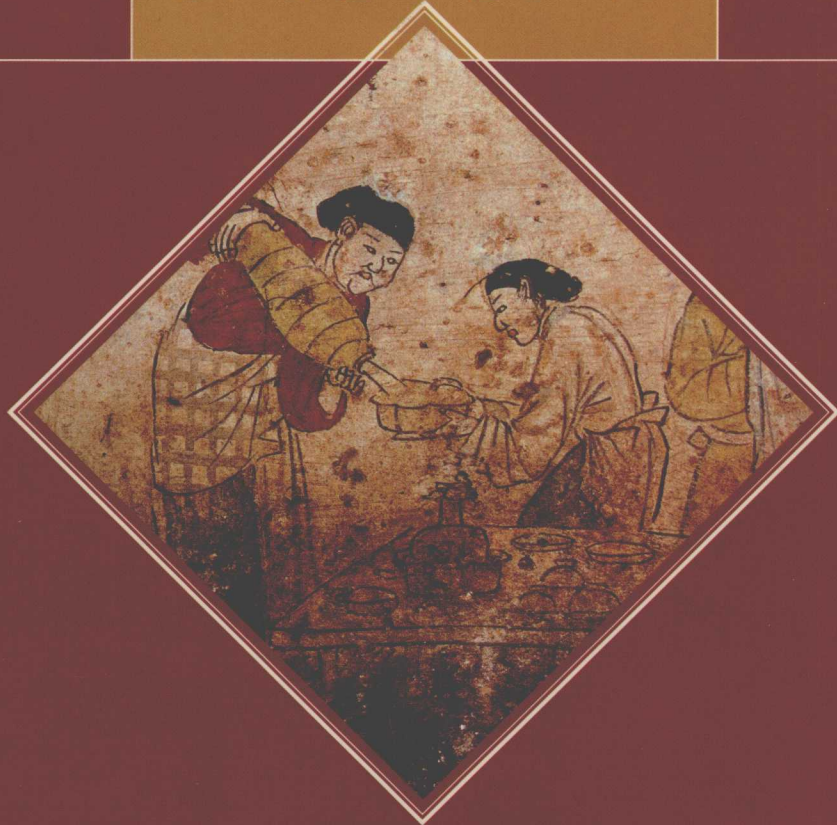


北京文物与考古系列丛书

北京地区辽金墓葬
壁画保护研究

◆ 北京市文物研究所 编著



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内 容 简 介

本书介绍了北京地区辽金墓葬壁画的概况,系统论述了北京地区辽金墓葬壁画的制作工艺、制作材料及结构,对壁画的颜料、病害机理、保护及修复工艺等方面也做了较为详细的介绍。

本书可供考古工作者、文物保护工作者及文物爱好者阅读、参考。

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北京文物与考古系列丛书编辑委员会

主任 宋大川

序

壁画是人类社会活动中遗留下来的具有历史、艺术和科学价值的珍贵的文化遗产，是历代先人智慧的结晶，是人类宝贵的文化财富，采用现代科学技术手段，使北京地区辽金墓葬壁画得以长久保存，是文物科技保护的重要途径。

近年来，在城市建设中，发现了多座辽金时期的壁画墓，2002年石景山八角村金墓出土的壁画，是北京地区完整揭取下来的金代壁画之一，对研究辽金时期丧葬习俗、壁画形制与绘画题材、内容及风格有着极其重要的意义，对研究辽金历史、风俗和文化也有着极为重要的价值。同年，北京市文物研究所在大兴区青云店发现了两座圆形穹隆顶单室墓，墓室内壁绘有壁画。墓葬壁画的发现，为研究辽代早期墓葬形制、壁画风格和器物演变等补充了新的资料。2005年，北京市文物研究所在延庆县张山营镇晏家堡村北发掘了一座金代壁画砖室墓。墓室壁画分别描绘了出行仪仗、侍女、鼓乐等内容。壁画人物生动、线条流畅、眉目传神。辽金时期壁画在延庆是首次发现，在北京地区也弥足珍贵。

