The standard immunodiffusion pattern of the species consists of seven immunoprecipitin lines, three proximal to the antiserum (central) well and four proximal to the antigen (peripheral) well (Fig. 1). A comparison of immunoprecipitin lines formed by the extracts of the cotyledons of different ages with those of the standard, revealed no specific sequence of degradation of the different components. The lines became gradually faint with the age of the cotyledons and disappeared at later stages. The three lines proximal to the central well disappeared first by the 6th day, probably because the concerned protein components were present in small quantities. Even after the first leaf was well formed (by about 10th day) the cotyledonary extracts formed one or two very faint lines proximal to the peripheral well indicating the presence of traces of these components. No precipitin lines formed with the extracts from the 20th day onwards, by which time the cotyledons became shrivelled and dry. Extracts from the root, shoot and leaf of the 6th and 10th day seedlings formed no precipitin lines showing that the storage proteins are not transported to other parts of the seedlings but are broken down *in situ*.

The author thanks Professor M. Nagaraj, Head of the Department, for facilities and encouragemnt and Dr. M. R. Suresh for help with methodology.

Department of Botany, C. K. RAO.
Bangalore University,
Bangalore 560 001, *August* 23, 1979.

1. Millerd, A., *Ann. Rev. Plant Physiol.*, 1975, **26**, 53.
2. Ackryod, J. F., *Immunological Methods*, F. A. Davis, Philadelphia, 1964.
3. Kwapinski, J. B., *Methods for Serological Research*, John Wiley and Sons, New York, 1965.
4. Ouchterlony, O., In : *Immunological Methods*, Ed. J. F. Ackryod, Blackwell Sci. Publ, Oxford, 1964.
5. —, In : *Handbook of Experimental Immunology*, Ed. D. M. Weir, Blackwell Sci. Publ., Oxford, 1967.

THE OCCURRENCE OF LUMINESCENT BACTERIA IN *PENAEUS INDICUS* FROM THE BACKWATERS OF COCHIN

OF the prawn samples collected for microbiological study from the Cochin backwaters of South-West coast of India, *Penaeus indicus* showed luminescent bacteria in its head region. The investigation was done in four spp. of prawns, *viz.*: *Penaeus indicus*, *Metaponaeus dobsoni*, *Metapenaeus monoceros*, and *Metapenaeus affinis*.

Two isolates belonged to the genus *Neisseria*, based on their morphological and biochemical characteristics. The luminescence was observed in the dark room.

They were found to emit a greenish bright luminescence after 24 hrs of incubation in nutrient agar, with the following composition: 1% Bacto-peptone, 0·5% Sodium chloride, 0·3% Beef extract, 1·8% Agar, with the water of salinity 2·5%. Final pH is 7·1 ± 0·2. No special medium was used in the present study either for culturing or subculturing the isolates.

Of the two strains isolated, one was luminescent both during day and night (strain-1) and the other was luminescent only during the night (strain-2). Both were cultured and subcultured at 27° C on the same medium. The luminescence was observed in both cultures for four days; however, after two days, the intensity of luminescence started decreasing comparatively, luminescence was high in the strain-1. Both isolates were Gram negative, non-motile cocci, oxidase-catalase positive and were found to grow on distilled water agar.

Both isolates were characterised by the following features. Both the strains reduce nitrates, produce indole, liquify gelatin, lysine decarboxylase positive, produce no acid and gas from sugars like Lactose, L. Rhamnose, D(+) Xylose, and H_2S is not produced (after 24 hrs of incubation of TSI agar).

Strain-1 differed from strain-2 in the following respects: It produced acid without gas from glucose, maltose and mannitol. It was both oxidative and fermentative without gas production in HL medium. There was no acid and gas formation from sucrose. This strain was sensitive to 2·5 IU of Penicillin disc. Strain-2 produced acid and gas from glucose, maltose, mannitol and sucrose. The strain was oxidative and fermentative, producing gas in HL medium and was not sensitive to 2·5 IU Penicillin disc.

It may be mentioned that the *Neisseria* spp. is genital commensal, with or without venereal significance in man. It is exclusively a parasite on animals (Salle[1] and Stainer *et al.*[2]). The occurrence of this genus in prawns is rare and it does not seem to affect the organoleptic qualities of prawns.

The author is thankful to Dr. V. D. Ramamurthy for suggestions and encouragement and MPEDA for providing him the facilities.

Inspection Laboratory, V. KRISHNAMURTHY.
Marine Products Export
Development Authority,
1st Main Road, Willingdon Island,
Cochin 682 003, *September* 3, 1979..

1. Salle, A. J., *Fundamental Principles of Bacteriology*, Tata McGraw Hill, 1974, p. 930.
2. Stainer, R. Y., Doudoroff, M. and Adelberg, E. A., *General Microbiology*, Macmillan, India, 1974, p. 618.