郭书春数学史自选集

（上册）

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Preface

This anthology of eighty-one selected works by the noted scholar Guo Shuchun is not only a tribute to his life-long research devoted to the history of Chinese mathematics, but is also intended to coincide with celebration of the 60th anniversary of the founding of the Chinese Academy of Sciences' Institute for History of Natural Sciences (IHNS) in Beijing, of which Professor Guo was an early member. The Institute traces its roots back to the Research Department on the History of Natural Sciences, which was established in January of 1957 by the Chinese Academy of Sciences (CAS) on the initiative of the Vice-president of CAS, Prof. ZHU Kezhen. The Department was expanded to become a research institute in 1975, and now represents a thriving multidisciplinary and comprehensive national center specializing in the study of the history of science and technology, of which Professor Guo is now a distinguished emeritus member.

Having studied mathematics at Shandong University, from which he graduated in 1964, Guo joined the Institute in 1965, and shortly thereafter began a series of publications that would soon establish him as one of the world's leading authorities on ancient Chinese mathematics, and the history of Chinese mathematics generally. In particular, Guo has established the significance of the role that the third-century mathematicians Liu Hui played through his commentary on the ancient text, The *Nine Chapters on the Art of Mathematics*, singled out as one of the *Ten Books of Mathematical Classics* by Li Chunfeng and his associates when they collated and commented on the work of Liu Hui and others in the Tang dynasty.

This collection of Professor Guo's selected papers opens with a group of thirty articles devoted to Liu Hui and the *Nine Chapters*. These include a number of works from the early 1980s, when Guo began to publish a number of pioneering

works on Liu Hui, including detailed studies of the pivotal role that the concept of *lü* played in his commentary and its applications in the *Nine Chapters* itself. Other studies focused on Liu Hui's theory of volumes, his theory of limits, and a new interpretation Guo advanced of the *fangcheng* method for solving simultaneous linear equations in as many as six unknowns (as presented in Chapter 8 of the *Nine Chapters*). Guo's careful analysis of Liu Hui's systematic understanding of *gou-gu* problems has also made it clear that the problems and critical analysis Liu Hui provides thereof constitute much more than simply a collection of individual results. Among Guo's articles devoted to these matters, one published in 1983 offers "A tentative analysis of the deductive logic and definitions in Liu Hui's commentary in the *Nine Chapters on the Art of Mathematics*." In the course of the next several decades, such tentative analyses provided in his early works would evolve into increasingly detailed results confirming the mastery Liu Hui had obtained that far surpassed the achievements reflected in earlier mathematical works from ancient China.

But as the articles collected here make clear, Guo's works go well beyond the subject of Liu Hui and the *Nine Chapters*. Following the impressive opening selection of thirty articles devoted to this material, the next section includes ten publications concerning pre-Qin mathematics and recently excavated Qin-Han mathematical bamboo slips. Here several articles survey important contributions to our understanding of the origins of mathematics in China in such newly-discovered bamboo texts as the *Shu* and *Suanshushu*. Then follow five articles focusing on the ancient mathematician-astronomer Zu Chongzhi (429-500 CE) and the *Ten Books of Mathematical Classics*. After these, there is a section comprised of thirteen papers devoted to Guo's research on mathematics of the Song, Yuan, and Ming dynasties, including his studies of the mathematicians Jia Xian, Qin Jiushao, and Yang Hui.

Next, a long section comprised of nineteen articles surveys a wide variety of subjects related to classical Chinese mathematics, ranging from the extent to which mathematics in ancient China was not simply practical but also theoretical, to comparisons of ancient Greek and Chinese mathematics, as well as a study of the role of mathematics in the feudal society of ancient China. Professor Guo has also written about the relationship between ancient Chinese mathematics and traditional

Chinese philosophy, including Confucianism and its significance for mathematics, the "mechanization" of mathematics, as well as possible relations between ancient mathematics in China and the infinitesimal calculus in the West. Most unexpected here is an article Professor Guo wrote to celebrate the 90th birthday of the famous mathematician Wu Wenjun, a close friend of Professor Guo's, for whom he provided his own account of Wu Wenjun's critique of the images of ancient mathematicians as depicted in the works of much later and even modern artists as being of dubious historical value. Of interest to historiographers and anyone interested in institutional history, Guo also includes here his study of "50 years research on the History of Mathematics in the Institute for History of Natural Sciences."