北京地区辽金墓葬壁画以其形象生动的笔触，描绘了富有特色的民族生活，是中国古代绘画艺术宝库中的奇葩，对于研究契丹和女真族的社会生活、发展变迁、文化传播、民族融合提供了新的资料，开拓了新的视野。

然而，这些精美的辽金墓葬壁画，在经历了地下漫长的埋藏岁月，在自然界诸多因素的影响下，已经产生了各种病害。因此，保护和修复辽金墓葬壁画是摆在文物保护工作者面前的一项重要任务。

为了使北京地区辽金墓葬壁画得以长久保存，北京市文物研究所进行了科学研究和一系列的技术保护修复工作，这部书便是北京地区出土辽金壁画科学保护工作的研究总结。

宋大川

2008年3月

北京地区

辽金墓葬壁画

保护研究

前言


公元938年，契丹占据幽州后，升幽州为南京，又称燕京，作为陪都，拉开了北京都城历史的序幕。辽南京遂成为北中国的文化与军事、政治重镇。金灭辽后，于1153年迁都至辽南京，改名中都。从此，北京成为封建王朝的正式都城。

近几年来，通过考古发掘的全面展开，北京地区发现了许多辽金墓葬，在这些墓葬中，有一部分绘有珍贵精美的壁画。这些精美的辽金墓葬壁画内容丰富多彩，有着高超的绘画技艺，具有较高的历史、艺术和科学价值。因此，保护和修复这些辽金墓葬壁画，是摆在我们面前的一项重要任务。

2002年3月，北京市文物研究所在北京市石景山区五环路八角村抢救发掘了一座金代壁画墓。该墓由墓道、影风墙、墓门、墓室四部分组成。这座墓室四周绘有六幅栩栩如生、色彩鲜艳的壁画。在墓室顶部边缘绘有十二生肖，所画动物形象均瘦可见骨。同时，壁画上绘制的奏乐、宴会、会客、侍女等内容，反映了墓主人生前的生活场景。其中，正对墓门的墓壁上绘有墓主人寝室图。正中为四扇屏风一座，黑色边框上部绘有盛开的花朵。屏风前有一卧榻，三面有云头栏板，以四根望柱相隔。卧榻正中放有睡枕。卧榻东侧有一侍女，高髻广袖，双手当胸持摇扇立于榻边。北京地区发现的金墓数量较少，壁画墓更少，此墓的发现，更显珍贵。

2002年4月，北京市文物研究所在北京市大兴区青云店镇东南的西杭子村王致和腐乳厂西墙外发现两座辽代砖墓。该地地处凤河流域。经抢救性处理，得知两座墓葬形制相同，均为青砖砌成的圆形穹隆顶单室墓，由墓道、墓门、门墙、甬道和墓室组成。墓室内壁绘有壁画。墓葬的发掘，为研究辽代早期墓葬形制、壁画风格和器物演变等补充了新的资料。

2005年4月北京市文物研究所在北京延庆县张山营镇晏家堡村北发掘了一座金代壁画砖室墓。该墓为圆形单室墓，南北向，由墓道、墓门、甬道、墓室等部分组成。墓室内壁按圆周八等分，砖砌柱角上有斗拱装饰。墓室内壁原绘有壁画，现甬道及墓壁尚残存壁画4幅，分别描绘出行仪仗、侍女、鼓乐等内容。壁画人物生动、



