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Nota di contenuto	Cover; Contents; 1 The origin of vision; The first eyes; Evolution of the essential components of visual systems; Evolution of visual function; The diversity of eye design; Summary; 2 Light and vision; The nature of light; Light intensity; Contrast; Wavelength and colour; Polarization; Summary; 3 What makes a good eye?; Fundamentals; Resolution; Sensitivity; Conclusions; Summary; 4 Aquatic eyes: the evolution of the lens; Evolutionary origins; Pinhole eyes: giant clams and Nautilus; Under-focused lens eyes; Forming a sharp image; Eyes of fish and cephalopods; Matching eye to environment Eyes with non-spherical lensesSummary; 5 Lens eyes on land; A new optical surface; Basic optics of cornea and lens; Variations on the lens/cornea theme in land vertebrates; Amphibious eyes; Invertebrate eyes with corneal optics; Summary; 6 Mirrors in animals; Mirrors in eyes; The physical optics of animal reflectors; Uses of photonic reflectors in structures other than eyes; Summary; 7 Apposition compound eyes; Origins; A little history: apposition and neural superposition; Basic optics; Ecological variations in apposition design; The anomalous eyes of strepsipterans and trilobites; Summary 8 Superposition eyesIntroduction-the nature of superposition imagery;

Refracting superposition; Superposition and afocal apposition: the eyes of butterflies; Reflecting superposition; Parabolic superposition; Summary; 9 Movements of the eyes; Sampling the world in space and time; How humans acquire visual information; Are other animals like us?; Insect flight behaviour seen as eye movement; Translational saccades: head-bobbing in birds; Why not let the eyes wander? Some consequences of image motion; Exceptions: rotational scanning by one-dimensional retinae; Summary
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Sommario/riassunto

Animal Eyes provides a comparative account of all known types of eye in the animal. kingdom, outlining their structure and function with an emphasis on the nature of. the optical systems and the physical principles involved in image formation. A. universal theme throughout the book is the evolution and taxonomic distribution of. each type of eye, and the roles of different eye types in the behaviour and ecology. of the animals that possess them. In comparing the specificcapabilities of eyes, it. considers the factors that lead to good resolution of detail and the ability to. function under a w