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7. Sung Neo-Confucianism and Medical Thought: Progress with an Eye to the Past (pp.154-188).

The year A.D. 500 marked the approximate conclusion of an epoch in China during which all dimensions that were to characterize Chinese medicine until the appearance of Western science had been created. This is not to say, however, that Chinese medicine did not progress or change during subsequent centuries. Numerous new physiological and therapeutic discoveries are contained in medical literature of the late first and second millennia. But the appearance of Buddhist medical concepts established the general boundaries that determined all medical thought of the following 1,500 years. And these boundaries were by no means narrow. Once established, the basic framework of distinctly conceptualized therapy systems permitted diverse constructs that served not only to expand traditional ideas in various directions but also, as I shall demonstrate, to integrate different elements of this complex and heterogeneous edifice. After the age of classical antiquity, political developments in China were marked, often enough, by periods of ruthless civil wars within individual regions, serious revolts, and interludes of unity that fostered intellectual creativity; these were followed, in turn, by disintegration of the empire and lengthy periods of rule by foreign, non-Chinese conquerors. Up to the time of the final collapse of the empire at the beginning of the twentieth century, however, none of these convulsions proved sufficiently far-reaching to stimulate intellectual fermentation similar to the process observable in the centuries preceding and following the first unification, during the genesis of Chinese civilization.

The following two chapters will demonstrate how medical scholars, influenced by social and political developments during the centuries preceding the collapse of Confucian social structures, sought new solutions to the unending problems of illness and early death within the confines of existing medical thought.

7.1. A SURVEY OF POLITICAL AND INTELLECTUAL DEVELOPMENTS BETWEEN THE SIXTH AND THIRTEENTH CENTURIES

7.1.1. The Sui and T'ang Epochs

Except for the brief unification of Chinese territory under the Chin (286-316), nearly four centuries elapsed between the conclusion of the Han dynasty and a new, lasting period of unity; the magnificent T'ang period (618-906) was preceded by the short-lived Sui dynasty (581-618). The most remarkable characteristic of the T'ang period is to be found in its cultural cosmopolitanism; unlike the Han dynasty, the Chinese empire now stood in lively intellectual and economic contact with all accessible centers of foreign civilizations. The philosophical spectrum of the epoch was marked by the simultaneous but varied influences of Confucianism, Buddhism, and Taoism. Although the Chin dynasty of the Ssu-ma clan is considered to have viewed Confucianism with favor, and although the Taoists were favored by the rulers of the Toba Empire, for example, during the Wei dynasty

(386-543) as well as during the T'ang period itself, it appears that from the first half of the eighth century on, in the scope and diversity of its consequences, Buddhism achieved an increasingly pre-eminent position in comparison with the two competing doctrines. Utterly insignificant and mistaken as an exotic appendage of Taoism as late as the Han period, the doctrine from India had, by the conclusion of the division of China into northern and southern dynasties, already surpassed the adherents of Lao-tzu in its appeal to the broad masses. During the Chin period (ca. A.D. 316), the number of Buddhists was approximately 4,000; under the Sui, millions had professed their faith in this religion. Two geographically and chronologically very limited secularization campaigns in the years 446 and 576-577 represented only temporary setbacks in the stormy rise of Buddhism. The underlying causes of this phenomenon must be sought both within and outside the religion itself. I have already noted the doubts about Confucianism as a social philosophy, expressed by certain thinkers after the disintegration of the first united empire. Confucianism had been unable to maintain its position of ideological leadership, and a portion of the Chinese intellectual elite became interested in the new doctrine that promised an alternative ethical approach. During the division of the empire, the influence of Buddhist monks and missionaries, particularly in the north, grew because their diverse abilities corresponded to the needs of the rulers. The performance of medical miracles was not the sole capability that demonstrated the value of their teachings to those who lacked sympathy for the philosophical concepts of the religion itself; rain making, a skill not to be underestimated in a primarily agricultural state economy, prediction of the outcome of the frequent military campaigns, and the divinatory investigations of ministers and purported friends, earned Buddhists the favor of the broad masses as well as of the rulers themselves. Not to be overlooked as well was the attraction the monasteries held for those refusing military service and those oppressed by heavy taxation. Both the rich and the poor made use of the monasteries. Buddhism created hopes for release from a bitter destiny. The concept of karma offered even those from the lowest station the eventual possibility of escape from earthly misery, if they followed a certain ethic. Finally, a need may have existed among the Chinese people for a metaphysical approach, that Confucianism, with its orientation on the ordering and harmonizing of earthly existence, could not fulfill. Perhaps it was the lack of warmhearted, sympathetic deities in indigenous Chinese doctrine, deities from whom those disappointed and embittered by human relationships could seek support and solace, that led the Chinese masses to place their faith in a foreign religion.¹

It is therefore not surprising that the founder of the Sui dynasty— more for political reasons than because of personal conviction—saw in Buddhism the ability to provide the newly united empire with the necessary ideological cohesion. Nonetheless, the state was to last only a brief time, for in his efforts to bring North and South together, the emperor saddled the population with excessive burdens. The construction of three capital cities and of a canal to connect the sparsely settled but extremely fertile areas of the South with the more congested North, required the services of millions of conscripted laborers. Following several favorable campaigns against the Kitans in Manchuria and the western Turkic peoples, other less successful undertakings in Korea eventually overtaxed both the state treasury and the patience of the population. When the second Sui emperor sought to obligate the

landed gentry to cover expenditures, he lost not only the sympathy of the masses but that of the aristocracy as well, and he was eventually assassinated in 618.²

Under the ensuing T'ang dynasty, the Chinese Empire reached a previously unknown geographical extent; administrative control encompassed—with decreasing intensity, of course, as the distance from the central capital increased—large portions of Central Asia and, at times, extended as far south as present-day Vietnam. The ruling family's name was Li, the same as that of the clan of Lao-tzu. This circumstance, coupled with repeated reports by Taoists of Lao-tzu's reappearance, proved beneficial to his supporters; with the exception of the extremely pro-Buddhist interregnum of the empress Wu (690-705), the Taoists enjoyed the favor of T'ang rulers. But this did not hinder administration officials from pursuing a tolerant policy toward other world views. The already established doctrines were joined by Nestorian Christianity, Islam, Manicheism, and other religions that attracted a significant following, primarily among the numerous foreigners.

As early as the Northern Chou dynasty (556-581) there had been public discussions concerning the relative importance of the three great doctrines. The emperor, having listened to the arguments of the participants, determined that Confucianism occupied the first place, followed by Taoism and Buddhism. Such debates were resumed under the T'ang, but for centuries the question was whether Buddhism or Taoism should be accorded priority; Confucianism was scarcely mentioned in this context.

Buddhist influence continued to grow under the T'ang, affecting more and more areas of public life. If, during the first centuries of its existence in China, the Indian doctrine had been largely dependent upon and overshadowed by Taoism, the relationship was now reversed to a certain extent.

