

## The Supposed Activation of Hydrogen Bromide by Oxygen. (Preliminary Note.)

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(Received May 5, 1938.)

In hopes of obtaining grounds for explaining the effects of oxygen and of ferromagnetic metals on the addition of hydrogen bromide to unsaturated organic compounds<sup>(1)</sup> and on the catalytic action of hydrogen bromide in the isomerization of isostilbene into stilbene,<sup>(2)</sup> the authors sealed reduced nickel freshly prepared and hydrogen bromide in a glass tube and the same in addition of oxygen in another, the amounts of all the substances being known, and examined the contents of the tubes after having placed them in the dark at room temperature for a fortnight. Unchanged hydrogen bromide was condensed by cooling in liquid air, and the pressure of the remaining gas mixtures was determined. Then the nickel was extracted with water and nickel and bromine in the resulting aqueous solutions were estimated. It was deduced that in absence of oxygen reduced nickel and hydrogen bromide underwent practically no change, while in presence of oxygen nearly all the hydrogen bromide introduced reacted with nickel to produce nickel bromide and hydrogen without giving rise to the formation of water. Thus oxygen was not brought to chemical reaction with any of reduced nickel, hydrogen bromide, hydrogen molecules, and hydrogen atoms, if any, and it is very probable that oxygen activated hydrogen bromide in the reaction with reduced nickel to produce nickel bromide and hydrogen. The experimental details and discussions will follow.

The authors thank the Japan Society for the Promotion of Scientific Research for a grant.

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(1) This Bulletin, **11** (1936), 692, 754, 798; **12** (1937), 51, 138, 173; **13** (1938), 331, 403, 404.

(2) This Bulletin, **12** (1937), 507.