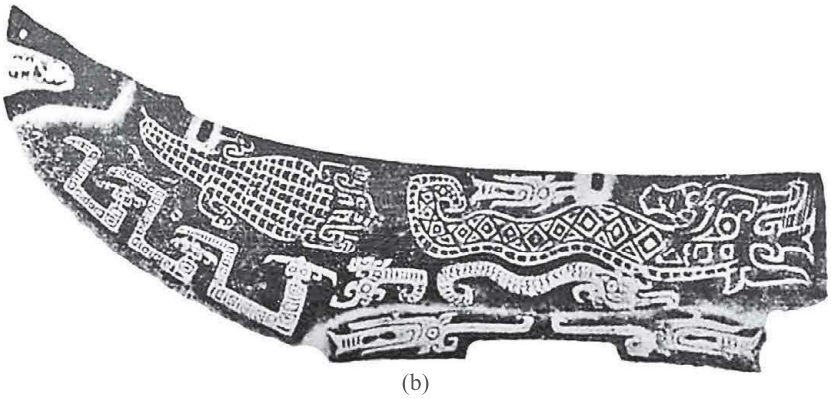
Figure 2.10 Shang Dynasty dragon basin (*pan*). Adapted from Pope et al. (1967, Vol. 1, Plate 3).

An eccentric dragon

The discovery of an extraordinary bronze vessel offers convincing evidence of the linkage between the alligator and the celestial *long*-dragon. In western Shanxi Province some archaeological finds are representative of a Northern Complex, so called because of the mix of stylistic influences that clearly distinguish the artifacts of this interaction sphere from the Central Plains style. Many share hybrid characteristics that reflect a mix of heartland and steppe cultures indicative of the complex archaeological picture of this area, where "northerners adopted into their own culture the manufacture and use of bronze vessels," some of which "have repeatedly been found together with vessels so eccentric that they must be local castings."[56]

[56] Bagley (1999, 225–6); Lin (1986).

(a)

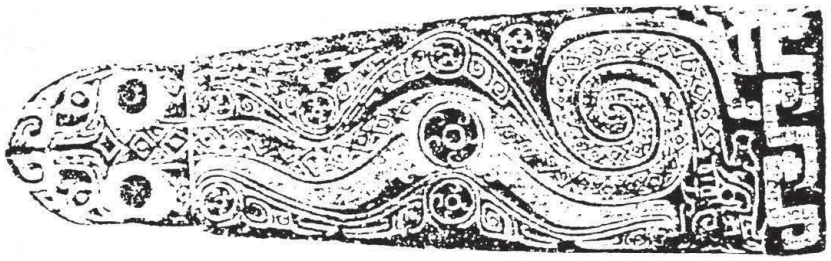


(b)

Figure 2.11 (a) Bottle-horned dragon *gong* wine vessel in the collection of Shanxi Provincial Museum. Adapted from *Shanxi Provincial Museum: Bronzes*. (b–c) Ink rubbings of the vessel's side and top. After Shanxi Provincial Museum available at www.art-and-archaeology.com/china/taiyuan/museum/pm05.html.

One such eccentric bronze is a boat-shaped zoomorphic wine vessel called a *gong* in the shape of a dragon (Figure 2.11a–c).[57] On the lid is a prominent raised knob, which serves as the handle. More than merely eccentric, this bronze

[57] In the collection of the Shanxi Provincial Museum, www.art-and-archaeology.com/china/taiyuan/museum/pm05.html; Xie and Yang (1960, 51–2); Feng Shi (1990a, 114); Yang Xiaoneng (1988, 177, Plate 170); Chang (1999, Figure 3.39g).