Increasingly, followers of Lao-tzu sought to conform to religious concepts and organizational forms cultivated in Buddhist monasteries. But the Buddhists no longer restricted their activities to the spiritual realm; beyond the purely religious life, they began to develop into an unmistakable factor in Chinese economic life. Monasteries frequently concealed significant accumulations of precious objects, which either had been donated by believers or entrusted for safekeeping by outsiders. Taking advantage of this wealth, monasteries began to function as credit institutions, increasing their income in part through usurious interest rates. The extensive landholdings of the monasteries were also partly a result of donations; in addition, monastery officials used profits to purchase additional land, which was worked by slaves, orphans, or even hired laborers. The monks and priests themselves (with the exception of a single sect) avoided such activity. Further profitable business ventures included the opening of numerous monasteries as hostels, as well as investments in water mills and oil presses, which were then leased out. As a result, the Chinese state lost enormous amounts of revenue, for most of the Buddhist income was tax free. When the third secularization campaign commenced in 845, this time encompassing the entire empire, it was less a result of ideological opposition than of the growing financial distress of the government. More than a quarter-million monks and nuns were returned to lay life; 100,000 slaves and more than double that number of workers were released from their obligations and, like their Buddhist masters, returned to a taxpaying status. Material possessions of bronze, iron, silver, gold, and jade were confiscated by the state. Followers of the other religions were not spared by these measures.

Initially, Confucian representatives played only a passive, restrained role in these developments. Even during the period of fragmentation that prevailed between the Han and Sui dynasties, the administrations of most smaller and larger political entities were based on an educated civil service constituted along Confucian guidelines. Knowledge of the correct rituals never completely disappeared and was continually handed down within certain clans. A revival of interest in this social doctrine is evident not only during the Chin dynasty (280-316), but under the Sui as well, where a reorganization of court rites, for instance, was carried out under the direction of Confucian scholars. But representatives of this tradition could not fail to note that the Han pre-eminence of Confucianism would be not only temporarily impaired but also permanently lost if considerable efforts were not directed to revitalizing its universal value. The indications were indeed alarming. Official rituals already exhibited clear traces of Buddhist influences, particularly since the first emperor of the Liang dynasty (502-556) had proclaimed his complete allegiance to the Indian doctrine and prohibited all blood sacrifices.³ Even the burning of incense had already been adopted into official state rites. More significant, however, was the fact that, primarily because of their ability to read and write, Buddhists had been able to enter the administrative bureaucracy as well, gradually undermining the Confucian monopoly on qualified candidates for civil service positions.⁴ Open, massive opposition to the broad "foreignization" of Chinese society by Buddhism and its followers, however, did not break out until the T'ang period. The minister Fu Yi (554-639), for instance, emphasized in a petition the subversive nature of Buddhism. He demonstrated, among other things, that the idea that man owes both well-being and misfortune to Buddha leads to disloyalty toward the emperor, and that monks and nuns conduct their lives totally at the expense of the rest of society. In 819, the scholar Han Yu (768-824) wrote a daring essay in which he rejected the ceremonial cult surrounding Buddha relics, pointing out the dangers of this non-Chinese doctrine. But he succeeded only in bringing about his own banishment. Of the other scholars who raised their voices in warning at this time, Li Ao (died 849) deserves special mention, for he wrote an allegorical treatise on the problem that proved prophetic for the future development of Confucianism. Perhaps to avoid the fate of Han Yü and others, Li Ao veiled his views in a description of a certain plant. The disguise was so effective that even some modern authors refer to Li Ao as a "botanist." Li Ao related the story of a sterile man completely given over to shortsighted pleasures, who one day discovers in the "wilderness" a plant with two intertwined offshoots. Surprised, he takes the plant with him, but no one can tell him what it is. Finally, he is told to take it as medicine. After following this advice he becomes fertile again and, after consuming more of the plant, is eventually able to recognize the correct way (tao) that all mankind must follow. Superficially at least, Li Ao brings his story into the sphere of the three great doctrines by including a Buddhist priest, an old man, whom we suspect to be a Taoist, as well as Confucian officials. At a more symbolic level, the sterile man represents the Confucianism of the time. In the wilderness, that is, outside of civilization, he encounters two intertwined offshoots, obvious symbols for Taoism and Buddhism. Only the consumption of a "carefully sifted powder" prepared from these two unknown plants is able to restore to the man fertility encompassing many generations. And only the "fertile man" can comprehend the true "Principles of Human Existence." Li Ao's portrayal sketches the fate of Confucianism. Either it must be supplemented by certain elements

from the two competing ideologies that it was lacking, or the tradition of Confucianism would soon come to an end.⁵ This challenge was met by philosophers of the Sung period, whose efforts led to the development known as Neo-Confucianism.

The T'ang dynasty is regarded as one of the golden ages of Chinese culture, an assessment based in part on the cosmopolitan nature of life in the flourishing cities, with their hundreds of thousands or millions of residents. Merchants from all countries bordering directly or indirectly on China brought with them exotic goods and returned home with Chinese cultural objects. As a result, music and the fine arts experienced important new impulses; society amused itself with novel games. Exotic fruits enriched the marketplace, and previously unknown drugs found their way into dispensaries.⁶

If we turn our attention to medical thought during this era, however, we discover that no significant new concepts were developed. At the beginning of the seventh century, Sun Ssu-miao, a scholar versed in all humanistic endeavors, compiled an extensive collection of prescriptions in which he combined, as already indicated, the concepts of systematic correspondence with Taoist techniques of demonic exorcism as well as with certain Buddhist notions. Other surviving prescription works from the T'ang period, such as the *Wai-t'ai pi-yao* by Wang Tao (ca. 725), have a similar character. For the first time, a state-approved work on drug therapy was compiled—the *Hsin-hsiu pen-ts'ao* of 659—an event that demonstrates the favorable attitude of the government toward Taoists, who were the primary figures in this branch of knowledge. Another Taoist, Wang Ping, prepared a new edition of the classic of systematic correspondence, the *Huang-ti nei-ching su-wen*, in the eighth century—one of the three surviving versions of the text. With the temporary displacement of Confucianism into the background, interest in this classic seems also to have diminished noticeably. It is therefore possible that the contradictory character of this work is due partly to Wang Ping's revision.

