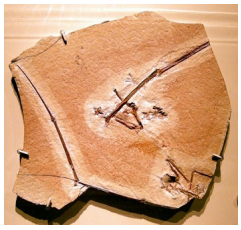


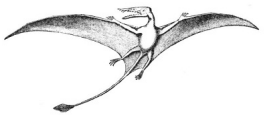
Our collections are important to the general public *and* the scientific community. As a perfect illustration of these many uses, the *Rhamphorhynchus* skeleton on display in the Hall of Life just played a major part in a recent technical publication!

Rhamphorhynchus is a flying reptile (pterosaur) from the age of dinosaurs, about 150 million years old. A few years back, scientists from University of California Berkeley sliced up ("thin-sectioned") one of the bones from our specimen, to better understand how it grew. Much like tree rings, you can count rings in bones to estimate the age and rate of growth of many animals.

Because *Rhamphorhynchus* fossils are so rare, and because thin-sectioning requires cutting into the bones, the Alf Museum specimen was previously only one of two in the world to have its internal bone structure analyzed in detail. A team of scientists from Hungary and Germany was able to sample three more skeletons, bringing the total to five. The researchers determined that our fossil was probably a fully adult, but small, individual. Most importantly, they found that body size is not equivalent to age in *Rhamphorhynchus*. In other words, small specimens (like ours) sometimes represent full adults approximately the same size as juvenile or sub-adult animals. Thus, scientists can't use size alone to determine the age of a *Rhamphorhynchus* - something that has major implications for separating species and interpreting the biology of this animal.

The new study nicely shows the multiple functions of a museum collection - display and research, among others. As scientists learn new things about our specimens, that information can then be communicated to the general public through exhibits and the internet. If you want to see the *Rhamphorhynchus* fossil in person, stop by the museum anytime we're open - the skeleton is on display just outside of the main office in the Hall of Life.

The citation for the new paper is:

Prondvai E, Stein K, Ösi A, Sander MP (2012) Life history of *Rhamphorhynchus* inferred from

bone histology and the diversity of pterosaurian growth strategies. PLoS ONE 7(2): e31392. doi:10.1371/journal.pone.0031392 [
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