INTRODUCTION

Amongst invertebrates the phylum Mollusca includes a seemingly infinite variety of the forms in their evolution. Many authorities believe that the phylum comprises more than 1,00,000 living species and only the Arthropoda includes more—thus making it one of the largest and most important phylum. Its representatives have assumed a seemingly infinite variety in their evolution (Kurhe, 2005). The association of molluscs and man has been very old, dating back to prehistoric times (N.V. Subba Rao, 2003).

The coast of Maharashtra state with its vast areas open coast, creeks, muddy bays rocky, inshore regions, estuaries and backwaters which produce excellent edible shellfishes, offer and attractive fields for fisheries enterprise. Clams, oysters and mussels and also some gastropod species form regular fisheries of considerable local importance along the coast. The meat is widely eaten, even considered delicious by those who developed a taste for it. Besides the edibility value and use of shells for lime and paint industries, the shellfishes of all sizes are trapped for making toys, shell boxes, rings, ash trays, etc.

“Biological diversity” means the variability among living organism from all sources including terrestrial, marine and other aquatic systems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystem, species can be counted and the number of species present at a site might seem to be a quantitative measure of its biodiversity and allow comparison with other sites. But this assumes that all species at a site, within and across systematic groups, contribute to its biodiversity. A measure of the diversity of a site ought ideally to say something about how different the inhabitants are each other (Pandit, 2002).

Mollusca, a large phylum constructed by seven classes comprise over a lakh of living species from land and aquatic environments. Besides these living species, a number of fossil organisms have also been assigned to this phylum. Among these seven classes Gastropoda, Pelecypoda and Cephalopoda are considered as major and important classes. The gastropoda (Gaster-stomach;pod-leg) have a well-developed head and spirally coiled univalve shell. The gastropod are mostly diversified class,
which account 3,619 species from Indian subcontinent, 7.24% of globally known species. They are found in various habitats like-marines, freshwater, terrestrial and arboreal, but highly abundant in marine ecosystem (Ghosh, 2008). The Pelecypoda or bivalves have not distinct head and radula is completely enclosed in a shell. Amongst these classes, the gastropods has been considered as a typical molluscs and has drawn much attention because of their shells and radula which is a rasping organ not found elsewhere. Gastropoda is also the second largest class in the animal kingdom, which has undergone rich adaptive radiation and shows its eminence from other groups by exhibiting torsion. This class is divided into three subclasses namely Prosobranchia or Streptoneura, Opisthobranchia and Pulmonata. Their own characters distinguish all these three subclasses. The Prosobranchia possesses advanced characters and comprises three orders as Archaeogastropoda, mesogastropoda and Neogastropoda or Stenoglossa, which includes the super family Toxoglossa. This super family consists of three venom-producing families such as Terebridae, Turridae and Conidae, and the last one is highly Venomous than the others.

Practically no consideration has so far been given to problem of biodiversity, conservation and management, especially of the molluscs from the coast of Maharashtra state. The study on the eco-physiology of species of clams, oyster and mussels from the coast of Maharashtra state carried out during the years 1992-95 (ICAR Funded by Research project).

Amongst several marine living resources the shell fishes play a vital role in India’s economy of their popularity is increasing due to their delicious and food value. The bivalves such as oysters, mussels and clams serve the nutritional needs of the coastal population. They are good source of minerals, protein and glycogen and are easily digestible compared to other animal foods (Suryawanshi et al., 2012).

Commercial exploitation of bivalve for food is dominated globally by epifaunal taxa such as ostreids, mytilids and pectinids; in addition a high diversity of infaunal species, many of which are of major local or regional importance, is exploited. Annual harvests of bivalve for human consumption represent about 5% by weight of the total world harvest of aquatic resources. The harvesting and cultivation of bivalves has environmental consequences, which must be overcome to ensure sustainable management of these valuable resources. The world trade of bivalve meat
has been estimated to be around 1.3 million MT and is making further strides, with an annual growth rate of about 10% percent per year. By species the most important bivalves are oysters and clams with 4.7 million MT each, while scallops and mussels are less important at 2.0 and 1.8 million MT, respectively. It is seen that relatively few bivalves enter international trade, at least when compared to shrimp or salmon (Clemente, 2007).

Bivalve and gastropod provides an important source of protein for human besides fish, it can be found in many parts of the world such as marine, brackish, fresh and terrestrial areas. Marine gastropod and bivalve consists various species that use for many purposes besides their nutritional source (Hamli et al., 2012).

Several species of venerid clams that occur along the coast of Maharashtra, *Paphia malabarica* is important from the nutritional point of view. It contributes 80% to the total production of clams landed annually mainly from Kalbadevi (Shirgaon creek) and (Bhatye creek) estuaries along Ratnagiri coast, Maharashtra. As large size clams are available from November to May, intensive fishing is observed during these months (Mohite, 2006).