Philological research in this question has established only the fact that Wang Ping is responsible for the addition of a cosmo-biological element (Chinese: *wu-yün liu-ch'i*) to systematic correspondence, which can be found for the first time in the T'ang version of the *Su-wen*. Surviving tables of contents from earlier versions of the classic do not yet indicate these concepts.⁷ The cosmo-biological impulse served to expand the already familiar and highly refined systematic lines of correspondence; the macrocosmic concepts of the sixty-year moon-sun cycle of the Chinese calendar could now be linked with illness and well-being by means of the concepts of yinyang and the Five Phases. Although this tendency is quite interesting—it was based on the observation of seasonally related illnesses and physiological rhythms, as well as on the recognition that the organism experiences certain generalizable cycles that parallel daily cycles—it remained undeveloped and, even today, is viewed by an apologist for healing based on systematic correspondence as "the weakest and a deservedly controversial element in the theoretical framework" of this system.⁸

It may seem surprising that such a cosmopolitan age as the T'ang dynasty, shaped by generations of peace and by contact with foreign modes of thought, contributed so little to the understanding of the causes, nature, and treatment of illness. An explanation of this phenomenon is proposed by Franke and Trauzettel, whose analysis of the T'ang dynasty is based on factors other than medical concepts of the period:

No new social class entered the historical arena, no revolution toppled old barriers, no new ideas or images reveal previously concealed impulses. On the contrary, we can discern only gradual changes, a constant progression of that which was already present, with no distinction as to whether it was of foreign or Chinese origin.⁹

The field of medical thought was no exception.

The decline of the T'ang dynasty began with the revolt of a military governor in 755, a consequence of the virtually unlimited civil and military power granted to commanders of the extensive border troops. The foreign troops, which the central government was forced to call in for support, were themselves a source of additional unrest after the uprising had been crushed. The clash between scholar-officials and the eunuchs, which had played such a crucial role during the Later Han, once again developed in the civil service. Growing corruption, disintegrating administrative control, increasing misery among the peasants following the ruthless appropriation of land by powerful landowners, and finally, after several isolated hunger revolts, the great uprising of 875, led first to a shadowy existence for the last emperors and, ultimately, in 906, to the final collapse of the dynasty.

7.1.2. The Sung Epoch

The ensuing struggle for control of China continued for some fifty years; in the North, five states rose and fell in rapid succession; in the South, a total of ten dynasties were founded before an army general from the North was proclaimed emperor of a new Sung dynasty by his troops in 960 and, in the following years, was finally able to suppress any remaining opposition. Once again, China was under the control of a single central government, but the circumstances were different from those in the T'ang period. The empire was now surrounded by powerful hostile states, some of which held Chinese territory. From the very beginning, Sung policies were aimed at maintaining a non-belligerent stance toward these neighbors; high yearly expenditures stretching over many decades were successfully directed to this goal. Although the even higher costs of war were thus largely avoided, the drain of both material and financial resources, as well as the enormous expense involved in maintaining large standing armies, nonetheless constituted an oppressive burden. In addition, the virtually permanent scarcity of money was further exacerbated by a foreign trade deficit. To solve these difficulties, paper notes were circulated, a process which itself only fueled inflation. The avoidance of taxes, primarily under the auspices of a revived Buddhism, also contributed to the economic distress.

Not only the conditions on the borders were different, however. Chinese society itself had undergone fundamental changes. In connection with the following discussion of Sung medical thought, it is especially important to note the social and economic differentiation that increasingly characterized public life. The growth of the cities continued undiminished; the exodus of peasants from rural areas and an immense migration to the South contributed to this development. In the cities, professional life became more and more specialized; the government itself—probably unintentionally—fostered this trend by requiring the organization of individual enterprises into guilds, thereby facilitating supervision of such groups. Through the introduction of new or improved techniques, both agriculture and the processing industries experienced an upswing. Consequently, large areas became dependent upon a particular economic product, and clear regional distinctions developed, so that

increased mutual economic interdependence began to replace the earlier economic self-sufficiency of individual regions.¹⁰ The continuing specialization even found its way into state examinations and therefore into the training of civil servants, which up to that time had been marked largely by the Confucian ideal of a comprehensive classical education. When Wang An-shih began his reform of the examination system in the eleventh century, his intention was to reorganize it more specifically in terms of such specialties as law, finance, military, geography, and even medicine.¹¹

The reorganization of Chinese society during the Sung period thus brought about a development in two directions that are only seemingly contradictory. On the one hand, we find a tendency to restrict both individual and regional competencies and concomitant increased interest in fine details. On the other hand, whether consciously or subconsciously, there was the feeling of an increased dependence upon an expansive, larger whole, to which the individual parts, with their highly specific functions, made a vital contribution. Such a sweeping reorganization could scarcely leave unaffected the philosophy of the era; it provided the basis out of which Confucianism was eventually able to add essential elements to its already traditional synthetic-integral social doctrine and, at the same time, adopt an analytic approach, concerned with the essence of individual phenomena, that it previously had never possessed to this degree. Such an intellectual climate, in turn, required its own foundation, namely, the refinement of technical and other detailed knowledge. The Sung period thus constitutes one of the pinnacles of technological and scientific progress in Chinese history.

In this context the re-emergence of Taoism during the Sung era becomes comprehensible. For more than a millennium, its followers had been occupied with the detailed analysis and observation of natural laws; many of the insights that now proved useful were derived from the discoveries and preliminary work of Taoist researchers. An example of this was the invention of gunpowder, which became a part of the Chinese arsenal during the Sung period. To be sure, a primary concern of Taoist efforts remained the desire to prolong life through such measures as the taking of certain substances either produced through technical processes or found in nature itself. Although it would be going too far to see in the therapy utilizing crystalline products distilled from urine, which developed during the course of such efforts, a forerunner of modern hormone therapy¹² (particularly since the conceptual framework was totally different), this example nonetheless illustrates the breadth of activities at the time. It should not be overlooked, of course, that Sung Taoism, especially the cheng-i school, was also deeply involved in techniques of demonic exorcism. The fundamental significance of Taoist ideology during the Sung period was reflected in its growing role in the official state cult.

Buddhism followed a totally different course during the same period. It had largely recovered, at least superficially, since the secularization of 845, but the spiritual force of the doctrine appeared to have been broken. This despite the fact that the first Sung emperor immediately ordered the ordination of 8,000 monks on the occasion of his birthday, sent out missions to the West, and even established another Bureau of Translation. The emperor himself took Buddhist vows and ordered the first publication of the Buddhist literary canon. Later Sung emperors looked upon Buddhism and its adherents with equal favor; in the year 1221, nearly 400,000 monks, more than 60,000 nuns, and some 40,000 temples were counted.¹³ The economic involvement of the monasteries surpassed even that of the T'ang period. But of the numerous schools active in that earlier epoch, only two

maintained their old significance under the Sung; both, moreover, were not greatly concerned with the interpretation of Buddhist literature or with the refinement of rituals, and thus contributed very little to the debate among Chinese intellectuals. The decline of Buddhism was accelerated by one measure of the government that promised financial benefit, but which in the long run only exacerbated the problems. It had been customary that the ordination of monks and nuns, and the accompanying series of privileges, including the tax-exempt status, were sanctioned and therefore legalized by a certificate, attesting to the fact that the bearer had passed the necessary examinations in Buddhist doctrine. As a result of its fiscal difficulties, the Sung administration began to offer these certificates for sale. In this way great numbers of people with absolutely no spiritual link to Buddhism entered the monasteries, and the standing of monks and nuns diminished rapidly.

