

The Emperor and the Calendar in Ancient China

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1. Introduction

For many people today the calendar may represent nothing more than an aid to leading their lives as member of society. But our world functions as an organic whole through the medium of the calendar and time, and the calendar in its role as a yardstick for life within society can be said to have made major contributions to human society ever since humankind came to possess a certain level of culture right down to the present age.

In China, however, the calendar transcended the bounds of social life and was treated as a subject of learning required of the emperor. This in itself is a relatively well-known fact. But when it comes to the reasons for this treatment of the calendar, there would seem to have been few opportunities for discussing this question.

The task that has been assigned to me in this paper is to provide such an opportunity. However, not only are the Chinese sources on which our discussion will be based difficult to understand, but they also concern musical theory and astronomy, subjects with which most people have little familiarity, and hence it is extremely difficult to deal with this matter in a readily comprehensible manner. I have nevertheless undertaken to attempt this here, and since I am bound to commit many indiscretions, I ask for the reader's indulgence and instruction.

2. The Cosmology of the "Lüli zhi" in the *Hanshu*

The calendar would appear to have been discussed in ancient China on the assumption that it was a branch of knowledge indispensable to the ruler. In the historical literature, a full discussion is to be found in the "Lüli zhi" 律歷志 included in the *Hanshu* 漢書.¹⁾ By "full" I mean not only that the calendar is dealt with in full, but also that, because of its connections with contemporary cosmology, it was understood in conjunction with weights and measures, and the "Lüli zhi" may be regarded as the first ascertainable example of such discussion.²⁾

In the relevant section of the "Lüli zhi" musical theory serves as the basis of the discussion. The reason for this is probably that since ancient times music (although perhaps of a primitive form) had been used when communing with the divine. The theoretical numerical values employed for producing different notes were also amenable to explaining the validity of the calendar, and it is to be

surmised, moreover, that it came to be realized that they could be applied to explications of the *Yijing* 易經 and of weights and measures.

Let us now consider this in a little more detail. Musical theory explains the ways of producing different notes, and the instrument chosen for this purpose was an end-blown flute.³⁾ The longer the flute, the lower the pitch of the sound that it produces, while the shorter the flute, the higher its pitch. Halving the length raises the pitch by one octave, and it was held that there were 'twelve notes' (十二律) within one octave. The manner in which this was explained was similar to the Pythagorean system in the West. The method for calculating the twelve notes was as follows: the length of the flute for producing the note called *huangzhong* 黃鐘, the fundamental note in Chinese music (corresponding to C in the fixed-do system), is multiplied by $2/3$ to give a flute that produces the next note *linzhong* 林鐘 (G), and this is then multiplied by $4/3$ ($2/3 \times 4/3$) to give a flute that produces the note *taicu* 太簇 (D). This process of multiplying by $2/3$ or $4/3$ (called *sanfen sunyi* 三分損益 or "divide by three and subtract or add [one third]") is then repeated to give a series of twelve notes. The point to be noted here is that if the length of the flute producing the first note *huangzhong* is equated with the number 9, then *linzhong* becomes 6 and *taicu* becomes 8, which are all integers, whereas the remaining notes all become fractions. The fact that 9, 6 and 8 are integers is of prime importance in understanding the "Lüli zhi."

Weights and measures were also explained in terms of musical theory. The length of the flute producing the note *huangzhong* was determined to be 9 *cun* 寸, which became the basic unit of length, while the weight of this flute when filled with millet became the basic unit of weight and its capacity became the basic unit of volume.

The calendar indicates the movements of heavenly bodies in units of days, months and years, and it too was explained by means of the same theory. In this manner, the order observed in the heavens is reflected in social order through the medium of musical theory, and the *Yijing* was also adduced on the basis of the same theory when describing the life of the individual within society. The chief purpose of the "Lüli zhi" is to explain the nature of this order, with which the emperor must be fully conversant. If the study of the calendar is to be referred to as a subject of learning that was required of the emperor, then these circumstances must also be taken into account.⁴⁾

