

LETTERS TO THE EDITOR

	PAGE		PAGE
Emission Spectrum of Lead Iodide— P. TIRUVENGANNA RAO	8	Sex Reversal (Heterogamy) in Jack-Fruit Tree (<i>Artocarpus integrifolia</i> , Linn.)— S. V. VENKATARAYAN	14
Glucose as a Beverage—F. GORDON CAWSTON	8	A Note on the Amphidiploid of the Hybrid of <i>Pennisetum typhoides</i> Stapf, and <i>Hubbard</i> × <i>P. purpureum</i> Schumach— N. KRISHNASWAMY AND V. S. RAMAN ..	15
The Determination of Linoleic Acid in Glycerides—A. R. S. KARTHA, K. N. MENON AND P. S. RAMAN	8	Angular Leaf-Spot of Kudzu in Mysore— M. J. THIRUMALACHAR	16
Cholera through Nira—J. V. BHAT AND RODA N. REPORTER	9	Production of Thymol from Ajowan Seeds —JAMES VERGHESE, K. C. GULATI AND M. L. JOSHI	17
The Growth Rings on the Otoliths of the Oil Sardine, <i>Sardinella longiceps</i> Cuv. and Val.—R. VELAPPAN NAIR	9	Wooden Pans for Sugarcane Seedlings R. R. PANJE	18
On the Occurrence of the 'Mrigal' <i>Cirrhina</i> <i>mrigala</i> (Hamilton) in the River Godavari—K. H. ALIKUNHI	11	Some Observations on Juices of Diseased Sugarcane—K. L. KHANNA AND A. S. CHACRAVARTI	19
A Mutant <i>Cedrus Deodara</i> , Loudon— T. N. KHOSHOO	12		
Smut on the Mat-Sedge, <i>Cyperus pangorei</i> , <i>Rottb.</i> —S. V. VENKATARAYAN	13		

EMISSION SPECTRUM OF LEAD
IODIDE

CONTINUING the work on thallium iodide, the emission spectrum of the iodide of lead, the element next to thallium in the periodic table, is obtained in a high frequency discharge. Characteristic bands attributed to the diatomic molecule PbI , are obtained in the region $\lambda 6400 - \lambda 4300$. The bands are generally degraded towards the red, though some of them chiefly on the more refrangible end of the spectrum are headless and diffuse. A vibrational analysis of the bands has led to the following approximate constants.

$$\nu_e = 19509.6 \quad \omega_e' = 119.5 \quad \omega_e'' = 156.6$$

$$\chi_e' \omega_e' = 0.25 \quad \chi_e'' \omega_e'' = 0.30$$

The vibrational constants are found to be in keeping with those of the related iodide molecules in the same horizontal row of the periodic table and of the other halides of lead. The intensity distribution in the system is analogous to that in the emission bands of $PbCl$.

A full discussion of the analysis is being communicated shortly to the *Indian Journal of Physics*.

Andhra University, P. TIRUVENGANNA RAO.
Waltair,
December 8, 1948.

GLUCOSE AS A BEVERAGE

IN wine-growing districts there is sometimes a severe shortage of good milk and cheese except where cows are kept privately, and

excessive cultivation of grapes may interfere with adequate grazing of cattle.

Refreshing beverages are widely favoured but there is reason to object to much of the preserved mineral waters which have only partially supplied the demand for fresh-fruit juices instead of what may be kept indefinitely.

There is a common demand for some sweet beverage which may be taken repeatedly and for long periods with impunity and this is available with solutions of *Glucose*.

Invalids and convalescents are often recommended to take *Glucose* as a readily absorbed remedy for wasting disease and it should be encouraged among communities affected by malnutrition as well as to prevent acidosis.

Glucose is readily excreted by the kidneys, is a useful stimulant for persons about to undergo an operation and serves as a useful substitute for other flavouring of plain water.

If this beverage were more accessible among the poorer classes and became popular among the wealthy it would do much to supply a natural craving after sugar without producing the undesirable effects of alcoholic beverages.

Durban, F. GORDON CAWSTON.
December 16, 1948.

THE DETERMINATION OF LINOLEIC
ACID IN GLYCERIDES

STAINSBY¹ has proposed a method for the determination of linoleic acid in edible fats consisting in the oxidation of the fat in

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,
December 23, 1948.

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. schottmuelleri*, *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)