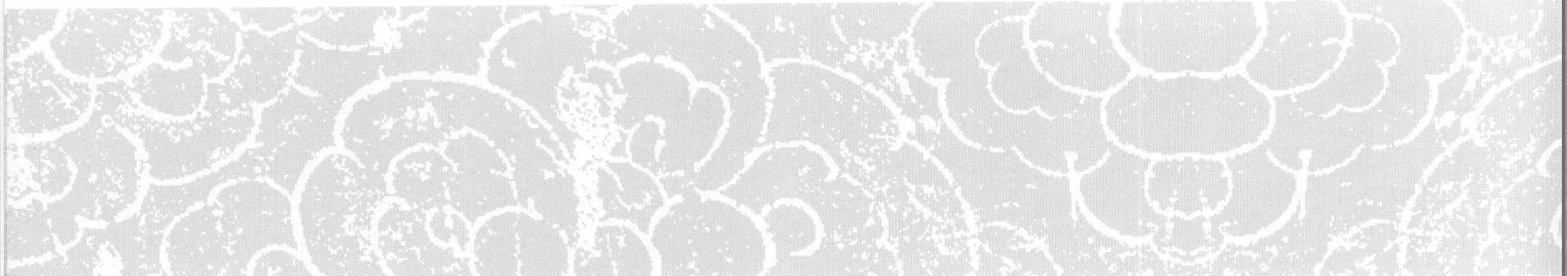
线条流畅、眉目传神、色彩艳丽，虽然剥落较为严重，但人物的面貌、服饰仍清晰可辨。金代壁画在延庆是首次发现，在北京地区弥足珍贵。

北京地区辽金时期的墓葬壁画来源于中原，因而在制作、构思立意、设计布局、绘画技法上，都同唐、五代、北宋的墓葬壁画相类似。墓葬壁画的结构一般是由基础支撑体、地仗层、颜料层三部分组成。北京地区辽金墓葬壁画的绘制一般经过以下的过程：将墓壁表面处理平整后，在墓室砖墙上抹一层草拌泥，即灰泥层，然后在上面再抹一层白灰，即白灰层，这两层构成壁画的地仗层，最后在白灰底上起画稿、定画稿。施彩所用的颜料基本上都是矿物质，有铁红、白垩、朱砂、铅丹、炭黑等。北京地区辽金时期墓葬壁画多绘于墓室和甬道，辽金时期墓葬壁画不易保存下来，多残缺不全。

由于北京地区辽金时期的墓葬壁画一直被埋藏于地下数米或数十米的深处，在封闭的状态下，墓葬中的温度、湿度、酸碱度、震动度、气体的成分及含量、微生物种类及含量等都相对比较稳定，故能够长期保持艳丽的色泽和清晰、完整的画面。一旦失去了这一独特的环境，在地面上的各种物理、化学因素的影响下，壁画由于其材质、潮湿、氧化、光照等原因，极易受损。墓葬壁画一般面临的问题主要有：壁画地仗层大面积脱落或崩塌，壁画发生空鼓、剥落和酥碱，壁画起甲、变色、褪色，壁画画面污染，如泥土附着、霉菌等，壁画断裂、变形等。

《中国文物古迹保护准则》规定，文物必须原址保护，只有在发生不可抗拒的自然灾害或因国家重大建设工程的需要，使迁移保护成为唯一有效的手段时，才可以原装迁移，易地保护。但因种种原因，当壁画在原始环境中无法很好地保存下去时，为防止壁画遭受进一步的损坏，壁画的揭取保护是必要的。壁画的揭取保护简单地讲，就是把壁画从其支撑体上揭取下来，再安装到新制作的支撑体上的这一过程，长期以来壁画的揭取一直是壁画保护行之有效的办法。

