

Contents

1. Historical Aspects	1
1.1. Scents of Time	1
1.2. Chemical Discoveries and Modern Perfumery	5
2. The Chemical Senses	23
2.1. Anatomy, Physiology, and Biochemistry of Olfactory Receptors	23
2.2. Description and Classification of Odor Impressions	31
2.3. Quantitative Odor Perception	37
2.4. Glossary	49
3. Structure–Odor Relationships	61
3.1. Physicochemical Properties of Odorants and the Concept of Osmophoric Groups	61
3.2. Structure–Odor Correlations	70
3.3. Molecular Shape and Odor – The Early Theories	73
3.4. The Concept of Profile and Bulky Groups	75
3.5. Unsaturated Compounds	80
3.6. Diastereoisomers	84
3.7. Steroid-Type Odorants	86
3.8. Odor Rules	96
3.9. Bifunctional Units: Muguet and Caramel Odorants	107
3.10. QSAR: Homology vs. Olfactophore Models	117
3.11. Enantioselectivity of the Odor Sensation	127
4. Odorants from Natural Sources	141
4.1. Important Terpene Building Blocks	141
4.2. Odorants from α - and β -Pinene	144
4.3. Synthetic Odorants from Cyclic Monoterpenes	147
4.4. Acyclic Odorants of the Monoterpene Series	152
4.5. Odorants from 3,7-Dimethylocta-1,6-diene	154
4.6. Odorants by Functionalization of Myrcene	162

4.7. Odorants from (–)-Caryophyllene and (+)-Longifolene	168
4.8. Odorants from α -Cedrene and Thujopsene	172
5. Odorants from Petrochemical Sources	179
5.1. Isoprene as Starting Material for the Synthesis of Odorants. .	179
5.2. Isobutene and 3-Methylbut-1-en-2-ol as Starting Materials . .	181
5.3. Terpenoids from Isobutene	185
5.4. (–)-Menthol	186
6. Ionones, Damascones, and <i>Iso E Super</i>	191
6.1. Violet and Orris Odorants.	191
6.2. Rose Ketones.	197
6.3. Isocyclemones	207
Ionone-Type Materials in Perfumery.	214
7. Essential Oils.	221
7.1. Citrus Oils	221
Citrus Notes in Perfumery.	235
7.2. Petitgrain Oil.	237
Petitgrain in Perfumery	239
7.3. Neroli Oil/Orange Blossoms	240
Neroli/Orange Blossoms in Perfumery	241
7.4. Lavender Oil	242
Lavender Notes in Perfumery	245
7.5. Clary Sage Oil	247
Clary Sage in Perfumery	250
7.6. Patchouli Oil	251
Patchouli Notes in Perfumery	257
7.7. Jasmine Absolute.	259
Jasmine Notes in Perfumery	264
7.8. Rose Oil.	266
Rose Notes in Perfumery	270
7.9. Geranium Oil	272
Geranium Notes in Perfumery	274
7.10. Violet Oil.	275
Violet Leaf Oil and Absolute in Perfumery	280
7.11. Orris Oil	281
Orris Notes in Perfumery	283
7.12. Osmanthus Oil.	284
Osmanthus in Perfumery.	290

7.13. Vetiver Oil	291
Vetiver Notes in Perfumery	295
7.14. Cedarwood Oil	296
Cedarwood in Perfumery	298
7.15. Sandalwood Oil	300
Sandalwood Oil in Perfumery	305
7.16. Galbanum	307
Galbanum Notes in Perfumery	311
7.17. Labdanum	312
Labdanum Notes in Perfumery	316
7.18. Oakmoss	317
Oakmoss Notes in Perfumery	321
7.19. Incense and Myrrh	322
Incense and Myrrh in Perfumery	325
7.20. Black and Pink Pepper	326
Black and Pink Pepper in Perfumery	331
 8. Odorants of Animal Origin	 339
8.1. Musk and Civet	339
8.2. Industrial Synthesis of Macrocyclic Odorants	345
8.3. Non-Natural Musks	356
8.4. Ambergris	364
8.5. Castoreum	372
Animalic Notes in Perfumery	374
 Subject Index	 381
Perfume Index	413