

Cytoarchitecture of the avian ventral lateral geniculate nucleus

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The avian thalamic ventral lateral geniculate nucleus (GLv) was studied by light microscopic techniques in order to understand its anatomy, neuronal composition, and the nature of its retinal and tectal afferents. The avian GLv is of considerable interest because physiological experiments show that it is the brain structure with the highest percentage of color-opponent responses (Maturana and Varela, '82). We used adult pigeons and quail for the present study. With Nissl techniques a predominance of medium-size neurons (58%) constitute the GLv. The shape, size, and orientation of the different neurons is highly variable throughout the GLv. With the Golgi methods, 5 classes of neurons are distinguished: I and IV (large), II (medium-size), III and V (small). Some class IV large neurons have bifurcated axons; no axons were distinguished on the small neurons. Optic fibers penetrating the GLv are often collateral branches of retinal axons that continue elsewhere. Fink-Heimer methods show th