

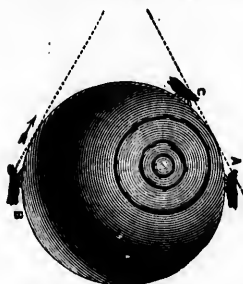


The Shape of the Earth.

9. The Shape of the Earth and its Size.

Do you remember about the sky-ring, also called the horizon? In all our travels that wonderful ring followed us. Sometimes it was sky and land at our own home; sometimes sky and water out on the mighty deep; but it was always a *ring* or *circle* when we could see it clearly. When we climbed those lofty mountains on the western side of America the ring grew very large and seemed far away.

Watch two flies walk about on the top of a level table. It is plain that each of them can see the whole of the other fly no matter where he goes on the top of the table. This would be true if the table were hundreds of times as big as it really is. The only difference would be that each fly would look smaller when farther away. You have noticed that trees in the distance look very small, and a large ship far out on the water looks as small as a boat. But as long as the flies are on the flat top of the table they cannot hide from each other.



Now let us lay an orange on the table and watch two flies alight on opposite sides; one at A and the other at B. The lines in the picture show which way they can look. In that position they cannot see each other, for the whole orange is between them. But let A stand

still while B creeps round to the point C in the line along which A looks. A can now see the other fly's head, but not his body, which is still hidden from A by the curve of the orange. When you look at the orange you can only see one-half of it. It is quite impossible to see the whole surface of the orange at once. If you hold it close to your eye, you will see much less than half the surface. Why can we never see the whole of the land and water in the world?

Yes, the whole world of land and water has the shape of a ball, or orange. The Continent of America on which we live, the Eastern Continent, and all the vast oceans are curved round and round like an orange. It took a long time to find out the shape of the earth. But our journey eastward, our long journey ever eastward from Canada back to Canada, proves that we can travel round the world just as the flies can walk round the orange. The earth *seems* flat only because it is so very large. When you hold an apple, or a ball, or an orange close to the eye it looks flat also. If we could go up far enough we should be able to see one-half of the round world, just as we can see one-half of the round orange. Do you recognize this picture?



Do you know America again? More than three hundred years ago Magellan sailed quite round the world and found out that it is round like a ball.

When we watch a ship coming across the lake on a clear day, or a steamer coming into port from the ocean, we do not see the whole ship at first. The top-mast appears like a tiny speck; this speck grows larger as the sails and smoke-stacks come into sight,