

Ultrastructure of the pineal gland in a nocturnal-bird (Strigiformes: *Carine noctua*)

**Maria Luisa Lucchi, Emilio Callegari, Alba Veggetti, Anna Maria Barazzoni,
Giovanna Lalatta Costerbosa, Cristiano Bombardi,
Annamaria Grandis and Roberto Chiocchetti**

Department of Veterinary Morphophysiology and Animal Productions. University of Bologna
40064 Ozzano Emilia (Bologna), Italy.

Key words: avian pineal gland, night bird, owl, *Carine noctua*, ultrastructure.

SUMMARY

The pineal body of a temperate nocturnal-bird (Strigiformes, *Carine noctua*) was investigated at light- and electron microscope. The gland is represented by a tubular structure with folded wall lined by columnar cells. In the semithin sections of the tubular wall two cellular types can be distinguished: pale and stained cells. The latter present an apical protrusion and are located in the criptae of the folds. On the electron microscope the pale and stained cells can be distinguished because of their low- and high-density cytoplasm, respectively. In both types of cells the Golgi area denotes an intense cellular activity. The apical protrusion contains floccular material or enlarged RER cisternae filled with proteinaceous material. The presence of noradrenergic nerve bundles and of cholinergic fibers forming typical synaptic contacts on the pineal cells is discussed in relation to a chemoreceptive, rather than photoreceptive, function.