(c)

Figure 2.11 (*cont.*)

is exceptional in several respects. It is the only artifact known to juxtapose a realistic representation of an alligator (Figure 2.11b) with the iconic "bottle-horned" dragon motif familiar from the late Shang Dynasty bronzes of the Central Plains. Discovered at Shilou barely fifty kilometers north of Taosi in the heart of the ancient Xia homeland, this vessel's realistic representation of an alligator makes it unique. The juxtaposition of the naturalistic and imaginative depictions of the two creatures, alligator and dragon, is clearly intended to suggest their intimate association. The diamond-back dragons depicted on the vessel's sides are repeated on the lid, only now with their tails curling together, the much larger dragon giving shape to the vessel as a whole. Surrounding the bottle-horned dragons and alligators on the sides are various other scaly or serpentine creatures, suggesting common membership in the category of reptilians. In this respect, the iconography of this vessel is perfectly consistent with the tradition according to which the dragon is chief of the reptilian or "scaly" clan (compare Figure 2.10).

The most curious feature of this object, however, is the asymmetry of the design on the lid, where seven roundels are arranged atop the large dragon. Three straddle the dragon's midsection, the central and largest of the three forming the raised knob, while four others are arranged alongside the body, between the knob and the head. In addition, the two bottle-shaped horns on the head also bear roundels on their "mushroom-cap" tops. For anyone familiar with Chinese bronzes, what is immediately eye-catching about the roundels is their asymmetric arrangement and varying sizes, a highly idiosyncratic feature since strict bilateral symmetry is the norm in Shang bronzes. Such roundels (or "whorl circles," *wo wen*) are identified as "fire patterns" (*huo wen*) by Ma Chengyuan, who gives an account of their long history from the late Neolithic through the Warring States period. Later, in Western Zhou, the simple curlicues of early Shang evolve into more obvious flames.[58] "Fire patterns" are particularly common from the early Shang Dynasty on, especially on bronze ritual vessels

[58] Ma Chengyuan (1992, 338).

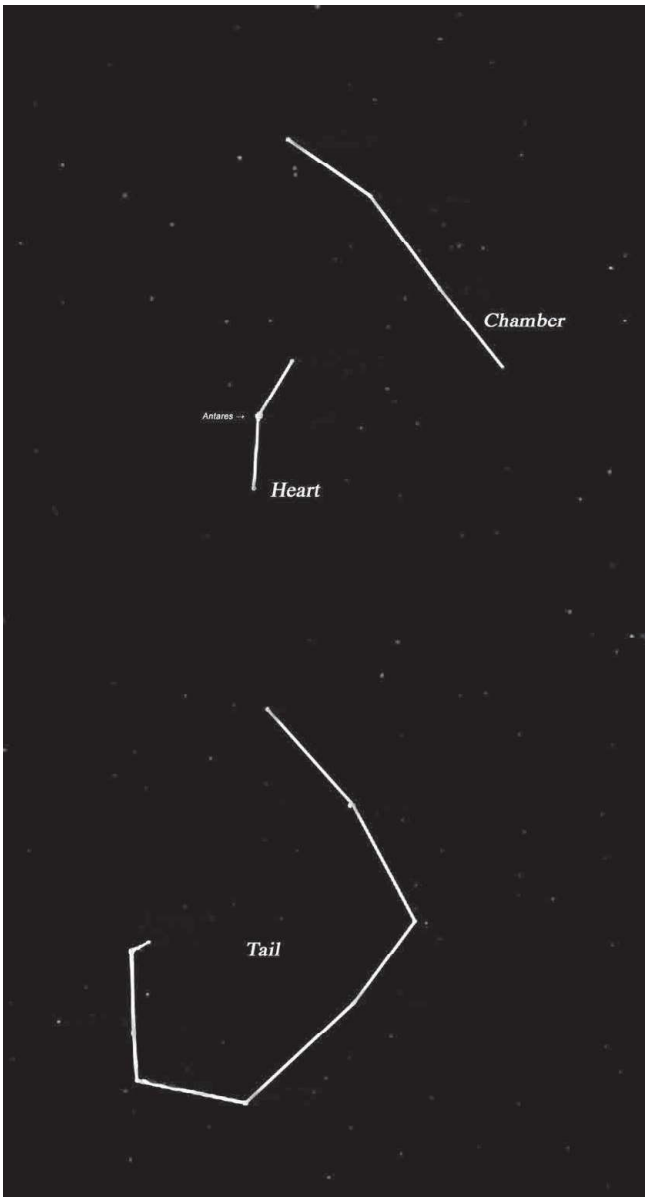


Figure 2.12 Chart of the *Celestial Dragon*'s midsection and tail (Starry Night Pro 6.4.3).

and in company with dragons and occasionally other creatures. Although the pattern regularly occurs as an ornamental motif, its presentation here in such a curious fashion in association with the iconic dragon demands an explanation. Do they have special meaning? The answer must be yes.

