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glaciation shows that the millennial-scale climatic variations in the Loess Plateau can be correlated fairly well with the Dansgaard-Oeschger cycles documented in the Greenland ice cores. *Fig. 4 (previous page)* shows the grain size curve of the S2-L2-S1 portion at Huining. The soils S2 and S1 were accumulated respectively during the penultimate and last interglacial periods; the loess bed L2 during the penultimate glaciation. Grain size changes in L2 clearly indicate two maxima and three minima, which are obviously forced by the precessional changes in the Earth's orbit. When we increase resolution for parts of the grain size minima, as shown in *Fig. 4*, it is seen that frequent, large-amplitude, millennial-scale variability also occurred during the stadials of the penultimate glaciation. This preliminary result implies that millennial-scale climate variability could be a common feature in the glacial periods of the late Pleistocene.

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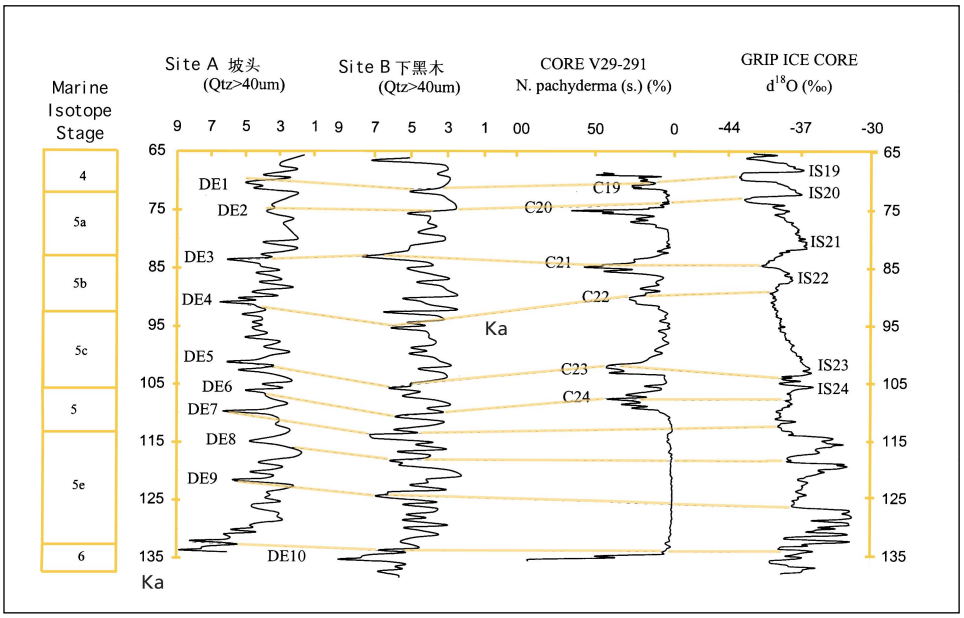

Fig. 5: Loess-Paleosol-Profiles in central China in comparison with North-Atlantic sediment cores and Greenland ice-sheet cores

Millennial-Scale Climatic Oscillations during the Last Interglaciation in Central China

Repeated southward excursions of North Atlantic polar water during the last interglacial ($\delta^{18}O$ stage 5, 130-74 ka) are recorded by planktonic foraminifera and ice-rafted detritus (IRD) in North Atlantic sediment cores, and Greenland ice-sheet cores display quasi-synchronous fluctuations. Comparable high-frequency variations in the East Asian winter monsoon climate are discernible in three loess-paleosol profiles in central China that span the last interglacial *(Fig. 5)*. Peak values of the >40 μm quartz fraction and bulk sediment samples from the S1 (last-interglacial) accretionary paleosol complex reflect major dust-flux events when winter monsoon winds strengthened. Frequent oscillations of the dust flux and nine significant dust events are recorded. Six events, falling between ca. 110 and 70 ka, are correlated with cold peaks (C19-24) identified in North Atlantic cores. Two comparable dust peaks occur within paleosol S1SS3 (= substage 5e); the older of these, dating to ca. 121 ka, may correlate with a brief cold event recently recognized in high-resolution marine and terrestrial climate-proxy records.

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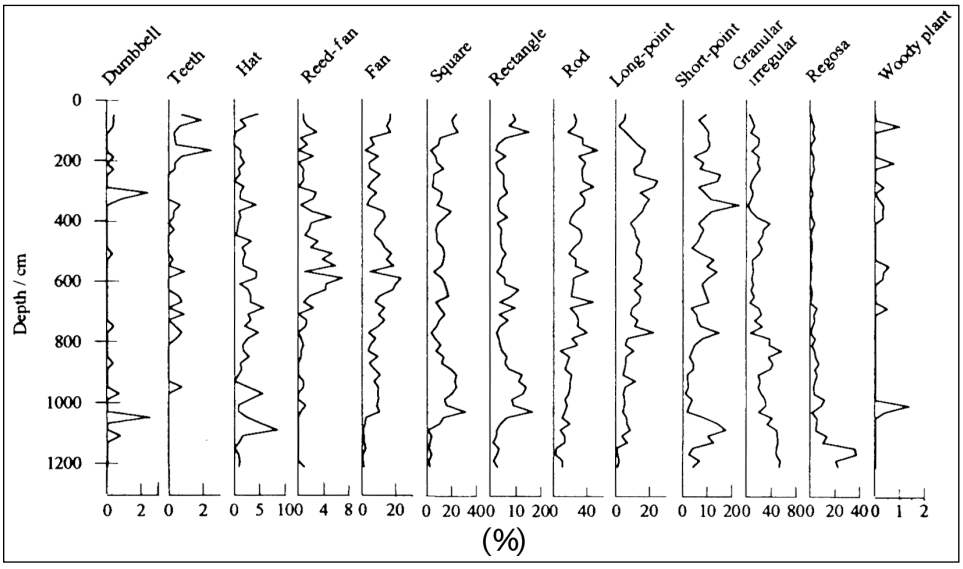

Fig. 6: Diagram of the percentage frequencies of 13 major phytolith types from the Baoji loess sequence for the last 150 ka.

Seasonal Climatic Variation recorded by Phytolith Assemblages from the Baoji Loess Sequence in Central China over the last 150 ka

153 samples from modern surface soils in China were collected and analyzed quantitatively alongside related meteorological data. 25 types of opal phytoliths, with significant climatic linkages, were selected to establish climatic transfer functions. The modern climatic parameters used in this study are based on data for annual mean temperature and annual mean precipitation over the past 40 years from the Chinese National Meteorological Bureau (1995). *Fig. 6* is a percentage diagram of 13 major phytolith types from the Baoji loess sequence in the south of the Loess