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COMPLETE
GEOGRAPHY

BY

ALEX EVERETT FRYE

AUTHOR OF "CHILD AND NATURE," "BROOKS AND BROOK BASINS,"
"PRIMARY GEOGRAPHY," ETC.



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P R E F A C E.

Commerce. A work on geography that seeks to lay a broad basis for the study of nations must throw a strong search-light upon their commercial relations.

Commerce and the related industries take a leading place in this book,—those of our own country being illustrated by twenty-two colored maps prepared expressly for this work.

The intelligent study of a country's natural resources must be based on knowledge of its physical features. For this reason the surface-forms and the climate of the various parts of the world receive full treatment in the text, the maps and the pictures. The natural regions of the United States are made to serve as a basis for the comparative study of other lands.

Order of Lessons. Though most teachers using this book will doubtless present the lessons in the order in which they appear, yet those who wish to complete the study of the United States in detail, before showing the broader relations of our country to other lands, can readily do so. The work is so arranged that pupils can go directly from the early lessons on the physical features and resources of our country (*pages 30 to 52*) to the study of its people, its government and its industries (*pages 123 et seq.*).

Sizes of Type. The subject-matter which needs the most careful study is in large type. The explanatory and descriptive matter in small type does not call for close study, but may be used for supplementary reading. Teachers who wish to shorten the course in geography can easily do so by laying little stress on the notes in small type.

Illustrations. Nearly all the pictures in this book were engraved directly from photographs. To the selection of subjects for the photographs, the author has given fully as much time and care as to the text itself. The aim has been to present *characteristic forms* that are educative. Many of the views are from the Gardner collection in Harvard University.

Spelling of Geographic Names. This book follows the rulings of the *United States Board on Geographic Names*,—the highest authority in our country.

Study and Reference Maps. All teachers of geography have felt the need of *simple* study maps and *full* reference maps. No single map can serve both purposes. If it is simple enough for study, it is of little value for reference. For this reason, two series of maps are used in this book, — the one containing such details as are needed in connection with the text; the other being the most complete series of reference maps ever placed in any text-book. Among the latter, in the supplement, are several historical maps showing geographical discoveries, Greece in the time of Pericles, Italy in the time of Augustus, Palestine in one of the most important periods of Biblical history.

Teachers' Manual. The suggestions in the *Teachers' Manual* are the outgrowth of experience in the class-room.

Acknowledgments. William Morris Davis, Professor of Physical Geography in Harvard University, has given very valuable assistance in the preparation of this work. The treatment of the atmosphere and the elementary land-forms is based on manuscripts of Professor Davis. He has also given many broad criticisms on other parts of the work.

The author takes pleasure in expressing his gratitude to Mr. Justin H. Smith, of Boston; Mr. Cyrus C. Adams, of New York; and Mr. Frank F. Murdock, of Bridgewater, Mass., for many helpful criticisms; — also, to Mr. J. F. Richardson, of Boston, for the care which he has bestowed upon the wood-engravings.

The relief maps were modeled under the direction of the author, by Miss Gertrude Beatrice Wright, of the Normal Art School, Boston. The industrial maps were drawn by Mr. Henry Gannett, Chief Topographer of the United States Geological Survey.

ALEX E. FRYE.

BOSTON, May, 1895.

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THE EARTH.

Introduction.

See Teachers' Manual of Methods in Geography.

THIS book describes the earth as our home.

We ought to know a great deal about the earth, because we live on it and use many of its products.

The earth supplies us with food, clothing and all other useful things. Do you not wish to know where wheat and corn grow?—where grassy plains are covered with cattle, horses and sheep?—where fields are white with cotton or blue with flax?—where trees are cut down, floated to the mills and sawed into lumber?—where coal, iron ore and granite are taken out of the earth?

All these products, and many more, are found in various parts of the United States, our own country, but some of the things which we use are raised by people in other lands. From this book we are to learn what kind of country those people live in, how they dress, what work they do, what they buy of us and what they sell to us.

