

Contents

Preface	page vii
1 Introduction	
1.1 <i>Aromatic character</i>	1
1.2 <i>The structural formula of benzene</i>	3
1.3 <i>The application of physical methods to the benzene problem</i>	5
1.4 <i>The application of wave mechanics</i>	10
1.5 <i>Polycyclic benzenoid hydrocarbons</i>	18
1.6 <i>Heterocyclic aromatic compounds</i>	24
1.7 <i>Aromaticity</i>	36
2 Some consequences of aromaticity	
2.1 <i>Bond lengths</i>	38
2.2 <i>Resonance energies</i>	43
2.3 <i>Electronic absorption spectra</i>	53
2.4 <i>Induced ring currents</i>	61
3 Non-benzenoid hydrocarbons	
3.1 <i>Hückel's rule</i>	71
3.2 <i>2π-Electron systems</i>	73
3.3 <i>4π-Electron systems</i>	77
3.4 <i>6π-Electron systems</i>	81
3.5 <i>8π-Electron systems</i>	88
3.6 <i>10π-Electron systems</i>	92
3.7 <i>12π-Electron systems</i>	95
3.8 <i>14π-Electron systems</i>	96
3.9 <i>16π-Electron systems</i>	99

vi		<i>Contents</i>
	3.10	<i>18π-Electron systems</i> <i>page</i> 100
	3.11	<i>20π-Electron systems</i> 107
	3.12	<i>24π-Electron systems</i> 107
	3.13	<i>30π-Electron systems</i> 107
	3.14	<i>Examination of Hückel's rule</i> 108
4	More complex systems	
	4.1	<i>Fulvenes and fulvalenes</i> 110
	4.2	<i>Metallocenes</i> 113
	4.3	<i>Bicyclic systems</i> 118
	4.4	<i>Tricyclic and other systems</i> 124
	References	126
	Index	131