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MEDICINE IN CHINA PRIOR TO THE HAN DYNASTY

For convenience, we can call the medical style that was systematised by scholars in the Han dynasty 'classical Chinese medicine'. Having labelled this strand of medical practice, and distinguished it from the many other medical styles practised in China, we can follow a continuous narrative of its progress, from the metaphysical ideas, investigations and fragmentary medical writings in the millennium prior to the start of the Han dynasty in –206, through a flowering due to the work of medical scholars in the Han dynasty itself, on through all the dynasties leading up to modern times. This story is a remarkable one, so vast, diverse and profound that all writers struggle to meet the challenge to accurately encompass its contents and its value.

Given the diversity of styles, practice and therapeutic traditions that have existed in China and its satellite cultures, it is possible to trace numerous other narratives that differ from those covered in this text. These might examine folk herbal medicine, shamanic healing, Daoist magical traditions, Buddhist chanting and prayer, the use of talismans and spells and the many other approaches to healthcare that deviate from what we choose to delineate as the classical style. Many of these other traditions survive today. Folk traditions, for instance, continue to exist in China and East Asia and across the world. These apply simple remedies that are cheap and accessible to everyone; they encompass sense and nonsense, they differ in degrees of simplicity and sophistication and often provide effective first aid measures for day-to-day ailments. Every rural province, for example, will have its local folk methods for the treatment of dysentery, the majority of which I think are effective. Daoist, Buddhist, magical, shamanic or superstitious traditions that might be characterised by the use of chanting, the performance of rituals, wearing lucky talismans or burning paper on which special characters have been written – all of these have formed part of the spectrum of medical care through China's history, and are mentioned here mainly to acknowledge the fact that there has always been an interchange between vernacular therapies and the classical tradition. Silk-clad classical physicians have often looked to folk medicine for inspiration, and conversely, folk practitioners have often sought to aggrandise their position by adopting the terminology and mannerisms of those higher up the social and intellectual ladder. The main focus of this book

is the classical medical tradition in China as represented by a relatively restricted collection of famous figures and their ideas. Although emphasising the ideas of a particular social elite, this medicine nevertheless created a literature that runs to tens of thousands of texts and drew on the work of vast numbers of clinicians.

The Han dynasty scholars who laid down the foundations for classical Chinese medicine, nearly all anonymous, detailed their ideas in a handful of texts, some of which have survived reasonably intact to the present day. Textual analysis of Chinese medicine's most famous founding canonical text, the *Huangdi Neijing* (Yellow Emperor's Inner Classic), indicates that the core content was the work of roughly 30 different scholars, a handful of whom are named. The medical style they defined and set down was aggregated from the ideas and medical practice that had been current in the preceding century or two, so it makes sense to set the context by first picking up some of these early threads. These tributary medical lineages were themselves rooted in the various philosophical, metaphysical and pre-scientific beliefs that existed in the millennium before the Han dynasty. Very few writings on healthcare survive from these pre-Han times and so, inevitably, this chapter includes a certain amount of author speculation and interpolation – which has hopefully been adequately highlighted as such where it occurs.

Prehistory

Legend tells us that the history of medicine in China begins with Shen Nong, the 'Divine Farmer', who is said to have lived around –2750. He is credited with introducing agriculture to the Chinese people and is reputed to have selflessly poisoned himself many times whilst testing plants and other potential medicinal substances for their effects on the body. Tradition also claims that his medical experiments were recorded in the *Shennong Bencao* (Divine Farmer's *Materia Medica*). It is certain that herbal medicine was practised in prehistory. Residues of medicinal plants such as yarrow and camomile have been identified in the tartar of Neanderthal teeth found in northern Spain, providing direct evidence of medicinal herb use. However, modern scholarship of the *Shennong Bencao* tells us that the text that has been passed through to modern times could not conceivably have been compiled before the first century; for instance, the place names mentioned in the text were those in use during the Eastern Han (+23–221). This helps date authorship to that period even if, as seems likely, its content was derived from writings circulating in the previous centuries amongst those providing medical care.

Shen Nong, a legendary healer

Said to have lived prior to the Xia dynasty, Shen Nong is traditionally credited with inventing the plough and introducing crop planting. His selfless medical experiments are legendary. Having such an iconic hero invites emulation by later generations, and so his story probably contributed much to the development of medicine in China,

inspiring similar investigations and, ultimately, almost every substance in the environment that was accessible in China was studied and its qualities recorded for future generations.