We shall also learn why the same kinds of products are not found in all parts of the earth. Our study will lead us to the cold land of the Lapps, where the sun shines low in the sky for several weeks each summer without setting. In that region, the warm season is too short to ripen much grain, but the flesh, milk and skins of reindeer supply food and clothing.

In other cold parts of the earth, there are vast fields of ice and snow, upon which Eskimos hunt the seal or the polar bear. How different is their life from ours! They see no grain ripening in fields, no cattle grazing in pastures, no fruit hanging on trees.

This book describes wide regions of shifting sand, where no rain falls and no plants grow, except near a few springs. There the people travel mostly on the backs of camels.

Do you know how tea leaves are dried and how silk is woven into fine cloth? You will learn how, when you read about the yellow people in Japan and China.

There are warm lands where coffee berries and many kinds of spices grow. Do you not wish to learn about the people who send us coffee, cloves and nutmegs? Every day as we study this book and look at its pictures, we shall learn something about the earth,—its forms of land and water, its plants, its animals or its people.



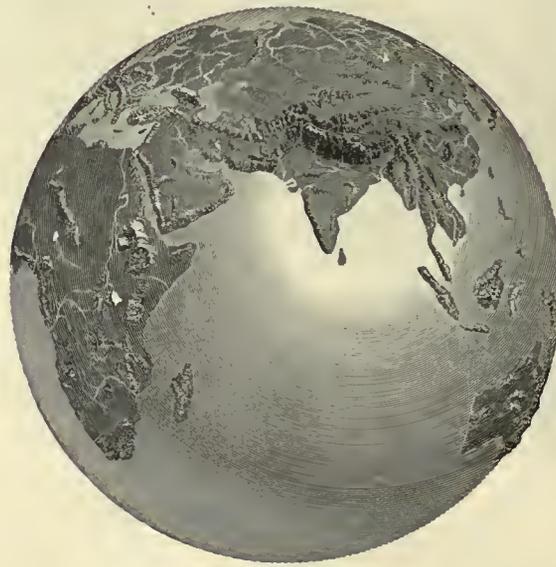
1. Form and Size of the Earth.¹

The earth is a great ball of land and water, surrounded by a shell of air.

We see so small a part of the earth at a time that it



America.



The Old World.

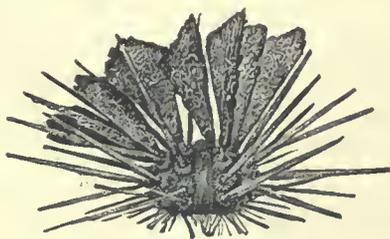
does not look like a ball, but there are many proofs that the earth is round. Here are a few of them :

1. Many persons have gone around the earth.
2. As ships sail out to sea, their hulls are often lost to sight while their sails are clearly seen.
3. When travelers go day after day towards the north or the south, new stars rise over the horizon before them, while the stars behind sink beneath the horizon.
4. Sometimes the earth moves between the sun and the moon and casts a shadow on the moon. The edge of this shadow always looks like part of a circle.

The sun and the moon are round, like the earth. The moon is smaller than the earth, but the sun is many times larger.

The shadow of the earth on the moon is called an *eclipse of the moon*. There may also be an eclipse of the sun, when the moon is between the earth and the sun.

The great body of salt water which surrounds the land is called the *sea*. Various parts of the sea are known as *oceans*. The oceans lie in broad hollows on the earth.



Sea-Urchin — $\frac{1}{2}$.

The two maps above show the land and the water on both sides of the earth.

The earth is so large that the distance from side to side, through the center, is nearly 8000 miles. The greatest distance around the

earth is about 25,000 miles. Many millions of people live on the earth, and yet a large part of the land is not used.

If a train of cars were to travel day and night at the rate of thirty miles an hour, how long would it take to go 25,000 miles ?

2. The Land and the Sea.

The greater part of the earth is a mass of rock. On the land most of the rock is covered with soil. Fine mud, or *ooze*, covers the rock under the sea.

