

THE FIRST PERSON THAT
DIGESTED WESTERN AND
CHINESE CULTURE TOGETHER

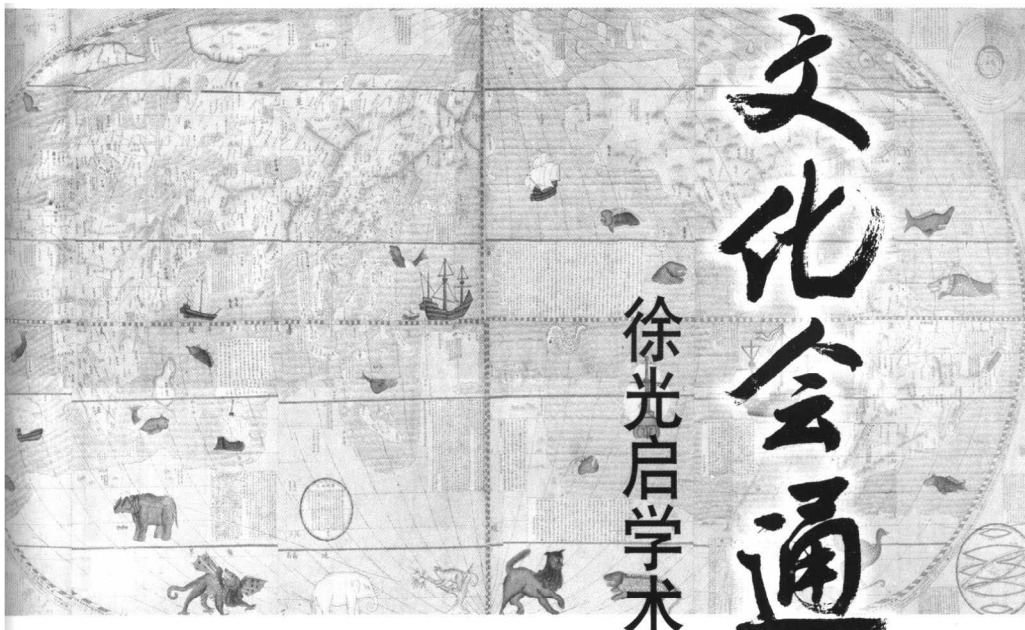
中西文化会通第一人

徐光启学术研讨会论文集

上海古籍出版社

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——徐光启学术研讨会论文集

宋浩杰 主编

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中西文化会通第一人——徐光启
(明绘徐光启像，现藏上海市历史博物馆)

Congratulation 1

Shanghai Xuhui Cultural Relic Management Committee

Academic Seminar in honor of the 372nd Death Anniversary of Xu Guangqi

Xu Guangqi, the great ideologist, politician, militarist and scientist in late Ming Dynasty and the pioneer in communication between western and Chinese culture, played an important role in the spread of modern science in China, and also made magnificent contribution in fields of mathematics, astronomy, calendar, strategics, measurement, agriculture and irrigation, etc. Today, as economy of China has made remarkable progress, it's significant to commemorate this sage and hold the Academic Seminar at Xu Guangqi's hometown and where Chinese culture is most developed. Chinese Society of Science and Technology History and the Institute for the History of Natural Science of Chinese Academy of Sciences hereby express sincere congratulations. We believe that this seminar will be a great success and play an active role for the prosperity of Chinese academe and development of Chinese culture in the new age.

Chinese Society of Science and Technology History
The Institute for the History of Natural Science
of Chinese Academy of Sciences

November 8, 2005

贺 词 一

上海徐汇区文物管理委员会
暨纪念徐光启逝世 372 周年学术研讨会

徐光启是明末重要的思想家、政治家、军事家和科学家，中西文化交流的先驱，对于近代科学在中国的传播发挥了关键的作用，在数学、天文、历法、军事、测量、农业和水利等方面都有重要贡献。在中国经济取得令人瞩目进步的今天，在徐光启的故乡和中国文化最为发达的地区，来纪念这位先哲并举办学术研讨会，是一件非常有意义的事情。中国科学技术史学会和中国科学院自然科学史研究所对此表示热烈的祝贺。相信会议必将取得成功，为中国学术的繁荣和新时代中国文化的建设发挥积极的作用。

中国科学技术史学会
中国科学院自然科学史研究所
2005 年 11 月 8 日

Congratulation 2

Shanghai Xuhui Cultural Relic Management Committee:

We are glad to hear that “the Academic Seminar in honor of the 372nd Death Anniversary of Xu Guangqi” is to be held in Shanghai. We hereby express our most sincere congratulations!

