

PARTS IN CHINESE MATHEMATICAL TEXTS

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The talk aimed at interpreting two statements of the 3rd century commentator Liu Hui's preface to his commentary on *The Nine Chapters on Mathematical Procedures*, the first century BCE or CE classical text. In his preface, one reads:

“周公制禮而有九數，九數之流，則《九章》是矣。往者暴秦焚書，經術散壞。自時厥後，漢北平侯張蒼、大司農中丞耿壽昌皆以善算命世。蒼等因舊文之遺殘，各稱刪補。故校其目則與古或異，而所論者多近語也。”

It is only when the Duke of Zhou established the Rites that [we know that] the **nine parts of mathematics (*jiu shu*)** existed. The **development (*liu*)** of these nine parts, **this is precisely what *The Nine Chapters* is**. Formerly, the cruel Qin (1) burnt the books. The Canons and procedures (**OR** the procedures of the Canons **OR** the procedures of the Canon) got scattered and damaged. After that time, the Bei Ping Marquis Zhang Cang (2) and the Assistant of the Grand Minister of Agriculture, Geng Shouchang (3), both acquired a universal reputation for their excellence in mathematics. On the basis of **scraps** of the old text (*wen*) that were handed down, Zhang Cang and the other (**OR** the others) made both excisions and completions. This is why, when one examines its sections (*mu*), in places they differ from the ancient ones and what is discussed is much in modern terms.”

The first part of the talk put forward a hypothesis to explain the following puzzle, that is, although Liu Hui seems to believe that the organization of mathematical knowledge into nine parts and of the classic into “nine chapters” dates to as early as before the unification of the Empire, none of the recently discovered manuscripts, which date to the Qin time period and early Han dynasty, is structured in chapters, let alone chapters comparable to those of *The Nine Chapters*. The hypothesis led to discuss the meaning of sentences of the preface for which one can suggest different interpretations. In particular, we suggested that there may have been two types of mathematical documents in early China: documents considered as classics and others. The talk brought forward the hypothesis that the concept of “nine ‘parts of mathematics’” and the Nine Chapters related to the first type while the mathematical books so far unearthed belonged to the second type.

The second part of the talk presented the evidence on the basis of which one can establish that the chapters of *The Nine Chapters* each had a mathematical meaning. The relation between the chapters of the book and the “nine ‘parts of mathematics’” was discussed, and in particular the meaning that Liu Hui could attribute to the idea that the former derived from a “development” of the latter. In addition, it was shown that the meaning of the chapters brought to light can help us account for the meaning of, and variations between, the various lists of “nine ‘parts of mathematics’” that were discussed by several actors between the first century and the seventh century of the Common Era.