Central Processing of Visual Information: A: Integrative Functions and Comparative Data-H. Autrum 1973-11-26 The present volume covers the physiology of the visual system beyond the optic nerve. It is a continuation of the two preceding parts on the photoreceptor and the physiology of the eye, and forms a bridge from them to the fourth part on visual psychophysics. These fields have all developed as independent special ties and need integrating with each other. The processing of visual information in the brain cannot be understood without some knowledge of the preceding mechanisms in the photoreceptor organs. There are two fundamental reasons, ontogenetic and functional, why this is so: 1) the retina of the vertebrate eye has developed from a specialized part of the brain; 2) in processing their data the eyes follow physiological principles similar to the visual brain centres. Peripheral and central functions should also be discussed in context with their final synthesis in subjective experience, i.e. visual perception. Microphysiology and ultramicroscopy have brought new insights into the neuronal basis of this visual. These investigations began in the periphery: HARTLINE’S pioneering experiments on single visual elements of Limulus in 1932 started a successful period of neuronal recordings which ascended from the retina to the highest centres in the visual brain. In the last two decades modern electron microscopic techniques and photochemical investigations of single photoreceptors further contributed to vision research.

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prerequisite for normal visual function. Over the past 40 years our knowledge of ocular blood flow regulation has improved significantly. This reader-friendly textbook provides a comprehensive overview of the current knowledge of ocular blood flow. Lavishly illustrated, it evaluates the wide array of methods that have been used to measure ocular blood flow. Furthermore, it not only offers the reader an evidence-based summary of the physiological and pharmacological properties of ocular blood flow regulation, but also demonstrates the ocular blood flow abnormalities in different vascular diseases. This book will enhance the understanding of all who are interested in learning more about ocular blood flow in health and disease.