Research on MB Growing Feature and MS Forming Environment in Chinese Quaternary Terrestrial Sediments

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Global climate and geologic-morphologic feature control the form and distribution of Chinese Quaternary terrestrial deposit, which can be divided into3 types according to deposit color, that are Red earth, black earth and yellow earth (loess). For getting information of paleo-climate by MB(magnetotactic bacteria) distribution and contribution of MS(magnetosomes, exist in MB) to susceptibility, we researched the relationship between organic matter and susceptibility, MB and MS by geological sample and simulated experiments. The results show that

1 MB grows in the 3 kind of sedimentregions, their shape is related with the environment, especially with temperature. In the same medium the length/width is increase (1→6) with decreasing in temperature(30•→8•);

2 MS is unstable in MB body, although MB grows in Red earth and Black earth, MS is not develop in the MB. If MS left or did not grows in MB, a lot of bubble structure can find in the MB body;

3 Correlation coefficient between total organic carbon and susceptibility is very good in the Multiple cycle loess-paleosol sequences (R in xifen and Duangjiapo section is 0.80 or 0.98 respectively), MB and MS develop in the loess section, especially in the paleosol layers. The simulated experiment shows that a moderate amount of organic iron, suitable difference of temperature during a day, and more stable medium are favorable

to form MS, susceptibility after the culture of MB in sampling from Xifen and Duangjiapo section can increase by 0.8-116.4%.