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SUPPLEMENTARY ONLINE MATERIAL FOR

Oviraptorosaur tail forms and functions

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Published in *Acta Palaeontologica Polonica* 2014 59 (3): 553–567.

doi: <http://dx.doi.org/10.4202/app.2012.0093>

SOM 1. Discovery and Preparation

SOM 2. Measurements of “*Ingenia*” *yanshini* (MPC 100/30)

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SOM 3. Measurements of *Khaan mckennai* (IGM 100/1127)

http://app.pan.pl/SOM/app59-Persons_etal_SOM/SOM_3.xlsx

SOM 4. Measurements of *Nomingia gobiensis* (MPC 100/119)

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SOM 1. Discovery and Preparation

MPC-D 102/5 is a new *Nomingia* pygostyle. It was found with no associated bones or bone fragments. The specimen is solid, so no consolidants were used at any stage.

MPC-D 100/1275 is an articulated specimen of *Conchoraptor gracilis* that includes a pygostyle. MPC-D 100/1275 was found in association with many other partial skeletons of the same species in the Baruungoyot (Upper Cretaceous) of Khulsan, Mongolia. The concentration of skeletons was only partly uncovered in the field, but it was clear that the block was too large to collect as a single unit. It was subdivided into six blocks (all bearing the field number MAE 97-212) that were shipped to the American Museum of Natural History on loan for preparation. MPC-D 100/1275 is a partial skeleton that was found in Blocks 2 and 5. The first six articulated caudal vertebrae are in MPC D-MAE 97-212, Block #5 (field number), whereas the last 24 articulated vertebrae were preserved in MPC D-MAE 97-212, Block #2. It is unknown how many vertebrae were lost between the two field blocks, but it is assumed to have been at least two, perhaps up to four. The tail is associated with the sacrum and right hind limb. Stabilization of Block 5 was done by Robert Evander at the AMNH and included reinforcement of the plaster jacket and consolidation with Butvar[®] B-76 (Monsanto Company), a terpolymer of vinyl butyral, vinyl alcohol and vinyl acetate monomers. Extensive filling with a mixture of Butvar B-76 and ground sedimentary matrix was necessary to reestablish structural integrity and re-align breaks. Butvar B-76 was also used as an adhesive to re-attach fragments. Previously added materials on this block include epoxy putty, plaster and yellowed epoxy. Block 2 has not been stabilized.

The holotype of *Citipati osmolskae* (MPC-D 100/978) is a virtually complete skeleton (Clark et al. 2010) that includes a pygostyle. Amy Davidson prepared the specimen at the AMNH over the course of many years, due to the technical challenges of extracting the porous and fragile bone from the matrix. Consolidation was accomplished primarily with

Butvar[®] B-76, which was also mixed with ground matrix as filler (Davidson 2003). Part of the specimen (Bisulca et al. 2009) was also consolidated with Conservare[®] OH 100 (Pro So Co, Inc.), an alkoxy silane commonly used as an architectural stone consolidant. Archival labels to preserve associations were adhered to the specimen as it was disarticulated and the completed specimen was housed in labeled archival mounts made out of Ethafoam[®] polyethylene foam, polyester batting and Tyvek[®] 1422A fabric.

Detailed records and photographs of the restoration processes for *Citipati* and *Conchoraptor* are maintained in the preparation database of the Division of Paleontology at the AMNH.

Bisulca, C., Kronthal Elkin, L., and Davidson, A. 2009. Consolidation of fragile fossil bone from Ukhaa Tolgod, Mongolia (late Cretaceous) with Conservare OH 100. *Journal of the American Institute for Conservation* 48: 37–50.

Clark, J.M., Norell, M.A., and Barsbold, R. 2001. Two new oviraptorids (Theropoda: Oviraptorosauria), Upper Cretaceous Djadokhta Formation, Ukhaa Tolgod, Mongolia. *Journal of Vertebrate Paleontology* 21: 209–213.

Davidson, A. 2003. Preparation of a fossil dinosaur. *American Institute for Conservation, Objects Specialty Group Postprints* 10: 49–61.