PRE-HAN DYNASTIES

Xia –2100 to –1600
Shang –1600 to –1060
Zhou –1060 to –256
- Western Zhou –1060 to –771
- Eastern Zhou –771 to –256
- Spring and Autumn –771 to –476

Warring States –475 to –221
Qin to –221 to –206

If a historical figure named Shen Nong actually existed five millennia ago, as many contemporary medical historians in China believe, he may actually have been a notable tribal leader or a charismatic healer. It is also possible that the name may have referred not to a specific individual, but to a clan, perhaps part of the Neolithic Yang Shao culture that was active across today's Henan, Shaanxi and Shanxi provinces around –2600. Various Neolithic cultures in ancient China have been investigated in recent years, but the Yang Shao is especially celebrated by archaeologists and ceramic connoisseurs for their finely crafted pottery decorated with intricate chocolate-brown patterns and swirling motifs. Some hints of the thoughts and beliefs of these people can be discerned from their ceramic decorations. For example, swastika-like motifs (卍), that are said to represent the rotatory movement of the heavens, point to man's early fascination with observation of the night sky. These constant, reliable and reassuring cyclic movements seem to have symbolised to Neolithic peoples that all was well with the universe, and that the spirits of their deceased were content in the afterlife. The forces that manage such regularity needed to be encouraged – the darkest fear was that the stability and regularity might fail or even be plunged into reverse, the sun and moon might fail to rise, or the seasons may lose their regularity, leading to catastrophic consequences. (That in the 20th century the Nazis chose to reverse this ancient emblem of peace to symbolise their activities perhaps should have been taken as a warning of their intent.) It seems likely that these ancient people had a cultural memory of a time of prolonged wintery darkness, perhaps as a result of a volcanic catastrophe, instilling fear that this might be repeated if the ancestral spirits were displeased. Indeed, modern genetic analysis suggests that in prehistory mankind suffered a population hiatus during which the world population was reduced from many millions down to roughly 30,000 due to the 'nuclear winter' following a large meteor strike. Cultural memories of this catastrophic event may have driven a need in ancient times to enact rites conducted at sacred sites at the winter solstice intended to ensure continued cosmic regularity and the return of longer days rather than a continued retreat into darkness, illness and death. Beyond such speculations, a near complete absence of textual evidence from these Neolithic times means that we can say little about the earliest medical beliefs and practices.

Fu Xi and Huangdi

Another legendary founding father of Chinese culture and medicine from prehistory is Fu Xi, who is credited with introducing agriculture, fishing with nets, the first written characters and, almost certainly incorrectly, with the eight-trigram symbols (*ba gua*) used in the *Yijing* (Classic of Changes), a text discussed later in this chapter. Traditionally considered to have lived around –2500, Fu Xi is also said to have devised the system that was used for most of China's history to track cycles of time and that formed the basis of the traditional calendar. This consisted of the successive paired interaction of a cycle of ten heavenly time periods, called stems, with twelve earthly attributes, called branches. The cyclic interaction of these resulted in a 60-part cycle where stems and branches paired successively to create a calendar that charted seasonal changes, information that was useful in an agrarian environment. It also served to model the moment-by-moment environmental and climatic qualities and their effect on the affairs of mankind. Much later, in the Tang and Song dynasties, this system was incorporated into a cosmology-based medical style. Various other contributions to civilisation are attributed to Fu Xi, but it is impossible to verify any of these.

Completing a triad of ancient heroes is Huangdi, who is said to have lived around –2680 and to have founded the Daoist healing arts. Because the *Huangdi Neijing* summarised earlier material on medical practice, it was respectfully attributed to him, even though we can be certain that none of the content came from such early times.

Whether or not any of these three named legendary rulers represent actual individuals, we know that charismatic clan leaders existed in these ancient times and exerted their rule, in part at least by virtue of their ability to convince others of a personal and influential connection with the spirits of the ancestors in the heavens. The rulers' professed power to mediate the will of heaven, earth and the destiny of mankind is reflected in an early character for chieftain that shows the three levels of heaven, earth and mankind connected and unified by a vertical line (*wang*, 王).