3. The "Lüli zhi" in the *Hanshu* and the Calendar

In the "Lüli zhi" in the *Hanshu* heaven, earth and man are equated with the numbers 9, 6 and 8 respectively. In the *Yijing*, which is also frequently quoted in the "Lüli zhi," heaven is identified with *yang* 陽 and earth with *yin* 陰, and they are further equated with 9 and 6 respectively when explaining the eight trigrams. But in the explanation of the calendar in the "Lüli zhi," a further interpretation was added to the numeral 6. Namely, if the so-called 'twelve branches' (*shier zhi* 十二支)

of the sexagenary cycle are assigned in descending order of length to the twelve flute lengths obtained through the process of *sanfen sunyi* starting from 9, then 9 will correspond to *zi* 子, 8 to *yin* 寅 and 6 to *wei* 未, but if the twelve branches are arranged around the points of the compass, the antipode of *wei* is *chou* 丑, and so 6 was equated with *chou*. This results in the following correspondences: *zi* — 9, heaven; *chou* — 6, earth; and *yin* — 8, man.

It was, moreover, considered that in the calendar appearing in the *Chunqiu* 春秋 (which was ascribed to the king of Zhou 周) the first month had corresponded to the month of heaven or *zi* (whence this calendar was called the *jianzi* 建子 calendar), with the remaining eleven 'branches' being assigned *seriatim* to the subsequent months; the month of *zi* included the winter solstice. In the calendar of the Yin 殷 dynasty, on the other hand, it was believed that the first month had corresponded to the month of earth or *chou* (whence this calendar was called the *jianchou* 建丑 calendar), while in the calendar used during the Han 漢 dynasty the first month corresponded to the month of man or *yin* (whence this calendar was called the *jianyin* 建寅 calendar). This gave rise to a theory of three calendars, differentiated by the 'branch' corresponding to their first month and known as *sanzheng* 三正 or 'three first months', and it was held that these changes in the first month of the year followed a certain cycle: Xia 夏 dynasty (month of *yin*) → Yin dynasty (month of *chou*) → Zhou dynasty (month of *zi*) → Han dynasty (month of *yin*).

The question of how far back this theory of three calendars can be traced remains unresolved, and there are also many concomitant issues that have yet to be settled. However, I have recently come to believe that it will probably be found that this theory goes back as far as the mid-Zhanguo 戰國 (Warring States) period. Hitherto it has been suggested in connection with the origins of the *sifenli* 四分歷 or 'one-quarter calendar' named after 365¼ days that the data for the winter solstice used in calendrical calculations are probably from the period extending from the mid-fifth to the mid-fourth centuries B.C.,⁵⁾ and it has also been noted that in the entry for the seventeenth year of Duke Zhao 昭公 in the *Zuozhuan* 左傳 the three calendars are explained in connection with the month in which Antares (*dahuo* 大火) first appears. But I have reached my conclusion by additionally taking into account the major change in the designation of the first year of a ruler's reign that occurred during the Zhanguo period in the latter half of the fourth century B.C. and the fact that it has become evident on the basis of the calendrical information given in the Chu 楚 bamboo slips unearthed in 1987 from Tomb No. 2 at Baoshan 包山, Jingmen 荊門, in Hubei 湖北 province that a calendar in which the winter solstice fell in the second month goes back at least as far as 322 B.C.⁶⁾ In the following I wish to consider these points in some detail.

4. The Change in the Designation of Reigns in the Mid-Zhanguo Period

To date it has been unconsciously assumed that the announcement of the first year of a new reign in China followed what is termed the *yunian* 踰年 method. This means that when a ruler died, the commencement of the next ruler's reign was not proclaimed immediately, but only once the following year had begun (*yunian*: "to pass from one year to the next") and the new ruler had been officially enthroned, and this corresponded to the first year of his reign. Era names were introduced during the Han dynasty, and it is a fact that changes in era name due to the accession of a new ruler did indeed follow this method in principle. But it also happened that when a ruler died, the new ruler might ascend the throne and initiate the first year of his reign immediately. In China this has been traditionally referred to as *weiyunian* 未踰年 or "not having passed from one year to the next." But this term is premised on the idea of *yunian*, and since it is necessary in the following to proceed without this premise, I shall use the expression *linian* 立年 instead. 'Li' 立 is a term from the *Chunqiu* 春秋 (the Spring and Autumn) and the *Zhanguo* (the Warring States) periods that has traditionally been interpreted as referring to the provisional accession to the throne by a new ruler that was announced immediately after the death of the previous ruler and prior to the new ruler's official enthronement in the following year, but in actual fact *li* as used in the present context refers to nothing less than the official enthronement.