Xu Guangqi, as a great scientist throughout Chinese history and a pioneer in research and applications of modern science and technology of China, whose academic achievements are permanent pride of the Chinese nation, is one of the leaders leading the Chinese nation to a modern civilized society. The Academic Seminar is a confirmation of his grand position throughout Chinese civilization history. He will be recalled and esteemed permanently.

Taking this opportunity, we hope to get great breakthrough in collection, research, exhibition and promotion of cultural relics and materials about Xu Guangqi and obtain plentiful academic achievements.

Wish the Seminar a great success!

Chinese Association of Museums
Chinese National Committee of International
Council of Museums
November 3, 2005

贺 词 二

上海市徐汇区文物管理委员会：

欣闻“纪念徐光启逝世 372 周年暨徐光启学术研讨会”在沪上隆重召开，谨致于最热烈的祝贺！

徐光启是中国历史上伟大的科学家，是中国现代科学技术研究与应用的先驱。他所取得的学术成就是中华民族永远的骄傲，他是中华民族走向现代文明社会的领路人之一。这次会议的召开，是对他在中华文明历史上崇高地位的肯定，人们将永远缅怀他、崇敬他。

希望能够以这次会议为契机，在徐光启文物资料的收藏、研究、展示和宣传等方面取得重大突破，取得丰硕的学术成果。

祝会议能够圆满成功！

中国博物馆学会
国际博物馆协会中国国家委员会
2005 年 11 月 3 日

Prologue

Chen Xiejun

Xujia Hui was originally the joint of two rivers, Fahuajing and Zhaojiabang, where, during the late years of Ming Dynasty, Xu Guangqi, a metropolitan graduate, director of the Board of Rites and grand academician of Wenyuan Pavilion, established his farm villa as an agricultural experimental site. After his death, his coffin was buried in “the northern part of Zhaojiabang” (Guangqi Park, No. 17, Nandan Rd, south of Xujia Hui). Some of his offspring multiplied and subsisted there, in which was originally called as Xujia She (village of the Xu’s family), and afterwards became a town gradually. It was because of him that Xujia Hui got its name, who made a strong stroke in the development of Shanghai modern culture. The modern Shanghai was the centre for introduction and spread of western science and the bridge connecting Chinese and western culture, which had everything to do with Mr. Xu Guangqi. When enjoying the prosperity of modern science and culture and the favor of the culture given by our forefathers, we should always remember Xu Guangqi, the famous, far-sighted and judicious scientist and the pioneer of modern science in Ming Dynasty, who was learnt in both western and Chinese culture.

“As a teacher for a hundred generations, he made studies in calendar and agriculture, who marked out the sky and the land; as a minister, he was the director of the Board of Rites within the country and a general outside, who exercised martial arts and wrote literatures”. Such a couplet carved on the two columns of memorial archway for Xu Guangqi arouses all kinds of feelings well up in our minds. All through his life, Xu Guangqi had been studying hard and pursuing the truth, who was the forthgoer for western science and scientific spirit in Chinese Ming Dynasty and the wheel for communication between western and Chinese culture. He strongly put forward the opinion to learn from the western world and catch up with them, who was so achieved in origination of propagation and introduction of science and technology. Xu Guangqi was noted for his rectitude, frugality and practicalism, who “had no extra money in his wallet when dead”, but had a very royal funeral. His spirit of concerning the affairs of state and caring for the hardships of demos and quality of probity and Rhadamanthus are precious heritage for the Chinese. Xu Guangqi was so respectable and famous by all people forever that he surpassed the limits of time and region. We believe that the spirit of Xu Guangqi and the sagacity of this sage must be passed on for ever and ever.