This volume of Professor Guo's selected works concludes with a brief section of four articles reflecting his long personal experience devoted to the study of the history of Chinese Mathematics, including his own reflections on a life-time devoted to the collation of scientific and technical books, the importance of the careful study of original sources, including "respect for original documents to avoid misinformation." Above all, Guo emphasizes the necessity of judicial use of the method of comparison and collation, especially where ancient scientific works are concerned.

Not included in this anthology of Professor Guo's most important articles published over the last fifty years, but also worth mentioning, are his many books that have served to establish him as one of the world's leading scholars among historians of mathematics. In particular, Professor Guo has carried on the important tradition of producing collations, critical editions, and detailed studies of ancient classic works of Chinese mathematics begun by such pioneering scholars who helped to establish the IHNS in its formative years as 李俨 LI Yan (1892—1963), 钱宝琮 QIAN Baocong (1892—1974), and 严敦杰 YAN Dunjie (1917—1988).

Like these notable predecessors, Professor Guo has also proven himself adept as an editor, collating many editions and providing modern Chinese translations with critical notes of the *Nine Chapters* and the *Ten Books of Mathematical Classics*. His critical edition published by Liaoning Education Press in 1990 of the *Nine Chapters* was followed by a five-volume set devoted to historic works on mathematics, namely *A Compendium of Chinese Classics of Science and Technology*, published by Henan Education Press in 1993. Subsequently, Guo

published his 九章筹术译注, *A Modern Chinese Translation and Commentary on the Nine Chapters on Art of Mathematics*, with Shanghai Ancient Text Press, in 2009.

Professor Guo has also collaborated with foreign scholars to make the *Nine Chapters on the Art of Mathematics* and its several surviving commentaries, notably that of Liu Hui, available to scholars unable to read the original Chinese text. Following his translation (in collaboration with Karine Chemla) of the *Nine Chapters* into French, *Les neuf chapitres: Le classique mathématique de la Chine ancienne et ses commentaires* (The Nine Chapters: The mathematical classic of ancient China and its commentaries, Paris: Dunod, 2004), he went on to collaborate with Joseph W. Dauben and Xu Yibao in producing a dual-language Chinese-English collation/critical edition of the *Nine Chapters on the Art of Mathematics* published in three volumes by Liaoning Education Press in 2013.

Another book that surveys most of Guo's early research is his impressive study, 古代世界数学泰斗刘徽 (Jinan: Shandong Science and Technology Press, 1992). This work offers a detailed examination of what can be said about Liu Hui's significance in establishing the foundations of mathematics with his commentary on the *Nine Chapters*, and how this set new levels of rigor and explanation for the rest of the history of mathematics in China.

The importance of Professor Guo's research has been recognized by a number of prestigious awards, including the 1991 National Excellent Education Book Award for his collation of the *Nine Chapters on the Art of Mathematics* (Liaoning Education Press, 1990; Traditional Chinese, Taipei: Commercial Press, 1994; revised edition, Beijing: Commercial Press, 1997). His *A Compendium of Chinese Classics of Science and Technology*, in five volumes (Henan Education Press, 1993), was nominated in 1997 for the National Book Award; *Li Yan and Qian Baocong History of Science*, in 10 volumes (Liaoning Education Press, 1998), won the Honor Award—the highest honor for the 1999 Book Award; the French translation of the *Nine Chapters*, written in collaboration with Professor Karine Chemla, won the Prix Ikuo Hirayama of the Institute de France in 2006; and in 2012, the volume devoted to mathematics edited by Professor Guo for *A History of Science and Technology in China* won First Prize in the fourth annual Guo Moruo Prize in History, to mention a few of the most prominent awards his

works have received.

