chief discrepancy between atomic weights determined by physicochemical methods and those obtained from mass-spectrographic data.

We expect to continue work on this problem.

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THE HABER-WILLSTÄTTER CHAIN MECHANISM OF ORGANIC AND ENZYMATIC PROCESSES

Sir:

Haber and Willstätter [*Ber.*, **64**, 2844 (1931)] have proposed chain mechanisms for a number of organic and enzymotic processes of which we may cite the oxidation of alcohol as typical. Their reaction scheme is

$$CH_3CH_3OH + \text{Enzyme} = CH_3\overset{/}{C}H(OH) + \text{Mono desoxy-enzyme} + H^{\cdot} \tag{a}$$

$$CH_3\overset{/}{C}HOH + CH_3CH_2OH + O_2 = 2CH_3CHO + H_2O + OH \tag{b}$$

$$OH + CH_3CH_2OH = CH_3\overset{/}{C}HOH + H_2O \tag{c}$$

A similar chain can be set up for aldehyde oxidation. We have attempted to verify such a mechanism, starting the chain of processes at stage (c) by decomposing hydrogen peroxide photochemically in mixtures of alcohol and oxygen suitably agitated. We find that the photo-decomposition of peroxide markedly sensitizes the interaction of alcohol and oxygen. The oxidation process is a chain reaction, sensitive to inhibitors but the chain length is short. It is much shorter than the assumed chain length ($\sim 10^5$) in the communication of Haber and Willstätter. Dilute aqueous aldehyde solutions behave similarly and the chain length is somewhat longer. The detailed results will be communicated immediately.

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ORIENTATION IN THE FURAN NUCLEUS

Sir:

The introduction of an aldehydic group into 3-methylfuran, by means of hydrogen cyanide and hydrogen chloride, results in the formation of 3-methyl-2-furfural [Reichstein, Zschokke and Goerg, *Helv. Chim. Acta*, **14,** 1277 (1931)]. The nitro-β-methylfuran obtained from 3-methylfuran by the action of fuming nitric acid in acetic anhydride has been shown to be 3-methyl-2-nitrofuran [Rinkes, *Rec. trav. chim.*, **49,** 1125 (1930)] by comparison with an authentic specimen kindly provided by Dr. I. J. Rinkes.