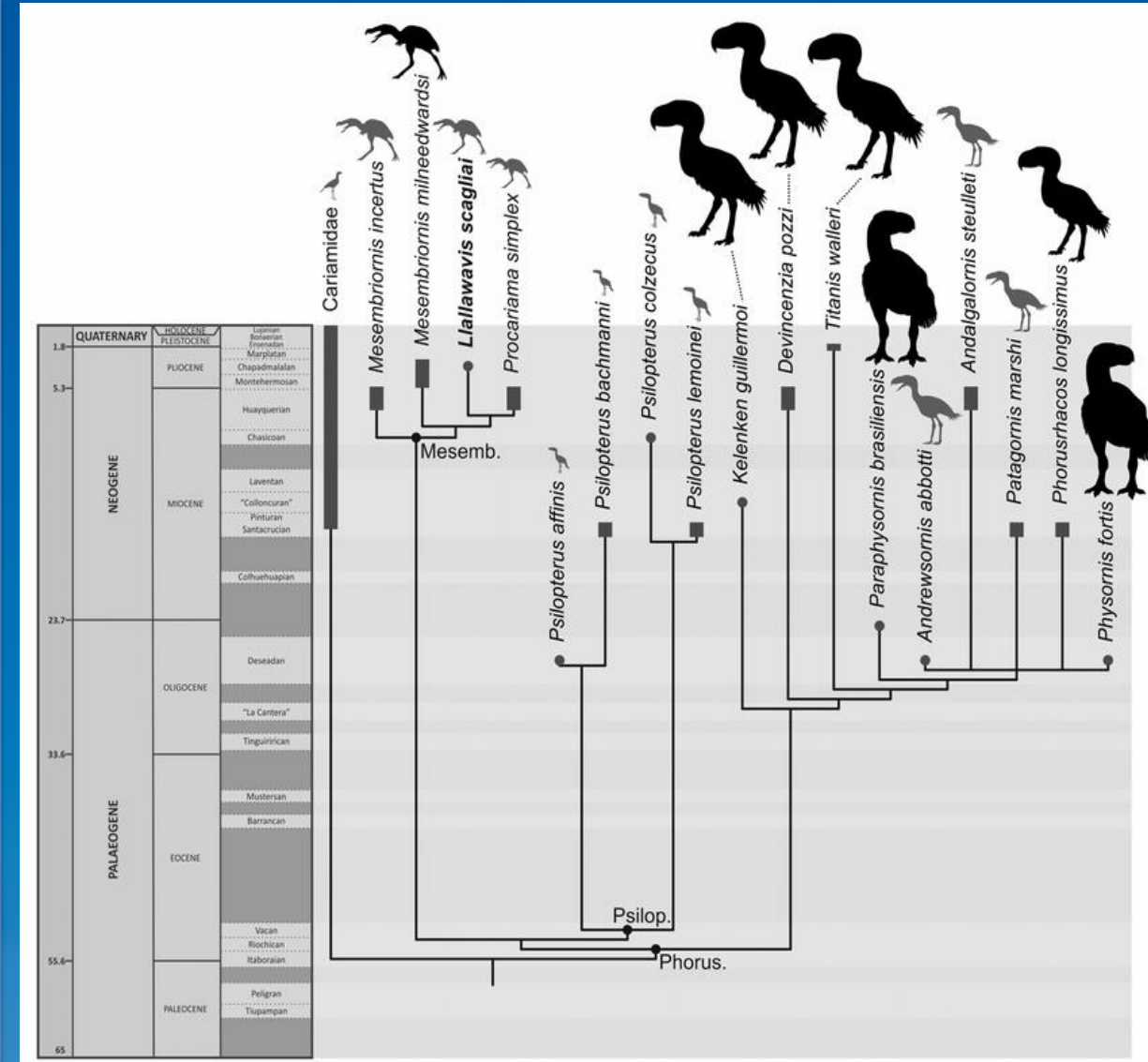


Terror Birds

“Phorusrhacidae”

TAXONOMY AND PHYLOGENY

- Named in 1887 by Florentino Ameghino, after the first member of the group discovered, *Phorusrhacos*
- Upon naming, no precedent for a large carnivorous bird had existed in South America (6)
- Silhouettes in the above diagram indicate body size, and dark silhouettes indicate a body mass over 70kg.
- Easily identified in the tree is the divergence from smaller terror birds to those that are very large, the ones we are familiar with, like *Phorusrhacos*. (2)



PHYSICAL FEATURES

Phorusrhacidae have plenty of physical attributes that helped them earn the name “terror birds”. These attributes include:

- Height of 3 to 10 feet
- Weight of up to 300 pounds
- Running speed of up to 30 mph
- Ability to make quick strikes with great power
- Sharp beak with a downward curving slope (advantage when killing prey)
- Sharp talons
- Small wing size

Although flying may not be a possibility, the balance that the wings provide aided the terror birds in maneuvering. (6) (7) (8)



