

STUDIES
IN
DIHYDROXYDIARYLS AND OTHER COMPOUNDS

INTRODUCTION

Introduction

Phenols are very reactive substances and they undergo a large number of reactions to give products of industrial, agricultural, medicinal and other importance. Extensive studies have therefore been made on these substances. They are also the starting materials for the synthesis of different types of oxygen heterocycles. The studies on biphenols and hydroxy derivatives of diphenyl methane, benzophenone and diphenyl sulfone are comparatively meagre. Biflavonyls and bicoumarinyls have also been found in nature in recent years and this has also increased our interest in the studies on diphenyl derivatives.

Some work has been done in our laboratories on the electrophilic substitution in hydroxy derivatives of diphenyl and benzophenone. A few syntheses of oxygen heterocycles from hydroxy derivatives of diphenyl and benzophenone have also been carried out, which are described in the relevant chapters. The present work is an extension of this work and deals with the synthesis of oxygen heterocycles from the appropriate derivatives of 2,2'- and 4,4'-dihydroxydiphenyl, 2,2'- and 4,4'-dihydroxydiphenyl methane, 4,4'-dihydroxybenzophenone and 4,4'-dihydroxydiphenyl sulfone.

In Chapter I, the cyanoethylation of 2,2'- and 4,4'-dihydroxydiphenyl, 2,2'- and 4,4'-dihydroxydiphenyl methane, 2,2'- and 4,4'-dihydroxybenzophenone and 4,4'-dihydroxydiphenyl sulfone and the synthesis of 8,8'- and 6,6'-bichromonyl,

8,8'-and 6,6'-bichromonyl methane, 6,6'-bichromonyl ketone and 6,6'-bichromonyl sulfone from the cyanoethylation products has been described.

In Chapter II, the work on the synthesis of some bicoumarinyll methane, biflavonyll methane and biflavonyll sulfone derivatives from the appropriate derivatives of 4,4'-dihydroxydiphenyl methane and 4,4'-dihydroxydiphenyl sulfone has been described.

Chapter III deals with the syntheses of bibenzofuranyls such as bi(2-methyl-5-benzofuranyl), bi(5-benzofuranyl) methane, bi(3-methyl-5-benzofuranyl)methane, bi(2-methyl-5-benzofuranyl)ketone, bi(2-methyl-5-benzofuranyl)sulfone and bi(3-methyl-5-benzofuranyl)sulfone from the appropriate derivatives of diphenyl, diphenyl methane, benzophenone and diphenyl sulfone.

Chapter IV deals with the chloromethylation of 2,2'- and 4,4'-dimethoxydiphenyl methane and the attempted chloromethylation of 4,4'-dihydroxydiphenyl sulfone.