

## Archaeopteryx was first bird after all

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Archaeopteryx fossil (Creative Commons - Wikipedia)

(PhysOrg.com) -- The crown of the famous 150-million-year-old Archaeopteryx fossil as the first bird has been restored by a new evolutionary tree.

In a study published today in the journal *Biology Letters*, Australian researchers say the feathered fossil is indeed of the first known bird, despite another study earlier this year suggesting otherwise.

<u>Archaeopteryx</u> had been considered for 150 years to be the first known bird since the first complete specimen was found in Germany in 1861,



revealing a combination of reptilian and and bird features. But Chinese researchers asserted recently that a new and closely related <u>fossil</u>, Xiaotingia zhengi, was a bird-like dinosaur - therefore suggesting that Archaeopteryx was also a dinosaur.

However, the new study, led by Dr Michael Lee, of the South Australian Museum, used a more detailed analyis to show that Archaeopteryx was a bird.

"Archaeopteryx is iconic in palaeontology as the basal bird, however the plethora of discoveries of feathered dinosaurs in China, in particular, has progressively eroded the distinction of just what defines a bird," says one of the authors, Dr Trevor Worthy, a palaeontologist in the UNSW School of Biological, Earth and Environmental Sciences.

"This trend came to a head when Xaiotingia was analysed most recently and in the analysis presented Archaeopteryx was found to jump ship as it were from the birds to the dromaeosaurs.

"This sensational result was presented and attracted much publicity, but the very weak statistical support for this new relationship was not given due consideration.

"In our work, Mike Lee has shown quite clearly that methodology is highly significant and that before a paradigm is overturned data needs to be rigorously examined.

"Using a different analytical methodology than that usually used by morphologists, but one always used by analysts of molecular data, we found that Archaeopteryx remains the basal bird and does so with strong statistical support.

"This case demonstrates that multiple analysis methods should be used,



each with concordant results before a paradigm breaking result is accepted. And it shows that Archaeopteryx remains the key to understanding the origin of <u>birds</u>."

More information: <a href="mailto:rsbl.royalsocietypublishing.org/content/current">rsbl.royalsocietypublishing.org/content/current</a>

## Provided by University of New South Wales

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