欧洲最早的壁画揭取是在19世纪中叶，那时人们对壁画的保护还不甚重视，揭

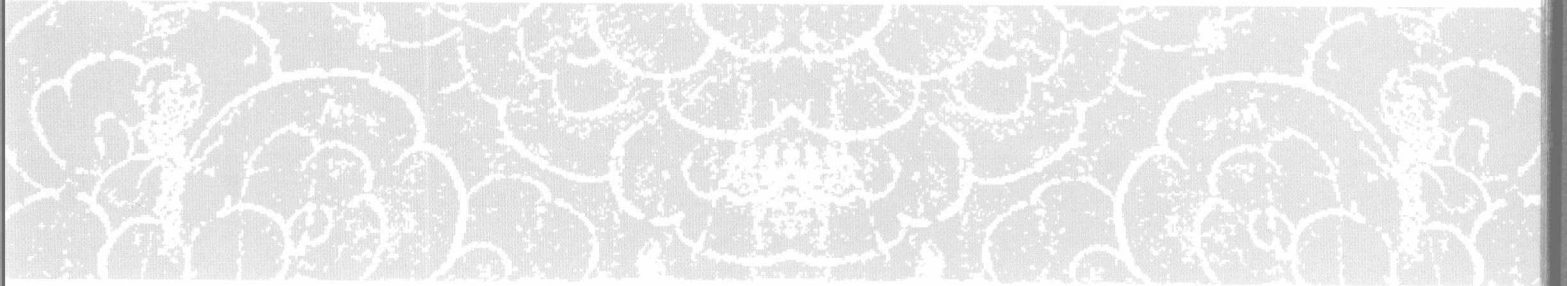


取壁画主要是为了研究其艺术价值和宗教价值。我国自20世纪五六十年代才开始揭取墓室壁画，直到现在揭取壁画时仍沿用同样的方法。但近几年来，由于所揭取的壁画在库存和修复的过程中皆出现了不同程度的病害及其他问题，迫使人们不得不加强这方面的研究工作，并找出问题的所在。北京地区辽金时期的墓葬壁画在壁面制作、颜料、技法等方面，有自身独特的一面，与西方壁画截然不同。传统的揭取方法有它的成功之处，但在材料、工具、药品等方面，需要改进和提高。如何将西方先进的材料、工具与传统的方法相融合，冷静、客观、科学地进行分析和筛选，以规范壁画揭取技术，提高壁画揭取的整体水平，也是值得我们认真思考和解决的一个问题。

北京市文物研究所在长期研究和试验的基础上，确定了安全、稳妥的揭取实施方案，对大兴区青云店辽代壁画、延庆县张山营金代壁画、石景山区八角金代壁画进行了揭取工作。

为了能够让北京地区辽金时期的墓葬壁画长期地保持原貌，我们需要在认真调查古代墓葬的内部构造和环境、壁画原有保存状态的前提下，研究壁画的制作技艺，准确地分析壁画颜料的成分，了解壁画的褪色机理，并借鉴各国各地区的经验和研究成果，采用科学技术手段来完成壁画的保护修复。针对壁画病害的保护具有两层含义，一是对已发生病变的壁画采取适当的修复材料与工艺，使之重新变得稳定；二是对还没有发生病变的壁画，积极采取预防措施，使之尽可能不发生变化，以维持其结构的稳定。

随着科学技术的进步和发展，对文化遗产的保护日益重视。壁画的保护科学技术也得到了较快的发展，壁画保护不再是简单的手工作坊操作，也不是各种传统工艺的拼凑应用，更不是从属于其他学科的辅助性劳动，壁画保护已经变成一门独立的学科。自然科学的各门学科是以不同的角度去探索自然的现象及其发展变化规律的。壁画保护科学技术是自然科学中研究壁画质变规律，并对抗自然对其破坏的一门科学，它研究壁画在内外因素影响下的变化规律，应用科学技术手段，维护壁画本来面貌，对抗一切形式的变化，延缓壁画质变过程，控制降低质变速度，对壁画进行综合防治。



为防止壁画进一步损坏，需采取必要的保护修复技术，最大限度的减少壁画的损坏。一是要引进国际上先进的科技手段，二是重视传统壁画保护修复技术，对受损壁画进行修复处理，消除其病害，控制其劣化，应用各种新技术和工艺对壁画进行有效的修复。

北京地区出土的这些精美的辽金墓葬壁画，用丰富多彩的内容，描绘了极具民族特色的社会生活，是中国古代绘画艺术宝库中的奇葩，为研究契丹和女真族的社会生活、文化艺术以及契丹族、女真族同汉族之间的关系等都提供了极为宝贵的实物资料，具有较高的历史、艺术和科学价值。这些墓葬壁画属于极易破损的珍贵文物，从揭取、加固、保护、修复，到日常的保管，都有很严格的技术要求和许多亟待解决的问题，需要考古、美术、文物保护、科技、博物馆管理以及社会各界的高度重视，也需要开展国际间的合作。由于编者水平的局限和时间的仓促，本研究报告不可避免的存在着许多谬误之处，敬请专家和同行批评指正。大家互相借鉴，取长补短，携起手来共同解决壁画保护的难题。