If we consider the depiction of the *long-Dragon* constellation in Figure 2.12, it will immediately be seen that the two asterisms comprising the *Dragon*'s midsection, lodges *Chamber* (π, ρ, δ, β_1 Sco) and *Heart* (σ, α, τ Sco), are made up of four and three stars respectively. The prominent middle star of *Heart* is first-magnitude α Sco or Antares, the "*Fire Star*" of Chinese tradition, so-called for its dull orange-red color. Antares is one of several stars mentioned in the earliest written documents, the thirteenth-century BCE Shang Dynasty oracle bone divinations.[59] As we saw above, the star served a very important function as a seasonal harbinger throughout the early period, both as the symbolic heart of the *Dragon* constellation and in its own right. Between *Chamber* and the two horns of the *Dragon* in lodge *Horns* (α Vir Spica, ζ Vir) lie the two somewhat nondescript lodges 3 *Base* (α^1, L, γ, β Lib) and *Neck* (κ, ι, φ, λ Vir). Neither is particularly bright or eye-catching, compared to *Chamber*, *Heart*, and *Tail* in Scorpius, a feature stressed in the quote above from the early glossary *Literary Expositor* (*Erya*): "The Great *Chen* is *Chamber*, *Heart*, and *Tail*."[60]

Compare now the stone relief in Figure 2.13 from the Eastern Han Dynasty (second century BCE), where we also see the stars *Horns*, *Chamber*, *Heart*, and *Tail* represented, *Heart* once again straddling the dragon's midsection. It is apparent to any naked-eye observer that the stars in *Chamber* and *Heart* vary significantly in brightness, with Antares being especially prominent, not least because of its distinctive ruddy color. Here, I believe, we have the explanation for the varying sizes of the roundels depicted on the dragon vessel. Beyond simply representing stars on what must be an early star map, they are actually intended to suggest variations in the stars' apparent visual magnitude, with Antares rendered especially prominently (and cleverly) as the knob due to its brightness and importance in regulating the calendar.[61] In this curious bronze

[59] Jao Tsung-yi (1998).

[60] In his "Treatise on the Celestial Offices" in *The Grand Scribe's Records* (27.1295), Sima Qian lays particular emphasis on just this part of the dragon: "In the Eastern Palace of the *Cerulean Dragon*, [the principal asterisms are] *Chamber* (4) and *Heart* (5). *Heart* is the *Luminous Hall*. Its large star [Antares] is the *Celestial King* . . . *Chamber* is the *Heavenly Directorate*, called *Heavenly Quadriga*." Deborah L. Porter (1996, 45, n. 67) argues (following Qiu Xigui) that "Yu [the Great's] name is a pictographic representation of the lower half of the celestial dragon." Qiu Xigui (1992, 13). Deborah Porter argues (1996, 56) that, in his heroic cosmogonic role, "Yu emblematized the ideal of the sage ruler, the embodiment of the earliest human capacity to observe, measure, and predict celestial changes." Indeed, notes Porter (ibid., 202, n. 105, original emphasis), "Yu is actually described as the *incarnation of measures* [*du*] in *The Grand Scribe's Records* (*Shiji*, 1.2, 51)."

[61] Feng Shi (2007, 418). The identification of the raised knob as Antares was first proposed in Feng Shi (1990a, 114); cited in Porter (1993, 41).

