# 中国科技典籍研究

——第三届中国科技典籍国际会议论文集

### STUDIES ON ANCIENT CHINESE SCIENTIFIC AND TECHNICAI TEXTS

Proceedings of the 3rd ISACBRST

主 编 傅汉思 莫克莉 高 宣

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### 前 言

第三届中国科技典籍国际会议于2003年3月31日至4月3日在德国的图宾根大学举行。在此之前,这个系列的国际性学术会议已经召开了两届,第一届于1996年在中国山东省的淄博市召开,第二届于1998年在德国的柏林工业大学举行。有几个机构作为这个系列会议的发起者为前两届会议作出了贡献,同时也是第三届会议的协办者,它们是:北京的中国科学院自然科学史研究所和清华大学科学技术史暨古文献研究所、柏林工业大学中国科技史及科技哲学中心。

与此同时,名为"中国匠作则例:理论与应用"的专题研讨会也在图宾根大学召开。该研讨会的论文集由莫克莉、宋建层和傅汉思主编,正在由德国慕尼黑的 Iudicium 出版社出版(ISBN 3-89129-405-0)。现在,我们非常高兴地得知,第三届中国科技典籍国际会议论文集也即将由中国的大象出版社出版,作为这个系列会议第一届、第二届会议论文集的出版者,大象出版社对出版会议的论文集表现了令人信赖和感动的一贯支持。

在图宾根同时举行的这两个会议包含了一系列有意义的主题。在中国科技典籍国际会议中,研究论文涉及了从古代典籍的版本考证到古代典籍中的文本与插图之间的关系等方面,内容涵盖的领域则包括从数学、天文学、测量学、地理学到中医药、土地耕作、纺织和冶金技术等等。而在专题研讨会中,则把中国古代的手工业规范——匠作则例——作为讨论的出发点,并从此引申到一个更广大的相关领域:如庙宇、宫殿、城墙等的建筑规则,河流、运河和近海的船舶运输规则,河工管理规则,钱币铸造、兵器铸造规则,书籍印刷业规则,以及手工业的物料价值和工价的历史发展等等。无论是科技典籍会议还是匠作则例研讨会,都有一个共同点,就是两个会议都把历史文献作为关注的焦点和研究的主要对象。因此,原始历史文献的考证和对文献的校勘成为大多数论文中的重要内容。然而,这并不意味着其他的对象,例如考古出土的证据和流传下来的实物证据不重要。同样,也不是说我们研究古代的科技典籍,就只能从科学技术史的角度来进行。大多数的研究者都希望能够多角度全方位地对研究对象进行研究,如同席文教授在他4月1日向大会所作的讲演"一个研究古代科技史的文化多面性的方法"中所阐述的那样。中国科技典籍国际会议已经显示出丰硕的成果,值得在将来继续进行下去,会议论文也涉及到了一些近年来在中国国内引起关注的关于科学技术的历史文献和记载。这方面的最重要的出版物

有中国科学院自然科学史研究所编辑、1990年代后期由河南教育出版社(大象出版社的前身)出版的《中国科学技术典籍通汇》,它使研究科技史的前者们可以更容易、更方便地查阅到许多重要的历史文献。另外必须提到的是一部关于中国古代科学、技术与医学等领域的大型的系列研究著作,就是也产生在1990年代后期,由科学出版社出版的《中国科学技术史》从书。

关于第三届中国科技典籍国际会议在图宾根举办的缘起,我想在这里介绍几句。如果我没有记错的话,相关的讨论应该是发生在1999年,当时我在北京与华觉明教授见面,他和我谈起是否可能在图宾根举办这次会议的话题。作为前两届中国科技典籍国际会议的参加者,我从会议内容本身以及同与会者的讨论交流中收获良多,因此我非常高兴地接受了这个建议。在此之前,我们已经在筹备举办一个关于匠作则例的研讨会,于是便将第三届中国科技典籍会议一并考虑了。很自然地,两个会议的内容和结果可以互相交流。然而让我感到非常遗憾的是,因为身体健康的原因,对这个系列国际会议作出了重要贡献的华觉明教授没能前来图宾根参加会议。我们衷心地期待着能在下一届会议上和他见面。