刘乃涛 董育纲

2008年3月

北京地区

辽金墓葬壁画

保护研究


Preface

The Khitan people took over Youzhou, renamed it Nanjing (the South Capital), also known as Yanjing, and promoted it to attendant capital in 938 AD. This event marks the beginning of Beijing's history as a capital city. The Liao Dynasty Nanjing became an important city in the culture, military, and politics in Northern China. After the Liao Dynasty was overthrown by the Jin Dynasty, Liao's Nanjing became the capital, and was renamed Zhongdu (Mid-Capital). From then on, Beijing became the official capital of feudal dynasties.

In recent years, through comprehensive archeological work in Beijing, many tombs from the Liao and Jin Dynasties have been found. Among these tombs, some have been discovered to have rare and beautiful wall paintings. These delicate wall paintings have colorful content, excellent skill, and great historical, artistic, and scientific value. Thus, protecting and restoring these tomb wall paintings from the Liao and Jin Dynasties has become an important mission for us.

In March 2002, Beijing Institute of Cultural Relics excavated a tomb with wall paintings from the Jin Dynasty. This tomb located in Bajiao village, Wuhuan road, Shijingshan District. This tomb was made up of a tomb gallery, a tomb wall, a tomb door, and a tomb chamber. On the walls of the chamber were six lifelike and brightly colorful wall paintings. On the borders of the roof of the chamber were the twelve animals of the lunar calendar, which were all so thin that the bones were distinguishable. At the same time, the wall paintings also depicted scenes from the life of the person buried in the tomb, including playing music, banquet, meeting guests, and maids. Among these, a picture of tomb owner's bedroom was painted on the wall adjacent to the door. In the middle there was a four-leaf screen with a black frame and blooming flowers painted on it. In front of the screen was a bed with sideboards with cloud patterns on three sides, and divided by four sacrificial columns. In the middle of the bed was a pillow. To the east of the bed was a maid with high bun and full sleeves, standing to the side of bed and holding a fan in her hands upon her breast. As tombs from the Jin Dynasty are few in Beijing, and tombs with wall paintings even fewer, the discovery of this tomb is a rich treasure.

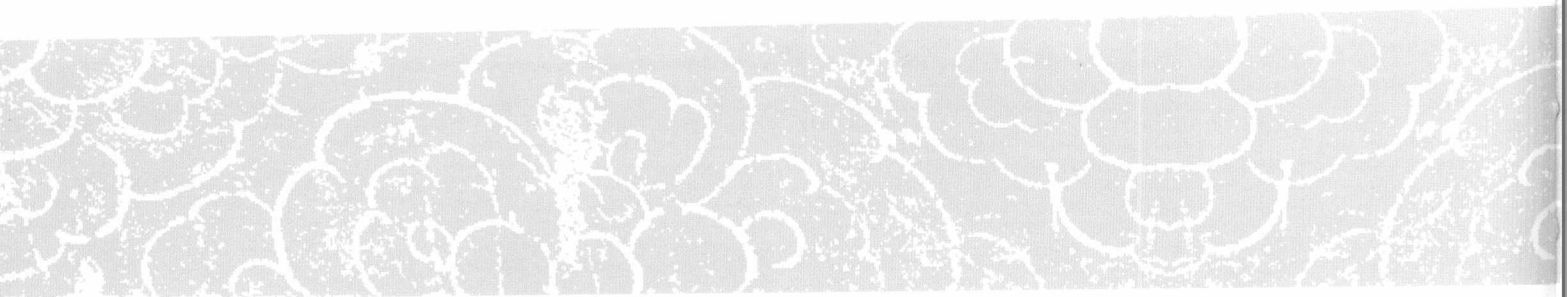
In April 2002, Beijing Institute of Cultural Relics discovered two brick tombs from the



Liao Dynasty outside the western wall of the Wangzhihe Bean Curd Plant at the Xihangzicun Village, southeast of Qingyundianzhen, Daxing District, Beijing. This area is located in the basin area of the Fenghe River. Through emergency excavate procedures, it was found that the two tombs had similar shape and structure. The two tombs both have a round single-chamber brick structure with a domed roof built with grey bricks, and made up of a tomb gallery, a tomb door, a tomb wall, a covered corridor and a burial chamber. The chamber walls were painted with wall paintings. The excavation of these tombs added new information for the study of the structure of early Liao tombs, style of wall paintings, and the evolution of implements.

