sānt kroi'.
St. Denis	sahn deh-nē'.
St. Elias	sānt ē lī'-ăs.
St. Helena	sānt hĕ-lē'-na.
St. Hyacinthe	sānt hī'-a-sinth.
St. Louis	sānt loo'-is.
St. Malo	sahn mah-lō'.
St. Maurice	sahn mō-rēs'.
St. Pierre	sahn pē-ār'.
St. Roque	sahn rōk.
Sakhalin	sah-kah-lyn'.
Salamanca	sal-a-man'-ka.
Salisbury	sawlz'-bĕr-e.
Salonica	sah-lō-nē'-kē.
Samoa	sah-mō'-ä.
Samothraki	sah-mō-thrah'-kē.
San Blas	sahn blahs'.
San Diego	sahn dē-ā'-go.
San Francisco	sahn frăn-sis'-ko.
San Jose	sahn hō-sā'.
San Juan	sahn hoo-ahn'.
Santa Fe	sahn'-tah fā'.
Santiago	sahn-tē-ah'-go.
Saone	sōn.
Saskatchewan	săs-katch-ē-wŏn.
Saskatoon	săs-kă-toon'.
Sault Ste. Marie	sōo sānt ma'-rē.
Savannah	sah-văn'-nah.
Scutari	skat-ă-rē'.
Scheldt	skĕlt.
Schenectady	skē-nĕk'-ta-dē.
Schleswig-Holstein	shlāz'-vig hōl'-stīn.
Schoodic	skoo'-dik.
Schuylkill	skōōl'-kĭl.
Scilly	sil'-lē.
Scutari	skoo'-tah-rē.
Sedan	sē-dăn'.
Seine	sān.
Senegal	sen-ē-gawl'.
Seville	sē-vil' (sev'-il).
Seychelles	sā-shĕl'.
Shanghai	shang-hī'.
Shawenegan	shah-wĕn-ē-găn'.
Shediac	shĕd-e-ak'.
Shemogue	shem-ō-gwē'.
Shenandoah	shen-an-dō'-ah.
Shepody	shĕp'-ō-dē.
Shippigan	shĭp-pē-găn'.
Shubenacadie	shōō-ben-ăk'-ă dē.
Shaswap	shŭs'-wap.
Siam	sī-am' (sē-am').
Sicamous	sik'-ă-moos.
Sicily	sis'-I-lē.
Sierra Leone	se-ĕr'-rah lē-o'-ne.
Sierra Madro	se-ĕr'-rah mah'-drā.
Sierra Morena	se-ĕr'-rah mō-rā'-nah.
Sierra Nevada	se-ĕr'-rah ne-vah'-dah.
Silesia	sī-lē'-shI-a.
Sinai	sī'-nā (sī'-nī).
Singapore	sing-gă-pōr'.
Sioux	sōō.
Skager Rack	skag'-er rak'.
Skagway	skag'-way
Slocan	slō-kăn'.
Smyrna	smŭr'-na.
Socotra	sō-kō'-trah.
Sofia	so-fē'-ah (so'-fē-yah).
Solent	so'-lĕnt.
Somaliland	so-mah'-lē-land.
Sorel	sō-rĕl'.
Söal	seh-ōōl'.
Soalanges	sōō-lahnzh'.
Souris	soo'-rē.
Spey	spā.
Spokane	spō-kăn'.
Sporades	spŏr'-ă-dēz.
Spree	sprā.
Stanovoi	stah-no-voi'.
Stettin	stĕt-tēn'.
Steveston	stēvs'-ton.
Stewiacke	stew'-ē ak.
Stikine	stik-ēn'.
Stockholm	stŏk'-hōlm.
Stour	stoŏr.
Strasburg	strahs'-boŏrg.

Name	Pronunciation
Stromboli	strŏm'-bō-lē.
Stuttgart	stŭt'-gahrt.
Suakin	swah'-kēn.
Sudan	soō-dahn'.
Suez	soō ez'.
Sulolman	soo-la-mahn'.
Sumatra	soo-mah'-trā.
Susquehanna	sŭs-kwē'-han'-nah.
Swansea	swon'-sē.
Swaziland	swah'-zē-land.
Syracuse	sĭr'-ah-kūs.
Syr Daria	sĭr dahr'-I-ah.
Syria	sĭr'-I-a.
Tabusintac	tab-ū sin-tak'.
Tacoma	tah-kō'-mah.
Tadoussac	tah-doo-sāk'.
Tahiti	tah-hē'-tē.
Tallahasse	tăl-lă-hās'-se.
Tampico	tăm-pē'-kō.
Tananarivo	tah-nah-nah-rē'-vo.
Tanganylka	tahn-ghan-yē'-kah.
Tangier	tahn-jēr'.
Tantramar	tan-trah-mahr'.
Tasmania	taz-mā'-nI-a.
Tatamagouche	tat'-mah-goosh.
Taunton	tahn'-tŭn.
Taurus	ta -rŭs.
Teherân	tē-hē-rahn'.
Tehuantepec	tā-wahn-tā-pĕk .
Temiscouata	tĕm-Is-kwaw'-tah.
Toneriffe	tĕn-ĕr if'.
Tennessee	tĕn-nĕs-sē'.
Terrebonne	tĕr-bŏn'.
Terre Haute	tĕr'-rē-hōt.
Thames	tēmz.
Thebes	thēbz.
Theiss	tIce.
Thian Shan	tē-ahn shahn'.
Tibet	tĭb-et' (tĭb'-et).
Ticino	tē-chē'-no.
Tientsin	te-en'-tsĕn.
Tierra del Fuego	tē-ĕr'-rah dĕl fwā'-go.
Tiflis	tif-lēs'.
Timiskaming	tIm-Is'-kă-ming.
Timor	tē-mōr'.
Titicaca	tit-ē-kah'-kah.
Tobago	tō-bā'-go.
Tobique	tō'-beek.
Tokyo	tō'-kē-o.
Tonquin	tŏn-kēn'.
Tormentine	tor'-men-tine.
Torquay	tor-kē'.
Toulon	toō-lŏn'.
Toulouse	toō-looz'.
Tours	toōr.
Tracadie	trak'-a-dē.
Trafalgar	traf al-gahr' (tră-fahr'-gahr)
Transvaal	trans-vahl'.
Trieste	trē-ĕst'.
Tripoli	trIp'-o-lē.
Trois Pistoles	twah pēs-tōl'.
Trondhjem	trŏn'-yĕm.
Trossachs	trŏs'-aks.
Troyes	trwah.
Tunis	tū'-nis.
Turin	tū'-rIn.
Turkestan	toōr-kēs-tahn'.
Tyrol	tIr'-ōl.
Ucayali	oō-kah-yah'-lē, *or* oo-kI-ah'-lē.
Uganda	oō-gahn'-da.
Uist	wist.
Ulleswater	ŭlz'-waw-ter.
Ungava	ung gah'-vah.
Upsala	ŭp-sah'-lah.
Ural	ū'-ral.
Uruguay	ū'-roō-gwâ (oō-roō-gwI).
Utreeht	ū'-trēkt.
Valdal	vahl-dI'.
Valencia	vah'-len'-shI-a.
Valentia	
Valenciennes	vah-lēn-si-enz' (vah-lahn-si-en')
Valparaiso	vahl-pah-rI'-so.
Vancouver	van-koō'-ver.
Van Diemen's	van dē'-menz.
Vaudreuil	vō-drool' (vō-drū'-y).
Venezuela	vēn-ez-wē'-lah.
Vera Cruz	vĕr'-ah krōōz.
Verchères	vĕr-shar'.
Vermont	vĕr-mŏnt'.
Versailles	vĕr sālz (vĕr-sah'y).
Verte	vĕrt.
Vesuvius	vē sū'-vI-ŭs.
Vienna	vē ĕn'-nah.
Vindhya	vind'-yah.
Vistula	vIs'-tū-la.
Vitoria	vē to'-rē-ah.
Vladivostok	vlah-dē-vŏs-tŏk'.
Vosges	vōzh.
Wabash	waw'-bash.
Wabigoon	waw'-bI-goōn.
Wallachia	wŏl-lā'-kI-a.
Warsaw	wawr'-saw.
Warwick	waw'-rik (wawr'-wik).
Wasatch	waw'-satch.
Washademoak	wŏsh-ă-dē-moik'.
Wear	wēr.
Weimar	wI'-mahr (vI'mahr).
Welland	wel'-land.
Wener	wē'-ner (vē'-ner).
Weser	vā'-zer.
Wetaskiwin	we-tas'-kI-wIn.
Wetter	wet'-ter (vĕt'-ter).
Whycocomagh	why-kog'-o mah.
Wlchita	witch'-I-taw.
Wiesbaden	ves-bah'-den.
Wight	wit.
Winnipegosis	win-nI-pē-gŏ'-sis.
Wollaston	wŏl'-las-ton.
Woolwich	woōl'-itch (wool-ij).
Worcester	woōs'-ter.
Wyoming	wI-ō'-ming.
Xalapa	chah-lah'-pah.
Xeres	cher-es'.
Yablonoi	yah-blo-noi'.
Yakutsk	yah koōtsk'.
Yamaska	yah-mahs'-kah.
Yang tse Kiang	yăng-tsē-kI-ang'.
Yenisei	yĕn-ē-sā'-ē.
Yokohama	yō-kō-hah'-mah.
Yosemite	yō-sĕm'-I-tē.
Youghal	yawl (yōh'-hăl).
Yucatan	yoō-kah-tahn'.
Zaandam	zahn-dahm'.
Zacatecas	zahk-ă-tā'-kas.
Zambesi	zahm-bā'-zē (zahm-bē'-zē).
Zante	zahn'-tē.
Zanzibar	zahn-zI-bahr'.
Zuider Zee	zI'-der zē.
Zurich	zoō'rik.

SUGGESTIONS FOR COLLATERAL READING

The references given below have been carefully selected from all available supplementary volumes, and are here presented because of their worth as collateral reading on the topics indicated. The references are given by chapters for convenience in use.

KEY TO ABBREVIATIONS

American Book Company (A. B. C.); D. Appleton & Company (Ap.); E. P. Dutton & Company (D.); Educational Publishing Company, Boston (E. P. C.); Ginn & Company (G.); D. C. Heath & Company (H.); Rand, McNally & Company (R., McN.); Macmillan's (M.).

ANDREWS' SEVEN LITTLE SISTERS (G.), and EACH AND ALL (G.).

ANDREWS' STORIES MOTHER NATURE TOLD HER CHILDREN (G.). One of God's Storehouses, p. 125, etc.

CARPENTER'S SOUTH AMERICA, EUROPE, AFRICA, ASIA, AND AUSTRALIA (A. B. C.).

FAIRBANKS' HOME GEOGRAPHY FOR PRIMARY GRADES (E. P. C.). Occupations, p. 177; Trade and Commerce, p. 181; Hunting and Fishing, p. 185; Farming, p. 189; Stock-Raising, p. 194; Lumbering, p. 199; The Making of Sugar, p. 213; The Story of the Silkworm, p. 221; Where Minerals are Found, p. 116; How People Used to Travel, p. 167; Travelling To-day, p. 171, etc.

LIFE OF DRAKE; LIFE OF LIVINGSTONE (M.).

MACMILLAN'S GEOGRAPHY READERS (M.), Books 3, 4, 5 and 6.

MACMILLAN'S NEW GEOGRAPHY READERS, ASIA, AMERICA, AFRICA, AND AUSTRALIA.

MILLER'S LITTLE PEOPLE OF ASIA (D.).

