

THE FIRST CENOZOIC MAMMAL FAUNA FROM THE CHILEAN ALTIPLANO

John J. Flynn, The Field Museum, Chicago, USA; Reynaldo Charrier, Universidad de Chile, Santiago, Chile; Gérard Herail, ORSTOM, Santiago, Chile; Darin Croft, The Field Museum and University of Chicago, Chicago, USA; André Wyss, Univ. of California, Santa Barbara, USA

During July 1998 we discovered extensive mammalian faunal assemblages from the Chilean Altiplano, the first known for the region. With support from the National Geographic Society, we revisited the Chucal Formation near Salar de Surire (18°43' S, 69°10' W), the site of our earlier recovery of a single toxodont humerus (Charrier et al. 1994). This formation represents more than 1100 meters of fluvio-lacustrine strata interbedded with frequent pyroclastic units unconformably deposited over the Lupica Formation (Late Oligocene?-early Miocene). K/Ar age determinations indicate that the study section in the Chucal Formation is younger than 21 Ma (Lupica Formation) and older than 11 Ma (Riquelme and Hérail, 1997).

We recovered specimens from 44 sites in 5 areas around Cerro Chucal. At least 3 areas produced abundant specimens and multiple taxa. We conservatively treat these assemblages as a single fauna owing to the relatively small number of taxa, preliminary nature of identifications, and apparent identity of several taxa across all areas. These assemblages ultimately may be found to represent distinct faunas of recognizably different age, a conclusion awaiting more material, further study, and completion of new dating. The current faunal list includes: hegetotheriine hegetothere (cf. Pseudohegetotherium; 8 jaw/max. fragments or isolated teeth), at least 2 mesotheriine mesotheres (the larger resembles Microtypotherium choquecotense from the "Friasian" of Bolivia but may be unique in possibly having only one upper premolar; the other taxon, 20-30% smaller, is the smallest known mesothere; at least 10 dental specimens including an excellent rostrum, plus post-crania), toxodont (Nesodon, represented by one skull and other dental and post-cranial specimens), macraucheniid litoptern (two calcaneae and other post-crania; similar in size to Theosodon, but morphologically distinct), chinchillid rodent (a skull and nearly complete skeleton; appears to be a chinchilline, possibly the oldest occurrence), armadillo (abundant scutes, possible jaw), turtle carapace pieces, and several bird bones (large and small size).

The Chucal Formation fauna is clearly middle Cenozoic, probably middle Miocene, in age. Taxa in this assemblage range elsewhere from Santacrucian to Chasicuan or Huayquerian, with most overlapping in the "Friasian." As these are the northernmost Cenozoic mammalian fauna(s) known from Chile, the assemblages from Cerro Chucal permit comparisons of an extensive latitudinal series (more than 30 degrees) of middle Cenozoic faunas from west of the Andean crest (Casamayoran? and "Tinguirirican" [pre-Deseadan, post-Mustersan] through Santacrucian and the type "Friasian".) The occurrence of these faunas at a critically important modern biotic disjunction (Atacama Desert - Bolivian Orocline bending axis), directly west of well-known Cenozoic faunas from a variety of paleoelevations in the Altiplano and other regions of Bolivia, may allow assessment of the biotic history along an east-west transect from Chile through eastern Bolivia.