夏 商 周 秦

The three powers: heaven, earth, mankind

The three powers (*san cai*, 三才) idea, a fundamental theme of the *Yijing*, was a theory derived from Neolithic cosmology that described the relationship between heaven, the earth and mankind. In the heavens only three external energetic influences were seen to reach the earth from above – the sun, the stars and the moon. The sun was plainly associated with daylight, warmth and so on, influencing day length and the changes over the course of a year. With its changing elevation in the sky, the sun was seen to have a profoundly *yang* influence on the changing seasons and growth and development on earth. Even in ordinary modern Chinese usage the word for sun is *taiyang*, extreme *yang*. The moon was also considered to influence the earth,

in a darker and subtler way, in the tides and in the menstrual cycles of women. Representing the souls of departed clansmen, the stars, and especially those that form the Milky Way, were also considered to influence events on earth and the affairs of mankind.

Heaven, represented by the character 天 (*tian*), was seen to be the epitome of reliable regularity in its behaviour and its cycles. Ordered and boundless, it was the abode of the ancestors and the source of the natural order of things. Its pristine influence descended to earth, normally working to ensure that man and nature did not deviate from their proper order. Those occasions where the heavens were seen to deviate from their exact regularity were therefore significant. Their long-standing obsession with sky watching means that ancient Chinese records are a useful resource for modern astronomers studying past cosmic events, such as supernovae.

In heaven–earth–man cosmology the energies of heaven and earth meet and react together to create life on earth and, in a sense, this is true from a scientific standpoint. Lacking the *yang*, the warming and transforming influence of the sun, the earth would be dark, cold and lifeless – *yin*, in other words. The heavens do indeed influence life on earth. Science would disagree about the extent to which events on earth can influence the heavens, although unarguably heaven and earth react together to create all the complexities of life. By understanding and describing these forces, including their movement and changing qualities, the ancient Chinese believed they would have the key to understanding what benefited and what hindered mankind. Man stood in the middle, with the bright, energetic, stimulating, non-material clear-sky influence from above, energising, warming, transforming, ordering and clarifying. Below was the earth, with its dense, dark, muddy and turbid qualities, providing material existence and sustenance. In this conception it was the interaction of the two that would allow man, and indeed life on earth, to flourish.

Use of medicinal herbs in prehistory

There can be no doubt that plant materials and other natural substances were used as medicines in China at around the alleged time of Shen Nong. Well-preserved desiccated bodies dated to the second and third millennia before Christ have been found in desert areas bordering modern China; one was found to be carrying a belt pouch containing the herb *ma huang* (Ephedra sinensis), a medicinal that remains important in Chinese medicine today to treat respiratory disorders. A main active component of this herb is ephedrine, an effective bronchodilator that was adopted into Western medical practice early in the 20th century when it became established as the first effective pharmaceutical drug for asthma. With the introduction of newer bronchodilators, it has since been relegated to use as a nasal decongestant; nevertheless, it is interesting to reflect on the fact that a pharmaceutical drug commonly used in modern medicine was first introduced into healthcare by people living around the end of the Neolithic period.

Other medical therapeutics in prehistory

In addition to herbal medicine, there is evidence of various other therapeutic procedures employed in prehistoric China, although acupuncture does not seem to have been in existence at this time. A skull with a carefully executed 3cm round hole dating from the Shang dynasty (roughly –1600 to –1060) has been unearthed in China. Scientific examination of the degree of local bone healing indicates that the subject lived for at least two months after the operation was carried out, and the procedure must have almost certainly required some form of anaesthesia. Most scholars in China consider that the area was probably numbed using ice prior to incision.

Apart from a few archaeological traces that have been found in China dating from roughly –3000 to –1500, the earliest documentary evidence available in relation to medicine and health practice dates from the Shang (c. –1600 to –1060) and Western Zhou (–1060 to –771) dynasties. Unfortunately, these are also too fragmentary to construct a clear idea of the standard health practices of this early time, although there is sufficient evidence for a rough picture to emerge of shamanic practices that often attributed ill health to ancestor displeasure.