PARKER AND HELM'S UNCLE ROBERT'S GEOGRAPHY, Book III. (Ap.). A Day on the River, p. 135; The Walk After the Rain, p. 158, etc.

PAYNE'S GEOGRAPHICAL NATURE STUDIES (A. B. C.). Farming, p. 102; Stock-Raising and Dairying, p. 105; Lumbering, p. 108; Mining, p. 111; Fishing, p. 113; Manufacturing, p. 114; Making Flour, p. 117; Making Cloth, p. 119; Making Iron and Steel, p. 122; The Occupations—Trade or Commerce, p. 124; Transportation by Land, p. 125; Transportation by Water, p. 127, etc.

PERDUE AND LA VICTOIRE'S CHILD LIFE IN MANY LANDS (R., McN.). Hunting and Fishing, p. 45; Tea, p. 83.

SCHWATKA'S CHILDREN OF THE COLD (G.).

SHAW'S BIG PEOPLE AND LITTLE PEOPLE OF OTHER LANDS (A. B. C.).

SMITH'S ESKIMO STORIES (R., McN.). The Northland, p. 11; How the Eskimos Live, p. 16; The Walrus, p. 20; Seals, pp. 35 and 49; A Long Journey, p. 31; Icebergs, p. 37; The White Bear, p. 39; The Story of a Real Eskimo, p. 177.

STARK'S STRANGE PEOPLES (H.). Chinese, p. 69; Thibetans, p. 81; South American Peoples, p. 26, etc.

THE WIDE WORLD (G.). Dining with a Mandarin, p. 20; Boys and Girls of Paris, p. 65; The Boys of Mexico, p. 108.

YOUTH'S COMPANION SERIES, NORTHERN EUROPE (G.). A People on Stilts, p. 46; The Eiffel Tower, p. 53; Scenes in Holland, p. 18; A Dutch Market Place, p. 29; The Faroe Islands, p. 1.

YOUTH'S COMPANION SERIES, STRANGE LANDS NEAR HOME (G.). In the Grand Plaza of Mexico, p. 16; A Mexican City, p. 26; A Growing Mountain, p. 36; A Trip to Santo Domingo, p. 8; A Venezuelan Railway, p. 44; Life in Asuncion, p. 60; An Odd City in the Andes, p. 75; The Land of the Llama, p. 86; The Argentine Capital, p. 97; South American Games, p. 101.

YOUTH'S COMPANION SERIES, TOWARD THE RISING SUN (G.). A School in China, p. 16; Country Life in China, p. 29; A Chinese Visit, p. 36.

YOUTH'S COMPANION SERIES, UNDER SUNNY SKIES (G.). Across the Desert, p. 108.

PRAIRIE PROVINCE SUPPLEMENT

The provinces of Manitoba, Saskatchewan, and Alberta, on account of the surface aspect of their best known ...s, are commonly grouped together under the name "Prairie Provinces," the term "prairie province" being first applied to Manitoba alone. With the progress of settlement and the establishment of a common form of political organization over two more recently established provinces, the term has been widened in significance to stand for the area included in Manitoba and in the two provinces between it and the Rocky Mountains.

THE NORTH-WEST TERRITORIES

On May 2nd, 1670, Charles II., king of England, granted a charter to the Hudson's Bay Company by which the ownership of Rupert's Land, as the vast central area of Canada was then called, became vested in this company. It controlled all the trade, regulated all the affairs, and became its sovereign rulers under the authority of the monarchs of England.

On November 19, 1869, the Company surrendered its rights in the North-West lands to the British Crown, and on June 22, 1870, the surrender was formally accepted. The North-West Territory at this time was practically the Mackenzie basin, while Rupert's Land included the rest of Western Canada north of the international boundary, as far west as the Rocky Mountains, east to include parts of northern Ontario and Quebec and north to the Arctic Ocean. On the Dominion Government satisfying the claims of the Hudson's Bay Company, this territory became part of Canada on July 15th, 1870. The name "North-West Territories" was applied to the whole of the newly-acquired country.

As soon as practical, after its acquisition, the central government at Otta... the subdivision of this vast area i... provinces and territories and formed local governing bodies similar to those already established in the older parts of the Dominion.

MANITOBA, SASKATCHEWAN, AND ALBERTA

The creation of the province of Manitoba in the year 1870 was an important event in the history of Western Canada, as it meant the exercise of effective sovereignty with respect to the West as well as the establishment of local self-government. The western boundary of the province was the meridian of 99°, which was extended to just beyond the meridian of 100° in 1877, but the total area in either case was only a fraction of the present area of the province. The present boundaries were fixed in 1912.

The name of North-West Territories has been used at all times to designate the parts of Western Canada outside of the organized provinces. The organization of this territory has gone on gradually to answer different needs and demands. In 1876 Keewatin District was formed, and made tributary, politically, to Manitoba. In the same year a Lieutenant-Governor and Council were given to the rest of the Territories which had been tributary to Manitoba up to this time. In 1882 four districts—Assiniboia, Saskatchewan, Alberta, and Athabaska—were marked out from this area for postal districts. Electoral divisions were carved out of this territory between 1875 and 1877 to the number of fourteen, and the members for these were added to the council. In 1888 an assembly wholly of elected members, which by 1900 had acquired practically all the powers of provincial governments, took the place of the council. In 1905 the two provinces of Saskatchewan and Alberta were formed out of the area approximately contained in the four provisional districts of Assiniboia, Saskatchewan, Alberta, and Athabaska.

Geology. The plains of Western Canada lie in a wide trough between two elevated masses of rock, the Laurentian Plateau and the Rocky Mountains. The Laurentian Plateau extends from the Atlantic to the Arctic Ocean in the form of a broad V around Hudson Bay. It is

composed of igneous rocks, and is generally supposed to have been the first part of the continent that appeared. Having been acted upon for ages by wind and water, ice and snow, and other erosive agencies, it has gradually been worn down until only a portion of it remains. In most places its mountain characteristics have disappeared altogether. Northwestward from the head of Lake Winnipeg it has more the nature of a plain than a plateau.

On the western slope of this axis, long before the upheaval of the Rocky Mountains, the many beds of sedimentary rocks that at present underlie the prairies were formed. In the Red River Valley these rocks are for the most part from 40 to feet below the surface. At one or two points outcroppings of limestone are found, with only a few feet of earth on top. From these, building stone is quarried in large quantities.

The elevation of the Rocky Mountain chain was the last great upheaval that took place in our continent. It followed long after the sedimentary rocks referred to had been formed. Subsequently occurred the many changes that have given rise to the present configuration of the plains. These changes were mainly brought about during the glacial period, when the clays, silts, sands, and gravels were brought down from the higher levels and distributed over the adjacent low lands. These "drift" deposits are spread more uniformly over the first and second prairie steppes than they are over the third.

The rich black loam which covers the underlying drift over such extensive areas is of comparatively recent origin. It is formed largely from the accumulation of decayed trees, grasses, and other plants.

Underlying the third prairie steppe are extensive coal-beds. They are very valuable as a source of supply for fuel. In the valleys of most of the streams issuing from the Rocky Mountains, beds of sandstone are seen wherever the rivers have cut their channels deep enough. Most of this sandstone is easily worked and is used extensively for building purposes. Fine gold is also found in the beds of most of these streams. It was thought at one time that the source of the gold was in the mountains, but it is now generally agreed that it exists in the gravels that were distributed over the western plains during the glacial epoch.

Position and Extent. The provinces of Manitoba, Saskatchewan, and Alberta occupy the greater part of the Great Central Plain lying within the Dominion of Canada and stretching from the international boundary to the Arctic Ocean, and in width varying from 800 miles in the south to 300 miles in the north. The provinces lie between the Rocky Mountains and the Laurentian Plateau, but the latter highland intrudes on the north-eastern parts of all three provinces. These provinces are bounded on the north by the North-West Territories, on the south by the United States, on the east by the province of Ontario and a small part of the United States, and on the west by British Columbia. The greatest length from north to south is 750 miles, and from east to west about 1,000 miles. They comprise a total area of 756,000 square miles.

Surface. The term "prairie provinces" which is commonly applied to the group made up of Manitoba, Saskatchewan, and Alberta, is applicable only to the part of the group lying along the southern boundary.

Four different surface aspects in relation to the presence or absence of timber occur within the provinces. The southern part of the provinces is prairie, which shades into a mixed timber or scrub and prairie country in the centre, sometimes called the park country. The northern part of the area of the three prairie provinces is generally well timbered except in the extreme north, where timber growth lightens toward the limits of the temperate zone.

The most important structural features of the area taken up by the provinces are displayed in the prairie area. The country south of the North Saskatchewan is naturally divided into three distinct levels, called the three prairie steppes, and conforming generally to the areas occupied by the three provinces. These steppes differ in elevation and surface features. The first steppe is represented in the province of Manitoba, and consists mainly of the Red River Valley. The surface is generally level and

unbroken, and its general elevation is about 800 feet. Its average width is 120 miles. The second prairie steppe begins in Manitoba. Its eastern boundary runs north-westerly, and is marked by a series of hills, chief of which are the Pembina, Riding, and Duck Mountains, and the Porcupine and Pasquia Hills. It is more diversified in surface than is the first prairie steppe. Isolated hills or groups of hills occur at intervals, and the northern part is lightly wooded in parts. The rivers also run at greater depth. Its average elevation is about 1,600 feet, and it is about 250 miles wide. The third steppe is bounded by a series of hills similar to those on the eastern side of the second level, and running in the same direction. The name Missouri Coteau is sometimes given to this ridge. The chief elevations are the Dirt Hills, the Coteau, Bear Hills, and Eagle Hills. This steppe begins in the south-west corner of Saskatchewan and includes the greater part of Alberta. The third prairie steppe is still more diversified in character. The prairie is more rolling, the river channels are deeper, coulees are common, and elevations more frequent. The third steppe, as in the case of the second level, becomes lightly wooded toward the north. Its elevation increases from 2,000 feet at the east to 4,200 feet at the foothills of the Rockies, and it is about 450 miles in width.

Manitoba is the gathering-place of the greater part of the drainage of the three levels. Lake Winnipeg is the largest of the prairie lakes. Lakes Winnipegosis and Manitoba form an intermediate basin parallel to Lake Winnipeg, and draining into it from the west by Dauphin River. The lakes in the rest of the prairie are chiefly local drainage basins.

Drainage. The drainage of the prairie provinces is chiefly by two systems, the Mackenzie and the Saskatchewan-Nelson, flowing north and east respectively. The height of land, however, lies north of the international boundary for the greater part of the way in Alberta and Saskatchewan, and a small part of the drainage is directed into the Mississippi. On the other hand, the Red River flows north from the United States. The chief rivers of the northern system are the Athabaska and Peace and their tributaries. The Peace flows into Slave River just north of Lake Athabaska, and the Athabaska empties into Slave Lake, which is drained by the Slave River to Great Slave Lake, which in turn is drained by the Mackenzie. The rivers flowing east are the Assiniboine, a tributary of the Red, with its tributaries the Qu'Appelle and Souris; the Saskatchewan, made up of the north and south branches which rise in Alberta and unite in Saskatchewan; and the Churchill, which is found in Saskatchewan and Manitoba. From the south the Red River flows into Lake Winnipeg. The important lakes connected with these systems are Lesser Slave Lake, which drains into the Athabaska; Slave Lake, at the mouth of the same river; and Lakes Winnipeg, Manitoba, and Winnipegosis. The Churchill is fed by a number of lakes at its head, and by Reindeer Lake and Lac La Ronge, along its course through Saskatchewan.

