

Lead sulphate may be examined in the same way, and distinguished at once from the above by turning black with ammonium sulphide. The insoluble chloride, iodides, and bromide of mercury may be examined by treating with ammonium sulphide, or by boiling with sodium hydrate or carbonate. Calomel will dissolve when heated with nitric acid or aqua regia. The iodine, chlorine and bromine in the silver compounds can be separated by fusing with sodium carbonate.

Tin tetroxide must be fused with potassium cyanide, the resulting metal dissolved in dilute hydrochloric acid, and the metal detected by appropriate tests.

#### TESTS FOR SOME OF THE MORE COMMONLY OCCURRING MINERALS.

**SHELL MARL.**—By washing with water and pouring off the lighter particles, fragments of shells may readily be detected. The mineral dissolves readily in dilute nitric acid, gives a precipitate with oxalic acid and ammonia; the precipitate, separated after warming, filtration, and the filtrate tested for magnesia by means of sodium phosphate. The nitric solution heated with ammonium molybdate may give (rarely) a faint yellow precipitate or colour, owing to presence of phosphate.

**LIMESTONES** may be examined in the same manner; many contain magnesia (Rockwood). They sometimes contain bituminous matter, which causes them to evolve a disagreeable smell when pounded or heated.

**CALCSPAR** is generally met with in the rhombic or the scalenohedral form; effervesces even with weak acids; can be scratched with a knife.

**FLUORSPAR** is usually crystallised in cubes; treated with sulphuric acid evolves a gas which corrodes glass; cannot be scratched with a knife.

**APATITE**—Calcium phosphate—is usually of a greenish or reddish colour; occurs generally in six-sided prisms; when in powder dissolves readily in nitric acid. The phosphoric acid can be detected by heating the solution with ammonium molybdate, when a yellow precipitate is formed; or by adding silver nitrate to a solution obtained by boiling an excess of the mineral with a very little nitric acid, a yellow pre-