(a)

(b)

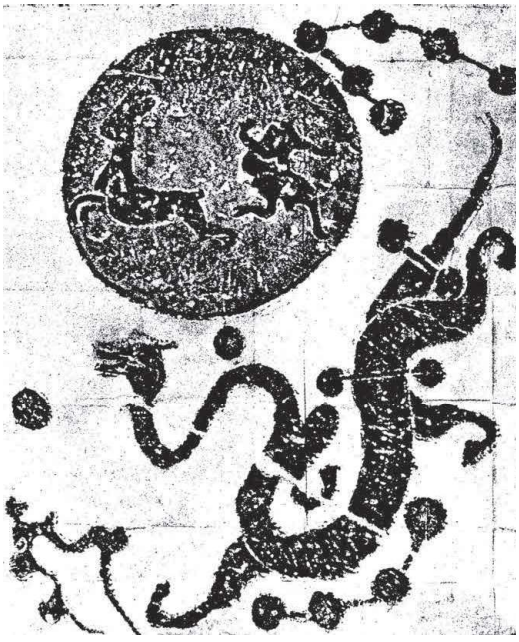


Figure 2.13 (a) Han Dynasty stone relief of the *Celestial Dragon*, first to second century CE (photo DWP). (b) Ink rubbing of the stone relief, adapted from *Nanyang liang Han hua xiang shi*, 270.

(a)

Figure 2.14 (a) *Niu fang ding* cauldron. Late Shang, excavated from tomb M1004 at Anyang in 1935. Enlargement of long side showing *taotie*-style mask flanked by parrots or owls. Available at www.ihp.sinica.edu.tw/~museum/tw/artifacts_detail.php?dc_id=9&class_plan=138. (b) Detail of bird image from the *Niu fang ding* (photos DWP).

from a zone of mixed cultural influences in the mid second millennium BCE we appear to have the earliest depiction of the *Dragon* constellation in any medium.[62]

* * *

Similar roundels are common on various styles of Shang bronzes, though not arranged so idiosyncratically as on the *gong* wine-pouring vessel. If this is an early depiction of the stars we may well ask; could similar motifs have a similar meaning on other Shang period artifacts, such as in the tail of the bird on the *Niu fang ding* (Figure 2.14a–b)? I think this is highly likely. Even if the appearance of the term "Bird Star," *niao xing*, in the Shang oracle bones is still disputed,[63] the prominent mention in the "Canon of Yao" of a *Bird Star* connected with the summer solstice in the second millennium BCE and its certain identification with the giant constellation later called the *Vermilion Bird* (lodges 23–8, roughly Cancer to Crater), make it fairly certain that the

[62] Except possibly for the famous clamshell mosaics from the 2500 BCE cosmo-priest's tomb in Puyang, Xishuipo, Henan, whose dragon and tiger may or may not represent actual constellations; but see Feng Shi (1990a, 108–11; 1996, 159; 2007, 374); Yi Shitong (1996, 22–31); and Figure 11.10 in Chapter 11 below.

[63] Li Xueqin (1999c; 2000).

(b)

Figure 2.14 (*cont.*)

constellation existed in Shang times.[64] Evidence in support of this comes from the site of the predynastic Western Zhou capital of Fengjing. An eave tile (*wa dang*) prominently displaying the name of the capital, *feng*, was discovered with four iconic creatures deployed in their proper cardinal directions: the *Dragon* to the east, a fish to the north, a long-necked bird to the south, and a tiger (bear?)

[64] Indeed, as Hwang Ming-chorng has shown, "almost all elements in the *Yaodian* can find an earlier and more complete example in the *Dahuangjing*. This match between the *Dahuangjing* and *Yaodian* has important implications in the understanding of the intellectual history in early China. Assuming that our reading of the *Dahuangjing* as a Shang cosmology is a reasonable proposition, from the *Dahuangjing* to *Yaodian* there seems to be a transformation from cosmology to history." Hwang (1996, 664).

to the west (Figure 2.15a).[65] Although the date and provenance are unknown, this appears to be an early depiction of the Four Iconic Images (*si xiang*) and only a slight variation on the later Warring States and Han configurations in which the Somber Warrior (*xuanwu*) replaces the Fish in the north.[66]

