

2. The effect of various iodides in $M/2$ concentration upon the rate of decomposition of $N/10$ hydriodic acid was as follows: marked acceleration, Fe^{++} and Mn ; appreciable acceleration, Na , Sr , NH_4 ; slight acceleration, Ca , K , Li ; slight retardation, Mg , Cd , Zn ; marked retardation, Ba . Only FeI_2 and MnI_2 had any effect on the rate of decomposition of $N/10$ HI when present in concentrations of $M/10$, $M/100$ or $M/1000$.

3. Experiments were carried out to determine the rate of liberation of free iodine in solutions containing various iodides alone. The only iodides to yield any free iodine within seven days were ferrous and manganese iodides, and these only in the higher concentrations.

4. The results may be explained on the basis of the hypothesis that the rate of deterioration is proportional to the concentration of HI molecules. When the concentration of HI molecules is decreased, as by dilution or formation of double iodides or complex ions, the rate of decomposition is decreased. When the concentration of iodide ions is increased, as by the addition of sodium iodide, the following reaction proceeds to the left: $\text{HI} \rightleftharpoons \text{H}^+ + \text{I}^-$. This change increases the concentration of HI molecules and thus increases the rate of decomposition.

5. Since ferrous iodide and manganese iodide have a pronounced accelerating effect on the decomposition, which is distinct even in $M/1000$ concentration of the salt in a $N/10$ solution of hydriodic acid, it is apparent that Fe^{++} and Mn^{++} ions have a specific catalytic effect in addition to the common ion effect of iodides.

6. Iodides which are only slightly ionized, as CdI_2 and ZnI_2 , do not accelerate the decomposition of hydriodic acid.

7. Experiments with $N/10$ hydriodic acid in pyrex bottles, placed behind various light filters, indicate that the part of the spectrum between 4600 and 6000 Å. has the greatest accelerating effect on the rate of decomposition when the acid is in pyrex bottles.

BIBLIOGRAPHY.

- (1) William J. Husa and W. W. F. Enz, *Jour. A. Ph. A.*, 19 (1930), 328-341.
- (2) William J. Husa, *Ibid.*, 19 (1930), 1287-1291.
- (3) William J. Husa and W. W. F. Enz, *Ibid.*, 19 (1930), 1228-1230.
- (4) Proceedings of the American Drug Manufacturers Association, 1928, page 374.
- (5) Personal communication to senior author.
- (6) G. B. Kistiakowsky, "Photochemical Processes," pages 205-206.
- (7) E. Warburg and W. Rump, *Z. Physik*, 47 (1928), 305-322; through *Chem. Abstr.*, 20 (1926), 965.
- (8) Arthur A. Noyes and E. Stanley Freed, *J. Amer. Chem. Soc.*, 42 (1920), 477.
- (9) J. W. Mellor, "A Comprehensive Treatise on Inorganic and Theoretical Chemistry," Vol. II, page 170.

COLLEGE OF PHARMACY,
UNIVERSITY OF FLORIDA,
GAINESVILLE, FLA.

SYNTHETIC ALKALOIDS INVOLVED IN GERMANY.

The complete synthesis of hydroquinine and hydroquinidine has been announced in Hamburg as an accomplished fact. The scientist responsible for this development states that his experiments lead up to the synthesis of 14 additional alkaloids which have not been found in a natural state. (Consul Knowlton V. Hicks, Hamburg.)