

WATER.

As a hygienic agent, water occupies a position of great importance. It constitutes by far the greater portion of the bulk and weight of the body, and forms a very essential element in all of its tissues, some of them being almost wholly composed of water, of which the brain is an example. Water is also the chief constituent of the blood, and is the medium by which the vitalized corpuscles, albumen, fibrine, and caseine—materials of which the tissues of the body are built—are transported to those parts where needed for the purpose of repairing or building the tissues. It also serves as a means of transportation for conveying the worn-out material and effete matters to those organs whose duty it is to remove them from the system.

Another purpose which water serves is that of purification. The skin is an important organ of depuration, more than one-half of the effete matters of the system being thrown out by it in connection with the insensible perspiration. These soon form a scaly incrustation which closes the pores of the skin unless it be kept cleansed with water. Many times individuals are made sick because their skin has become clogged with impurities through want of proper bathing.

Soft water only should be used. When it is possible to obtain it, none but pure soft water should be used either for purposes of bathing, drinking, or cooking. In some parts of the country, springs of soft water are to be found; while in others, soft water is obtained by digging wells. There are, however, many very large sections where only hard water can be obtained from either springs or wells; yet there are few habitable portions of the earth's surface where a sufficient quantity of soft water cannot be obtained by catching the rain as it falls and storing it in cisterns, where it can ever be ready at hand for use.

Hard water should not be used either for cooking, drinking, or bathing, when soft water can be had, for the reason that the hard water contains certain mineral substances which are injurious to life, such as lime, salt, magnesia, borax, alum, iron, sulphur, etc. None of these, when taken into the system, are usable either in building up the tissues or in maintaining life; and the organs of depuration, i. e., the liver, kidneys, mucous membrane of the intestines, skin, and lungs have to remove them from the system the same as they do the ashes and effete matters spoken of under the head of air; otherwise, the entire system would become clogged with them, the circulation would be impeded, the body thereby would be improperly maintained, and death would soon ensue.

One of the reasons why so many people suffer so much with diseased livers, kidney difficulties, lung complaints, bowel complaints, agues, fevers, skin diseases, rheumatism, etc., is because they drink hard water. The mineral substances taken into the system with the water have all to be cast out of the system by the above-mentioned organs of depuration, and they become overworked, worn out, or diseased, in their endeavors to perform the extra work which is imposed upon them.

Another evil that results from drinking hard water is the formation of hard concretions, or calculi, commonly known as gravel (*stones*). These concretions may form in various parts of the body, but are usually found in the kidneys and bladder, although they sometimes occur in the lungs and also in the liver.

These concretions are formed by the precipitation of the mineral substances held in solution in the blood. It is true that the use of hard water does not occasion any immediate, appreciable ill effects, yet its continued use will sooner or later break down the strongest constitution; for as the various organs of depuration expend their vitality in eliminating these substances, they have less strength wherewith to perform their usual work, and as a consequence the system becomes clogged with the wastes of the body and disease of some kind must follow, sooner or later.

Pure water only should be used. All water that has stood long in the open air is liable to become impure, either by vegetable or animal substances falling into it, or by the absorption of certain noxious gases. Water containing vegetable or animal substances in a state of decomposition, or that has absorbed organic impurities by standing in an open vessel over night or through the day in a room that is occupied

by persons or animals, is even more injurious than hard water, and should never be used without filtering.

The rain water caught on wooden roofs always contains more or less decaying vegetable matter, which comes from the wood of the roof, while the dark or yellow color of the water is due to the presence of soot, smoke, dust, and other impurities which collect upon the roof.

Rain water can be rendered nearly pure by filtering. Water is filtered naturally by passing through large and compact bodies of sand, or through porous sandstone. Such water is usually pure and soft. **We can imitate nature by passing water through vessels filled with sand and charcoal.** A good filter can be made by fitting a perforated false bottom into a barrel so as to leave an air chamber about three inches deep. Then lay over this bottom a layer of coarse gravel or broken sandstone, then a second layer of broken charcoal, the lumps the size of large peas. This should be well packed, so as to prevent the finer particles from sifting through. Then fill the barrel up to within three inches of the top with finely powdered charcoal that is freshly burned, mixed with twice its bulk of fine, well-washed sand. Cover the whole with a flannel cloth, and pour on the water.

There should be a small pipe connecting with the chamber below, and this pipe should extend as high as the top of the barrel. This pipe serves as an outlet and inlet for air as the filtered water rises or falls in the chamber. There should also be a stop-cock or faucet for drawing the filtered water from the chamber. Every family who would have health should have a cistern for rain water and a filter, unless they have soft spring or well water. As before stated, **stone in the bladder, gravel in the kidneys, calculi in the liver, and concretions and tubercles in the lungs are some of the evils resulting from the use of hard water.**

The Hygienic Family Physician: A Complete Guide for the Preservation of Health, and the Treatment of the Sick without Medicine, pg. 11-15 by M. G. Kellogg