Of all the interesting and important contributions Professor Guo has made to our understanding of the history of Chinese mathematics, perhaps none is more representative than the study he published in 1988 in *Ziran kexueshi yanjiu* (Studies in the History of Natural Sciences) 7(4)(1988): 228-334: "A Preliminary Discussion of Jia Xian's *Huangdi jiuzhang suanjing xicao*—Looking into the Structural Framework of *Xiangjie jiuzhang suanfa*." Here Professor Guo shows how it is possible to reconstruct the long presumed-to-be-lost commentary on the *Nine Chapters* by the brilliant Northern Song mathematician Jia Xian. Thanks to a careful, detailed textual analysis of the later well-known work, Yang Hui's *Xiangjie jiuzhang suanfa*, Professor Guo argues convincingly that imbedded therein is a large portion of what he deduces must have been the original detailed commentary, analysis, and explanation of the *Nine Chapters* written by Jia Xian. In this work, as Professor Guo emphasizes, Jia Xian laid the foundation for mathematical studies which reached their peak during the Song and Yuan dynasties. Guo estimates that about two-thirds of Jia Xian's original version of the *Huangdi jiuzhang suanjing xicao* can be recovered from Yang Hui's *Xiangjie jiuzhang suanfa*.

In his approach to the history of mathematics in China, Professor Guo has always emphasized the importance of relying on primary sources, and among these, he is internationally known for his mastery of the *Nine Chapters on the Art of Mathematics*. It is no exaggerations to say that thanks to Professor Guo and his many students who have been trained by him at the Institute for History of Natural Sciences in Beijing, Liu Hui is no longer an obscure figure in the history of mathematics in China, but has achieved a prominence fully deserved, as Professor Guo's many studies of Liu Hui and his work have demonstrated.

Anyone wishing to survey the vast sweep of Professor Guo's work over the past five decades as he has written on so many subjects, capturing the breadth and depth of Chinese mathematics from early antiquity through such high points as those represented by the works of Liu Hui and Jia Xian, among many others, will find this a most convenient publication. By gathering together in this collection of Guo Shuchun's eighty-one most important selected papers, his own "*jiu jiu*" of the history of Chinese mathematics has been assembled in one substantial volume.

In his "Preface" to the *Nine Chapters*, Liu Hui referred to the origins of the *"jiu jiu"* in great antiquity, which provided the basics of numbers, counting, and indeed, of mathematics itself, which later made it possible, he said, to understand and follow "the subtle and profound essence of heaven and earth and everything in between". Likewise, in this collection of *"jiu jiu"*, nine-nines or eighty-one of his most essential works, Guo Shuchun has provided a rich and penetrating analysis of a broad spectrum of Chinese mathematics. With masterful strokes from Professor Guo's historical brush, he paints a clear and vigorous history of Chinese mathematics through the more than fifty years of published works represented in this marvelous collection drawn from his many publications.

Also of particular value here is an appendix offering a comprehensive list of all of Professor Guo's writings through 2017. In concluding this brief preface, I am pleased to congratulate Professor Guo not only for five decades of exemplary research, but for having trained a cadre of younger researchers who will carry on the great tradition of history of mathematics begun at the Institute for History of Natural Sciences by its founding fathers Li Yan, Qian Baocong, and Yan Dunjie in the 1950s, and continued now six decades later thanks in large measure to the tireless efforts of Professor Guo and the many students he has so carefully and generously trained.

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序

　　这本文集是著名学者郭书春先生结集 81 篇文章而成的自选集,它不仅是郭先生一生迄今对中国数学史研究的重要贡献,在此时出版,也是郭先生对中国科学院自然科学史研究所建所六十周年庆祝的献礼,郭先生是该研究所的一名早期成员。自然科学史研究所的起源,可追溯自 1957 年 1 月由当时的中国科学院副院长竺可桢先生提议成立的中国自然科学史研究室,其后于 1975 年扩大成立研究所。研究所现在已成为一个蓬勃发展的多学科、综合性的国家研究中心,专注于科学史与技术史的研究,而郭先生现在是这个所的荣誉退休研究员。

　　郭先生 1964 年从山东大学数学系毕业,于 1965 年到中国自然科学史研究室工作。在很短时间内,郭先生发表了一系列成果,这些成果不久就使他成为国际上研究中国古代数学与中国数学史的权威之一。特别值得一提的是,郭先生证明了公元3 世纪数学家刘徽通过注释古籍《九章算术》所扮演角色的重要性。唐代李淳风等注释《算经十书》时将刘徽注的《九章算术》列为其一。