Yet another reason behind Buddhism's declining appeal for Chinese thinkers was the success of certain philosophers in developing an alternative attractive enough to claim the attention of the intellectual elite. Impressed by the successes of Taoism and Buddhism, various thinkers had identified the essential features lacking in Confucianism, gradually offering new ideas that were eventually synthesized in the philosophy of Chu Hsi (1130-1200). In the T'ang "botanical" allegory cited earlier, Li Ao had not only demonstrated that Confucianism required elaboration to survive, he had, in another passage, indicated those aspects he considered crucial for this objective:

Although writings dealing with the Nature and with Destiny are still preserved, said Li Ao, none of the scholars understands them, and therefore they all plunge into Taoism or Buddhism. Ignorant people say that the followers of the Master (Confucius) are incapable of investigating the teachings on the Nature and Destiny, and everybody believes them¹⁴.

Knowledge concerning processes and phenomena in nature and an all-encompassing, macrocosmic ethic that linked human morality on a metaphysical plane with the entire universe were indeed the weak elements of Confucianism. In the eleventh and twelfth centuries, the conceptual impulses of the T'ang forerunners of Neo-Confucianism bore fruit. Unlike earlier attempts, criticism of Buddhism was no longer solely negative, but offered a genuine alternative to the Buddhist notion that the phenomenal world represented not reality but pure illusion, from which we can and must free ourselves. Chang Tsai (1020-1077) was the first to oppose this doctrine with the argument that material finest matter (ch'i) had existed from the very beginning of time. He claimed that all things were real, since they come into existence through the concentration of ch'i-influence, and end by returning into finest influence. The notion of the convergence and dissolution of matter based on the concept of finest influences was certainly not new. As we have seen, it was already in existence during the Han period, and it found renewed interest especially in T'ang Taoism.¹⁵ Chang Tsai extended these concepts by combining them with the ethic of human relationships. Chang wrote:

Since all things in the universe arise from the same ch'i, then the people of the world are our brothers: things are my companions.... All those who are exhausted and prone to illness, maimed and deformed, lonely and childless, widows and widowers, are our brothers and sisters who are in difficulties and have no one to appeal to. If one protects them at the proper time this is to show the reverence of a son. If one does one's work with joy and without grudge, this exemplifies the purity of filial piety. To do the contrary is to deviate from one's moral virtue and he who violates jen (benevolence or human-heartedness) is a robber.¹⁶

Recalling the restrictions that were placed on the original Confucian concept of correct human relations, we can clearly see here the desire of the author to claim for Confucianism the notion of charity toward one's fellow man, which previously had been limited to Buddhism. At the same time, Chang Tsai's deliberations contain a clear call to face all the realities of life, instead of avoiding the obligations of daily life by entering a monastery, for example.¹⁷

Ch'eng Hao (1032-1085) and Ch'eng Yi (1033-1107), two nephews of Chang Tsai, pursued a different course, arguing that a specific principle (li), which could be fathomed with the appropriate study, underlies all phenomena and existence.

Chu Hsi (1130-1200) was finally able to forge these disparate arguments into a system in which li constituted the immaterial organizational principle controlling all genesis, existence, and decay, and ch'i the material finest influence that brings genesis, existence, and decay to fruition. In addition, Chu combined the doctrines of li and ch'i with the cosmogony developed by another Sung philosopher—Chou Tun-i (1017-1073)—creating an organic model of the universe, in which each material phenomenon and each ethical category could be explained. For Confucians, the study of nature was now finally "legal"; the motto "achieve an understanding of things by investigating them" (ko-wu chih-chih) spread like a veritable signal of freedom. Chu Hsi's construct conferred upon human existence a meaning within a metaphysical system without recourse to the deities, spirits, and demons of competing doctrine. Chu Hsi demonstrated that the evolution of the universe in accord with an all-embracing organizational principle is accompanied at the appropriate time by the genesis of certain conceptions of morality and virtuous conduct; the necessity for some being situated beyond space and time, who controls the destiny of man and watches over his adherence to certain moral values, simply did not exist in this conceptual system.¹⁸

To summarize this brief survey of Neo-Confucianism: Chu Hsi and his predecessors offered a comprehensive, naturalistic, and organic world view that reinterpreted and expanded traditional Confucianism in a two-fold process. On the one hand, Neo-Confucianism adopted concepts that previously had belonged within the purview of Taoism, so that in fact it is possible to speak of partial syncretism. On the other hand, totally new concepts were developed that were directly opposed to comparable ideas within Buddhist doctrine, so that although the latter did not have to be integrated into Chinese thought, their function had nonetheless been fulfilled. This differentiated development of Confucianism soon radiated a great intellectual vigor and appeal. The study of the classics once more became a vital topic. The impulse to investigate carefully individual phenomena of nature and in so doing to understand one's own position in the larger scheme of the universe, culminated in the scientific activities of the period that I have already mentioned.

7.2. CULTURAL AND SOCIAL TRENDS AS REFLECTED IN MEDICAL THOUGHT

For approximately 1,000 years, until the Sung period, Chinese medical thought, as far as surviving literature indicates, developed along the lines established by the compilation of the Huang-ti nei-ching and the Shen-nung pen-ts'ao ching. I have already discussed the nature of the widespread activities of demonic medicine as well as Buddhist healing during the first millennium A.D. The pluralism of

healing systems is evident not only in medical literature itself, but also, for instance, in the official list of medical specialties and examination subjects compiled during the Sung period. Taoist and Buddhist exorcistic techniques were just as much a part of the reservoir of recognized and required knowledge as the ability to prepare prescriptions or apply needles according to the rules of systematic correspondence. While the tradition of systematic correspondence, including the integrated therapeutic technique of acupuncture, underwent what could be termed a "development" over the centuries only in terms of minor details, the literature of practical drug therapy, which remained virtually untouched by the concepts of systematic correspondence through the end of the Northern Sung (960-1126), is marked by an intensive progression. Not only was the number of available medicinal plants, animals, and minerals continually increased, but individual drug descriptions were regularly revised with new information on drug properties and errors of earlier authors corrected. If we compare the earliest drug work whose author can be identified—the Pen-ts'ao ching chi chu, written by T'ao Hung-ching about A.D. 500—with the extensive compendia of the Sung period, this advance in knowledge is immediately evident.¹⁹ There is no doubt that the productive development of pharmaceutical literature and knowledge was due to the ongoing efforts of a large group of naturalists and observers who, always receptive to new discoveries, continually sought to unlock the secrets of nature. Although they held their classic, the Han Shen-nung pen-ts'ao ching, in great respect, its insights represented only a starting point for their own concerns and not, as was the case for followers of the Huang-ti nei-ching/ Nan-ching tradition, the ultimate and complete stage in a particular field of knowledge. It was the new intellectual climate under the Sung that first transformed the medical thinking of those operating within the conceptual framework of systematic correspondence. It was no coincidence that scholars associated with Confucianism provided the impetus for this development, and it is therefore not surprising that the structural changes in Chinese society sketched above, as well as the fundamental tendencies of Neo-Confucianism, were now mirrored in the concepts of medical literature. The history of medicine under the Sung thus underwent a two-fold development. First, we can observe the fragmentation into specialized fields, as well as a tendency toward pronounced reductionism in notions about the cause, nature, and treatment of illness; second, there were intensive efforts to verify the universal validity of the medicine of systematic correspondence by extending it to practical drug therapy. Since changes such as these leave their mark in literature only after a certain interval of incubation, these developments occurred between the time that Sung rule had first been restricted to a southern part of China by the establishment of the foreign Chin dynasty in the North (1115-1234) and the period when Sung rule was completely destroyed by the Mongols, who defeated both the Chin and the Sung, founding the Yuan dynasty (1260-1368). Since the most important exponents of the medical thought fostered by the intellectual atmosphere under the Sung did not compile their works until these subsequent dynasties, they are generally referred to in the context of "Chin-Yüan medicine." To illustrate more clearly the connections with Neo-Confucianism, which is also referred to as "Sung doctrine," it is more accurate to speak of "Sung-Chin-Yüan" medicine.