Many parts of the land do not rise very high above the sea, but other parts are lofty and rugged. Some mountains rise higher than most of the clouds which

we see, — even four or five miles into the air.

Most parts of the sea *near the land* are shallow. Far from the shores the sea is in many places two miles deep, and in some places the bottom is four or five miles below the surface.

The land and the surface of the sea have light by day and darkness by night. They have also warm and cold seasons. No sunshine reaches the deep parts of the sea. The deep water is always cold and dark.

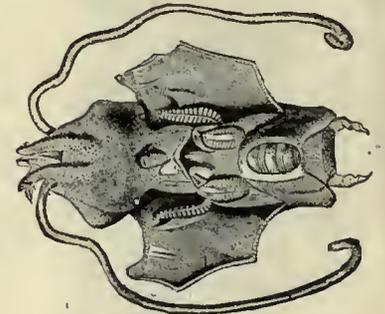
The land has many valleys and mountains, but a large part of the sea-bottom is a great smooth plain.

The wind blows sand and dust over the land and also makes waves on the surface of the sea, but the deep sea is very still. Part of the rain falling on the land feeds brooks and rivers which carry or *wash* loose soil down the slopes and help to wear valleys in the land. Thus the form of the land is slowly changed.

Nearly all the soil which is washed into the sea settles in the shallow water near the shores. The smooth bottom of the deep sea hardly changes at all, for there are no streams to wear valleys in it, and very little soil from the land



Coral — $\frac{1}{2}$.



Deep-Sea Spirula — $\frac{1}{2}$.

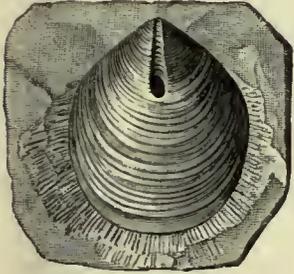


Sponge — $\frac{1}{2}$.

¹ For pronunciation of difficult words, see the *Vocabulary* in the Supplement. reaches these quiet waters.

Animals and plants, or parts of them, are often buried in the layers of sand and mud which are formed in the sea. During long ages, many layers form and gradually harden to rock. The remains of animals or of plants bedded in the rock are called *fossils*.

Plants and animals of many kinds live on the land. Seaweeds, fish and other kinds of creatures abound in the shallow waters near the seashores, but the cold and dark depths of the sea have only a few, if any, plants and not nearly so many kinds of animals as live either in the shore waters or on the land.



A Fossil Shell.

Fish abound in many rivers and lakes. Some kinds of fish are found in fresh water only, but others from the salt water go into the rivers to *spawn*, or deposit their eggs.

Some of the small pictures on this page and that opposite show a deep-sea fish and a few other forms of deep-sea life.

We shall study the land more than the sea, because we live on the land and get from it most of the things we use.

3. Directions.

In our country all shadows cast by the sun at midday point due north. When you stand with your back to the midday sun, you face the north. Your back is then towards the south.

Have you ever seen the *north star*? Do you know how to find it by means of the two stars called *pointers*, in the "Dipper"?

North is the direction along the earth's surface towards the north star. *South* is the opposite direction, towards the midday sun.

Which is the north side of your schoolroom? Which is the south side? Name some objects north of your schoolhouse. Name some objects south of it.

When you face the north, east is on the right side, and west is on the left.

When you face the south, which direction is on the right? Which is then on the left?

Only twice each year¹ the sun rises due east of us and sets due west, but it always rises in the *eastern* part of the sky and sets in the *western* part.

Name some objects east of your schoolhouse. What street near by runs about east and west?

Point midway between north and east. This direction is called *northeast* and may be written N. E.

Where will you look for *southeast*? Where will you look for S.W.? For N.W.?

¹ About March 21 and September 22.

Here is the picture of a *mariner's compass*. Under its glass cover is a round card, naming the *points of the compass*, — N., S., E., W., N.E., S.E., etc. On the under side of the card is a steel magnet in the form of a needle or bar that swings on a pivot.



