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**CHECKLIST OF MOSSES (BRYOPSIDA) OF THE KALRAYAN HILLS  
IN THE EASTERN GHATS OF TAMIL NADU, INDIA**

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**ABSTRACT**

A detailed survey of the checklist of the mosses of Kalrayan hills of Eastern Ghats of Tamil Nadu. The study was carried out in the year 2013. This is the fourth of this kind in South India. There is a total of 54 species belong to 35 genera and 23 families. Five are new records to South India. Four species are found to be pollution indicators.

**KEYWORDS:** Mosses, Kalrayan Hills, Eastern Ghats



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## INTRODUCTION

Among the non vascular cryptogams, bryophytes are highly specialized group of plants with second highest assemblage among land plants often flowering plants. Their surviving capacity is enormous as they survive under wide variety of environmental condition and forming strong part of the ecosystem.

Among the bryophytes, the class (Bryopsida) is highly evolved group of bryophytes, comprising 17,000 species falling in 3 classes. They have a unique position between lower cryptogams and vascular cryptogams, as they have protonema like lower cryptogams and conducting stand like higher (vascular) cryptogams. Studies on ecological (environment) diversity and distributional aspects of such important plant groups have not been made from the area of Kalrayan hills. Therefore an attempt was made to determine the diversity of mosses from this area.

## MATERIALS AND METHODS

The Kalrayan are a major Hill range of Eastern Ghats straddle a number of Tamil Nadu districts, extending northeast

from the Salem District Salem District. It lies between 11°20' - 12° - 12° 05' N latitude and 78°28' - 79°05' E longitude. Along with the Pachaimalai, Javadi, and Shevaroy hills, they separate the Kaveri River basin to the south from the Palar River basin to the north. Kalrayan Hills spread over an area of 1095sq. Kms and is endowed with rich natural resources. The vegetation types of Kalrayans are scrub jungles of altitude 400m, deciduous forest between 800 to 1300 to 1300m and Sholas at the sheltered pockets on the plateau. The Kalrayans measures 25.76 km and 37 km.

The Kalrayans are divided in two sections. The Chinna Kalrayans average 2700 feet in height, while the Periya Kalrayans average 4000 feet. Kalrayans and the North and the East pass into the Ariya Goundan and the Kurumba Goundan Jaghirs of South Arcot District. The range as a whole is fairly smooth, with soil well-suited for plant growth. Though the forest stand is growing, due to "Habitat Uniqueness, Human impacts and Cultural Tradition", Conservation efforts are needed.

Collection and survey of mosses from the region of Kalrayan hills were



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carried out. The systematic collection was made covering start seasons, during and after monsoon, different sites, differing on the altitude.

The materials collected were subjected to detailed morphological examination under the microscope for its genus and species identification. The mosses density abundance and frequency were estimated. Collected mosses from the different sites were preserved for future documentation. The herbarium packets are kept in small containers and deposited in the Research Centre (Center of Cryptogrammic Botany), Department of Botany, St. Joseph's College (Autonomous), Tiruchirappalli, Tamil Nadu, India. Identifications were made with the help of Gangulee's '*Mosses of Eastern*

*India and Adjacent Regions*' (1969-1980) and other related works and also by comparing with protologues, types and or authenticated specimens. The final identification and confirmation were done in consultation with Bryologists of the University of Calicut, Kerala.

### RESULTS AND DISCUSSION

This study, the fourth of this kind in South India has brought 54 species of bryophytes from an area of 1095sq. Kms. The present study reports 54 species belong to 35 genera and 23 families. Meterioriaceae is the largest family with 6 species followed by Fissidentaceae with 4 species. Five species are found to be indicators of high degree of habitat degradation.

