

to methane, hydrogen, alkali carbonate and propionate, but not to amylene or any other olefine.

Benzophenone, when heated with sodium ethoxide, *isobutyl* oxide, or *isoamyloxyde*, yields benzhydrol and in the case of the second experiment this product is accompanied by a small amount of *αα-dimethyl-ββ-diphenylpropionic acid*, $\text{CHPh}_2 \cdot \text{CMe}_2 \cdot \text{CO}_2\text{H}$; the acid crystallises in colourless plates and melts at $134\text{--}135^\circ$. This result is explained by supposing that diphenylmethylenes, $\text{Ph}_2\text{C}<$ (an alkylidene derived from benzophenone) combines with *isobutyric acid*.

A large portion of the communication is devoted to the decompositions occurring when the alcohols, ethers, aldehydes, and fatty acids are heated; these reactions are explained by assuming that the initial dissociations involve the production of alkylidenes. This part of the investigation cannot, however, be satisfactorily summarised.

G. T. M.

Oxidation of Propylene Glycol by Oxidising Ferments. By ANDRÉ KLING (*Bull. Soc. Chim.*, 1901, [iii], 25, 905—910).—Details of work already published (*Abstr.*, 1901, i, 625). N. I.

Structure of *isoButylene Chlorohydrin*. By K. KRASSUSKY (*J. pr. Chem.*, 1901, [ii], 64, 387—393).—A claim for priority (see *Abstr.*, 1901, i, 246; Michael, *ibid.*, 625). R. H. P.

Action of Mannitol on Bismuth Nitrate. By LUDWIG VANINO and OTTO HAUSER (*Zeit. anorg. Chem.*, 1901, 28, 210—218).—Bismuth nitrate dissolves to a clear solution in an aqueous solution of mannitol and these solutions are more stable the greater the proportion of mannitol. When molecular proportions of bismuth nitrate and mannitol are employed, the compound $\text{BiO} \cdot \text{NO}_3 \cdot \text{C}_6\text{H}_{14}\text{O}_6$ is obtained by adding alcohol and, after separating the mannitol which is precipitated, adding ether. It is sparingly soluble in water and easily so in potassium or sodium hydroxide.

The compound, $\text{Bi}_2\text{O}_3 \cdot 2\text{C}_6\text{H}_{14}\text{O}_6$, is obtained by allowing a solution of bismuth nitrate in mannitol to remain more than three months and then precipitating it with alcohol. It separates in yellowish-white, crystalline granules, is slightly soluble in water, easily so in potassium or sodium hydroxide, but insoluble in ammonia and barium hydroxide solution and is partially decomposed when dissolved in water.

The compound, $\text{Bi}_2\text{O}_3 \cdot 4\text{C}_6\text{H}_{14}\text{O}_6 \cdot 3\text{H}_2\text{O}$, crystallises from the filtrate obtained in the precipitation of the preceding compound, is a white powder easily soluble in water, has not the sweet taste of mannitol, and gradually decomposes on exposure to the air. When heated at 130° , it is converted into the compound $\text{Bi}_2\text{O}_3 \cdot 4\text{C}_6\text{H}_{14}\text{O}_6$, which is insoluble in water and easily soluble in potassium or sodium hydroxide.

The solution of bismuth nitrate in mannitol, since it contains no excess of acid, is very suitable for the preparation of bismuth salts by double decomposition. The authors have prepared the following salts from this solution, bismuth oxalate, citrate, gallate, salicylate, camphorate: the double salts with potassium chromate and dichromate, the tri-iodide, and a white, amorphous precipitate with borax.

E. C. R.