It is strange to note, however, that there has been almost no discussion of when the *yunian* method of designating the first year of a ruler's reign came into use. Even the reconstruction of the calendars of the Yin and Zhou dynasties has been premised on the *yunian* method right down to the present time, and for scholars throughout history this method has been self-evident. One of the few scholars to take up this question was Ouyang Xiu 歐陽脩 of the Northern Song 北宋, and our attention is drawn to his view that the *yunian* method can be traced back as far as the *Chunqiu* (*Xin wudai shi* 新五代史, "Hanji" 漢紀). It is true that in the *Chunqiu* the reigns of the rulers of the state of Lu 魯 are listed in accordance with this method, and judging from the references to solar eclipses, there are even by modern standards definitely no chronological errors. Sima Qian 司馬遷, the author of the *Shiji* 史記, drew up a chronological table of the Twelve Feudal Lords by supplementing the material in the *Chunqiu* and also compiled a chronological table of the Six States of the subsequent *Zhanguo* period, and in both cases the *yunian* method is used throughout.

However, following the discovery in the mid-third century of the annals of the *Zhanguo* state of Wei 魏, called the *Zhushu jinian* 竹書紀年, there was for a time an effusion of debate in Chinese scholarly circles concerning the contents of the *Shiji*. Discussion centred on the fact that the discrepancies between the *Mengzi* 孟子 and the chronological table of the Six States in the *Shiji* could be rectified on the basis of this *Zhushu jinian*. But this debate eventually subsided once the position of

the *Shiji* had become firmly established, and the *Zhushu jinian* was subsequently lost. (Parts of the *Zhushu jinian* were preserved in commentaries, and these are today collectively known as the 'old text' in contradistinction to the spurious later version known as the 'current text'.) As long as the *yunian* method was regarded as axiomatic, there existed an insurmountable gulf between the *Shiji* and the 'old text' of the *Zhushu jinian*.

When attempting to bridge this gulf, I noticed that there was a certain pattern evident in the discrepancies between these two works.⁷⁾ Sima Zhen 司馬貞 of the Tan 唐, who discussed these discrepancies and argued for the superiority of the *Shiji*, wrote a detailed commentary (*Shiji suoyin* 史記索隱) in which the discussion of these discrepancies invariably occurs in sections where the years of rulers' deaths that he has gleaned from the 'old text' of the *Zhushu jinian* indicate a longer reign than that given in the *Shiji*. (The *Zhushu jinian* would have recorded when a certain ruler of a certain state died, and consequently Sima Zhen probably based his calculations on the *yunian* method.) If, contrary to Sima Zhen's intentions, one accepts the dates given in the *Zhushu jinian* whenever the length of a reign or the very existence of a ruler is at issue, one is forced to conclude that these problematic sections have been excluded from the *Shiji*. I therefore set about substituting for the dates given in the *Shiji* only those dates indicative of a longer reign from among the dates of rulers' deaths gleaned by Sima Zhen from the 'old text' of the *Zhushu jinian* (taking into account the fact that his interpretation would have been based on the *yunian* method) while retaining all other dates of rulers' deaths given in the *Shiji*, whereupon I found that it was possible to resolve the discrepancies by applying the *linian* method. This new arrangement is based on the assumption that those states which first assumed the title of 'king' (*wang* 王) for their rulers during the Zhanguo period used the *yunian* method only after the adoption of this title, while prior to this they had used the *linian* method, as did all other states both before and after this time.

