days. It gathers other materials as it flows, taking them from the soil and its organic decompositions, and from rocks or minerals, and especially where decompositions are in progress. It finds soda and potash in rocks containing feldspars; lime and magnesia, in limestones and also more or less in many other rocks, fragmental and crystalline; and various other materials in these and other rocks. Among the materials gathered up, the chief are calcium carbonate; salts of iron; magnesium, sodium and potassium carbonate, sulphate or chloride; calcium chloride; humus acids from the soil; and carbonic acid from the soils and other sources; besides, more sparingly, aluminum sulphates and lithium salts. Besides the gas carbonic acid, the waters often receive and discharge hydrogen sulphide and nitrogen, and sometimes the gases hydrogen and oxygen. The gatherings depend on the kinds of rocks washed by streams, both those of the surface and those of subterranean source. It was long since recognized that, through the gathering action of fresh waters, a lake without outlet might become saline, like the sea.

The desert and semi-desert regions of the world often illustrate through the efflorescences that exist over the surfaces of old lake basins, as well as the salts in the waters of lakes, what solvent work the waters have done. The Great Basin in the west has been studied with reference to this subject by King, Gilbert, Russell, and others. The moisture below comes up by capillary action; and, as evaporation above is almost constant, owing to the excessive dryness and heat (90° F. the mean over part of it for July), so also the production of the salts is in constant progress. The most abundant are common salt (NaCl), sodium carbonate and sulphate, with often calcium carbonate, and borates.

From one of two samples of the saline deposits from the Lahontan region analyzed by Dr. T. M. Chatard were obtained, as cited by I. C. Russell, 72·69 per cent of sodium carbonate ($Na_2O.CO_2$), 17·49 of sodium sulphate ($Na_2O.SO_3$), 4·15 sodium borate ($Na_2O.B_4O_6$), 2·53 sodium chloride (NaCl), 1·18 potassium chloride (KCl), and 1·96 silica. In the other: 9·06 $Na_2O.CO_2$, 27·05 $Na_2O.SO_3$, 1·00 $Na_2O.B_4O_6$, 59·32 NaCl, 1·39 KCl, and 2·18 SiO_2. In deposits of the dried-up Sevier Lake, south of the Great Salt Lake, Dr. O. Lœw obtained, as reported by G. K. Gilbert, (1) from those of the center of the lake: sodium sulphate 87·65, sodium carbonate 1·08, sodium chloride 2·34, with water 8·90= 99·97; (2) from the middle or 3d layer of those of the margin, sodium sulphate 83·79, sodium chloride 13·84, magnesium sulphate 1·33, potassium sulphate 0·26, with water 0·78= 100; from a layer overlying the last, (4th layer) sodium sulphate 2·71, sodium chloride 88·49, magnesium sulphate, potassium sulphate 0·11, water 3·40=100. The above are a few of the published analyses. These saline materials were once in solution in lakes of the region that are now dried up.

Salt lakes are in some cases remnants of the ocean that once covered the land. But in the Great Basin, according to Gilbert, the saline ingredients have come from the soil and rocks of the region.

Mineral springs, or sources of water holding mineral ingredients in solution, are hence universally distributed. They include "pure" waters as well as the so-called "mineral waters." The latter contain some mineral salt generally in sufficient quantities to affect the taste; and they are most

http://www.geology.19thcenturyscience.org/books/1896-Dana-ManGeol/README.htm