of nickel contain six and not seven atoms of water. At a temperature of 59°—68° F., he obtained rhombic crystals with 7 H O, at 86°—104° F., quadratic crystals with 6 H O, and at 122°—158° F., monoclinometric crystals with 6 H O. These remain transparent above 104° F.; at ordinary temperatures, they gradually become opaque, without loss of weight. Dimorphism, therefore, exists in the salt with 6 H O, but not in that with 7 H O.

From solutions of sulphate of magnesia at 158° F. of sulphate of zinc at 131° F., and of sulphate of cobalt at 122° F., he obtained compounds analogous in composition, and isomorphous with the above mentioned monoclinometric crystals. Ch. G. 329.

Silver.—Deville finds that silver is rapidly dissolved by hydriodic acid with evolution of hydrogen, especially if heat be applied; the iodide separates in large hexagonal prisms; palladium is also attacked, but slowly. Gold and platinum do not evolve any sensible amount of hydrogen, but are gradually dissolved. while all the common metals are dissolved with remarkable energy by hydriodic acid. Deville is inclined to class silver with mercury or even with lead.

Sesqui-Salts of Manganese.—Carius prepares the anhydrous sulphate of the sesquioxide, by forming an artificial brown oxide, by passing chlorine through a solution of carbonate of soda, in which proto-carbonate of manganese is suspended. *This, when dry, is triturated with sulphuric acid into a thin paste. The mixture* being heated in an oil bath, oxygen is evolved, but at 230° F., the evolution stops, and a violet gray mass is produced. At 270° the green sulphate is formed. It can be washed with nitric acid, and heated to 266° to drive off excess, and is then pure. It is very easily decomposable, and can only be kept in closed tubes, By absorption of water, hydrated sesquioxide is produced. It is not soluble in diluted sulphuric acid, unless some of the proto-salt be present, when it readily dissolves, forming a red solution.

Antimony.—Rose mentions some experiments by Weber to determine the atomic weight of antimony, the terchloride was precipitated by sulphuretted hydrogen, and the chlorine determined as usual; unless tartaric acid be used, a little chlorine remains with the sulphide. In this way, the number 1503.67 was obtained, agreeing closely with that of Schneider, viz., 1503. Rose adds that many years ago he determined the atomic weight from the two chlorides, and found 1513.14 and 1508.3.

Non-precipitation of Metals.—Martin has made some experiments on the influence of strong hydrochloric acid in preventing the precipitation of metals by sulphuretted hydrogen. Lead, cadmium, antimony, tin, mercury, bismuth, copper, and silver, are not wholly precipitated unless a large quantity of water be employed. Lead requires the smallest quantity of acid to retain it in solution, and the other metals in larger quantity, in the above order. The portion of the chlorides of copper, mercury, and bismuth, which remains dissolved, is converted into sub-chloride.

Arsenic Acid.—E. Kopp having prepared large quantities of this substance as a substitute for tartaric acid in the discharge style of calico-printing, was led to examine the different hydrates. $As O^5 + 4$ aq. separates from the gently evaporated solution in large crystals, heated to 202° F., a creamy substance, consisting of little needles, is formed, which is the terhydrate, $As O^5 + 3$ aq. If the solution be heated up to 284° or 356° F., rectangular prisms are formed, they are