

EURASIAN AND NORTH AMERICAN PHYLOGENY OF TUROLIAN HIPPARIONINE HORSES (PERISSODACTYLA, MAMMALIA) IN CHINA

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The late Miocene Chinese hipparions are morphologically diversified showing similarity to both western Old World's and North American forms. Two Chinese taxa that are phylogenetically related to western Old World's forms are *Hipparion fossatum* (= *H. forstenae*) from Baode (Shanxi) and *H. hippidiodus* from Qingyang (Gansu) and Baode. The former is related to *H. mediterraneum* and the latter to *H. urmiense - platygenys* from the Turolian localities in the western Old World. *H. fossatum* and *H. hippidiodus* are associated with the "dorcadoides" (open-land) and "mixed" faunas in northern China. *Hipparion fossatum* that is characterized by POF located close to the orbit co-occurs with large and morphologically specialized form, *H. dermatorhinum* in Baode (Loc.30). *H. hippidiodus* with reduced POF is discovered with smaller *H. coelophyes* in Loc. 43, 44 (Baode) and Loc. 115 (Gansu).

The hipparions associated with the "gaudryi" (forest) fauna are characterized by well defined and small POF located far from the orbit. Those forms are: *H. platyodus* from Loc. 70; *H. ptychodus* from Loc. 73; *H. tylodus* from Hsi-Liang in Yushe - Wuxiang basins; and *H. sefvei* from Loc. 12 at Xin-an in Henan province. *H. coelophyes* from Baode (Loc.43 & 44) and Qingyang (Loc. 115) also show similar facial morphology to the these forms, although it has small size and shallow POF. Those forms are similar in facial and dental morphology to *Hipparion sensu stricto* and some species of *Cormohipparion* in North America.

The assemblages of Chinese hipparions are composed of two groups whose members are phylogenetically similar to the forms from both western part of Eurasia and North America. The "gaudryi" fauna is considered younger than the other two on the basis of faunal analyses. The similarity in hipparionine taxonomy between northern China and North America in the latest Miocene is an evidences for possible faunal interchange(s) occurred during that period, as suggested by taxonomic analyses on carnivores and proboscideans in eastern half of Eurasia and North America.

	Western Old World Affinity	North American Affinity
TUROLIAN	<i>H. fossatum</i> (= <i>H. forstenae</i>) <i>H. hippidiodus</i>	<i>H. coelophyes</i> <i>H. platyodus</i> <i>H. ptychodus</i> <i>H. tylodus</i> <i>H. sefvei</i>
VALLESIAN	<i>Hipparion weihonense</i>	