

Late Pleistocene Frogs From Cathedral Cave, Nevada

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Abstract

- Pleistocene microvertebrae fossils of frogs and toads are reported from Cathedral Cave (CC), White Pine County, Nevada.
- Skeletal remains include 5 ilia belonging to at least 3 species of amphibians, including one extinct species; all occur in or adjacent to the area today.
- These provide valuable information about the taxonomic diversity and paleoecology of the Late Pleistocene fauna of east-central Nevada.

Background

- In 1989, CC was excavated to determine its paleoecological significance [4]. The site is located in White Pine County, Nevada, in the Great Basin of the western United States.
- The locality has a maximum age range of 146.02 ± 2.584 ka to 151.2 ± 4.4 ka [3].
- Identification of amphibian specimens from CC have not received the same attention given to mammals [4]. Because of the need for more investigations into different groups, I examined anuran ilia excavated from CC.
- Due to intraspecific variation in Anura, the ilium, a pelvic bone, has become valuable for identification [6].

Methods

- Anuran specimens were previously sorted and identified preliminarily. My goal was to further refine those identifications.
- Specimens were examined under a dissecting microscope.
- Images were taken with a Canon Rebel XSi camera attached to a microscope. Figures were designed using GIMP 2.10.22.



Figure 1. Geographic Location of CC [4]

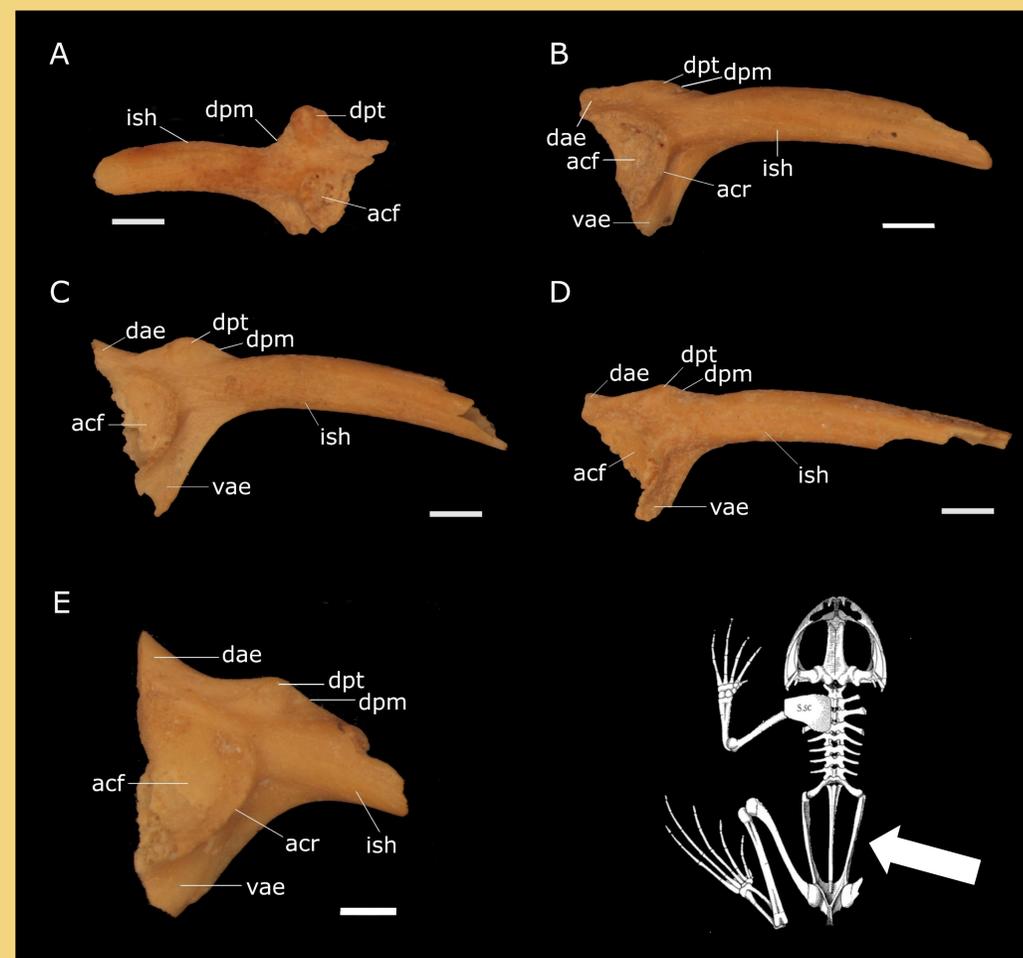


Figure 2. Ilium in lateral view; scale bar = 1 mm. A, left ilium; *Anaxyrus pliocompactilis*, *cognatus*, or *speciosus* (?) (specimen 153); B-D, right ilia; *A. punctatus* (151, 154, 155, respectively); E, right ilium; *A. boreas* (?) (152). Abbreviations: acf, acetabular fossa; acr, acetabular rim; dae, dorsal acetabular expansion; dpm, dorsal prominence; dpt, dorsal protuberance; ish, ilial shaft; vae, ventral acetabular expansion. Skeleton drawing from [1].

Conclusions

- The deposit provides important information for understanding the composition of the region today as a product of previous biotic factors [4].
- Of extant species identified, *Anaxyrus punctatus*, *cognatus*, *boreas*, and *speciosus* inhabit the southwestern United States. The extinct, *A. pliocompactilis*, also was recovered from the WaKeeny Local Fauna, Trego County, Kansas, [2].
- Despite no records of *A. pliocompactilis* in the Pleistocene, [5] suggests the species has inhabited areas similar to *A. punctatus*, which is commonly found in Nevada today.
- These findings provide valuable paleoecological information that can be used to infer the environmental conditions CC previously experienced.
- In order to perform accurate identifications, a regional framework containing fossil data from other sites must be created to further compare data [4].

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