　　这本文集的第一部分是由 30 篇有关刘徽、《九章算术》的文章组成,包括了郭先生自上世纪 80 年代初期开始发表的讨论刘徽的文章。这些工作极具开创性,包括详细研究了"率"的概念在刘徽注中举足轻重的作用及其在《九章算术》问题中的应用。其他的研究着重于刘徽的体积理论、极限理论,以及郭先生对《九章算术》中线性方程组解法的新诠释(有些方程组可含高达 6 个未知数,见《九章算术》第八章)。郭先生又仔细地分析了刘徽对勾股问题的系统性认知,从而清楚地指出刘徽对勾股问题的注不仅仅是特例的简单汇集。在这些文章中,有一篇 1983 年发表的《刘徽〈九章算术注〉中的定义及演绎逻辑试析》,在接下来的几十年里,郭先生早期工作里的"试析"逐渐地演化成更成熟更详细的研究,并证实了刘徽对演绎逻辑的掌握远远超越了更早的中国古代算书中反映出的成果。

这本文集中的文章清楚显示,郭先生的工作远远超出刘徽及《九章算术》研究。在第一部分令人印象深刻的 30 篇文章之后,接下来的部分包括了 10 篇有关先秦数学和新近挖掘出土的秦汉数学竹简的文章。这里有几篇文章概括论述了《数》《算数书》等古代算书竹简的数学成果,这样的研究对了解中国数学的起源有莫大的贡献。接下来的 5 篇文章是关于古代数学家与天文学家祖冲之(429—500)与《算经十书》的。再之后的部分是一系列的 13 篇文章,这些是有关宋、元、明、清数学的研究,其中包含了郭先生对贾宪、秦九韶、杨辉的研究工作。

　　再下一部分是由 19 篇文章组成的长篇概述,内容相当广泛,包括中国古代数学不仅重应用而且有理论,古希腊和中国古代数学的比较,以及数学在中国古代封建社会中扮演的角色,等等。郭先生的工作还涉及到中国古代数学与传统哲学间的联系:儒学及其对数学的重要性,数学的机械化,以及中国古代数学与西方微积分中无限小概念的可能关系。在这部分中,有一篇出人意料的文章,是郭先生为庆祝其好友、著名数学家吴文俊院士 90 岁生日所写,文章中提到吴院士对古代数学家画像的批评,许多后人甚至现代画家凭想象所绘古代数学家画像没有实际的历史价值,吴院士对此种做法颇不以为然。史学家和其他对自然科学史研究所的所史有兴趣的人,会对其中的《五十年来自然科学史研究所的数学史研究》这篇文章感兴趣。

　　郭先生的这本自选集最后用 4 篇文章组成的小章节作为结尾,这些文章反映了他长期从事中国数学史研究的经验:他个人对科技古籍整理的思考,仔细研究原始材料的重要性,"尊重原始文献,避免以讹传讹"。最重要的是,郭先生强调客观地使用对校法的必要性,特别是涉及古代科学著作时。

　　这本自选集收录的是郭先生在过去 50 多年里发表的最重要的文章,他出版的多部著作没有收入,但值得提到,这些著作使他成为数学史家中的世界一流学者。特别是,郭先生继承了由李俨(1892—1963)、钱宝琮(1892—1974)、严敦杰(1917—1988)等协助创建自然科学史研究所的先驱学者们所开创的对中算典籍进行整理、校勘与细致研究的重要传统。

　　与这些前辈学者一样,郭先生具有校勘的专长:校勘了《九章算术》和《算经十书》的许多版本,提供了带有订正性注释的现代汉语翻译。这其中包括由辽宁教育出版社于 1990 年出版的汇校《九章算术》,另外郭先生由上海古籍出版社于 2009 年出版了《九章筭术译注》。还有,河南教育出版社于 1993 年出版的五卷本《中国科学技术典籍通汇·数学卷》,也是郭先生的重要编纂工作之一。