如果没有一些基金会和公共机构的慷慨支持,在图宾根召开第三届中国科技典籍国际会议是不可能的。我想在这里以会议组织者、会议国际顾问委员会成员和会议参加者的名义,表达对德意志研究基金会、巴登—符腾堡州科学研究和文化部、图宾根大学以及霍思海姆大学、斯图加特大学、图宾根大学等学校的德国—东亚科学学术论坛等机构和团体的诚挚谢意。正是由于他们在经费上给予的慷慨支持,才使我们能够举办这次国际会议。

我的同事们和合作者们为第三届中国科技典籍国际会议的组织和筹备做了大量的工作,这些工作对于会议的成功举行具有同样重要的意义。我在这里特别要提到莫克莉博士对会议的贡献,她肩负起了会议联络组织的繁重任务,并带领我们的一个筹备小组完成了会议的各项具体任务,这个小组成员首先要提到的是 Juliane Kiefner,然后按照字母排序有 Özlem Agar, Steffen Dyck, Peter Kuhfus 博士, Vera Schick, Ulrich Theobald, 吴莹真,姚宁和郑亮等,还有一些人默默地为会议作出了贡献,例如我们的秘书 Kabagema 夫人和Wiech 夫人,我们的图书馆员 Thomas Gaiser。此外,还要提到高宣、陈朝勇和苏荣誉,他们从中国方面给了我们极大的支持,包括筹集资金支持了部分中国同事来图宾根出席会议和参观。由于所有这些帮助和鼓励,使得我们主办的第三届中国科技典籍国际会议和清代匠作则例主题研讨会能够取得圆满成功,我愿意借此机会表达我深深的谢意。

傳汉思 图宾根,2005 年 5 月 14 日

### **PREFACE**

From March 31 to April 3, 2003, the 3rd International Symposium on Ancient Chinese Books and Records of Science and Technology was held at Eberhard Karls University in Tübingen. The first in this series was held in Zibo, Shandong province, in 1996, followed by the second at the Technical University of Berlin in 1998. Both these conferences were supported by institutions that were also part of the organisational structure of the third symposium, namely, the Institute for History of Natural Science of the Chinese Academy of Sciences in Peking, the Institute for History of Science and Technology & Ancient Documents at Tsinghua University Peking, and the Study Group for History and Philosophy of Chinese Science and Technology at the Technical University of Berlin.

Another workshop, "Chinese Handicraft Regulations of the Qing Dynasty: Theory and Application", was held in Tübingen at the same time as the symposium. The proceedings of the workshop, edited by Christine Moll-Murata, Song Jianze, and Hans Ulrich Vogel has now been published by the Iudicium Verlag in Munich (ISBN 3-89129-405-0). We are very pleased that now the proceedings of the symposium are to be made available to the public, published, as the proceedings of the first and second ISACBRST were, by the Elephant Press of Zhengzhou, thus continuing a well established, reliable and much appreciated tradition.

Both the symposium and the workshop held in Tübingen covered a wide variety of interesting topics. In the symposium, the subjects ranged from textual criticism to the relationship between text and illustration, and from such fields as mathematics, astronomy, metrology and geography to medicine, agrarian and textile technology, as well as metallurgy. The workshop, carried out in conjunction with the symposium, was dedicated to Chinese handicraft regulations (jiangzuo zeli), a subject which was approached from a variety of perspectives, such as temple, palace and city wall construction, river, canal and coastal shipping regulations, river conservancy projects, monetary policy, the military sector, metallurgy, developments in the history of prices and wages, and the printing industry. A particular feature of both the symposium and the workshop was that texts were the main focus of interest and research. As a consequence, the sources of the texts and textual criticism constituted an important facet of most contributions. This does not mean, however, that other types of sources, such as archaeological evidence or historical remains, were neglected, nor does it imply that the subjects were approached only from the point of view of a history of science and technology. Most contributors at least aspired to adopt some kind of multi-dimensional approach, as was called for in the plenary lecture delivered by Professor Nathan Sivin on April 1, introducing a new approach to comparative and other research on pre-modern science in China and Europe. ISACBRST has proved to be a fruitful exercise, well worth continuing in the future, and it also can be linked to recent endeavours in China to make readily accessible the major texts and records on Chinese science and technology. The most important contribution in this respect was the publication of the series Zhongguo kexue jishu dianji tonghui (Comprehensive Compilation of Chinese Texts and Records of Science and Technology), compiled by the Institute for History of Natural Science of the Chinese Academy of Sciences and published by Henan Education Press since the late 1990s. Through this compilation many important texts are now easily and conveniently available to historians of science and technology. Another influential Chinese series to be mentioned is the huge collection of monographs on all topics of ancient Chinese science, technology, and medicine published, also since the late 1990s, under the title Zhongguo kexue jishushi (History of Chinese Science and Technology) by the Science Press.