In April 2005, Beijing Institute of Cultural Relics excavated a brick chamber tomb with wall paintings from Jin Dynasty. This tomb located in Yanjiabu Village, Zhangshanyingzhen, Yanqing County, Beijing. This tomb had a round single-chamber brick structure, was oriented north-south, and made up of a tomb gallery, a tomb door, a covered corridor and burial chamber. The tomb gallery was 12.3 meters long, and the chamber was 3.5 meters in diameter with 2.8 meters left in height. The walls of the chamber were divided into 8 equal parts by circumference, and there were bracket set decorations on the corners of the brick-laid columns. The chamber walls were originally painted, and four wall paintings remained on the walls of the corridor and chamber, depicting traveling escort, maids, and music. The characters are lifelike, with smooth lines, vivid expressions, and bright colors. Although the paintings have flaked off severely, the appearances and clothing of the characters are very discernable.

The wall paintings of Beijing tombs area from the Liao and Jin Dynasties have their origins in Central China, so their craftsmanship, approach, design and arrangement, and drawing techniques are all similar to those from the tomb wall paintings from the Tang Dynasty, the Five Dynasties Period, and Northern Song Dynasty. The structure of the wall paintings usually includes a sustaining foundation, a ground layer, and a paint layer. The wall paintings in Beijing tombs from the Liao and Jin Dynasties usually are made through the following procedures: after making the tomb wall surface smooth, a layer of grass mixed with mud is smeared to the brick wall, that is mortar layer, and then another layer of lime on top of this,




that is plaster layer. These two layers make up the ground layer. The paintings are then painted on top of the plaster layer. The pigments used are nearly all minerals, including iron oxide, chalk, cinnabar, mennige, and black carbon. The wall paintings in Beijing tombs from the Liao and Jin Dynasties are mainly painted in the chambers and corridors. They are not easily preserved, and mostly fragmentary.

Because most wall paintings in Beijing tombs from the Liao and Jin Dynasties have been buried several meters or even several dozen meters underground where factors such as the temperature, humidity, pH value, shock, components and concentration of the atmosphere, and the types and concentration of microorganisms are comparatively stable, and the color, clarification and completeness of the paintings can be preserved for long periods of time. Once this unique environment is lost, the wall paintings can easily be damaged under the influence of all kinds of physical and chemical factors due to reasons such as material, humidity, oxidation, or light. Tomb wall paintings usually face problems such as: massive flaking or crumbling of the ground layer, hollowing, flaking and efflorescence of the painting, squama formation, discolor, or fading on the painting, pollution of the painting, such as mud or mold, and cracking and contortion.

According to Principles for the Conservation of Heritage Sites in China, conservation must be undertaken in situ. Only in the face of uncontrollable natural threats or when a major development project of national importance is undertaken and relocation is the sole means of saving elements of a site may they be moved in their historic condition. However, when wall paintings cannot be well preserved in their original environment, to transfer and preserve wall paintings is necessary to prevent further damage. Generally speaking, the process of transferring the painting from its original sustaining foundation to one newly made has been an effective method for protecting wall paintings.

