

NEW CHEMICAL CONSTITUENTS FROM SOME
ENDEMIC FLORA OF SRI LANKA

Presented by

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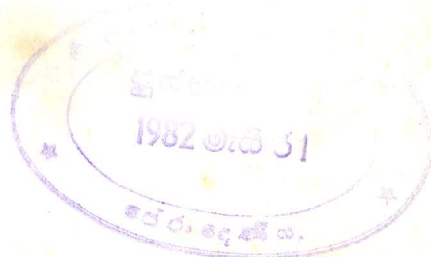
Being a Thesis presented in partial fulfilment of the
requirement for the award of the degree of

DOCTOR OF PHILOSOPHY

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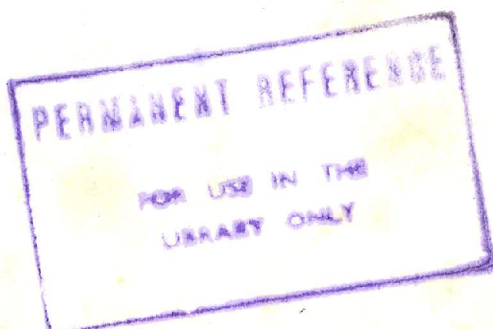
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ABSTRACT

New Chemical Constituents from some Endemic Flora of Sri Lanka

This thesis is composed of three parts.

The first part consists of the isolation and structure elucidation of a new class of some novel polyphenols of resveratrol origin (3,5,4'-trihydroxystilbene) from some endemic Dipterocarpaceae. The presumed formation of these compounds by phenolic coupling reaction and their biosynthesis is also discussed. Data obtained in this study also suggest that these oligomers of resveratrol have pronounced antibacterial activity and could be used as taxonomic markers on a familial level to Dipterocarpaceae. ^{13}C n.m.r. data of these compounds are interpreted and their unique mass spectral fragmentation are studied as far as possible.

The second part describes the isolation and characterisation of some new constituents from some endemic species of the family Moraceae. The isolation and structure elucidation of two new chromenodihydro-

benzoxanthenes from Artocarpus nobilis Thw. are the first examples of the presence of benzoxanthenes in plants. These two new natural products further enlightene a route to the biosynthesis of xanthenes from flavonoids which still remain obscure. The structure is also proposed for a new prenylated flavonoid from this species. The presence of resorcinol in this species is reported for the first time and making it the third Artocarpus species showing the presence of this compound. Three new minor alkaloids have been isolated from Broussonetia zeylanica and two of them have been shown to have a δ -hydroxy-quinoline moiety and the other is a bipyridine diol. As a completion of the endemic survey of this family the chemical constituents of endemic Ficus species are also studied in this part.

Part three is based on the chemical investigation of Calophyllum calaba L. var. worthingtonii Stevens a plant belonging to the family Guttiferae. A diprenylated trioxygenated xanthone, isolated, is found to be the precursor of the major xanthone in this species.

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