

西北早一中侏罗世 煤岩煤质与煤变质研究

RESEARCH ON COAL PETROLOGY
PROPERTIES AND METAMORPHISM OF
EARLY—MID JURASSIC COAL IN
NORTHWEST CHINA

吴传荣 张 慧 李远虑 李小彦 汪程生 著

煤炭工业出版社

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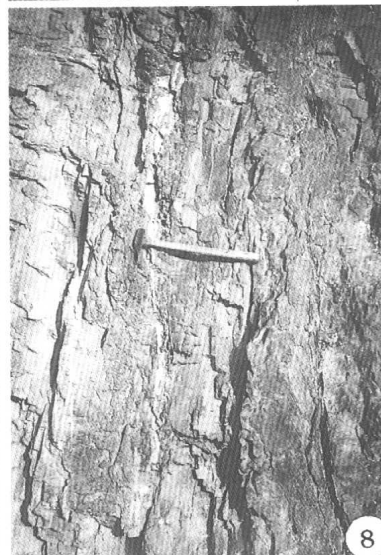
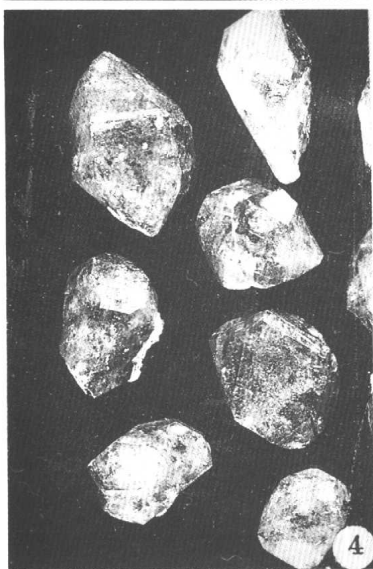
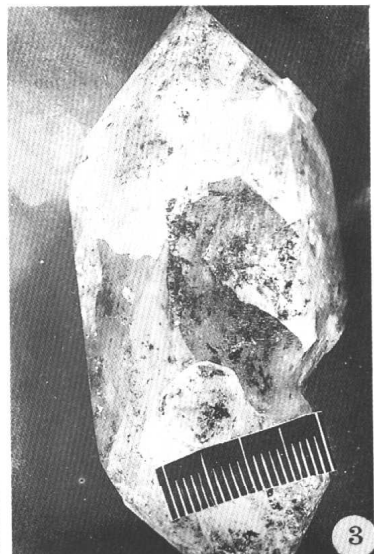
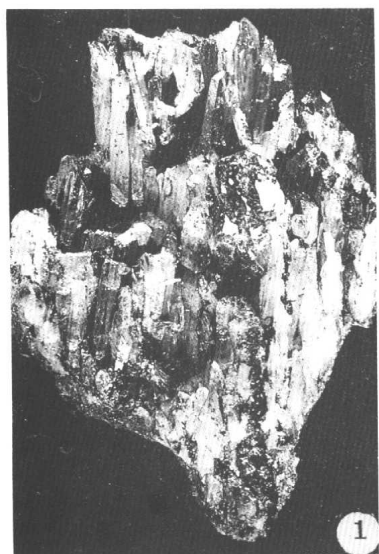
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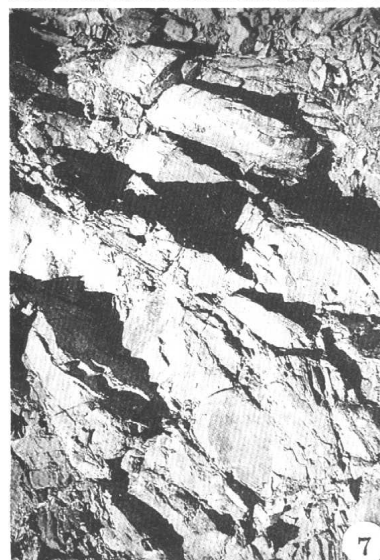