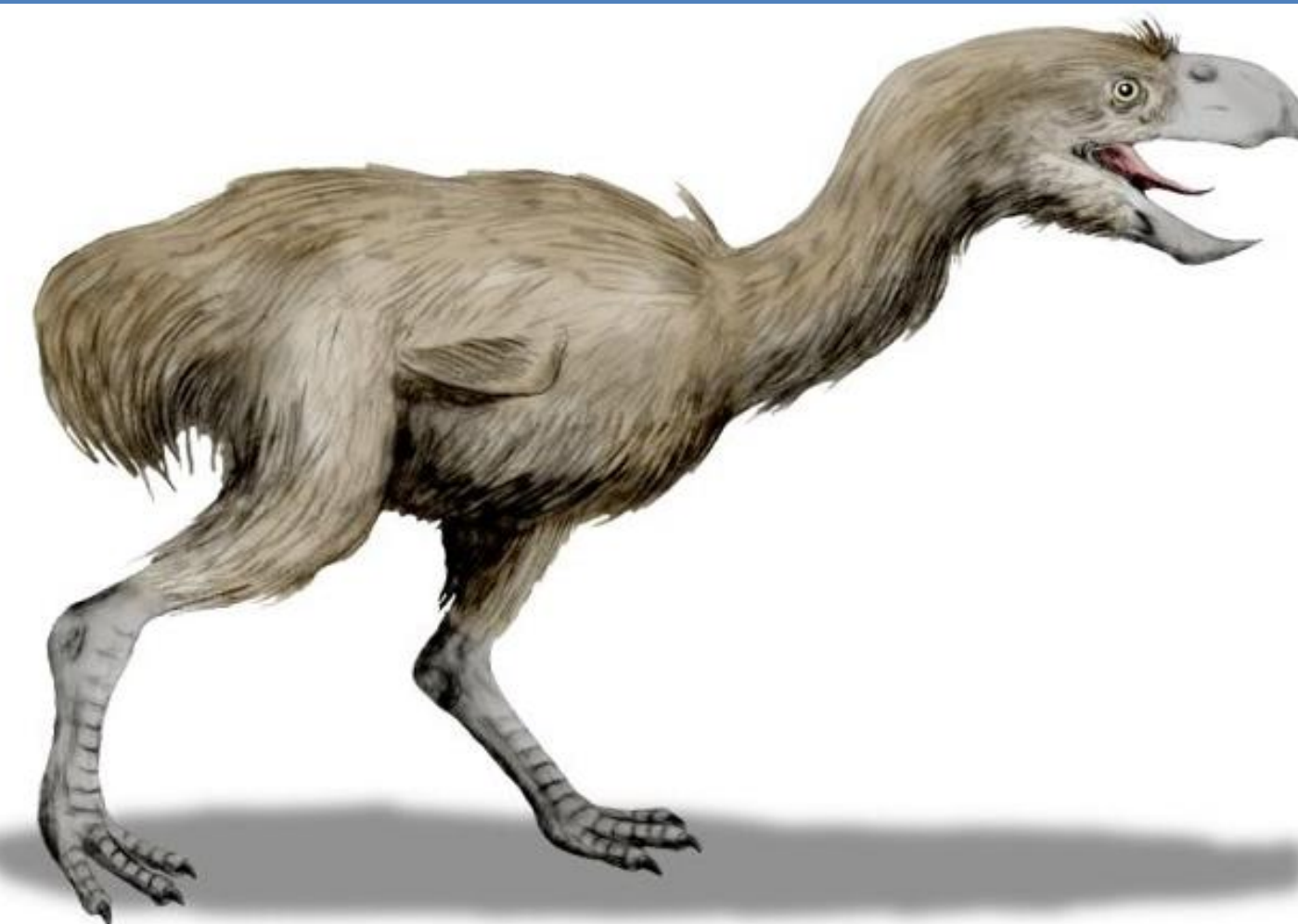
ORIGINS OF FLIGHTLESSNESS IN BIRDS

Origin: (5)

A theory commonly accepted by scientist is that all birds that cannot fly today descended from birds that could fly. Some scientist argue that the birds that can no longer fly lost that ability because there wasn't any evolutionary advantage to flying in their environment.

Relation to Phorusrhacidae: (9)

Phorusrhacidae evolved to be menacing predators despite not having the ability to fly. Part of what made them such a formidable predator is their small wings. The size of the wings of Phorusrhacidae allowed for them to make quick maneuvers while moving at top speeds. This ultimately enabled them to out maneuver their prey more often than not.



NEW DISCOVERIES IN TERROR BIRD RESEARCH AND SCIENTIFIC RELEVANCE

Discovery: (1)

- First discovered in Tertiary of Argentina during the 1880s
- Carlos Ameghino, Florentino Ameghino, and Fransico Pascasio Moreno were the founders of the Phorusrhacidae

Scientific Relevance: (1)

- The discovery of Phorusrhacidae dramatically helps our understanding of avian paleontology
- Helped discover many new taxa of birds.
- Helped us further understand the behavior of predatory birds.

