Contents

1. Approaching the Study of Pain 1

Experience of Pain / Historical Perspective on the Problem of Conceptualizing Pain / Approaching the Scientific Study of Pain / Biological Functions of Pain / Reasons for the Study of Pain

2. Measurement of Pain: Sensory-Discriminative Features 18

Measurement and Pain / Methods of Pain Measurement in Humans / Psychophysiological Correlates of Pain in Humans / Measuring Pain in Animals / Convergence of Pain Assessment Methods in Determining Sensory-Discriminative Features of Pain

3. Cognitive-Evaluative and Affective Dimensions of Pain 50

Theories of Emotion and Emotions During Pain / Studies of the Affective Dimensions of Experimental and Clinical Pain / Conclusions About Interrelationships Between the Three Dimensions of Pain

4. Primary Afferents Subserving Pain 76

Determining Which Classes of Neurons Subserve Pain / Primary Afferent Nociceptive Neurons / Summary and Conclusions

5. Spinal Cord Mechanisms Subserving Pain 100

Spinal Cord Neurons that Subserve Pain / Microcircuitry and Neural Mechanisms Within the Dorsal Horn / Characteristics of Central Destinations of Spinal Cord Nociceptive Pathways

6. Brain Processing of Nociceptive Information 150

Medullary and Midbrain Mechanisms of Pain / Thalamic Mechanisms of Pain / Cortical Mechanisms of Pain / Summary and Conclusions

7. Physiological and Psychological Mechanisms of Pain Inhibition 181

Historical Development of the Discovery of Endogenous Pain Control Mechanisms / Physiological Activation of Centrifugal Pain Inhibitory Pathways / Analgesic Mechanisms in Humans and Their Characterization

8. Classical and Current Theories of Pain Mechanisms 211

Classical Theories of Pain / Current Theories of Pain

Subject Index 233