On Nov 8, 2005, the 372nd anniversary of Mr. Xu Guangqi, Cultural Relic Administrative Department of Xuhui District, in respect for Mr. Xu Guangqi, planned and organ-

序 言

徐 彦 石

徐家汇原是法华泾和肇嘉浜两条河流汇合处。明末进士、礼部尚书兼文渊阁大学士徐光启生前在此建立农庄别业，作为农业试验场所。逝世后，灵柩归葬“肇嘉浜北原”（今徐家汇南面南丹路17号光启公园内）。他的部分后裔世居于此，繁衍生息，初名“徐家厍”，后渐成集镇。徐家汇因他而得名，在上海文明的演进中有他浓浓的一笔。近代上海成为引进和传播西方科学的中心、中西文化会通的桥梁，与徐光启先生有着十分紧密的联系。当我们充分享受当代科技文化的繁荣，沐浴着先人播撒文明的恩泽，我们不能不怀念学贯中西、富于远见卓识的近代科学先驱者——我国明代著名的科学家徐光启。

“治历明农百世师，经天纬地；出将入相一个臣，奋武揆文”。徐光启墓阙柱上所刻的一副对联使人百感交集。徐光启一生勤奋学习，追求真理，是中国明代向西方追求科学和科学精神的先行者，是明末沟通中西文化交流的令人敬仰的重要人物。他响亮地提出了学习西方、赶超西方的主张，在宣传和介绍科技方面有披荆斩棘的开创之功。徐光启为政清廉，生活俭朴，注重实用，有口皆碑。“盖棺之日，囊无余资”，但却有着一个极其盛大的葬礼。徐光启那种关心国家大事、忧怀人民疾苦的精神，清正廉洁、刚正不阿的品质是中华民族的一份珍贵的遗产。徐光启超越时间和地域的局限，世人景仰，彪炳史册。我们相信，徐光启的精神、先哲的睿智一定会传之久远，万世流芳。

2005年11月8日，正值徐光启先生逝世372周年纪念日，徐汇区文物管理委员会怀着对徐光启先生的崇敬心情，周密策划、组织举办“纪念徐光启逝世372周年暨徐光启学术研讨会”。研讨会不但得到了上海市专家学者的积极支持，还得到了国家文物局领导和北京、广东专家学者以及新闻媒体的热情支持。复旦大学朱维铮教授、周振鹤教授、李天纲教授，华东师大王家范教授，交通大学江晓原教授、纪志刚教授，上海社科院晏可佳研究员、马学强研究员等三十多

ized "372nd Anniversary of Xu Guangqi and Learning Proseminar on Xu Guangqi". The proseminar was positively supported not only by scholars and experts of Shanghai but also by leaders of State Administration of Cultural Heritage, scholars and experts from Beijing and Guangdong and the media. More than 30 scholars and experts, including Professor Zhu Weizheng, Professor Zhou Zhenhe and Professor Li Tiangang from Fudan University, Professor Wang Jiafan from East China Normal University, Professor Jiang Xiaoyuan and Professor Ji Zhigang from Shanghai Jiao Tong University, researcher Yan Kejia, researcher Ma Xueqiang from Shanghai Academy of Social Science etc. were seated there and made speeches enthusiastically. Their speeches dealt with the literatures by Xu Guangqi, discussed his learning contributions, argued his outstanding achievements, and carried forward the scientific spirit sparked by Xu Guangqi. The proseminar had a great achievement, with all experts and scholars quoting various evidences and each airing his own views.

After the seminar, Cultural Relic Administrative Office of Xuhui District compiled the essays for the seminar, filed the speech records and edited the Essays for Learning Proseminar on Xu Guangqi, which not only covers the latest returns on learning of Xu Guangqi by experts and scholars, but also is valuable in the history of ideological culture, besides, the list of all literatures by Xu Guangqi, some important historical characters involved etc. in the appendices are all valuable in study on historical materials. The publication of the Essays is the enrichment and expansion for the returns from the Learning Proseminar on Xu Guangqi and the playback and revelation of the immortal life of Xu Guangqi, which is, historically and practically, much important in carrying forward his patriotism and scientific spirit, developing excellent traditional culture, advancing learning discussion and promoting learning boom.

Culture is the soul of urban development. For a city, the function of culture is to model people and advance urban energy and civilization, which provides strong intellectual support and spiritual motive power for the reform and opening-up and modernization construction and is some kind of very powerful soft strength. Xuhui District is the district there the earliest, severest and unique collisions between western and Chinese culture happened, which left us a considerable historical and cultural heritage. As you wander in Xujia Hui, from the ancient Longhua Temple of 1,700 years old to the First Cathedral in far east, from Huang Daopo Memorial established 700 years ago to Xu Guangqi Memorial, from literature institutes gathering all top literary talents in the city to all academies and schools with various persons with abilities, and from the relative concentration of scientific research academies and institutes to a congestion of all large hospitals, we can find that Xuhui District has possessed incomparable cultural advantages. We should protect, utilize, pass and develop those material and immaterial cultural heritages, fusing the brilliant achievements and great spirits of scientific forerunner Xu Guangqi and weaving technical innovator Huang Daopo etc. into the urban culture and spiritual civilization construction as the valuable spiritual wealth, teaching, leading, encouraging while agglomerating all people with advanced civilization and scientific spirits, so as to form powerful resultant force to accelerate cultural development, promote the enforcement of the main strategy of developing the city with scientific education and construct a harmonious city of social democracy.

