DIVISION I.

Dry salt, when heated, evolves smell of burnt sugar; heated with strong sulphuric acid, blackens rapidly. The original solution, with excess of lime water, gives a white precipitate, soluble in large excess of potassium hydrate; boiled with silver nitrate, becomes turbid and black.

Tartaric.

Dry salt, when heated, evolves an acid smell; heated with sulphuric acid, blackens slowly. Solutions give a white precipitate, with excess of lime water; insoluble in ammonia.

Citric.

Salt or acid blackens rapidly when heated with sulphuric acid; gives black colour with ferric chloride; precipitates gelatine.

Tannic.

Salt or acid blackens rapidly when heated with sulphuric acid; gives black colour with ferric chloride; does not precipitate gelatine.

Gallic.

Dry salt, heated with sulphuric acid, evolves smell of vinegar. Original solution gives, with ferric chloride, a red colour, and red brown precipitate on boiling.

Acetic.

Dry salt, heated with sulphuric acid, evolves pungent vapours of an aromatic odour. Original solution gives buff precipitate with ferric chloride.

Benzoic.

Dry salt or acid, heated in a porcelain capsule with a few drops of nitric acid and the solution evaporated to dryness, gives a red residue, which dissolves in potassium hydrate with a purple colour.

Uric.

DIVISION II.

Salts blacken very slightly on heating; the residue dissolves in acids with effervescence. Dry salt or acid, heated with strong sulphuric acid, evolves a gas which burns at the mouth of the tube with a blue flame.

Salt or acid, mixed with manganese dioxide and sulphuric acid, produces violent effervescence.

Oxalic.

Salts turn brown on heating; heated with sulphuric acid, turn blue, and evolve hydrocyanic acid. The solutions give a pale blue precipitate with ferrous salts; a dark blue with ferric salts.

Hydroferrocyanic.

Salts turn brown on heating. Solutions give a dark blue precipitate with ferrous salts; a brown colour with ferric salts.

Hydroferricyanic.

Salts turn somewhat dark on heating. Solutions give a red colour with ferric chloride; not altered by boiling, but destroyed by mercuric chloride.

Sulphocyanic.

The acids of this division, as well as acetic acid, will appear in other groups.