A comparison of the *Chunqiu* and *Zuozhuan* on the one hand and the *Shiji* on the other reveals that there are many references to the Chunqiu period too that would suggest the existence of the *linian* method at this time. In addition, among the calendrical references in the bronze inscriptions of the Western Zhou 西周, I selected those that specify the year of the reign, the month, the phase of the moon and the 'stems and branches' (*ganzhi* 干支) of the day (—because of the strong mutual constraints on the ordering of these elements, there has until now been no research that has managed to arrange them all in a satisfactory manner), and I then attempted to arrange them on the basis of a perspective different from that of earlier researchers. Namely, taking into account observation techniques current at the time and assuming that the seasons were determined on the basis of the direction of the tail of the Great Bear (*beidou* 北斗) immediately after sunset, I made the month of the winter solstice the twelfth month instead of the first month, as had hitherto been the case. At the present point in time, it would seem that if one proceeds on the hypothesis that an intercalation was made when the

winter solstice occurred towards the end of the month, everything falls in place more or less satisfactorily, and as a result of this improvisation not only did I succeed in arranging all the dates in order, but I also found that they connect quite consistently with the calendrical references in the *Shangshu* 尚書 (apart from its pseudoclassical passages) and *Yizhoushu* 逸周書.⁸⁾ What merits even greater attention than these points, however, is the fact that if one calculates the lengths of the reigns of the kings of Zhou on the premise that the above-mentioned bronze inscriptions of the Western Zhou follow the *linian* method (—King You 幽王 reigned for three years, and according to the ‘old text’ of the *Zhushu jinian*, the Jin 晉 dynasty began in the third year of King You’s reign), then it is found that the sum total coincides with the total number of years of the reigns of the kings of Zhou as given by Sima Zhen in his *Shiji suoyin* on the basis of the ‘old text’ of the *Zhushu jinian*. This confirms the fact that the examples of the *linian* method obtained through a comparison of the *Chunqiu* and other sources are not occasional exceptions, but represent the general method of designating the first year of a reign that was current from the Western Zhou onwards. (This fact became obscured in the *Chunqiu* and in the chronological tables of the *Shiji* which were compiled later, and it also means that the *Chunqiu* was composed after the *yunian* method had become a subject of discussion.) It would also bear further witness to the validity of my earlier conjecture in regard to the Zhanguo period.

Thus the *yunian* method was first adopted by those states that began using the title of ‘king’ for their rulers during the Zhanguo period. The first ruler to do so was King Wei 威王 of Ji 齊 in 338 B.C., and his example was then followed by Wei (334 B.C.) and other states. It is to be assumed that there would have been some discussion of the *yunian* method prior to the adoption of this title in 338 B.C., and this would tally with the earlier suggestion that the data used for calendrical calculations from the Zhanguo to Han periods extended from the mid-fifth to the mid-fourth centuries B.C. A further corroboration of this conjecture is provided by the calendrical references found in the Chu 楚 bamboo slips from Baoshan 包山 noted below.

5. The *Yunian* Method and the *Jianyin* Calendar

In the “Lüli zhi” in the *Hanshu* there is no mention whatsoever of the calendar of Chu described above, and in calendars other than the three calendars mentioned earlier (*sanzheng*) the first month coincided with the month preceding the month of the winter solstice. (This latter type of calendar might be termed the *jianhai* 建亥 calendar, or calendar beginning with the month of *hai* 亥). The existence of this calendar had been known from the calendrical data found in the Qin 秦 bamboo slips from Yunmeng 雲夢, which show the state of affairs between the late Zhanguo period and early Qin dynasty, but its date has been pushed back even further as a result of the discovery of the Chu bamboo slips at Baoshan. These go back as far as 322 B.C., which is only a short time after the ruler of Ji

assumed the title of 'king' in 338 B.C.

