

world's history, and is seen at the present day in nature in the Great Salt Lake of Utah, as well as at all points where salt is produced by solar evaporation or action. Gypsum is formed principally as a chemical precipitate from solution in water, as well as by the action of sulphurous vapours from volcanic vents upon calcareous rocks. Shell marls are mostly of organic origin, formed by the accumulation of the remains of shells in the bottoms of lakes or ponds, often seen underlying peat bogs, as is also the case with certain of the limestones where the mass of the rock is made up almost entirely of organisms. Certain of the limestones, however, are formed by chemical action, by deposition of calcareous matter in solution, in which case they are frequently highly siliceous and devoid of all trace of organic life. Chalk is formed like shell marl, only differing in its being of marine instead of fresh water origin; the mass of the deposit being principally calcareous, while with infusorial earth which is formed from portions of diatoms, the mass is chiefly siliceous. This substance although requiring a high power of the microscope to detect the traces of the organisms is often found in deposits of many feet in thickness.

The deposits of iron ore, which form a very important portion of the economic products of the earth's crust, owe their origin very largely to the action of certain organic acids, which have been produced by the decomposition of vegetable matter upon the ferruginous minerals found in many rock masses, and which thus pass into solution with water. These solutions rapidly decompose under certain conditions and the iron salts are precipitated, and become mixed with sands and clays, gradually forming beds of what is known as bog iron ore. This material in certain areas constitutes deposits of very great extent as in the St. Maurice district, where these ores have been mined and smelted for over 150 years, and are still as abundant as ever, at many points. The other ores of iron, such as limonite, hematite, magnetite &c., which frequently occur in immense masses have also been regarded by some chemists, and geologists as owing their existence to organic agencies, and their present condition is supposed to be due to the great metamorphoses to which they have been subjected during the great lapse of time since their deposition. It seems however probable from the