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Research Article

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Prelimenary Screening of Bryophytes of three Mandals of Huzurabad Division of Karim Nagar District of Telangana, India

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ABSTRACT

Due to urbanization and usage of agriculture land increasing several natural biota facing habitat loss. Bryophytes are pioneer land and embryophytes with parechymatious tissue.9species from 5genera and five Families; represent with two which are globally dominating bryophytes i.e. Hepaticapsida and Bryopsida. Bryophyte population studies through Quadrate method by using of Quadrates measurements with 25cms×25cms. Quadrates were placed randomly and counts the number of plant species present in each Quadrate. Species number with highest Riccia. If we neglect them, rare and threatened species can be extinct.

Key words: *Riccia, Bryophytes, Karimnagar, Abundance, Quadrate Study*

INTRODUCTION

Bryophytes are the primitive plants on the land .In the process of bare rocks to forest formation after lichens these are followed by other herbs and shrubs. They are made of mainly by parenchymatous tissue in all parts of the body after algae. They have the capability to grow on soil, moist places, rocky, shady places and wetlands. India alone has the place in 12 mega biodiversity centers with its variation in climatic and edaphic factors. In case of bryophytes it has 2489 species (25,000 worldwide Buck and Goffinetnet, 2000), among them 1786 mosses, 675 liverworts, 25 hornworts. India alone has the 10% of liverworts population of the globe majority of the plant species distribution based on the modifications by the complexity of environmental, climatic and also biological factors. Bryophytes are used in medicine from ancient time by the Chinese. They also used in fuel industry, packaging division Spagnum have its own market in production of peat moss for horticulture purpose. They participate in reclining of nutrients in ecosystem point of view, sharing in primary production of some ecosystems. Bryophytes are useful in seed germination process in flowering plants by facilitating with their capability of soil forming especially in ephimeral lifecycles of flowering plants.

The activities of human population like particularly in India increasing of irrigation land, using of pesticides in agriculture sprayer methods, urbanization. Present studied area is near to granite exporting, due to this loosing of their native habitat. If we see the aesthetic value in nature and bryophytes it is valuable. They are mainly conserved in waste lands and temples old buildings, no one care about them due to their economic importance known to us little.

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They are well known about their work in nature in calm going manner.

STUDY AREA

The select three mandals of Huzurabad division which is one of belonging to karim nagar district of north Telangana region of Telangana state .These mandals have received rain fall with moderate climatic characteristics. Majority of the land with agriculture under Sri Ram Sagar Project, some area covered with shrub like forest area. This area under Deccan plateau of south India bryophytic zone as by former researchers. Study area bordered with east and south Warangal district west and north Karimnagar itself. Flora of Karimnagar studied by Naqvi A.H et al around 1995-1998, nearly twenty years back, but the author concentrates mainly on flowering plants. Studies conducted during 2012-2015.

MATERIALS AND METHODS

The plant materials have been collected from various sites of studied area nearly 60 villages. Author observes variations like foothills/footsteps, near water bodies, temples, (Bijigiri,Korkal,China komatipally. These are lord Laxmi Narasimha Temples), walls, old buildings and oldest government offices. Material collected by through field visits and collected samples also dried at open shaded areas to preservation for further studies. Bryophyte population studies through Quadrate method by using of Quadrates measurements with 25cms×25cms.Quadrates were placed randomly and counts the number of plant species present in each Quadrate .60 Quadrates samples were taken during 2012-till. The phytosociological attributes like Frequency, Abundance, Density and their relativities also calculated by as per standards. The specie identifications by standard literature and experts and also used internet facilities also.

RESULTS AND DISCUSSION

The preliminary study of bryophytes in this study area is 9 species with 5 genera and 5 families.the maximum species number three with Riccia, another with two Polytrichum, Funaria (Table.No.1). Funaria hygrometrica high frequency and Tortula ruralis with low frequency.

In present investigation said that study area favourable for tolerant Bryophytes. 9 species represents from two classes i.e. Hepaticapsida and Bryopsida. No species representation from hornworts. They are mostly soil born bryophytes. Earlier workers established the word some of bryophytes also indicator plants. Present day bryophytes facing main threats in the form of pollution and natural habitat loss due to anthropogenic activities.

