IV.—*On Salts of Acetylinated Ethyl—a new Class of Derivatives of the Ethyl-Series.*

By J. ALFRED WANKLYN, Corresponding Member of the
Royal Bavarian Academy of Sciences.

(Read November 18, 1869.)

THE study of metamorphoses of the products given when metallic sodium acts upon acetic ether, has revealed the existence of a very interesting set of chemical compounds, viz., the salts of a new organic radical, wherein a portion of the hydrogen contained in the alcohol-radical has undergone replacement by acetyl. The following terms are known:—

Acetate of acetylinated ethyl,

Butyrate of acetylinated ethyl,

Caproate of acetylinated ethyl,

and by the employment of known methods the series might be indefinitely extended.

The first of these compounds is produced by treating sodium-triacetyl (the new product got by the action of sodium on acetic ether) with acetic acid, whereby acetate of sodium results and the organic product loses an equivalent of sodium, and gains an equivalent of hydrogen. Inasmuch as sodium when existing in its least condensed state, is *triatomic*, it cannot strictly speaking, be *replaced* by an atom of hydrogen, and,

accordingly, sodium-triacetyl does not yield hydrogen-triacetyl, but a compound isomeric with the latter, viz., acetate of acetylated ethyl, thus:—

The second compound is produced similarly when sodium-triacetyl is attacked by iodide of ethyl. Instead of ethyl-triacetyl there is butyrate of acetylated ethyl, thus:—

The third compound is a product of the action of iodide of ethyl on acetate of ethylene-sodium (the isomer of butyrate of soda recently described by me, which yields alcohol and acetate of soda when treated with water):—

The characteristic property of salts of acetylated ethyl is that of yielding salts of common ethyl by replacement of the acetyl with hydrogen. This reaction is effected by the employment of ethylate of sodium, thus:—

and consists in the exchange of acetyl for hydrogen.

The first and second of these salts of acetylated ethyl were discovered by Geuther, and the third by Frankland and Duppa; and all three have received other names expressive of the views which these chemists entertained of their constitution.

Besides the reaction with ethylate of sodium, there is a very interesting reaction with baryta water (vide Geuther, Frank-

land, and Duppa) whereby carbonate of baryta, alcohol, and a ketone are produced, thus :—

This reaction may be looked upon as consisting of an exchange of the acetyl and butyryl for two equivalents of hydrogen, derived from the hydrate of baryta, whereby common alcohol is produced; and at the same time the liberated acetyl and butyryl resolve themselves into acetyl-propyl and carbonic oxide, which latter forms carbonate of baryta.

I am engaged in the further investigation of this subject.

8th November, 1869.