

## C O N T E N T S

|   | Page    |
|---|---------|
| CHAPTER I   |         |
| INTRODUCTION:   | 1 - 35  |
| RECENT PROGRESS IN SESQUI-<br>TERPENE CHEMISTRY               |         |
| Monocyclic  | 2       |
| Bicyclic  | 6       |
| Tricyclic   | 20      |
| Tetracyclic   | 26      |
| Biogenesis  | 27      |
| References  | 30      |
| CHAPTER II  |         |
| ISOLATION OF HIMACHALENES                                     | 36 - 50 |
| The tree  | 36      |
| The essential oil   | 36      |
| Himachalenes  | 40      |
| Experimental  | 41      |
| Summary   | 49      |
| References  | 50      |
| CHAPTER III   |         |
| DETERMINATION OF THE STRUCTURE<br>OF HIMACHALENES             | 51 - 97 |
| Relationship between<br>$\alpha$ - and $\beta$ -himachalenes. | 51      |
| Structural features   | 53      |
| Determination of the carbon<br>skeleton                       | 56      |
| Structure of $\beta$ -himachalene                             | 60      |
| Structure of $\alpha$ -himachalene                            | 64      |

|  | Page      |
|--|-----------|
| Experimental   | 67        |
| Summary  | 95        |
| References   | 96        |
| CHAPTER IV ABSOLUTE STEREOCHEMISTRY OF<br>HIMACHALENES   | 98 - 127  |
| $\alpha$ -Himachalene  |           |
| Nature of ring-fusion  | 98        |
| Absolute Stereochemistry   | 107       |
| $\beta$ -Himachalene   | 110       |
| Experimental   | 112       |
| Appendix   | 119       |
| Summary  | 125       |
| References   | 127       |
| CHAPTER V STRUCTURE OF HIMACHALENE<br>MONOHYDROCHLORIDE AND THE<br>PREPARATION OF TRANS-HIMACHALENES | 128 - 141 |
| Structure of Himachalene<br>monohydrochloride  | 128       |
| Trans-himachalenes   | 133       |
| Experimental   | 136       |
| Summary  | 140       |
| References   | 141       |
| CHAPTER VI BIOGENETIC CONSIDERATIONS   | 142       |
| References   | 144       |
| Acknowledgement .. .. .  | 145       |