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Middle Miocene carnivorans from the Monarch Mill Formation, Nevada

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The lowest part of the Monarch Mill Formation in the Middlegate basin, west-central Nevada, has yielded a middle Miocene (Barstovian Land Mammal Age) vertebrate assemblage, the Eastgate local fauna. Paleobotanical evidence from nearby, nearly contemporaneous fossil leaf assemblages indicates that the Middle Miocene vegetation in the area was mixed coniferous and hardwood forest and chaparral-sclerophyllous shrubland, and suggests that the area had been uplifted to 2700–2800 m paleoaltitude before dropping later to near its present elevation of 1600 m. Thus, the local fauna provides a rare glimpse at a medium- to high-altitude vertebrate community in the intermountain western interior of North America. The local fauna includes the remains of fish, amphibians, reptiles, birds, and 25 families of mammals. Carnivorans, the focus of this study, include six taxa (three of which are new) belonging to four families. Canidae are represented by the borophagine T*omarctus brevirostris* and the canine *Leptocyon* sp. indet. The earliest record and second North American occurrence of the simocyonine ailurid *Actiocyon* is represented by *A. parverratis* sp. nov. Two new mustelids, *Brevimalictis chikasha* gen. et sp. nov. and *Negodiaetictis rugatrulleum* gen. et sp. nov., may represent Galictinae but are of uncertain subfamilial and tribal affinity. The fourth family is represented by the felid *Pseudaelurus* sp. indet. *Tomarctus brevirostris* is limited biochronologically to the Barstovian land mammal age and thus is consistent with the age indicated by other members of the Eastgate local fauna as well as by indirect tephrochronological dates previously associated with the Monarch Mill Formation. *Actiocyon parverratis* sp. nov. extends the temporal range of the genus *Actiocyon* from late Clarendonian back to the Barstovian. The Eastgate local fauna improves our understanding of mammalian successions and evolution, during and subsequent to the Mid-Miocene Climatic Optimum (~14–17 Ma).

Key words: Mammalia, Mustelidae, Canidae, Ailuridae, Felidae, Miocene, Barstovian, Nevada.

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