Let me say a few words on how it came about that the 3rd ISACBRST was held in Tübingen. If I remember correctly, it must have been in 1999 that Prof. Hua Jueming asked me, while I was in Peking, whether we would be interested in organizing the event in Tübingen. As I had participated in the previous two meetings and had gained a great deal from them both personally and professionally, I gladly took up this idea. It was an added bonus that it could be held concurrently with the workshop on handicraft regulations then already in planning. Naturally, it took quite some time until all these plans could come to fruition. It was, however, a great pity that, due to health problems, Prof. Hua Jueming could not come to Tübingen, especially since he has always shown great dedication to this series. We all profoundly hope that he will be able to participate the next time it is held.

It would not have been possible to convene in Tübingen for the 3rd ISACBRST without the help of a number of foundations and institutions that generously supported us. In the name of the organizers, the international advisory board members, as well as the participants I would like to express my sincere gratitude to the German Research Foundation (Deutsche Forschungsgemeinschaft), the Ministry of Science, Research and the Arts of the State of Baden-Württemberg, the University of Tübingen, and the German-East Asian Science Forum of the Universities of Hohenheim, Stuttgart and Tübingen for their financial support. Without their generous help, the symposium could not have taken place.

Of equal importance for the successful organisation of the 3rd ISACBRST was the help and support we received from our collaborators and colleagues. This especially holds true for Dr. Christine Moll-Murata, who shouldered the heavy load of all the concrete organizational work. She was supported in this task by our able staff of collaborators, first of all Juliane Kiefner, then, in alphabetical order, Özlem Agar, Steffen Dyck, Dr. Peter Kuhfus, Vera Schick, Ulrich Theobald, Wu Ying-chen, Ning Yao, and Zheng Liang, as well as a number of people in the background, such as our secretaries Mrs. Kabagema and Mrs. Wiech and our librarian Thomas Gaiser. Moreover, Gao Xuan, Chen Chaoyong and Su Rongyu in particular did their utmost in supporting us from the Chinese side, which included raising funds for financing the visits of a number of colleagues to Tübingen. To all of them I would like to express my deepest gratitude for all their help and encouragement which were instrumental and decisive in making the 3rd ISACBRST as well as the workshop on Qing handicraft regulations a full success.

Hans Ulrich Vogel Tübingen, May 14, 2005

## 目 录

"九州"概念早期文献记载的比较研究 维拉・德	洛芏娃	1
	马深孟	24
历史上的特应:《秦经》与古代以州的万字总忠 田 心	一分休血	32
《墨经》中的力学部分:文本问题		
《考工记》"数尚六"现象初探		41
从《算数书》和秦简看上古几种粮米的比率	邹大海	47
试论《算数书》的数学表达方式		
——兼论《九章算术》对中国传统数学表达方式的规范化		58
释古代道家的"宇宙"	李学勤	73
农家:一个专门分支的形成		
——周至南北朝与农业相关的文献	丁慕妮	76
玉泉:作为快感和痛感的一种源泉		
——古代和中古医学和道家文献中的前列腺 体验······· 鲁道夫·	费斯特	88
中国中古妇科学发展中文本知识的形成		
——孙思邈《备急千金要方》第2卷到第4卷的记载分析	碧悦华	107
唐代对星认识的进展:《乙巳占》和《开元占经》	理 査	121
宋代天文仪器的相关古文献整理研究		135
《新仪象法要》中关于水运仪象台机构和部件记载内容的研究 … 陆 震		140
宋朝疆界制图:西夏一宋争执时期地图的制作与应用		147
一个研究古代科技史的文化多面性的方法		153
中国古代海洋医学对坏血病的处理		
——《青腿牙疳》的文献依据 ····································	唐麦轩	161
三部明代著作中的钢铁生产		172
《天工开物》"燔石"、"五金"、"丹青"章中插图的技术内容		189
《晓庵新法》与《新法算书》计算太阳地心黄经方法的比较		201
论中国古本草的图、文关系		210
	小工工	210
新安医学的社会价值观和科学基础		