In Europe, transferring wall paintings began in the middle 19th century, a time when people paid little attention to the protection and maintenance of wall paintings while aiming at their artistic and religious value. China began to transfer wall paintings during the 1950s and 1960s and follow the same methods to this day. However, diseases of different degrees and other problems have arisen in the preservation and restoration of transferred wall paintings in recent years, which has urged more research to find out why. Tomb wall paintings from the Liao and Jin Dynasties in the Beijing area are unique in method, pigments, and technique,



and very different from Western wall paintings. Although traditional methods of transferring wall paintings have their advantages, there is room for improvement in materials, tools and chemicals used. It is necessary for us to calmly, objectively and scientifically think about and solve the issue of how to analyze and select advanced western materials and tools, and integrate them into traditional methods in order to standardize the techniques and to raise the overall level of transferring wall paintings.

Based on long-term research and experiments, Beijing Institute of Cultural Relics carried out the work on transferring wall paintings from the Liao Dynasty in Qingyundian, Daxing District, the tomb wall paintings of Jin Dynasties in Zhangshanying, Yanqing County, and the tomb wall paintings from the Jin Dynasty in Bajiao, Shijingshan District. A safe plan was made according to intensive explorations and experiments.

In order to maintain the original appearance of the tomb wall paintings from the Liao and Jin Dynasties of the Beijing area, we must pre-investigate the internal structure and environment of the ancient tombs and the original preservation state of the wall paintings. Based on the above, we should study their techniques, accurately analyze the ingredients of the paint, to find out their discoloration mechanisms, and to learn from the experience and achievements of other countries in order to accomplish the restoration of the wall paintings with scientific methods. The work of keeping wall paintings away from disease includes two aspects: to restore stability in the damaged wall paintings with proper materials and techniques; and to protect healthy ones with preventive measures to maintain their stable structures.

With the development of science and technology, people attach more importance to the protection of cultural heritage. Science and technology related to protecting wall paintings are also developing quickly. Wall paintings protection is no longer a simple handwork operation or a patchwork of different traditional craftwork or an assistant job for other studies. It has become an independent subject. Various subjects of natural science explore natural phenomena and their laws of development from various perspectives. Wall paintings protection is a subject in natural science which studies the laws of qualitative change of wall paintings and preventing natural damages. It studies the laws under which wall paintings change under the influence of internal and external factors, uses technical methods to maintain the original appearance of wall paintings, fight all quantitative changes, delay qualitative processes,



control the speed of changes, and complete comprehensive conservation of wall paintings.

To prevent wall paintings from further damage, it is necessary to take restorative action and to adopt proper protection techniques to limit the damages to the least. We should import advanced international scientific methods and apply more emphasis on traditional techniques of wall paintings protection to restore damaged wall paintings, eliminate disease, prevent deterioration, and to apply various new techniques into the effective restoration of wall paintings.

The delicate tomb wall paintings excavated in Beijing describe a social life of remarkable ethical features with their rich and colorful content. They are unique treasures in Chinese ancient art of painting, and provide precious material data in the research of Khitan and Jurchen social life, cultural art and their relationship with the Han people. Therefore, these wall paintings have great historical, artistic, and scientific value. Since they are fragile, advanced skills are needed in their transfer, reinforcement, restoration and daily maintenance. In addition, many other issues also require the concern of many fields including archaeology, art, artifacts protection, science and technology, and museum management, as well as all walks of life. International cooperation is also encouraged. Due to the limited time and competence of the author, mistakes are unavoidable in this report. Any comments and corrections are welcomed from experts and colleagues. We can learn from each other's strong points to offset weaknesses, and solve the problems in wall paintings protection together.

Liu Naitao and Dong Yugang

后 记

在北京市文物局领导的关心、支持和指导下，北京市文物研究所对北京地区辽金墓葬壁画进行了科学、系统的保护修复研究。本研究报告就是对北京地区辽金墓葬壁画保护工作的阶段性科学总结。

本研究报告由刘乃涛、董育纲执笔撰写。

本研究报告介绍了北京地区辽金墓葬壁画的概况，系统地论述了北京地区辽金墓葬壁画的制作工艺、制作材料及结构，壁画的颜料分析研究，壁画的病害及其机理研究，壁画的保护、修复、修复材料及修复工艺，壁画的揭取以及北京地区墓葬壁画保护修复调研等。