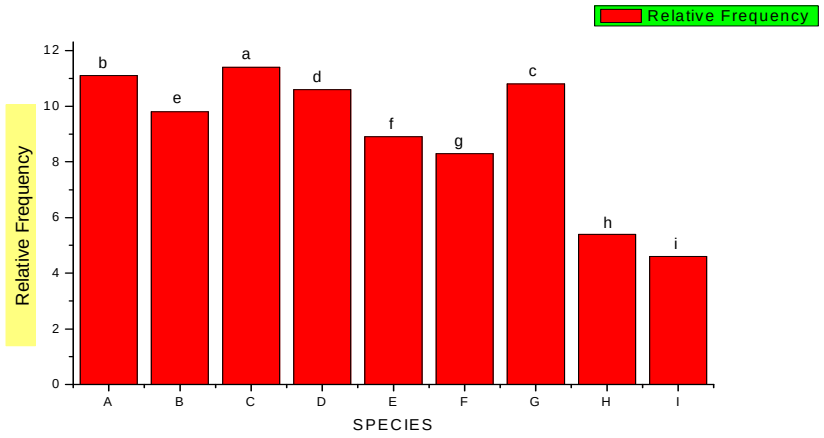
Some Bryophytes have the capability of absorption of pollutants and show symptoms, if the pollutants present in very low concentrations.

Table 1: Enumaration of Bryophytes of Study Area

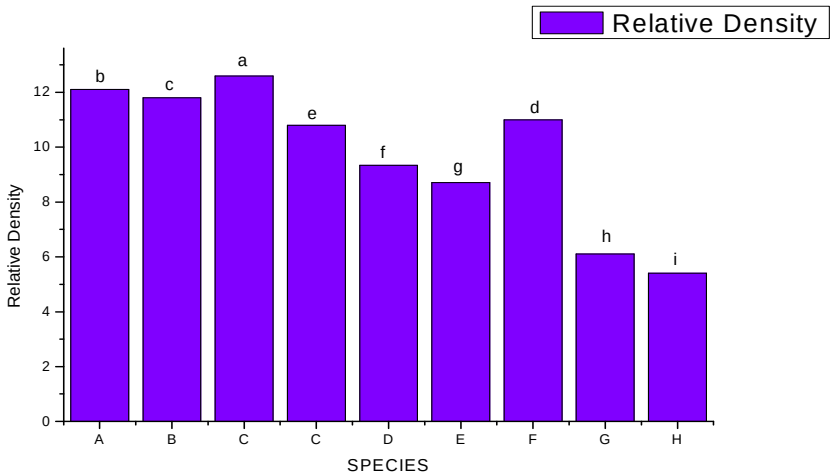
S.No.	Scientific Name	Family	Order	Class	IUCN Status
1	*Funaria hygrometrica*	Funariaceae	Funariales	Bryopsida	NE
2	*Funaria leptopoda*	Funariaceae	Funariales	Bryopsida	NE
3	*Polytrichum alpinum*	Polytrichaceae	Polytrichales	Bryopsida	DD
4	*Polytrichum densiflorum*	Polytrichaceae	Polytrichales	Bryopsida	DD
5	*Riccia discolor*	Ricciaceae	Marchantiales	Hepaticapsida	NE
6	*Riccia fluitans*	Ricciaceae	Marchantiales	Hepaticapsida	NE
7	*Riccia sorocarpa*	Ricciaceae	Marchantiales	Hepaticapsida	NE
8	*Sphagnum sps*	Sphagnaceae	Sphagnales	Bryopsida	NE
9	*Tortula ruralis*	Pottiaceae	Pottiales	Bryopsida	DD

Table 2: Data represents Quantitative Charecteristics

S.No	Scientific Name	Frequency	Density	Abundance
1	*Funaria hygrometrica*	72	5.6	6.4
2	*Funaria leptopoda*	68	4.8	5.9
3	*Polytrichum alpinum*	76	4.9	6.1
4	*Polytrichum densiflorum*	70	3.9	4.9
5	*Riccia discolor*	63	5.1	4.7
6	*Riccia fluitans*	56	3.8	5.4
7	*Riccia sorocarpa*	71	5.3	5.5
8	*Sphagnum sps*	32	3.2	4.3
9	*Tortula ruralis*	21	2.7	3.9



A = *Funaria hygrometrica* **B** =*F. Leptopoda* **C** =*Polytrichum alpinum* **D** =*P. densiflorum* **E** =*Riccia discolor* **F** =*R. Fluitans* **G** =*R. sorocarpa* **H** =*Sphagnum sps* **I** =*Tortula ruralis*



