VI. — Preliminary Note concerning a new Homologue of Benzoic Acid.

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ATTEMPTS have been made to effect the oxidation of benzol by means of an oxidizing mixture consisting of bichromate of potassium and sulphuric acid; it has been found, however, that the hydrocarbon remained unattacked. Not so, however, with the other members of the same series, toluol and cumol yielding benzoic acid, and cymol, an acid of totally different properties and constitution. I have succeeded in producing from benzol an apparently new oxygenated body, presenting all the properties one might expect to find in a homologue of benzoic acid containing CH_2 less than that substance. This supposition is strengthened by the result of an experiment in which nitrobenzol was made to yield an acid body apparently standing in the same relation to the first-mentioned new acid as nitrobenzol to benzol.

The following was the plan pursued in the preparation of the new acids: Pure benzol was dissolved in a slight excess of Nordhausen sulphuric acid, and the mixture heated for some time to 100°C. It was then diluted with about its bulk of water, and transferred to a retort. Small fragments of bichromate of potassium were added gradually to the liquid, the temperature of which was slowly raised. The acid was found partly floating on. and partly dissolved in, the aqueous distillate. Great care must be taken lest the oxidation proceed too actively, and the product The acid is a white fusible and crystalline solid, dishe lost. tinguished from Collinic acid, to which the same formula has been assigned, by its far greater solubility in hot water. The analytical results indicate the formula-

 $\rm C_6H_4O_2*$ for the acid; and $\rm C_6H_3MO_2$ for the salts.

The fact that benzol is reproduced in large quantity from sulphobenzolate of ammonium C_6H_5 . NH_4 . SO_3 , when that salt is submitted to dry distillation, suggested the probability that the

* C = 12; O = 16; S = 32; H = 1.

acid itself, when acted on by an oxidizing agent, might yield the products which we should expect to obtain by the oxidation of the original benzol.

When sulphotoluolic and sulphocumolic acids are similarly treated, benzoic acid is the corresponding product : with sulphocymolic acid, a white powder, apparently identical with the insolinic acid of Hofmann, is obtained.

Nitrobenzol is attacked with the utmost difficulty by the chromic acid mixture. By long boiling it is, however, at length converted into a white acid, which crystallizes from boiling water in large nacreous plates. Analysis has led to the formula—

 $C_6H_3(NO_2)O_2$ for the acid ; and $C_6H_2(NO_2)MO_2$ for the salts.

Nitrotoluol and nitrocumol are oxidized with considerable ease under similar conditions, yielding nitrobenzoic acid in abundance. This is the case also with nitrosulphotoluolic acid, $C_7H_6NO_2$. H. SO₃, the acid sulphite of nitrotolucnyl.

The acid from nitrobenzol was obtained in June last, but MM. Cloëz and Mignet announce in the "Comptes Rendus" of January 21st, 1861, that they have obtained a new acid from nitrobenzol by oxidizing it with permanganate of potassium or with a mixture of bichromate of potassium and nitric acid. To their acid they assign the expression

$C_{9}H_{7}(NO_{2})O_{3}$,

But it is not easy to see how such a body can be derived from the oxidation of nitrobenzol, which contains only C_6 . Indeed the authors are by no means certain of the purity of the nitrobenzol which they employed, and they even go so far as to suggest that the acid which they describe may have owed its origin to some foreign body with which the commercial nitrobenzol on which they operated may have been contaminated.