directly as the condensation, or inversely as the value of v. This may be seen in comparing colourless ordinary phosphorus, $v=17\cdot2$, with the metalloidal form, $v=13\cdot2$; the isomeric silicates, meionite, $v=6\cdot5$, and zoisite, $v=5\cdot3$; or calcite, $v=6\cdot2$, with dolomite, chalybite and dic'logite, $v=5\cdot2$, and with magsenite and smithsonite, $v=4\cdot7$; for aragonite, $v=5\cdot55$. These examples will serve to show the relations between sensible characters and chemical constitution, the interdependence of which must be taken into account in a natural system of mineralogical classification. The differences in hardness and in solubility of the different species just named are familiar to chemists. The behaviour of native silicates with fluorhydric acid, lately studied by J. B. Mackintosh, illustrates in a striking manner the relations between condensation and solubility.

§ 5. The successive forms imposed upon matter gives us the order in which such a system of mineralogy should be built up. First, the form which we may call the chemical form of the species, either elemental or compound, due to the unknown stochiogenic process, or to subsequent chemical metagenesis. Second, what may be called the mineralogical form, which involves the greater or less intrinsic contraction (polymeric condensation) of the normal chemical species-often gaseous or volatile, but frequently unknown to us-and the assumption by it of a liquid or solid state, having greater or less specific gravity, hardness, fixity and insolubility, and being metallic or non-metallic, colloidal or crystalline. Third, the crystalline form, being the geometric shape assumed by the crystalline individual, which connotes a certain structure, apparent in the cleavage, the varying hardness, and the thermic, optical and electrical relations, of the crystal, but is, notwithstanding its value in determinative mineralogy, the least essential or most accidental form of the mineral species. The significance involved in the note of metallicity is very apparent when we consider the metallic and non-metallic conditions of selenium and of phosphorus, the similar dual conditions of the sulphide of mercury and antimony, the non-metallic and sparry characters of the