Chapter Five

Knowledge, Technology, and the Natural World

Water Creatures, Names, and Injustices

At the dynasty’s beginning, the Yangzi River’s banks crumbled easily. Local people said that they were that way because there were water animals, [alligators] called zhupolong, digging away below them. When the court asked about the reason for the erosion, the people avoided saying the truth, because zhu and the imperial family’s surname [Zhu] were homophones. So they blamed the problem on great sea turtles (yuan). Because yuan is the same sound as the Yuan [dynasty], the emperor further detested them. Then the court sent down an order to catch great sea turtles. Great sea turtles from the Yangzi, regardless of size, were hunted and captured until they were almost extinct.

There was an old sea turtle that evaded capture, not rising to the sandy shallow areas. The people used roasted pork to hook it. The strength of many people pulling on the line could not bring it up. An old fisherman said, “It’s probably only that its four feet are in the mud and gravel. We should take a big urn and pierce its bottom, then thread the fishing line down through. The urn will cover the turtle’s head, and it certainly will use its front feet to resist. Then if we combine our strength and pull on it, that will be enough to make it float and rise.” They did as he said, and it turned out to be so. It was said that the zhupolong had four feet and a long tail. It had scales, and they suspected it was an alligator (tuo) but were not sure.

I have heard that giant sea turtles eat people. This indeed is detestable. Yet digging away at the river bank is not such a crime. Because of the Hongwu emperor’s intelligence and divine wisdom, as soon as people’s explanations yielded to the force of circumstances and compromised, calamity came to
innocent creatures like this. At the time when criminal cases abounded because of factions, there was no end of people who died because others yielded to the force of circumstances and compromised! (SZ 3.32)

**STUDENT HEALTH**

For literati, studying books and composing essays takes a lot of effort, and it is appropriate to limit one’s desires. In general, if one taxes his mind but does not limit his desires, then his fire properties will be stirred. If the fire properties are stirred, then the kidney water will grow more depleted each day. If the water is depleted and the fire rages, then the metal of the lungs will be harmed. As the condition develops, the person will be subject to fatigue and illness. I have heard that the theory comes from the book *How a Confucian Scholar Serves His Parents* (Rumen shiqin), but I have not yet seen this book. When people sit for a long time immersed in books, their blood and qi become sluggish, and they lose the ability to produce children. I heard this from Doctor Sun from Jinchi [Yunnan]. (GD 73.1601)

**PRENATAL PRECAUTIONS**

When women realize that they are pregnant, men ought not to come into contact with them. If men do not avoid them, there often are miscarriages. In general, when women and men meet, their desires move and feelings take over, and there certainly will be flowing and leaking. In addition, the womb is not sealed, and of course it results often in miscarriages.

After cattle and horses are with fetus, should the males approach them, the females will kick them away. We call this “protecting the fetus.” That is why they have no miscarriages. Yet people have many desires and do not avoid each other, and so often they have miscarriages. Neither the discussions of *The Birth Treasury* (Chanbao lun) nor books on gynecology have this explanation. This explanation could be said to elaborate on concepts that people earlier did not develop. I heard it from Director Dai Jingyuan [1464 jinshi] of the Evaluations Bureau. I daresay there must be a basis for this. (GD 74.1620–21)

**ANNALS OF PREGNANCY, 1**

The ancients believed that when they were ill, abstaining from medicine was the appropriate treatment. In general, they said that if one took medicine and it was the wrong one, then death would come quickly. If one did not take
PREGNANCY AND SEX, ACCORDING TO SUN YIKUI (1522–1619)

As Lu Rong suggests, the growing literature on gynecology and obstetrics in the Song and Ming dynasties did not make his point. However, a famous doctor and medical theorist in the late Ming, Sun Yikui, read *Miscellaneous Records from the Bean Garden* and agreed with Lu. In the two passages below, Sun cites Lu and elaborates this view:

One should warn all women, after they become pregnant. If they are not prudent with sex, and their desires are moved and their womb reopens, how can it not lead to miscarriages in most cases? If they give birth to a child, then most have early deaths due to sores and toxic swellings. Why? It is that licentious fires have burned the fetus.

As for species such as horses and oxen, after [the females] are pregnant, if the males approach them, the females always kick them and prevent them from getting close. It is called “protecting the fetus.” How can they have miscarriages? It only that people are lustful and so usually do not know how to protect it. The *Birth Treasury* discussions and books on gynecology lack this item. So I use what *Miscellaneous Records from the Bean Garden* records to add to the matter like this.1

As for miscarriages today, if they do not derive from the inadequacies of the Highway channel and the Conception channel,2 then they inevitably are

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1 Sun, *Yizhi xuyu*, xia 13b–14a.
2 Channels (also known as “conduit vessels”), or *mo*, refer to pulses or flows of energy in the body. The three channels named here were thought to be central in the reproductive process. See Unschuld, *Medicine*, 75–77; and Furth, *Flourishing Yin*, 28, 42–44.

medicine, death would come slower. If one happened to find an enlightened person to cure their ailment, one could in some situations take medicine, and that was all. Using what I have heard and seen to test this notion, the idea that it is an appropriate treatment has its basis.

