

THREE CASES OF SOFT-TISSUE PRESERVATION IN THEROPOD DINOSAURS:
CHANGING OUR PERCEPTION OF THEROPOD APPEARANCE.

NORELL, M.A., Div. of Paleontology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024; MAKOVICKY, P. J., Dept. of Geology, Field Museum, Roosevelt Rd. at Lake Shore Drive, Chicago, IL. 60605; CURRIE, P.J., Royal Tyrrell Museum of Palaeontology, Drumheller, AB T0J 0Y0; and JI Q., Chinese Academy of Geological Sciences, 26 Baiwanzhuang, Beijing 100037, PRC.

Recent discoveries in China, Mongolia and Canada of a dromaeosaur and two ornithomimid specimens that preserve various aspects of the soft tissue body covering have dramatic consequences concerning the appearance and putative behavior of these taxa. The first specimen is an *Ornithomimus* from the Dinosaur Park Formation of Alberta, Canada that preserves a beak like structure at the buccal margins of the premaxilla and dentary. The second is a specimen of *Gallimimus* from the Nemegt formation at Tsaagan Khuushu, Mongolia that also preserves soft tissue in this region. In this specimen the "beak" displays lamellae, similar to those found on extant ducks, suggesting that advanced ornithomimids had avian-like beaks and may have exhibited straining behavior. This is consistent with recent discovery of gastroliths in ornithomimid specimens, as well as their abundance in certain mesic environments.

The third specimen is dromaeosaur from the Yixian Formation of China. This specimen shows a complete body covering of integumentary fibers. Three organizational kinds of fibers are preserved on the specimen. The most notable are those on the back of the forearm, which show a herring bone pattern like that of the feathers of *Caudipteryx*. The integumentary covering shows that feather-like structures were present before the origin of modern birds and their evolutionary origin can not be correlated with the origin of flight.

JVP 21(3) September 2001—ABSTRACTS

© 2001 by the Society of Vertebrate Paleontology