

# Proceedings of the Iowa Academy of Science

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Volume 34 | Annual Issue

Article 21

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1927

## Some Observations on the Germicidal Efficiencies of Alkalies

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### Recommended Citation

Levine, Max; Buchanan, J. H.; Lease, Grace; and Peterson, E. E. (1927) "Some Observations on the Germicidal Efficiencies of Alkalies," *Proceedings of the Iowa Academy of Science*, 34(1), 93-93.  
Available at: <https://scholarworks.uni.edu/pias/vol34/iss1/21>

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condition of the pea broth. The following canned vegetables offer conditions for the growth of the organism and development of the blackened condition: Sweet corn, peas, green and wax beans, carrots, beets, pumpkin, plain baked beans and hominy.

IOWA STATE COLLEGE,  
AMES, IOWA.

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### SOME OBSERVATIONS ON THE GERMICIDAL EFFICIENCIES OF ALKALIES

MAX LEVINE, J. H. BUCHANAN, GRACE LEASE AND  
E. E. PETERSON

A technique is described for measuring the relative germicidal efficiencies of strong alkalies.

For a given alkali, the germicidal efficiency increases with decreasing  $H^+$  ion concentration, but the  $H^+$  ion concentration is not suitable as an index of the germicidal powers of different alkalies.

The addition of various salts to sodium hydroxide increased the germicidal effects of the alkali.

IOWA STATE COLLEGE,  
AMES, IOWA.

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### THE SYNTHESIS OF VITAMINS BY MICRO- ORGANISMS

GERTRUDE SUNDERLIN AND C. H. WERKMAN

The synthesis of vitamin B is of general occurrence among microorganisms. Negative results of some investigators may be accounted for by inadequate amounts fed or too limited feeding periods. Our experiments showed the following organisms to elaborate vitamin B when tested by the rat weight test: *Saccharomyces cerevisiae*, *Torula rosea*, *Oospora lactis*, *Bacillus adhaerens*, *Bacterium coli* (three strains), *Bacillus subtilis* and *Bacillus mycoides*.

The amount of organism fed is very important in the determination of vitamin B production by microorganisms. Drying at  $37^{\circ}C$ . and  $100^{\circ}C$ . for forty-eight hours did not materially diminish the vitamin potency of the bacterial mass. The three strains of *Bacterium coli* used in our experiments show little variation in their ability to synthesize vitamin B. The vitamin B furnished by intes-