



“柯氏猎豹”源自一件伪造的化石

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所谓的“柯氏猎豹(*Acinonyx kurteni*)”源自一件地点层位不明的伪造化石,发表该化石的两位作者现已承认这件标本的颧弓和枕部确实是由石膏修补成完整模样,是化石贩子为了提高标本的商业价值而采用的不正当手段。有鉴于此,该种显然是一个无效名称,由此得出的推论均不成立。邱占祥等(2004)已描述了临夏盆地的一个猎豹新种临夏西瓦猎豹(*Sivapanthera linxiaensis*),而对比的结果显示,“柯氏猎豹”的牙齿形态和大小实际上都落入临夏西瓦猎豹的变异范围之内。

ACINONYX KURTENI BASED ON A FOSSIL COMPOSITE

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Christiansen and Mazák (2009) reported a new species(*Acinonyx kurteni*) of the cheetah based on a skull from the Late Pliocene loess deposits of the Linxia Basin in Gansu Province, China. As a vertebrate paleontologist working on the late Cenozoic mammals of the Linxia Basin for many years, I naturally had particular interests in reading this paper. Unfortunately, I found that they studied a fossil forgery, the sole foundation of the paper.

The forged parts of this skull are easily recognized. In lateral view of the skull, it clearly shows that the zygomatic arch is not only unnaturally high and robust, without postorbital process, which is usually prominent and pointed in the cheetah, but also has clear boundaries where the “zygomatic” was artificially pieced together with the skull. Furthermore, the zygomatic arch does not belong to the skull, and it may not be a zygomatic arch of a carnivore at all (Fig. 1A). The occipital part is obviously not original, and it is undoubtedly artificial for several reasons. The direction of the occipital surface is so abnormal that it becomes almost horizontally oriented and its lowest point connects directly with the posterior end of the zygomatic arch. In so doing, there is no space left at all for the tympanic bullae, the mastoid and paroccipital processes, and the occipital condyles. In dorsal view of the skull, the parietal area was glued together with some bone pieces to imitate the skull of a modern cheetah, but the forger did not make the parietal crests, and in doing so giving away the nature of the forgery. The braincase, with a sagittal crest, was made of plaster and painted also to imitate the skull of the modern cheetah. Some large rounded plaster spots and unpainted areas on the parietal and occipital parts are very marked, which indicate that the braincase is a plaster cast. Many traces of daubing plaster can be easily observed in the posterior part of the skull (Fig. 1B). In ventral view of the skull, the whole basioccipital area is filled and daubed with plaster; because this area is

so complicated that the forger could not replicate the morphology seen in the modern cheetah. As a result, no anatomical structures can be found in this area (Fig. 1C).

