

XXX.—*On the Preparation of Methyllic Alcohol.*

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Kane's process for the preparation of methyllic alcohol, by saturating crude wood-spirit with chloride of calcium, and distilling over the water-bath, generally yields but a small quantity of the pure product. I have tried it with various qualities of commercial wood-spirit, and in most cases have obtained not more than two or three ounces of pure methyllic alcohol from a gallon of the crude spirit. A specimen of Parisian wood-spirit was found to produce the greatest quantity of the pure alcohol; but even in that case the pure product was in small proportion to the original substance,—the greater quantity of the liquid consisting of lignone, acetone, empyreumatic oils, &c. To obtain pure lignone, crude wood-spirit was treated with an equal quantity of a saturated aqueous solution of chloride of calcium, whereupon a separation of empyreumatic oils took place,

* A delicate galvanometer showed no indication of the passage of an electrical current.

which floated to the surface, in quantity equal to at least one-eighth of the bulk of the original substance. This was separated, the lower stratum treated with dry chloride of calcium, and submitted to the process of upward distillation, dry chloride of calcium being added as long as any continued to be dissolved, by which a further quantity of the oils was thrown up to the surface; the solution was then distilled, and lignone obtained, which, after desiccation, boiled at 61° to 66° .

The oils separated by solution of chloride of calcium were treated with a solution of caustic alkali, which gave rise to a strong action, and evolved great heat. The resulting liquid was found to contain methylic alcohol, lignone, acetic acid, and some resinous substance.

When crude wood-spirit is treated with an equal volume of a strong solution of caustic potash or soda, a tolerably strong action takes place, accompanied by a rise of temperature, and formation of a homogeneous solution; on distillation the residue is found to consist of acetate of soda, with a small quantity of resinous matter: it yields a very large quantity of acetic acid.

The distillate was desiccated by carbonate of potash, saturated with dry chloride of calcium, and distilled at 100° C. The resulting compound of methylic alcohol and chloride of calcium was decomposed by water in the usual manner, and the methylic alcohol thus obtained was dehydrated by distilling over quick-lime. The product was in very much larger quantities than that which is obtained without the use of caustic alkali.

The liquid distilled off from the methylated chloride of calcium was treated with a solution of caustic potash, which separated some oils mixed with acetone, and a small quantity of methylic alcohol. In the first treatment by caustic alkali, the oils and acetone had been held in solution by the greater quantity of methylic alcohol then present. The potash solution was distilled, and the distillate, after desiccation, separated by dry chloride of calcium into methylic alcohol and pure acetone, the latter being soluble in water, from which it was again separated by chloride of calcium or potash.

The oils and acetone were separated by mixing with water, which dissolved the acetone, the oils separating out and floating to the surface. The acetone was precipitated from its aqueous solution by potash, and thereby separated from a small quantity of methylic alcohol which had dissolved in it.

Methylic alcohol and acetic acid are the principal substances contained in crude wood-spirit, acetone and oils being also found in comparatively small quantities.