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NONMARINE MOLLUSKS OF THE GREEN RIVER FORMATION (EARLY EOCENE), WESTERN INTERIOR, USA

HARTMAN, Joseph H. joseph_hartman@und.nodak.edu, Department of Geology and Geological Engineering, Univ of North Dakota, Box 8358, Grand Forks, ND 58202, joseph_hartman@und.nodak.edu, HANLEY, John H, U.S. Geol Survey, Denver Federal Center, Box 25046, Denver, CO 80225, GOOD, Steven C., Department of Geology & Astronomy, West Chester Univ, West Chester, PA 19383, and EVANOFF, Emmett, University of Colorado Museum, Univ Colorado - Boulder, Campus Box 265, Boulder, CO 80309-0265

The shells of freshwater and terrestrial mollusks occur in all facies of the Wasatchian and Bridgerian-age Green River Formation and can be so abundant as to form coquinas. Fossil assemblages include freshwater gastropods, terrestrial (subaerial) gastropods, freshwater mussels, and fingernail clams.

The most common gastropods are the freshwater ceanogastropods that include the pleurocerid (~pachychilid) *Elimia tenera* and varieties (the most abundant fossil snail in the formation) and species of the viviparid *Viviparus*. These two gill-bearing snails are most abundant in the high-energy shore facies of the formation. Other gastropods include species of *Hydrobia* (Ceanogastropoda) and *Valvata* (Heterostropha). The latter are typically the only gastropods that occur in the sublittoral oil shales. Freshwater pulmonate gastropods are numerically rare in the formation but include species of *Physa*, *Gyraulus*, *Omalodiscus*, *Biomphalaria*, *Drepanotrema?*, and *Lymnaea*. Terrestrial pulmonate gastropods are very rare in the Green River Formation but include species of *Oreoconus*, *Holospira*, and *Gastrocopta*. The pulmonate gastropods typically occur in near-shore facies and in pond deposits in the Wasatch and Bridger Formations lateral to the Green River Formation.

Freshwater bivalves in the Green River Formation include species of the unionid *Pleisielliptio* and the fingernail clam *Sphaerium*. *Pleisielliptio* is most abundant in the near-shore facies. The highly alkaline chemistries of the Green River Lakes allowed for the preservation of the glochidium on adult shells of *Pleisielliptio*. *Sphaerium* is most abundant in the sublittoral facies and can occur in the oil shales.

Molluscan taxa and their paleoecological associations appear to remain uniform throughout deposition of the formation, except for the large planorbid *Biomphalaria pseudoammonius*, which occurs only in the Bridgerian-aged rocks of the formation. Living forms of the most common freshwater taxa *Elimia*, *Viviparus*, and the unionids) do not now naturally occur in the Rocky Mountains, but occur in two separated regions: one in the eastern Mississippi River drainages, the other in the Pacific Northwest. This distribution reflects the shift from perennial warm waters in the Eocene to cooler, largely intermittent waters in the post-Eocene.