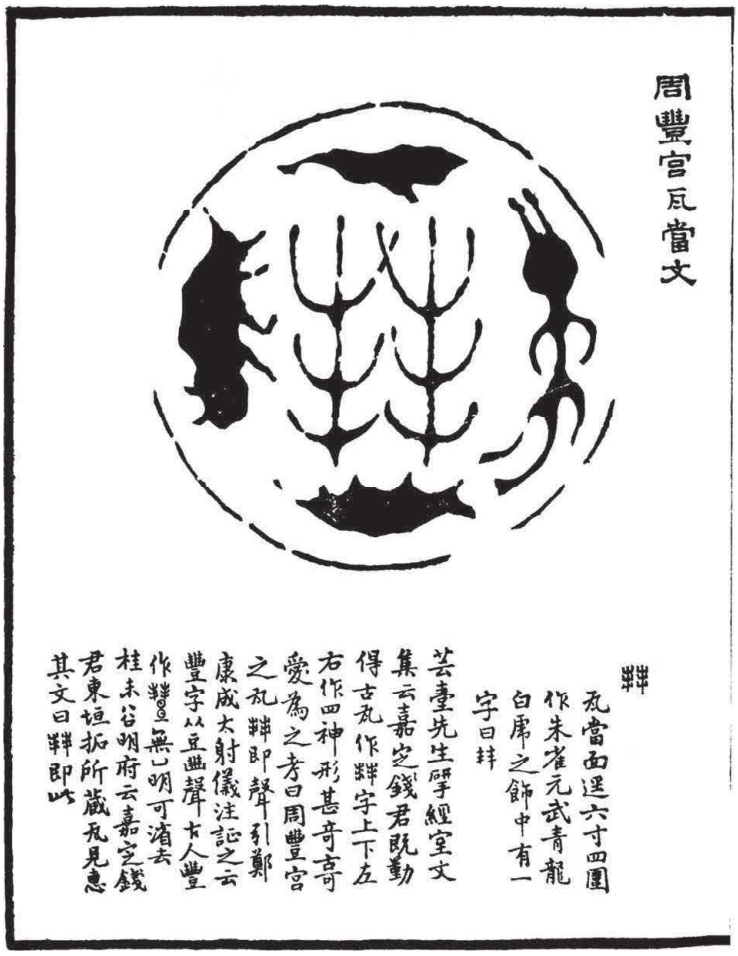
One problem, however, is that what could be a raptor depicted on the *Niu fang ding* bronze is utterly unlike either the long-necked *Vermilion Bird* constellation comprising lodges *Ghost in the Conveyance* through *Chariot Platform* (Cancer through Corvus) or the bird in Figure 2.15. Might there be another possibility? Indeed there is. Lying between the lodges *Hunting Net* (Taurus) and *Triaster* (Orion's belt), beneath *Topknot* (Pleiades), is the small triangle of stars called *Horned Owl* (aka *Beak*, lodge 20).[67] The identification of this asterism as an owl must belong to an early stratum in the development of the scheme. Unlike the *Dragon* of the eastern palace, none of the western asterisms except Orion are said to depict any part of a tiger's body, and variant names are already found in the *Book of Odes*. Figure 2.16 shows the *Owl* asterism as depicted on the early Han tomb ceiling from Xi'an. Here, corresponding to Taurus, a man is shown throwing a small-game net to catch a fleeing rabbit. Just behind him is the *Owl*, known as *Zuixi*, a term whose obscurity occasioned much discussion before the discovery of the Xi'an tomb ceiling in 1987. This is because in the "Treatise on the Celestial Offices" Sima Qian says that this "small triangle of three stars is the head of the *Tiger*."[68] Given the tiny asterism's small extent, scholars no doubt wondered how it could possibly represent the head of a huge constellation comprising the entire western quadrant of the sky. In the *Shuowen jiezi*, the first graph, *zui*, is defined as the feathery "horns" on the *Owl*'s head, as well as a western lodge, while a thousand years later the *Guangyun* (eleventh

[65] Yi Ding, Yu Lu, and Hong Yong (1996, 14, Figure 1-15); the reference is to the history of Chinese architecture by Itō Chūta (1938, 87), who reproduces the rubbing from *Jin shi suo* (Chapter 6) by Feng Yunpeng (1893). Western Zhou eave tiles were typically semicircular (*ban wa*), so both the identification of this unprovenanced artifact and Western Zhou dating are somewhat uncertain.

