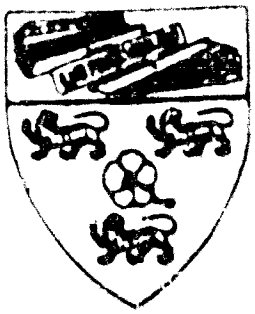

MULA

ALKALOIDS FROM MALAYSIAN *UNCARIA*

A dissertation submitted in
partial fulfillment of the
requirements for the degree of

Master of Philosophy

by

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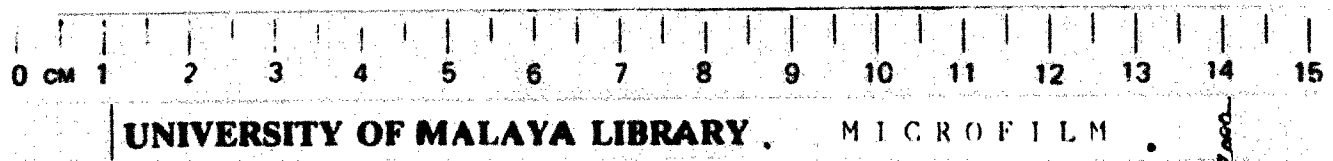

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ABSTRACT

Eight species of Malaysian *Uncaria* were investigated for their alkaloidal content in this study and the results are summarized in the table below.

Detailed studies were carried out on two species, *viz.*, *U. callophylla* and *U. borneensis*. Four new alkaloids were isolated from the leaves of *U. callophylla*. Two of these were tetracyclic heteroyohimbine alkaloids, isogambirine (10-hydroxydihydrocorynantheine) and gambireine (9-hydroxycorynantheine) and the other two were dimeric alkaloids, callophylline A (constituted from gambirine and 3-epi-β-yohimbine) and callophylline B (constituted from gambirine and 9-hydroxypseudoyohimbine). A detailed discussion on the struture elucidation of these new compounds is presented.

U. callophylla was found to show a seasonal dependence of its alkaloidal content in which there is a sharp drop in the gambirine content coinciding with the flowering season.

The rutin content of Malaysian *Uncaria* species were also determined and only *U. callophylla* was found to be a major source of rutin (2.6%).

Crude alkaloidal mixtures as well as pure isolated alkaloids were also evaluated for cardiavoscular effects (antihypertensive activity) in rats.

Distribution of Alkaloids in Malaysian *Uncaria*

Species	Alkaloids[#]
U. callophylla	**dihydrocorynantheine [20], gambirine [22],** isogambirine [86], gambireine [87], rotundifoline [42], **callophylline [88]** callophylline A [89], callophylline B [90], yohimbine [47], pseudoyohimbine [50], β-yohimbine [49], α-yohimbine [54].
U. borneensis	**isorhynchophylline [38], rhynchophylline [39], isocorynoxeine [40], corynoxeine [41],** alloyohimbine [53], pseudoyohimbine [50], 3-epi- β-yohimbine [52].
U. longiflora	
var. longiflora	isorhynchophylline [38], rhynchophylline [39], isocorynoxeine [40], corynoxeine [41].
var. pteropoda	isopteropodine [34], pteropodine [35].
U. lanosa	
var. glabrata	isopteropodine [34], pteropodine [35].
var. ferrea	isopteropodine [34], pteropodine [35].
U. cordata	
var. cordata	
f. sundaica	dihydrocorynantheine [20].
f. cordata	-ve
var. ferruginea	
f. ferruginea	dihydrocorynantheine [20].
U. elliptica	mixture of alkaloids but no roxburghines [5].
U. acida	-ve
U. gambir	-ve

[#]major alkaloids in **bold** type; -ve = not detectable.

CONTENT

CHAPTER 2 RESULTS AND DISCUSSION

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