eral. Most of the brines worked as sources of salt are derived from artificial borings into saliferous rocks. Those of Cheshire in England, the Salzkammergut in Austria, Bex in Switzerland, etc., have long been well known. That of Clemenshall, Würtemberg, yields upward of 26 per cent of salts, of which almost the whole is chloride of sodium. The other substances contained in solution in the water of brine-springs are chlorides of potassium, magnesium, and calcium; sulphates of calcium, and less frequently of sodium, potassium, magnesium, barium, strontium, or aluminium; silica; compounds of iodine and fluorine; with phosphates, arseniates, borates, nitrates, organic matter, carbon-dioxide, sulphuretted hydrogen, marsh-gas, and nitrogen.[88]

Medicinal Springs, a vague term applied to mineral springs which have or are believed to have curative effects in different diseases. Medical men recognize various qualities, distinguished by the particular substance most conspicuous in each variety of water: *Alkaline Waters*, containing lime or soda and carbonic acid—Vichy, Saratoga; *Bitter Waters*, with sulphate of magnesia and soda—Sedlitz, Kissingen; *Salt* or *Muriated Waters*, with common salt as the leading mineral constituent—Wiesbaden, Cheltenham; *Earthy Waters*, lime, either a sulphate or carbonate being the most marked ingredient—Bath, Lucca; *Sulphurous Waters*, with sulphur as sulphuretted hydrogen and in sulphides—Aix-la-Chapelle, Harrogate. Some of these medicinal springs are thermal waters. Even where no longer warm, the water may have acquired its peculiar medicinal characters at a great depth, and therefore under the influence of increased temperature and pressure. Sulphur springs are sometimes warm, but also occur abundantly cold, where the water rises through rocks containing decomposing sulphides and organic matter. Sulphates are there first formed, which by the reducing effect of the organic matter are decomposed, with the resultant formation of sulphuretted hydrogen (p. 124). Sulphuretted hydrogen and sulphurous acid are sometimes oxidized into sulphuric acid, which remains free in the water.[89]

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[88] Roth, "Chem. Geol." i. p. 442. Bischof, "Chem. Geol." ii. Many subterranean waters, though not deserving the name of brines, contain considerable proportions of chlorides. On the alkaline chlorides of the Coal-measures see R. Malherbe, Bull. Acad. Roy. Belgique, 1875, p. 16; also R. Laloy, Ann. Soc. Geol. Nord, 1875, p. 195.

[89] Roth, op. cit. i. pp. 444, 452.