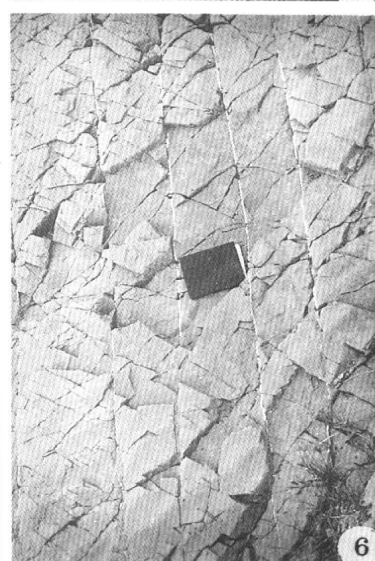
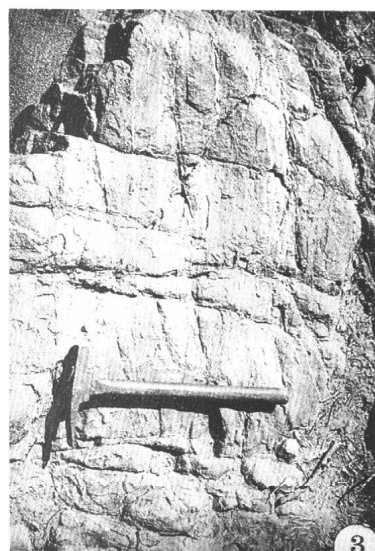
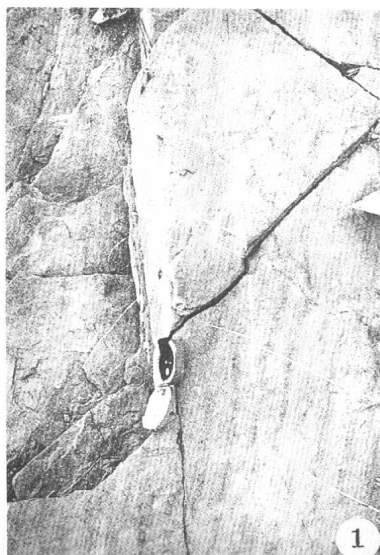
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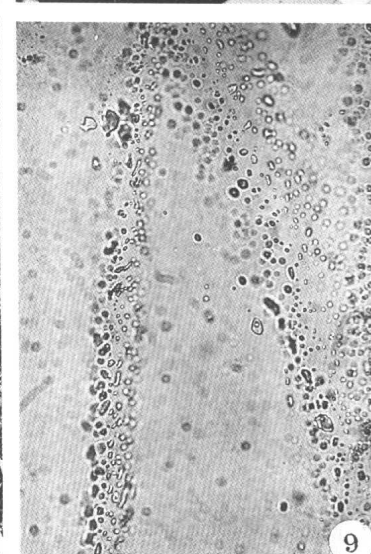
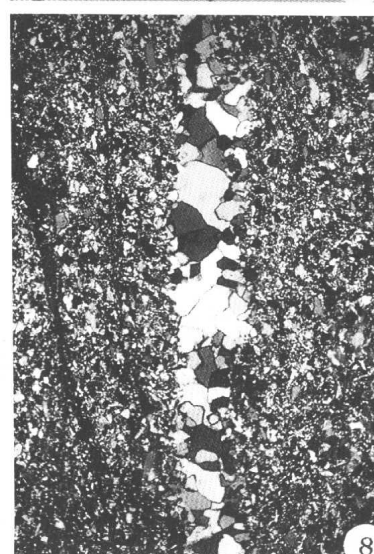
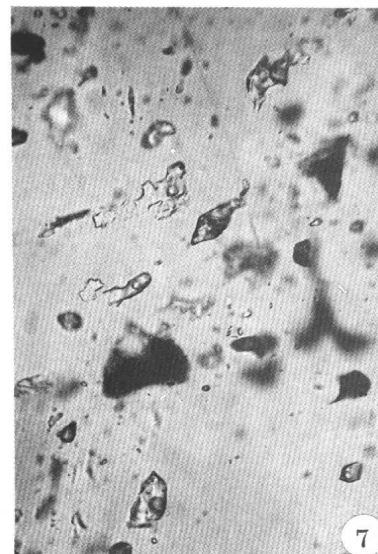
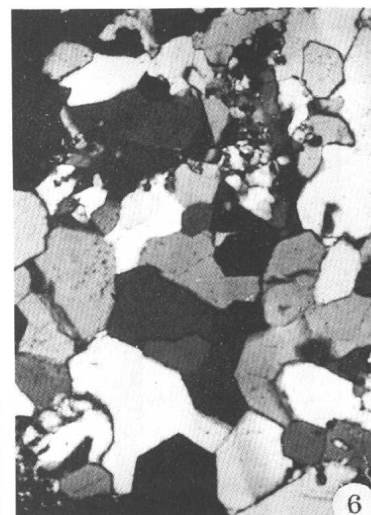
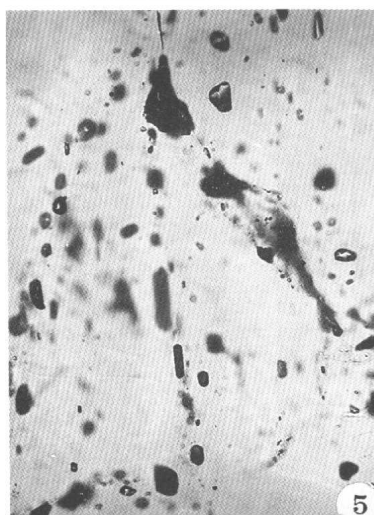