The household of Magistrate Zhou Jingxing from Kunshan (Jiangsu) had a woman who suffered from a painful lump in her belly. An obstetrics specialist diagnosed her and believed that she had excessively accumulated qi. He prepared a dose of medicine to make her qi flow and break up the accumulated
caused by licentious fire. As soon as the fires are moved, then they shake the Superintendent channel. The uterus’s door consequently is open, and the fetus drops from it. The fetus’s drop inevitably leaves the waist in pain. The Waist Flesh and the Vital Gate are passed through by the Superintendent channel.  

It is because the fetus is also attached to the Vital Gate.

If we observe the protection of the fetus by female animals, we can make inferences from their prudence. The association of male and female animals has its due restraint. After the females are pregnant, should the males approach them, the females will kick and keep them at a distance. Thus meetings inevitably result in pregnancies, and pregnancies inevitably result in births. So their association has its due restraint.

If one is pregnant but does not put lust aside, then one will be fortunate to not miscarry. If one does give birth to a child, it inevitably will be weak and have many illnesses. Smallpox cases also abound. These dangers are all brought on by the intense heat of licentious fires.

3 The Vital Gate (also known as “Gate of Life”), or Mingmen, was a complex concept, linked with reproduction and the kidneys. See Unschuld, *Medicine*, 200–202; and Furth, *Flourishing Yin*, 29, 53. The Waist Flesh is also an acupoint, commonly located at the base of the coccyx. For a visual representation of the Superintendent channel and its components, see Furth, *Flourishing Yin*, 42.

4 Sun, *Chishui yuanzhu*, 21.32b.

qi. He also ordered soup and cakes to pierce and strike it. It was ineffective. They learned of a shaman who had great prowess in bringing down the spirits to help people, and they went to consult him. He said, “This is fetus qi. Do not use medicine.” They believed him, and later it turned out that she gave birth to a boy.

The wife of Han Wenliang, secretary of the Nanjing Ministry of Revenue, fell ill, and her belly was in pain. They pressed on her belly, and it was as if there was something around her navel. At the time a famous doctor from Zhezhong came to the southern capital. They asked him to look and diagnose her. He said it was obstruction of the bowels. She took a dose of a bur reed and zedoary herbal medicine compound. After ten days, her feelings grew more intense, and, because the treatment was ineffective, they stopped. Later, after several months, she gave birth to two boys.

In all these cases human life was involved. One must be careful! (sz 4.37–38)
Chapter Five

Annals of Pregnancy, 2

The wife of Section Head Tu in the Autumn Office had no children but was jealous. She feared that her husband would buy a concubine. She often would pretend to be pregnant in order to prevent it. One year she actually was pregnant. She carried the pregnancy to term and gave birth. It was a fetus made of forty-seven bird eggs. They broke them and inside there was only blood and water.

The daughter of Director of State Affairs Xiang had no husband but was pregnant. Her relatives feared the unsightliness of her appearance and had her drink cold herbs to destroy the fetus, but in the end it did not work. When she came to term and gave birth, the placenta contained several snakes, and she died of fright. None knew what had afflicted her. (sz 6.72–73)

The Spread of Cabbage

People in the northern regions sow song cabbage. In the first year of sowing, half become rape-turnips, and in the second year the cabbage seeds are all gone. In the southern regions, they also sow rape-turnip. In general, cabbage varieties do not grow in northern soil. It is akin to the change with tangerines north of the Huai River. This view is found in Suzhou gazetteers. Note: song cabbage is white cabbage. Today at the end of every autumn in the capital, the households pickle and store it in preparation for winter. What they call “arrow stalks” are as good as what Suzhou produces.

I heard this from older people: During the Yongle era [1403–1424], when they sowed southern flowers, trees, and vegetables, no sprouts would come. What did sprout never grew well. In recent years, they have all the southern vegetables, and they are not going back to the old ways. “Tangerines do not cross the Huai River; raccoons do not cross the Wen River [Shandong]; crested mynahs do not cross the Ji River [Shandong].” These are established views.

Today song cabbage from the Suzhou area thrives in Yan [Hebei] and does not change to become rape-turnip. Was there a vegetable growing method that people in the past did not know but that people today know? Or is it climate change, with things adapting to it and then thriving? In the future, won’t tangerines and pomelos be alongside them? (sz 6.77–78)

Wondrous Births

As recorded in the histories, Xiuji’s back split, and she gave birth to Yü. Jiandi’s chest split, and she gave birth to Qi. Mr. Luzhong married the
daughter of Guifang. He opened her left and right flanks and she gave birth to six people, Kunwu and the others. The Buddhists say that in the case of Shakyamuni’s birth, he emerged from his mother’s right flank. The Daoists say that in the case of Laozi’s birth, he dropped from his mother’s armpit. Previous Confucians regarded these stories as ridiculous.