Climate. The climate of the prairie provinces may be generally described as extreme, owing to their interior position. The winters are generally cold, and the summers hot. In relation to rainfall there is considerable variation. It is restricted in comparison with the rainfall in both the eastern and western sections of the Dominion, but it is generally adequate to needs in the growth of crops, especially of a superior class of cereals. In the south-western part of the area extending across southern Alberta, for some distance into Saskatchewan, the available or effective rainfall is somewhat reduced by the influence of the Chinook. On the other hand, the same influence is accountable for moderating practically the climate of the whole of the province of Alberta, so as to change materially its extreme character, and to open up possibilities for northern development which, up to the present, have not been fully or adequately taken account of. Its influence extends for a considerable distance into southern Saskatchewan, and necessarily the unobstructed surface of the prairie interior makes perceptible, even into Manitoba, the atmospheric changes which occur in the other provinces. The importance of the Chinook in relation to the western part of the interior is such, and its effect is so much in the nature of an exception, that it demands explanation.

The term Chinook was first applied to a moist wind blowing along the ocean over Astoria, in Oregon, from the direction of the camping-place of the Chinook Indians, near the mouth of the Columbia River. The term has since been extended, and its significance changed to stand for a much more important and larger influence. It is now applied characteristically to warm, dry winds descending east of the Cascade Range in Washington, and of the main range of the Rockies in Montana and Alberta. It was supposed to owe its existence and character to the warm Japan current, and this is still a common belief; but this current is small and is 1,000 miles from the coast, and need not be assumed to account for even the warmth of the moist coast Chinook, as against the moderating influence of the great body of the Pacific.

The warmth of the dry Chinook is due to a wholly different cause. It is due chiefly to the compression of air descending from the mountain, the moisture from which has been abstracted on the western slope of the Rockies. Its peculiarity is that it blows from the mountains and plateaus where ice and snow persist, and occurs on the prairies as a dry, hot wind. It has no relation to the warming effect of the sun, as it arrives as frequently in the dead of night as in the daytime.

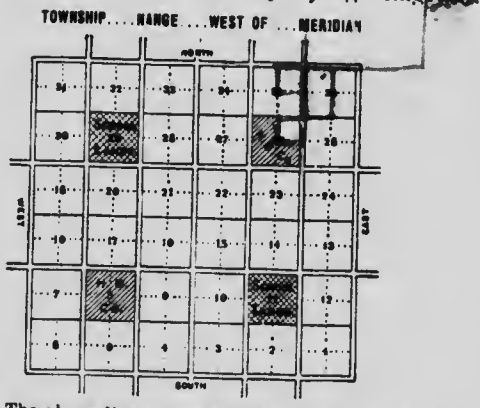
The beginning point for the prairie Chinook is a high pressure area in the Rocky Mountain plateau, as that over Utah or southern Idaho. This area customarily moves north from California and dissipates northerly, giving rise to a Chinook between the Cascades and Rockies northerly or north-westerly, as well as a north-easterly wind which climbs the main range of the Rockies. The movement of air up the mountains from the base of the anti-cyclonic column leads to its expansion from decreasing pressure as higher altitudes are reached. This expansion uses up heat. The capacity of air to retain moisture decreases as its temperature is lowered, so that condensation of its vapour occurs as the air reaches higher altitudes. Condensation of vapour renders sensible the latent heat used in previous evaporation, so that the lowering of temperature goes on at a rate below normal. The descent of the current on the east side of the Rockies means a heightening of temperature from pressure of the upper volume of air. It is estimated that the increase is half a degree for every three hundred feet of descent. As the height of the mountains is from 5,000 to 8,000 feet, this means considerable direct gain. The warmth of the prairie Chinook will then be seen to be due to two causes: the evolving of latent heat by condensation of moisture on the western slope of the Rockies, and an increase of temperature due to compression on the eastern side.

The effects of the Chinook are startling. It introduces April weather into midwinter, and may remove a foot of snow in a few hours. It makes possible the running of stock out of doors the year round. The visits of the Chinook lessen the danger of spring floods, by carrying off precipitation in instalments. The sudden changes in temperature do not seem to induce sickness and disorder, though changes of from 20 to 40 degrees in temperature may occur in fifteen minutes. On the other hand, it has given to localities over which it blows the name of being semi-arid. Though these areas have precipitation about equal to that in other parts of the province, the evaporation of rain and snow by the Chinook has reduced available moisture, or has made necessary the employment of special methods of soil culture to receive and retain moisture. Except for the Chinooks, which generally come with considerable velocity, the provinces are not subject to violent atmospheric disturbances.

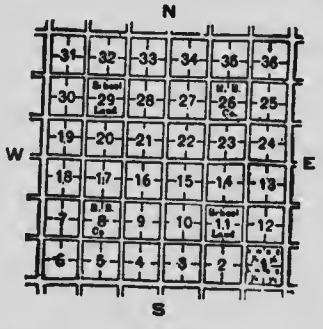
System of Survey. There are three systems of survey followed in the provinces of Manitoba, Saskatchewan, and Alberta. These systems are essentially the same, differing only with respect to the number and width of the road allowances. The first system is the one under which the older part of Manitoba, that portion of Saskatchewan lying east of the Second Meridian and south of Township 31, and small areas in the vicinity of Prince Albert, Rosthern, and Kinistino, have been surveyed. The second system is restricted to Townships 1 and 2, Ranges 1 to 8 inclusive; Townships 19 to 30, Ranges 1 to 12 inclusive; and Townships 27 to

30, Ranges 13 to 16 inclusive. The third system is the one under which the greater part of the land in Saskatchewan, Alberta, and the northern part of Manitoba has been laid out. Under the first and second systems of survey, a road allowance of one and one-half chains, or 99 feet in width, was provided around each section. In the third system, road allowances one chain in width were allowed on every section line running north and south, and on every alternate section line running east and west, that is, along the north and south boundaries of the township, and along the second and fourth section lines north of the south boundary of the township.

In all the systems, the land is uniformly laid out in quadrilateral townships about six miles square, and containing thirty-six sections each one mile square, together with certain allowances for roads, as in the accompanying diagram.



ROADS.—The above diagram shows the subdivision of a township under the third system of survey. The double lines indicate the position of the road allowances, which are one chain or 66 feet in width. Under the first and second systems in use in the older portions of Manitoba and Saskatchewan a road allowance one and one-half chains or 99 feet in width was laid off around each section.



These sections are divided into quarters, and each quarter may be further subdivided into forty-acre plots, styled legal subdivisions.

In commencing the survey, the international boundary line was fixed upon as the starting point, and was called the first base line. From it other lines, called initial meridians, were run due north. The first initial meridian, called the Principal Meridian, passes about eleven miles west of the town of Emerson, in Manitoba. The Second Meridian corresponds with longitude 102, the Third Meridian with longitude 106, and so on, each initial meridian after the second being four degrees west of the preceding one.

For convenience in surveying, the land is first laid out into blocks. This is done by surveying lines parallel to the first base line, and twenty-four miles, or the width of four townships, apart. These are also called base lines, and are numbered in regular order northward as far as the survey extends. These lines form the northern and southern boundaries of the blocks. The eastern and western boundaries are formed by surveying meridians north and south from the base lines to the depth of two townships. Owing to the curvature of the earth's surface, these meridians approach each other as they extend northward, and diverge as they extend southward; and as the blocks have been laid out of a uniform width of twenty-four miles, these meridians will not meet, thus giving rise to what is commonly known as a "jog." The lines along which this jog is laid off, and which are midway between and parallel to the base lines, are known as "correction lines." They, too, are numbered in regular order as they extend northward, the first correction line being twelve miles north of the first base line, the second one twelve miles north of the second base line, and so on.

Each block is then surveyed into sixteen townships, and each township is further subdivided, as indicated above. In subdividing the blocks, the townships are laid out of the exact width of six miles along the base lines, exclusive of road allowances. The eastern and western boundaries are then run due north and south till the correction lines are reached.

The townships are numbered in regular order from the 49th parallel, or first base line northward. The first tier of townships adjoining this base line on the north is called Township I, the

second tier north Township II, the third tier north Township III, and so on as far as the survey extends. These townships lie in rows or "ranges," and are numbered in regular order east and west from the Principal Meridian, and west from the other initial meridians. Thus the first row of townships adjoining the Principal Meridian on the east is said to be in Range I, the second row is said to be in Range II, etc., east of the Principal Meridian. The first row of townships adjoining any initial meridian on the west is said to be in Range I, the second row is said to be in Range II, etc., west of the Principal, First, Second, etc., Meridian, as the case may be. This numbering is continued until the next initial meridian is reached.

The numbering of sections in each township begins in the south-east corner. The south-east section is number 1, the one immediately west of it is number 2. The second row of sections begins with number 7, immediately above number 6, and the third with number 13, above 12, etc.

In all townships subdivided as above, Sections 11 and 29 are set apart for school purposes; Section 8 and three-quarters of Section 26 belong to the Hudson's Bay Company. In every fifth township the Hudson's Bay Company has in addition the other quarter of Section 26. Of the remaining sections, those bearing even numbers have been reserved by the Dominion Government for homestead entry, while of those bearing odd numbers a large number belong to the Canadian Pacific and to other railway companies.

An exception to the system mentioned above was made in the case of certain settlements along the Saskatchewan and Red and other rivers in the different provinces in which the land was laid out in long, narrow strips fronting the rivers. These strips of land are called "river lots."

Transportation. The prairie provinces are served by three great systems of railway lines, the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific. The main line of the Canadian Pacific, which was completed in 1885, is the only transcontinental line yet completed. It runs through the southern part of Manitoba and Saskatchewan at a distance of from sixty to one hundred miles north of the international boundary, turns north-west in Alberta, and leaves the province by the Kicking Horse Pass, about one hundred and seventy-five miles north of the southern boundary of the province. Its important branch lines are the Crowsnest Pass Railway, the Macleod, Calgary, and Edmonton branch, a line connecting Portage la Prairie and Wetaskiwin by way of Saskatoon, and another connecting Moosejaw and Lacombe. A branch running from Moosejaw south-east through Portal, is part of the Soo line, an alternate route to the east by St. Paul. Besides these, the system has a great number of branch lines in Manitoba and Saskatchewan.

The Canadian Northern enters the prairie country near the south-east corner of Manitoba, and runs in a general north-westerly direction through Winnipeg and Battleford to Edmonton. From here its route is directly w to the Yellowhead Pass, from which point will run south-west and reach the coast at Vancouver. It has also a number of important branch lines; one through north-western Manitoba runs north of the main line to Prince Albert, another connects Prince Albert, Saskatoon, and Regina, and a third connects Regina with Winnipeg. A branch running directly north connects Edmonton and Athabaska Landing. It has branches from Saskatoon and Vegreville to Calgary. It also has branches running south into the United States.

Controlled by the Canadian Pacific Railway Company, the Alberta Railway and Irrigation Company has a small system between Lethbridge and Coutts connecting with the Great Northern system, and a branch line from Stirling to Cardston.

The Grand Trunk Pacific runs north-westerly from Winnipeg to Edmonton. Its route is then west to the Yellowhead Pass and north-westerly to Prince Rupert, on the Pacific Coast. It has a branch from Regina north-east to Melville, one from Tofield to Calgary completed, and a number of other branches projected.