——帝国时期的中国徽州医学典籍个案研究	邱淑如	221
曹存心的《琉球百问》:一个医学领域中不同文化相遇的例子 ······	萧婷	234
从晚清蚕书看西方对中国蚕桑技术的影响	毛传慧	255
中国古文物实践中的客观测量	宗小娜	265
中国 19、20 世纪的抄本:被医学史著作忽略的材料	文树德	275
20 世纪 30 年代辽宁地方志中的农业技术		
——《奉天通志・实业志・农业卷》	傅玛瑞	286

## **CONTENTS**

Comparative Analysis of Early Accounts of the "Nine Provinces" (Jiu zhou)	
······ Vera V. Dorofeeva-Lichtmann	1
Mechanics in the Mohist Canon and Its European Counterparts	
Jürgen Renn and Matthias Schemmel	24
Mechanics in the Mohist Canon: Preliminary Textual Questions William G. Boltz	32
First Explorations of the Preference of the Numeral "Six" in Kaogong ji · · · · Peng Lin	41
The Ratios of Several Kinds of Grains in Ancient China	
—A New Research based on the Suanshu Shu and Qin Bamboo Strips	
Zou Dahai	47
The Ways of Mathematical Expression of the Suanshu shu;	
Simultaneous Discussion of the Nine Chapters on Mathematical Procedures to the	
Standardization of the Ways of Chinese Traditional Mathematical Expression	
····· Guo Shuchun	58
Explanation on the Term "Yu Zhou" by the Taoist School Li Xueqin	73
Nongjia: the Formation of a Special Branch	
-Sources on Agriculture from Zhou to Nanbei Chao	
Monique Nagel-Angermann	76
The Jade Spring as a Source of Pleasure and Pain:	
The Prostatic Experience in Ancient and Medieval Medical and Daoist Texts	
Rudolf Pfister	88
The Formation of Textual Knowledge in the Development of Medieval Chinese	
Gynecology: The Sources for the Second through Fourth Scrolls of Sun	
Simiao's Beiji qianjin yaofang	
····· Sabine Wilms	107
Approaching the Stars under the Tang: the Yisi zhan and the Kaiyuan zhanjing	
Licia Di Giacinto	121