In the fifth year of the Huangchu reign of the Wei dynasty [225], the wife of Qu Yong from Runan [Henan], Madame Wang, gave birth to a son. He came from below her right armpit and above her navel. During the Song, the wife of a Putian [Fujian] native, who resided at the left side of the commandant’s quarters, gave birth to a son. It came from between her hip and buttocks. The wound closed, and mother and son were without harm. In both cases there is more evidence than before, but I dare not believe them entirely. Recently I have seen that Fengyang [Anhui] Regional Inspector Zhou Fan memorialized that a commoner household in Lingbi County [Anhui] gave birth to a son. They split open the area below the mother’s navel, and he came out. Later the split area healed. The authorities examined the case and made it known to the court. According to this, then the births of the two sons in Runan and Putian also ought not to be fabrications. In my foolish opinion, when the wound broke out, it broke only the abdomen. Before the child is born, the child is kept in the womb. It is not in some open space outside the viscera. Today, if the abdomen breaks, would not the womb split as well? If the womb broke, then the woman would die, and there would be no birth. Yet she was fine, and I cannot understand why. What cannot be completely investigated and explained with heavenly principle is simply bizarre. If it can be comprehensively explained with heavenly principle, then it is not bizarre. If I do not speak of bizarre things, it is not that bizarre things do not exist. It is that I cannot completely investigate them, and so do not speak of them, and that is all. (SZ 8.98–99; GD 80.1721–22)

**Abstinence and Longevity**

General Wei was over seventy. He wore his armor and went to the palace. While accompanying the imperial palanquin on its rounds exiting and entering the palace, he was the equal of younger men. Someone asked about his life. He said that when he was forty-five, he had already cut off his desire for sex. The monk Zhou was a native of Luling. He traveled around the capital. He was over ninety, he was able to walk for long distances, and his hair did not turn white. I asked him about his techniques for self-cultivation. He said that there were no special techniques. Since he had become a man, he could restrain his desires and that was all. He also said, “When men’s sperm is passed to
women, it can give birth to people. If it can be retained and preserved, how can one not use it to nurture oneself?"

The Taicang painter Zhang Hui [fl. 1478] was over ninety. His sight and hearing were acute, and he could still paint. I asked him how he cultivated himself to be so. He said that his desiring mind had been very mild for his whole life, and that in matters of desire he could restrain himself. Some people only rely on these guidelines, without any special techniques. (SZ 9.113)

QUESTIONS ON THE CLASSICS

I have read the poem “In the Wilds There Is a Dead Antelope” from the “South of Shao” chapter in The Book of Songs. Because it is a lewd sort of poem, I have been dubious about its authenticity. But due to Zhu Xi’s [1130–1200] commentary, I dare not let groundless, dissenting views arise. Recently I saw Wang Bo’s [1197–1274] “Paired Pictures of the “Two Souths.”” Only then did I understand how the ancients could “similarly approve what is in our hearts.” My suspicions of many years were all removed by him. In fact, Wang Bo treated the two “South” chapters as each having eleven poems. [The “South of Zhou” chapter has eleven poems, and the “South of Shao” chapter has fourteen poems. Wang removed the offending three works from the second group to make eleven pairs.] The “South of Shao” poem “Sweet Pear Tree” appeared because people later missed Lord Shao and so composed it. “Gorgeous in Their Beauty” was made because of the corruption of the kingly way. “In the Wilds There Is a Dead Antelope” is a lewd poem. None of them is worthy of being in The Book of Songs.

His general meaning was, how could all of the 305 poems in The Book of Songs today have been edited by the hand of Confucius? What he removed perhaps still remained in the mouths of glib, insincere village folk, and Han-dynasty Confucians just used the poems to fill in the gaps in the collection. Then they matched the poems with pictures. This opinion indeed is best. If Wang Bo had lived in Zhu Xi’s time, he could have discussed it with him, and Zhu Xi would not have been able to say such things about “Sweet Pear Tree” and “Gorgeous in Their Beauty.” My understanding cannot grasp these two poems. (SZ 10.119; GD 82.1750)

BOOKS: THEIR AVAILABILITY AND USES

The books of the ancients were not printed. All were hand-copied records. I have heard that the printing of the Five Classics began with Feng Dao [881–954]. Today many scholars have received his blessing. At the beginning of the
The Book of Songs lay at the heart of the learned tradition. Composed of 305 poems and reputedly compiled by Confucius, the Songs contained works probably dating from about 1000 to 600 BCE. The book was part of the Five Classics, and its verses were read, chanted, memorized, and cited probably more than any other canonical text. Confucius himself, in a memorable passage, outlined its many vital functions: “[The Book of] Songs can be used to stimulate [moral insight], to observe [character], to reaffirm one’s commitment to the group, or to express resentment. Close at hand one can serve his father and farther away his lord, and you can increase your acquaintance with the names of birds, beasts, plants, and trees.”

Crucially, scholar-officials insisted on their moral content and purpose. They possessed transformative powers. As a modern scholar elaborates, “The poems of The Book of Songs were meant to give paradigmatic expression to human feeling; and those who learned and recited [it] would naturally internalize correct values.” In this respect, The Book of Songs constituted an indispensable foundation stone in orthodox Chinese civilization.