Before the advent of railways considerable traffic was carried on by flat-bottomed boats and canoes in the North Saskatchewan and

other rivers of the province. At present steamers ply east and west of Prince Albert and on Lake Winnipeg. Improvements at the foot of Lake Winnipeg and at the rapids below Prince Albert, will give a water route between Edmonton and Winnipeg. Steamers ply on the Athabaska and Peace Rivers, and on Lesser Slave Lake.

POPULATION

The Indians. The aboriginal inhabitants of Western Canada were the Indians. They were practically in undisturbed occupation of many parts of the western provinces within the memory of living men, and are still seen in all the provinces unmixed with civilized new-comers. In all the provinces, likewise, there has been considerable intermarrying of the white and red races, and half-breeds are common throughout the three provinces.

The great Algonquin nation, with its Crees, Ojibwas, and Blackfeet, stretched from Labrador, past Hudson Bay, to the Rocky Mountains. The Swamp Crees were between Lake Winnipeg and Hudson Bay, the Wood Crees along the North Saskatchewan, and the Plain Crees in Southern Saskatchewan, while the Blackfeet were in Southern Alberta. The Ojibwas were on the present western boundary of Manitoba and around the Qu'Appelle. The Assiniboines were along the inner slope of the Rockies. To the north the great Athabaska nation spread from Hudson Bay to Alaska and up to the Eskimo country. A remnant of them, the Sarcees, were as far south as Calgary. A small settlement of Iroquois were near Edmonton, and a larger number around the headwaters of the Athabaska, having been brought out originally by the North-West Fur Company.

Their distribution has remained about the same, but they are now confined to reserves allotted by the Dominion Government. An attempt is being made to teach them the arts of the white men. Some progress is possible on the industrial side. Ranching and a little cultivation are practised. All efforts at liberal culture appear to be wasted on them. They cannot be assimilated to the white man's civilization on the intellectual and social sides; and not only this, the cramp of settlement is fatal to them. They are becoming fewer in numbers annually. The total Indian population of the three prairie provinces is only 24,141.

White Population. The greater part of the present population of the prairie provinces is British or Canadian. Though the population is quite cosmopolitan with respect to the number of peoples represented, British and Canadian people predominate in seven eighths of the settled area of the country. The order in which the British people stand as to numbers is English, Scotch, and Irish in the order named. Next to British and British-Canadian come French, followed by Germans, Scandinavians, and Austrians. A considerable section of recent additions to population consists of repatriated Canadians from the United States. The social and political ideals of the western provinces are distinctly and essentially those belonging to people who have been bred under the British flag. The foreign population of Western Canada is made up of industrious and law-abiding people. The vigour of school administration in the different provinces is rapidly moulding them to Canadian ideals.

The establishment of white settlement and white domination of the vast interior of Canada followed different lines and directions from those which have been more recently followed with the introduction of a transcontinental railway. From the nucleus of the Selkirk colony in Manitoba, the general route of exploration and serious settlement was along the North Saskatchewan Valley, by way of the Touchwood Hills, to Battleford and Edmonton. These three points stand for early development in settlement and cultivation. The advent of the Canadian Pacific Railway swung settlement along the southern part of the prairie. Latterly, with the building of the Grand Trunk Pacific and Canadian Northern, a new area for settlement has been opened up, and settlement is spreading rapidly northward. The proposed Hudson Bay route still farther north will open not only new areas for settlement and cultivation, but will develop the forest, lake, and mineral resources of all the provinces, and inaugurate a new era in transportation by shortening the route to Liverpool, as well as reducing the cost by shorter rail and relatively longer water transportation.

Government. The government of the provinces of Manitoba, Saskatchewan, and Alberta consists of a Lieutenant-Governor, appointed by the Dominion Government, an executive council representing the party having a majority in the legislature, and an elected Legislative Assembly.

MANITOBA

Position. The Province of Manitoba is situated along the southern boundary of the Dominion, about midway between the east and west coasts. It is the most easterly of the three prairie provinces. It is bounded on the north by the 60th parallel; on the south by the United States; on the east by the Province of Ontario, and a small part of the United States, including a part of the Lake of the Woods; and on the west by the Province of Saskatchewan. The 60th parallel forms the northern boundary, and the 49th the southern.

Area. Its area is 251,832 square miles.

Surface. Approximately, half of the province of Manitoba consists of land in the area of the first prairie steppe, which runs north-westerly through the province. On the east side the Laurentian Plateau falls within the province to the extent of about a fifth of the total area of the province. The second prairie steppe, whose eastern boundary runs from the north-west corner of Manitoba to a point east of the middle of the south boundary, covers fully a fourth of the area of the province on the west and south-west.

The middle area gives the province its characteristic feature, being generally rich level prairie land of great depth and fertility. The elevation of Lake Winnipeg is 700 feet above the level of the sea, and the average elevation of the whole of the first prairie steppe is only 800 feet. It is in this area that almost the whole of the water surface of the province occurs, which is about one seventh of the total area of the province.

The boundary between the first and second prairie steppes is marked by a series of elevations which occur under the names of Pembina Mountains, Riding Mountains, and Duck Mountains, in Manitoba, the Porcupine Hills on the boundary, and the Pasquia Hills in Saskatchewan. The Turtle Mountains lie in an isolated group in the south-western part of the province. The Riding, Duck, and Turtle Mountains are held as timber reserves by the federal government. The part of Manitoba in the second prairie steppe is more rolling than the central portion, but the contrast in surface between it and the surface of the first prairie steppe is not great. The Laurentian area, on the other hand, in the east and north-east of the province, is more abrupt in slope and more diversified in surface. It is rough, broken, rocky, and wooded with light timber. Some portions of it are wet and boggy.

The effect of the rivers in relation to surface features varies. In the second prairie steppe the Assiniboine, at the western boundary of Manitoba, flows in a channel from 250 to 300 feet deep, the sides of which are locally known as "cutbanks," while in the first prairie steppe the rivers frequently overflow their banks. The rivers in this steppe are filled with sediment in the bottom. The erosion is wholly lateral, and the rivers are generally very wide. In the Laurentian slope of the province the rivers have cut deep, rocky channels through their valleys. Tree growth is common on the banks of the rivers of the second prairie steppe, and to a less extent along the banks of the rivers of the first prairie steppe. The Laurentian plateau is generally wooded, though the timber, except in the north, is not heavy. South-eastern Manitoba is fairly well wooded.

Drainage. The whole of the drainage of the province of Manitoba finds its way to Hudson Bay by the Nelson River. The great gathering-place of the rivers of the province is Lake Winnipeg, which receives its waters from slopes on the south, west, and east sides. The Red River is the largest and most important river of the province. It rises in the state of Minnesota, flows north for 700 miles, and empties into the most southerly extremity of Lake Winnipeg. It carries a vast amount of sediment, with which a large delta is being formed at the head of the lake, and which interferes with lake and river navigation. The western slope of the province is made tributary to the Red River basin by the entrance of the Assiniboine at Winnipeg. The Assiniboine rises in the province of Saskatchewan and flows south-easterly.

After crossing the Manitoba boundary it receives the Qu'Appelle, also from Saskatchewan, at Fort Ellice, and finally flows east till it reaches the Red River. A second important tributary of the Assiniboine is the Souris. The Souris rises in the Missouri Coteau, flows east through the greater part of Saskatchewan, turns south into Dakota and, doubling back, enters the Assiniboine east of Brandon. From the Riding Mountains a third tributary, the Little Saskatchewan, is received. The Pembina is a tributary entering the Red near the boundary. The western slope of the province to the north is represented in the Dauphin River, which drains Lakes Dauphin, Winnipegosis, and Manitoba into Lake Winnipeg through the Fairford River and Lake St. Martin. The chief river entering Lake Winnipeg on the east is Winnipeg River, which, with its tributaries the Whitemouth and Bird, drain the south eastern portion of the province. The Winnipeg River has its source in the Lake of the Woods. Its course is rapid and is frequently broken by rapids and falls, which offer large possibilities for the development of power enterprises, one of which has already been inaugurated at Lac du Bonnet. Numerous small streams enter Lake Winnipeg farther north.

St. Andrew's Rapids and Bridge, Red River.

As has been seen, the lakes of Manitoba are an integral part of the drainage system. Besides this, the lakes are interesting by reason of their being the centre of an ancient basin containing a much greater volume of water than the present lakes contain, and which has had an important influence on the economy and industry of the province. Lake Agassiz is the name applied to this body. It covered about three quarters of the present area of Manitoba, and extended into Ontario and the United States, the western boundary being the line of hills marking the eastern boundary of the second prairie steppe. By reason of Lake Winnipeg being the centre of such a large sedimentary basin, it is extremely shallow in relation to its area. Lakes Manitoba and Winnipegosis are of the same character. These two bodies are of the same elevation, the current of the connecting stream, Ebb and Flow River, flowing north or south according to the direction of wind pressure on the surface of the lakes. The outlets to Dauphin and Swan lakes are the Mossy and Shoal rivers respectively, both emptying into Lake Winnipegosis. All the important lakes of the province are thus seen to be tributary to the great drainage reservoir of Lake Winnipeg. Lake Winnipeg itself has a length of 250 miles, and varies in width from 25 to 60 miles. It is in no place more than 70 feet deep, and its channels must be carefully followed in navigation.

The proximity of the large lakes to the centre of population of the province is important on account of the opportunities they afford for recreation. They are attractive to the sportsman and to the summer visitor. Winnipeg Beach, Whytewold, and Ponemah are popular summer resorts on Lake Winnipeg.

Climate. The province of Manitoba, being situated at a long distance from the moderating influence of large bodies of water, and in the temperate zone, is subject to extremes of heat and cold. Summer heat frequently rising to 90 degrees, and winter cold as low as 40 degrees below zero, are not uncommon. The great evaporating basin of the lakes exercises a perceptible influence in the reduction of summer heat locally. The seasons are usually steady and well-defined. The snow lies without interruption in winter, the spring is marked by liberal rainfall and very rapid growth, and the summers are warm and conducive to the full ripening of the characteristic cereal crops. The autumns are sharp and generally clear and highly enjoyable. The snow is dry and the air clear and bracing in winter. The precipitation is adequate to the growth of heavy crops throughout the province, being about twenty inches annually.

INDUSTRIES AND RESOURCES

Agriculture. Manitoba stands in the first rank for the quality of its wheat among the different wheat-producing countries of the world. Grain-growing is the chief industry of the province. The soil of the greater part of the province being the sediment of an ancient lake topped by centuries of decayed vegetation, is in most places extremely rich in the elements of plant food. The soil of the second prairie steppe is somewhat lighter than it is in the first steppe. The climate, as respects both the liberal moisture of June and the heat of harvest time, is the other important condition to successful grain-growing. The long days of sunshine and the short nights have an important influence. Crops are likewise aided by the deep frosts of winter, which insure the gradual rise of moisture by capillarity and support the crops notwithstanding occasional interruptions of precipitation. The other grain crops grown are oats, barley, rye, and flax. All kinds of tame grasses succeed, and mixed prairie hay of fine nutritive properties can be cut in abundance in both prairie and slough land. Fodder corn is a successful crop.