Shamanic medicine

Illness, along with most other calamities, was often blamed on displeasure of the ancestor spirits meting out retribution to the living who had failed in some way to satisfy their needs and desires, for example, by not carrying out the appropriate rites of appeasement at the proper times, rites that may well have been devised by those in the community with schizotypal and obsessive personality disorders. The shamanic diagnostic process was similar to that used for any other problem facing the clan – it consisted of divining which particular ancestral figure was responsible for the difficulty, and identifying what placatory actions the living could take to help restore normality. Typically this consisted of an offering and conducting a ritual, a prayer or a sacrifice. This early conception of the underlying meaning of disease differed from our modern sense of the word because an individual's illness carried with it implications beyond the concerns of an individual or family; it could imply ancestral displeasure that carried with it ramifications for the larger social group – a person's illness might be a harbinger for medical catastrophe on a wider scale. In cases of epidemic illness, of course, the effects of ancestor displeasure could quickly spread to affect many people, and so suitable appeasement measures were crucial for the well-being of everyone. So the fact that one individual had been targeted for retribution did not rule out the possibility of others becoming affected too, and things were especially ominous if the person affected was a high-status individual. Rapid appeasement was important before deeper trouble set in.

Further, beyond the medical consequences for the individual or the potential for epidemic disease, unresolved ancestor displeasure might entail an even wider package of associated adverse events – perhaps impacting on the whole clan, such as

infertility of livestock, floods or losing battles with neighbouring clans, and so on. With such ramifications to consider, the appropriate response sometimes required remedial measures that were targeted not only at the sick individual, but the social group as a whole, for instance, by performing rituals that were evident to the whole community.

Given that the ruler and his clan were responsible for the maintenance of harmonious relationships between the ancestors in the Milky Way, the earthly climate and its numerous ghosts and the affairs of the living, it was especially incumbent on them to employ the most powerful shamans available to ensure proper regulation of ancestral relations. In prehistory, tribal rulers may themselves have been shamans, but later kings could simply employ them to assist in state administration. This relationship, based on respect and fear, meant that for much of China's early history a degree of tension existed between the shamans, with their schizotypal personalities, and the rulers. In the Warring States period (–475 to –221) the influence of the shamans declined and they lost some of their influence to the then burgeoning scholar classes, but tensions between advisers and the ruling aristocracy continued. Such advisers, shamanic or scholarly, were a necessary part of government, but were also prone to overreach themselves, plot and scheme for their own advantage and generally bicker and cause trouble. Later, court eunuchs also became renowned for joining in the intrigue and profiteering game.

An important way that the power and legitimacy of early rulers was demonstrated to those around them was by effective divinatory activity. If rulers could accurately predict, and thereby appear to be in control of, eclipses and other events in the heavens, catastrophes, changes in climate and so on, then their credibility and position was more assured. Repeated crop failures, famines, disease epidemics and so on were tangible evidence for both ministers and the populace that the heavens' support for the current ruler was waning. The shamans and court scholars were therefore an important part of this aspect of government, and when predictions came to pass, the veracity of the claimed links between the rulers and the spirits of the ancestors was confirmed. The use of clan folk beliefs and superstitions, hallucinatory trance states and magic provided an extra dimension to the more mundane aspects of statecraft, such as punishing wrongdoers, ensuring grain supplies and defending against marauders. Of course, a skilful court mystic could predict a catastrophe, enact a solution and then be celebrated for his power when the disaster failed to occur.

Individual shamans probably achieved their credibility and hence their influence and position by having learned to perform a set of convincing, perhaps awe-inspiring, tricks and illusions that combined magic, chanting, acoustics, hyperventilation and hallucinogenic drugs. This was a trade that gave access to influence. At the very least these specialists needed a demonstrable track record in summoning ancestral spirits and ways of proving to everyone that they had done so. Being privy to secret knowledge of astronomy enabled some to make predictions of heavenly events such as eclipses, comets and retrograde planetary motions. The diurnal rotation of the