The Book of Songs fulfilled this function only if people interpreted its verses correctly. As with the Bible, achieving this consensus potentially could prove difficult. First, the songs’ language was already centuries old before the first commentators began to explain them in a comprehensive fashion. In the second century, the scholar Zheng Xuan (127–200) wrote a detailed, learned, often allegorical exegesis that became orthodoxy for nearly a millennium. Eleventh- and twelfth-century Confucians, however, took strong issue with Zheng’s approach, finding its allegories strained and preferring more literal interpretations. Second, the songs came from pre-Confucian societies. In some cases, their sentiments reflect worlds where lords and subjects, and men and women “knew their place” and observed normative hierarchies. In other cases, they seemed to flout Confucian norms, such as with the “lewd poems”;

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1 Adopting the translation of Analects 17.9 used in Van Zoeren, Poetry and Personality, 44–45.
2 Owen, Readings, 39.

(continued)
their presence in this canonical work troubled some (but not all) readers. Below are the offending song and two of the best-known responses:

“In the Wilds There Is a Dead Antelope”

In the wild there is a dead antelope,
And it is wrapped up with the white grass.
There is a young lady with thoughts natural to spring,
And a fine gentleman would lead her astray.

In the forest there are the scrubby oaks,
In the wild there is a dead deer,
And it is bound round with the white grass;
There is a young lady like a gem.

[She says] Slowly; gently, gently;
Do not move my handkerchief;
Do not make my dog bark.³

ZHOU XI

Someone asked, “What about lewd poems?” I said, “Lewd poems were originally depraved. Yet if we turn it around, they are not depraved.” So someone said, “The good examples can move people’s good hearts; the bad examples can warn people against their unrestrained ambitions.”⁴

WANG BO

I say that in ancient times the various Confucians excessively honored The Minor Prefaces [Han-dynasty commentaries on The Book of Songs]. The prefaces dared not to view them as lewd poems. They drew farfetched analogies and made distorted explanations. They sought to put the poems in accord with the prefaces. How dare one get rid of them?

In fact, the prefices to these thirty-odd poems mostly say, “They criticize the times.” Or they say, “They criticize disorder.” . . . They never point to them

³ Legge, She King, 34.
⁴ Li Jingde, Zhuzi yulei, 23.542–43.
as lewd poems and rectify matters by labeling them. It is because if it said, “Debauched Poems,” then they should be discarded. Since Master Zhu Xi belittled The Minor Prefaces and began to search for the meaning of the poems, he pointed to them directly and said, “These are lewd poems.”

I have repeatedly investigated and recited them. I believe that Zhu’s opinion is correct and irrefutable. If we regulate matters according to the sagely model, then we should discard them without question. One says, “That being so, why then did Master Zhu Xi not get rid of them?” . . . At present, later scholars, having heard Master Zhu Xi’s words, truly understand that The Minor Prefaces are absurd. They truly understand that these poems are lewd but still want to read them. Where is the sense in that?5

5 Wang Bo, Shiyi, 1.17a–b.

dynasty, only the Directorate of Education had printed works, and I suspect that commanderies and counties outside the capital did not have them. One knows this by looking at Song Lian’s [1310–1381] “Preface Sending Off Student Ma of Dongyang.” During the Xuande [1426–1435] and Zhengtong [1436–1449] reigns, printed books were still not very widespread. Printed books today increase by the day and month. The world’s ancient prose increasingly is in much better shape than in the past.

But the work of today’s gentlemen is very ornamental and elegant. Few can print and revise the great ancient books to help scholars of later generations. The printed books are all ancient and contemporary poetry and literary collections. Their contents are worthless and detestable. Graded Collection of Tang Poems (Tangshi pinhui), The Poetry Mountain of Myriad Treasures (Wanbao shishan), Assembled Compilation of Elegant Tones (Yayin huibian), and Essence of the Regulated Verse from the Isle of the Immortals and the Constellations (Ying-kui lüsui) are just such examples. Moreover, high officials usually use these books to bestow as gifts in their visits back and forth. They usually print up to a hundred volumes, and the official expenses indeed are very high. In remote prefectures and minor counties, many poor scholars who want to read cannot get a single look.

I like how the Yuan dynasty ordered that books had to first pass through the examination of the Department of State Affairs and have their mistakes criticized. The matter then would be sent down to the authorities, and only then did publishers dare to carve the blocks and print the books. I think that
then no one simply printed on their own authority, and that this method is very good. To correct today’s problems, it is necessary to do things like this, but no one discusses it. It is probably because it would border on stinginess. (SZ 10.128–29; GD 82.1761)

