

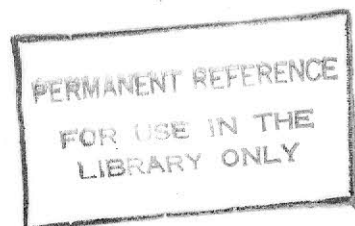
C
547
WAN

**CHEMISTRY AND SEARCH FOR ANTIVIRAL /HIV
ACTIVITY OF
SOME SRI LANKAN *CALOPHYLLUM* SPECIES**

A thesis presented by

W.M.A.P. WANIGASEKERA

in partial fulfilment of the requirement
for the award of



MASTER OF PHILOSOPHY

in the

UNIVERSITY OF PERADENIYA

SRI LANKA

January 1996

Natural Products Programme
Institute of Fundamental Studies
Kandy

488502

ABSTRACT

In this study chemistry and antiviral / HIV activity of *Calophyllum* products were investigated. The root bark of *Calophyllum thwaitesii* has been shown to contain seven xanthenes, calozeylenic acid, friedelin and sitosterol. Two of the xanthenes have been identified as demethylcalabaxanthone and trapezifolixanthone, two new xanthenes as 3,10,11,12-tetrahydro-13-hydroxydipyranoxanthen-14-one [11,12-dihydrothwaitesixanthone] and 6,8-dihydroxy-2,2-dimethyl-7,9-di(3-methylbut-2-enyl)-2H,5H-pyrano(3,2-a)xanthene-5-one [batukinaxanthone]. The other three xanthenes are thwaitesi xanthone, calothwaitesixanthone and 6-deoxy- γ -mangostin, which have previously reported from the same species. This is the first report on the isolation of a 1,3,5-trioxygenated xanthone [trapzifolixanthone] from this plant. Stem bark of *Calophyllum cordato-oblongum* gave two coumarins cordatolide B, soulattrolide and cordato-oblongic acid. This is the first report on the isolation of a 4-phenylpyrano coumarin derivative, soulattrolide from this plant.

MeOH extracts of *C. bracteatum*, *C. cordato-oblongum*, *C. soulattri* and *C. thwaitesii* inhibited the activity of one of the aspartic proteinase enzymes pepsin-A. Further, bioassay guided fractionation of above extracts showed that water fractions of *C. moonii* and *C. cordato-oblongum* were protective against pepsin A. Above results indicated that further investigation of active fractions is very essential with the view to isolating antiviral / HIV compounds from this genus. Above coumarins are structurally very close to the anti HIV coumarins isolated from the same genus. Therefore antiviral / HIV studies were carried out on them. Preliminary tests showed no activity and this may be due to the solubility problem regarding pure coumarins in aqueous phase.