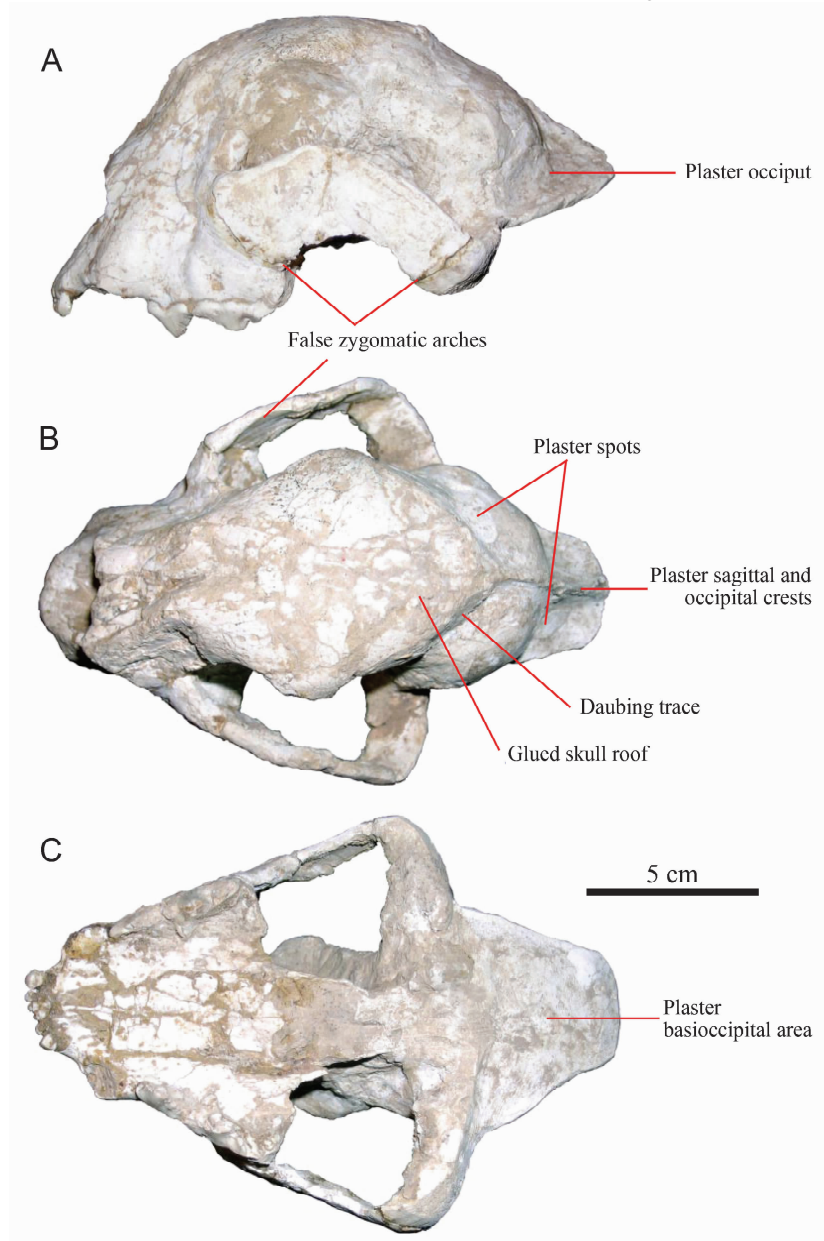


Fig. 1 Fabricated features in the holotype of *Acinonyx kurteni* in lateral (A), dorsal (B), and ventral (C) views

Marked from Christiansen and Mazák, 2009; fig. 1 in PNAS

Frequent contacts with the local “dragon-bone” dealers during my work in the Linxia area gave me knowledge that it is quite common to come across such forgery, especially in recent years. Personally, I have seen hundreds of seemingly “complete” skulls of various kinds, and I know well that unqualified collectors are often cheated by being sold forgeries. Unfortunately,

Mazák was one of them.

Christiansen and Mazák alleged that the skull specimen was from the “Hezheng” locality, with an estimated age of ~2.2-2.5 million years. In fact, Hezheng is not a locality, but a county of Linxia Prefecture, where no fossil mammals have ever been found from loess deposits so far as I know. A “fossiliferous-rich locality” does exist, but it is Longdan in Dongxiang County of Linxia Prefecture. A monograph on the Longdan fauna was already published by Qiu et al. (2004), wherein the new cheetah species, *Sivapanthera linxiaensis*, was described, based on two skulls with their articulated lower jaws and other isolated skull or lower jaw specimens.

As the two authors admitted, the teeth are highly diagnostic for identification of the cheetah in general, and for the establishment of their new species in particular. Nevertheless, the teeth, especially the P3, are very poorly demonstrated in their fig. 1C. There is no information about the presence of P2 and M1, not to speak of their morphology. It is surprising to find that the lengths of the P3 and P4 of the new skull (18.6 and 27.7 mm respectively, Christiansen and Mazák, 2009: fig. S6A, B) fall within the variation ranges of *Sivapanthera linxiaensis* (18 ~ 19.5 mm and 26.9 ~ 31 mm respectively, Qiu et al., 2004: table 19). Revealingly, Christiansen and Mazák cited the monograph of Qiu et al., 2004 as the basis of their age determination but did not mention a word about the established species, *S. linxiaensis*, not to speak of direct comparison of the two forms. Their paper fails at the most basic level systematic description.

I can only conclude that, at a minimum, Christiansen and Mazák completely failed to do due diligence to establish a new species at multiple levels: failing to recognize a fake specimen; failing to work on an actual specimen, because the senior and corresponding author, Christiansen, relied on photos to describe a new species, as Mazák said; failing to explore and verify a fossil locality; failing to inspect primary literature; and failing to acknowledge an existing taxon. To sum up, their conclusion is based on a fossil forgery, so it is extremely unfounded and groundless.

After I presented a query for their paper (see Stone, 2010), Mazák and Christiansen (2011) noted “the occipital area and zygomatic arches have been heavily restored in plaster, probably to make it appear more complete, thus enhancing its commercial value, a common malpractice among Chinese fossil dealers.” We are pleased to see this note, but stand by our view that the skull is a composite with fabricated features (Deng and Qiu, 2011).

Unfortunately, Mazák and Christiansen insisted that this altered skull does not impinge on *Acinonyx kurteni*'s status as a primitive cheetah. The occipital area and zygomatic arches have not only been described in their original paper, but also in their phylogenetic and principal components analyses. The authors committed grave errors, which did serious harm to the field of vertebrate paleontology and damaged the credibility of PNAS.

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