

and the ventricle proper. This observation, which appears to be unique, together with further evidence from another case with auricular premature beats, strongly suggests the presence of decremental conduction in the human heart. Even if the tracing be interpreted as one of simple reciprocating rhythm, yet the extreme peculiarity in question remains, namely a descending impulse discharging the ventricular pacemaker yet failing to reach the ventricular musculature.

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### Production of Trimethylene Glycol by Fermentation.

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Freund<sup>1</sup> first reported the occurrence of trimethylene glycol in fermentation mixtures while making a study of the production of butyl alcohol. Rayner<sup>2</sup> concluded that the trimethylene glycol must be formed during the spontaneous fermentation of soap lyes subsequently to the liberation of glycerol. He believed that trimethylene glycol was produced by microorganisms. Braak<sup>3</sup> isolated and named *Bacterium freundii* isolated from ditch water, an organism producing trimethylene glycol. He discusses the chemism of the process in some detail.

The present work undertakes to make a systematic study of organisms producing trimethylene glycol. Twelve cultures were isolated from horse, sheep, cow and mouse feces and soils, which produced the glycol from glycerol. All were gram negative short rods occurring in the group generally referred to as intermediate forms of the "coli-aerogenes" group. The 12 cultures were subdivided into 7 species on the basis of fermentative dissimilation of sugars. The group appears to deserve generic ranking. As high as 30% of trimethylene glycol is produced from the fermented glycerol. Typical *Escherichia* or *Aerobacter* forms do not produce trimethylene glycol from glycerol. They do produce much greater volumes of CO<sub>2</sub>, H<sub>2</sub>, ethyl alcohol and succinic acid than do the intermediates, but much less acetic acid.

<sup>1</sup> Freund, A., *Monatsch. Chem.*, 1881, **2**, 636. *Sitzber. K. Akad. Wiss.*, **84**, 671.

<sup>2</sup> Rayner, Archibald, *J. Soc. Chem. Indus.*, 1926, **45**, 265, 287.

<sup>3</sup> Braak, H. R., *Onderzoekingen over Vergisting van Glycerine*. 1928. Thesis, Delft.