

Contents

PART I

General

PREFACE

| | |
|--|-----|
| CONTENTS OF VOLUME 2 | xxi |
| CHAPTER 1. Nomenclature of Polycyclic Hydrocarbons | |
| CHAPTER 2. Carbon Atoms, <i>p</i> -Electrons and Hybridization | |
| CHAPTER 3. The C=C Double Bond and Conjugation in Butadiene | |
| CHAPTER 4. Theories about the Aromatic Bonds in Benzene | 10 |
| CHAPTER 5. The Significance of Double Bonds and Kekulé Structures for the Stability of Aromatic Systems | |
| CHAPTER 6. The Aromatic Sextet and its Significance in Relation to the Stability of Aromatic Systems | 32 |
| CHAPTER 7. The Annellation Principle | 40 |
| CHAPTER 8. Asymmetric Annellation Effects | 70 |
| CHAPTER 9. The Relation between <i>p</i> -, α - and β -Bands, Phosphorescence Bands and the Reactive <i>p</i> -State in Aromatic Hydrocarbons | 86 |
| CHAPTER 10. The Ionization Potentials and the Electronic Levels of the Aromatic Sextet | 105 |
| CHAPTER 11. The Tautomerism of Phenols | 108 |
| CHAPTER 12. The Relation between Hydroquinols and Quinones | 10 |
| CHAPTER 13. Magnetic Properties of Aromatic Hydrocarbons | 13 |
| CHAPTER 14. The Electrical Conductivity of Aromatic Hydrocarbons | 118 |
| CHAPTER 15. The C—C Bond Length in Polycyclic Hydrocarbons | 119 |
| CHAPTER 16. Non-coplanar, Overcrowded Aromatic Hydrocarbons | 126 |
| CHAPTER 17. The Possibility of Bond Fixation by Substitution | 130 |

CHAPTER 18. Carcinogenesis by Polycyclic Aromatic Hydrocarbons and by Certain Other Carcinogens, *by* Regina Schoental

CHAPTER 19. General Methods for the Preparation of Aromatic Hydrocarbons

PART II

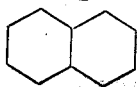
kata-Annellated Hydrocarbons

CHAPTER 20. Benzene:



CHAPTER 21. Hydrocarbons Containing up to Two Linearly Annellated Benzene Rings:

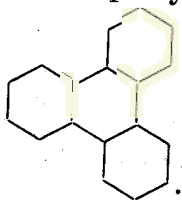
I. Naphthalene



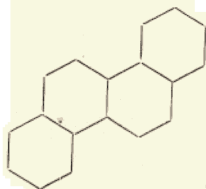
II. Phenanthrene



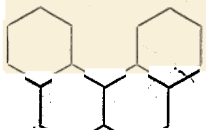
III. Triphenylene



IV. Chrysene

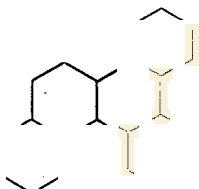


V. 3,4-Benzophenanthrene

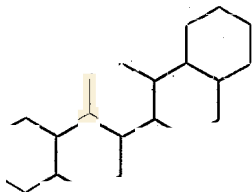


256

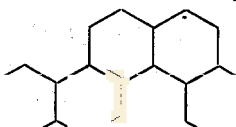
VI. 1,2-Benzochrysene



VII. Picene

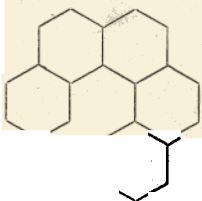


VIII. 5,6-Benzochrysene



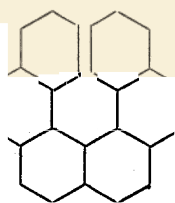
275

IX. 3,4,5,6-Dibenzophenanthrene

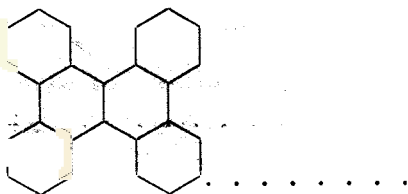
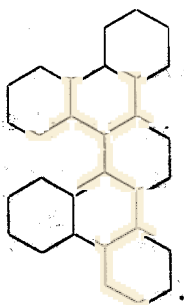
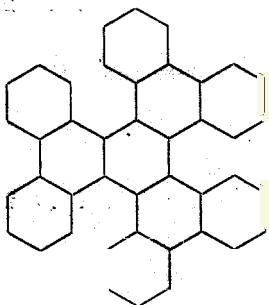
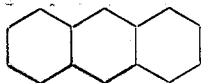


277

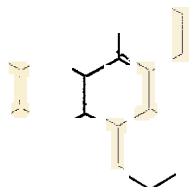
X. Hexahelicene



281

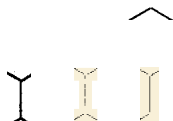
XI. 1,2,7,8-Dibenzochrysene**XII. 11,12,13,14-Dibenzopicene****XIII. 1,2,3,4,5,6,7,8,9,10,11,12-Hexabenzotriphenylene****CHAPTER 22. Hydrocarbons Containing Three Linearly Annellated Benzene Rings:****I. Anthracene****II. Tetraphene**