Mariner's Compass.

The needle generally points almost north and south.¹

By means of the compass, the sun or the stars, sailors can at all times tell the direction in which they are moving. Without this simple magnet-needle,

the task of steering vessels from port to port would be very difficult.

4. Directions on the Earth.

The earth is always turning round like a ball spinning as it flies through the air, but the earth turns only once in twenty-four hours, — a day and night.

The sun can light and warm only a little more than one half² of the earth at a time. As the earth turns, or *rotates*, some parts of it are turning into the sunlight while other parts are turning away from it. One side of the earth has day while the other side has night.



Deep-Sea Fish—1.

As the earth rotates, its surface moves from west to east. The sun seems therefore to "rise" in the east and "set" in the west.

¹ The needle points to the *magnetic pole* of the earth. Find this pole on the colored map of North America.



Waves on the Seashore.

² If there were no air the sun would light exactly one half of the earth at a time. There would then be no twilight, and the sun would not be visible after it had actually sunk beneath the horizon line.

Bright daylight would be tiresome, if it lasted all the time, with no dark hours for rest and sleep. Endless night would be cold and dismal, if there were no sunshine to heat and light the earth.

Far away in the north, there is a point on the earth, known as the *north pole*. It is under the north star, which is often called the *pole star*. Opposite the north pole, on the other side of the earth, there is a point called the *south pole*.

The word *pole* means *pivot*, or point on which a thing turns. The earth does not rest on anything, but turns in space as if held by a line running from pole to pole. We can think of such a line, and we will call it the *axis* of the earth.

No person has yet reached the poles. They are in regions of ice and snow.

In our land every midday shadow points towards the north pole, and so all north lines that we may imagine on the earth meet at that point. Going in the opposite direction, all south lines meet at the south pole.

East-and-west lines go round the earth in circles. The largest of these circles is midway between the poles and is called the *equator*, because it divides the surface of the earth into two *equal* parts. All east-and-west lines run parallel with the equator. When we face the north pole, *east* is along the lines to the right, and *west* to the left.

Of course there are no real circles to be seen on the earth, but we may imagine such lines and name or number them. We shall find that these lines are very useful in helping to locate places on the globe. The equator is far south of us. If we were near it we

could see the sun overhead, or nearly so, at noon every day. The regions near the equator have no winter. The hot season lasts all the year. Snow and ice are not found there, except on the tops of high mountains.

By climbing any very high mountain near the equator, a person may find the same changes in climate as in going from the equator to either polar region.

The lands in the hot belt teem with life. Dense forests cover many parts of the surface. Birds, insects and large animals also abound. In later lessons we shall read about some of these animals.

We shall see maps of the earth in many positions, but we shall

always be able to tell the directions on them, if we remember that north and south are towards the poles, while east and west are parallel with the equator.

How many arrows on map A point north? How many point south? Which arrows point north on map B? On map C?

Which arrows are flying south on map B? On map C? How many arrows on map A point east? Which fly east on map B? On map C?

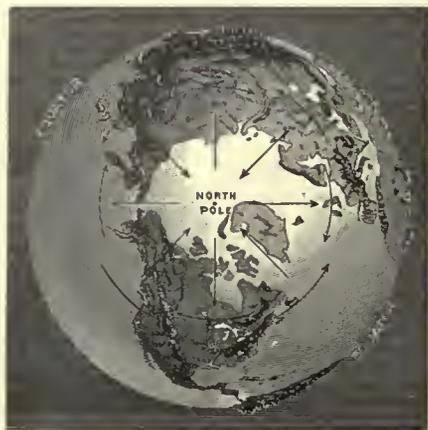
Which arrow points west on map A? On map B? On map C?

A map of half a globe, or *sphere*, is called a *hemisphere*. *Hemi* means *half*. One of the little hemispheres on this page

shows the side of the earth having the most water. The other shows the side having the most land. How many lines on the *Land Hemisphere* are drawn north-and-south?