[66] A bear still survives as the spirit animal of the west in the "Artificer's Record" (*Kao gong ji*) in the *Rites of Zhou* (*Zhou li*, "Dongguan"). There, among the four cardinal asterisms, *Attack* (*Fa*, Orion's sword) is said to be represented by a flag with six pennants. In his commentary Zheng Xuan then associates the two main components of Orion, *Triaster*, *Shen* (belt), and *Attack* with the Tiger and Bear respectively; Yi Ding, Yu Lu, and Hong Yong (1996, 11–15). The Tiger may be the later addition, becoming conventional once the southlands were absorbed into the Hua–Xia cultural orbit, since the tiger motif is especially prominent in the iconography of the south; but see Jao Tsung-yi (1998, 39, 44) for a possible *Tiger Star* in the oracle bone inscriptions. Variants have a deer or *qilin* (unicorn) in place of the fish or turtle in the north; cf Feng Shi (2007, 427 and the Niya brocade on the cover).

[67] λ, φ_1, φ_2 Ori; *Shiji*, 27.1306. The discovery in 1987 of the Xi'an Western Han tomb ceiling with a horned owl representing this asterism resolved the confusion about the interpretation of the name *Zuixi* for this lodge; Hu Lin'gui (1989, 87). Its dual identity as both "Tiger's head" and *Horned Owl* reflects the late overlay of the iconic Tiger on the earlier individual asterisms of the western palace.

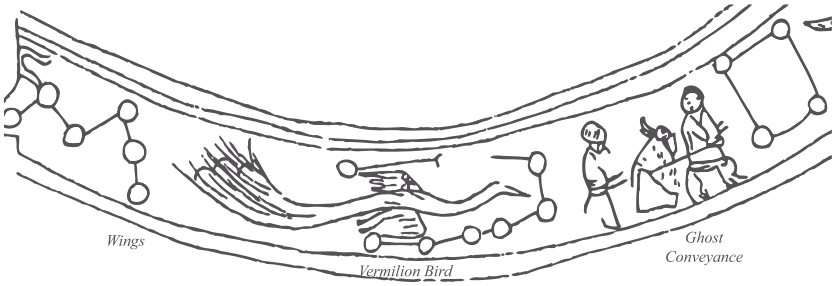
[68] *Shiji*, 27.1306.



(a)

Figure 2.15 (a) Predynastic Western Zhou eave tile (?) from the capital, Fengjing. After Feng Yunpeng (1893), Chapter 6; cf Yi Ding Yu Lu, and Hong Yong (1996, 14, Figure 1-15). (b) Tracing of the *Vermilion Bird* constellation from the Western Han tomb mural discovered at Xi'an, Jiaotong University, in 1987. Detail redrawn from Rawson (2000, 178, Figure 9).

century) says it is a "beak." The second graph, *xi*, is defined as a horn or awl-shaped pendant worn on the belt to loosen knots, again a pointed or horn-shaped object. In some early literary contexts the compound *zuixi* is said to be a "large turtle" without further comment. About the only thing the two creatures, owl and turtle, have in common is the shape of their beak, so it is possible the compound alludes to the two attributes, feathery peak as well as hooked beak.