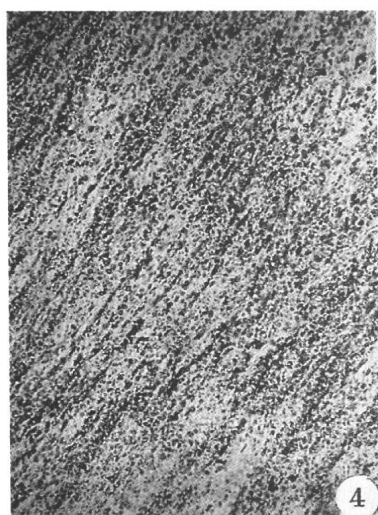
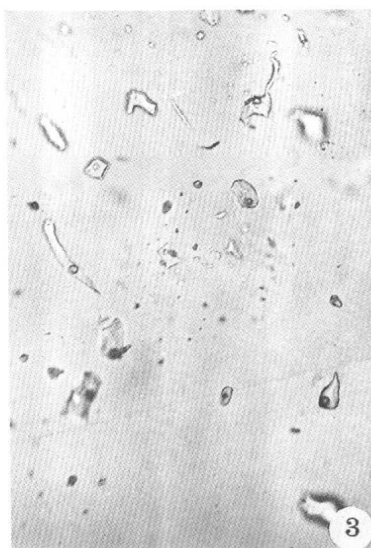
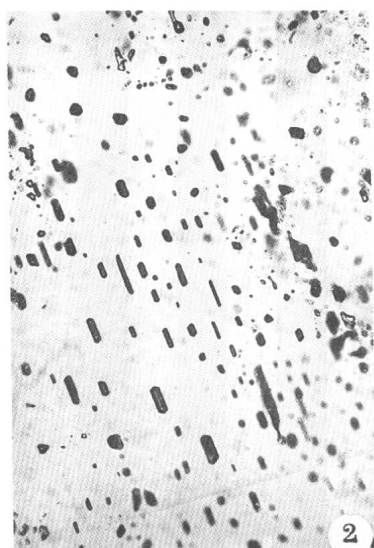
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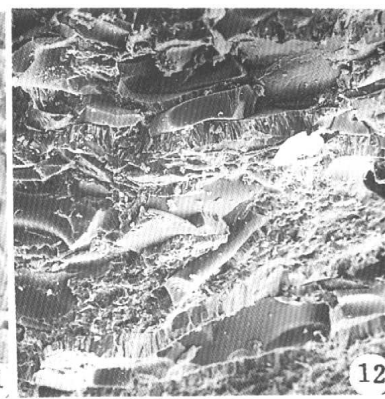
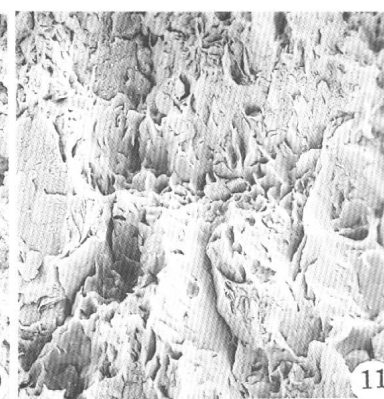
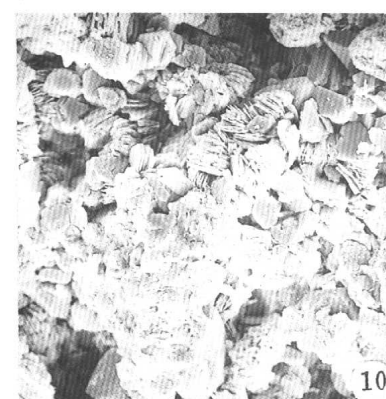
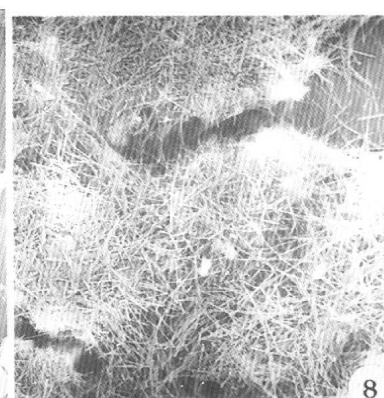
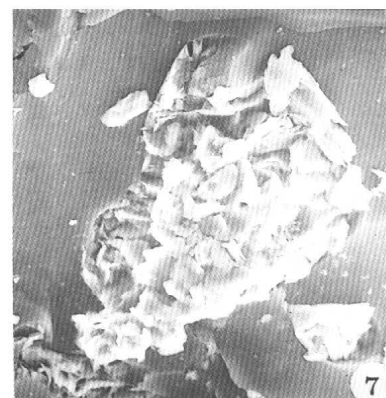
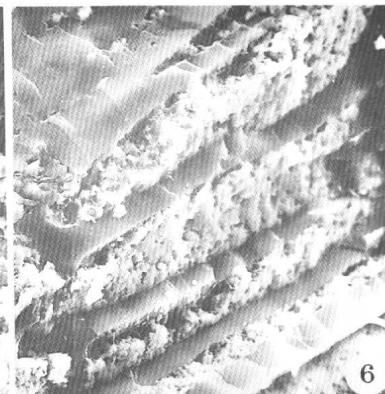
