

calculated for alumina and glucina, the numbers 157 and 160 are found, which agree very closely.

According to the formula  $G + O$  the atomic volume would be 52.3, and this should agree with that of magnesia. If this latter earth be heated in a porcelain furnace it is obtained in a crystalline form, and exactly similar in its properties to the *periclase* from Vesuvius. Its specific gravity is 3.694, and its volume 71. The oxide of nickel, examined by Genth, has the same volume. Hence there is no analogy between these two oxides and glucina. From these and other reasons Rose does not consider that the decomposition of ammoniacal salts by glucina warrants any alteration in the present formula.

*Alcoholic Compounds.*—*Mercaptan.*—Hermann has obtained Butylic mercaptan  $C^4 H^{10} S^2$ , analogous in its properties to the rest of the class.

*Benzoic Alcohol.*—Cannizzaro, by acting on toluene (derived from commercial benzine) with chlorine, has obtained the monochlorinated toluene which is identical with chloride of benzæthyle, when this is treated with acetate of potash, acetate of benzæthyle is formed, which with potash give benzoic alcohol  $C^{14} H^8 O^2$ .—By means of the monochlorinated toluene, and cyanide of potassium, cyanide of benzæthyle is readily obtained, and this with caustic potash yields toluic acid, a compound belonging to a higher series.

*Propylic Alcohol.*—Dusart produces propylene by the deoxidation of acetone; this is effected by distilling gradually a mixture of equivalent portions of acetate of lime, and oxalate of potash, dried as carefully as possible. The propylene is conducted into bromine, and the bromide of propylene purified by distillation. By the action of an alcoholic solution of potash, the compound  $C^3 H^5 Br$  is obtained, which, heated with sulphocyanide of potassium, gives the oil of mustard. If the propylene be conducted into sulphuric acid and the product distilled with water, propylic alcohol is formed, as in Berthelot's process for forming common alcohol from olefiant gas.

*Alcohol.*—Marx has shown that the formation of alcohol from olefiant gas and sulphuric acid, lately proved by Berthelot, was described twenty-seven years ago by Hennel, in his paper on the formation of ether.

*Bisulphocyanide of ætherine.*—Sommenschcin has succeeded in replacing the chlorine in the chloride of ætherine by sulphocyanogen, producing a compound homologous with oil of mustard.

*Amylic Alcohol.*—Pasteur has found that amylic alcohol consists of two bodies, which he calls active and inactive alcohols, the one possesses a rotatory power on the plane of polarization, the other possesses none. The alcohols cannot be separated directly, but the sulphamylate of baryta is found to consist of two salts, one of which is  $2\frac{1}{2}$  times more soluble than the other, the soluble one yields the active alcohol.

*Sugars.*—Berthelot has re-examined the sugar of the Eucalyptus, and gives to the crystalline manna-like substance the name of Melitose. It does not act upon oxide of copper until after boiling with sulphuric acid, it is capable of fermentation but yields half its weight of a body, which is incapable of fermenting even after treatment with sulphuric acid, and which he calls Eucalyne. He has also examined a peculiar kind of sugar, said to be derived from the *Pirus Lambertiana* of California, he calls it Pinite, it is insusceptible of fermentation, and does not reduce oxide of copper.

*Propionic Acid.*—Limpricht and Von Usler have endeavoured to prove that butyric acid is distinct from propionic, and that it is decomposed under certain