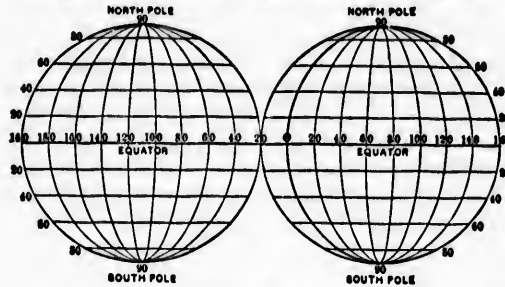


apart. You can count them up to 120° west and 60° east, or 180° altogether. Now mark some meridians of longitude on your clay globe at even distances.



In another picture we see all the imaginary lines represented at once on the two sides of the globe. The parallels of latitude and the meridians of longitude are all drawn this time 20° apart. You will find some maps in this book in which they are drawn only 5° apart, and a few in which they are only 1° apart. Turn up a number of these maps and see for yourself how very convenient these lines are to tell the exact position of any place. Let us draw a meridian line on the playground at the next recess, and also a parallel of latitude quite across the ground. At present we shall make two lines across the floor, one north and south, the other east and west. The point where they cross shows our latitude and our longitude. Find out the correct figures. How many degrees do we live west of Greenwich? How many degrees north of the equator?

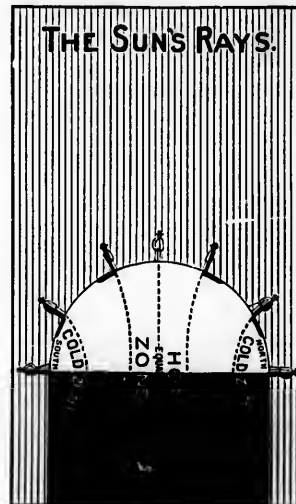
ORAL AND WRITTEN EXERCISES.

Rule your slate or a large sheet of paper into squares like a checker-board. Number the lines at the sides and along the top and the bottom. Here and there, at the places where the lines cross, mark in the 26 letters with capitals. Call the top north, the right side east, the bottom south, the left side west. Suppose these lines are meridians and parallels. Now read from your drawing the position of each letter thus: the point A is in latitude 10° north and in longitude 8° west. Place the point of a pencil on the school globe and then read the latitude and longitude of that place. Take a pointer and indicate any place on one of the wall maps. Tell the latitude and the longitude of the place you touch. Give the latitude and the longitude of the place where the first meridian cuts the equator. Point out the place on the map. What is the latitude of the south pole? What is the longitude of the north pole? Two ships are sailing along the equator out in the Pacific Ocean. The first ship is going east and the second west. Tell the latitude of each ship. When the first ship is in 180° east longitude and the second in 180° west longitude, how far will the ships be apart? Parry Sound, Ontario, is in 80° west longitude, and St. John, New Brunswick, is in 66° west

longitude. Both places lie in 46° north latitude. How many degrees is the first town west of the other? If the whole circumference of the earth is divided into 360°, and if the earth turns round in 24 hours, tell how many degrees of longitude rotate before the sun in one hour. If 15° of the equator turn round under the sun in 60 minutes, how long does it take for one degree to rotate? If two places have their meridians 75° apart, what is the difference of time for sunrise at these places? Charlottetown, Prince Edward, is about 63° west longitude, and Winnipeg is about 97° west of Greenwich. How many degrees are they apart? How many minutes will the sun shine at Winnipeg after it has set at Charlottetown? Find the places on the globe that lie as follows:—45° N. lat. and 45° W. long.; 45° S. lat. and 45° E. long.; 36° S. lat. and 20° E. long.; 30° N. lat. and 32° E. long. At Windsor, Ontario, the sun sets about 5 hours and 32 minutes later than it does at Greenwich. Find the longitude of Windsor. If a number of people in different parts of the world all set off from their different homes and travelled straight northward could they possibly meet? In what latitude? What star would be directly overhead? The meridians of longitude are all equal, but the parallels of latitude grow smaller and smaller all the way from the equator to the poles. Explain this. A degree of latitude is everywhere the same, namely, about 69 miles; but a degree of longitude varies all the way from 69 miles at the equator to zero at the poles. Explain this by means of a ball or globe, or by drawing circles on the blackboard.

12. The Zones.

The earth turns before the sun, and its daily rotation on the axis causes day and night in regular succession. But all the days are not alike. Everybody knows that the middle of the day is hottest, and that summer is much warmer than winter. Nearly all our light and heat come from the sun;



and where there is most sunshine there we have the strongest light and the greatest heat. At noon the sun pours down his heat and light with the most direct rays, and in summer his rays slant less than in winter. We find that these are the periods of greatest heat. In some parts of the world the sun shines straight overhead at noon, and these are the hottest parts of the earth. In the