An attempt was made to establish the position of the *tert.*-butyl groups in the naphthalene ring by means of boiling the di-*tert.*-butylnaphthalenes with dilute nitric acid, but no oxidation to the naphthalene-dicarbonic acids took place.

Very probably Wegscheider had already obtained these two isomeric di-*tert.*-butylnaphthalenes but his belief that his compounds of m. p. 80° and 146–147° were α,β-dinaphthyl and α,α-dinaphthyl was erroneous.

CONTRIBUTION FROM THE
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COMMUNICATIONS TO THE EDITOR

PHOTOCHEMICAL REACTIONS OF GASEOUS METHYL IODIDE

Sir:

In a recent communication to *Nature*, Iredale[1] has discussed the action of light upon gaseous methyl iodide. From a study of the short wave limit of the absorption spectrum, he calculates the energy of the C–H bond to be 65 Cal. and suggests, with Herzberg and Scheibe,[2] that the initial process is the dissociation of methyl idodide into CH_3 and I, since the absorption is continuous. Studies of the photochemical decomposition and oxidation of gaseous methyl iodide in progress in this Laboratory for some time past lend additional support to the idea that CH_3 and I are the initial products. The reaction behaves as though the process were actually that of the oxidation of free methyl groups. Formaldehyde, paraformaldehyde and methylal seem to be the products, while the iodine originally present in the methyl iodide can in all cases be recovered as free iodine.

A possible mechanism for the process is

$$CH_3I \longrightarrow CH_3 + I$$
$$CH_3 + O_2 \longrightarrow CH_2O + OH$$
$$CH_3I + OH \longrightarrow CH_3OH + I$$
$$2CH_3OH + CH_2O \longrightarrow (CH_3O)_2CH_2 + H_2O$$

Kinetic measurements are being made to determine the actual mechanism.

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[1] Iredale, *Nature*, 604, Oct. (1930).

[2] Herzberg and Scheibe, *Trans. Faraday Soc.*, **25**, 716 (1929).