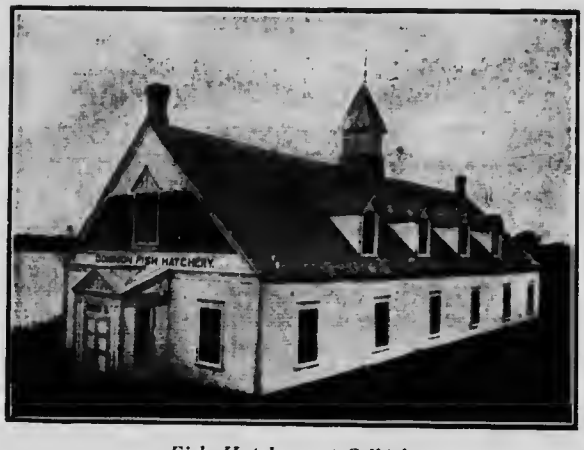
The system of agriculture is being rapidly modified by the substituting of mixed farming for grain-growing. Fodder crops are being more generally grown, and the returns from land increased and made more certain and stable by more complex and varied production. Manitoba excels in the quality of its heavy horse stock and shorthorn cattle. The province raises a large number of cattle of export quality; and dairying, hog, and sheep raising are becoming settled and important adjuncts to cultivation. In certain districts dairying has become a special industry. The chief agricultural exports are grain and cattle to the British market, and dairy products to the western provinces and the Yukon.

An important development of the grain-growing industry of the province is the trade in seed grain arising from the perfection and constitution of the northern grown grain.

Vegetables, roots, and small fruits are other crops that succeed well, and tree fruits are being experimented with for the development of hardy varieties for general use in the province.

Lumbering is carried on in the northern part of the province chiefly tributary to Lake Winnipeg. Selkirk, Winnipeg, and Brandon have saw-mills. The chief kinds of timber found in the province are spruce, poplar, jackpine, birch, and tamarac. The chief sawn timber of the province is spruce, which is useful for local needs, but the industry does not meet the general needs of the province for this class of building material, British Columbia furnishing a considerable part of the lumber required.

Fishing. The fishing industry is of great importance and commercial value to the province. All the lakes, Winnipeg, Manitoba, Winnipegosis, and Dauphin, abound with a good class of



Fish Hatchery at Selkirk.

food-fishes, such as trout, whitefish, sturgeon, pickerel, perch, and pike, the most important and valuable being whitefish and sturgeon. The industry engages considerable capital in tugs, boats, freezers, and other equipment, and gives employment to a great many people. The greater part of the catch finds a market in the United States. The industry is under strict government supervision and regulation.

Mining. Manitoba is not rich in minerals. Soft coal occurs in Turtle Mountain in the southwest but there is no actual mining. At Gypsumville, on Lake Manitoba, gypsum is found and treated. Salt is found adjacent to Lakes Manitoba and Winnipegosis, and limestone is quarried at Stonewall and Stony Mountain. At Tyndall a fine quality of finishing stone is quarried, which has a large sale within and outside of the

province. Iron has been found at Black Island in Lake Winnipeg, but is not mined.

Manufacturing is becoming of considerable importance in Manitoba, chiefly in relation to the materials of the common resources of the province. Flour-mills are common everywhere, and all of them manufacture for export. Cereal foods of all kinds are manufactured and exported. Large packing concerns are established in Winnipeg. The making of bricks, drain tile, and other clay products, is becoming a large industry. Lime-burning is an important industry. The manufacture of farm implements, wire fencing, and threshing machines is carried on in Winnipeg and Brandon. Winnipeg being one of the great transportation points of the three transcontinental railways, the work of the shops gives employment to a large number of men. The manufacture of iron and steel structural material is becoming very important. Leather manufactures, principally of harness and saddles, are important. They produce for a large western demand. Biscuits, pickled goods, and cigars are manufactured in Winnipeg, and glass at Beausejour, east of Winnipeg.

Transportation. Manitoba, in common with other prairie provinces, requires large transportation facilities to carry the immense weight and bulk of grain towards the great export points and to distribute wholesale commodities to the west. The greater part of the crop moves out to Fort William and Port Arthur for lake shipment while navigation is open. Three great companies, the Canadian Pacific, the Canadian Northern, and the Grand Trunk Pacific, have lines running through the province and connecting, or being about to connect, both coasts of the Dominion. The Canadian Pacific and Canadian Northern and Great Northern have routes to the south. All the great lines of railway are running lines north-west to serve the needs of distribution and production in the northern parts of Saskatchewan, and more particularly of Alberta. The province is a network of branches and cross lines.

Navigation is not important, except on Lake Winnipeg; and up the river as far as Winnipeg, the railways have taken the place of river transportation. It is certain, however, that water transportation, particularly on the Saskatchewan, will be facilitated by improvements which will overcome the rapids, and that a long water route from beyond Edmonton to Winnipeg will be developed. At present the railway companies are laying lines to secure territory, but the economy of water traffic will mean its later use.

Closely connected with the transportation facilities of the province is the vast storage capacity represented in the elevator system. The chief terminal elevators are at Fort William and Port Arthur. In the province hundreds of these appear along the lines of railway.

CITIES

Winnipeg, the capital, and the largest city of the province, is situated at the junction of the Assiniboine with the Red River. It was originally a trading-post and fort of the Hudson's Bay Company, and was called Fort Garry. Its growth has occurred within the past twenty-five or thirty years. It is a striking example of the speed of development of a western civilization for which it characteristically stands. It is just at the entrance to the best part of the great prairie provinces, and practically all the heavy traffic between Western and Eastern Canada passes through it. All distribution to the western provinces takes place from Winnipeg, or passes through it. It has three great lines of railway, the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific, running from coast to coast, passing through it, and the Great Northern from St. Paul enters Winnipeg. In addition to this, innumerable branch lines bring a large area of productive country directly tributary to the city. It is the educational, political, commercial, financial, and railway centre of the province. It is the headquarters of the government telephone system, which has a vast network of lines in almost all the towns and villages as well as in the rural districts of the province.

The University of Manitoba, St. John's, Manitoba, and Wesley Colleges, the Agricultural College, Medical College, School of Pharmacy, the Institute for the Deaf and Dumb, and Provincial Normal School, comprise the educational institutions of provincial importance. The educational services of the city itself are of the

best possible character. The public schools are unsurpassed, and the high schools are of a specially modern type, in relation to industrial and technical, as well as academic training. The public and business buildings are generally good.

The manufacturing interests of the city include the making of flour, biscuits, soap, lumber, cured meats, wire fencing, agricultural implements, leather goods, cigars, pickles, clothing, and articles of iron. The largest abattoirs in Western Canada are at Winnipeg. Its interests are largely railway and commercial, but it will no doubt increase in importance in manufacturing.

Brandon is situated on the Assiniboine River, about 125 miles west of Winnipeg. It is on the main line of the Canadian Pacific Railway, and on a branch of the Canadian Northern Railway, and is the terminus of a branch of the Great Northern as well as of a number of other branch lines. It has a college and good local educational services. One of the Provincial Asylums, an Industrial School, and a Dominion Experimental Farm are located at Brandon. It has manufactures of lumber, woollen goods, and farm implements. It is supported by a fine grain and live-stock district, being specially well known for its draught horses.

Portage la Prairie is situated about midway between Winnipeg and Brandon in the centre of a highly productive district called the Portage Plains. It is an important railway point. It has the three great Canadian main line systems, and a number of branch lines. An Indian Industrial School and the Provincial Home for Incurables are situated at Portage la Prairie. It has large elevators and flour-mills.

TOWNS

The towns of Manitoba are local market towns in most cases, and their growth is limited to the growth of the districts they serve. Some of them have already developed large business interests owing to the wealth of production and the rapid improvements about them, and a few are aided by special industries in addition to the grain and retail trades.

St. Boniface, opposite Winnipeg on the Red River, has woollen-mills, flour-mills and brick yards. It is connected with the capital by a number of bridges. It has a French College and Normal School, a fine Roman Catholic Cathedral and Convent. It has interesting historical associations.

West Selkirk is at the head of Lake Winnipeg, and is connected with Winnipeg by a suburban line. It has lumber-mills, a fish-hatchery, and large fish trade. An asylum for the insane is situated at Selkirk. *Stonewall*, also north of Winnipeg, has large quarries. Near Stonewall is *Stony Mountain*, where the Provincial Penitentiary is located.

Carberry and *Virden* are grain shipping points on the Canadian Pacific west of Winnipeg. The latter is one of the most attractive residential towns in the province.

Dauphin is a divisional point on the main line of the Canadian Northern Railway, and is the market centre for a large agricultural district between the Riding and Duck Mountains on the west, and Lake Dauphin on the east. The country is specially adapted to mixed farming. Other towns to the north are *Grand View* and *Swan River*.

Neepawa, *Gladstone*, *Minnedosa*, *Birtle*, *Binscarth*, and *Russell* are situated on the Yorkton branch of the Canadian Pacific Railway. Neepawa is the centre of a rich country known as the Beautiful Plains. Minnedosa lies in the valley of the Little Saskatchewan. Both towns have railway connection with Brandon.

Morden, *Manitou*, *Killarney*, *Boissevain*, and *Deloraine* are on the Deloraine branch of the Canadian Pacific. They are among the oldest towns of the province, and are centres for highly developed agricultural districts.

Melita, *Napinka*, *Souris*, *Treherne*, and *Carman* are flourishing market towns on the Glenbow branch of the Canadian Pacific Railway. Souris is an important divisional point and has flour-mills and other manufacturing interests.

Emerson and *Gretna* are on the south boundary, the former on the Canadian Pacific, and the latter on the Canadian Northern railway. Both are customs ports.

SASKATCHEWAN

Position. The province of Saskatchewan is the middle one of the three prairie provinces. It is bounded on the north by the North-West Territories and on the south by the United States; on the east by the province of Manitoba, and on the west by the province of Alberta. It is separated from the North-West Territories by the 60th parallel of latitude, and from the United States by the 49th parallel. It lies west of the second meridian as far south as latitude 56, from which point the meridian between ranges 29 and 30 west of the principal meridian forms the dividing line to the international boundary. The 110th meridian separates it from the province of Alberta.

The College, one of the many stately buildings, University of Saskatchewan, Saskatoon.

Area. The province extends for 750 miles from north to south, and is 250 miles wide at the north and 400 miles wide at the south. Its area is 250,000 square miles.

Surface. The charaeteristic surface features of the southern part of Saskatchewan are those of the second prairie steppe. Though the conventional boundaries of the province do not correspond with the natural boundaries of this elevation, the greater part of the second prairie steppe is included in the province. The province of Manitoba includes a small portion of this elevation, while the province of Saskatchewan cuts off a similar portion in the south-western corner from the third prairie steppe. Saskatchewan is midway between Manitoba and Alberta with respect to elevation and surface aspect. Its average elevation is about 1,600 feet, and its surface, while not showing great variations, is slightly more rolling than the surface of Manitoba. Its rivers show deeper channels, and buttes and groups of hills are more common. The chief elevations of the southern part of the province are the series of elevations marking the eastern and western boundaries of the second prairie steppe. Those lying within the province on the east side are the Porcupine and Pasquia Hills, and on the west side the Dirt Hills, the Cotcau, Bear Hills, and Eagle Hills. Other isolated elevations or groups of hills are Moose Mountain, Touchwood Hills, Wood Mountain, and Cypress Hills. Smaller elevations, called "buttes," occur in the southern parts of the province. The province north of the 52nd parallel is diversified by bluffs and an increasing number of patches of scrub and soft timber, but with large stretches of open land. North of the North Saskatchewan River the land is quite diversified in aspeet and surface. Wooded areas become more prominent, the timber is larger, and the country is well watered by numerous lakes and streams. The Laurentian Plateau reaches into the province on the north-east corner.