Song Dynasty Sources Concerning Astronomical Instruments · · · · · · Gao Xuan	135
Research on the Records of Xin Yi Xiang Fa Yao about the Mechanisms and	
Parts of the Astronomical Clock Tower Lu Zhen, Gao Xuan	140
Cartography on the Song Frontier: Making and Using Maps in the Song	
—Xi Xia Conflict ····· Ruth Mostern	147
A Multi-dimensional Approach to Research on Ancient Science Nathan Sivin	153
Dealing with Provisional and Scurvy Matters in Chinese History: An Introduction	
into Chinese Maritime Medicine and the Text Qingtui Yagan Mathieu Torck	161
Iron Production in three Ming Texts: Tie ye zhi, Guangdong xinyu, and Tian gong kai wu	ı
Donald B. Wagner	172
The technical content of the illustrations in the <i>Tian gong kai wu</i> :	
Articles "Calcination of Stones", "Five Metals" and "Vermilion and Ink"	
Stéphane Vacca	189
A Comparison of the Calculating Methods of the Geocentric Longitude of	
the Sun in Xiaoan Xinfa and Xinfa Suanshu Ning Xiaoyu	201
On the Relationship between the Text and Illustrations in Ancient Chinese	
Works on Materia Medica Zheng Jinsheng	210
The Social Value and Scientific Foundation of Xin' an Medicine:	
A Case Study of Traditional Medicinal Classics Written by Huizhou Physicians	
in Imperial China Ann Shu-ju Chiu	221
The Liuqiu baiwen (Hundred Questions from the Liuqius) by Cao Cunxin:	
An Example of an Intercultural Encounter in the Field of Medicine	
	234
Western Influence on Chinese Sericulture As Reflected in Some Chinese	25,
Manuals of the Late Qing	255
Objective Measurement in Late-Qing Antiquarian Practice Shana J. Brown	265
Chinese Manuscripts of the Nineteenth and Twentieth Centuries:	203
Neglected Sources of Medical Historiography Paul U. Unschuld	275
On the Representation of Peasant Agricultural Technology in Liaoning	275
Gazetteers of the 1930s: The Section on Agriculture in the Fengtian tongzhi	
	206
Marelle Flitsch	286

# Comparative Analysis of Early Accounts of the "Nine Provinces" (Jiu zhou) \*

Vera V. Dorofeeva-Lichtmann CNRS-EHESS, Paris, France

### "九州"概念早期文献记载的比较研究

维拉·德洛芙娃 国家科研中心--社会科学高等学院,巴黎,法国

"九州"的概念出现在先秦和前汉的一系列文献:《尚书》的《禹贡》,《吕氏春秋》的《有始览》,《尔雅》的《释地》,《周礼》的《职方氏》,《礼记》的《王制》,《淮南子》的《地形训》中。班固(公元32—92年)依据其中的某些著作(《禹贡》、《职方氏》和《王制》)概述了"州"系统怎样从神话中的皇帝黄帝到汉武帝的发展(《汉书·地理志》)。特别是,他注意到某些"州"的名称的变化。"九州"的另一个重要特征是给出单个州位置的原则(如对于地界,依据主要方向)。John Major(1984)得出了对"九州"的描述中这些方面的差别的有趣的观察结果,然而他首要关心的是《地形训》及其与其他描述的明显的不同。相反,我打算更仔细地考察后面一组。依据这两个特征(名字和位置),详细检查"九州"的描述能够使人们怎样建立起现存文献的相互联系和在"九州"概念发展中各自代表了什么阶段。得到的结果也有助于确定这组文献的相对年代。

然后我将把得出的"九州"描述的相互关系与班固对它们的发展的概述相比较,这种比较揭示出另一个重要的在官方认可的描述与被略去的描述之间的差别。班固的理论在两个方面提供了某些线索:一、许多描述中隐含的"州"字的原义("岛",由水或河流分隔的陆地);二、"九州"用作代表"文明世界"和帝国的一个模型。

0.0. Recent finds related to the "Nine Provinces" (primarily, the Rong cheng shi 容成氏 manuscript)<sup>[1]</sup> have revived interest in this spatial conception. This paper is focused on the accounts of the "Nine Provinces" found in the texts that have reached us in the form of books. Relationships between these accounts revealed as the result of analysis of names and given loca-

<sup>\*</sup> I am truly indebted to John Moffett for corrections of my English. Any mistakes found in this paper are my own responsibility.

tions of "provinces" can serve as a basis for further comparison with the Rong cheng shi version. [2]

