

THE 1989 FIELD SEASON OF THE DINOSAUR PROJECT

The third field season of the Dinosaur Project (China, Canada, Alberta) was centered in the Junggar Basin (Xinjiang Uygur Zizhiqu) and divided into two phases, an initial three weeks near Pinfengshan and a final week at Jiangjunmiao. During the latter part of May through mid-June, personnel of the National Museum of Natural Sciences (Ottawa) and Tyrrell Museum of Palaeontology (Alberta) joined their hosts from the Institute of Vertebrate Paleontology and Paleoanthropology (Beijing). Where through their combined efforts a total of twelve cases of vertebrate fossils (weighing 5 tons) were extracted from Middle Jurassic to Early Cretaceous sediments.

Pinfengshan area

Fossil-bearing strata at locality Pinfengshan dip toward the southwest, approximately parallel to the surface of erosion. From the east to the west three formations can be distinguished across the region: the Wucaiwan Formation (Middle Jurassic), Shishugou Formation (Upper Jurassic) and Tugulu Group (Early Cretaceous). Most of the fossils collected were taken from the latter two units. The Shishugou Formation is most Fossiliferous near its base where it is dominated by reddish mudstones. These are overlain by a sequence of yellowish white, fine-grained sandstone beds, which individually measure several tens of centimeters to several meters in thickness and contain petrified wood. The sandstones are in turn overlain by massively crossbedded grey siltstones at the base of the Tugulu group, which interdigitate above with reddish coarsegrained sandstones and conglomerates. Higher levels of the Tugulu group are dominated by buff to pinkish fine-grained clastics. The entire Jurassic-Cretaceous sequence is about 700 meters thick.

The lower part of the Shishugou Formation yielded labyrinthodont remains, several well-preserved turtle specimens, a nearly complete skeleton of a crocodile measuring 1.7 meters in length, the skeleton of a small theropod discovered during the 1988 season, isolated sauropod bones including vertebrae and a humerus, and several skeletal fragments of small ornithopods. The faunal facies differs from that of the Shishugou at Jiangjunmiao, and was apparently influenced by lacustrine environments. Isolated theropod bones, including claws, were found in higher levels of this formation.

The site where a small sauropod was discovered near the middle of the Tugulu Group by IVPP staff in 1983 was requarried and several additional skeletal parts were excavated. Although the proximal caudal centra are deeply procoelous, it is doubtful that the specimen is closely related to titanosaurs. Remains of turtles and pterosaurs were recovered in abundance at this and nearby sites in the Tugulu Group.

Jiangjunmiao area

Approximately 150 kilometers to the east of the Pinfengshan area, excavations were continued on the neck of the large sauropod found in 1987 (IVPP 87004). The anterior end of the neck, imbedded in red channel-fill sandstones of the Shishugou Formation, was still not reached before the close of field operations. The locality will be revisited during the 1990 field season, when field activities will also be resumed in Nei Mongol.

(Dale A. Russell, Zheng Zhong)