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### ISOLATION OF *SALMONELLA LIMETE* AFTER TWO DECADES IN INDIA

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DURING an eco-epidemiological survey of *Salmonella* in and around Manipal a west coastal region of Karnataka, South India, a large number of *Salmonella* isolations made from 125 healthy frogs (*Rana pipiens*) revealed that they are of known pathogenicity to human beings. Of 73 *Salmonella* isolates belonging to 9 different serotypes<sup>1</sup>, 7 strains of *Salmonella limete* (1, 4, 12, 27:b:1, 5) were recovered between August and December 1982. All the strains were recovered from the intestines of healthy frogs. The frogs were collected from wells, rivers, ponds and streams present within a radius of 15 km from Manipal. Rappaport's medium and modified MacConkey's agar were mainly used for isolation. The strains were identified by standard procedures<sup>2,3</sup> and serotyped at Central Research Institute, Kasauli and Adelaide, Australia. The anti-biogram revealed their sensitivity to most of the commonly used drugs like, ampicillin, chloramphenicol, gentamycin, kanamycin, streptomycin, cotrimoxazole and polymyxin.

So far, a single strain of *S. limete* has been isolated

only once in India at Hissar from a cattle<sup>4</sup>. Our isolation at Manipal becomes the first report of recovery of *S. limete* from South India, being isolated exactly after 2 decades of its first isolation at Hissar (North India) in November, 1962 (Saxena, S. N. Personal communication).

Frogs are the free living amphibians which survive in close association with human beings. Being present in livestock premises and human dwellings, they act as chief reservoirs of pathogenic *Salmonellae* in nature. They can contaminate the water of rivers, ponds and even wells of rural areas and thus pose serious health hazards.

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### STOMATAL PECULIARITIES IN *CATHARANTHUS ROSEUS* (LINN.) G. DON (APOCYNACEAE)

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WHILE undertaking a detailed study of morphology and ontogeny of stomata in some members of this family, the author came across unique types of foliar stomata in *Catharanthus roseus* (Linn.) G. Don which are hitherto unreported in this plant as well as in the family Apocynaceae. Metcalfe and Chalk<sup>1</sup> reported only two types of stomata: ranunculaceous and rubiaceous in this family. Kapoor *et al*<sup>2</sup> recorded shrivelled stomata (abnormal type) in *Thevetia peruviana* (Pers.) Schum. and Patel *et al*<sup>3</sup> recorded six kinds of abnormal stomata in the leaves of *Aganosma dichotoma* (Roth.) K. Schum.

Leaves were collected from plants growing in different localities of Delhi, and were boiled in 2% HNO<sub>3</sub> for 7–10 min. The epidermal peels thus obtained were