7.2.1. Reductionism and the Narrowing of Categories

The medical thought and writings of the scholars whom we recognize as proponents of Sung-Chin-Yüan medicine were derived primarily from four sources. In addition to the Huang-ti nei-ching, which provided the theoretical foundation of systematic correspondence, and the pen-ts'ao literature, which contained detailed information on the properties of individual drugs, it was mainly the work of the Han author Chang Chi (tzu: Chung-ching) as well as T'ang cosmobiology (wu-yün liu-ch'i) that influenced the authors of Sung-Chin-Yüan medicine.

7.2.1.1. Chang Chi and the Adoption of Restricted Etiology

Chang Chi (142-220?) is known as the author of two prescription works, the Shang-han lun (On Cold-Induced Bodily Injuries) and Chin-kuei yü-han yao-lüeh (Survey of the Most Important Elements from the Golden Chest and Jade Container). Although both texts survived more or less intact for centuries, there are several indications that these works exerted only marginal influence on medical thought and literature between the Han and Sung dynasties. While the interest generated by Wang Shu-ho (210-285), for example, in pulse diagnosis had been continued in more than seventy titles by the beginning of the Sung period, and while during the same interval more than ninety works had been devoted to acupuncture and more than fifty to physiology, not even ten authors followed the direction taken by Chang Chi. It was only during the Sung and Chin epochs that a larger circle of scholars became interested in the surviving fragments of Chang Chi; during the course of these two dynasties alone, so many revisions or commentaries appeared on the problems of cold-related illnesses that more than eighty titles have survived to the present day. The contrast becomes even more striking when we compare the ten titles devoted specifically to the treatment of such illnesses written before the Sung period with the more than three hundred encyclopedic works containing prescriptions for all kinds of illnesses that appeared during the same time. The Chang Chi renaissance during the Sung-Chin-Yüan era was due primarily to two characteristics in his writings. To scholars of the twelfth, thirteenth, and fourteenth centuries, it was significant that Chang Chi had been the first to combine the use of drug therapy with the theory of systematic correspondence. In addition, Chang Chi, with his interest in the effects of cold on illness, was the first and virtually only author whose work was devoted exclusively to a specific etiology. All authors of Sung-Chin-Yüan medical texts adopted these elements, which had virtually lain dormant for some 1,000 years, as the point of departure for their own, further-reaching deliberations. Consequently, in almost all of their works, drug prescriptions and theoretical considerations are linked on the basis of systematic correspondence. At a later point I will discuss in detail the development of a pharmacology of systematic correspondence, which represents the true achievement of Sung-Chin-Yüan scholars. In addition, each of these authors concentrated on a specific etiology. Here, too, considerable advances beyond Chang Chi's original impulses were made. While Chang's particular interest had been in cold as merely one of many causes of illness, several of the Sung-Chin-Yüan scholars identified highly specific personal or non-personal factors—which is why I speak of reductionism—that they regarded as responsible for the vast majority of human illnesses. Each of these theoreticians, who were all practitioners as well, focused on a narrow etiological category, which then served as the basis for

diagnosis and treatment of individual suffering. This procedure stands in stark contrast to the contents of the Huang-ti nei-ching and, even more so, of the Nan-ching where, although we can find the indication that wind, for instance, is responsible for numerous afflictions, the emphasis nonetheless is on initial observation of the victim's condition, followed by an individual course of therapy that was not dependent on the cause of the condition.

7.2.1.2. The Cosmobiological Concepts Wu-yün liu-ch'i

The notions of a correspondence between cosmically determined seasonal cycles and phenomena in the existence of individual organisms, which Wang Ping had introduced to the Su-wen during the T'ang period, did not raise great interest until the Sung epoch, when such concepts were even adopted as an examination topic. Since such a significant part of the theoretical framework of Sung-Chin-Yüan medicine is unintelligible without an understanding of the five phases of circulation (wu-yün) and six climatic influences (liu-ch'i), it will be necessary to discuss briefly the basic outline of these concepts.

The five phases of circulation are five different time periods that together constitute a cycle. All are of equal duration, encompassing a total of one year. A distinction was drawn between "primary" phases and "guest" phases. The former are the phases that theoretically correspond exactly to the calendar, while the latter are the actual seasonally related phases, which are subject to certain fluctuations from year to year. Each of the five phases of circulation is associated with one of the Five Phases of change (wu-hsing). An older calendrical system was also incorporated, the so-called celestial stems (t'ien-kan), a system consisting of ten symbols, in which the odd-numbered symbols are associated with yang, while the even-numbered symbols are each associated with yin. Two symbols from the ten celestial stems, namely one "odd" yang and the following fifth—that is, even—yin, are associated with each of the five phases of circulation. The five phases of circulation ensure the orderly progression of seasons and formation of corresponding climatic conditions. In systematic correspondence the circulatory phase chia-chi (symbolized by the first and sixth celestial stems) corresponds to soil and stimulates the formation of moisture. The circulatory phase i-keng (symbolized by the second and seventh celestial stems) corresponds to metal and engenders dryness. The phase ping-hsin (symbolized by the third and eighth celestial stems) corresponds to water and produces cold. The phase ting-jen (symbolized by the fourth and ninth celestial stems) corresponds to wood and gives rise to wind. Finally, the phase mou-kuei (symbolized by the fifth and tenth celestial stems) corresponds to fire and brings forth heat. Since the cycle of five phases together encompasses a period of one year, each phase lasts one-fifth of a year, or a total of seventy-three days.

Irregularities can appear within the relationships between phases of circulation and climatic conditions: the influence of a phase, for example, can be only partly developed (pu-chi), producing an insufficient supply of the expected seasonal climatic circumstances. Moreover, each phase can also be excessively developed (t'ai-kuo), resulting in the exaggerated presence of normal climatic conditions.