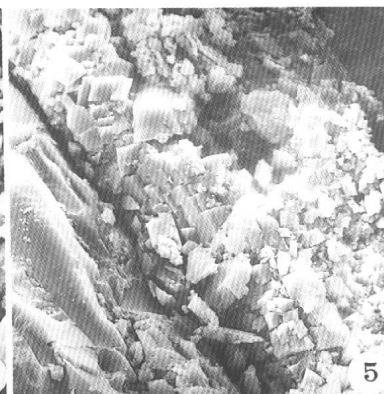
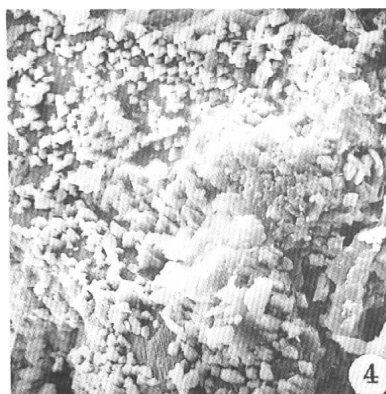
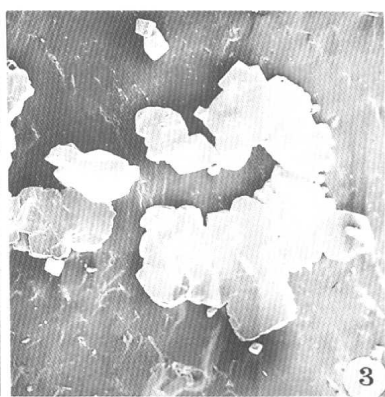
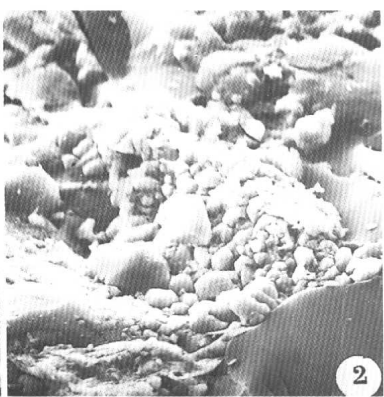
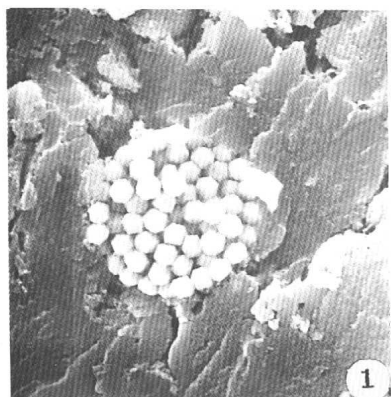
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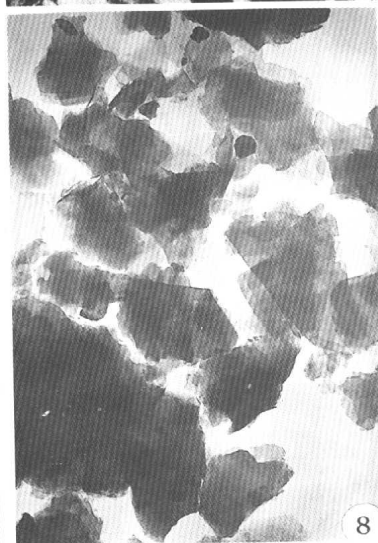
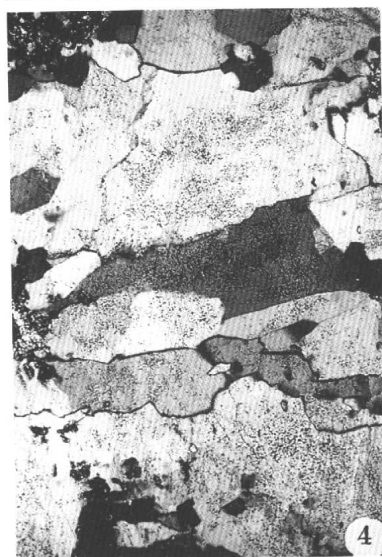
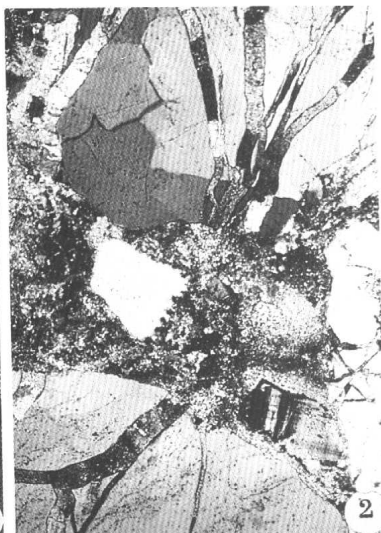
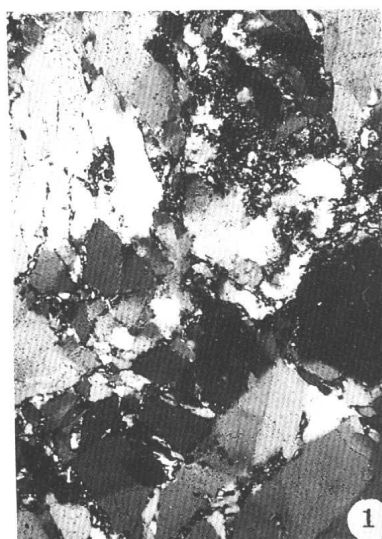