位专家学者济济一堂，踊跃发言。他们的发言研究徐光启的生平著作，探讨徐光启的学术贡献，论证徐光启的伟大业绩，弘扬徐光启倡导的科学精神，广征博引，各抒己见，研讨会成果颇丰。

研讨会后，徐汇区文物管理办公室汇编了会议论文，整理了发言记录，精心编辑《徐光启学术研讨会论文集》。这本论文集不仅集中收录了专家学者对徐光启学术研究的最新成果，具有重要的思想文化史价值，而且附录徐光启生平著作，及与徐光启有关的重要历史人物等，具有重要的史料价值。论文集的面世，是徐光启学术研讨会成果的充实和延伸，是徐光启不朽人生的再现和昭示，对于发扬徐光启的爱国精神和科学精神，弘扬和发展优秀传统文化，推进学术研讨，促进学术繁荣，具有较大的历史、现实意义。

文化是城市发展的灵魂。对一个城市而言，文化的功能是对人的塑造，对城市精神和文明素质的提升，文化为改革开放和现代化建设提供有力的智力支持和精神动力，是一种极具能量的软实力。徐汇区是上海中西文化碰撞发生最早、最激烈和最具特色的区域，留给后人的历史文化遗产十分丰富。漫步徐家汇，从1700年前的龙华古寺到远东第一大教堂，从700年前的黄道婆到如今的徐光启纪念馆，从汇聚全市顶级文艺人才的文艺院团到人才荟萃的各大院校，从科研院所相对集中到各大医院共聚一地，徐汇有得天独厚的文化优势。我们要保护利用、传承发展物质和非物质文化遗产，将科技先驱徐光启、棉纺织技术革新家黄道婆等光辉业绩和伟大精神当作一笔宝贵的精神财富，融入上海的城市文化和精神文明建设中，以先进文化和科学精神教育人、引导人、鼓舞人、凝聚人，形成加快文化发展的强大合力，积极促进科教兴市主战略的实施，共同建设社会主义和谐城市。

（作者为上海市文物管理委员会常务副主任，
上海博物馆馆长）

Summary

Liu Min

“Xu Guangqi may be ever supposed to know that his curiosity towards Euclidean geometry, which was the base for” tests in the western world, finally changed the views of Chinese scholar-bureaucrats towards people and this world. Of course, our space perception, according to traditional literature, dates back to The Geography in Hanshu and even Yu-kung, but modern space perception, in my opinion, could only start from the publication of the Chinese translation of Elements (wushen year, Wanli Calendar, 1608 AD). With the preach of Xu Guangqi in History, the essay by Professor Zhu Weizheng from Fudan University, the 372nd Anniversary of Xu Guangqi and Learning Proseminar on Xu Guangqi commenced.

On Nov 8, 2005, which was the 372nd anniversary of Xu Guangqi, the famous ancient scientist of China. And in memory of this excellent scientist and great patriot that was born in Shanghai during the late years of Ming Dynasty, Cultural Relic Administrative Department of Xuhui District held “372nd Anniversary of Xu Guangqi and Learning Proseminar on Guangqi Xu” in Shanghai Tianping Hotel. More than 40 persons, including famous experts, scholars and professors from high academies and research institutes such as Museum Department of State Administration of Cultural Heritage, China Museum Academy, Fudan University, Shanghai Jiao Tong University, East China Normal University, Shanghai University, South China Agricultural University, Shanghai Cultural Relic Administrative Department, Shanghai Academy of Social Sciences, Shanghai Library, Shanghai History Museum, Shanghai Lexicology Press, China Cultural Relics News, Wenhui Daily, leaders and scholars from relevant units(or departments) of the city and district and representatives of offspring of Xu Guangqi attended the proseminar. All attendees exchanged notes and gave speeches enthusiastically. They collogued the great contribution that Xu Guangqi has made to the communications between western and Chinese culture and spread of modern science and technology and recognized Xu Guangqi’s dedicated spirits, who had been caring for his nation and the people all his life, spared no efforts in the performance of his duty to make his nation prosperous and the demos in good health. The proseminar had been going on in an impassioned and matey atmosphere with both cross swords and introjections between different concepts and collisions of scientific views.

