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**ALKALOIDS OF *Erythroxylum zeylanicum* O.E.SCHULZ  
(ERYTHROXYLACEAE)**

A THESIS PRESENTED

BY

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to the

**POSTGRADUATE INSTITUTE OF SCIENCE**

*in partial fulfilment of the  
requirements for the degree of*

**MASTER OF PHILOSOPHY**

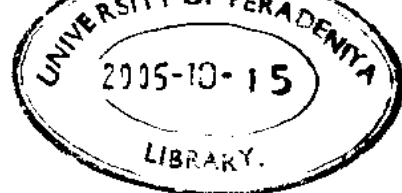
of the

**UNIVERSITY OF PERADENIYA**

**SRI LANKA**

**October 2002**

380478



ALKALOIDS OF *Erythroxyllum zeylanicum* O.E.SCHULZ  
(ERYTHROXYLACEAE)

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This thesis describes a study of alkaloids in *E. zeylanicum* of the family Erythroxyllaceae. Only five species of the family Erythroxyllaceae are found in Sri Lanka including *E. zeylanicum* which is the only endemic *Erythroxyllum* species. The leaf of this plant is used in traditional medicine as a very effective anthelmintic agent for round worms. There are no reports of phytochemical work on Sri Lankan *Erythroxyllum* except for *E. monogynum*.

The roots (with bark) of *E. zeylanicum* contained four alkaloids including two new alkaloids, namely 1R,3R,5S,6R-6-acetoxy-3-(3',4',5'-trimethoxybenzoyloxy) tropane, *cis*-3 $\beta$ -(cinnamoyloxy)tropane, 3 $\alpha$ -(3',4',5'-trimethoxybenzoyloxy)tropane and *trans*-3 $\beta$ -(cinnamoyloxy)tropane. 1R,3R,5S,6R-6-acetoxy-3-(3',4',5'-trimethoxybenzoyloxy) tropane and *cis*-3 $\beta$ -(cinnamoyloxy)tropane were new and subsequently named as Erythrozeylanine A and Erythrozeylanine B. 3 $\alpha$ -(3',4',5'-trimethoxybenzoyloxy) tropane, and *trans*-3 $\beta$ -(cinnamoyloxy) tropane were previously isolated from *E. monogynum* and *E. hypericifolium* respectively.

*E. zeylanicum* twigs and leaves contained two alkaloids including a new natural product namely *cis*-6 $\beta$ -acetoxy-3 $\alpha$ -(cinnamoyloxy)tropane and *trans*-6 $\beta$ -acetoxy-3 $\alpha$ -(cinnamoyloxy)tropane. The new alkaloid *cis*-6 $\beta$ -acetoxy-3 $\alpha$ -(cinnamoyloxy)tropane

was named as Erythrozeylanine C. The structures of the new alkaloids were established using spectroscopic and quantum chemical CD calculations. This is the first record of using CD calculations for the establishment of stereochemistry in structure elucidation of tropane alkaloids.