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THE GERMICIDAL ACTION OF α -ALKYLATED
FUROIC ACIDS

N. O. CALLOWAY, H. GILMAN AND C. H. WERKMAN

A series of alkylated furoic acids has recently been synthesized by means of the Friedel-Crafts reaction. In a study on the germicidal action of these compounds it has been found that some of them are of relatively high germicidal efficiency. This study was carried out on a virulent strain of *Staphylococcus aureus* using a modified Anderson-McClintic technic.

The following phenol coefficients were found for the various alkylated acids: Methyl furoic acid, 2.7; *iso*-propylfuroic acid, 9; *tert*-butylfuroic acid, 19; and *tert*-amylfuroic acid, 20. This work is being continued with related heterocyclic types including derivatives of pyrrole, thiophen and furan.

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SUGAR DISSIMILATION BY SHIGELLA PARADY-
SENTERIAE VARIETY SONNE

HOWARD REYNOLDS, C. S. McCLESKEY AND C. H. WERKMAN

Colonies of *Shigella paradysenteriae* var. Sonne are characterized on lactose and sucrose agar media by the formation of papillae after several days' incubation at 37° C. Organisms in the papillae dissimilate lactose or sucrose with the formation of acid within 24 hours, whereas the remaining organisms in the colony fail to show acid production on china blue-rosolic acid differential medium. The acid papillae appear blue on a pink colony. In a liquid medium containing sucrose or lactose, alkaline organisms reach a maximum after two to six days followed by a decline of alkaline organisms with a marked increase of acid producing forms (rapid variant).

Study was made of the daily progress of sucrose and lactose dissimilation under aerated, anaerobic (under N₂) and aerobic (grown in flasks exposed to air) conditions.

Under aerobic conditions the total utilization of sucrose is small and varies between five and ten per cent over periods of five to eight days. During a period of two to six days there is little or