**Table: 1 List of the Mosses of Kalrayan Hills**

S. №	Genus	Species	Family
1	<i>Pogonatum</i>	<i>P. aloides</i>	Polytrichaceae
2.	<i>Campylopus</i>	<i>C. flexuosus</i>	Dicranaceae
		<i>C. ericoides</i>	
3.	<i>Leucoloma</i>	<i>L. taylorii</i>	Dicranaceae
4.	<i>Octoblepharum</i>	<i>O. albidium</i>	
6.	<i>Hyophila</i>	<i>H. involuta</i>	Pottiaceae
7.		<i>H. kurziana</i>	



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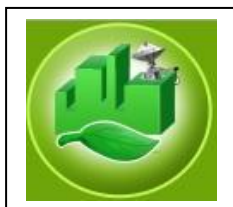
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S. №	Genus	Species	Family
8.		<i>H.ranuii</i>	
9.	<i>Oxystegus</i>	<i>O. cylindricus</i>	
10.	<i>Funaria</i>	<i>F. hygrometrica</i>	Funariaceae
11.		<i>B. argenteum</i>	
12.	<i>Bryum</i>	<i>B. capillare</i>	Bryaceae
13.		<i>B. wightii</i>	
14.	<i>Hamoliodendron</i>	<i>H. flabellatum</i>	
15.	<i>Neckeropsis</i>	<i>N.darjeelingensis</i>	Neckeriaceae
16.		<i>M. moorcroftii</i>	
17.	<i>Macromitrium</i>	<i>M.sulcatum</i>	
18.		<i>M.hamatum</i>	Orthotrichaceae
19.		<i>M. turgidum</i>	
20.		<i>R. cuspidigerum</i>	
21.	<i>Racopilum</i>	<i>R. orthocarpum</i>	Racopilaceae
22.		<i>P. acuminate</i>	
23.	<i>Pterobryopsis</i>	<i>P. orientalis</i>	Pterobryaceae
24.		<i>P. divergens</i>	
25.	<i>Aerobryopsis</i>	<i>A.membranacea</i>	
26.		<i>M. squarrosa</i>	
27.	<i>Meteoriopsis</i>	<i>M. reclinata</i>	
28.		<i>M.ancistrodes</i>	Meteoriaceae
29.	<i>Cryptopapillaria</i>	<i>C. fuscescens</i>	
30.	<i>Acrobryum</i>	<i>A. speciosum</i>	
31.	<i>Frullania</i>	<i>F.gaudichaudi</i>	Frullaniaceae
32.	<i>Hypopterygium</i>	<i>H. tamarisci</i>	
33.		<i>H. aristatum</i>	Hypoterygiaceae
34.	<i>Thuidium</i>	<i>T. tamariscellum</i>	Thuidiaceae



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S. №	Genus	Species	Family
35.	<i>Entodon</i>	<i>E. flavescens</i>	Entodontaceae
36.	<i>Vesicularia</i>	<i>V. vesicularis</i>	Hypnaceae
37.	<i>Ctenidium</i>	<i>C. lychnites</i>	
38.	<i>Isopterygium</i>	<i>I. albescens</i>	
39.	<i>Fissidens</i>	<i>F. griffithii</i>	
40.		<i>F. leptopema</i>	
41.		<i>F. subpulchellus</i>	Fissidentaceae
42.		<i>F. sylvaticus</i>	
43.	<i>Calymperes</i>	<i>C. motleyi</i>	Calymperaceae
44.	<i>Riccardia</i>	<i>R. santapau</i>	Aneuraceae
45.	<i>Leucobryum</i>	<i>L. cucullifolium</i>	Leucobryaceae
46.		<i>L. juniperoideum</i>	
47.	<i>Porella</i>	<i>P. campylophylla</i>	Porellaceae
48.	<i>Floribundaria</i>	<i>F. walkeri</i>	Meteoriaceae
49.	<i>Meteorium</i>	<i>M. helminthocladum</i>	
50.	<i>Mnium</i>	<i>M. integrum</i>	Mniaceae
51.	<i>Cheatomitrium</i>	<i>C. sikkimense</i>	Hookeriaceae
52.	<i>Leptolejeunea</i>	<i>L. himalayensis</i>	Lejeuneaceae
53.		<i>L. sikkimensis</i>	
54.	<i>Schiffneriolejeunea</i>	<i>S. indica</i>	
	<b>Genus: 35</b>	<b>Total Species: 54</b>	<b>Family: 23</b>

The area is under extreme pressure of anthropogenic activities in and around the hills. Mosses are very sensitive to such activities and also due to change in the nature of the habitat. The bryophytes, being the primary colonizer and effective pollution indicator, play a major role in

ecosystem functioning. *Macromitrium* and *Fissidens* have the maximum number of four species. Four species are new records to South India. Four species are found to be indicators of high degree at habitual degradation. All these show richness of the bryo-diversity of the area.



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