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THE ELECTRICAL CHROMATICITY WAVES IN THE BRAIN IN COLOR VISION AND THEIR
RELATION TO THE BASIC BIOLOGIC FUNCTION OF UNIDIRECTIONAL RATE SENSITIVITY.
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Since the original discovery of Unidirectional Rate Sensitivity in 1960 (Ann. N.Y. Acad. Sci., 92, 946-969) the significance and our understanding of this basic biologic function has deepened. (Similarly to the need for two sets of muscles to move a limb in both directions, two channels of communication are seen to be needed in biologic design for transmitting information about change in a parameter equally well for both directions of change.) This function can also be shown to play a significant role in the electric brain correlates to color vision. These evoked potentials have spatial and temporal components characteristic of each color and, a fortiori, of changes in color at constant intensity. A new iterative mathematical technique for convenient computer analysis of the brain space components has been developed. A significant phenomenon is the ability of the brain to perceive yellow when red and green lights are presented to each eye separately. The potentials evoked by color changes are notably different and attenuated in color blindness. It would appear that one is observing the electric behavior of a brain mechanism balancing the various nerve impulses received from the retina related to color and intensity.