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Nota di contenuto	Preface; CONTENTS; INTRODUCTORY LECTURE; The Optics of Animal Eyes; MOLECULAR LEVEL; Rhodopsin-like Proteins: The Universal and Probably Unique Proteins for Vision; Photoreception Before Men; The Molecular Design of a Visual Cascade: Molecular Stages of Phototransduction in Drosophila; The Molecular Design of a Visual Cascade: Assembly of the Drosophila Phototransduction Pathway into a Supramolecular Signaling Complex; Molecular Changes During Primary Visual Pathway Development; Metabolism of a Synaptic Protein in Mature Retinal Terminals In Vivo: Implications for Alzheimer's Disease Site Directed Mutagenesis of Phosphorylation Sites in the C-terminal Region of Drosophila RH1 OpsinIsolation of Novel Eye-specifically Expressed Genes by Differential Hybridization of a Retinal cDNA Library of Calliphora vicina; CELLULAR LEVEL; What Do Butterflies ""See"" with Their Genitalia? Biological Function of the Genital Photoreceptors of the Swallowtail Butterfly Papilio xuthus; Color Vision and Retinal Randomness of the Japanese Yellow Swallowtail Butterfly Papilio xuthus; Patch-clamping Solitary Visual Cells to Understand the Cellular Mechanisms of Invertebrate Phototransduction Phototransduction in a Depolarizing Photoreceptor of VertebratesPhototransduction in Retinal Rods and Cones; Formation of

""ON"" and ""OFF"" Ganglion Cell Mosaics; Developmental Specificity of Retinal Projections in the Prenatal Monkey; Hyperpolarizing vs Depolarizing Photoreceptors: Implications for the Length of the Light Sensitive Region and for the Conductance of the Photosensitive Channels; Subcellular Localization of InsP3 Receptor-like Immunoreactivity in Invertebrate Microvillar Photoreceptors; Light Adaptive Effect of Nitric Oxide on Cone Plasticity in Fish and Amphibian Retinae

Possible Relationships Between the Shaping of Asymmetrical Projections of the Frontal Organ with Asymmetrical Habenular Activity During the Frog Brain Development; Effect of Photic Stimulation and Photodeprivation in the Taurine Content in Discrete Brain Regions and Retina; INTEGRATIVE LEVEL; The Roles of Eye Movements in Animals; Endogenous Nitric Oxide Modulates Signal Transmission from Photoreceptors to On-center Bipolar Cells in the Rabbit Retina; Colour Matching in Red/Green Chromaticity Type Horizontal Cells of the Turtle Retina

Now You See It Now You Don't: Shunting Inhibition in Early Vision; Perceptual Learning as a Sign of Adult Cortical Plasticity; Pigeons' Visual Field When Binocularity is Kept Out at Different Life Stages; Decision Time for Correct and Incorrect Responses in Size Discrimination; Learning of Combined-Features Search: Specificity of Stimulus Characteristics; Parafoveal Preview Facilitation in a Lexical Decision Task is Visually Based; Masking Effect in Orienting of Attention; The Modulation of Multistable Visual Perception and the Intentional Penetrability of Visual Processing; Influence of Dot Number and Angle Amplitude on Muller-Lyer Illusion

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#### Sommario/riassunto

The light sense is conceivably the key sense in both the animal and the plant kingdom. Vision research, undoubtedly a fast-growing field, is providing impressive results - thanks to modern theoretical and methodological advances. The approach of biophysics and neuroscience seems to be of great benefit and, for this reason, the present book gives an outline of recent acquisitions and updated advanced methods concerning this approach. Visual mechanisms and processes are analysed at several (molecular, cellular, integrative, computational and cognitive) levels by different methodologies (from mol

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