As was noted earlier, in the calendar of the Western Zhou the start of the year was determined by observing the direction of the tail of the Great Bear immediately after sunset, and consequently the month of the winter solstice corresponded to the twelfth month. Judging from the wording of the "Lüli zhi," usually this coincided with the calendar of Yin (the first month of which was the month of *chou*), and if the year had thirteen months because of an intercalary month due to the occurrence of the winter solstice towards the end of the twelfth month, the following year would concur with the calendar of Xia (the first month of which was the month of *yin*). There are also references to "fourteen months" in bronze inscriptions, thus indicating that two intercalations were sometimes made together, and a clear line may be drawn between the calendar of this period and the calendar of later times which, it is important to note, was based on comparatively careful observations. The intercalary month was always placed at the end of the year. The calendars referred to in the *Chunqiu* and *Zuozhuan* can also basically be interpreted along these lines (although it is only to be expected that there would have been differences between the different states in regard to the month if one takes account of the circumstances in which they made their actual observations). But as far as one can judge from the references to solar eclipses, it would seem that from the second half of the 7th century B.C. the state of Lu converted to a calendar in which the month of the winter solstice became mainly the first month of the year. This is thought to have been because of advances in the observation of the winter solstice through the use of the gnomon. This represented a new move that went beyond the determination of the seasons in earlier calendars through the observation of heavenly bodies, such as the Great Bear after sunset once the winter solstice had passed. Shinjō Shinzō 新城新藏 has described the calendar of the Western Zhou and earlier as one in which the seasons were determined on the basis of empirical observations (*kanshō juji* 觀象授時),⁹⁾ and in the following I shall accordingly refer to this type of calendar as an 'empirical calendar'.

It may be inferred from an examination of the calendrical references to Chu in the *Chunqiu* and *Zuozhuan* that until the Chunqiu period Chu too was using this empirical calendar (with the month of the winter solstice corresponding to the twelfth month). But since the *jianhai* calendar (with the month of the winter solstice corresponding to the second month) was being used in Chu in 322 B.C., there must have been a change in calendars at some point prior to this. Moreover, the fact that it would probably have taken into account the commencement of winter (*lidong* 立冬) means that there must also have been some discussion of the calendar of Xia, the first month of which took into account the commencement of spring (*lichun* 立春). The conjecture that the data employed in calendrical calculations for the calendars used from the Zhanguo to Han periods were from the mid-fifth to mid-fourth centuries B.C. is closely linked to this point. Qi and the other states that assumed the title of 'king' for their rulers during the Zhanguo

period had also been using the empirical calendar during the Chunqiu period, and there is thus a strong possibility that the adoption of the title of 'king' and the calendar of Xia beginning with the month of *yin* were treated as if they formed a set. I would accordingly make the following conjectures.

Firstly, (1) the precursor of the theory of three calendars alluded to in the "Lüli zhi" of the *Hanshu* was rather hastily formulated in conjunction with the adoption of the title of 'king' during the Zhanguo period, and (2) because in content it implied the negation of the king of Zhou (regardless of whether Zhou had used an empirical calendar or whether the so-called Zhou calendar beginning with the month of *zi* was equated with the original calendar of Zhou in the course of these discussions), during the Zhanguo period it was treated as a means of justifying the adoption of the title of 'king'. If we add to this the fact that the *yunian* method of designating the first year of a ruler's reign was linked to the adoption of the title of 'king', then it may also be supposed (3) that the king of Chu, which had been using an empirical calendar and the title of 'king' since the Chunqiu period, was negated in the same way as the king of Zhou had been, and (4) that in resistance to this, and also in order to negate the king of Zhou and the kings of the states that first adopted the title of 'king' for their rulers during the Zhanguo period, Chu converted to the *jianhai* calendar. This *jianhai* calendar of Chu probably appeared after the debate over the calendar of Xia had arisen.

Unlike the states that began using the title of 'king' during the Zhanguo period, Chu did not alter its method of designating the first year of a ruler's reign, and it continued to use the *linian* method. This fact is closely connected with the calendar used in Chu. Zhou also continued to follow the *linian* method, but it is not known what calendar it used during the Zhanguo period. All that can be said with any certainty is that, as was noted above, the so-called Zhou calendar with the month of *zi* as its first month was discussed in connection with the adoption of the title of 'king' during the Zhanguo period as if it represented the original calendar of Zhou (probably the early Zhou). But in actual fact there is a strong possibility that Zhou continued to use an empirical calendar.

6. The Distinctive Zhuanxu Calendar

Up until now there has been a certain vagueness in my discussion. This concerns the Zhuanxu 顓頊 calendar, which was used from the Zhanguo to Han periods. Its distinctiveness lay in that the year began not with the first month but with the tenth month (and therefore ended with the ninth month). There are no other examples of such a calendar, and although it is stated in the *Shiji* that it was initiated by Qinshihuang 秦始皇 (the First Emperor of Qin), it dates from the Zhanguo period. Here I wish to examine this point and also consider the origins of its distinctiveness.

