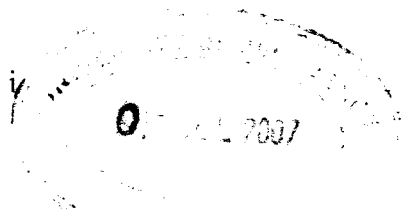


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**A DETAILED TAXONOMIC STUDY ON THE GENUS *Ilex* L.,
(FAMILY AQUIFOLIACEAE) IN SRI LANKA**

A PROJECT REPORT PRESENTED BY

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**A DETAILED TAXONOMIC STUDY
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Plant taxonomy is classification of plants following certain rules or, principles while systematics is a much more modern field of study of the biological diversity that exists on earth today and there evolutionary history. The placement of an entity in a logically organized scheme of relationships is called classification. One method of classifying plants according to their way of operating is numerical or phenetic method clustering plants on total similarity. It consists of mathematical procedures to encode character, state data for the plants under study and used to arrange taxa in a hierarchy. The results obtained through this study would classify plants to the satisfaction of everyone and to the angiosperm phylogeny. This is important in biodiversity conservation.

The study was carried out to find the species limits of the genus *Ilex* belonging to, family Aquifoliaceae. The family is represented in Sri Lanka only by this genus, harbouring the three native species namely *Ilex walkeri* Wight & Gardn., *I. denticulata* Wall. and *I. zeylanica* (Hook. f.) Maxim. and the endemic species *I. knucklesensis* Philcox.

Among the species of *I. walkeri*, according to Willis (1911) and Philcox (1996) two significantly different types and three visibly different types of identified specimens deposited at the National Herbarium were noted. The three identified different types of *I. walkeri* are named as Iw1, Iw2 and Iw3.

Altogether, 117 characters were coded initially. A data matrix of 95 characters were used for cluster analysis and a dendrogram was obtained. Another dendrogram was recovered from a 30 character data matrix. Cladistic analysis was also done from a data matrix of 93 characters.

Both analyses supported the recognition of the three types of *I. walkeri* and the other three species in clusters separately. Therefore, the study supports break up of the existing species in different clusters as well as the three types of *I. walkeri* separately thus, forming a picture of having altogether six species within genus *Ilex*. This study revealed several confusing character combinations that overlap among **these species** and the current species delimitations for Sri Lankan *Ilex* species seems confusing.

Further, the study unveils the necessity of carrying out a study on species limits of *Ilex* with more informative characters such as leaf anatomy and wood anatomy. A cladistic analysis using an out group may reveal the order in which the clusters are related phylogenetically. A more reliable and definitive results can be expected from a molecular analysis as well.