IRRIGATION TECHNOLOGY

The irrigation method in the Yanzhou Mountains [Zhejiang] uses water-wheels. In their system, they measure more or less the number of chi between the water’s surface and the top of the bank in order to make a wheel. For the wheel’s spokes, they use small tree trunks. At each spoke where the rack protrudes, they attach bamboo cylinders. They tie them only lightly around the middle and let the two ends be free, able to “look” up and down. They place the axle in the middle of the bank [between the water surface and the bank’s top] and thread the wheel on it. Atop the bank near the wheel, they place wooden troughs to catch the water. If the creek’s water is spread out and the current runs slow, they use stones to channel the water toward the wheel’s bottom and make it run swiftly. If the water is swift, then the wheel turns as if it were flying. Each time the cylinders catch the water, then the bottom is heavy, and the tube’s opening looks up. When the cycle reaches the top, then the tube’s opening looks down. The water rushes into the wooden trough and spreads to flow into the paddies. It does not tax the people’s strength, and the water is sufficient. In sum, it is a beneficial instrument.
Now counterweight levers are found everywhere to draw water. Sometimes they are operated by hand, sometimes by foot, and sometimes by ox. Nothing matches the ingenuity of these devices. In the mountains, with deep creeks and high banks, the ingenuity of the counterweight lever cannot be used. So there is the waterwheel method. In general, if there are benefits to this world in the employment of manufactured things, then the gentleman uses them. As for the idea of embracing pitchers in Hanyin, that is only what people do when they are furious with the world and hate perversity.¹⁷ The idea of not using beneficial machines is not fit for widespread application. (SZ 12.143–44)

**SALT PRODUCTION**

The Liangzhe [Zhejiang and southern Jiangsu] Salt Distribution Commission manages altogether thirty-five salt production fields.¹⁸ The thirteen fields of Qingpu and the others in Su, Song, and Jiaxing lie in the western part of Zhe, but the Tianci field lies at a remove at the seashore in Chongming County. The twelve fields at Xixing and other places in Shaoxing, Ning, Wen, and Tai Prefectures lie in the eastern part of Zhe, and the Yüquan field lies at a remove at...
the seashore in Xiangshan County. For the two fields in Renhe and Xucun in Hangzhou Prefecture, although they lie in Zhe’s western part, their allotment belongs to Zhe’s eastern part.

Zhedong’s total salt revenues amount to over 207,500 salt vouchers. Excluding the water districts’ silver taxes, its salt revenues come to over 106,190 vouchers. Zhexi’s total salt revenues amount to over 114,700 vouchers. Excluding the water districts’ silver taxes, its salt revenues come to over 72,600 vouchers. In both cases half of the production is exchanged for cash and sent to the capital. The other half is retained and provided to traveling merchants.

Most of Zhexi’s fields are on flat wastes and extensive marshes, which are suitable for water transport. The salt is easily obtained, and so there are ample profits. For the silver sent to the capital, each large voucher makes a profit of six silver cash. In Zhedong, most fields are among mountains and crests, and are difficult to access. Few boats can pass through, and it is hard for traveling merchants. So there is little profit. For the silver sent to the capital, each large voucher makes a profit of three and a half silver cash.

All are saltern households. Success in making a profit in salt necessarily relies on briny water. Yet the leaching and extraction of salt in each case is different. There are sandy soils where the salt seeps through, and it cannot become briny soil. They must burn grasses to make ash and spread it on the drying fields. Later they take salt water and soak the ash. They wait for the salt to crystalize in the sunlight, as it floats and turns white. Then they sweep off the salt and leach the ashes again.

There are soils that are fine and moist, and often have a briny vapor. They need only to scrape off the surface mud and move it to a drying field. Then they still leach it with seawater. They wait for the sunshine to make it dry and hard, gather it together, and leach it again. In the summer they do this process for two days. If done in winter, they use twice the time.

To start making salt that can be used, they take briny mud that has been exposed to the sun. It comes to about fifty to sixty loads. They carry them and make large salt mounds and pools, ten feet across. They install troughs and dig wells next to them. They use bamboo pipes to connect underneath the wells and pools. Then they take seawater and tip the briny soil into the seeping pools, which causes the briny water to flow through to the wells.

Later they test it with two batches of three dried lotus seeds. Before that, they first take small bamboo pipes, fill them with brine, and put the lotus seeds inside. If they float and fall over, then it is extremely briny and can be cooked. If the seeds stand up on the surface, the saline content is somewhat bland. If
the seeds sink and do not rise again, the saline level is completely bland. Then they do not use the soil again and discard it completely. It is because the seashore areas will later get new mud and there will be rainwater. (SZ 12.147–48; GD 68.1521)

**MARINE ODDITIES**

During the Jingtai reign [1450–1456] in Leqing County in Wenzhou [Zhejiang], there was a great fish. It followed the tide and entered the harbor. When the tide ebbed, it could not leave. From time to time it spouted water, and the whole sky was like rain. The residents assembled to cut open up its flesh. Suddenly the fish turned, and over a hundred people drowned. From then on, the people did not dare to approach it. At dusk there was thunder and rain, and it leaped up and left. It was suspected that it was a type of dragon.