The southern part of the province is not marked by many large lakes. They are usually local basins, and are not connected with the general drainage system. Many of them are alkaline. The most important are Chaplin, Johnston, Last Mountain, and Big Quill. Farther north are Lake Montreal and Lac La Ronge. At the head of the Churchill is a chain of lakes, chief of which are Island, Clear, and Buffalo lakes. The largest lakes of the province are those skirting the Laurentian Plateau, of which Reindeer, Wollaston, and Athabaska are the most important. With the exception of Chaplin, Johnston, and Quill, these lakes are usually well stocked with fish.

Drainage. The general slope of the province is easterly or slightly north-easterly. The Hudson Bay receives the major part of the drainage, but the northern part is drained to the Arctic Ocean through the Mackenzie system, and a small strip south of the height of land to the Gulf of Mexico through the Mississippi system. The chief rivers flowing east are the Souris and Qu'Appelle, both rising in Sas-

katchewan, and tributary to the Assiniboine; the North and South Saskatchewan, rising in Alberta and joining near Prince Albert, and flowing into Lake Winnipeg; and the Churchill in the north, which flows directly into Hudson Bay. Important tributaries of the North and South Saskatchewan are the Battle River and the Red Deer, both rising in Alberta and joining the North and South Saskatchewan in Saskatchewan. The Churchill is fed by a series of lakes and small rivers on the western side of the province. The greater part of Lake Athabaska lies within the province, its chief tributary being the Chipman. It is drained to Great Slave Lake by the Slave River, and thence to the Arctic Ocean by the Mackenzie River. Two small streams called Battle Creek and Frenchman River flow south, and become tributary to the Missouri.

Climate. The province of Saskatchewan, by reason of its position in the interior of the continent, and because it is situated in the temperate zone, has an extreme climate. The south-western part of the province, however, has milder winters than the rest of the province, owing to the influence of the Chinook winds. It is likewise drier in summer. The winter season is generally steady and the snowfall is fairly heavy. The atmosphere is clear, dry, and bracing. The snow is light and dry. High winds are not common in winter, but when they occur occasionally develop into severe storms on account of the lightness of the snow. The snowfall is slightly heavier in the north than in the south. The average annual precipitation of the province is between fifteen and twenty inches, two thirds of which occurs between April and September. High temperatures are sometimes reached during the summer days, but the nights are always cool and invigorating. The country is free from violent atmospheric disturbances. The climate on the whole, and in conjunction with the phenomenal excellence of the land, makes for the highest success in wheat growing. The progress of crops in spring and early summer is very rapid, and the ripening process is intensified by the bright sunshine and dry weather of harvest time.

INDUSTRIES AND RESOURCES

Agriculture. The province of Saskatchewan is essentially an agricultural country, four-fifths of the population being engaged in agricultural pursuits. Its operations are commonly on a large scale, steam and gasoline power being employed in the larger enterprises. The soil is very fertile and enduring, and the climate ideal for the production of the best possible quality of cereals, roots, and grasses. The growing season is marked by liberal rainfall, about half of the precipitation falling within the months of May, June, and July, and the harvesting period by continuous, bright, dry weather. Threshing is done in the open. The quality of wheat

Ploughing by Traction Engine on the Prairie. Note that the engine is breaking ten furrows and therefore doing the work of twenty horses.

grown is equal to that of the best wheat areas of the world. Barley, oats, and flax succeed equally well, and all classes of vegetables and small fruits are grown in abundance. The usual varieties of tame hay yield heavily, and the prairie furnishes large quantities of native hay. Practically all development is south of the North Saskatchewan River; but the open stretches of country to the north, where the soil is of great depth and fertility, will display heavy production in the near future. In the best settled parts of the country dairying and live-stock interests are developing rapidly. Herds of registered stock are common, and special feeding enterprises are carried on at the large elevator towns. The "park district" is

not as easily broken as the open prairie district, and stock-growing is usually associated with cultivation in this area. The south-west corner of the province was formerly given over to ranching on account of the suitability of its climate to winter grazing, but the open range area is being rapidly settled by the homesteader. Range properties in horses, cattle, and sheep still persist, but large holdings are becoming impossible.

Lumbering. The extreme southern part of the province is wholly open prairie, but patches of brush and light timber appear in the northern half of the part of the province south of the North Saskatchewan. The timber in this district is chiefly pole timber, which is useful for local settlers. The merchantable timber grows north of the Saskatchewan, and it occurs in such quantity as to form the basis of an active industry in lumber, and to become an important source of supply for the province. The timber is white spruce, which grows to a size of from two to three feet in diameter, and black spruce, birch, tamarack, and jack pine, the last being used principally for ties. Prince Albert is the centre of the lumber industry.

Fur Trading is still an important industry. The chief furs taken are bear, otter, beaver, mink, wolf, marten, and musk-ox. The chief fur-trading centres are Prince Albert and Battleford. The output is valued at $200,000 annually.

Mining is carried on principally in the Souris district. The coal is lignite, and does not compete with the harder varieties of Alberta coal, except locally. The two chief centres at which coal is mined are Bienfait and Roche Percée. Including the Wood Mountain, Cypress Hills, and Willow Bunch districts along with the Souris, the estimated coal area in Saskatchewan is 7,500 square miles, with an estimated tonnage of twenty billions. About 200,000 tons were mined in 1910. Gold is found in small quantities in the sands of the North Saskatchewan.

Fishing is yearly becoming more important. The northern lakes abound with a good quality of whitefish, pike, pickerel, and sturgeon, which are caught through the ice in winter-time. The industry not only furnishes large local supplies of food, but is the basis of an important trade with eastern and southern markets.

Manufacturing. The most important manufacturing interests are those connected with the converting of cereals into foods. Flour-mills are common throughout the province. The making of cement and bricks is a thriving and important industry.

Transportation. Three railway companies are operating in the province. The Canadian Pacific main line and the Portage la Prairie-Wetaskiwin branch traverse the province. From Moosejaw the Soo line runs south-east, leaving the province at Portal, and the Lacombe branch runs north-west. The company has many other short lines. The Canadian Northern and Grand Trunk Pacific main lines run almost parallel to each other north-westerly through the province. The Canadian Northern has important lines connecting Regina, Saskatoon, and Prince Albert, and Prince Albert with Dauphin, Man., as well as a number of other branches in the southern part of the province. The Grand Trunk Pacific has a number of branch lines in course of construction. There is considerable need of colonization roads, to make the resources of the north available to the southern part of the province.

CITIES

Regina, the capital of Saskatchewan, is on the main line of the Canadian Pacific Railway and on the southern branch of the Canadian Northern Railway, running from Winnipeg to Prince Albert. It is the terminus of the Arcola and Moose Mountain section of the Canadian Pacific between Brandon and Regina, and is connected with the Grand Trunk Pacific by a branch from Melville. It is an important terminal point for both the Canadian Northern and Grand Trunk Pacific lines. The district surrounding Regina is one of the best wheat sections in western Canada, and it has undergone rapid development in the last few years. The city has a large distributing business north, south, and west, and a heavy local trade supported by the productive area tributary to

the city. Its schools, churches, and other public buildings are of outstanding excellence, and its business blocks and homes substantial. The city is well paved and has good parks and boating facilities. Its utilities are owned by the city. The Provincial Normal School is situated at Regina, and the city is the headquarters of the Royal North-West Mounted Police.

Saskatoon is situated on the South Saskatchewan River. It has important railway interests. It is on the main line of the Grand Trunk Pacific Railway, and on an important branch of the Canadian Pacific between Portage la Prairie and Edmonton. It is connected with the main line of the Canadian Northern at Warman, thirteen miles north, and with Regina by a branch line of the Canadian Northern running south-east. A branch of the same line runs from Saskatoon to Calgary. The facilities of the city for distribution could scarcely be improved upon. It is already an active commercial centre. Its growth from a village to an important city has all taken place in half a dozen years. The district around Saskatoon is an excellent grain and stock country, and is already highly improved. The Provincial University is located at Saskatoon. Among the faculties of the University, that of agriculture is being given prominence, in order to relate the work of the university to the dominant interests of the province. A large experimental farm is part of the university site. One of the Provincial Normal Schools is located here.

Moosejaw is on the main line of the Canadian Pacific Railway. It is a divisional point, and an important junction point on the Canadian Pacific. It is the junction of the Soo line running south-west through Portal to St. Paul, and of a branch running north-west by Outlook, to Lacombe, Alta. Many new lines and branches are projected. There are large shops in the city for the work of the company. The country around Moosejaw is excellent wheat land, and is well settled. The city has large elevator capacity, one of the largest flour-mills in the west, and large abattoir and stock yards. Feeding enterprises are carried on from the elevator waste and screenings. The city has excellent schools, churches, and other public buildings, and substantial business blocks.

Prince Albert is situated on the south bank of the North Saskatchewan on a site of great natural beauty. It is the terminus of the Regina and Prince Albert branch of the Canadian Northern, and of a branch of the same line from Dauphin, Man. Extensions of this line southwest to Battleford and north-west toward Lake Athabaska are now being made. A branch of the Grand Trunk Pacific from Young is nearing completion. Prince Albert is the centre for the lumber trade and the fish trade of the province, which are both expanding rapidly. It has large flour-mills and a large packing plant. It is the chief fur emporium of the province, and the most important distributing point for supplies to the north. Power is being developed from the rapids of the Saskatchewan east of the city. It is making rapid progress in the establishment of good schools and other services and utilities. The country about Prince Albert has a deep black soil of great fertility.

North Battleford is an important city and a divisional point on the Canadian Northern Railway. A branch line runs north. It is situated on the north side of the North Saskatchewan River.

TOWNS

The growth of towns with respect to both number and size has been very rapid. There are already over fifty towns and four times as many incorporated villages in the province. The transportation involved in the immense wheat production of the province has made immense elevator capacity necessary, which has given rise to a great number of market points on all lines of railway. Many of them are of local importance only, but the growth of branch lines of railway has already increased the business and traffic of a number of points to take account of wider relations than those of the immediate district. Most of the larger towns exemplify an active municipal spirit, and own and operate their own public utilities.

Indian Head, on the main line of the Canadian Pacific Railway, east of Regina, is one of the oldest and wealthiest towns of the province. It has nine elevators, large flour-mills,

and sash and door factories. It is well equipped for modern public utilities, which are owned and operated by the town. Surrounding it is a fine agricultural country which has been influenced by the work of the Dominion Experimental Farm. The forestry branch of the farm is doing an important work for the prairie provinces by the distribution of trees as well as by its demonstration work. To the west is *Qu'Appelle*, one of the oldest settlements of the province, and to the east *Wolseley*, *Grenfell*, *Broadview*, and *Moosomin*. Broadview is a divisional point and Moosomin is making rapid progress with respect to public services and utilities.

Swift Current and *Maple Creek* are the most important towns west of Moosejaw. Swift Current is a divisional point. Maple Creek was formerly a ranch centre, but is now surrounded by farms. Both towns serve large areas north and south with supplies.

Estevan, *Alameda*, *Ovbow*, and *Carnduff* are important market towns in the rich south-eastern part of the province. Estevan is the centre of the coal industry, and has large brickyards.

Weyburn is the largest town on the Portal-Moosejaw section. It is an important junction point and is developing rapidly in up-to-date municipal utilities. East of it, on the Moose Mountain section, are *Arcola* and *Carlyle*.

Lumsden, on the Prince Albert branch north of Regina, is a fine live-stock centre. North of it on the same line are *Davidson* and *Dundurn*.

Outlook is a growing divisional point on the Moosejaw-Lacombe branch of the Canadian Pacific Railway.

Melville, *Watrous*, and *Biggar* are thriving towns on the Grand Trunk Pacific main line. Near Watrous is Little Manitou Lake, where the water has valuable medicinal properties. A large sanatorium has been erected here.

