

106**Historical changes in number of Endemic birds in Sri Lanka from 1852 to 2006**

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Number of endemic bird species, which is special interest among the wildlife enthusiasts for all the time, continuously fluctuated in the ornithological history of Sri Lanka.

To clarify the number of endemic species present in Sri Lanka and to study the change of this number in the history of Ornithology in Sri Lanka, systematic literature survey was done. Twenty major publications including field guides and checklists that are published from 1854 to 2006 were considered.

The number of endemics has changed from a maximum of 47 to a minimum of 20 from 1854 to 2006. Sixty two of the present species were endemic at least once in the history although there are only 26 species are to be considered as definite endemics at present.

Many of the species considered as endemic to the island were discovered before these publications. Only nine species were discovered in or after 1852 but before 1872. And one species was described very recently in 2004. However, only 11 species excluding newly discovered Serendib scops owl, have appeared in all these publications as endemics. Four species were discovered in 1870 and 1972 and those were in all the publications as endemics after the discovery. Although discovered in 1850, White-faced Starling was added to the list in 1872 and remained continuously. Hence, these 16 species can be accepted as endemics without any argument.

Main reasons for changes in numbers are upgrades of existing subspecies and downgrade to subspecies level. Six of the present endemic species fluctuated in species and subspecies levels in the history. Another 30 species including 7 proposed endemic species need taxonomic studies since those were changed between species and subspecies levels.

Sri Lanka Red faced Malkoha was removed twice and Yellow-cared bulbul was also removed once from the endemic list due to unconfirmed sight records from South India. Sri Lanka Wood pigeon was removed from the list by Murray (1890) due to misidentification as Nilgiri Wood Pigeon.

Representation of present endemic species in each of the publication ranges from 61.54% in Blyth (1852) to 100% in Rasmussen and Anderton (2005). However, second highest percentage (92.31%) was represented in Legge (1880) and Murray (1890), more than a century ago.

107**A study on tree diversity in lowland, sub-montane and upper montane forest formations along the Hapugastenna nature trail in the Peak Wilderness sanctuary**

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Hapugastenna nature trail is one of sixth access way to peak "Sri-pada" that running through Peak Wilderness sanctuary. It starts at the middle way of southern boundary of the sanctuary between Rathganga and Waleboda and runs North-Western direction.

This study examined the tree diversity in different forest formations along the trail. Twelve plots (each 5 x 100 m) were laid in lowland (6), sub-montane (4) and upper montane (4) forest formations, respectively. Altitudinal range of lowland plots were below 1000 m, sub-montane plots were between 1000 -1550 m and montane plots were above 1550 m. All tree species over 10 cm dbh were selected for the study. Important value index (IVI) and Shanon's diversity index were calculated. IVI was calculated for each family, genera and species separately.

Recorded number of total individuals was 592 belong to 90 species, 55 genera and 26 families. It includes 58 endemic species with 3 endemic genera (*Loxococcus* -1 sp., *Shumacheria* - 1 sp., *Stemonoporus* - 6 sp.). A total of 58 (250 individuals), 32 (174 individuals) and 29 (168 individuals) tree species were identified from lowland, sub-montane and upper montane forest formations, respectively. Identified species distributed in 3 forest formations as follows, lowland 43, upper montane 13, sub-montane 11, lowland and sub-montane 8, lowland and upper montane 2, sub-montane and upper montane 8, all three formations 5. There were 35 endemic tree species in lowland (60.3 %), 22 (68.7 %) in sub-montane and 17 (60.7 %) in upper montane forest formations.

According to the IVI values, in the lowland forest formation Dipterocarpaceae was the dominant family, *Myristica* was the dominant genus and *Myristica dactyloides* was the dominant species. In the sub-montane and montane forest formations *Palaquium rubiginosum* was the dominant species.

The diversity index (Shannon's) was calculated for each plot and three different forest formations. These results were analyzed using analysis of variance. It showed that there were significant differences between lowland - montane lowland - sub montane formations. Same result showed for evenness and dominance.

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Pteridopytic diversity in Loolkandura forest

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The plant category ferns and fern allies are taxonomically known as Pteridophytes. In Sri Lanka about 340 Pteridophytes have been recorded belongs to 29 families. They have ornamental, medicinal and edible values and play an important role in biodiversity of forest understory. Unlike flowering plants, studies on Pteridophytes are limited in Sri Lanka. Sri Lanka's first tea plantation has started in Loolkandura area but the remaining hilly areas still exists as undisturbed forests with high biodiversity. However limited studies have been carried out on biodiversity of Loolkandura forest area. Consequently, the objective of this study was identification of Pteridophytic diversity of Loolkandura forest area.

Three elevation levels (1100, 1300 and 1500 m) were selected along the stream networks and three plots (each of 10 × 10 m) from each elevation level were established for sampling. Number of species, their population size and habitats were assessed for each plot. Data were analyzed to identify correlation of species and individuals with elevation levels. A total of 56 Pteridophytes from 19 families were identified from studied area. Seventeen percent of Sri Lankan Pteridophytic flora represent in Loolkandura forest area which consists 3 endemic species (*Cyathea walkerae*, *Meringium macroglossum* and *Diplazium beddomei*). Two main Pteridophytic habitats were identified as lithophytes and terrestrial (terrestrial dense forest, terrestrial open and terrestrial road side). In Loolkandura forest area, both number of families and number of species are in increasing trend with increasing of elevation. There are three species namely, *Asplenium nomale* ($R^2 = 0.69$), *Metathelypteris flassida* ($R^2 = 0.54$) and *Polystichum biaristatum* ($R^2 = 0.64$) showed significantly positive relationship with number of individual of a species with increasing of elevation from 1100 to 1500 m. Two species namely *Arachniodes aristata* ($R^2 = 0.69$) and *Tectaria decurrence* ($R^2 = 0.59$) showed decreasing trend in number of individuals with increasing of elevation. Disturbances to the ecosystem and soil moisture content were identified as major parameters to variations of *Metathelypteris flassida* and *Arachniodes aristata*. Checklist for Pteridophytes was prepared for the studied area and implications of findings on conservation and utilization of Pteridophytes are discussed.