Living fossils reveal secrets of evolution

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An ancient group of African fish known as bichirs were examined by scientists seeking a better understanding of the development of early vertebrates.

Researchers conducted anatomical and genetic studies on different

bichir species, which belong to the polypteridae family and posses a number of archaic characteristics that are otherwise found only in fossil fish. The 'Polypterids – development and evolution of a 'living fossil'' (Polypterus EVO-DEVO) project examined 1,000 museum specimens and found that the current taxonomy for the studied group needed revision. The consortium published a paper summarising their results.

Tissue samples from all known species of bichirs and most subspecies were used to select seven molecular markers for further analyses. Genes from all markers were sequenced for 38 specimens and used as a 'molecular clock' to determine when new species of bichir arose during the evolution process. A publication was prepared outlining this approach for estimating the age of the polypteridae.

Analyses of the form, structure and genetic makeup of specimens provided researchers with a unique opportunity for achieving a greater understanding of the relationship between birchir species. The results from the Polypterus EVO-DEVO project therefore provided scientists with an important basis for future studies of the anatomical and genetic development of early vertebrates.

Provided by CORDIS