

anhydrous acetone with potassium permanganate followed by titration of the acidic glycerides after removal of the volatile acidic products by distillation. Kartha and Menon,² in the course of the development of their method for glyceride estimation, considered the possibility of estimating azealo-glycerides by means of their acid values, but preferred saponification values, in order to avoid hydrolysis of azealo-glycerides during titration with alkali. Kartha and Menon have been engaged in effecting further improvements and are now engaged in work with synthetic glycerides. Although their work in this direction has not yet reached publication level, the appearance of Stainsby's paper makes it necessary to publish this note.

We have applied Stainsby's method to one of our synthetic glycerides containing oleic and linoleic acids only. It contains 39.98% of linoleic acid on the basis of iodine value, further confirmed by quantitative estimation as tetrabromide after regeneration of the free acids by hydrolysis. Three separate experiments under identical conditions gave the values 58.5%, 51.5% and 54.2% by the Stainsby method. This method has not proved satisfactory in our hands.

Kartha and Menon's distrust of acid values in glyceride estimation is being further confirmed in our laboratories. We have reasons to suspect a not negligible amount of hydrolysis of azealo-glycerides even during the course of acetone-permanganate oxidation. This difficulty can be overcome and the details of our work in all directions will constitute papers to be submitted for publication elsewhere.

Maharaja's College,
Ernakulam,
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A. R. S. KARTHA.
K. N. MENON.
P. S. RAMAN.

1. *Analyst*, 1948, 73, 429. 2. *Proc. Ind. Acad. Sci.*, 1943 17, 114.

CHOLERA THROUGH NIRA

DURING the course of an investigation on the susceptibility of certain foods and drinks to contamination with and suitability for the growth and distribution of some intestinal pathogenic bacteria,^{1,2,3} it occurred to us that similar studies with regard to *nira* would be of interest and of considerable importance from the public health standpoint inasmuch as this drink is being popularized as a healthful drink for man. Accordingly *nira* was tested for its suitability for the growth and viability of *E. typhosa*, *S. paratyphi*, *S. schottmulleri*, *S. enteritidis*, *S. dysenteriae* (Shiga), *S. paradyseriae* (Flexner), *E. coli* and *V. cholerae*.

Nira was examined in its non-sterile, steam-sterilized and filter sterilized states and the methods employed in its examination were much the same as outlined previously² with this difference that in this instance *nira* was employed in three dilutions only, viz., 33 $\frac{1}{3}$ %, 66 $\frac{2}{3}$ % and in an undiluted form, and the tests for multiplication and viability were followed every half an hour instead of every three hours.

The results obtained indicate that, with the exception of the dysentery bacilli, all the other bacteria tested can not only multiply in *nira* but can actually remain viable for 1 to 3 days or longer depending on the dilution and the sterility status of the samples as well as on the nature of the inoculated species. Alcohol formation in the non-sterile samples was, however, observed to have a deleterious effect on the growth, viability, motility, antigenic character and pathogenicity of the bacteria studied. But so far as the *V. cholerae* was concerned, it was observed that in the initial stages of its growth it could even suppress the growth of the indigenous flora of *nira* and that its activity or character was not at all influenced by the production of small quantities of alcohol. In other words, there were unmistakable experimental evidences to suggest that the contamination of *nira* with the cholera vibrio would result in its multiplication with the consequence that contaminated *nira* or for that matter even *toldy* (fermented *nira*) would constitute a menace from the cholera infection view-point.

A detailed report on this subject will be sent for publication elsewhere. In the meantime it must be reported here for the information of the epidemiologist that during last December twenty persons were diagnosed to be suffering from cholera as a result of drinking contaminated *nira* from a newly opened centre in Poona. It is also significant to refer here that eleven of the people taken ill had later succumbed to the infection.

Microbiology Dept.,
St. Xavier's College,
Bombay,
January 10, 1949.

J. V. BHAT.
RODA N. REPORTER.

1. Bhat, J. V., and Raghunath, M., *Curr. Sci.*, 1948, 17, 213 and 264. 2. Bhat, J. V., and Reporter, R. N., *Curr. Sci.*, 1948, 17, 183. 3. Reporter, R. N., "Suitability of certain foods and drinks for the growth and distribution of some intestinal pathogenic bacteria," M. Sc. Thesis Bomb. Univ., 1944.

THE GROWTH RINGS ON THE OTOLITHS OF THE OIL SARDINE, *SARDINELLA LONGICEPS* CUV. AND VAL.*

THE importance of the study of growth rings on the otoliths and scales of fishes for age determination, by which alone the passage of year classes of commercially important fishes can be followed through the fishery, appears to have been well realised in European countries where intensive investigations on these structures have been made for several years. In India, however, judging by the paucity of investigations in this field, very little attention appears to have been devoted to the determination of age of even the economically more important fishes. The observations of Rao (1935) and Sastry (1936) on the otoliths of *Psettodes erumei*, of Hornell and Nayudu (1923) and Devanesan (1943) on the growth rings on the scales of *Sardinella longiceps*, and of Chacko, Zobairi and Krishnamurthi (1948)