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PURE WATER AT A MINIMUM OF COST FOR INSTALLATION AND MAINTENANCE

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Water is the most wonderful substance furnished by nature—to merely index its properties would take a volume. We will consider its use for potable purposes.

No living thing can exist without it, and yet were we to use a chemically pure water its effect on the animal economy would be deleterious. Nevertheless, Providence furnishes it in abundance in the combination required, but it is becoming a costly necessity due either to carelessness, ignorance, cupidity or crowded communities; and to the consideration of the latter condition we propose to give most attention.

Pure water to the hygienist is the chemist's element (H^2O), containing its ordinary amount of dissolved air, and small percentages of salines that may vary very greatly in composition as in quantity, but it must not contain organic impurity. If this be present, and from vegetable sources, it is less harmful; if the source be animal it is specially deleterious, for, being due to animal waste, it may be accompanied by active biological entities (germs) likely to cause sickness and many diseases, espe-

cially the endemic and contagious, for these are greatly dependant on this form of distribution.

Time being given, natural processes would convert these albuminoid or nitrogenous wastes of tainted water into harmless nitrates by the (germs) microscopic living elements that depend for their existence on these nitrogenous wastes, and the whole would disappear when the food supply is exhausted.

We may note in passing that bacteria (germs) or microbes are indispensable to the disintegration and reduction to their simpler inorganic elements of all kinds of organic matter, the result of life waste, and their number and variety are governed by the amount and kind of material awaiting their services. Here and now we are most concerned with the soil and water supply.

The upper layers of the soil have most organic material, so there we may find a great abundance of germs or microbes of all varieties, and as we go downward organic substances diminish, and *pro rata*,