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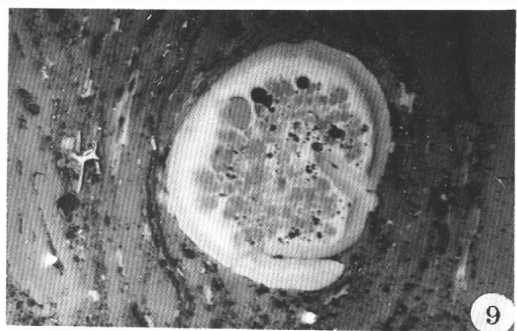
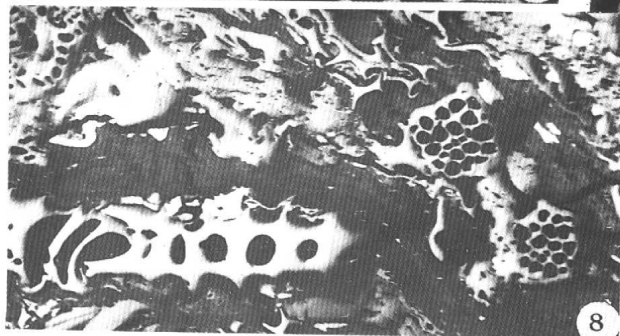
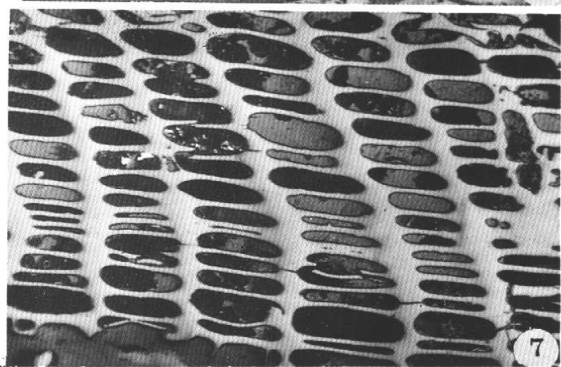
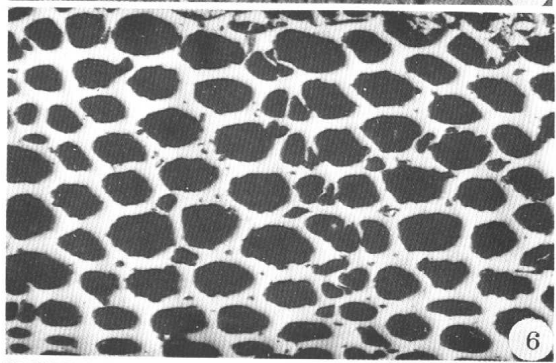
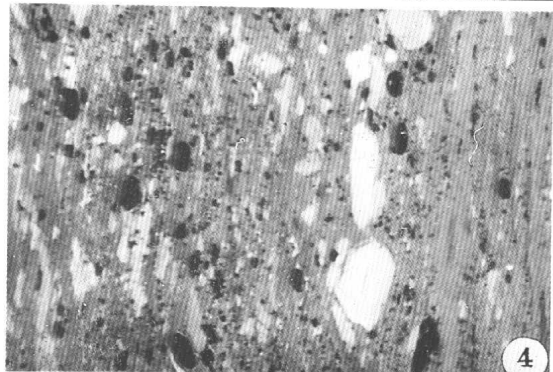
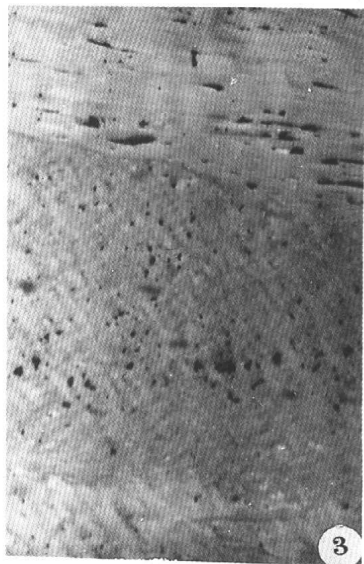