In view of the calendrical computations on which it was based, the Zhuanxu calendar may be said to have been a variety of Xia or *jianyin* calendar with the

month of *yin* as its first month. This first month corresponded to the month in which the commencement of spring fell (*viz.* the month of *yin*). But insofar that the year began in the tenth month (*viz.* month of *hai*), it was a variety of *jianhai* calendar.

If one compares passages of similar content scattered throughout the *Shiji*, it becomes very clear that this Zhuanxu calendar goes back to the Zhanguo period. Since the chronological tables of the Six States given in the *Shiji* are based on the *yunian* method, they can be relied upon only for the period after the adoption of the title of 'king' by those states that adopted this title or their rulers (— there are also problems concerning the chronology of Tianqi 田齊, but these cannot be discussed here), and if one compares the dates given in these tables with the dynastic annals and regional histories of the *Shiji*, it is sometimes found that there is a difference of one year. There is a certain pattern to this difference, with the records for Qin showing a lag of one year. This probably derives from the differences between the Zhuanxu calendar and the standard Xia calendar, for the tenth month of the Xia calendar would correspond to the start of the following year in the Zhuanxu calendar.

Furthermore, the name 'Zhuanxu calendar' suggests links with the *jianhai* calendar of Chu. The rulers of both Chu and Qin looked upon Zhuanxu as their ancestor. In the *Lüshi chunqiu* 呂氏春秋 compiled in Qin towards the end of the Zhanguo period, the emperor Zhuanxu is identified with the winter months, namely, the tenth, eleventh and twelfth months. If the Chu calendar in which the tenth month corresponded to the first month of the calendrical year can be traced back to 322 B.C., then one must also consider the possibility that the Zhuanxu calendar of Qin too goes back as far as the mid-Zhanguo period. This brings us to the fact that Qin adopted the title of 'king' for its ruler in 324 B.C., a mere two years before 322 B.C. When considered in this light, my earlier conjecture that the *jianhai* calendar of Chu represented a negation of the king of Zhou and of the Zhou calendar, as well as of the kings of the states that began using the title of 'king' during the Zhanguo period and of the Xia calendar, becomes meaningful. It is evident that Qin adopted the title of 'king' later than Qi and Wei did, and furthermore it no doubt did so after Chu had begun using the *jianhai* calendar. This gives rise to the conjecture that Qin not only adopted the Xian calendar and *yunian* method when it assumed the title of 'king' for its ruler, but also sought to incorporate the ideals of the *jianhai* calendar of Chu which would have evolved in resistance to the Xian calendar and *yunian* method.

When considered in this manner, it becomes possible to solve the riddle of the Zhuanxu calendar with its year starting in the tenth month, a riddle which had until now been unresolvable. The Zhuanxu calendar would have been introduced when Qin adopted the title of 'king' (under King Huiwen 惠文王). As long as the *yunian* method was being used, the ideals of the Xian calendar could not be abandoned. The Xia calendar and *yunian* method were subsequently incorporated in the "Lüli zhi" of the *Hanshu*, with the title of 'king' being replaced by that of

'emperor'. It is not known whether a comprehensive discussion touching also on weights and measures took place when the title of 'king' began to be used during the Zhanguo period, but I have discussed elsewhere how weights and measures evolved while maintaining links with musical theory.¹⁰⁾

7. The Post-Hanshu Period

The arguments set forth in the "Lüli zhi" of the *Hanshu* continued to be looked upon as representing the basic ideals of subsequent Chinese dynasties. By the time of the Sanguo 三國 (Three Kingdoms) period, however, weights and measures had changed to such an extent that they were no longer consistent with the explanations found in the "Lüli zhi," although during the Jin dynasty the Han foot (*chi* 尺) was temporarily revived, and during the Tang dynasty it was known as the 'small foot' (*xiaochi* 小尺) and used for ritual purposes. These were both measures taken so that weights and measures could be explained in accordance with the prescriptions of the "Lüli zhi."

