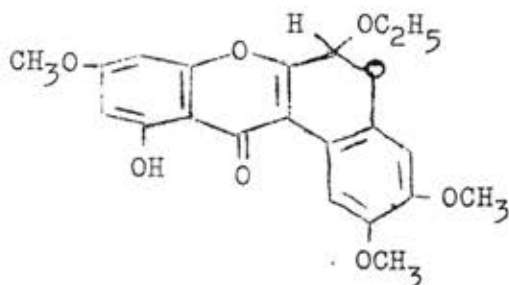


Chapter I

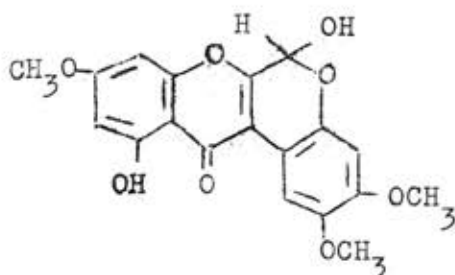
INTRODUCTION

Stemona collinsae is a climber plant and can be found generally in tropical forests. It belongs to the family Stemonaceae. Extract of its root has been used as an insecticide and sometimes as drugs (carminative, anthelmintic, phthesis). Active ingredients which act as insecticide are mostly found to be alkaloidal base. In an attempt to extract active ingredient from *stemona collinsae* roots (Pakasem, 1967), three compounds of Rotenoids were found : They are believed to be



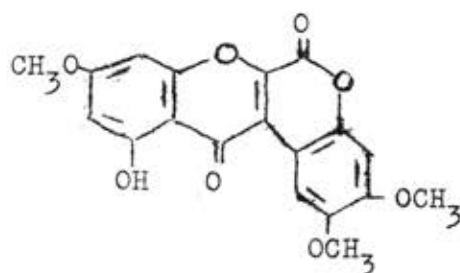
Stemonacetal

m.p. 203-4 °C



Stemonal

m.p. 215-6 °C (d)



Stemonone

m.p. 229-30 °C (d)

Stemonone which appeared as needle shaped single crystals with transparent orange colour was chosen to study by x-ray diffraction method.

Initially it was hoped that the structure factor of Stemonone could be determined but the crystal system turns out to be triclinic, the lowest symmetry in crystals system, and it was possible only to perform preliminary determination of the crystallographic parameters in the available time. The present investigation includes the determination of the crystal system, unit cell dimensions, the number of molecules per unit cell, the observed and calculated densities, and the space group of the extract Stemonone (mp. $229-30^{\circ}\text{C}$) of *stemona collinsae* roots, supplied to us by Dr. Dep Shiengthong and Miss. Vichitra Pakasem (Mrs. Uaprasert). Chapter two summarizes the principles of Laue photograph, Rotation and Weissenberg photographs which were the techniques used in this experiment. Chapter three contains a description of the procedures for correcting data, as well as the calculations for the desired results. Chapter four consists of discussions of the obtained results.