heavens was the most universal constant imaginable. Its frequency could be calculated and then represented as a musical note. This understanding allowed sacred rites on earth to be tuned by the emperor and his advisers to resonate with, and therefore communicate with, the heavens – the abode of the ancestors. The geometry of the Ming dynasty Temple of Heaven in Beijing appears to reflect this, as do many much more ancient structures across the world, such as Stonehenge in England. Speculating for a moment, with their roughly 32-metre diameter, the Temple of Heaven and Stonehenge are resonant with overtones of the frequency of the apparent rotation of the universe which approximates to the note F. Clan voices singing a low F note two octaves below middle C would resonate with the structure, and so, in theory, with the universe itself. With the structure roofed and the walls closed up, the acoustic standing wave from this chanting would likely create impressive effects, such as swirling dust and smoke along the entrance tunnel and the 'spirit path' that leads up to it. There is archaeological evidence of cremated remains here in Neolithic ritual sites such as Stonehenge, a site that also has the inside stones slightly hollowed in a way that would enhance their response to chanting. With this acoustic trick, dust from the cremated remains of recently deceased tribal leaders, lit by the rising sun on the winter solstice, along with chanting and the use of hallucinogens, such effects would serve quite well as convincing demonstrations of awe-inspiring shamanic supernatural power and influence. Resonate with this overtone of the fundamental note of the universe and, as a shaman, you could feel quite sure you were getting through to those in the heavens and the ancestral spirits, themselves revolving around the pole star. And sure enough, from that moment on, the days would get longer and lighter, and the rejuvenation of spring would appear. These prehistoric notions of a resonant connection between the heavens, the natural world on earth and the affairs of mankind persisted from prehistory into the beginnings of documented history in China in the Shang and Zhou dynasties. The power of the mandate of heaven could be demonstrated annually by ritual and magic.

Understanding the great potential of resonance to ancient peoples is an important aspect of understanding some of the thinking behind early medical practices.

夏商周秦

Shang and Zhou cultures

Thriving roughly from –1600 to –1050, the Shang civilisation was located on the plains of the Yellow River in northeastern China. Their capital was called Yin, a place that corresponds to the city of Anyang today. Towards the end of this period the Zhou clan, who were confined to territories further to the west, referred to their neighbours as the Yin Shang, or simply the Yin, a term that is often used by historians today. The Yin Shang people are remembered today for their iconic and skilfully cast bronze ritual vessels. They ruled with the aid of military force and, like many civilisations of this time, ancestor worship was at the centre of their belief system.

The people of the Shang dynasty, in common with most cultures ancient and modern, were keenly interested in the effects of ingested substances on mind and body. They made beer (*chang*) out of the fermented tubers of the mild intoxicant *yujin* (Curcuma longa), a relative of the ginger plant that remains a commonly used medicinal in Chinese medicine today. Grapes, together with medicinal herbs such as *shan zha* (hawthorn berries), have also been identified from fermenting vessels from Neolithic times, which may indicate a crossover between medicinal and recreational use. It is certain that many other plants and substances were employed in prehistoric times for their therapeutic properties, although substantive understanding of the way that medicine was practised at this time is virtually absent, and so we have to hunt carefully for clues.

Components of the character 醫 (*yi*), the Shang and Zhou word for healer, give hints about the tools that medicine used at the boundaries of history and prehistory. One part of the character suggests the sticks clattered together by shamans to drive away malevolent spirits. Another part shows a quiver full of arrows said to represent the lances, or perhaps stone arrowheads, used to drain abscesses, boils and other pustular swellings. The lower part suggests medicinal wines and decoctions made from herbs and other substances used to treat illness or to strengthen an ailing patient. *Yi* can therefore be interpreted as summarising some of the main activities inherent in medical practices of the Shang era.

In contrast to the classical medicine of the literati that was to develop roughly a millennium later, herbal medicine was almost certainly practised in a folk medicine style – meaning, single medicinal substances applied symptomatically, with little by way of systematic diagnostic or theoretical foundation. Folk medicine differs from the more systematic literate medical traditions by the relative paucity of its written corpus, by the limited formal training of its practitioners and by the simple matching of symptom to treatment. Incidentally, the term 'herbal medicine' is used here as a convenient label despite the fact that therapeutic usage was not confined to plant materials. Throughout the history of Chinese medicine, physicians went to the trouble of systematically investigating the therapeutic properties of pretty much every imaginable substance found in nature – plants, insects, rocks, animal droppings and beyond. Moss scraped from the north wall of a house, the oviduct of a particular frog, flying squirrel droppings, dandruff and dust swept up from below a hangman's gibbet, the quest was to investigate the properties of everything. This work was driven by curiosity and by the medical imperative. In addition, during times of famine there was a survivalist imperative to distinguish substances that could serve as food sources from substances that were inedible or poisonous.

The great majority of substances listed in the historical *bencao* (herbal pharmacopias) are not in common use today in medicine, although the vast database of possibilities remains. Demand for substances whose properties were explored historically, such as rhino horn, bear bile and tiger bone, comes today not from mainstream professional Chinese medicine practice but from the whims and desires of the wealthy keen to possess expensive rarities.