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Dynamics of the Eurasian Neogene

Birth of the New World



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The evolution of the Vallesian Crisis

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The Vallesian Crisis was first recognized by Agustí & Moyà-Solà (1990) in the Vallés-Penedés Basin, being considered as a one of the main events that affected the Eurasian mammalian faunas in the late Miocene. The Vallesian Crisis was characterized by the sudden extinction of a number of taxa which characterized most of the early and middle Miocene. Among other large mammals, the Vallesian Crisis involved the disappearance of most of the humid elements that characterised the middle Miocene and early Vallesian faunas from Western Europe. This crisis particularly affected several groups of perissodactyls, such as rhinoceroses (*Lartetotherium sansaniense*, “*Dicerorhinus*” *steinheimensis*) and tapirs. Among the artiodactyls, the high diversity attained by the suids in the early Vallesian times suddenly dropped and several characteristic elements such as *Listriodon*, *Schizochoerus* and the tetraconodontines *Conohyus* and *Parachleuastochoerus* became extinct as well. The Vallesian Crisis also involved the final decline of the middle Miocene forest community of cervids (*Amphiprox*) and moschids (*Hispanomeryx*) and the spread of the boselaphine bovids like *Tragoportax*, which replaced their semiaquatic relatives of the genus *Protragocerus* (Köhler, 1993). Another group that was severely affected by the Vallesian Crisis was the large carnivores of the families Nimravidae (*Sansanosmilus*) and Amphicyonidae (*Pseudarctos bavaricus*, *Amphicyon major*, *Thaumastocyon dirus*). Their extinction was partly compensated with the entry of *Paramachairodus*, a new genus of machairodontine cat. Among the rodents, the Vallesian Crisis involved the disappearance of most of the hamsters (cricetids) and dormice (glirids) of early or middle Miocene origin (*Megacricetodon*, *Eumyarion*, *Bransatoglis*, *Myoglis*, *Paragilirulus*, *Eomuscardinus*), flying-squirrels (*Albanensia*, *Miopetaurista*) and beavers (*Chalicomys*, *Euroxenomys*). In Western and Central Europe this event coincided with the first dispersal of the murid rodents, the family that include the living mice and rats. After their entry into Europe, this group became the dominant rodents in the late Miocene communities and diversified into a number of genera: *Progonomys*, *Occitanomys*, *Huerzelerimys*, *Parapodemus*.

Since that time, considerable progress has been done regarding the dating and timing of the Vallesian Crisis (Agustí et al., 1997 and 1999) as well possible causes for such crisis (Agustí et al., 2003). However, question remains about the extent of the Vallesian Crisis outside Western Europe.

References

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