III. 1.2,3,4-Dibenzanthracene



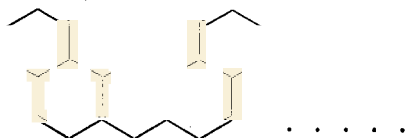
322

IV. 1.2,5,6-Dibenzanthracene



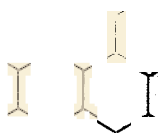
329

V. 1.2,7,8-Dibenzanthracene



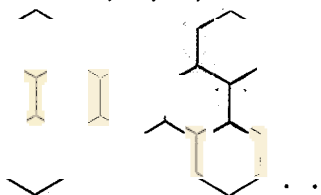
337

VI. 1.2,3,4,5,6-Tribenzanthracene



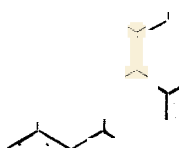
341

VII. 1.2,3,4,5,6,7,8-Tetrabenzanthracene

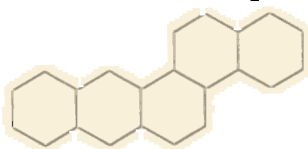


343

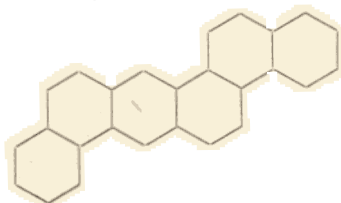
VIII. 1.2-Benzotetraphene



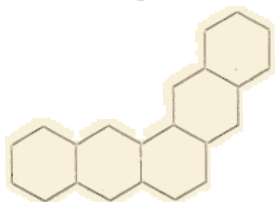
345

IX. 3,4-Benzotetraphene

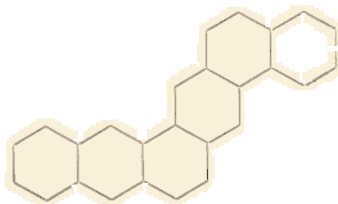
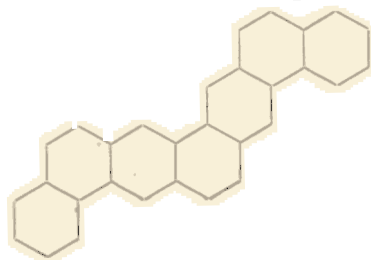
347

X. 3,4,8,9-Dibenzotetraphene

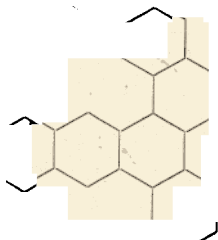
351

XI. Pentaphene

353

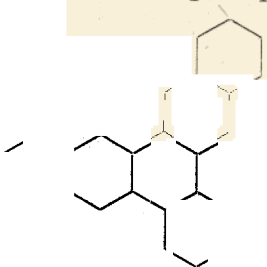
XII. 3,4-Benzopentaphene**XIII. 3,4,9,10-Dibenzopentaphene**

XIV. 1,2,5,6-Dibenzotetraphene



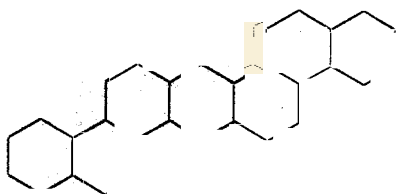
363

6,7-Benzopentaphene



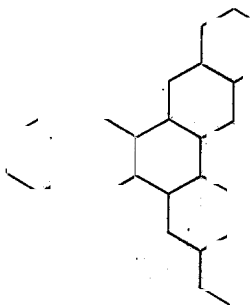
364

Dinaphtho-(2'.1':1.2);(2".1":5.6)-anthracene

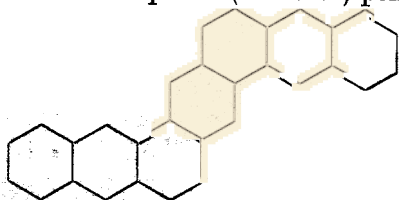
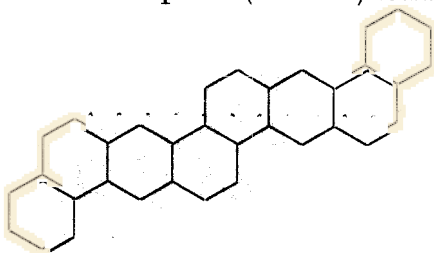


365

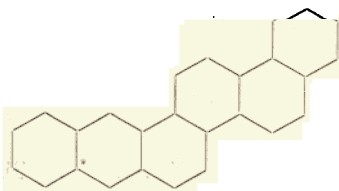
XVII. Naphtho-(2'.3':6.7)-pentaphene



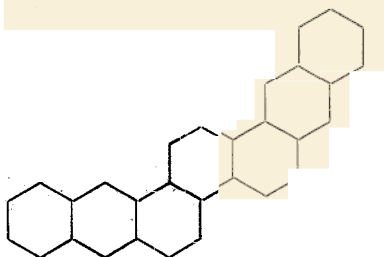
36

XVIII. Naphtho-(2'.3':3.4)-pentaphene**XIX. Anthraceno-(2'.1':1.2)anthracene****XX. Anthraceno-(2'.1':8.9)-tetraphene****XXI. Tetrapheno-(9'.8':8.9)-tetraphene**

