

# The systematic position of the Eocene bird *Asiavis phosphatica*

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*Asiavis phosphatica* from the Uppermost Middle Eocene of Uzbekistan is redescribed and placed in the Anseriformes (subfamily Cygninae). Originally this bird was placed in Gruiformes (family incertae). *A. phosphatica* is the oldest known cygnine.

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The distal end of the carpometacarpus was found in Uppermost Middle Eocene phosphorites of Tashkura locality (Central Kyzylkum Desert, Uzbekistan) in 1985. Nessonov (1986) described from this bone *Asiavis phosphatica* gen. et sp. n. in the order Gruiformes (family incertae). He noted (p. 37) that the new species "differs from known to him Gruiformes by the structure of articular area of metacarpals III and IV (? - A.P.)". The systematic position of this bird remained vague. Nessonov (1992a, 1992b), after a find of the bones of *Odontopteryx* sp. in Dzheroy II locality (Averianov et al., 1991), did not exclude the possibility that *Asiavis phosphatica* belonged to the bony-toothed birds.

I tried to determine the systematic position of *A. phosphatica* more exactly. A comparison of the holotype with Gruiformes showed only 2 common features: the wide sulcus tendineus with a widening near distal end of the bone, and the extended distal metacarpal symphysis. In other respects, the fossil bone and bones of gruiforms are different.

Comparison of *A. phosphatica* with other orders of birds showed a close similarity to the swans (*Cygnus* spp.). They differ only in the form of the sulcus tendineus and in several minor features.

Order ANSERIFORMES Wagler, 1831

Family ANATIDAE Vigors, 1825

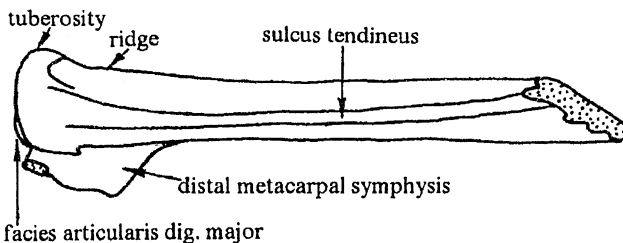
Subfamily CYGNINAE Vigors, 1825

Genus *Asiavis* Nessonov, 1986

Type species: *Asiavis phosphatica* Nessonov, 1986.

**Description and comparison.** The sulcus tendineus is wide, clearly visible all the way, feebly bent, strongly widened before the distal end of the bone. On the carpometacarpus of *Cygnus*, the sulcus tendineus is narrowed and obliterated distally. The small sloping ridge adjoins to the proximal side of the tuberosity of metacarpal II. The ridge is absent or faint in *Cygnus*, therefore the tuberosity seems higher. The distal metacarpal symphysis on the dorsal side is wider and more plane than in *Cygnus*. Judging by break, the os metacarpale minus was wide and flat at least in distal part. The trochlea of the facies articularis dig. major is less stretched dorso-ventrally than in *Cygnus*.

**Remarks.** In addition to the genus *Cygnus*, the sub-



*Asiavis phosphatica*, distal end of metacarpus, external view.

family Cygninae includes the genera *Cygnopterus* Lambrecht, 1931 from the Lower Oligocene of Belgium, *Megalodytes* Howard, 1992 from the Middle Miocene of California, *Chendytes* L. Miller, 1925 from the Pleistocene of California (Miller, 1925; Lambrecht, 1931; Howard, 1932) and the recent genus *Chenopsis* Wagler, 1832. The species of the last four genera are smaller than *Asiavis*. The carpometacarpus of the fossil genera are unknown. The bone morphology of *Asiavis* is closer to that of *Cygnus* than to that of *Chenopsis*. Possibly the genus *Asiavis* is the ancestor of *Cygnus* in spite of the long time interval between them. In this case the supposition about the asiatic origin of the genus *Cygnus* (Kurochkin, 1985) would be confirmed.

The earliest remnants of the genus *Cygnus* are known from the Early Pliocene. *Cygnus pristinus* Kurochkin, 1971 is found in many Mongolian localities of the Lower and Middle Pliocene (Kurochkin, 1985). The birds of that species were large, with distinct sexual dimorphism.

#### ***Asiavis phosphatica* Nessonov, 1986**

*Asiavis phosphatica* Nessonov, 1986: 37, fig. 2.14 a-c; Nessonov, 1992a: 473, fig. 6 a-c; Nessonov, 1992b: 35.

*Holotype*. Distal end of the carpometacarpus; Zoological Institute, St. Petersburg, N PO 34343 (N PO 3440 is mistaken!). Collected by Lev A. Nessonov, September 1985.

*Type locality and age*. Tashkura locality, Central Kyzylkum Desert, Uzbekistan. Uppermost Middle Eocene.

*Description*. As for the genus. The bone belonged to a large bird similar in size to Whooper Swan (*Cygnus cygnus*).

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