The nucleus pretectalis principalis: A pretectal structure hidden in the mammalian thalamus

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 A defining feature of the amniote tecto-fugal visual pathway is a massive bilateral projection to the thalamus originating from a distinct neuronal population, tectal ganglion cells (TGCs), of the optic tectum/superior colliculus (TeO/SC). In sauropsids, the thalamic target of the tecto-fugal pathway is the nucleus rotundus thalami (Rt). TGCs axons collateralize en route to Rt to target the nucleus pretectalis principalis (PT), which in turn gives rise to bilateral projection to the TeO. In rodents, the thalamic target of these TGCs afferents is the caudal division of the pulvinar complex (PulC). No pretectal structures in receipt of TGC collaterals have been described in this group. However, Baldwin et al. (Journal of Comparative Neurology, 2011;519(6):1071?1094) reported in the squirrel a feedback projection from the PulC to the SC. Pulvino-tectal (Pul-T) cells lie at the caudal pole of the PulC, intermingled with the axonal terminals of TGCs. Here, by