Yorkton is an important town and divisional point on the Grand Trunk Pacific and Canadian Pacific railways. It has large elevator accommodation.

Battleford, on the south side of the North Saskatchewan, is connected with the main line by a short branch from Battleford Junction. It is a place of historic interest and of picturesque situation.

Kamsack, *Humboldt*, and *Lloydminster* are other live towns on the Canadian Northern. *Rosthern* is a good agricultural town on the Prince Albert branch.

Melfort and *Kinistino* are important towns in the centre of the fertile Carrot River country.

Kindersley and *Rosetown* are growing points in a rich agricultural tract on the Saskatoon-Calgary branch of the Canadian Northern.

Lanigan and *Neudorf* are divisional points on the Kirkella section of the Canadian Pacific Railway.

ALBERTA

Position. The province of Alberta is the most westerly of the three prairie provinces. It is bounded on the north by the North-West Territory, on the south by the United States, on the east by Saskatchewan, and on the west by British Columbia. The 60th parallel separates it from the North-West Territories, and the 49th from the United States. The 110th meridian separates it from Saskatchewan, and the 120th from British Columbia, as far south as the 54th parallel, south of which the summit of the Rocky Mountains forms the dividing line.

Area. The province extends from north to south for 750 miles, and from 200 to 400 from east to west. Its total area is estimated at 253,540 square miles.

Surface Features. Alberta is part of the Great Central Plain of North America, which in the upper part of the continent is flanked on the east by the Laurentian Mountains, and on the west by the Rocky Mountains. The part of the province south of the North Saskatchewan River, except for an area extending for fifty or sixty miles from the mountains, lies within the third prairie steppe. Outside of the mountain district this part of the province varies in elevation from 2,000 to 4,000 feet. While the surface is diversified in comparison with the surface of Manitoba and Saskatchewan, it is not marked by any important structural elevations. Elevations occur in isolated groups of hills, as in the case of the Hand, Beaver, Blackfoot, and part of the Cypress Hills. Smaller regularly formed elevations called "buttes" appear in different parts of the prairie. The prairie is

deeply cut by its rivers. Corresponding to the canyons of the mountain area, steep banks of clay, locally known as "cutbanks," flank the sides of the rivers in the prairie area often to a depth of 300 feet from the prairie level or "bench land." The area adjacent to the rivers is diversified by "coulees" running back from the rivers at right angles for long distances into the prairie. The Dominion Government has established two important game reservations in the prairie area east and south-east of Edmonton. Elk Island Park at Lamont consists of 16 square miles, and Buffalo Park at Wainwright of 162 square miles. These are largely for the preservation of a herd of eight hundred prairie buffalo purchased in Montana.

The mountain area of Alberta lies in the southern half of the province. It embraces a strip about sixty miles wide on the western side of the province, being the eastern slope of the Rocky Mountains. The eastern slope of the Rockies is rather abrupt, and the surface is irregular. It has no supporting structural elevation parallel to the main range, and is deeply cut by canyons and ravines. The general elevation of the main range of the Rockies in Alberta and of the lands lying away from the mountains, is greatest in the south. The chief peaks are Mount Brown, 16,000 feet; Mount Hooker, 13,500 feet; and Mount Murchison, 13,500 feet. The mountains are traversed by the following passes, which are important as channels for transportation across the mountains: North Kootenay, 6,600 feet; Crowsnest, 5,500 feet; Kicking Horse, 5,300; Yellowhead, 3,733 feet; Pine River, 2,850 feet, and Peace River, 2,000 feet. The Kicking Horse and Crowsnest are traversed by the Canadian Pacific Railway, and the Yellowhead by the Grand Trunk Pacific and Canadian Northern railways.

In the mountain area of the province, the Dominion Government has set apart large areas for forest and game preservation and for recreative purposes. They are patrolled by fire and game guardians, and are being improved by the construction of roads and trails to facilitate sight-seeing. The chief reserves in the mountains are Rocky Mountains Park and Jasper Park, containing 4,500 and 5,000 square miles respectively. Rocky Mountains Park is situated on the main line of the Canadian Pacific Railway. It is watered principally by the Bow River. Two important resorts within the park are Banff and Laggan; the former very popular on account of its hot springs, and the latter for its natural beauty. Jasper Park is on the main line of the Grand Trunk Pacific. It is watered by the Athabaska, and has hot springs, which are near the Yellowhead Pass. The government sanatorium is located at this point. The progress of the railway up the valley of the Athabaska is by a route of great scenic beauty. The government has also a reservation of fifty-four square miles at Waterton Lake.

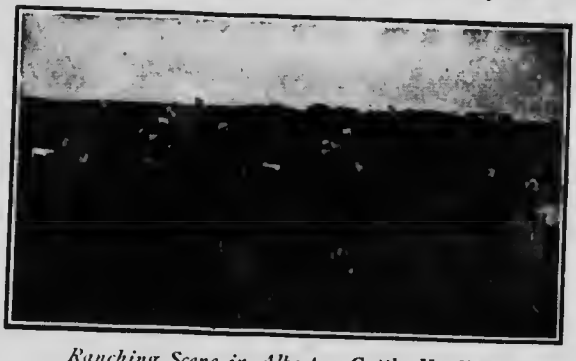
The area north of the North Saskatchewan River is skirted for some distance by the Rocky Mountains, but is for the most part an undulating plain. Its elevations appear as prominent isolated hills or groups of hills, chief of which are the Cariboo, Clear, Birch, and Buffalo Head. The north-eastern corner of the province is rough and broken in character from the crossings of this area by the Laurentian formation. Farther south, areas of sand are found on the eastern boundary of the province. The interior of the northern part of the province between the Peace and Athabaska rivers is well watered, and has stretches of muskeg which will become valuable when drained. The rivers in the north enter the province by deep channels, flanked in some cases by regular terraces rising back to the level of the prairie. The Peace and Athabaska rivers spread into broad deltas at their mouths.

The lakes of the province are not important in the south, being generally shallow local basins or sloughs which shrink in volume and area after the spring and early summer rains. The largest is Pakowki. In central Alberta larger bodies of water occur, such as Beaver, Bittern, Pigeon, Cooking, Sullivan, Birch, Gull, and Wabamun—lakes which are large enough to carry small craft. The lakes in the northern part of the province occur usually as part of the drainage system. The most important of these are Lac La Biche, Lesser Slave Lake, and Lake Claire, belonging to the Athabaska system.

The southern part of the province is treeless, except along the bottom lands of the rivers and in the mountains. The side of the coulees exposed to the north is frequently covered with short low scrub. In the central part of the province clumps of scrub and light timber alternate with large prairie stretches. The river banks are timbered, particularly in the upper levels. In the northern part of the province the growth is considerably heavier and the areas larger. Outside of the upper waters of the rivers, the chief forest areas are on the east side of the Athabaska and between the Athabaska and the Peace. The country north and west of the Peace is generally open, with occasional patches of scrub; and south of the Peace River and west of the Smoky, and including the Grande Prairie and Spirit River district, is open prairie.

Drainage. There are three great drainage systems represented in Alberta—the Mackenzie, Saskatchewan-Nelson, and Mississippi. The Peace and Athabaska rivers drain the northern part, their waters passing by the Great Slave River and Great Slave Lake into the Mackenzie, and finally into the Arctic Ocean. The Peace River enters Alberta from British Columbia in an easterly direction, turns north-easterly and enters the Slave River a short distance north of Lake Athabaska. Its important tributaries are the Smoky, Wabiskaw, and Red rivers. The Athabaska River rises in Alberta, flows north-east and finally north into Lake Athabaska. Its important tributaries are the Macleod, Pembina, Lesser Slave, and Clearwater. The North and South Saskatchewan rivers drain most of the southern part. They unite in the province of Saskatchewan and, joining the waters of the Red River in Lake Winnipeg, form the Nelson River, which empties into Hudson Bay. Both branches of the Saskatchewan rise in Alberta and flow in an easterly direction. The chief tributary of the North Saskatchewan is the Battle River. The chief tributaries of the South Saskatchewan are: on the north side, the Bow and the Red Deer rivers, and on the south, the Belly River with its tributaries the Little Bow, Old Man, and St. Marys. The Milk River, which flows through the province for a distance of one hundred miles just north of the international boundary, joins the Missouri River in Montana, and passes by way of the Mississippi into the Gulf of Mexico.

Climate. The climate of Alberta is usually described, along with that of the rest of the prairie provinces, as extreme; but this is subject to important and characteristic exceptions. The range between high and low temperature is scarcely as wide as in the other prairie provinces. The summer seasons are not marked by excessive heat, the nights being always cool, and the rigors of winter are broken by frequent visits of the Chinook winds. The influence of the Chinook is greatest in that part of the province south of Red Deer, but the same general influence for which it stands has some effect over the whole province, and distinctly so in the upper valley of the Peace River. The economic and industrial significance of the Chinook influence is scarcely realized. With the filling up of the southern strip of the prairie provinces as far west as the Rocky Mountains, the movement of the homeseeking population for agricultural lands must necessarily be north. The climatic limitations to this northward movement are not great in Alberta. Good grain and vegetables are grown to the northern limits of the province, and a vast development of Northern Alberta will follow colonization railways if they are constructed. The influence of the Chinook extends into Saskatchewan for some distance, and moderates the climate of the south-west part of the province.



Ranching Scene in Alberta—Cattle Herding.

The precipitation averages sixteen or eighteen inches annually. The greater part of the rainfall occurs in the months of May, June, and July.

INDUSTRIES AND RESOURCES

Agriculture. The province of Alberta is important agriculturally, not only on account of its general fertility, but on account of its rapid progress in diversified lines of agricultural work. The rancher, grain grower, dairyman, stock grower, and irrigator have appeared side by side or in quick succession within a decade as highly efficient producers. The country south of the main line of the Canadian Pacific Railway, and to a lesser extent for a hundred miles north of it, was formerly devoted to ranching. It is what is known as a short-grass country. The naturally cured prairie grasses of low growth furnished food to stock summer and winter. Recently this area has been invaded by the settler, and has been changed to a grain-

Farm Flock near Edmonton.

producing country. Though having sufficient absolute precipitation for grains, grasses, and root crops, the work of the Chinook has made it necessary to check evaporation by a special method of culture, called dry farming, a method generally followed throughout the prairie provinces. It is briefly a plan of preparing soil, by deep and thorough tillage, to receive moisture and of preventing evaporation from capillary action by frequently stirring the surface soil to make a dust blanket. This method, consistently followed, successfully removes danger of failure from drouth.

Three important irrigation enterprises have been inaugurated within this area at Calgary, Lethbridge, and Medicine Hat, which will artificially water a total area of about 2,500,000 acres of land.

A few small ranch enterprises still persist in the southern and south-eastern part of the province, but grain-growing, principally of winter wheat, spring wheat, oats, and barley are general. Alfalfa and sugar beets are important crops in irrigated lands, and stock enterprises on the farms are increasing in number and importance.

Central Alberta is devoted to mixed farming and dairying. It is a country of choice dairy and beef herds and of a good class of horse stock. The butter output amounts to about 2,500,000 pounds annually. Hog raising is becoming an important industry. Winter and spring wheat and barley are satisfactory crops, and oats grow in the highest perfection.

Northern Alberta is undergoing development. The land of the Upper Peace River Valley is being settled, and rapid settlement will follow transportation over the greater part of the country, which is generally good land, and which has been demonstrated to be fitted for the growth of good cereal, vegetable, and fodder crops almost to its northern boundary.