Another day as the tide was high, several thousand big and small fish, without heads, blocked the river as they came through. The people thought it was
strange, and they did not dare to eat them. They suspected that the sea must have an evil creature that bit their heads off. It bit them but did not eat them. How many there were could not be known. I was lodging at Yandang [Zhejiang] and heard this from an old monk. (SZ 12.154)

LOCAL HORTICULTURE AND AGRICULTURE

Suzhou and Hangzhou are both praised among Jiangnan’s famous prefectures, but the rich households in Suzhou city and the various counties usually have surpassing gazebos, lodges, flowers, and gardens. Hangzhou city has none of that. It is because Hangzhou’s customs are simpler and more frugal than those of Suzhou. The households of Huzhou do not even plant peonies. Because they are working with mulberries and silkworms in spring when the flowers bloom, they have no spare time to go back and forth visiting relatives and friends. In Yanzhou down to Yuqian and other counties, commoners mostly plant paulownia, mangroves, mulberries, cypress, hemp, and ramie. In Shaoxing, it is mostly mulberries, tea, and ramie. In Taizhou they mostly plant mulberries and cypress. Their customs are diligent and frugal, even more than Hangzhou. In vacant lots, Suzhou people mostly have elm, willows, pagoda, ailanthus, and chinaberry tree varieties. In Zhejiang’s various prefectures, those trees are only in the mountains. They are completely absent in other places. At Mount Dongting in Suzhou, people grow oranges for a living and also do not keep inferior tree varieties. We can see commoners’ customs from these cases. (SZ 13.156)

THE FISHING INDUSTRY

The croaker fish is found in the fourth and fifth lunar months. Commoners near the ocean in Wenzhou, Taizhou, and Ningbo in Zhejiang [eastern Zhejiang] every year put out to sea and sail their boats. They go straight to places near Jinshan [near the Yangzi River’s mouth in Jiangsu] and Taicang to net them. In general, this is where the fresh water of Lake Tai [Jiangsu] flows east, and the fish all gather there. Other spots, like the battalion headquarters at Jiantiao [Zhejiang], used to have them but not in such numbers. The people in Jinshan and Taicang who live near the sea only take what is fresh. The commoners of Wenzhou, Taizhou, and Ningbo salt them or use them for fish paste. Their uses are many, and the profits are great.

I have said that people on the seacoast took fish and salt as sources of profit. If the state completely banned this business, the measure truly would not be
beneficial. Yet today’s profit is completely monopolized by powerful households. Poor commoners can only gain by being hired by them. Their ships put out to sea, catch fish, return, and that is it. Otherwise, if they encounter a ship with fish, if they can overcome the other boat, they kill its people and seize the ship. These matters must be stopped. If they have secret trade with foreigners, this will bring about problems on the frontier. If there are conflicts, as in Fujian and Guangdong, then we will forbid these activities. Fishermen catching mussels, sea anemones, and *hijiki* seaweed must go to the islands near Japan to get them. Sometimes they go to stir up trouble. This is what those who have inquired about local customs say, and what those with sea patrol duties inherently should know. (SZ 13.156; GD 69.1533–34)

**Paper Manufacturing**

In Changshan, Kaihua, and other counties in Qu [Zhejiang], they make paper for a living. This is their manufacturing method: after they select the mulberry bark and steam it, they split it and remove the coarse parts. They mix in lime and soak it for three nights and then stamp on it to make it just right. They remove the lime, soak it further in water for seven days, and steam it again. They wash out the dirt and grit, and let it dry in the sun for ten days. They grind it into a pulp and rinse it. They add herbs, such as kiwi fruit vine, and put the pulp on screens made of bamboo threads. After waiting for it to congeal to a greater consistency, they lift off the frame and put the sheet on a white surface, drying it with heat. The white surface is made of bricks and boards, and looks like a table. They use a trowel to plaster it with lime and apply heat underneath. (SZ 13.157)

**Prescriptions, 1**

Wang Ting, an administrator in the Prince of Shen’s principality, is my friend from school. When he was an instructor second-class at the National University, he took ill and there was blood in his stool. His situation was critical. One day, when he was muddled and confused, he heard someone say, “Taking medicines is a mistake. Drinking urine is better.” Ting believed it and drank a bowl. Soon he revived. Then he drank it every day, and his illness gradually went away. He made it his medicine and was cured.

Mr. Wang, assistant prefect of Hangzhou, was a native of Hejian [Hebei]. He took ill with a swollen belly, and taking medicine was ineffective. He dreamed someone said to him, “Spanish needles can cure it.” Wang then
sought and found it. He cooked it and drank the liquid. The pain was unbearable. A while later he completely evacuated his bowels, and there burst forth a creature, over ten feet long. Later, he got better.

