INTRODUCTION

Investigations described in Section (A) of this thesis comprise the results of experiments, which have been carried out with a view to building up a few carbocyclic systems, closely analogous to guaianolides. This interesting chapter of sesquiterpenoids has recently been explored with commendable success through the isolation of several representative members of this group. It has also thrown considerable light on the biogenesis of terpenoid bodies in nature. It appears that synthetic studies in this field have not been initiated with much success until now. In Part (i) of this section, the synthesis of an important bicyclic intermediate has been described in detail. It was expected that, in analogy with the success achieved in the field of santonins, this bicyclic compound would again serve as a key-compound for the synthesis of the fundamental skeleton of guaianolides. The extension of this line of investigation has not been very encouraging. In Part (ii), the carbon framework of a monocarbocyclic sesquiterpenoid, Xanthatin, closely related to guaianolide, has been built up with the possibilities of extending the same to the synthesis of dihydroxanthatin.

Section (B) deals with studies on the synthesis of different isomers of santonin. This problem was being investigated in this laboratory during the past few years and a few communications have appeared on the synthesis of santonin C and santonin D. A part of these studies has been included in Part (i)
of this section. Part (ii) is concerned with some exploratory studies for the synthesis of a diketo-acid, which was originally expected to be useful for the synthesis of naturally occurring α- and β- santonins. The latter aspect has recently been investigated by Tahara from the diketo-acid prepared from natural santonins.

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