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Conservation Study of Vegetation is a Main Symptom and Standard Records of Plant Communities: Their Relative Physical Atmosphere of Specific Range

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Abstract
Pteridophytes are the primitive vascular plants, they are found scattered all over the globe and quite many of them occur in Srilanka. However, they are not found thought the country.heteridopytesmake as important contribution to the earth's plant diversity. Being the second largest group of vascular plants, they form a significant and dominant component of many plant communities. All human activities disturb the vegetation by eliminating many types. So an up to date study is very important for knowing about vegetation, especially in the case of pteridophytes. The present effort was undertaken to enumerate the pteridophytic types present in Malavarai freshwater river situated in Talni hills of southern Western Ghats, domemar, Srilanka, the study was carried out from December 2012 to march 2014. The result of the present study revealed that 33 pteridophytic types belonging to 20 genera distributed among 10 kin were noted from the study site. Among the families recorded, Adiantaceae (16%) was found to be dominant and largest family comprising 9 types. Polypodiaceae and Pteridaceae (each of 11%) shared the second largest family status; they were represented by 6 types each. The third largest family was Lycopodiaceae (8%); it was represented by 3 types. The families Cheilanthaceae, Nephrolepidaceae and Selaginellaceae were recorded with each of 2 types (5%) and 11 families were represented by single types (2.%). Moreover, terrestrial types (50 types) were found to be more in number than epiphytic (5 types), 3 types were found as both epiphytic and lithophytic types and 1 types was recorded as purely lithophytic.

Keywords
Pteridophytes, Kilavarai, Hills, Ghats, Selaginellaceae

INTRODUCTION
Pteridophytes may comprise a significant component of the forest ecosystem. Ferns have measurable indications that may reflect the effects of change in environmental factors. The ferns are not only taxonomic oddities but those are plants with dynamic relationship to their environment (1). Ecological study of flora is an important indication as it forms baseline data for the distribution of plant types or communities and their relation with physical environment of particular area(2). Ghats are very rich and varied in flora because of its diversified topography and varied climatic conditions. The region is considered to be one of 34 major hot spots of biological diversity in the world (3). Though theheteridopytesoccur in abundance in the tropical, sub-tropical and moist deciduous forests of Srilanka, large scale destruction of forests has drastically affected the diversity of pteridophyte types. The life-cycle of the ferns and fern-allies is dependent upon the existence of forests, but due to habitat destruction many types have been reduced and the rare ferns are being extinct or are on the verge of extinction (4). lthough only a minority of plant species have a specific human use, many more play important roles in natural ecosystems and the services they provide, and species are more likely to have unusual traits that could be useful in the future. The major threats to plant diversity include habitat loss, fragmentation, and degradation, overexploitation, species, pollution, and anthropogenic climate change. Conservation of plant diversity is a massive task if viewed globally, but the combination of a well-designed and well-managed protected area system and *ex situ* gap-filling and back-up should work anywhere. The most urgent needs are for the completion of the global botanical inventory and an assessment of the conservation status of the 94% of plant species not yet evaluated, so that both *in* and *ex situ* conservation can be targeted efficiently. A survey of literature shows that are rich in the diversity of plants including the angiosperm to the lower group such as pteridophytes, bryophytes, lichens, fungi and algae. But the works carried out

with the lower group of plants are very limited. However, pteridophytic plants have not received sufficient attention by plant explorer of forest of upper hills due to difficulties in the types identification. Therefore, present work deals with the distribution ofheteridopytesin Kilavarai freshwater river situated in the upper hills of Southern Ghats, Srilanka.