In addition to the five phases of circulation, the year was divided into a cycle of six climatic influences (liu-ch'i), which were also associated with the yinyang duality and the Five Phases. In

order to achieve correspondence between the groups of six and five, one of the Five Phases or agents had to be further split; in this system, therefore, "fire" is replaced by the two phases "ruler-fire" (chün-huo) and "minister-fire" (hsiang-huo).

A second calendrical system, the twelve so-called terrestrial branches (ti-chih), was used to designate the six climatic influences. Each influence was associated with two symbols—the first and following sixth terrestrial branches.

The six climatic influences encompass the entire range of climatic conditions (ch'i) that affect man during the course of a year. Once again, a distinction was drawn between two constellations: namely, the constellation of "primary influences" (chu-ch'i), the unchangeable climatic influences that theoretically should occur during the yearly cycle, and the constellation of "guest influences" (k'e-ch'i), the actual weather conditions. Both constellations correspond to the progression of an entire year. Climatic influences of the first half of the year are associated with heaven and thus with yang; those of the second half are associated with earth and therefore with yin. Each half of the year is further separated into three climatic periods of sixty days each. This produces a total of six climatic periods, each of which is itself divided into four sections of fifteen days corresponding to specific weather conditions. Consequently, a year encompasses twenty-four different climatic periods.²⁰

The functions of the human organism, it was believed, are to a great extent determined by the influences that affect it during each season. Liu Wen-shu, who in 1099 published one of the best-known works on the theory of the five phases of circulation and six climatic influences, went so far as to claim that each season was dominated by certain climatic influences that inevitably caused certain illnesses, giving rise to the concept of "illness caused by seasonal influence" (shih-ch'i ping). Other authors, however, rejected or modified this extreme interpretation of wu-yün liu-ch'i theories. They argued that good health was completely possible if man was able, through appropriate conduct, to adapt himself and, should climatic irregularities occur, take appropriate therapeutic measures to rectify a condition of excess or deficiency of influences from the yinyang or Five Phases categories.

7.2.2. Individual Contributions to Contemporary Trends

The Sung-Chin-Yüan epoch provides an instructive illustration of two factors that together determine the nature of cognitive progress. These are, first, the effects of the general intellectual climate as determined by ideological and social structures on the great, overriding tendencies of the development of knowledge and, second, the intellectual achievements of certain individuals who are nonetheless able to shape the direction of science in a highly personal manner within the boundaries of these tendencies. To illustrate the spectrum of alternative approaches within this unifying conceptual framework, I will now turn to the views and works of four theoreticians of the Sung-Chin-Yüan period.

7.2.2.1. Liu Wan-su

Liu Wan-su (1110-1200), whose origins and life remain largely obscure, regarded the theory of the five phases and six climatic influences as the basis for all healing. In the introduction to one of his

works, the Su-wen hsüan-chi yüan-ping-shih (The Original Forms of Illness in the Obscurity of the Su-wen), he wrote:

If we consider medical practitioners, we find that [in the diagnosis and treatment of illnesses] they take into account only whether [the affliction] belongs to the yin or yang category or whether a symptom of deficiency or excess exists. The [sole correct] procedure, however, for achieving understanding about illnesses [is as follows]. Only when the influences that give rise to illness have been investigated as to the changes in the [normal course] of the five circulatory phases and six climatic influences, can the [nature of illness and its treatment] be perceived clearly.²¹

Liu Wan-su subscribed to the view that a normal progression of circulatory phases and climatic influences is possible without pathogenic consequences for man, criticizing, as he called it, the "mechanistic" approach of Liu Wen-chu. Liu Wan-su taught that only cosmic deviations from the normal progression of events or the failure of man to adjust to this progression cause illness. In this context he also observed that of the five phases of circulation, four were one-dimensional, while the fifth—associated with fire—was subdivided into ruler and minister, and thus constitutes a point of special emphasis. In addition, he determined that among the six climatic influences—wind, dryness, dampness, cold, summer heat, and fire—the first four each possessed independent and unmistakable attributes, while summer heat and fire ultimately formed an integral entity. These observations led Liu to the conclusion that fire and heat must have an extraordinary significance in the origin of illness. Analyzing the diseases in the Su-wen in this light, he discovered that in fact the overwhelming majority could be traced to these causes. Liu Wan-su therefore concentrated on afflictions due to the climatic influences and phases of fire and heat, thereby founding the "school of cooling" (han-liang p'ai) in Chinese medicine. His treatises frequently combined the use of drugs and acupuncture. A few of his prescriptions, as in the seventh chapter of his Huang-ti su-wen hsüan-ming lun fang (Prescriptions Compiled and Analyzed on the Basis of the Huang-ti su-wen), also advocate the use of Buddhist demonological incantations. The principles underlying his therapies were by no means limited to the relatively simple conceptualization of the hot-cold antithesis, which even today marks the medical thought and practice of numerous cultures, particularly those of Latin America. For Liu Wan-su, an excess of fire influence meant the simultaneous deficiency of water in the body and thus a pathological profusion of yang influences, which in turn corresponded to a lack of vital yin influences. It consequently was necessary to dissipate the former and replenish the latter, utilizing the appropriate therapeutic procedures for the affected palaces and depots as outlined in the Huang-ti nei-ching. Liu Wan-su achieved the replenishment of deficiencies primarily through the administration of drugs; in this connection he frequently cited the instructions of Chang Chi in the Shang-han lun. For the treatment of heat-related diarrhea, for example, Liu advised the taking of "cold" and bitter medicinal preparations, so as to reduce the excessive heat (by means of the "cold" influences of the drugs), alleviating the obvious lack of fluid in the kidney depot (through the corresponding bitter flavor).²² This type of approach necessitated an integration of medicinal drugs into the theoretical framework of systematic correspondence as it existed in the Nei-ching, a requirement first given a consistent expression in the work of Chang Yüan-su (ca. 1180).

7.2.2.2. Chang Ts'ung-cheng

Chang Ts'ung-cheng (1156-1228) is the second significant medical theoretician of the Sung-Chin-Yüan epoch. As with Liu Wan-su, the circumstances surrounding his life are largely unknown. Although the title of his principal work *Ju-men shih-ch'in* (How a Confucian Scholar Serves his Parents) indicates an intellectual link with Confucianism, it must be remembered that this book was written and published by a disciple and companion of Chang Ts'ung-cheng, possibly even after the latter's death, rendering Chang's influence on the choice of title doubtful. It appears certain that Chang Ts'ung-cheng was an itinerant doctor, for a number of case histories in the above-mentioned work begin with the phrase "When Tai-jen (i.e., Chang Ts'ung-cheng as narrated by his pupil) was passing through."