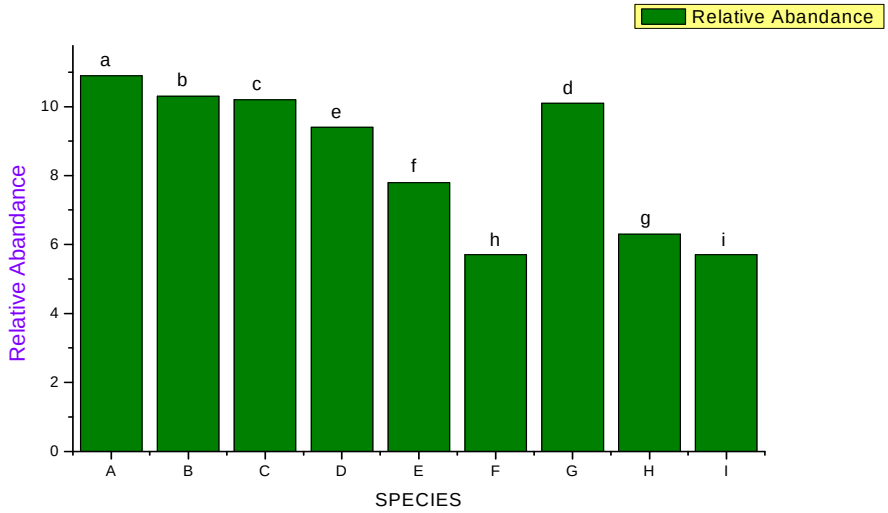


Fig. 1: Funaria hygrometrica under microscope

Fig. 2: Riccia discolor

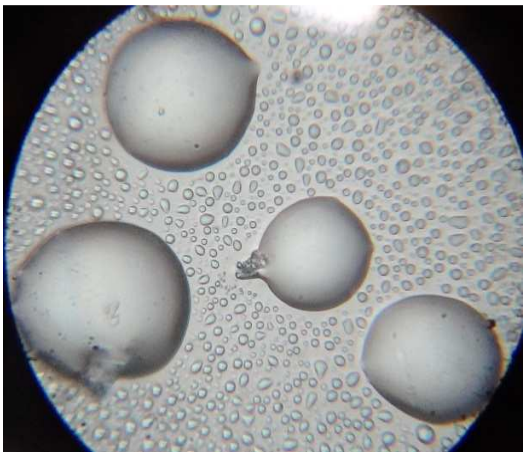


Fig. 3: spores of polytrichum

Fig. 4: Polytrichum with capsule

Fig. 5: Tortula ruralis

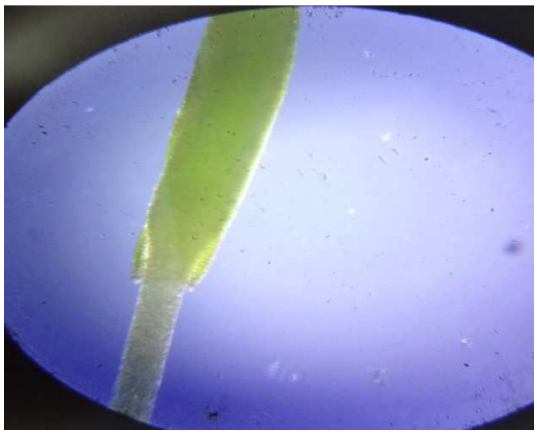


Fig. 6: capsule under microscope x 10

Fig.7: Riccia sorocarpa

Fig. 8: Riccia with sporophyte

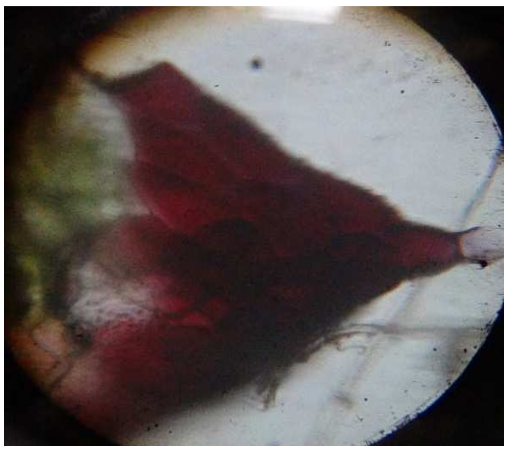


Fig. 9: Riccia with sporophyte

Fig. 10: Funaria with capsule

Fig. 11: site of Collection of bryophytes

Fig. 12: Associtation of Bryopsida members

CONCLUSION

Bryophytes are pollution indicators after the lichens. Study area is having some better chances for the growth of bryophytes. Especially bryopsida have show dominant itself. If we neglect them, rare and threatened species can be extinct.

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