ORGANOMETALLIC AND COORDINATION DERIVATIVES

OF MAIN GROUP ELEMENTS

Glen Berenger Deacon, Ph.D. (Adelaide)

Department of Chemistry, Monash University

Thesis presented for the degree of

Doctor of Science of the University of Adelaide

September, 1971
### CONTENTS

Summary ........................................... 1
Signed Statement ................................. 11
Acknowledgements ............................... 111

**PREFACE**

- Table of Collaborators ...................... 2
- Comments on Collaborative Studies ....... 4

**INTRODUCTION** ................................. 8

**INDEX TO PUBLICATIONS** ................. 9

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Organomercury Compounds</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>Coordination Derivatives of Zinc, Cadmium, and Mercury</td>
<td>13</td>
</tr>
<tr>
<td>C</td>
<td>Organothallium Compounds</td>
<td>15</td>
</tr>
<tr>
<td>D</td>
<td>Organophosphorus and Organoarsenic Compounds</td>
<td>17</td>
</tr>
<tr>
<td>E</td>
<td>Other Main Group Elements and General Section</td>
<td>19</td>
</tr>
<tr>
<td>F</td>
<td>Miscellaneous</td>
<td>20</td>
</tr>
</tbody>
</table>

**PUBLICATIONS**

The Publications for each section follow a section title page.
SUMMARY

This thesis presents a series of publications relating to the chemistry of organometallic and coordination derivatives of main group elements. Investigations have centred on organomercury compounds, coordination derivatives of zinc, cadmium, and mercury, organothallium compounds, and organophosphorus and organoarsenic compounds, together with less extensive studies of organoindium, organolead, and organobismuth compounds. Emphasis has been placed on the chemistry of organometallics with electronegative substituents in the organic groups, on elimination reactions in organometallic synthesis, on structures of sulphinate and carboxylate complexes, on organometallic coordination chemistry, and on the infrared spectra of organometallic compounds and main group element halide complexes.