

In regions of deep Drift and abundant water-basins, the supplies of spring-water are sometimes sufficient to meet the demands of towns and cities. The city of Ann Arbor, with its ten thousand of population, is thus supplied with nearly five hundred thousand gallons daily. This is obtained from two groups of springs, and distributed through the city in the usual way. Five times this amount could be had, if needed.

Now let us consider springs in another light. We have already reflected that the percolating water takes some substances in solution from the surface. It must take up much more in leaching through the sands. This is the reason why most sands are composed chiefly of insoluble constituents. Their soluble constituents have been leached out. But there remain still, in many regions, some soluble limestone pebbles or larger masses which have not yet been dissolved, and the water is continually diminishing the amount of these. Now, first of all, consider that this little fact is a demonstration that the present order of things has not existed from eternity. If it had, all the soluble substances would have disappeared long ago—in fact, an eternity since. The time, therefore, since this Drift was brought here is only a finite number of years. That is a positive datum.

Water that has dissolved much limestone is “hard.” Hence, many spring and river waters are hard. The water of a pond may be softer, because a large proportion of it has been directly rained in, or supplied by surface drainage from the surrounding land. Of course, the hardness of underground water depends upon the amount of limestone pebbles and grains with which it has come in contact. Aside from any supply of limestone from neighboring ledges, the amount of limestone in the Drift depends on the amount transported from the northern regions which supplied the material of the Drift at each particular place. Some northern regions supplied much limestone, and others little. Hence, in Michigan, Ohio, and Indiana, well and spring waters are hard, while in New England and Pennsylvania they are comparatively soft.

Under-ground water often experiences great pressure. In