Among the benthic animals oysters (*Saccostrea cucullata* and *Crassostrea cattuckensis*) are remarkable colonizing members of any hard substratum due to their physical success to withstand strong wave action in littoral zone of the sea by development of protective shell. The shell consists of two valves joined together by an elastic hinge on dorsal part. The elastic part is compressed during the process of closure of shell valves by adductor muscles. Adaptation of a sessile life by oysters has resulted in considerable departure from more symmetrical shells of species burrowing into soft substrata. A number of different species of oysters belonging to ostreidae exist along the different parts of coast around the world. The shells of ostreidae are often so variable that identification is peculiarly difficult. Many specific names will be found synonyms when the subject receives adequate attention on both fossil species and existing alive species from different geographical regions. *Saccostrea cucullata* is found in inshore and estuarine environment and also invades in intertidal zone of marine environment. *S. cucullata* usually settles on hard substrates lime boulders, reef crest, corals, sandstones or on other oyster shells. *S. cucullata* is
distributed in the marine environment in shallow coastal waters and creeks. (Salunkhe, 1999).

Also by Kurhe 2005 Marine Research Laboratory of this University at Ratnagiri, work done on diversity of bivalve and gastropoda molluscs from Ratnagiri and Sindhudurg districts, Ratnagiri and Sindhudurg district has much molluscan diversity that’s why Raigad district study especially open coast, rocky shore, creek, backwater, and muddy areas, with diversity of bivalve and gastropod molluscs is important.

Estuary is an integral part of the coastal environment. It is the outfall region of the river, making the transitional zone between the fluvial and marine environs. Historically the term estuary has been applied to the lower tidal reaches of a river. An estuary is a semi-enclosed coastal body of water which has a free connection with the open sea and within which the sea water is measurably diluted with the fresh water derived from land drainage. Estuary has been the focal point of the maritime studies and activities. As they are semi-enclosed they provide natural harbor for trade and commerce. They are also effective nutrient traps and provide a vital source of natural resources to man and are used for commercial, industrial and recreational purposes. Biodiversity in this ecosystem is very impressive. They are the best settling places for clams and oysters. They also act as nursery ground for a variety of shrimps and finfishes (T. Balasubramanian, 2002).

Mangroves provide essential goods and ecological services for the livelihood of coastal people. The goods and fishery products (fish, prawn, crab, molluscs etc.). The ecological services of mangroves include mainly protection and stabilization of coasts, enrichment of coastal waters and supporting of coastal fisheries. The mangroves are able to support and sustain large populations of shellfish and finfish. Mangroves provide both shelter and food to the juveniles of a wide variety of marine animals like shellfish and finfish. Mangroves are good substratum for attachment of larval forms of marine molluscs especially oysters. The meat of the oyster is edible and is consumed mainly by the local people. Shells of mangrove molluscs are also collected for the manufacture of lime. In short the mangroves help the socio-economics development of the coastal communities by supplying by supplying
"seeds" for aquaculture industries as well as providing the traditional sources of medicines, honey, firewood, fodder and timber. Mangroves can therefore be developed as coastal 'cash crops' as source of high value commercial products, fishery resources, as sites for the burgeoning ecotourism industry and for their ecological and economic benefits (Rajenran, 2004).

Aim and Objectives of the present study:

Some aspects of the diversity of bivalve and gastropod molluscs on the coast of Maharashtra state, particularly Raigad district. This includes survey and classification of bivalve and gastropod molluscs according to taxonomic and ecological zonation viz. backwater, estuary, bay, open coast and horizontal, vertical and depth distribution according to intertidal limits. Preferred substratum and its composition etc., and species association with biotic components and abiotic factors, molluscan population pressure, impact of human settlement on the coast and subsequent explosion, and pollution load or magnitude of alteration occurred in species decline, abundance or dominance due to known or unknown causes, molluscan conservation measures in the view of spatial and temporal variations and fitness of the species in the region identification of endangered species, economic value of the species, and host specificity for different parasites and finally identification of scope for further bio-prospecting molluscan diversity, both and species and surveyed.

The knowledge of taxonomy is essential for the study of biological diversity, management of environmental programs involving sustainable utilization and conservation of faunal wealth pest and parasite management, biological control programs management etc. To know and understand biological diversity, be it for the purpose of their sustainable utilization for the sake of humanity or for their conservation it has been studied the very first step in this direction would be to identify and name them (nomenclature); describe them, if need be so that other as and when they come across that species face no difficulty in its identification; and classify them so that the information is properly systematized. All there activities are nothing but taxonomy as has already been defined earlier.