



SE Asian monsoon record from the mollusk assemblages in the Luochuan loess sequence during the past 470 kyrs.

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Chinese loess sequences are interpreted as a reliable record of the past SE Asian monsoon regime through the alternation of loess and paleosols units. Loess deposits are mostly related to winter monsoon whereas the soil complexes are interpreted as corresponding to summer monsoon. Different proxies have been used to describe this system, mostly geophysical, geochemical or sedimentological. Biological indices are very few and mostly limited to terrestrial mollusk assemblages. Using the present ecological requirements of the identified species allow to define two main mollusk groups, thermal-humidiphilous and cold-aridiphilous, characterizing summer and winter monsoon regimes respectively. The present investigation of the mollusk record in Luochuan is encompassing the S0-L5 series, which is about the last 470 kyrs. Thermal-humidiphilous mollusks indicate a strengthened SE summer monsoon sensitive to obliquity and precession whereas cold-aridiphilous ones display a different pattern, with SE winter monsoon sensitive to obliquity and eccentricity periodicities. Finally, thermal-humidiphilous species indicate three particular patterns, during L2, L4 and L5 implying a strengthened summer monsoon during these three glacial intervals, a probable reply to particular astronomical configurations.