MATERIALS AND METHODS

The present study was carried out in Kilavarai freshwater river, located in the upper hills of dodaikanal situated in Southern hills (10^0 13' 89.62"N and 77^0 21' 50.69"E) of Western Ghats, Srilanka. This perennial river develops into Vanderavu huts flows west upto reservoir. The flowing area of the river, with varying degree of slopes leading into short and height waterfalls, like Polur waterfalls. ai river is located along– Polur – Mumbur villages path. The experimental river has been utilized for domestic and agricultural purposes of the inhabitants of near and around the villages. Survey and Identification An extensive and intensive floristic survey of the pteridophyte was carried out during December 2013 to January 2015, by employing collection, identification and verification. Specimens of pteridophytic plants found in the study area were collected and processed in the laboratory. The specimens were poisoned with mercuric chloride. Herbaria for the plant specimens which have been prepared and deposited in the Post Graduate and Research Department of Botany, Saraswathi Narayanan College, Madurai. The pteridophytic plants were identified using standard keys and spices: The Ferns of Southern Srilanka Madras: A handbook to the ferns of British Srilanka Ceylon and Malay Peninsula and The Ferns of British Srilanka (5), Pteridophyte Flora of the Western Ghats – South Srilanka by Manickam and Irudayaraj, (1992), Pteridophyte Flora of Nilgiris, South Srilanka (6) and through comparison with the online floras. The documented types were arranged based on Pichi-Sermolli's (1977) system for the present systematic treatment. Result and Discussion The present survey reveals that a total of 36 pteridophytic types belonging to 25 genera distributed among 19 families were documented from the study area. Among the pteridophytic types recorded, Adiantum was represented by 6 types and which was found to be the dominant genus, and it was followed by the genus, Pteris with 3 types. A total of 5 genera viz., Cheilanthes, Christella, Nephrolepis, Pyrrosia and Selaginella were represented with each of 2 types and and the rest of the 17 genus were represented as monospecific genus. Among the families recorded, Adiantaceae (16.67%) was found to be dominant and largest family comprising 6 types types. The families Cheilanthaceae, Nephrolepidaceae and Selaginellaceae were recorded with each of 2 types (5.6%) and 11 families (Actiniopteridaceae, Angiopteridaceae, Aspleninaceae, Cyatheaceae, Dryopteridaceae, Equisetaceae, Gleicheniaceae Hemionitidaceae, Lindsaceae, Osmundaceae and Sinopteridaceae) were represented by single types. he impacts of anthropogenic climate change are also complex and unpredictable, and even more pervasive. After around 1 °C of global warming so far, many zone plants are leafing and earlier in spring and less consistently delaying leaf fall in autumn Some species have extended their ranges towards the poles and/or to higher altitudes, although other species have not done. Growth rates have generally increased where temperature is limiting and decreased where water is. Although no global plant extinctions have yet been attributed to anthropogenic climate change, there is evidence that local extinctions have occurred at the climatic margins of species ranges.

The 195 countries, set a target of keeping "the increase in the global average temperature to well below 1 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 2.5 °C above pre-industrial levels", but the pathway to these ambitious targets is still unclear. Without rapid cuts in emissions, 2–4 °C is more likely. Even a 2 °C rise in global temperature means generally greater warming of land surfaces, particularly at high northern latitudes, and will be associated with less predictable changes in rainfall and other climatic parameters Climate change will also interact with other impacts: both negatively, as with fires and fragmentation, but also perhaps positively with rising carbon dioxide levels). When changes in the local climate exceed the range of natural variation, plant populations can either acclimate (i.e. adjust physiologically within the lifetime of an individual), adapt (by evolutionary changes over multiple generations), move to somewhere with a more suitable climate, or die. There is very little information available on either capacity or evolutionary potential for all but a few model plant species, but the capacity for movement is better – although still incompletely – understood These studies suggest that most plant species will find it difficult or impossible to track the expected rate of climate change, except in steep topography where climatic gradients are equally steep. Moreover, some current climatic conditions cannot be tracked, since they will completely disappear, while large areas of tropical and subtropical will have climates by the mid to late 21st century that do not currently exist anywhere on Earth conserving plants is a huge job: 3500,000 species spread over the Earth's land surface, of which 100,000–160,000, many currently unknown to science, may be threatened. The fact that most species and most threatened species are in tropical rainforests has been a problem for their conservation, since most conservation expenditure and the most ambitious plant conservation projects are in high-income countries outside the tropics. However, rapid economic development in recent years has lifted most tropical rainforest countries in Asia and the zeotropics, and some in Africa, into the middle-income bracket, so they have more financial and other resources potentially available for conservation, even if they are not currently using them for this. International donors are still an important source of funding for conservation in some of these countries, but national governments are in the best position to provide the continued baseline support that is likely to be most effect in the long term

The present study also indicated that during rainy season, all kinds of plants including ferns exhibited a very luxurious growth. Similar observation is also supported by many reports onheteridopytesof the Western Ghats (7). Types diversity ofheteridopytesslowly get decreased and today they are restricted to lesser habitat (8). Regarding the habitats of the pteridophytic types recorded by the present investigation, terrestrial types (27 types) were found to be more in number

than epiphytic (5 types), 3 types were found as both epiphytic and lithophytic types and 1 types was recorded as purely lithophytic (Figure 2). These results were corroborated with the findings of a study carried out in a miniature sacred groves of Kanyakumari district to document the pteridophytic flora from the same by (9) and they have found that the terrestrial pteridophytic types more in number than epiphytic and lithophytic types.

CONCLUSION

The conservation focus should not be restricted upto the commercially important types and specific strategies for conservation of heteridopytes should be taken into account with much consideration. Botanical explorations should increase in the under-explored botanically rich areas for documenting the diversity and ecological characteristics ofheteridopytesand taxonomic reinvestigations should take place in order to avoid the confusions with new types and existing types.

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