Which pole is not shown on map D? How many north-and-south lines are shown on this map?

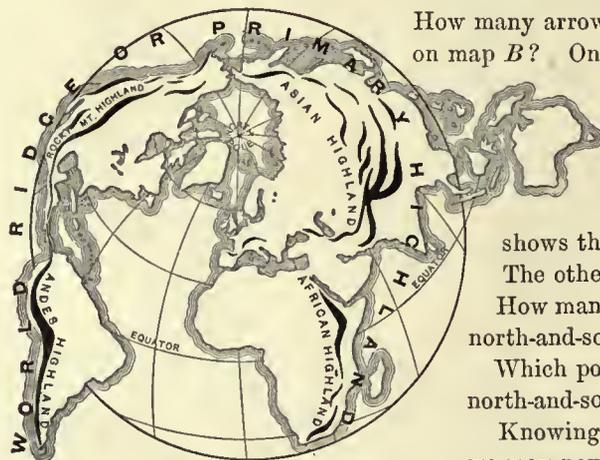
Knowing how to tell the directions on the earth, we may now study the positions of the great bodies of land and water.



Map A.



Map B.



Map D.

Key to the World Ridge Map, page 5.

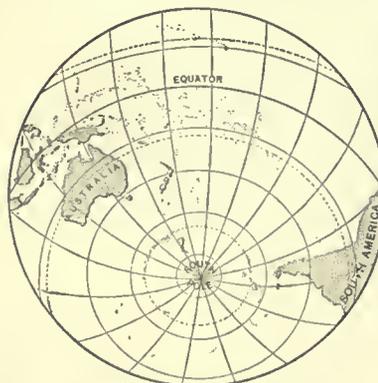


5. The World Ridge or Primary Highland.

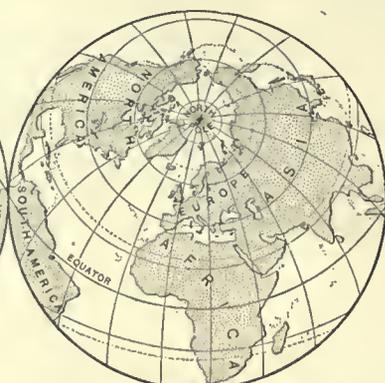
Most of the lands on the earth are in large bodies, instead of being scattered in small islands.

The land is not evenly distributed over the earth. Most of it is north of the equator and therefore much nearer the north pole than the south pole.