Like Liu Wan-su, Chang ascribed a decisive significance to the pathogenic potential of climatic influences, but his own deliberations led to markedly different conclusions. Chang stressed the distinction between those influences normally present in the body and those that must be considered pathogenic, which he therefore designated with the classical term *hsieh* ("evil") or *k'e-ch'i* ("guest") influences. Chang's approach diverged considerably from the belief of Liu Wan-su and other contemporary scholars in the organic homogeneity of influences inside and outside the body, a conception which defined illness solely as an imbalance in the distribution of these influences among the various depots and palaces. Chang Ts'ung-cheng, therefore, directed his therapeutic efforts not to the establishment of a state of equilibrium, but to the decisive expulsion of harmful influences. He identified wind, cold, summer heat, dampness, dryness, and fire as potentially harmful influences of heaven; fog, dew, rain, hail, ice, and mud as potentially malevolent influences of the earth; finally, sour, sweet, bitter, sharply seasoned/ spicy, and salty as possible harmful influences in food and drink. If someone has fallen ill, there is no other choice, according to Chang Ts'ung-cheng, but to eliminate the responsible foreign influences from the body immediately. For the appropriate therapy, he returned terminologically to the three techniques cited by Chang Chi in the *Shang-han lun*—emetics, sweating, and purgation, thereby incorporating a broad spectrum of therapeutic measures into a classic pattern. Induced salivation, sneezing, lacrimation, as well as all other techniques that eliminate pathogenic foreign influences through upper body orifices, were defined as "emetics." Moxibustion, vaporization, fumigation, lavation, hot compresses, mud packs, needles, physical exercise, and massage, as well as all other procedures that eliminate influences through the skin were designated "sudorifics." Induced labor, increased lactation, diuretics, the unblocking of obstructions, induced flatulation, and all other techniques that eliminate harmful influences through lower body orifices were called "purgatives." These three general therapeutic categories were further differentiated according to the location and type of illness. On the basis of these procedures, Chang Ts'ung-cheng is known as the founder of the "school of attack and purgation" (*kung hsia p'ai*); like Liu Wan-su, Chang, too, found disciples, but bitter opponents as well, who warned of the dangers of such one-sided therapy.²³ The appendix of this volume contains excerpts from four case histories in the *Ju-men shih-ch'in* that demonstrate the scope of application of Chang's three techniques for expelling evil influences from the organism. Whether the illnesses were those that modern Western medicine would term somatic or those whose treatment today might be a concern for psychologists,

Chang Ts'ung-cheng's conception of the nature of illness enabled in each case a successful use of emetics, sudorifics, or purgatives.

7.2.2.3. Ch 'en Yen

For Ch'en Yen (fl. 1161-1174), not even the exact dates of his life are known, although he must have been an important medical practitioner and author. He is known primarily for an often-reprinted handbook of etiology, which has survived under the title *San-yin chi i-ping cheng fang lun* (Prescriptions Elucidated on the Premise That All Pathological Symptoms Have Only Three Primary Causes). The *San-yin fang*, as the work is usually titled, contains both theoretical treatises on the etiology and diagnosis of numerous diseases and detailed instructions for the medicinal treatment of these conditions. Although the use of acupuncture is occasionally cited in the *San-yin fang*, it did not constitute a part of the specific therapeutic process. Ch'en Yen frequently referred to the *Huang-ti nei-ching* and adopted the conceptual framework of systematic correspondence in a consistent fashion for his own deliberations; but he failed to link the use of individual drugs in prescriptions directly with his theories, an impulse so characteristic of most other contemporary medical scholars. In the work of Chang Chi, so highly esteemed by Sung-Chin-Yüan authors, Ch'en Yen found another aspect he deemed worth reviving. In the *Chin-kuei yao-lüeh* (Remarkable Elements from the Golden Chest), dating from the Han period, Chang Chi had written the following:

Man is provided the five normal elements of all existence (*wu-ch'ang*); the influence of wind brings man life and growth. Thus the influence of wind can bring life and growth to the ten-thousand things, but it can also bring misfortune to all of them. In this way it resembles water, which both carries and sinks ships. When the original and true influences fill the depot, man enjoys peace and harmony. When he is attacked by foreign influences or evil winds, however, death frequently follows. The thousands of possible afflictions caused by heat are nothing more than [symptoms of] only three illnesses. These are: first, the assault through the transportation channels of evil [influences], which from there then penetrate the depots and palaces. This is an internal appearance [of illness]. Second, if the blood channels between the four limbs and nine body openings are restricted or completely obstructed, the skin is affected externally [by an evil influence]. Third, there are injuries caused by sexual intercourse, weapons, insects, and animals. If all illnesses are investigated in light of this [categorization], all causes are included.²⁴

The attempt by Chang Chi to subsume the great number of possible afflictions into only three categories remained as neglected in subsequent centuries as his initial efforts for a theoretically grounded application of drugs and his adoption of a specific etiology. When Ch'ao Yüan-fang (fl. 610), in the seventh century, compiled the first known Chinese work devoted especially to the etiology of illness, the *Chu-ping yüan hou lun* (On the Cause and Course of All Illnesses), he divided the nearly 2,000 syndromes that are described in detail and whose causes are investigated into groups, but there was no underlying, integral scheme. The fifty chapters devoted to illnesses are arranged in part according to principal cause (wind, cold, insects), in part according to where the illness first manifested itself (in the various depots or palaces, etc.), in part according to age and sex of the victim (children, women), but also in part according to known disorders (numerous forms of diarrhea, for instance). Ch'ao Yüan-fang ultimately assigned each individual ailment to a specific etiology, thus ignoring the example set by Chang Chi. The work of Ch'ao Yüan-fang has survived in its entirety; the Appendix 3 contains several translations from his commentaries.

Ch'en Yen was the first to pick up the suggestions of Chang Chi, distancing himself cautiously but explicitly from the methodology of Ch'ao Yüan-fang. In the process he progressed far beyond the rather simple initiatives of Chang Chi, developing a detailed system of assessing individual ailments in terms of "internal," "external," or "neither internal nor external" origin. As external harmful influences he defined, similar to the familiar climatic influences, the effects of cold, summer heat, dryness, dampness, wind, and humidity. Internally, he claimed, illnesses can be caused by certain emotional states such as joy, anger, grief, and brooding. Finally, in the category "neither/ nor" he included overwork, idleness, and various violent assaults, such as those from animals, other men, poisons, or accidents. The value or even advantage, however, that knowledge of the category of the cause of an illness provides for its treatment is not apparent in Ch'en Yen's work. Although the text repeatedly states that each treatment must be preceded by determination of the category of origin, there is no indication of the actual or theoretical connection between the author's concrete suggestions for the treatment of a specific illness, on the one hand, and the recognition that the cause is "internal," "external," or "neither/ nor," on the other hand.