　　再者,郭先生与国外的学者合作,将《九章算术》与其现存的注,特别是刘徽注,

翻译成外文,让无法理解中国古文的学者也能研读中国古代的数学名著。郭先生与法国学者林力娜教授合作将《九章算术》翻译成法文(*Les neuf chapitres：Le classique mathématique de la Chine ancienne et ses commentaires*. Paris：Dunod，2004)。之后,他又与美国周道本教授和徐义保博士合作翻译了中英对照的《九章算术》三册(the *Nine Chapters on the Art of Mathematics*),于2013年由辽宁教育出版社出版。

郭先生另外一本书《古代世界数学泰斗刘徽》(济南:山东科学技术出版社,1992)概述了他早期的重要工作。这项工作详细研究了刘徽《九章算术》注对建立数学基础的重要意义,阐述了刘徽的工作如何为之后的中国数学史建立了严谨性与数学解释的新标准。

郭先生研究工作的重要性得到广泛的认可,他得到的多项著名奖项就是一个实证。1990年出版的汇校《九章算术》获1991年全国优秀教育图书一等奖。1993年出版的五卷本《中国科学技术典籍通汇·数学卷》于1997年获国家图书奖提名奖。与杜石然、刘钝先生合作编纂,于1998年出版的十卷本《李俨钱宝琮科学史全集》获得1999年国家图书奖最高奖——荣誉奖。与法国林力娜教授合作,2004年出版的中法对照本《九章算术》于2006年获法兰西学院平山郁夫奖。而2010年出版的《中国科学技术史·数学卷》于2012年获第四届郭沫若历史奖一等奖。以上,不过略举数端。

在郭先生对中国数学史所有重要的贡献里,也许没有比他在1988年发表于《自然科学史研究》的《贾宪〈黄帝九章算经细草〉初探——〈详解九章算法〉结构试析》更具代表性。在此篇文章中,郭先生展示了如何重构才华横溢的北宋数学家贾宪对《九章算术》作的注,这是长久以来一直被认为已失传的重要工作。通过对南宋杨辉知名著作《详解九章算法》进行小心详细的文字分析,郭先生令人信服地证明在杨辉的著作里隐藏了极大部分郭先生推断是贾宪所写对《九章算术》的注、分析与解释。这项工作显示,贾宪奠定了在宋元时期达到高峰之中国数学的基础。郭先生估计贾宪所著《黄帝九章算经细草》大约有三分之二可由杨辉的《详解九章算法》重现原貌。

郭先生在对中国数学史的研究中,一直强调依靠原始文献的重要性。提到原始文献,郭先生是国际上公认的《九章算术》专家。我们可以毫不夸张地说,由于郭先生和他在北京自然科学史研究所训练出来的众多学生的努力,刘徽不再是中国数学史上默默无闻的人物,他的工作得到学界公认的崇高地位与认可,这些工作在郭先生对刘徽与其注所发表的研究成果中表露无遗。

郭先生的研究既有广度又有深度,从早期的古代数学,到数个由刘徽、贾宪为代表的中国数学高峰,还有其他众多的研究专题,著述宏富,而阅读这本文集是了解郭先生过去50多年研究工作的方便捷径。把81篇最重要的文章结集出版,算得上是郭先生自己的中国数学史"九九之术"。在《九章算术》的序中,刘徽提到上古九九之术的起源,其中包括数字、计数,基本上就是数学本身的基础知识,刘徽认为这也是"然后两仪四象精微之气可得而效焉"的基础。相同地,通过这部九九(八十一)篇精要文章组成的文集,郭书春先生为中国数学的广泛领域提供了丰富而深入的分析。用其精湛的历史笔法,通过这部文集中收集的50多年来发表的研究成果,郭先生描绘出了中国数学的清晰和活跃的历史。

　　另外,此文集里还有个特别有价值的附录,就是包含了到2017年为止郭先生所有已发表和出版的论文和著作的目录。

　　最后,借着这篇简短的序文,我很高兴地祝贺郭先生,不仅是因为他50多年来的典范研究,更是祝贺他培养出一批年轻的研究人员。这些青年学者将会延续自然科学史研究所数学史研究的伟大传统,这是在上世纪50年代由李俨、钱宝琮、严敦杰诸位先生在建所时所开创,迄今已有60年的优良传统。这种优良传统的延续,在很大程度上,是郭先生与其细心调教出来的学生们不懈努力的结果。

