Chapter 5
Discussion and Conclusion
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Bryophytes, make a significant contribution to the floral diversity of this ‘watery planet’ and constitute an important component of the forest ecosystem, they become first colonizers on variety of habitats. They are highly specific group of plants with second highest assemblages among land plant after angiosperms. There surviving capability is immense as they survive under wide range of ecological conditions and forming strong part of the ecosystem where they grows in forest, wet lands, desert (hot as well as cold) and other habitats. They classified under three diversified classes, are Hepaticae, Anthocerotae and Musci. The Indian sub-continent is bestowed with a vast range of climate coupled with varied ecological conditions in different regions.

Currently, about 2480 taxa of bryophytes (including infraspecific taxa) are reported from India (including island groups, and Sikkim), comprising about 722 taxa of liverworts in 128 genera and 52 families, 36 taxa in 6 genera and 2 families of hornworts (Singh, V. B., 1966; Parihar et al, 1994; Singh, D. K., 1997; Srivastava, 1998) and about 1623 taxa in 342 genera and 57 families of mosses (Gangulee, 1969-1980; Lal, 2005; Aziz and Vohra, 2008; Nath et al, 2011).

The state of Rajasthan is not so congenial for the growth of bryophytes, however, there are few very potential regions exist in this western state of country. Usually, the bryologists of past neglected these region as they were basically interested in other bryorich regions of India. Consequently, at present several reports and checklists are available from those areas, and the Western parts of India particularly Rajasthan remains one of the country’s most overlooked bryological region due to its harsh environmental condition. But being a desert it also have certain localities which are instrumental in nurturing these amphibians of plant kingdom. The present study is an effort to explore the region and provide consolidated account of bryodiversity which will fill the existing lacuna in bryological research.

Earlier, there are very few reports available regarding floristic work in Rajasthan like Macdam (1890); King (1879); Champion (1937); Mahabale & Kharadi (1946) but all were related to spermatophyte. Bryologists of India generally overlooked the exploration of this place for various reasons. As a upshot in earlier bryological works by Mitten (1859), Stephani (1901–1924) and Chopra (1938, 1943) there was no record of bryophytes. Later on, Kashyap (1929,
1932) mentioned the presence of few taxa in Rajasthan e.g. *Plagiochasma appendiculatum* and *Cyathodium tuberosum*. Chavan and Mahabale (1945) noticed *Riccia discolor* and *Asterella angusta* beside *Plagiochasma appendiculatum*, though, at that time, they were dealing with hepatic flora of Gujarat for the most part. Whereas, Mahabale and Kharadi (1946) mentioned the occurrence of *Riccia discolor* and *Plagiochasma appendiculatum* during ecological study of area. The first valiant attempt was made by Bapna (1958) and his study, he reported 24 species from Mount Abu. Afterward, Bapna and Vyas (1962) published a preliminary account about the liverworts of Mount Abu and extended the list up to 28 taxa of liverworts and hornworts. This account is probably the only authentic record available so far as far as liverworts are concerned. Regarding mosses only few sporadic reports had been published with limited circulation and remain less known (Choudhary and Deora, 2001). This study is an effort has made to fill this lacuna. The study reveals the complete and updated status of mosses of this region. The earlier reported number of species (Bapna, 1958; Bapna & Vyas, 1962; Lal 2005) have also included along with newly reported taxa.

The careful study of the bryorich regions of Rajasthan reveals that the prominent 3 classes of bryophytes, viz. Bryopsida, Hepatocopsida and Anthocerotopsida are present. However, Hepaticopsida is represented by only order Marchantiales with 3 families with sole genus, viz., Aytoniaceae (*Plagiochasma*), Cyatodiaceae (*Cyathodium*) and Ricciaceae (*Riccia*) only. While, Anthocerotopsida is represented only by a single species of *Anthoceros*. The most diversified class is Bryopsida which contains 4 orders, viz., Pottiales, Funariales, Bryales and Hypnales. In terms of genera, the most diversified order is Pottiales with 1 family, i.e. Pottiaceae having 7 genera and 16 species. This is followed by order Hypnales which has maximum number of families (7) with 8 genera and 9 species. Order Bryales has 2 families with sole representative each. The least diversified order is Funariales which has only 1 family and two genera that have single species. Genera like *Hydrogonium* and *Hyophila* are most diversified with 4 species in each, followed by *Anoectangium* with 3 species. *Molendoa* and *Hypnum* have 2 species come next. Remaining 14 genera are represented by single species (Plates 44, 45).

The present work on bryoflora of Rajasthan reveals the occurrence of 3 classes, 6 orders, 15 families, 23 genera and 33 species. Earlier, total 44 taxa were reported but now only 33 retained their valid status, while the other previously reported taxa come under the doubtful category *i.e.*
unresolved name. In this study, taxa like *Anoectangium clarum, Hypnum plumaeforme, Hyophila spathulata* and *Stereophyllum wightii* have been reported new to Rajasthan. These new reports of mosses confirm the potential of Rajasthan in terms of bryodiversity particularly of mosses. Hence more explorations are required to this neglected part of India.