

## Abstract

The Accipitridae are a family of predatory birds which comprise of species such as eagles, hawks, and Old-World vultures. They first appear in the fossil record in the late Eocene of Europe and North America, and today have a global distribution across all continents except Antarctica. Modern Australia is home to seventeen species of this family, including the iconic wedge-tailed eagle *Aquila audax*, but our understanding of the evolutionary and fossil history of these birds on this continent is severely lacking.

The research presented within this thesis includes the first description of a late Oligocene accipitrid (~26–24 million years ago) from the Namba Formation of Lake Pinpa, South Australia. This new species is represented by a partial skeleton, allowing detailed analysis and comparison. Morphological comparisons revealed the fossil taxon was very similar to species of the forest-dwelling hawks and eagles *Spizaetus* and *Spilornis*, and phylogenetic analysis with living Accipitridae determined the taxon most likely belonged to a unique basal subfamily that was potentially endemic to Australia (presented in chapter 2).

The Pleistocene fossil species "*Taphaetus*" *lacertosus* de Vis, 1905, had the original lectotype (a distal humerus) and associated material (a quadrate) redescribed. This determined that the original assessment of the humerus as a distinct species of accipitrid was valid, but the quadrate was in fact from a species of Ardeidae. In addition to this, undescribed fossil distal humeri from the Wellington Caves, New South Wales, were compared to the lectotype and determined to be referable to "*T.*" *lacertosus* based on their morphology. A tarsometatarsus (AM F.58093) from Wellington Caves was also referred to the taxon due to its association with the humeri, and by proxy a tarsometatarsus from Leaena's Breath Cave due to its similarity to the Wellington specimen. Phylogenetic analysis of the humeri and tarsometatarsi supported a position within the Aegyptiinae, a subfamily of Old World vultures.

The fossil remains of large accipitrids from across southern Australia were assessed to determine the number of species they represented. These included the sites Leaena's breath Cave (Nullarbor, Western Australia), Mairs Cave (Flinders Ranges, South Australia), Victoria Fossil Cave (Naracoorte, South Australia), Green Waterhole Cave (Tantanoola district, South Australia), and the Wellington Caves (Wellington, New South Wales). It was determined that two species were present among the assemblages, which are described within as the Mairs Cave accipitrid and accipitrid GWC/VFC (Green Waterhole Cave/Victoria Fossil Cave). Phylogenetic analyses resolved accipitrid GWC as an aegyptiine vulture despite its morphology being much more similar to active predators such as eagles. The

Mairs Cave accipitrid could not have phylogenetic analyses performed upon it due to a lack of material, but its morphology strongly supported a relationship with gypaetine vultures.