INTRODUCTION

Food intoxications are caused in man by the ingestion of preformed toxic materials by microorganisms in food substances.

The food poisoning agents usually get access to the food materials through contaminated water supply and due to general unhygienic conditions of production and handling of food products. Under favourable conditions these organisms grow and multiply to sufficiently large numbers either to cause food infections or to elaborate enough quantities of enterotoxin to result in food intoxication upon ingestion by a susceptible man or animal.

One of the important group of organisms well known from the early times as a food poisoning agent is *Salmonella* and *Shigella*. From the intestinal tract of infected man and animal they get into foods through faecal contamination of water supply and through insanitary conditions existing in the production and handling of these food materials. Detection of these organisms in food materials hence became the first step for controlling food poisoning outbreaks. The result was the emergence of a group of organisms called Indicator organisms. These bacteria being normal inhabitants of the intestines of man and animals, are always or nearly always present in the faecal materials of the hosts. The presence of these organisms in food or water, it was assumed, would indicate contamination with faecal matter and probably by enteric pathogens.
Escherichia coli, and more recently, enterococci, are being used extensively as indicator organisms of faecal pollution especially in water supplies and in certain foods (Kjellander, 1960; Deibal, 1964a; Niven, 1964; Mossel, 1969). These organisms other than causing occasional food spoilage, were originally, considered as harmless from public health point of view. Later certain strains of E. coli were found to possess an ability to cause food poisoning. Enterococci due to their ability to survive adverse environmental conditions like high levels of chlorination, freezing and pasteurization temperatures are more frequently met with in food substances than E. coli and hence could be considered as better indicator of faecal contamination.

Enterococci can grow and multiply luxuriantly in milk and may be found in large numbers in several dairy products. This is especially so in cheese where their numbers reach several millions during a particular stage of ripening or dried milk where they form a major part of the microbial flora. The significance of these organisms in these products has often been a matter of dispute since they are frequently isolated from food materials suspected to have caused food poisoning outbreaks, and so ineliminated by implication as causative agent for these outbreaks. Experiments conducted to this date to prove the ability of enterococci to elaborate an enterotoxin have given only inconclusive results. While the situation has reached a point where the potentialities
of enterococci to cause food poisoning are no more doubted, the failure to reproduce the syndrome under laboratory conditions is believed to be due to the absence of right combination of factors necessary for the production of the toxin by the organisms. At present only very little information is available regarding those factors that may play a role in the expression of enterotoxigenicity by enterococci. An ultimate answer to this problem can be found only by studying sufficiently large number of enterococci isolated from diverse sources as well as those isolated from suspected cases of food poisoning for their ability to elaborate various metabolic products which are sometimes correlated with toxigenicity and finally demonstrating the food poisoning symptoms, first in suitable laboratory animals, and finally in human beings. In this study an attempt has been made to (1) obtain enterococci from different sources and identify them taxonomically, (2) detect and study various metabolic products elaborated by them under different growth conditions and (3) demonstrate the production of enterotoxin.

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