综 述

刘 敏

“徐光启或许没有想到,他对西方‘举业’基础的欧氏几何的好奇,竟会导致中国士大夫开始改变知人论世的眼光。我们追溯传统文献中的空间认知,固然可上追至《汉书·地理志》,乃至《禹贡》,但倘说近代认知,则据我的私见,只能从《几何原本》的汉译文问世(万历戊申,1608)算起”。复旦大学朱维铮教授在题目为《历史上的徐光启》的论文宣讲中,拉开了“纪念徐光启逝世 372 周年暨徐光启学术研讨会”的序幕。

2005 年 11 月 8 日,是我国古代著名的科学家徐光启先生逝世 372 周年纪念日,为了缅怀这位明末上海出生的杰出的科学家和伟大的爱国者,徐汇区文物管理委员会假坐上海天平宾馆举行“纪念徐光启逝世 372 周年暨徐光启学术研讨会”。国家文物局博物馆处、中国博物馆学会、复旦大学、上海交通大学、上海华东师范大学、上海大学、广州华南农业大学、上海市文物管理委员会、上海社会科学院、上海市图书馆、上海历史博物馆、上海辞书出版社、《中国文物报》、《文汇报》等高等院校、科研机构的著名学者、专家、教授和市、区有关单位(部门)的领导、学者及徐光启后裔代表等 40 多人出席会议。与会者踊跃交流发言,畅谈了徐光启为中西文化交流和近代科技传播作出的巨大贡献;赞誉了徐光启一生忧国忧民,为祖国的繁荣和人民的安康殚精竭虑、鞠躬尽瘁的奉献精神。研讨会既有思想观念交锋融合,也有学术观点的碰撞火花,气氛热烈融洽。

I. “The First Person that Connected Western and Chinese Culture Together”

“Xu Guangqi was one of those scholar-bureaucrats who realized the international situation in China 1600. Being willing to envisage western culture and daring to accept ideological challenges, he was ‘the first person to open his eyes to see this real world’. Xu Guangqi earnestly practiced what he advocated, comparing notes and integrating and connecting western and Chinese culture together with European scholars such as Matthieu Ricci etc. , who was, or rather, ‘the first person to connect western and Chinese culture’ ”. The praiseful words by Professor Li Tiangang from Fudan University and Professor Jiang Xiaoyuan from Shanghai Jiaotong University highly evaluated the scientific achievements and contributions by Xu Guangqi.

Professor Zhou Zhenhe from Fudan University introduced that it has been just 400 years since the translation of Elements was done. There had been 3 translation waves in Chinese history, the translation of sutras in the mediaeval times, the translation of western technological classics in the late years of Ming Dynasty and early years of Qing Dynasty, and the translation of western technological, cultural and social scientific literatures in the late years of Qing Dynasty and early years of Minguo period. While the translation of Elements was the first one that was done by the combining work of interpretation by westerners and dictation by Chinese people in the late years of Ming Dynasty and early years of Qing Dynasty.

Yan Kejia, a researcher from Shanghai Academy of Social Sciences said that Xu Guangqi “learnt all kinds of technologies such as chronometer, calendar and firearms from the westerner Matthieu Ricci, and then learnt elective books on tactics, agriculture, tax, water conservancy etc.” It can be said that Xu Guangqi was the first reprehensive of Chinese intellectuals to learn from foreign countries and introduce advanced western science and technologies. Professor Ji Zhigang from Shanghai Jiaotong University said that it is more important that Xu Guangqi put forward the idea that “To be leading, one should connect western and Chinese culture first, before which he should translate first”. Translation was the foundation, which is the only way to learn advanced western culture and technologies; To connect means to introject and combine western technologies and Chinese scientific tradition; To be leading is the highest hope of Xu Guangqi. It was Xu Guangqi’s great ambition to succeed tradition but “not satisfied with the old learning”, and translate western science but “try to make improvements”, so as to outdo our ancestors and westerners. Such an idea is the conclusion and sublimation of Xu Guangqi’s scientific ideologies, the significance of which had overran Xu Guangqi’s era, and which still has important historical value and passive realistic meaning at present.