There was also much lively debate over calendar reform. The reasons for this was quite simply that it was required of the emperor that he accurately embody the cosmic order. As a result of these debates, Wei of the Sanguo period introduced the Yin calendar for a time, while Empress Wu 武后 of the Tang used the Zhou calendar. But probably because these changes would have resulted in considerable confusion throughout society, the Xia calendar has generally continued to be used down to the present day, and the focus of debates on the embodiment of cosmic order shifted from calendar reform to the computation of accurate calendars.¹¹⁾

Perhaps because of this entrenchment of the Xia calendar, it seems to have been forgotten already in the Han period that the Xia calendar was linked to the *yunian* method of designating the first year of a ruler's reign. This means that the revolutionary aspect of the adoption of the title of 'king' during the *Zhanguo* period had already been obfuscated. For this reason Sima Qian compiled his chronological tables on the assumption that the *yunian* method had been used as early as the Western Zhou, when so it was believed, the Zhou calendar had been in use. Thereafter the use of the *yunian* method became axiomatic, and although after the Later Han 後漢 the *linian* method was employed on occasions of revolution or dethronement and also during the Tang and later when an emperor abdicated, these were exceptions to the rule.

8. Concluding Remarks

In the above I have essayed a rather hurried overview of issues relating to the emperor and the calendar in ancient China. Inasmuch as this is a fundamental question concerning not only Chinese history but also the history of East Asia as a

whole, both the space allotted to me and my own capabilities have been inadequate to do even minimum justice to the subject, and I have accordingly dealt only with aspects relating to my recent research and interests.

When considering the question of the relationship between the emperor and the calendar, the “Lǜli zhi” in the *Hanshu* provides the basic historical source material, and it continued to carry considerable weight in later times. In the above I have discussed how the embryonic elements of its content can be traced back to the mid-Zhanguo period when various states began using the title of ‘king’ for their rulers. This coincided with a time when the system of local government based on (*jun*-)*xian* (郡)縣 or ‘(commanderies and) districts’, laws in the form of *lǜ* 律 (identical to the character meaning ‘note’ or ‘pitch’ in music), and the bureaucracy were rapidly taking shape, and these were to determine the nature of Chinese politics far into the future. In this sense, any discussion of the relationship between the king or emperor during the Zhanguo period and the calendar also concerns the relationship between the Chinese-type state and the calendar. I welcome any comments from the reader.

Notes

- 1) See KAWAHARA Hideki 川原秀城, “Santōreki no sekai — keigaku seiritsu no ichisokumen —” [三統曆の世界—經學成立の一側面—] (The world of the *santongli*: One aspect of the establishment of the study of Confucian classics), *chūgoku Shisōshi Kenkyū* [中國思想史研究] (Journal of History of Chinese Thought), No. 1 (1977), Department of History of Chinese Philosophy, Kyoto University, and KOIZUMI Kesakatsu 小泉袈裟勝, *Monosashi* [ものさし] (Measures), Hōsei Daigaku Shuppankyoku 法政大學出版局 (Hōsei University Press), Tōkyō, 1977. (KAWAHARA emphasizes the fact that the ‘three’ of the three elements of heaven, earth and man [*santong* 三統] is multiplied by three.) When tracing the debates about the calendar in ancient China within the context of research history, reference should be made to the following works: SHINJŌ Shinzō 新城新藏, *Tōyō tenmongakushi kenkyū* [東洋天文學史研究] (A study of the history of East Asian astronomy), Kōbundō 弘文堂, Kyōto, 1928; IJIMA Tadao 飯島忠夫, *Shina rekihō kigen kō* [支那曆法起源考] (An inquiry into the origins of calendrics in China), Kōseisha 恒星社, 1930 (repr. Daiichi Shobō 第一書房, 1979); NŌDA Chūryō 能田忠亮, *Tōyō tenmongakushi ronsō* [東洋天文學史論叢] (Studies in the history of East Asian astronomy), Kōseisha, Tōkyō, 1943; HASHIMOTO Masakichi 橋本増吉, *Shina kodai rekihōshi kenkyū* [支那古代曆法史研究] (A study of the history of calendrics in ancient China), Tōyō Bunko 東洋文庫 (Tōyō Bunko Ronsō 東洋文庫論叢, No. 29), Tōkyō, 1943; and YABUUCHI Kiyoshi 藪内清, *Chūgoku no tenmon rekihō* [中國の天文曆法] (Astronomy and calendrics in China), Heibonsha 平凡社, Tōkyō, 1969.
- 2) A discussion that does not take into account weights and measures is to be found in the *Lǜshi chunqiu* 呂氏春秋 dating from the late Zhanguo period.
- 3) I cannot go into details here, but because pitch rises in inverse proportion to wavelength, this was a rational choice when considered from the viewpoint of physics theory.
- 4) What is usually discussed, and then only in vague terms, is the function of the calendar as a guiding principle for agriculture.
- 5) See Iijima, *op. cit.*, pp. 244–254.
- 6) The Jingmen-Shashi Railway Archaeological Team, Hubei 湖北省荊沙鐵路考古隊, *Baoshan chumu* [包山楚墓] (The Chu Cemetery at Baoshan), Wenwu Chubanshe 文物出版社 (Cultural Relics Publishing House), Beijing, 1991.
- 7) See HIRASE Takao 平勢隆郎, “Sengoku kinen ni kansuru shiron—kunshu zaii no shōgenhō kara