ADAPTATIONS

Diet and Hunting: (3)

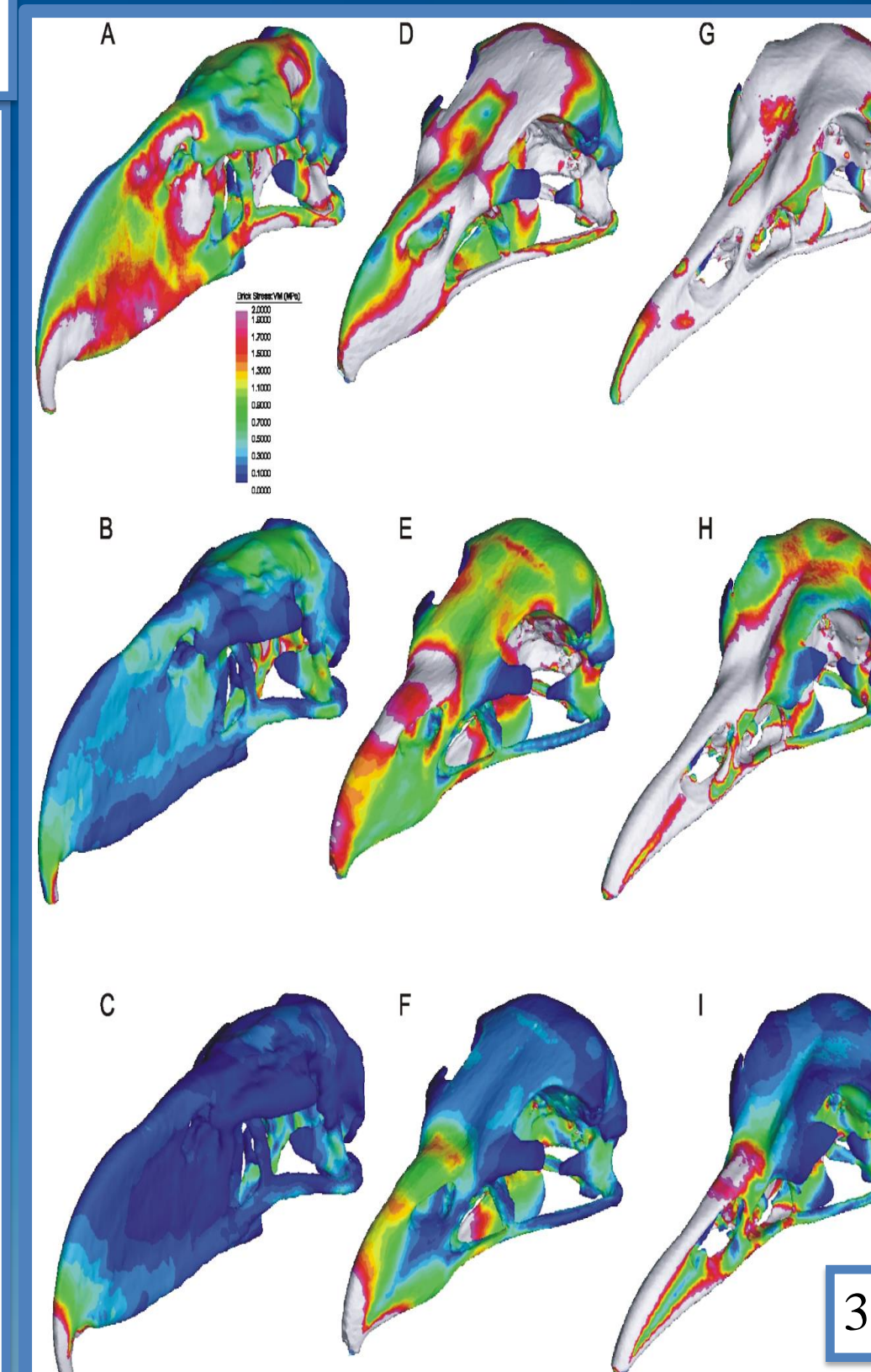
The graphic to the left compares the skulls of three species of terror birds including *Andalgalornis steulleti*, *Haliaeetus albicilla* and *Cariama cristata*. Each skull is placed under different load cases.

If *Andalgalornis steulleti* hunted small prey:

- Less precision necessary
- Easier to kill
- More safe to consume

If *Andalgalornis steulleti* hunted large prey:

- More precision
- Avoiding high lateral loads
- Used attack-and-retreat strategy
- Possible use of talons to hold down prey



Habitat: (4)

Based on the hip bone structures, most Phorusrhacidae were very maneuverable. This tells that they lived in a region of high vegetation and were still very agile. This supports the idea that they were able to hunt for smaller prey under rocks and foliage. With vision similar to hawks, it can be assumed Phorusrhacidae hunted by sight thus requiring sunlit areas to hunt and not hunting at night. The habitat for Phorusrhacidae must of had sunlight and high vegetation.

Running: (4)

Based off toe morphology, we can conclude that Phorusrhacidae were similar to our modern day ostriches. Phorusrhacidae had long hind limbs which enabled a long stride when running therefore making them faster than other animals with shorter hind limbs.