一、中西文化交流第一人

“1600年的中国，徐光启是少数几个了解到世界局势大格局的士大夫之一。愿意正视西方文化，敢于接受思想挑战，徐光启才是真正的‘睁眼看世界的第一人’。徐光启身体力行，与利玛窦等欧洲学者如切如磋，融会贯通，更确切地说，他是‘中西文化交流第一人’”。复旦大学教授李天纲、上海交通大学教授江晓原等高度评价了徐光启的成就和贡献。

复旦大学教授周振鹤介绍说：《几何原本》的翻译至今恰好400年整。中国历史上有过三次翻译高潮，一次是中古时期对佛经的翻译，一次是晚明清初对西方科学技术典籍的翻译，又一次是晚清民初对西方科技以及人文社会科学著作的翻译。而在晚明清初的科学著作翻译中，《几何原本》是第一部，采取的是西洋人的“口译”与中国人的“笔受”相结合的方式进行的。

上海社会科学院研究员晏可佳说：徐光启“从西洋人利玛窦学天文历算火器以尽其术，遂偏习兵机、屯田、盐策、水利诸书”。可以说徐光启是最早主动向国外学习和引进西方科学技术的中国知识分子的代表。上海交通大学教授纪志刚说：更重要的是徐光启提出了“欲求超胜，必须会通；会通之前，先须翻译”的思想。“翻译”，是基础，是向西方先进科学文化学习的必由之路；“会通”，指将西方科学技术与中国学术传统的“融合”与“并蓄”；“超胜”是徐光启的最高追求。继承传统，而“不安旧学”；翻译西法，但又“志求改正”，这样才能超越前人，超越西人，这正是徐光启的伟大抱负。这一思想，是徐光启科学思想的总结与升华，它的意义远远超过徐光启的时代，直到今天，仍然具有重要的历史价值和积极的现实意义。

II. “Only with agriculture can we make our nation rich”

Xu Guangqi cherished the ambition “to manage state and civilian affairs, protect justice and avoid evils” since he was young; After he grew up, he dedicated himself to agriculture. He thought that “Only with agriculture can we make our nation rich, and only with military force can we make our nation powerful and strong”. Only agriculture can “stabilize the nation and make the common people live better”. Professor Wang Jiafan from East China Normal University pointed out that Xu Guangqi not only had the idea of making the common people rich and his nation strong, but was much concerned about national economy and people’s livelihood. Especially for people’s livelihood, such as agriculture, industry and commerce, he made investigation and experiments himself and provided various practical consulting services for the civilians. He always planned for local calamities and famine controlling, as well as development of cotton industry, who thought far and deep.

Professor Zhu Weizhong said that though repeating experiments, Xu Guangqi got rid of the conservative idea of inadvisable climate, and succeeded to introduce sweet potatoes in Shanghai and Tianjin. It can be said that the breed varieties innovated by him were integration of scientific perceptions and agricultural technologies. Xu Guangqi’s original idea to introduce imported crops such as sweet potatoes was to control famine, which showed that he still kept in mind his poor landmen who were suffering from hunger and coldness after he was compelled to retreat from the power centre filled with jackals.

To solve clothing problems of people, especially those in the north, who were suffering from coldness, Xu Guangqi introduced specially the gardening method of cotton tree in Complete Treatise on Agriculture. Cotton Tree. Huang Daopo, the spinning technical expert of Yuan Dynasty, introduced spinning skills from Hainan to Songjiang government office. And Xu Guangqi’s hometown became the center of cotton tree gardening and cottonocracy in Ming Dynasty. Xu Guangqi summed up the cotton gardening experiences then, and put forwards improving methods to make the output of cotton increased further. Complete Treatise on Agriculture had detailed records on tools for fluffing cotton and spinning, and full supplements on cotton spinning tools innovated together by civilians, which became historical literature for textual research on the heritage and development of the manual cotton spinning skills. Professor Ni Genjin from South China Agricultural University and Professor Zhao Yanping from South China Normal University thought that Xu Guangqi’s Complete Treatise on Agriculture not only guided much of ancient agricultural techniques, but applied scientific methods to analyze farming. It started a new way for research of historical plague of locusts, which applied a combining method of literature research and modern natural scientific knowledge on the conclusion of laws of plague of locusts.