

## CONTENTS

**Part I Terpenoids**

Chapter 1	Monoterpenoids	3
1	Physical Measurements: Spectra etc.; Chirality	3
2	General Synthetic Reactions	6
3	Biogenesis, Occurrence, and Biological Activity	10
4	Acyclic Monoterpenoids	14
5	Monocyclic Monoterpenoids	21
6	Bicyclic Monoterpenoids	35
7	Furanoid and Pyranoid Monoterpenoids	47
8	Cannabinoids and other Phenolic Monoterpenoids	48
Chapter 2	Sesquiterpenoids	52
1	Farnesanes	52
2	Bisabolanes	56
3	Sesquicarane	59
4	Sesquipinane (Bergamotane), Sesquifenchane, Sesquicamphane, Santalane	60
5	Acorane, Carotane, Cedrane	61
6	Cuparane, Laurane, Trichothecane, Cyclotrichothecane	62
7	Chamigrane etc.	64
8	Amorphane, Cadinane, Copacamphane, Sativane, etc.	65
9	Himachalane, Longipinane, Longicamphane, Longifolane etc.	69
10	Humulane, Caryophyllane, Hirsutane, Protoilludane, Illudane, Marasmane	71
11	Germacrane, Eudesmane, Vetispirane	75
12	Guaiane, Aromadendrane, Pseudoguaiane	88
13	Mono- and Bi-cyclofarnesanes	91
14	Miscellaneous	94
Chapter 3	Diterpenoids	96
1	Introduction	96
2	Bicyclic Diterpenoids	97
3	Tricyclic Diterpenoids	100
4	Tetracyclic Diterpenoids	105
5	Macrocyclic Diterpenoids and their Cyclization Products	112
6	Miscellaneous Diterpenoids	115
7	Diterpenoid Synthesis	116

Chapter 4	Triterpenoids	118
1	Squalene Group	118
2	Fusidane-Lanostane Group	120
3	Dammarane-Euphane Group	123
4	Shionane Group	129
5	Lupane Group	130
6	Oleanane Group	132
7	Ursane Group	139
8	Hopane Group	140
9	Serratane Group	141
Chapter 5	Carotenoids and Polyterpenoids	144
1	Introduction	144
2	Carotenoids	144
3	Polyterpenoids and Quinones	165
Chapter 6	Biosynthesis of Terpenoids and Steroids	169
1	Introduction	169
2	Acyclic Precursors	170
3	Hemiterpenoids	177
4	Monoterpenoids	177
5	Sesquiterpenoids	180
6	Diterpenoids	187
7	Sesterterpenoids	190
8	Steroidal Triterpenoids	190
9	Further Metabolism of Steroids	200
10	Non-steroidal Triterpenoids	208
11	Carotenoids	209
12	Polyterpenoids	211
13	Meroterpenoids	211
14	methods	215
15	Chemotaxonomy	217

## Part II Steroids

Chapter 1	Steroid Properties and Reactions	221
1	Structure, Stereochemistry, and Conformational Analysis	221
2	Alcohols and their Derivatives, Halides, and Epoxides	226
3	Unsaturated Compounds	234
4	Carbonyl Compounds	242
5	Compounds of Nitrogen and Sulphur	258
6	Molecular Rearrangements	260
7	Functionalization of Non-activated Positions	268
8	Photochemical Reactions	269
9	Miscellaneous	274
Chapter 2	Steroid Synthesis	276
1	Total Synthesis	276
2	Halogeno-steroids	284
3	Oestrans	286
4	Androstanes	289
5	Pregnanes	306
6	Seco-steroids	310
7	Cholestane and Analogues	313
8	Steroid Insect and Plant Hormones	330
9	Steroid Alkaloids	331
10	Sapogenins	335
11	Cardenolides	336
12	Bufadienolides	341
	Errata	344
	Author Index	345