

The pattern of callosal connections in posterior neocortex of congenitally anophthalmic rats 1897 as a valid species of the genus *Callitetrarhynchus*

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Abstract

In an effort to assess the innate capacity of the central visual system to specify corticocortical connectivity in the absence of retinal afferents, we examined the tangential distribution of callosal cells and terminations in posterior neocortex of congenitally anophthalmic rats. Although our results indicate that the callosal pattern is clearly anomalous in these rats, all features of the normal visual callosal pattern are recognizable in mutant rats, indicating that central visual pathways can generate many aspects of normal interhemispheric connectivity in the absence of input from the periphery. On the other hand, the presence of anomalies in the pattern indicates that the eyes are necessary to finetune the distribution of callosal connections at some developmental stage. Moreover, the fact that abnormalities in the callosal pattern of mutant rats are the same as those previously described in rats enucleated at birth suggests that the eyes begin to exert their influence on callosal development after birth.

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