not hydrolyze as readily as most other soaps, and has therefore been used extensively in our experiments. It is more toxic to some bacteria than potassium or sodium stearate. This is probably due to the fact that castor oil soap is dialyzable and probably dialyzes into the cell and disturbs the salt balance by precipitating the calcium, magnesium and salts of the heavy metals.

Bacteria such as the pneumococcus and streptococcus will not grow on low tension media, while the organisms which inhabit the intestinal tract grow abundantly on media of low tension. This is not surprising since the contents of the intestines have a low S. tension due to the presence of bile, soaps and other S. tension depressants. It is well known that many of the intestinal bacteria when inoculated in broth grow near the surface of the medium. This is particularly true of the cholera vibrio. This selective localization is probably due to the fact that the S. tension reducing substances concentrate at the surface of the medium thus creating a favorable environment for these bacteria. Incidentally it may be pointed out that the bacteria which grow well in low tension media are better antigens than the streptococcus, pneumococcus and others which refuse to grow under such conditions.

34 (1781)

A micro-Winkler method for the quantitative determination of dissolved oxygen.

By E. J. LUND.

[*From the Department of Animal Biology, University of Minnesota, Minneapolis, Minn.*]

Winkler's method for quantitative determination of dissolved oxygen may be applied to 10 c.c. or even 5 c.c. samples of water in the following way. One tenth of a cubic centimeter of each of the two solutions $MnCl_2$ and NaOH − KI are added from 1 c.c. burettes graduated to 0.1 c.c. or less. The thiosulfate solution of the usual concentration is diluted to ten times its volume. The iodine is titrated in a tall dish using a 5 c.c. burette. The end joint is just as definite as that in the ordinary procedure. The percentage error is also the same, about 1 per cent. The distinct

advantage in the micro method lies in the possibility of greatly shortening the duration of the tests, thus making it possible to follow the time course of respiratory exchange over relatively short periods of time. Owing to the small volumes used, temperature adjustment is rapid.

With good manipulation the maximum error is less than 0.005 c.c. of O_2 gas. The method is being used in studies on oxygen consumption by small organisms such as protozoa, eggs and certain kinds of tissues.

35 (1782)

Does the introduction of an ethoxy group into aromatic compounds increase their bactericidal action upon the pneumococcus and the gonococcus? [1]

By ARTHUR D. HIRSCHFELDER and L. J. PANKOW.

[*From the Department of Pharmacology of the University of Minnesota, Minneapolis, Minn.*]

Morgenroth and his collaborators have shown that when an ethoxy group is substituted for the methoxy group in quinine derivatives and ethylhydrocuprein is produced, the substance takes on markedly increased pneumococcicidal action in vitro and in vivo. Solis Cohen, Kolmer and Heist found that ethylhydrocuprein hydrochloride was from eight to twenty times as strong an antiseptic for the pneumococcus as quinine hydrochloride. Morgenroth and Levy had shown that no such difference between quinine and ethyl hydrocuprein could be observed in the case of the streptococcus. We find that when cultures of gonococcus are exposed to starch bouillon containing quinine hydrochloride or ethylhydrocuprein in 1/10,000 dilution and then transferred to plates of rabbit's blood agar, growth occurs if the exposure to the drug has lasted only ten minutes but the bacteria are killed if the exposure has lasted thirty minutes. Ethylhydrocuprein has therefore no specific action against the gonococcus. However, as ethylhydrocuprein is too toxic for successful use in the chem-

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