



Oldest fossil of a modern bird found at Maastricht's Sint-Pietersberg: ***Asteriornis maastrichtensis***

Already in 2000, a fossil of some 66.7 million years old was unearthed at Sint-Pietersberg, but only now it has become clear that it represents an early relative of modern birds such as chickens and geese. The new fossil combines skeletal characters of both groups of birds.

Asteriornis maastrichtensis

[Recent CT scans](#) have demonstrated that the fossil constitutes an undescribed species; it has now been christened *Asteriornis maastrichtensis*. This find sheds new light on the evolutionary family tree of modern birds. It is a small miracle that the fragile skull of *Asteriornis maastrichtensis* survived this well; it yields a wealth of novel data – information that we had not thought possible previously.

'Wonderchicken'

This fossil is of utmost importance because it illustrates the earliest stages in the evolution of modern birds. It is closely related to the common ancestor of the group that now comprises chickens, ducks and geese; the Galloanserae. The new species combines features that are typical of chickens and geese and is unique in that respect. It is endearingly referred to as the 'Wonderchicken'.

Research at Cambridge (England)

The fossil described, around 66.7 million years old, was collected in 2000 by Maarten van Dinther, who is employed at the Medical Centre of Leiden University. He donated his fossil to the Natural History Museum of Maastricht. Only last year did it become clear just how special this specimen is. While the research group of Dr Daniel Field at Cambridge University (England) were doing high-resolution CT scans, it was discovered that the fossil represented a still undescribed genus and species: *Asteriornis maastrichtensis*.

About this find, palaeontologist Dr John Jagt at the Natural History Museum of Maastricht says, "Maarten van Dinther's keen eye has given us a great present – this is world class news!"

A comparison with modern birds suggests that *Asteriornis* may have weighed around 390 gr. It was an animal that probably lived in the coastal areas of a subtropical sea. Unlike fish-eating birds (Ichthyornis group) that had been recorded earlier from the Sint-Pietersberg area, the newly described specimen had no teeth.

Where is it on display?

The paper describing and naming the new bird, *Asteriornis maastrichtensis*, has just been published in the high-ranking, peer-reviewed journal [Nature](#)¹.

Of the type specimen, bearing registration number NHMM 2013 008, an enlarged 3D print of the skull will be put on display at the Natural History Museum of Maastricht. However, this can only be done after the museum reopens its doors. Just like other museums, it is currently closed as a result of corona virus measures. The fossil also includes other skeletal elements, such as leg bones.

The original four pieces of limestone with the unprepared bird bones will remain in Cambridge's Sedgwick Museum for the time being, on a loan basis, because our study of the specimen has not been completed just yet.

Fossil finds

For more than 250 years, people have been collecting fossils from the limestones of Sint-Pietersberg and surroundings. Generally these include small snails and clams, sea urchins, crabs, corals, squid and shark and fish teeth, but also parts of the skeletons of mosasaurs and sea turtles. All of these represent remains of animals that lived in a shallow and warm sea, between 68 and 66 million years ago.

Fossils of land-dwelling animals are extremely rare in these marine deposits, because the road from the land, via rivers, to the sea is a long and treacherous one. To date, merely a handful of isolated bones and teeth of plant- and meat-eating dinosaurs and a single tooth of a small mammal have been found.

Bird fossils

Just as rare are fossil remains of birds. In 2002² a few vertebrae, bones, jaw pieces and a single tooth of an individual of a fish-eating bird were described. Several years later, in 2008³ a few isolated pieces of other birds were added.

References

¹ Field, D.J., J. Benito, A. Chen, J.W.M. Jagt & D.T. Ksepka, 2020. Late Cretaceous neornithine from Europe illuminates the origins of crown birds. *Nature*, <https://doi.org/10.1038/s41586-020-2096-0>

² Dyke, G.J., R.W. Dortangs, J.W.M. Jagt, E.W.A. Mulder, A.S. Schulp & L.M. Chiappe, 2002. Europe's last Mesozoic bird. *Naturwissenschaften*, 89(9): 408-411.

³ Dyke, G.J., A.S. Schulp & J.W.M. Jagt, 2008. Bird remains from the Maastrichtian type area (Late Cretaceous). *Netherlands Journal of Geosciences*, 87: 353-358.

Note for the press, not for publication

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