0.1. Descriptions of the "Nine Provinces" (Jiu zhou 九州) occur in a series of texts dating from the Warring States and the Former Han periods. These include the "Yu gong" 禹贡 chapter of the Shang shu/Shu jing 尚书/书经; the "You shi lan" 有始览 chapter of the Lüshi chungiu 吕氏春秋; the "Shi di" 释地 chapter of the Er ya 尔雅; the "Zhi fang shi" 职方氏 chapter of the Zhou li 周礼; the "Wang zhi" 王制 chapter of the Li ji 礼记, and the "Di xing xun" 地形训 chapter of the Huai nan zi 淮南子. Apart from the "Wang zhi", each "province" in these descriptions is supplied with a name. From the point of view of the names of "provinces", the enumerated texts constitute two clearly demarcated groups (see Table 1). The first group includes the majority of these texts; the "Yu gong", the "You shi lan", the "Shi di", and the "Zhi fang shi", which all share the same nucleus of names (the entire sets differ from each other in one or two positions). I also associate with this group the "Wang zhi", since its description of the "Nine Provinces" develops the topic of the concluding part of the "Zhi fang zhi" (the areas of the "provinces" and "principalities," guo 国). [3] The second group includes only one text, the "Di xing xun", whose names of "provinces" have little in common with those of the first group. Gu Jiegang 顾颉刚 and Tong Shuye 童书业 tried to find a compromise between the "Yu gong" and the "Di xing xun" sets of names by distinguishing the so-called "Small Nine Provinces" (Xiao jiu zhou), "Large Nine Continents" (Da jiu zhou), and "Middle Nine Continents" (Zhong jiu zhou) theories. [4] These allowed them to make the two radically different sets of names compatible by referring them to different hierarchical levels of territorial division, the "Di xing xun" set being a division of a larger scale than those of the first group. Their argument has, however, certain inconsistencies, as showed by John S. Major who, nevertheless, does not completely exclude the advanced hypothesis. [5]

Rather than looking for compromises, Major is more interested in the differences between the representation of the "Nine Provinces" according to the "Di xing xun" to those in the texts of the first group. Apart from the differences in the names of "provinces", Major pinpoints another demarcation line between the groups—the way the locations of the "provinces" are given. <sup>[6]</sup> In particular, in the "Di xing xun" the "Nine Provinces" are located strictly according to the cardinal and the semi-cardinal directions and the center (see **Table 2**), and, therefore, perfectly match the 3 × 3grid pattern. Such a uniform and consistent system of locations of the "provinces" implying their purely schematic representation is not found anywhere in the texts of the first group.

Since Major's primary concern is the "Di xing xun", he does not examine the differences between the texts of the first group in detail, and also does not take into account all of them (e.g., the "Shi di"). A survey of this group of descriptions of the "Nine Provinces" was made by Gu Jiegang just prior to his study mentioned above. [7] This study contains many valua-

ble observations, especially on related passages in ancient Chinese texts and commentaries. However, comparison of these descriptions occupies a rather modest place in his study, and is mostly limited to differences in the names of "provinces". Instead his attention is focused on seeking the origins of "provinces" as a territorial system in administrative units and divisions that really existed in ancient China, and on establishing links between specific "provinces" and real landmarks, lands, or units of administrative division. His aim is eventually to trace variations and changes in topography of the "Nine Provinces", and to relate the changes to historical events of the Warring States period (475-222 BC). [8] In sum, Gu examines this group of descriptions of the "Nine Provinces" from the perspective of their real topographical and administrative background, and specific historical setting.

I propose, pursuing the approach outlined by Major, to focus on formal attributes of the accounts of the "Nine Provinces", while abstracting at this stage, for the sake of objectivity of expected results, from any real topography of the "provinces". In particular, I shall scrutinise the following characteristics of the accounts:

- -varying names of "provinces" between the accounts with respect to their placement in the provided lists of "provinces" (and not their real topographical provenance);
- —types of given locations of "provinces", variations of these locations and specific means of locating them (and not real locations of "provinces");
  - -structure of phrases where names and locations are provided.

Such a formal approach allows to see conceptual aspects of the accounts of the "Nine Provinces"—how they serve as means of conveying spatial representation, and eventually to outline typological relationships between these accounts.

I shall then compare interrelations between the accounts of the "Nine Provinces" deduced from their comparative analysis with how they were seen with respect to each other in early imperial thought. For this purpose I shall investigate two sources: the "Di li zhi" 地理志 chapter of the *Han shu* 汉书 by Ban Gu 班固(AD 32-92), which provides an official point of view, and the *Wuxing dayi* 五行大义 written much later, in the early sixth century, by Xiao Ji 萧吉, which has a cosmological perspective much less restricted by the needs of the official ideology.

