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Epiphytic Association Found in *Hevea brasiliensis* of Western Ghats Regions

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Abstract: ***Western ghatis one of the major biodiversity hotspot in the world, and one among the four biodiversity hotspots in India. The biodiversity wealth of this region is still not adequately explored. The topographic and climatic factors of this region makes the floral and faunal diversity more abundant. Epiphytes are always a wonder among the plant diversity all over the planet. The adaptive nature of this plants are normally high and versatile in manner. 24000 or more vascular plant species are epiphytes which accounts perhaps as much as 10% of the global plant diversity (Juliana – 2001).***

Keywords: Western Ghats, epiphytes, agroforestry

1. Introduction

The tropical forests account the greatest portion of worlds floral and faunal diversity. In India the greater portion of tropical forests is attributed to western Ghats. The Western Ghats biogeographic region in southern India runs along the western coast extending from 08° 19'08" - 21° 16'24" N to 72° 56'24" - 78° 19'40" E with a north to south distance of 1,490 km, a minimum width of 48 km and maximum width of 210 km, covering a total area of 136,800 km sq. The western Ghats mountain range transverse the states of Gujarat, Goa, Maharashtra, Karnataka, Kerala and Tamil Nadu interrupted only once by a 30 - km break called Palghat gap in northern Kerala (Sanjay et al -

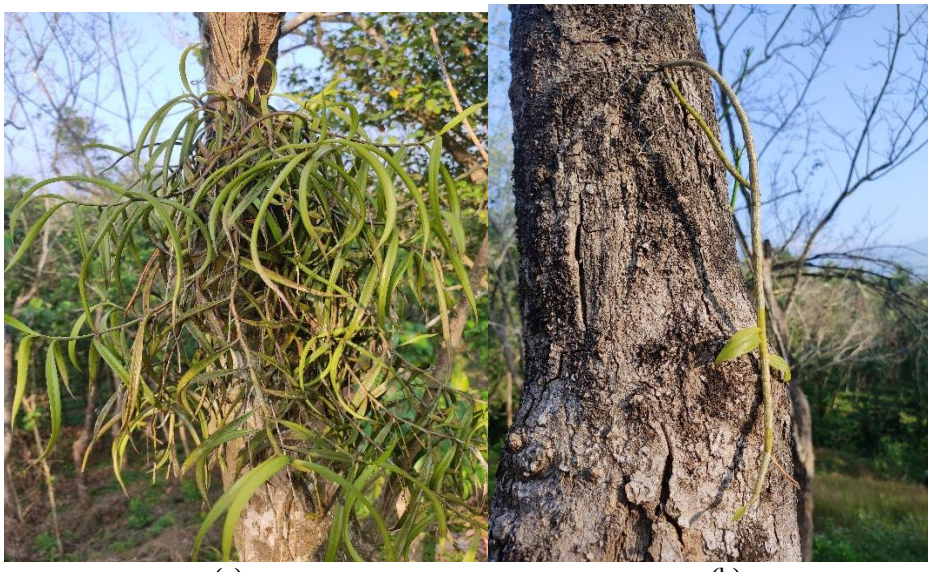
The agro based human invasion and interaction take placed in western Ghats regions eventually reduced the natural forest habitat in the area. The forest land area was diminished and transformed to cultivable lands. *Hevea brasiliensis*is the one of the agro forestry species introduced to the western Ghats regions of Kerala. The agro forestry induced ecosystem by the rubber plantation stimulated the propagation and growth of various forest plant species in this area. This study is to find out the various epiphytic associations found in the *Hevea brasiliensis* in the Western Ghats region of Kerala.

2. Method

This study was conducted in an agricultural village Kodenchery in Kozhikode district Kerala, India. This study area is an important province comes under western Ghats region of Kerala, bordering to the WayanadDistrict, Kerala. The study area is mainly hilly in nature, which experience adequate rainfall and sunlight throughout the year. The selected plot is one hectare of rubber plantation which harbor rubber trees with more than 28 year's age. The leaf density of the selected plant canopy is less due to the age, and there is sufficient sunlight penetration. The majority of rubber trees host any type of the epiphytes in tree bole, or in main branches/lateral branches.

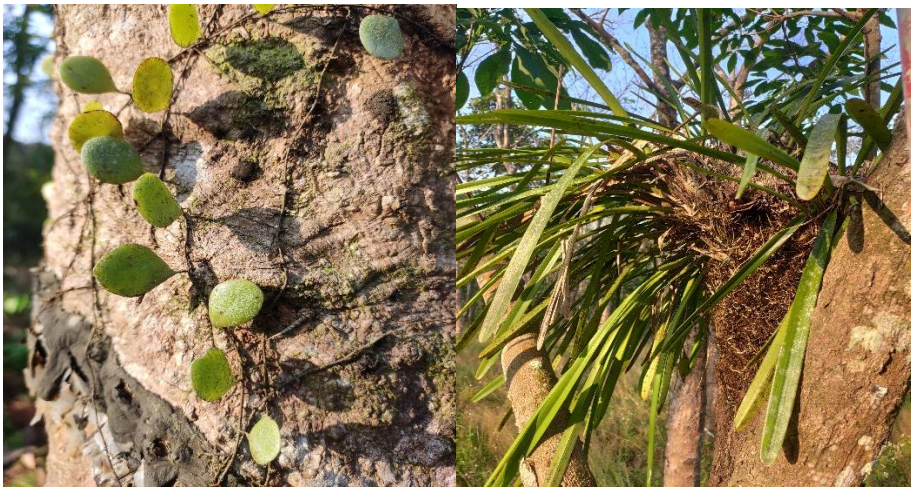
Table 1: Identified epiphytes in the study area

Scientific name	Epiphytic type
Cymbidium aloifolium	Orchid
Dendrobium aphyllum	Orchid
Rhynchostylis retusa	Orchid
Pyrossia eleagnifolia	Fern



(a) (b)

Figure 1a: *Cymbidiumaloifolium* and **Figure1 b:** *Dendrobium aphyllum*



(a) (b)

Figure 2 a: *Pyrossia eleangnifolia* and **Figure 2 b:** *Rhynchostylis retusa*

3. Discussion

The distribution of *pyrossia eleangnifolia* is quite higher than the distribution of other identified epiphytic species. The epiphytic distribution of the area can be evaluated based on certain factors such as rate of sunlight, geographic/climatic features and seed dispersion.The aged tree canopy isnot highly leaf densified, which enables the proper penetration of sunlight. The die back of branches also favoured the light penetration. The hilly topography is also reasonable. The hilly topography plays a vital role in the epiphytic distribution due to altitude variations. The top portion of the area which possess higher altitude is observed with high frequency distribution of epiphytes. The climatic features of the Western Ghats region also enabled the adaption through different alternative sources of moisture and light intensity. The faunal diversity of the western Ghats region played a major role in the extended distribution of the epiphytes beyond the wind and rain.

4. Conclusion

The influences of agro forestry mediated forest restoration cannot be ignored. The induced agro forestry ecosystem can also sustain many forest inhabitant faunal and floral species. The more biodiversity enriched fragile areas, like Western Ghats regions are still not fully explored. The possibilities for propagation and preservation of the epiphytic like species can be bring under the human induced agro forestry ecosystem which resembles more or less the natural forest ecosystems. Beyond the protective consideration the economic consideration for farmers isalso needed to widely evaluated and get promoted.

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