

PREFACE

Population genetics developed as a science with the intention of understanding the genetic basis of evolutionary process in both qualitative and quantitative terms. It is now obvious that in any widely distributed species, there is a tendency for divergencies to become established in different parts of the range with different environmental conditions. With few exceptions, the distribution of any organism is discontinuous and the degree of isolation of one population from the next depends upon a great variety of factors, including the mobility of the species and the nature and extent of the intervening habitats and the difference may be physiological, morphological or both and they may be phenotypic or genotypic in each case. However, even a species is continuously distributed, or the discontinuities in distribution are slight, it is still possible for differences to become established in parts of the range of the species. These may be of such magnitude that would bring forth sub-species, varieties or even species.

A description of the extent of variation among populations of the same species and of different species may be necessary but not sufficient for understanding the process of evolution. It is also necessary to understand the nature and magnitude of forces that change genotypic and phenotypic frequencies over time. In general, species assignments in molluscs are made on the basis of morphological criteria and this may not always help in the understanding of the exact taxonomical position of some species.

These were the important guiding principles for initiating the present

study which involved delineation of the systematic position of three bivalve species belonging to the phylum Mollusca and the extent of variation among selected populations of each species from a morphological and biochemical point of view. The information gathered during the present study would throw more light into our understanding of the nature of genetic variations that underly the process of speciation.