Peter J. Golas

[Peter J. Golas is Professor in the History Department of the University of Denver. His specialties are the social and economic history of traditional China and the history of technology in China. He has published the volume on mining in the Science and Civilisation in China series. His current research focuses on the question of why illustrations of technology differed so dramatically in Europe and in China.]

The lively illustration on the cover of this book, showing in one courtyard a mix of craftsmen (carpenters, a wheelwright, someone making a spade, and a group fashioning a large blade) hints at its rather protean subject. As Jane Kate Leonard points out in her brief but very helpful introduction, the long-established genre of Chinese texts called zeli 则例 do not lend themselves to any neat definition but could refer to standards for any kind work done for the government (p. 27). The question is complicated by the fact that the sub-set term translated as “handicraft regulations”, jiangzuo zeli 匠作則例, has no traditional lineage but is a coinage from the 1960’s. By convention, it refers to government regulations not only for what is normally thought of as “handicraft” work, such as carpentry or metal-smithing, but also to other kinds of work such as the transportation of grain or the building and maintenance of hydraulic works.

This volume resulted from a major workshop held at Tübingen University in 2003 which drew scholars from across the globe. In addition to two prefaces by the editors (one in English which introduces each of the contributions to the volume and a shorter one in Chinese), it includes twenty four contributions by scholars from eight countries; fifteen are in English and nine in Chinese. Each article is preceded by an English and a Chinese abstract. An appendix compiled by Christine Moll-Murata, Song Jianze 宋建昃 and Liu Qiang 劉蔷 will be a boon to researchers; it contains a union list of Qing handicraft regulations and related works that is based on a search of forty-eight libraries in Asia, Europe and North America. The list is intelligently organized. In Part 1, Regulations and precedents (zeli 则例) on specific topics such as military equipment, shipbuilding and river conservancy can be easily found. Part 2 lists “Measurement inventories and cost calculations” (qingce 清冊) while Part 3 includes “Technical instructions” (zuofa 做法) of both a general nature as well as those dealing with specific crafts. A pinyin title index (there is unfortunately no index for the volume as a whole) makes it easy to find where individual works are held.

Especially important and possibly a little disappointing for readers of this journal, the “handicraft regulations” reflect their origin in the administrative
concerns of government bureaucrats and tend to say little about technology specifically. In the case of building construction, for example, we have vast amounts of information for estimating the needs and calculating the costs of materials and labor, but very little about just how the buildings were to be constructed. This can be seen, for example, in the topics addressed by Guo Daiheng 國黛姮 in her very thorough discussion of the Yuanming Yuan Neigong Zeli 圓明園內工則例 (Regulations and Precedents on Interior Handicrafts in the Garden of Perfect Brilliance) and the discussion by Chen Chaoyong 陳朝勇 of the costs of building materials and wages for public construction in five provinces in 1769. As the editors point out, “[o]nly when a certain construction or production phase was related to an administrative or legal problem can we expect to obtain relevant technical information.” (p. 10)

Despite these caveats, this is nevertheless a very useful, and sometimes quite fascinating book. Much of the information it provides helps us to understand better the overall institutional, economic and social context in which the technology was employed. We learn a great deal about the Qing state and how it dealt with those who worked for it. The “handicraft regulations” are also rich in precise economic information such as price and wage data although, as the editors point out, we can arrive at a finely textured historical reality only by crosschecking these normative data wherever possible against reality-based information for different times and different places, data that can be found only by combing a wide range of sources.

The six sections into which the book is divided serve mainly to provide homes for the strikingly heterogeneous contributions, generally of high quality but sometimes rather tenuously related to the purported subject of the book. Thus, in the first section, “Theoretical and Institutional Foundations: Historical Materials on the Crafts in China and Europe”, we have a discussion by Dagmar Schäfer of Song Yingxing and his Tian gong kai wu 天工開物 (The Exploitation of the Works of Nature) that, while interesting in its own right, has little connection with handicraft regulations and a discussion by Josef Ehmer on recent views of artisans, guilds and craft regulations in Europe that makes no reference to China. (The editors on pp. 12-13 attempt to draw some of the relevant connections.)

Building technology is perhaps the best represented technology in the volume, as reflected in the fact that seven of the ten contributions in the section “Handicraft Regulations and their Function for the Crafts” deal with it. The remaining contributions discuss imperial printing at the Wuyingdian 武英殿 or “Hall of Military Fame”, river works, and weapons and military equipment. Of special interest is Caroline Bodolec’s discussion of vaulting in Chinese architecture that interestingly fleshes out a brief discussion of vault calculations in the 1734 Gongcheng Zuofa 工程做法 (Building Methods) by examining contemporary vaulted houses in Shaanxi and Shanxi; this “experimental methodology” enables her to hypothesize that technical knowledge used for public buildings may have been transmitted to popular constructions in the Qing period (p. 225).
The contributions to the section on monetary policies and minting, while very interesting in themselves, generally offer little in the way of technical information and, indeed, benefit little or not at all from the examination of handicraft regulations. Hans Ulrich Vogel’s discussion of unrest and strikes at the Beijing mints in 1741 and 1816 therefore stands out all the more in showing us how one can use other types of sources to assess the effectiveness of the norms in handicraft regulations and other similar types of collections. In particular, we see how the rigidity, not to say the wishful thinking, of the normative regulations had to give way to the reality of unpredictable fluctuations within the monetary system. (The story of the strike in 1741, well told by Vogel on pp. 404-415, is as fascinating and instructive an account of labour unrest in traditional China as I have seen anywhere.)

The theme of adaptation of the regulations to different local conditions and to changes over time is also prominent in the final section with its discussions of canal, river and coastal shipping. In Jane Kate Leonard’s investigation of the revision in 1845 of the Board of Revenue’s code on grain transport, we are provided with another illuminating case from which emerges a picture of bottom-up forces leading to code revisions that “sanctioned flexibility and responsiveness to changing local conditions.” (p. 450) As the author stresses, Qing administrative norms were not a case of “one size fits all”.

Finally, this reader would have liked to see rather more done to draw comparisons between the Chinese experience and, for example, that of Europe where much more work has been done (especially in Germany) on the writing of craft history. One step in this direction is Jan Lucassen’s comparison of wage payments in coins in Europe and China from the thirteenth to the nineteenth centuries. Also, Welf Schnell uses a comparison of regulations for the Yuanming Yuan and the Ten Books on Architecture of Vitruvius to point out that the Chinese volume describes objects using detailed measurements whereas, in Vitruvius’ text, “objects are determined by their relation to other objects.” He then goes on to suggest that this may reflect the difference between a Chinese mathematics where practical computations were stressed versus a Western mathematics strongly focused on geometry and therefore “thinking in spatial forms and the relationships between things.” (p. 211) One may or may not be persuaded by this interpretation, but it is certainly stimulating.

The insights to be obtained from this volume are as rich and varied as the topics and approaches of its contributors. The overall picture they leave us with is that of “a governing system in motion in a slow, constant, and persistent adjustment to political reality. Maybe it wasn’t fast, maybe it wasn’t ‘transformative’; and maybe it couldn’t cope with the disaster-overload of the late nineteenth century. But nonetheless, for the greater part of the Qing period, it was steady, fairly reliable, and worked pretty well to serve the broad social / economic interests of the diverse peoples and places of the empire. Not a bad track record, all in all.” (p.30)