

ABSTRACT

NATURAL PRODUCTS FROM ENDEMIC *JATROPHA* AND *PSYCHOTRIA* SPECIES AND STUDIES OF ALKYLATION-DEALKOXYCARBONYLATION OF DIMETHYL MALONATE ESTERS BY ALKYLAMMONIUM SALTS

Chadwick Ivor Anderson

This thesis is divided into two sections, Section A and Section B. Section A is divided into two parts detailing the isolation and structural elucidation of metabolites from *Jatropha divaricata* (Euphorbiaceae) and *Psychotria corymbosa* (Rubiaceae).

Part I commences with a literature review of the metabolites from the Euphorbiaceae and details the isolation and characterization of two novel diterpenes from *J. divaricata* (compounds A and B). Part II gives a literature review of alkaloids from the *Psychotria* genus. It also presents a description of the isolation of seven alkaloids (compounds C-I) from *P. corymbosa*. Part II also describes the molecular modeling studies of the chimonanthine diastereomers (compounds D and E).

Section B provides a review of the dealkoxycarbonylation of malonate esters and the results of studies of the scope and limitations of the alkylation-dealkoxycarbonylation of dimethyl malonate esters by alkylammonium salts.