Those two people were on the verge of death and did not deserve to die. Did the ghosts and spirits silently protect them because they had unknown acts of merit?²² (SZ 13.160)

PRESCRIPTIONS, 2

“Transmigration wine” is human urine. Those with serious illnesses sometimes drink a small bowl and use wine to rinse out their mouths. After a long time, it proves effective. It is especially fit for use for those who have fallen down and been injured, or whose chests feel swollen and blocked. After women have given birth, people mix the urine with wine, cook it, and take it, so as to avoid various postpartum ailments. When the Nanjing vice-director, his excellency Zhang Lun [1413–1483], was in the Imperial Bodyguard’s prison, he did not have herbal medicine for six or seven years. Whenever his chest cavities felt blocked, or he had eye pain or headaches, he would always drink it, and it was always effective. (SZ 13.160; GD 69.1538)

COMPASSIONATE CREATURES

Shen Zongzheng of Mount Han in Songjiang [Jiangsu] in late autumn would always set up a barrier in the pond, catch crabs, and then cook them. One day he saw two or three crabs climbing up, which looked attached to each other. He looked closer and saw that one of them was missing all of its eight legs and could not move. The other two crabs carried it to cross over the barrier. He then sighed and said, “People are the most elevated and spiritual of the myriad beings. Brothers and friends fight with and sue each other, to the point where they take advantage of others’ misfortunes to deliberately ruin them. Yet such insignificant sea creatures have such righteousness.” He then ordered the barrier taken down and for the rest of his life never again ate crabs. I heard this from my younger paternal uncle.

Zhang Yongliang of Taicang [Jiangsu] is my wife’s elder brother. He always hated how hornets stung people. When he saw them, he would promptly strike and kill them. Once he saw a flying insect enmeshed in a spider’s web. The spider had tied it very tightly. A hornet came to sting the spider, and the spider avoided it and went away. Several hornets carrying water moistened the insect, and after a long time it was able to get free and leave. Thereupon, Zhang was
moved at the hornets’ righteousness and from then on never again killed hornets. I personally heard this from Yongliang. The ancients said that animals had souls. I believe it more after seeing these examples. (SZ 13.167; GD 69.1546)

DANGEROUS BOOKS

The book *Extended Meanings of the Great Learning* (Daxue yanyi) discusses the techniques for the ruler to cultivate himself, regulate his family, rule the country, and bring peace to the world. They are the most pressing, most essential matters, and are not obscure and difficult to practice. Within the work, chapters 39 and 40 concern the essentials of ordering the family and cite the matters concerning eunuchs from earlier ages. There are only eight entries about the blessings of eunuchs’ loyalty and prudence. But there are four times as many entries about the disasters of eunuchs’ participation in government. Even if one were to propose that the ruler read it, how could the attendants permit a single glance?

The Suzhou native Chen Zuo [fl. 1431] during the Xuande reign [1426–1435] served as censor. He sent up a petition urging the emperor to read the book. The emperor was furious and had Zuo and eight or nine of his sons and nephews arrested. All were sent down to the Imperial Bodyguard’s jail and incarcerated for several years. Only when the emperor passed away were they finally released.

At the beginning of the Chenghua reign [1465–1487], I heard that Ye Sheng [1420–1474] also spoke about this book. The court did not reply. Recently the Libation Master Qiu Jun [1421–1495] presented his *Supplement to Extended Meanings of the Great Learning* (Daxue yanyi bu) in several chapters. The court ordered that it be printed and circulated. What he supplemented only concerned the two matters of ruling the country and bringing peace to the world.

This foolish one, myself, says that if one can fully accomplish the tasks of regulating the family, then ruling the country and bringing peace to the world would follow. The book would be fine even without supplements. I feel it a shame that most rulers of later times do not want to look at it. (SZ 14.170–71; GD 70.1553)

MINING SILVER

Various kinds of ore deposits arise amid rugged mountain ranges and winding rivers, on lofty peaks and imposing ridges. When they initially appear, one can only barely make out veins of ore in coarse rocks. They are as slight as a hair. Those who understand ore take them, boring through the rock to obtain and
test them. The colors and shapes of the ores are uneven, and their quality also varies. When they obtain silver from the ore deposits, the amounts are unfixed. In some cases, a single basket weighs twenty-five jin. At the most, the silver they acquire came to two or three liang, and at the least, it is worth three or four cash.

The depth of ore veins cannot be fathomed. In some cases, as soon as the ground is turned, the ore is quickly exhausted. In some cases, they dig several tens of feet deep and only then are the veins exhausted. In some cases, they obtain very little and only after a long time do the veins broaden out. In some cases, the veins break off in the middle, but the miners continue to bore through without stopping, and later the veins revive. They name this “passing through the jade disk” (guobi). In some cases, just as they are finding ore in one place, suddenly the vein disappears. Then, within eight feet, they find the vein again. They name this “jumping toads” (xiama tiao). In general, when miners dig for ore, it looks like worms eating through wood. Sometimes they go tens of feet, sometimes several hundreds of feet, and sometimes they go several thousands of feet. Whatever depth they go, they stop only when the vein ends. In the past, acquiring ore meant taking along iron picks and iron hammers. They struck with all their might, tens of times, and only got small slivers. Today they do not use hammers and picks, but only burn and set off explosions to obtain ore.

