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RECONSTRUCTION OF THE HIGH RESOLUTION TIMESCALE IN THE WEINAN LOESS SECTION OF THE LATE QUATERNARY

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Abstract: Seven samples of loess and paleosol collected from the major stratigraphic boundaries of the Weinan section, Shaanxi Province, have been dated using the fine-grain TL technique. Based on the TL results and previously ages-published from this section, the polynomial regression methods are applied to developing the high resolution timescale for the Weinan loess section in the Late Quaternary. According to this timescale, the ages of S0/L1－1, L1-1/L1-2, L1-4/L1-5, L1－5/S1 and S1/L2 stratigraphic boundary of Weinan section are 1.1, 2.5, 5.1, 7.6 and 12.8 ka. With exception of the maximum difference between the ages of L1-4/ L1-5 and the ages of 3/4 stage boundary of the deep-sea oxygen isotopes, they are generally consistent with the ages of 1/2, 2/3, 4/5 and 5/6 stage boundary of the deep-sea oxygen isotopes in the SPECMAP curve.

Key words: loess; thermoluminescence dating; high resolution; timescale.

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东昆仑塔妥煤矿羊曲组化石新材料及地质意义

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东昆仑塔妥煤矿羊曲组呈断片分布,为东昆仑造山带东段昆中蛇绿混杂岩带中的最年轻的一个构造岩片,前人认为其时代为早侏罗世[1～2].

据本次塔妥煤矿羊曲组实测剖面研究,可将羊曲组自下而上划分为 3 个岩性段:(1)砂砾岩段(TJy^1),为灰白色、黄褐色、黄灰色、灰紫色中—厚层状复成分砾岩、石英砾岩、含砾石英质杂砂岩,夹深灰色、黄灰色中厚层状粉砂岩、泥质粉砂岩,发育交错层理、平行层理,为河流相产物.(2)含煤砂泥岩段(TJy^2),为深灰色、褐灰色薄—中厚层状泥质粉砂岩、粉砂质泥岩、钙质泥岩与灰黑色炭质泥岩互层,夹数层煤线及可采煤 4 层,发育小型交错层理、平行层理、水平层理、小型波纹层理.富含植物碎屑、孢粉,产淡水双壳类,主要为湖沼相产物.(3)砂岩段

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UPGRADING OF COMPUTER FOR POLE FIGURE ATTACHMENT CONTROL SYSTEM AND DESIGNING OF WINDOWS95-COMPATIBLE PROGRAM

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Abstract: On the basis of the structural analysis of the pole figure attachment in X-ray diffractometer, this paper presents the method for upgrading this pole figure attachment, including the designing of computer interface and the application of the software program compatible to the WINDOWS95 operating system. In addition, this upgrading method also includes the system safety and the operational convenience.

Key words: pole figure attachment; computer; interface; software programming.

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(TJy^3),为灰白色、灰紫色、青灰色中一厚层状细一粗粒石英砂岩、岩屑砂岩夹青灰色、紫灰色薄一中层状泥质粉砂岩、粉砂质泥岩.粉砂岩和泥岩中含植物碎片.发育大中型交错层理、平行层理,为河流相产物.

本次在塔妥煤矿羊曲组含煤砂泥岩段(TJy^2)底部(剖面第8层)获得丰富的孢粉化石:*Alisporites* spp., *A. toralis*, *Cycadopites* spp., *Aratrisporites tenuispinosus*, *Calamospora nathorsti*, *Caytonipollenites pallidus*, *Cyathidites* sp., *C. minor*, *Chordasporites* sp., *C. australiesis*, *Limatulasporites limatulus*, *L. parvus*, *Lundbladispora nejburgii*, *Perinopollenites* sp., *Stenozonotriletes* sp., *Striatopodocarpites* sp., *Taeniaesporites* sp., *T. novimundi*,上述孢粉组合反映的是我国三叠纪孢粉组合面貌,组合中出现了一些三叠纪典型分子,如 *Lundbladispora*, *Taeniaesporite*, *Aratrisporites* 是三叠纪广泛分布的重要特征属, *Chordasporites* 也是三叠纪的常见分子.在早三叠世孢粉组合中常见的一些晚古生代的孑遗分子如 *Densoisporites*, *Stellisporites*, *Crassisporites*, *Torispora* 等在本组合中未见.因此当前孢粉组合的地质时代应为中三叠世.

综合上述羊曲组的时代依据,可以判断东昆仑海西一印支期的昆中特提斯小洋盆在中二叠世末关闭后,经历了晚二叠一早三叠世强烈的陆内收缩挤压隆升阶段[3],至中三叠世,当东昆南南侧红水川一托索湖一带为萎缩的前陆浊积盆地,东昆仑一阿尼玛卿造山带前陆盆地主体迁至玛沁、玛多一带时东昆南北侧和昆中一带则出现陆内山间小型断陷盆地,盆地内充填了一套河流一湖沼相含煤碎屑岩建造,反映出中三叠世东昆仑东段造山带应力场一度转为松弛阶段,其后的陆相再次收缩挤压导致推覆逆冲走滑作用,使塔妥煤矿的羊曲组最终呈构造岩片形式定位于东昆中蛇绿混杂岩带内[3].

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