

SOME OF THE PROPERTIES OF WATER.

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In addition to being one of the most widely distributed substances known to us, Water is one of the most valuable compounds. Without it life from the highest to the lowest forms would be impossible. Owing to its solvent action it is the carrier of plant life in the soil. It enables transformation and translocation of materials in the tissues of all living bodies, enabling them to grow. It plays a part in the electric currents of the atmosphere, and acts as a most powerful equalizer of the climate of our globe. It is one of the principal factors in the formation of soils; and has at the same time assisted in the production of many of the rock formations. It is a purifier of the atmosphere. In short it may be considered as a balance-wheel of nature.

Having such useful and varied functions to perform, it would doubtless be interesting to study its properties, even if they were the most simple; how much more so is this the case when they are, as we find them, very varied and manifold, giving ample room for study and thought.

Water exists in different forms and locations. In addition to the vast expanse of oceans, lakes and rivers in the Torrid and Temperate Zones, and the plains of ice and snow to the north and south of these, it is present in varying percentages in nearly all organic substances. It can be detected in apparently perfectly dry paper or wood. Hay, straw, and the various grains contain in the neighborhood of 10 per cent. We find it also in some perfectly dry crystals, which without this "water of crystallization," as it is called, would fall into powder. It may be interesting to note that while milk (a liquid) contains about 87 per cent. of water, cucumbers and melons (solids) are made up of 95 per cent. of this compound. The difference is that in the former the solids are largely held in solution, while in the latter they form tissues to enclose the water—as it were a mass of minute sacks, called cells, filled with water. Since it is incompressible it helps to prevent cells from collapsing which, having thin walls, they would otherwise be liable to do. The water in succulent fruits or other parts of the plant