About one fourth of the earth's surface is land,—the rest is water. Only a small



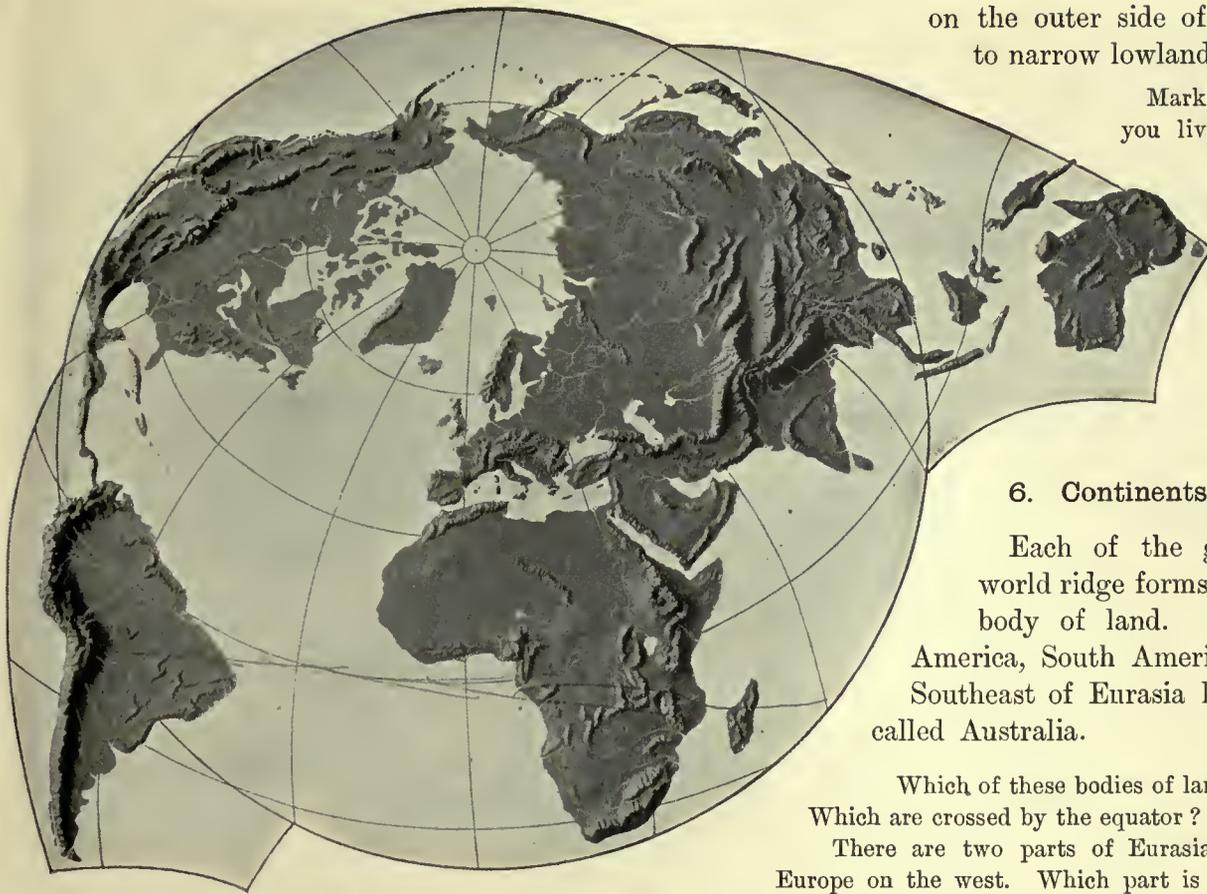
Water Hemisphere.



Land Hemisphere.



Map C.



Map showing the World Ridge.

on the outer side of this highland, descend to narrow lowlands along the shores.

Mark on the map the place where you live. On which side of the equator are the ends of the primary highland? In how many places does the equator cross the highland? Which part of the primary highland is nearest the north pole? Nearest the south pole?

6. Continents or Grand Divisions.

Each of the great highlands in the world ridge forms the backbone of a large body of land. These lands are North America, South America, Eurasia and Africa. Southeast of Eurasia lies a great body of land called Australia.

Which of these bodies of land are north of the equator? Which are crossed by the equator?

There are two parts of Eurasia,—Asia on the east, and Europe on the west. Which part is the larger?

North America, South America, Europe, Asia, Africa and Australia are called *continents*, or *grand divisions*.

Which of these continents is wholly south of the equator?

Bering strait cuts through the primary highland and separates the *Old World* from *America*, or the *New World*.

part of the surface south of the equator is land. The sea is not wholly cut into separate oceans by the lands, but it spreads in one large body around them.

Through the great bodies of land, we can trace a long chain of highlands, somewhat in the shape of a horseshoe.

We will call this chain of highlands the *world ridge*, or the *primary highland of the world*. The greater part of the world ridge consists of long and wide plateaus, broken by mountains and valleys. In many places it is hundreds of miles in width. Some parts of the world ridge are not very high.

On both sides of the primary highland, the land slopes away to the shores and there dips beneath the sea. Most of the longer slopes are on the inner side of the horseshoe-shaped highland.

These slopes make wide plains between the primary highland and the sea. In many places the shorter slopes,



America.



Old World.

Which continents are in America? Which are in the Old World? What isthmus connects the two parts of America?

Where is the isthmus of Suez? What seas does it separate? Which is the larger,—Africa or Eurasia? Africa or North America? Australia or North America?

Which continent is farthest from your home?

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