Lumbering. The lumber industry is not yet important from the standpoint of total production. Timber growth south of the North Saskatchewan is limited largely to cottonwood and poplar, the latter being locally useful. Saw logs of spruce, pine, and birch are floated down the Saskatchewan to Edmonton. The northern part of the province is rich in timber resources in the forest areas between the Peace and Athabaska and east of the Athabaska, the chief varieties being jack-pine, balsam, spruce, poplar, and birch.

Mining. Alberta possesses a great wealth of coal. Its distribution extends from the international boundary to the Peace River, and from the mountains well toward the eastern boundary of the province. The quality varies from lignite to anthracite, the harder quality being found in the neighbourhood of the mountains. The chief centres of the industry are Taber, Lethbridge, Blairmore, Coleman, Frank, Lundbreck, Hillcrest, and Lille on the Crowsnest Railway; Bankhead and Canmore on the main line of the Canadian Pacific, and Edmonton, Clover Bar, Tofield, Morinville, and Cardiff in the Edmonton district. Large coal properties are in process

of development in the district between the Brazeau and Athabaska rivers, contiguous to the Grand Trunk Pacific Railway. The total area of coal land is estimated at 16,000 square miles. Gold is found in paying quantities in the sands of the North Saskatchewan and Peace rivers. Oil wells have been sunk at Morinville and near Cardston. Important results are looked for from the work of half a dozen companies boring along the Athabaska. Gas is found in Medicine Hat in quantity to answer for light, fuel, and power purposes, and also at Bow Island. There are large salt deposits near Fort Smith. Immense beds of tar sands are seen east of the Athabaska River, which with transportation will prove of great value for roadmaking.

Fur Trading. The taking of fur is still an important interest. It is tributary to Edmonton. The most important fur district is in the northern interior between the Peace and Athabaska. Three companies, besides many individuals, are engaged in the traffic. Its value is one million dollars annually. The furs are bear, beaver, mink, marten, fox, wolf, musk-ox, coyote, etc. A large herd of wood buffalo, numbering from four to eight hundred, run [illegible] of the Peace in the north-west corner of the province. They are protected by federal regulation.

Fishing is important in relation to local food supply in the north and centre of the province. The northern lakes are heavily stocked with trout, whitefish, pickerel, and pike. The industry will become important with the establishing of transportation.

Transportation. The province is served by the Canadian Pacific, the Canadian Northern, and the Grand Trunk Pacific. The main line of the Canadian Pacific enters the province about sixty-five miles north of the international boundary, and runs in a general north-westerly direction through Calgary, leaving the province by the Kicking Horse Pass. The Crowsnest division leaves the main line at Dunmore junction, runs almost directly west through Lethbridge and Macleod, and enters British Columbia by the Crowsnest Pass. A branch connects Lethbridge and Calgary. The Canadian Pacific Railway Company controls and operates a line, formerly owned by the Alberta Railway and Irrigation Company, running south-east from Lethbridge to the boundary, and a branch of the same line from Stirling running south-west to beyond Cardston. A line runs directly north and south from Macleod, through Calgary, to Edmonton, and two branch lines running north-west from Moosejaw and Saskatoon join the north and south line at Lacombe and Wetaskiwin respectively.

The Canadian Northern main line running north-westerly between Winnipeg and Edmonton, crosses the Saskatchewan River at Fort Saskatchewan. A line runs to Athabaska Land-

Junction of the Echo and Bow Rivers, Banff.

ing north, and others run west from Edmonton. The main line will ultimately run to Vancouver by way of the Yellowhead Pass. A line connects Vegreville and Calgary.

The Grand Trunk Pacific also runs from Winnipeg to Edmonton in the same general direction a little farther south, and runs west to the Athabaska River, following the river south-west and crossing the mountains by the Yellowhead Pass. A line connects Tofield and Calgary.

The advent of railways has done away with water transportation in southern Alberta. Stern-wheel steamers ply on the Athabaska, Peace, and North Saskatchewan rivers, and on Lesser Slave Lake. It is probable that the development of production will involve the improvement of transportation services on all the important rivers of the province.

CITIES

Edmonton, the capital of the province, is situated on the North Saskatchewan River, about two hundred feet above the level of the river. The city now includes what was formerly the two cities of Edmonton and Strathcona. The site is one of great natural beauty. The river is spanned by the high level railway and traffic bridge of the Canadian Pacific Railway, and by other bridges. It is on the main line of the Grand Trunk Pacific and Canadian Northern railways, and is the present terminus of the Calgary and Edmonton division of the Canadian Pacific, as well as of a direct line from Winnipeg. A number of lines of railway radiate from Edmonton west, north-west, and north. A branch of the Canadian Northern Railway runs to Athabaska Landing, and does a large distributing traffic for the north at this point. Extensions are projected north to Fort Murray, north-west to the Peace River, and also north-east. The city has important wholesale interests, large flour and lumber mills, brickyards, ironworks, and large abattoir and packing plants. It is the largest frontier fur emporium in North America. It has a good class of commercial and public buildings, more especially schools. It is the seat of the Provincial University, which is situated on a site comprising two hundred and fifty-eight acres, with a view to permit of suitable expansion into experimental and demonstration work in relation to the teaching of agricultural science. The scope of the work of the university is expanding rapidly through the policy of receiving in affiliation colleges which are serving the denominational interests of the province.

Calgary is the largest city of the province. It is situated in a valley between the Bow and the Elbow rivers, and is on the main line of the Canadian Pacific Railway, on a line of the same road running from Macleod to Edmonton, and has shops and terminal facilities. It will likewise be served by branch lines of the Canadian Northern and Grand Trunk Pacific lines from Saskatoon, Tofield, and Vegreville. The city has large wholesale interests, and distributes west, north, and south. It has large mills, brickyards, cement works, breweries, foundries, stone quarries, harness manufactory, and meat-packing concerns. The city is substantially built of local sandstone, and has good banks, business blocks, colleges, schools, and churches. The Provincial Normal School is located at Calgary. Calgary is the headquarters of one of the largest irrigation enterprises on the continent. The irrigated lands are being converted to heavy production of grains, grasses, sugar-beets and other roots, vegetables, and small fruits. Calgary, which was formerly a ranching centre, is now an important district for registered and highly improved cattle, sheep, and more especially horses.

Lethbridge, situated on the Belly River, is a divisional point on the Crowsnest Railway, and is the headquarters of the former Alberta Railway and Irrigation Company's line. It has a line running north-west, and it will be the terminus of a line from Weyburn. It is the centre of the first large irrigation enterprise in Canada. The irrigated lands in the district are producing grain, roots, alfalfa, and other fodder crops abundantly. The district is well settled as respects both irrigated and unirrigated lands. Winter wheat is an important crop. One of the Dominion Experimental Farms is situated near the city. The Galt coal is mined at Lethbridge, and a number of other important mines operate in close proximity. The city is wholly modern with respect to educational and other services and utilities.

Medicine Hat is situated on the South Saskatchewan River and on the main line of the Canadian Pacific Railway, a short distance east of its point of junction with the Crowsnest branch. It is a divisional point. The city has large supplies of natural gas which furnishes light, power, and fuel at low cost. It is owned by the city. It furnishes power to the shops of the railway, and fuel and power to an immense manufacturing concern east of the city. The Alberta Clay Products Company manufactures pressed, glazed, and fire brick, sewer and drain tile, and a variety of other clay products. There is a provincial demonstration farm adjoining the city devoted to showing the working of the best dry-farming practice. The district about Medicine Hat was formerly one of the most important ranch areas in the west. It is rapidly losing

this character, and has already become a grain-growing and mixed farming district. The city is compactly built. It has good public and business buildings, substantial churches, schools, and homes.

Wetaskiwin is situated on the Battle River and on the Calgary and Edmonton Railway, about forty miles south of Edmonton. It is the junction point of the Saskatoon section of the Canadian Pacific with the Calgary and Edmonton division. The city is the centre of a fine grain and stock-growing country, and has large elevator interests.

Lacombe, twenty miles north, is important on account of the quality of its live-stock and its heavy production of grain and grass crops. An experimental farm established by the Dominion Government adjoins the town. It is the junction point of a branch of the Canadian Pacific Railway from Moosejaw. Important towns on this line within the province are *Stettler* and *Castor*. *Daysland* and *Camrose* are on the Wetaskiwin-Saskatoon line. The latter is the point of crossing of the Tofield-Calgary branch of the Grand Trunk Paeific. It is the seat of a provincial Normal School.

TOWNS

The development of transportation interests has led to the establishment of a great number of new towns, the ultimate importance of which can scarcely be forecasted. Places of any size are confined to central and southern Alberta. In central Alberta and on the lines tributary to Edmonton, the towns of *Vermilion*, *Vegreville*, *Fort Saskatchewan*, and part of *Lloydminster* are on the Canadian Northern Railway to the east, and *Athabaska Landing*, *Morinville*, and *St. Albert* to the north. Vermilion has a demonstration farm and is a divisional point, and Athabaska Landing is the farthest point north to which the railway has penetrated in the western interior of Canada. It has a provincial demonstration farm. Morinville has large coal mines. *Tofield* and *Wainwright* are thriving places on the Grand Trunk Pacific on the east, and *Edson* on the west of Edmonton. *Ponoka*, on the Calgary and Edmonton line, is the seat of the provincial asylum.

Parliament Buildings, Edmonton.

Red Deer is the largest town between Edmonton and Calgary. It is situated on Red Deer River, has mills and brickyards, and is surrounded by a good grain-growing and live-stock country. The Alberta Central Railway is at present being built westerly towards Rocky Mountain House.

Innisfail, *Bowden*, *Olds*, *Didsbury*, and *Carstairs* are thriving centres of the dairy interest of the province. Olds is the site of a demonstration farm.

South of Calgary, on the Macleod line, are *Okotoks*, *High River*, *Nanton*, and *Claresholm*, which are important centres for the growing of winter wheat and the raising of horses. West of Calgary *Bankhead* and *Canmore* are mining centres.

Macleod is the junction point of the Edmonton and Macleod section with the Crowsnest division of the Canadian Pacific Railway. It is situated on the Old Man River. It is the centre of a good grain-growing country which was formerly devoted to ranching. It still has large stock interests to which it is

specially adapted on account of the character of its grasses, abundance of water, and the influence of the Chinook. *Pincher Creek* is the centre of a good mixed farming area. The other towns which have attained importance on the Crowsnest Railway are the mining towns of *Taber*, *Bellevue*, *Frank*, *Blairmore*, and *Coleman*.

Raymond, about twenty miles south of Lethbridge, has a large sugar refinery. It is on a branch of the Alberta Railway and Irrigation Company's railway and on the irrigation canal. Its tributary interests include the growing of grain, the cultivation of sugar beets, and the grazing and feeding of live-stock. *Stirling* is a junction point on the railway, and is watered by the canal. *Magrath* is in an excellent farming district, and is also on the canal. *Cardston*, which is nearer the foothills, is beautifully situated, and is likewise in an excellent mixed farming district. It is equally noted for its heavy yields of grain and for the excellence of its stock. *Warner* is a new town between Stirling and the boundary, and is in the centre of an excellent wheat-growing district.

Washing Gold with a "Grissely."

"The Muskeg", second best muskrat breeding ground in Canada, a great floating marsh, 9 mi. north of Lake Winnipegosis, reached from the lake by way of overflowing River & Muskeg Creek, a journey of nearly 25 mi. P.P. Prairie Farmer