- 1.0. Let us now proceed to the examination of the names and given locations of the "provinces" in the texts of the first group.
- 1.1. In the "Yu gong" (see **Table 3**) the "provinces" are located with respect to landmarks, which play the role of border-markers (with the exception of the initial "province" Ji 冀, which does not have any location at all). In one case, Xu 徐 "province," three landmarks are used for location. In the majority of cases (seven "provinces") two landmarks are sufficient for locating a "province," e.g., "[Between] the Ji [and] the He [rivers]: Yan 'province.'"

It should be pointed out that location formulas in the "Yu gong" are very concise. They are limited to the names of the landmarks, the name of the "province" and wei 惟 in between serving as a two points mark (Ji He: (=wei) Yan zhou). In one case the conjunction jil links two landmarks (two mountains, Jing 荆 "province"), in the case of three landmarks jil is placed between the second and the third of them.

Two types of landmarks occur in the "Yu gong"—water landmarks—rivers and the sea (shown in **Table 3**) and mountains (<u>italics underlined</u>). Water landmarks serve the function of border-markers much more commonly than mountains (eleven water landmarks as opposed to six mountains).

1.2. The "You shi lan" set of "provinces" [10] differs from that of the "Yu gong" in one position: Liang 梁 province is no more in evidence, and there is a new name instead—You 幽 province, placed at the end of the list (see **Table 4**, You is <u>underlined</u>). Moreover, there are some considerable changes in the way the locations of the "provinces" are given.

Firstly, landmarks as markers of borders are still there, but they are now reduced to rivers, and this way of locating is applied only to four provinces. It should be also noted that the location formula is more detailed than that of the "Yu gong": in three cases it is explicitly stated that a "province" is located "between" (jian 闲) two rivers, e. g., "between the He [and] the Han Rivers there is Yu 'province.'" In one case a new usage of a landmark occurs—one river (Si 泅) serves as border-mark, and the province is located "above" (shang 上) it.

Secondly, five other "provinces" are located according to a completely different principle—with respect to the cardinal directions (shown in **Table 4** in **bold**). These locations are the four cardinal points defined by means of the term "fang" ("direction," "side," "quadrate"), e. g., dong fang 东方, and one semi-cardinal direction, South-east (dong-nan). E. g., "In the East there is Qing 'province.'"

Finally, the "You shi lan" stresses a "political" aspect of the "Nine Provinces": the first province in the list and apparently corresponding to the Center (Yu 豫) is associated with the Zhou domain, and each of the other eight "provinces" with a particular "principality" (in **Table 4** the principalities are given in *italics bold*). They represent the set of major Zhou principalities with the Zhou domain apparently in the Center. [11]

1. 3. In the "Shi di" chapter of the Er ya (see **Table 5**) [12] another new name of a "province" appears when compared to the "You shi lan", while another name disappears, and two appear if compared to the "Yu gong" (these names are <u>underlined</u>)—"provinces" You 幽 and Ying 营 instead of Liang 梁 and Qing 青). Similarly to the "You shi lan," these names are given at the end of the list, and the new name with respect to the "You shi lan" is the last.

These two new "provinces" placed at the end of the list are clearly demarcated from the

other seven "provinces" (similar with those of the "Yu gong" set) by their locations. Namely, both new "provinces" are associated with two Zhou "principalities" of a later period,—You "province" with Yan 燕, and Ying "province" with Qi 齐. This type of location is never found elsewhere in the "Shi di" account. Correspondences between "provinces" and "principalities", as just mentioned, occur in the "You shi lan", but there they are given consistently for every "province" as its additional characteristic, and never as a means of location.

