ABSTRACT

A CHEMOTAXONOMICAL INVESTIGATION OF MARINE OCTOCORALS OF THE GENUS *EUNICEA*

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This thesis is divided into six chapters:

Chapter one outlines the classes of diterpenes isolated from various species of *Eunicea*. This genus is known to biosynthesise diterpenes of the cembrane, dolabellane, cubitane, dilophol and fuscoside classes. Diterpenoids of the cembrane class, however, consitute the largest percentage of diterpenes that have been isolated thus far. Other interesting non-diterpenoid secondary metabolites isolated from this genus are also discussed.

Chapter two describes the chemical investigation of *Eunicea tourneforti / fusca* complex. This investigation resulted in the isolation of four new cembrane diterpenes, one known cembrane diterpene and a diterpene of the fuscoside class named fuscoside B.

Chapter three describes the chemical investigation of *Eunicea tourneforti*. This investigation led to the isolation of two known dolabellane diterpenes.

A chemical investigation of unidentified *Eunicea* species led to the isolation of a new cembrane diterpene, a new steroidal glycoside and the known 7α-hydroxysitosterol. This chemical investigation is reported in chapter four.

Chapter five reports the chemical investigation of *Eunicea calyculata* from which a new cubitane diterpene and the known dinosterol were isolated.

Chapter six analyses the use of secondary metabolite content of gorgonians chemically investigated as a chemotaxonomic tool.

The various types of diterpenes isolated from the genus *Eunicea* could be used as a chemotaxonomic tool (*Tetrahedron* **1995**, 51, 4571-4618). From the extensive literature research carried out on the *Eunicea* genus, it was discovered that a particular class or classes of diterpenes were common to a particular species of *Eunicea*. This class of diterpene was not solely produced by the species but constituted a major percentage of the diterpenoid composition of the species.