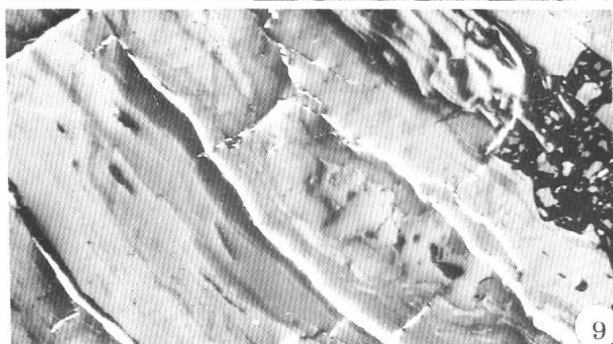
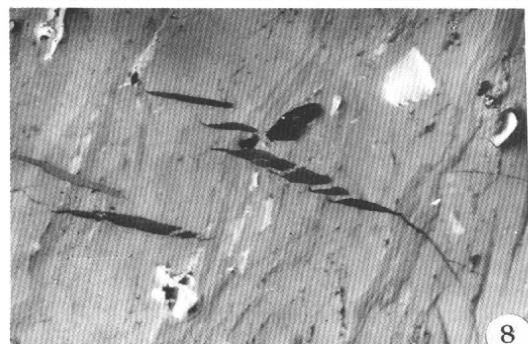
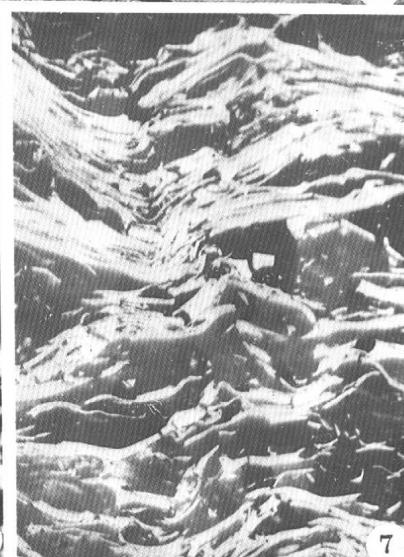
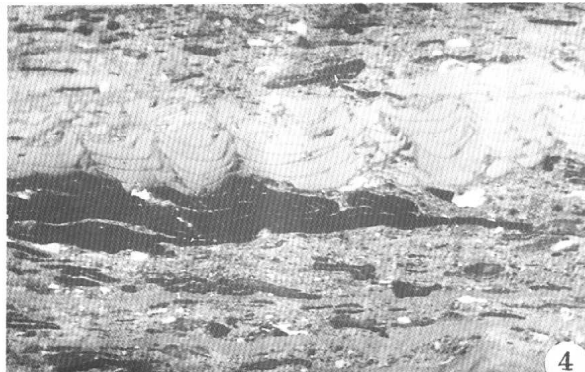