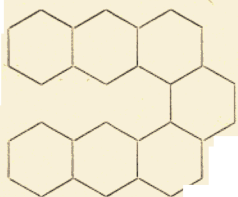
379

XXII. 2.3-Benzopicene

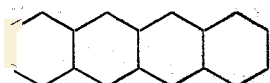
380

XXIII. 2,3,8,9-Dibenzopicene

382

XXIV. Anthraceno-(1'.2':1.2)-tetraphene

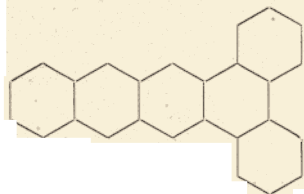
383

CHAPTER 23. Hydrocarbons with Four Linearly Annellated Benzene Rings:**I. Tetracene**

386

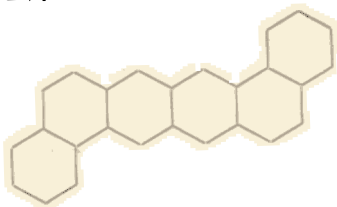
II. 1,2-Benzotetracene

401

III. 1,2,3,4-Dibenzotetracene

406

IV. 1.2.7.8-Dibenzotetracene



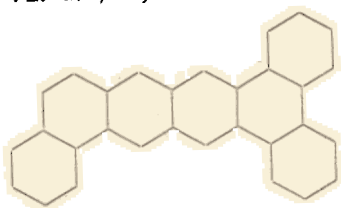
409

V. 1.2.9.10-Dibenzotetracene



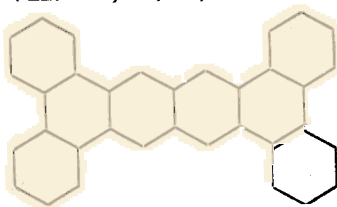
411

VI. 1.2,3.4,7.8-Tribenzotetracene



413

VII. 1.2,3.4,7.8,9.10-Tetrabenzotetracene



414

VIII. Hexaphene



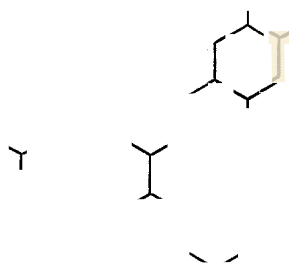
416

IX. Heptaphene



418

X. 7.8-Benzoheptaphene



CHAPTER 24. Hydrocarbons with Five Linearly Annellated Rings

I. Pentacene



423

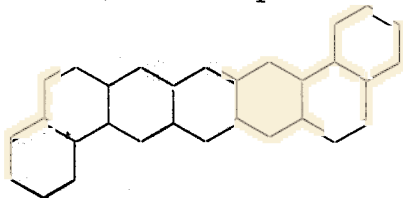
II. 1.2-Benzopentacene



1.2,3.4-Dibenzopentacene

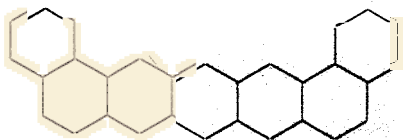


IV. 1,2,8,9-Dibenzopentacene



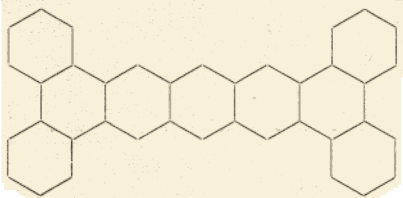
and

1,2,10,11-Dibenzopentacene



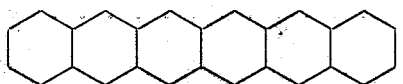
440

V. 1,2,3,4,8,9,10,11-Tetrabenzopentacene



CHAPTER 25. Hydrocarbons with Six Linearly Annellated Rings:

I. Hexacene

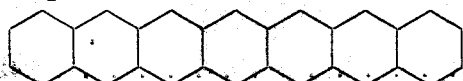


II. 1,2-Benzoheptacene

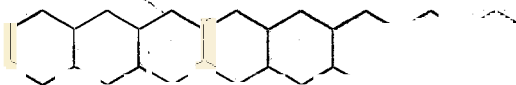
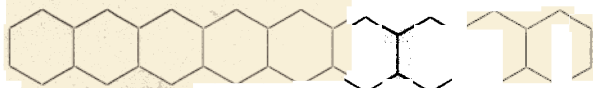


CHAPTER 26. Hydrocarbons with Seven Linearly Annellated Rings:

Heptacene



455

**CHAPTER 27. Hydrocarbons with Eight and More Linearly Annellated
Rings:****I. Octacene****II. Nonacene****III. Undecacene****AUTHOR INDEX****467**