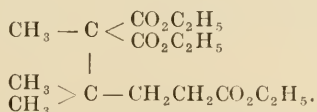


# SYNTHESIS OF 2,3,3-TRIMETHYL CYCLO-PENTANONE, A CYCLIC DERIVATIVE OF CAMPHOR.

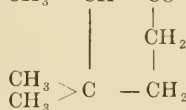
BY W. A. NOYES.

When a solution of the sodium derivative of methyl malonic ester and of the ethyl ester of  $\gamma$ -bromisocaproic acid in absolute alcohol is boiled on the water bath, about six per cent. of the brom-ester is converted into the ethyl ester of 2,3,3, tetramethyl-hexanoic 1, 2<sup>1</sup>, 6-acid,

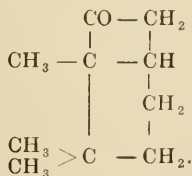


The free acid, obtained by saponification of the ester with caustic potash, loses carbon dioxide when heated to 200° and is converted into  $\alpha$ - $\beta$ -trimethyl-adipic acid,  $\text{CH}_3 - \text{CH} - \text{CO}_2\text{H}$

$$\begin{array}{c} | \\ \begin{array}{l} \text{CH}_3 \\ \text{CH}_3 \end{array} > \text{C} - \text{CH}_2 - \text{CH}_2\text{CO}_2\text{H}. \end{array}$$
 When this acid is mixed with lime and distilled, 2,3,3-trimethyl cyclopentanone,  $\text{CH}_3 - \text{CH} - \text{CO}$



is formed. The oxime of this ketone was proved to be identical with the oxime of the ketone obtained by J. W. Shepherd and myself from  $\alpha$ -hydroxydihydrociscampholytic acid. This synthesis establishes, beyond reasonable doubt, the correctness of Bouveault's formula for camphor.



The details of the investigation appear in the American Chemical Journal, Vol. 23, p. 128.