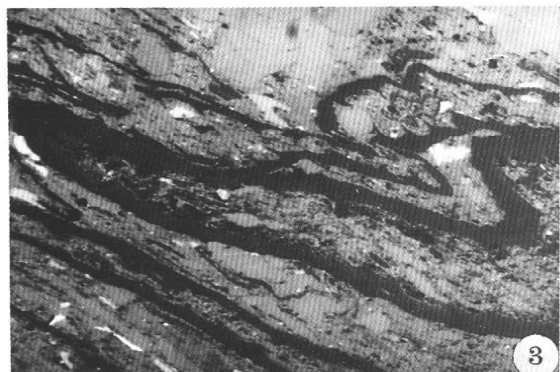
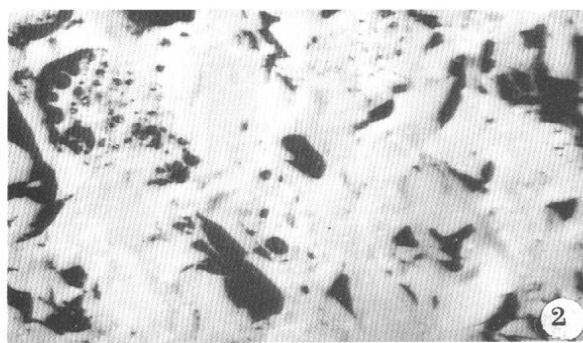
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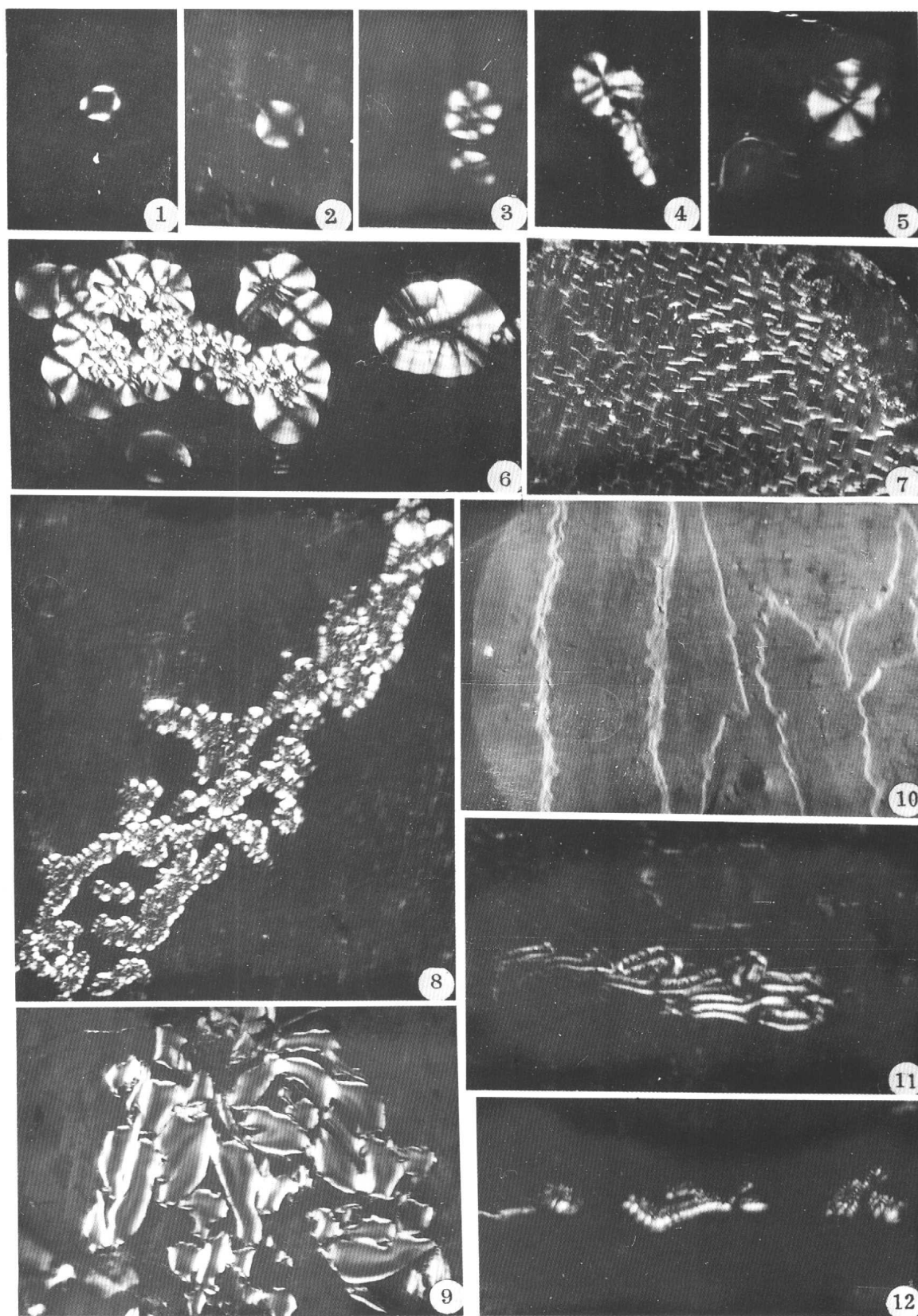