It should be noted that the writing of some names of "provinces" similar with those found in the "Yu gong" varies slightly from the latter—Yang is written with the radical "tree" (杨) and not "hand" (扬), the name of the Yong "province" is also written in a slightly different way (雝). [13]

All the "provinces" similar to the "Yu gong" set are located with respect to rivers. Twice the principle "between" (jian 间) two rivers of the "Yu gong" is applied. The rest of the five "provinces" combine locations with respect to rivers with cardinal orientation, e. g., "to the South of the He [River]" (He nan 河南). This means that the rivers combine the role of a border-marker and a reference object for orientation according to the cardinal directions. A prototype of this type of location is found in the "You shi lan" ("Above the Si [River]"—Si shang 泗上). No purely cardinally-orientated locations are found in the "Shi di", e. g., nan fang, as we observed in the "You shi lan", but since such locations are found in the definitions of the "Nine Depositories" (Jiu fu 九府), it is possible that they were intentionally avoided in locations of the "provinces".

1. 4. The set of the "provinces" enumerated in the "Zhi fang shi", [14] (see **Table 6**), similarly to that of the "Shi di", differs in one title from the "You shi lan" set (and, respectively, in two from the "Yu gong" set), but the name of the new "province" here (Bing 并) is also different from that found in the "Shi di" (Ying). The replaced "province" is also different (Xu and not Qing).

The new names are also at the end of the list, but this time the new names (<u>underlined</u> in **Table 6**), both referring to the north, encircle another northern "province"—Ji. Ban Gu in the "Di li zhi" derives both You and Bing "provinces" from Ji. [15]

In the majority of cases (six "provinces") a purely cardinally-oriented type of location is applied, with a difference from the "You shi lan" that here the four cardinal directions are referred to my means of the term zheng ("right"), e. g., zheng nan 正南 ("true South"), as done in the "Di xing xun" (see **Table 2**).

Rivers still appear in locations (three "provinces"), but now they are reduced exclusively to the Yellow River. As we observed in the "Shi di", the Yellow River serves as the reference object for orientation according to the cardinal directions (two "provinces", e. g., "to the South of the River"). In one case a "province" (Ji) is located "inside" (nei 内) the Yellow River.

#### 1.5. Let us now sum up the results of the examination above.

Differences in the names of "provinces" between the texts of the first group show the following relationship between them; change in one name from the "Yu gong" to the "You shi lan", then ramification into the "Shi di" and the "Zhi fang shi" sets, each differing from the "You shi lan" in one name (see **Table 7**). New names appear at the end of the lists, showing their status of "additions" to the seven nucleus names—those that are shared by all the accounts. In the case of the "Shi di", the locations of these "added" names are considerably different from the rest. In total, twelve names of "provinces" occur in these four texts. These names became associated with the twelve "provinces" mentioned in the "Shun dian" 舜典 / "Yao dian 2" 尧典 chapter of the Shang shu/Shu jing. [16]

Given locations taken for both the groups allow one to trace a step-by-step evolution from locations with respect to landmarks (rivers, sea and mountains that mark borders of "provinces") in the "Yu gong" to locations according to the cardinal directions in the "Di xing xun" (see **Table 8**). The use of mountains and the sea as means of location is only found in the "Yu gong", and never occur in the other texts discussed. Rivers, in contrast, constitute a stable means of location that can serve as a simple border-marker or as an object of reference for cardinal orientation.

Location formulas (seè Tables 2-6) evolve in the following way:

"Yu gong"	a) landmark landmark (river, mountain, sea) wei 惟 province	(7)
	a') landmark ji1 及 landmark wei province	(1)
	a") landmark landmark ji1 landmark wei province	(1)
	(one province not located—the first in the list)	
"You shi lan"	a) river river zhi 之 xian 闲 weil 为 province,	(3)
	principality ye 也	
	b) river above (shang 上) weil province, principality ye	(1)
	c) cardinal direction (type nan fang)/semi-cardinal direction	(5)
	weil province, principality ye	
"Shi di"	a) river river jian 间 yue 日 province	(2)
	b) river cardinal direction yue province	(5)
	c) principality yue province	(2)
"Zhi fang shi"	a) Yellow River cardinal direction yue province	(2)
	a') Yellow river inside yue province	(1)
	c) cardinal direction (type zheng nan)/semi-cardinal	(6)
	direction yue province	• •
"Di xing xun" c	ardinal direction (type zheng nan) province yue "land"	(9)