Whatever the amount of rocks and ore, it is pounded by pedal-tilt hammers until it becomes a fine powder. They are called “ore ends” (kuangmo). Next, they take large barrels and fill them with water, throw the ore powder inside, stirring it several hundred times. They call this “mixing the paste” (jiaonian). The paste in the barrels separates into three levels. The part that floats on the surface is called “fine paste” (xini). The sort in the middle is called “plum sands” (meisha). What sinks to the bottom is called “coarse ore flesh” (cu kuangrou).

For the fine paste and plum grains, they use a washing pan with a sharp [i.e., V-shaped] bottom. They pick and weed through what floats in the pan, throwing out the gangue and keeping the good pieces. For the coarse ore body, they use a wooden basin that resembles a small boat. They weed out the materials using the method just described. In sum, they try to weed out the gangue and keep the real ore. They store it in full baskets. They are beautiful and glitter, making a fine sight. They call it “ore flesh” (kuangrou).

Next, they take rice paste and mix it in, making pieces round and big as a fist. They lay the pieces out in rows on the charcoal and further cover them with about a foot of charcoal. They start the fire at dawn. At the shen hours [3–5 p.m.], they put the fire out and wait for it to cool. They call them “pit bricks” (jiaotuan). Next, they use [unidentified character] a silver furnace to
burn the charcoal. They put lead in the furnace, wait for it to react, and then add the pit bricks. They fan it with a leather bellows, their hands never stopping. In general, lead's nature is to absorb the silver. When the silver has all sunk to the furnace bottom, only the dross remains on top. They open up the furnace to expose the hot fire and remove the dross on the furnace surface, doing so many times. After it has been smelted for a long time, they douse the fire with water, and the lead and silver fuse together. This is called the “lead camel” (*yantuo*).
Next, at the first furnace, they use high-grade charcoal. They examine the size of the silver camel, make a shallow ash pit, and place the lead camel inside the ash pit. They pile ash around the sides, fanning the fire ceaselessly. At first the lead and silver are mixed, as they are deep in the ash pit. One sees that the wide surface has vapors of “smoky clouds,” which fly about in shifting shapes.

After a long time, it dissipates somewhat, and then “snowflakes” (xuehua) burst up. After the snowflakes have all gone, it is stable and transparent. A while later, its appearance from one side begins to change to a muddled color. This is called “the overturned nest” (kefan) (this is the name of smelted silver). The clouds of smoke and the “snowflakes” are simply lead vapors that have not yet disappeared. The nature of lead is to fear ash. So they use ash to capture lead. After the lead has entered the charcoal, only the silver remains. The process lasts from the chen hours [7–9 a.m.] to the wu hours [11 a.m.–1 p.m.], and only then does one see finished silver. When the lead enters the unfired ash, it then gives rise to the mineral litharge. (*SZ* 14.175–76; *GD* 70.1557-58)

**ETHICAL LIGHTNING**

In the fifth year of the Hongzhi reign [1492], at a spot in Guazhou [Jiangsu] where boats assembled, a rice merchant’s boat was struck by lightning, which snapped off its mast. People approached the scene, and there was an assortment of big and small rats, which were all dead. Probably they had gnawed an opening and nested inside. One large rat had a weight of seven jin. The smaller rats weighed about two jin. The local man Yin Shouchu heard about it but did not believe it. He personally asked the boat captain, who said it was so. Probably Heaven feared that if the wind snapped the mast when the sails were up, it might unjustly bring about people’s deaths. So it struck the rats. (*SZ* 15.181–82; *GD* 71.1567)

**AUSPICIOUS FAMILY FLORA**

I remember that in the tenth year of the Zhengtong reign [1446], my ancestors planted in the garden two bamboo trees. When they grew several joints tall, they split into two stalks. We loved how the kingfisher green leaves joined together. The family servants waited for them to grow older. They cut away the side branches and used them to slice waterweed to feed the pigs.

In the second year of the Jingtai reign [1451], I moved to the rear garden. One snake gourd vine grew five branches. The places where the fruit left the stalk and the buds had fallen off had split to form five sections, and the backs
of the gourds then were stuck together. The orchard workers picked them and brought them in. Everyone played with them for a bit, and the children struck them to crack them open, and then ate them.

Later I served at court. There were those who asked for a colophon to praise *Pictures of Auspicious Bamboo and Auspicious Squash* (Ruizhu ruigua tu). I read it, and its samples were all what my family had possessed. Moreover, their auspicious bamboo pictures had one stalk, and my family gave birth to two stalks. Their squashes came only in two and threes, and also were not linked together. My family had five squashes that grew from the same root. Were they not extremely auspicious?

At the time, had there been rumormongers and busybodies among the family elders, fathers, and elder brothers, the flattery would have made its way back to the government offices, and the exaggerations would have made their way back to the family. They would have provoked everyone and ruined our wealth, and there would have a great deal of disruption. Yet my relatives were sincere and guileless, and so what people call auspicious portents did not move their hearts at all. Because it did not move their hearts, arrogance and extravagance did not take shape, and disasters did not break out. Consequently, my relatives could preserve the family for a long time.

It has been passed down, “The world originally has no troubles; vulgar people themselves disorder it.” Isn’t this case what this expression means? (SZ 15.182)