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图版8



内 容 提 要

本书从分析含煤区的地壳结构、航磁异常、隐伏岩体及中、新生代岩浆活动规律入手,首次研究了我国西北早-中侏罗世煤的煤质、煤级和煤变质带,用较大篇幅对宁夏汝箕沟矿区煤的变质进行了较全面的剖析。在研究煤变质的同时,特别注重了煤系中的岩脉和煤层围岩的岩石学、矿物学及地球化学等多学科研究。在综合研究的基础上,提出了有关煤变质的一些新观点,建立了岩浆热变质作用的地质模式,并探索出一些新的热变质成因指标,从而进一步加深与完善了岩浆热变质作用的研究。

本书可供煤田地质、石油地质、冶金地质、地热地质等工作及有关专业人员参考。

Abstract

This book is a summary of the authors' research results for many years, is a monograph on coal metamorphism. New views and achievements in the book are as follows:

1. Concealed intrusives provide add heat sources for geothermal anomaly. During Mesozoic and Cenozoic Era, magmatic activity is wider, concealed in Northwest China. It is heat from concealed intrusives that promote metamorphism of Early-Mid Jurassic coal.

2. Quartz veins are important mark of telemagmatic metamorphism of coal. There are many quartz veins (width is a few centimetres) in Early-Mid Jurassic coal measures. The veins result from postmagmatic pneumatolite solution, being often referred to as good ground indication of concealed intrusives. Their direction, size and contact relation with adjacent rock can reflect the place, scale and nature of concealed intrusives.

3. Heat source, heat conduction and heat closed, three elements are essential for geothermal anomaly and metamorphism of coal. From this idea, a model of telemagmatic metamorphism that have a heat source from concealed intrusives has been built. Authors emphasize the importance of strata structure and boundary conditions (fold, fault) in the model.

4. In Northwest China, low rank coal is mainly controlled by plutonic metamorphism, the higher than low-mid rank coal results from adding telemagmatic metamorphism on the basis of plutonic metamorphism.

5. New genesis indexes have been explored in the way of coal metamorphism. Such as shape of minerals, illite crystallinity, trace elements within veins, inclusion temperature and so on. Which will be used as genesis foundation for analyzing metamorphism of coal and parameters for predicting coal species.

6. Properties and metamorphism regularities of Early-Mid Jurassic coal are known again, as well as, the predicting direction of coal species is provided in Northwest China.

The book serves as a reference for scientists, producers, teachers and students in coal, oil and metal geology.

前 言

我国西北地域广阔,能源丰富,煤炭地质总储量占全国总储量的45.91%,预测储量占全国预测总储量的50.52% (1987)。而中生代早-中侏罗世又是我国煤炭储量最丰富的成煤期,其预测储量占全国预测总储量的60%以上,其中90%以上集中在西北地区。显而易见,西北早-中侏罗世是我国煤炭资源的巨大潜力所在。然而,西北早-中侏罗世煤的煤种、煤质特征与变质规律的研究程度,却远不如华北、华东、及东北等地。这种局面无疑地限制了西北煤炭资源的合理开发和利用。由此,作者于1990~1993年申请并完成了煤炭科研指令性课题——西北煤变质特点及优质煤种预测。本书即系在该研究成果的基础上撰写而成。

研究工作采用了由野外到室内,由宏观到微观、由现象到本质的科研方法与思路。先后两次对宁夏汝箕沟矿区进行了全方位的地面地质观测,随后又对新疆艾维尔沟、阜康、甘肃九条岭等地进行了实地调查,并按一定的时间和空间规律采集了煤层、砂岩、泥质岩、脉岩等样品500多个。室内开展了岩矿薄片鉴定、煤岩鉴定、煤质分析、煤物理性质测定,煤化学结构分析、粘土矿物分析、脉岩包裹体分析测试、块状岩样和煤样的电子显微镜观察等九大类共40项内容的分析测试工作。野外与室内均取得了较丰富的第一性资料。本书撰写分工如下:

前言、第一章、第八章由吴传荣、张慧执笔;第二章由李远虑、吴传荣执笔;第三章由李小彦、吴传荣、汪程生执笔;第四章由李小彦、汪程生执笔;第五章由吴传荣、李远虑、汪程生执笔;第六章由吴传荣、张慧、李小彦、汪程生执笔;第七章由吴传荣、李小彦执笔;第九章由张慧、吴传荣执笔;第十章由吴传荣执笔。最后由吴传荣、张慧对全书进行了统纂和审校。

此外,张彩荣、刘有年参加了汝箕沟矿区的专题研究工作。在研究过程中,得到了中国地质大学北京研究生部、中国矿业大学北京研究生部、地质矿产部遥感中心、中国煤田地质局、陕西省地质矿产局、西安矿业学院、西安地质学院、宁夏回族自治区煤炭工业厅、汝箕沟煤矿、大风沟煤矿、白芨沟煤矿、银川地质队、宁夏回族自治区地质局、固原县炭山煤矿、彭阳县王洼煤矿、新疆维吾尔自治区煤田地质局及156队、艾维尔沟煤矿、甘肃九条岭煤矿等的热情支持;煤炭科学研究总院西安分院对本书的编写和出版给予了指导和大力支持,在此一并表示衷心的感谢。

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