北京地区辽金墓葬壁画的发掘及保护工作，是集体合作的产物，凡是参加过北京地区辽金墓葬壁画的发掘及保护工作的同志都尽了自己的一份力量。

北京地区辽金墓葬壁画的发掘及保护工作由北京市文物研究所所长宋大川博士负责，他不仅不辞辛劳地亲自参与勘察、发掘及保护工作，而且对编写研究报告的全过程给予了很多关注。

这几处辽金墓葬壁画的田野考古调查、钻探及清理工作由基建考古室负责，王清林、朱志刚、李华、周宇、刘保山、刘凤亮、韩鸿业等同志做了发掘工作，同时北京市文物研究所相关科室的同志也倾情协助，刘凤亮同志绘制了线图，刘乃涛同志对前言进行了英文翻译，王殿平同志对壁画进行了摄影工作。

本书的出版得到了北京市文物局和科学出版社的大力支持和帮助。北京市文物局文保处王玉玮处长，博物馆处刘超英处长为壁画保护科研经费的落实提供了大力帮助和支持；科学出版社文物考古分社孙莉、海宁等编辑为本书的出版做了大量的工作，付出了许多辛劳的汗水，在此一并表示诚挚的感谢！

目 录

序	
前言	
Preface	
第一章 北京地区辽金墓葬壁画概况及特点	1
一、北京地区辽金墓葬壁画概况	2
1. 大兴区青云店辽墓壁画	6
2. 延庆县张山营金墓壁画	18
3. 石景山区八角金墓壁画	26
二、北京地区辽金墓葬壁画的特点	38
第二章 北京地区辽金墓葬壁画的结构、制作工艺及材料	41
一、北京地区辽金墓葬壁画的结构	42
1. 基础支撑体	42
2. 地仗层	42
3. 颜料层	49
二、北京地区辽金墓葬壁画的制作工艺及材料	49
第三章 北京地区辽金墓葬壁画颜料研究	55
一、颜料分析的历史	56
二、壁画颜料的类型	57
1. 白色颜料	57
2. 红色颜料	57
3. 蓝色颜料	57
4. 绿色颜料	58
5. 棕黑色颜料	58
6. 黄色颜料	58
三、北京地区辽金墓葬壁画颜料分析	58
1. 延庆县张山营金墓壁画颜料分析	58
2. 石景山区八角金墓壁画颜料分析	62
3. 大兴区青云店辽墓壁画颜料分析	63



四、壁画颜色监测 64

五、北京地区辽金墓葬壁画颜料特征 66

1. 红色颜料的特征 66

2. 黑色颜料的特征 66

3. 白色颜料的特征 66

第四章 北京地区辽金墓葬壁画病害研究 69

一、北京地区辽金墓葬壁画病害的类型 70

1. 酥碱病害 70

2. 空鼓病害 74

3. 起甲病害 77

4. 褪色病害 77

二、北京地区辽金墓葬壁画产生病害的影响因素 82

1. 结构材料对壁画的影响 82

2. 潮湿对壁画的破坏 82

3. 微生物对壁画的破坏 82

4. 大气污染物对壁画的破坏 82

5. 光对壁画的破坏 82

6. 灰尘对壁画的破坏 83

三、北京地区辽金墓葬壁画酥碱病害机理 83

第五章 北京地区辽金墓葬壁画的保护问题 91

一、壁画保护的概念 92

二、壁画保护研究的内容 93

1. 研究壁画的颜料构成 93

2. 研究壁画的病害机理 93

3. 研究壁画的埋藏环境 94

4. 研究壁画的保存环境 94

5. 研究壁画的保护修复技术 94

三、壁画保护的基本原则 94

1. 不改变原状原则 94

2. 可逆性修复原则 95

3. 可识别修复原则 95

4. 最小干预性修复原则 95

5. 消除隐患原则 96

6. 保存和再现历史信息遗存原则 96

7. 兼容性原则 96

四、北京地区辽金墓葬壁画保护的现状 96

五、壁画保护的工作程序 97

1. 调查 97

2. 研究评估 97

3. 确定保护级别、实现四有 97