周道本

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　　(中文译稿由美国明尼苏达大学陈建平教授翻译,中国科学院自然科学史研究所郭金海教授修订)

序

郭书春先生和我是同一时段进中国科学院哲学社会科学部的。未几,冷板凳还没坐热,大革文化命即铺天盖地而来。我们都卷了进去,先当红卫兵,后被打成"五一六分子"。从1966年到1976年,十年的青葱岁月就此匆匆过去。所幸者,"文革"末了,我们都已醒了过来,以各自的方式开启了以科技史为安身立命之所的治学之旅①。如今,书春兄要出自选集,作为难友、学友、挚友的我,当然是分外高兴的。

藉作序之便,我得以先睹郭氏自选集的自序、目录和部分篇帙。尽管对他的业绩并不陌生,待到缀合成集,翻检一过,仍不禁为他的卓越史识,极认真、严谨的史学研探,对前辈学者敬重有加而又不讳言其缺失的史德,以及精心培育和引领年轻学者共同推动学科建设的使命感和责任心感到震撼。

书春同志治学之刻苦和认真,人所共知,毋遑多言。难得的是,他在阵阵"中国古代数学史已经做完了""没什么要做的了"的声浪中,独具慧眼,明辨其非,坚决走自己的路,从刘徽《九章筭术注》再研究入手,步步着实,着着领先,开创出了中国古代数学史研究的新境界,使之提升到了一个更高的层次,从而强有力地推动了学科的持续发展。这样的远见卓识,自是值得我们赞佩和效尤的。

史学研究的一大特点,是史料占有的非全息性和历时性。为此,尊重原始文献,认真研读原著,严谨、细致地校勘历来的刊本,对古代数学史研究十分重要,也是这一领域研究者不可或缺的基本功。对此,书春兄是下了大功夫的。他遍搜所有能找到的《九章筭术》刊本,诸如南宋刊本、杨辉本、《永乐大典》抄本、汲古阁本、聚珍版

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① 我住朝内大街的家属宿舍,稍自由一些。郭住所内单身宿舍,为避军宣队的突击检查,学法语时,课本之上覆以毛选。这种治学方式,今天的年轻人是难以想象的。

本、四库全书本等，一一校雠又作了汇校。经这番艰苦努力，他恢复了戴震等错改的原文450余条，重校前人误校近70条，新校前人漏校约40条。如此，得以厘清《九章筹术》的原貌，在正本清源的基础上，对刘徽的贡献及其在数学史上的地位作出了科学、准确的评价。这样的认真和严谨，贯穿于书春研究工作的全过程。仍以《九章筹术注》再研究为例，"以一面乘半径，觚而裁之，每辄自倍，故以半周乘半径而为圆幂"，是刘徽论割圆术最关键的25个字，是证明圆面积公式"半周半径相乘得积步"的关键。但出于疏忽或没读懂，历来的注家恰恰无视这25字的"书眼"甚至撇而不论。通过认真阅读和研究原著，书春在这关键点取得了突破，阐明了刘徽割圆术的真谛及其价值，成为他学术成就的一大亮点。书春的数学史研究是丰富和多彩的，诸如秦汉出土简牍的解析、《算经十书》和宋元明数学特别是贾宪、秦九韶、李冶的研究都卓有所成，在此不一一备述。需要提及的是，他对古代数学史的综合研究，突出地反映于《中国科学技术史·数学卷》这一传世之作中。中国史学界的最高奖项郭沫若奖一等奖颁给了这本书，有点出人意外，其实也在情理之中，它表达了史学界同仁对数学史研究成就的高度认可。

