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CONTRIBUTIONS TO THE CHEMISTRY OF
NATURAL WATERS.

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It is proposed to divide this essay into three parts, in the first of which will be considered some general principles which must form the basis of a correct chemical history of natural waters. The second part will embrace a series of chemical analyses of mineral waters from the paleozoic rocks of the Champlain and St. Lawrence basins, together with some river-waters; and the third part will consist chiefly of deductions and generalizations from these analyses.

I.

CONTENTS OF SECTIONS.—1, atmospheric waters; 2, 3, results of vegetable decay; 4-7, action on rocky sediments; 8, action on iron-oxyd; 9, solution of alumina; 10, reduction of sulphates; 11, kaolinization; 12, decay of silicates; 13, origin of carbonate of soda; 14, Bischof's view rejected; 15, 16, porosity of rocks, and their contained saline waters; 17, saliferous strata; 18, action of carbonate of soda on saline waters; 19, origin of sulphate of magnesia; 20, 21, Mitscherlich's view rejected; 22, 23, salts from evaporating sea-water, composition of ancient seas, origin of carbonate of lime; 24-27, origin of gypsum, carbonate of magnesia, and dolomite; 28, waters from oxydized sulphurets; 29, origin of free sulphuric and hydrochloric acids; 30, of hydrosulphuric and boric acids; 31, of carbonic acid gas; 32, of ammoniacal salts; 33-35, classification of mineral waters.

§ 1. The solvent powers of water are such that this liquid is never met with in nature in a perfectly pure state: even