- suru kohon *Chikusho kinen no saihyōka*—”「戦國紀年に關する試論—君主在位の称元法からする古本『竹書紀年』の再評價—」(A tentative study of the chronology of the Warring States period: Reevaluating the old text of the *Zhushu jinian* from the perspective of methods for designating the first year of a ruler's reign), *Shigaku Zasshi* 『史學雜誌』, Vol. 101, No. 8 (1992); “Sengoku kinen ni kansuru shiron—zoku—”「戦國紀年に關する試論—續—」(A tentative study of the chronology of the Warring States period—Supplement—), The Memoirs of the Institute of Oriental Culture 『東洋文化研究所紀要』, No. 123, February 1994, The Institute of Oriental Culture, The University of Tokyo.
- 8) Paper read at the 38th International Conference of Orientalists in Japan (May 1993) and to be published under the title “Seishū kinen ni kansuru shiron” 「西周紀年に關する試論」(A tentative study of the chronology of the Western Zhou).
 - 9) See n. 1.
 - 10) HIRASE, “Sō Kōitsu henshō no rekishiteki igi 曾侯乙編鐘の歴史的意義」(The historical significance of Zeng-hou Yi set bells), in *Sō-kō Yitsu bo* 『曾侯乙墓』(Zeng-hou Yi tomb), Tōkyō Kokuritsu Hakubutsukan 東京國立博物館 (Tokyo National Museum), 1992. The character 水 in 1. 8 of the left column on p. 49 should be emended to 黍.
 - 11) On the subject of debates about calendrical theory and calendar reform after the compilation of the *Hanshu*, see HASEBE Eiichi 長谷部英一, “Gi-Shin-Nanbokuchō no rekiron” 「魏晉南北朝の曆論 (Calendrical theory during the six dynasties), *Tōkyō Daigaku Tetsugaku Kenkyū* 『東京大學哲學研究』 (Todai Journal of Chinese Philosophy), No. 3 (1991), Todai associate for Chinese Philosophy, Tokyo University.

* In contemporary astronomical research it has become possible to determine the time of the conjunction of the sun and moon and the position of the stars and planets in ancient times. These calculations are becoming ever more precise, and they provide the basic data for research on the calendar. On the basis of this data it is possible for us today to consider questions such as which synodic month corresponded to which month of the year, whether the start of the month was the first day or third day of the moon, when these facts were realized by the ancients, and how the winter solstice was determined. Although the increasing precision in computations of the basic data and our interpretations concerning the above questions are closely linked to one another, they belong to different levels of inquiry. In closing this paper, I would like to point out that hitherto, under the influence of the former (*viz.* increasing computational precision), discussion of the calendar in the Zhanguo period and earlier has tended to assume the existence of a calendar more mathematically refined than was actually the case.