吴文俊先生称，中国的机械化算法体系和古希腊的数学公理化演绎体系各有特点，交替成为世界数学发展的主流。这一重要判语在书春同志的系列研究中得到了很好的印证。

书春兄历来对李俨、钱宝琮两位前辈极为敬重。经他提议，召开了纪念李、钱二老百年诞辰的学术研讨会。他主持了《李俨钱宝琮科学史全集》的编纂工作。1999年修订《辞海》时，他承担了中国数学史条目的修订，发现其中有李俨先生却没有钱宝琮先生，当即致函编辑部要求加上，得到该部的首肯。与此同时，他也如实地指出钱先生当年作《九章筹术》研究时限于条件，以微波榭本为底本，而这个版本缺失甚多，是不足为凭的，从而出现了一些误刊误判。这种未敢为长者讳的科学精神和良好学风，得到了同行们的高度评价，正如《荀子·修良》所说："是谓是，非谓非，曰直。"直道而行，循理之正，方显学者之本真。

书春兄历来重视对年轻学者人格、治学的培养，退休之后，仍常为研究生讲课。经他的不倦努力，田淼、邹大海、郭金海、段耀勇、傅海伦、郑振初（香港）、朱一文等中青年学者都已卓然成才，使数学史研究得以持续发展，传承有绪，被公认为中国科学史界及我所之强项。

书春对所从事的事业知之深而爱之切，有时溢于言表。这，我们是理解的。

我和书春同住中国科学院华严北里小区。前些年,常见他踩着三轮车接送上小学的外孙女儿。这两年,则常见他踩着三轮车带夫人去菜市场或元大都北土城公园。此情此景,或可以"执子之车,与子偕老"名之①。书春和他夫人王玉芝是可共患难、可同安乐的好夫妻。语云:"二人同心,利可断金。"②得贤内之助,书春兄活得充实、开心,继自选集之后,他还会有厚重的学术建树问世是可以预期的。

　　是为序。

<div align="right">华觉明</div>
<div align="right">2017 年 5 月 16 日</div>

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　　①诗云:"执子之手,与子偕老。"此处套改一字,"之"用作动词,意为:牵着你的手,坐上我的车,就这样相伴,我俩慢慢变老。
　　②语出《周易·系辞上》。

自 序

在中国科学院自然科学史研究所建所 60 周年之际，笔者的数学史论文自选集即将问世。国际数学史学会前主席、我所名誉教授、纽约市立大学教授周道本（Joseph W. Dauben）和我所原副所长华觉明教授百忙中赐序，使拙作增色不少。

回想在中国数学史领域耕耘半个多世纪，曲曲折折，峰回路转，感慨良多。

我是父母的"老生子"，他们生我时已经 46 岁（虚岁）了。我幼年体弱多病，多亏当时考学不考体育，否则我连初中都上不了。我少年痛失怙恃，父母未能看到我长大，不到 14 岁，母亲因肝硬化去世，1957 年父亲因说农业合作社减产被迫害致死。幸亏五个哥哥对我都很好。经济上主要是三哥郭淑元（解放军军官）支持，寒暑假都是回村在大哥郭集亭、二哥郭新春处度过，有时到舅父和四哥郭阳春那里，生活上受到与我一起在青岛一中读书的五哥郭常春照顾。他们抚育我成人，读到大学毕业，我是我们村第一个大学生。

儿时春节我家常贴的春联之一是"龙躔肇岁，麟笔书春"。每当春节前长兄笔走龙蛇，书写这副春联时便会说："小弟之名源于此。"麟笔，史官之笔也，源于孔子作《春秋》，绝笔于获麟。我自小喜欢历史，1959 年青岛一中毕业时却在老师的动员下考了理工科，被山东大学数学系录取。1962 年夏我即将升入大学四年级时系领导内定我毕业后留校任常微分方程学科的教师，并指定尤秉礼先生带我，而到五年级时高教部通知，重点大学专业教师必须是研究生毕业，我便在 1964 年 8 月毕业时被分配到中国科学院哲学社会科学部（下简称"学部"，今中国社会科学院）《新建设》杂志社。当时学部虽然仍冠以"中国科学院"之名，实际上从 1962 年起就归中共中央宣传部领导，与中国科学院脱钩了。《新建设》是"文革"前一家重要的文史哲经刊物，1964 年中宣部副部长周扬决定它扩充版面，增加数学、自然科学和文艺创作等内容，想办成三四十年代《东方》杂志那样的大型综合性刊物，便从当年大学毕业生

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