(b)

Figure 2.15 (*cont.*)

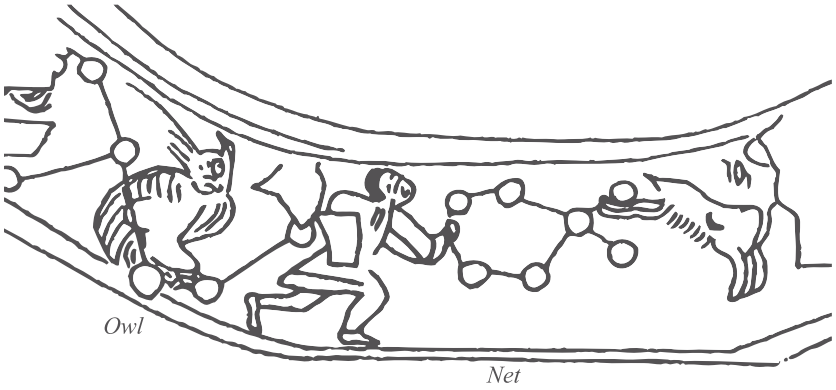


Figure 2.16 Tracing of western lodges *Hunting Net* (Bi) and *Owl* (*Zuixi*; λ, φ_1, φ_2 Ori) from the W. Han tomb ceiling mural at Xi'an Jiaotong University. Detail redrawn from Rawson (2000, 178, Figure 9).

In any case, the Xi'an mural conclusively confirms the existence of a tradition identifying this asterism as an owl, so that Sima Qian's characterization must simply refer to this part of Orion as marking the general location of the *Tiger*'s head. So here we have three stars anciently perceived to form a triangle and identified with the horned owl, a description that clearly fits the owl-like crested bird with a triangle of three stars in its tail depicted on the *Niu fang ding*. If this identification is correct, then we also have here in a classic late Shang bronze *ding* a representation of an asterism, this time exactly opposite the *Dragon* in the sky and therefore not to be identified with the giant *Vermilion Bird* constellation.[69]

[69] Strong support for this identification is found in the old astronomy of the Yizu minority of Sichuan, Guizhou, and Yunnan. Among the Yizu and Naxi people, the stars of lodge *Zuixi* are

Conclusion

In these two artifacts from the mid second millennium BCE – an eccentric zoomorphic bronze from a zone of mixed cultural influences and a classic Anyang period cauldron – we seem to have the earliest Chinese depictions in any medium of actual constellations as well as individual stars. These treasured bronze vessels provide the best evidence to date that by the Shang Dynasty at the latest, constellations familiar to us from late classical cosmology and cosmography had already been placed in the sky. The identification of the *long*-*Dragon*, in particular, ultimately derived from close observation of the activity of the alligator, whose seasonal behavior paralleled that of the constellation. This is not to say that one should understand the naturalistic explanation in terms of an apotheosis or an intellectualized process of elevation of a denizen of the environment to a cosmic place of honor in the sky. At the time "nature" as such was not differentiated from the human world. Rather, one should see this nexus of associations as an example of the "dynamic totalistic weaving of nature, society, myth and technology" characteristic of Neolithic and early Bronze Age thought.[70] We can further affirm that there was an elite class of priest-astrologers, Cai Mo's predecessors, who were responsible for maintenance of the calendar and management of ritual time. Their esoteric knowledge, given material form in the dragon-shaped bronze from the tomb of one of their number, was precisely the sort of "wisdom" alluded to in the passage from *Zuozhuan*, whose obsolescence astrologer Cai Mo obliquely laments in recounting the passing of the age when *Dragons* could still be domesticated.

identified as a *Parrot*, whose long tail feathers even more closely resemble the image on the *Niu fang ding*; Chen Jiujin, Lu Yang, and Liu Yaohan (1984, 90, 95). Both owls and parrots are amply represented in late Shang figurative art, with owl-shaped bronze wine pourers and beakers being particularly prevalent. The parrot was no longer a denizen of the Central Plains in Warring States and Han times, though in the late Shang it was, along with the elephant, tiger, and rhinoceros. Whether parrot or owl, the bird must have had a more auspicious significance in Shang than in late imperial times when the call of an owl in the night was considered an evil omen.

70 Tambiah (1990, 106). As Nathan Sivin points out (Lloyd and Sivin 2002, 200), "before modern times, Chinese did not need a word that meant 'nature' (the physical or material universe)."