

ABSTRACT

Structure and Synthesis of Compounds from Endemic Caribbean Guttiferae, Euphorbiaceae and Rutaceae

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This dissertation is divided into two sections, Section A and Section B. Section A, dealing with the isolation and structure elucidation of natural products from endemic Caribbean plants, is divided into two parts, Part I and Part II.

Part I consists of a review of the metabolites of the genus *Clusia* (Guttiferae) and a description of the isolation and characterization of eight pentacyclic triterpenes (Compounds A-F3) from *Clusia havetiodes* var. *stenocarpa*, a new prenylated benzophenone derivative (Compound G) from *Clusia portlandiana* and seven new prenylated benzophenone derivatives (Compounds H-N) and a triterpene (Compound O) from *Clusia plukenetii*. Part I also deals with the isolation and characterization of triterpenes (Compounds P-R) from *Quiina jamaicensis* (Quinaceae). These structures were solved by the use of 2D NMR experiments.

Part II consists of a review of the secondary metabolites of *Phyllanthus* (Euphorbiaceae). Isolation and characterization of two polyisoprenes (Compound S and Compound T), as well as two pentacyclic triterpenes (Compound U and Compound V) from *Phyllanthus latifolius* is also described.

Section B contains a brief review of methods of preparing chromene derivatives and outlines the approaches used in the preparation of 5-methoxy-2,2-dimethyl-2H-1-benzopyran-6-propanoic acid methyl ester. Preliminary biological testing of this compound is also outlined.