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Recent Report on Thalloid Liverworts from Western Ghats, Maharashtra

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ABSTRACT

Rajgad and purandar forts are historically important at western ghats Maharashtra.Biodiversity includes non- vascular cryptogams, bryophytes.The class hepaticae indicate important medicinal properties.The present study is focused on the report of liverworts after long period.Totally 11 species, belonging to 6 genera of hepaticae as well as 5 species belonging to 4 genera of anthocerotae from Rajgad fort are reported.

Keywords: Liverworts,W.Ghats,MH.

INTRODUCTION

Maharashtra State is a mountainous and climatically diverse in the country India. The Western ghats are not true mountains but, are the faulted edge of the Deccan plateau.They are believed to, have been formed during the break up of the super continent of Gondvana, some 150 millions years ago. It's length 1600 km, N-S and width 100 km, E-W.Climate in the Western ghats varies with altitudinal gradation and distance from the equator.The climate is humid and tropical in the lower reaches tempered by the proximity to the sea. Elevations of 1500 m(4921 ft) and above in the north and 2000 m (6562ft) and above in the south,have a more temperate climate. Rajgad fort is situated in western ghats of Maharashtra. The King of forts: Rajgad is 42km to the south west of Pune, about 15-16km west of Nasarapur,in the climate.In Sahyadri ranges, the fort is approximately 4250 ft above sea-level. At least 325 globally threatened species occurred in the western ghats. The relative humidity is normally high during monsoon,which favours growth of bryophytes in such area.

Despite their small size,they comprise major components of the biomass and photosynthetic production in the forest ecosystem (Frego, 2007).Bryophytes are the second largest group of plants with about 25000 species Worldwide (Buck and Goffinate,2000). About 2000 sp. Of mosses, 816 species of liverworts and 34 species of hornworts occuring in India with present status. These are distributed in Eastern and Western Himalaya, South India and central India (Nath and Asthana,2005). The bryophytes species richness depends upon biogeography and historic events (Sergio,2001). It determines the occurrence, distribution and structure of biotic communities. more over bryophyte community structure, habitat tolerence and Niche relationship are extremely specialised and correlated with structural and physiological adaptations of the species to this extreme environment(Slack and Glume,1985). Western ghats of peninsular India is one of the notable global biodiversity hotspot, influences the climate and topography of an area

Despite their diversity and therapeutic use, no study has been carried out in Maharashtra, since 1984. Bryologist has given contribution to gain knowledge of hepatics, hornworts and mosses, by monographs. The present study focusing on the exploration of thalloid diversity, from Rajgad fort.

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Material and Methods A Rapid biodiversity assessment survey was conducted during September, 2017 to October, 2017 from rajgad fort of western ghats, Maharashtra. Afterwords, they brought to the laboratory and identified with the help of previous bryophytic taxonomic literature (Clark and Ducket,1979; Joshi and Biradar,1984) in botany department, SBZ Mahavidyalaya,Barshi. Identified specimens then verified through comparison with material preserved in herbarium voucher specimens stored at laboratory. Results and discussion.

Recently the results estimate that totally 11 species, belonging to 6 genera of hepatics as well as 5 species belonging to 4 genera of anthocerotae from Rajgad fort, from different altitudinal areas. The limited biosystematic literature dealing with western ghats bryoflora review. But floristic study outline is well known and provide the basis for the production of modern regional flora's. The non-vascular cryptogams are well grown, under influence of deciduous forest pathces with litter. Both altitude as well as litter influences the species richness of bryophytes. Similar observations were made with in Bwindi National park,Uganda (Tusiime et al.,2007).

- They are sensitive to pH and water availablity and would probably respond to factors associated with tree species. Unlike vascular plants, bryophytes have very thin leaves and lack cuticle and stomata(Brown,1982). Von Krusenstjerna,(1965) suggested that litter from base rich deciduous tree species increase both the availability of nutrients and pH on the substrate surface. Effect of litter is probably one of the most important factors regulating bryophyte species composition in forest, has severe effects on the occurrence and performance of bryophytes(Hazell and Gustafson,1999). Even in areas with moderate level of air pollution, acid deposition has strong impact on the bryophyte, may seriously affect the species composition. It is clear that, many bryophytes theoretically, have a very high potential capacity for survival. However, there is a limited chance to survive if the subpopulation are very small and restricted to sites under severe human impact. This investigation is the species distribution and ecology in the mountain streams of western ghats, Maharashtra. There is also a value in conserving population at the edge of their geographical range. It's distribution reduced due to change in forest practice. In conservation biology, information on the effects of isolation on bryophytes subpopulations is more or less lacking. Government of India established many protected areas including 2 biosphere reserves, 13 National parks, to restrict human access, several wild sanctuaries to protect specific endangered species and many reserve forests, all managed by the forest departments of their respective states, to preserve some of the eco regions still undeveloped. Central Government not sanction mining and hydroelectric projects, cause of destroying western ghats ecosystem.

There is an international responsibility and precautionary principles of conservation, strategy for species, to save one at the risk of extinction.

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Table 1: Enlisting of thalloid liverworts from Rajgad,MH

Species	Altitude	
Anthoceros erectus Kash.	Middle	
Asterella angusta St.	Middle	
A.reticulate Kash.	High	
Cyathodium tuberosum Kash.	Middle	
Folioceros Khandala sis Bhardwaj.	Middle	
Notothylas indica Kash.	Middle	
N.lavieri Schiffn.	Middle	
Phaeoceros Himalayansis Kash.	Basal	
P.appendiculatum L.et L.	Middle	
P.simulensis Kash.	High	
Riccia welanspora Kash.	Basal	
R.discolar L. et L.	Middle	
R.fluitans L.	Basal	
Targionia hypophylla (Mich.)L.	Basal	
Sewardiella tuberose Kash.	Middle	