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## Tropical punctate keratopathy in cats

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Tropical keratopathy (Florida spots) is a common eye lesion of cats in tropical and subtropical areas which are clinically and epidemiologically similar to human punctate keratopathy (Rice's keratopathy) reported in the West Indies and in America. To determine the pathology of the cat lesions we performed light and electron microscopy on clinically typical lesions which revealed epithelial hyperplasia, thinning of the corneal stroma (by 4 to 18%) and occasional vacuoles in the basement membrane. Small-angle x-ray scattering analysis revealed greater diameters and variation in size of collagen fibrils in the corneal stroma containing the lesions compared to normal corneas ( $48.8 \pm 4.5$  nm versus  $35.5 \pm 2.6$  nm;  $P < 0.05$ ), but no difference in d-spacing in the lesion compared to normal corneal stroma. The average orientation index of the collagen across the corneal stroma containing the lesions was greater than that in normal corneas ( $0.428 \pm 0.08$  versus  $0.285 \pm 0.03$ , respectively;  $P < 0.05$ ). A survey revealed "Florida spots" lesions were static over time and only seldom became less obvious when cats were moved to temperate areas. Although tropical keratopathy of cats is macroscopically and epidemiologically similar to Rice's keratopathy, it is an anterior stromal disorder of unknown etiology, rather than epitheliolysis of the basal cells, epithelial detachment and fatty degeneration in Bowman's membrane, also of unknown aetiology.

## Biography

Susyn Kelly is a PhD student at Massey University in Palmerston North, New Zealand. Her thesis looks to investigate the nano-structural motifs of collagen in collagen based materials such as skins and the cornea. Her work builds upon key findings from the Haverkamp research group who has utilized the Australian Synchrotron to characterize collagen structures a range of collagen based materials at the nano-scale and there effect on physical characteristics

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