7.2.2.4. Li Kao

Li Kao (1180-1251) is one of the few medical practitioners of the Sung-Chin-Yüan epoch whose biography can be found in official histories. The annals of the Yüan dynasty indicate that Li Kao came from a family that had enjoyed prosperity for generations; in accordance with the Confucian ideal, he had not learned medicine to earn money or to treat his fellow men, but rather to assist his ill mother.²⁵ Since it was not particularly flattering for a Confucian scholar to be called a "physician," outsiders, according to the annals, did not dare refer to him as one or ask for his assistance. Li's offers to help in cases where the therapy of others had proven ineffective were spontaneous and not professionally motivated. The distinction between this attitude toward the practice of healing and the apparently financially motivated medical services of Chang Ts'ung-cheng is clear and explains why Li enjoyed official recognition while Chang did not.²⁶

The Huang-ti nei-ching and Shang-han lun also constituted the basis for Li Kao's deliberations. His contribution was two-fold. First, he carried on the efforts of his teacher Chang Yüan-su to establish a concrete pharmacology of systematic correspondence. Li Kao's views on the theorization of drug therapy are contained in two medical texts attributed to him, fragments of which have survived. These are the Chen-chu nang pu-i yao-hsing fu (Correction of Deficiencies in the Pearl Purse and Poem of Drug Qualities), whose title is a conscious reference to the Chen-chu nang (Pearl Purse) of Chang Yüan-su, and the Yung-yao fa hsiang (Regularities and Cosmological Correspondences in the Use of Drugs).²⁷

The second contribution of Li Kao to contemporary medical thought was the development of a specific etiology, which made him the founder of his own school. These views are recorded in his best-known work, the P'i wei lun (On the Spleen and Stomach). It should be noted that according to contemporary thought, the spleen was ascribed the digestive function in the organism.

Li Kao's interest appears to have been provoked by certain statements in the Huang-ti nei-ching that stress the central importance of the stomach and digestion for human physiology. He concluded:

"When the digestive system and stomach in the body sustain damage, all kinds of illnesses can occur!" Four postulates were offered as proof of this conclusion.

1. Human life is made possible by the yang influence of heaven absorbed by the body. These yang influences must accumulate in the stomach and digestive region.
2. The development of man is made possible by the yin influences of the earth that flow to the body. These yin influences must undergo a transformation in the stomach and digestive region that renders them useful to the organism.
3. For nourishment the human body absorbs yang influences, which collect in the stomach and digestive region.
4. Through yin finest matter (ching) the human body achieves longevity. Yin finest matter has its origin in the stomach and digestive region, where it is formed from influences absorbed from external sources.

Should illness occur in the stomach or digestive area, their ability to assimilate, accumulate, transform, and distribute is impaired, and the preservation of a normal state in the body is threatened. In this regard, Li Kao stressed three factors that can lead to such developments.

1. Irregular consumption of food and drink damages the stomach first. If the stomach is affected, it is unable to supply the digestive system with the requisite substances. Finest influences and finest matter, which arise from water and grain in the organism, no longer flow through the body, resulting in depletions.
2. Excessive exhaustion of the body prevents the yang influences, normally radiated by the digestive region, from reaching the four extremities. The results are drowsiness and the need to sleep.
3. Excessive emotions such as joy, anger, sorrow, and fear cause the fire associated with the heart depot to flare up. In accordance with the doctrine of self-genesis among the Five Phases, fire is succeeded by soil, which is associated with the stomach and digestive region. Ebullition of the fire phase thus eventually spreads to the soil phase, producing harmful effects here, too.²⁸

In line with this approach, Li Kao emphasized the necessity for measures that replenish (pu) the stomach and digestive area of the affected organism with influences, enabling both organs to resume their functions. Li Kao's doctrine was therefore designated pu-t'u p'ai ("the school of replenishing the soil phase") and also pu p'i wei p'ai ("the school of replenishing spleen and stomach").

7.2.3. The Pharmacology of Systematic Correspondence

Pharmacology is defined here as the science of drug properties and reactions in the body. The conceptualization of a pharmacology therefore requires an understanding of the processes that occur in the organism between the administration of a substance and the manifestation of its effects. As long as Chinese medical and pharmaceutical literature contained only very pragmatic descriptions of individual drugs, with no consideration of why such substances exhibit their particular properties, we cannot speak of the existence of a pharmacology.

The Huang-ti nei-ching mentions about a dozen drug names; occasionally, the term "drug" (yao) is employed in an abstract sense. Needle treatments were the sole form of therapy in the Huang-ti nei-ching; their results were interpreted on the basis of theories of systematic correspondence. Future

philological studies face the difficult task of ascertaining to what extent the few occurrences of the concept of "drugs" and drug names were added to the work only in the second half of the first millennium. A textual comparison of the T'ai-su and Su-wen versions of the Huang-ti nei-ching suggests that the potential for a development of a pharmacology of systematic correspondence was strengthened in the latter.

The T'ai-su, that is, the version closest to the Han nucleus of the Huang-ti nei-ching scriptures,²⁹ presents, in the chapter "T'iao-shih" (Regulating One's Diet),³⁰ a first categorization of primary substance qualities (i.e., "yellow," "green," "black," "red," and "white" as colors, and "acid," "sweet," "sour," "bitter," and "salty" as flavors) along the lines of the Five Phases doctrine. From these primary qualities, secondary qualities are derived to describe the properties that natural substances can develop in the body, such as "hardening," "collecting," "dissipating," "calming," and "moistening." Through an association of these primary and secondary substance qualities with the five kinds of grains, fruit, domestic animals, and vegetables on the one hand, and with the five bodily depots on the other hand, a conceptual tool was provided to, first, regulate the daily intake of the respective qualities in accordance with a proper balance of the Five Phases, and, second, to add or decrease any of those qualities in accordance with extraordinary conditions, such as illness. Thus, the T'ai-su introduced therapeutic dietetics of systematic correspondence.

These tenets reappear in the Su-wen, that is, the version of the Huang-ti nei-ching that was thoroughly revised and rearranged by Wang Ping during the T'ang period, and then once more under the Sung. Here, however, the dietetic component is rather insignificant; instead one finds an abstract presentation of extended primary and secondary qualities with an emphasis on their usage in the cure of illnesses (see below, pp. 181-186). To the former were added the thermo-influences (ch'i), including "warm," "hot," "cool," and "cold"; the latter were amended by properties such as "penetrating" and "ascending" or "sinking." Furthermore, all of these qualities were now also linked with the two lines of association of the yinyang doctrine.

Thus at the latest by the seventh century (compiled in the T'ai-su) or by the eighth century (in Wang Ping's Su-wen), the essential prerequisites for the creation of a pharmacology of systematic correspondence were already present in the two versions of the textus receptus of the Huang-ti nei-ching. Although concrete drug names were not provided, their primary and secondary qualities were interpreted logically—from the taking of a substance to the manifestation of its effects—within the theoretical framework of systematic correspondence. Therefore, it is possible to speak in this context of an abstract pharmacology, at least in the Su-wen version of the Huangti nei-ching. The development of a concrete pharmacology of systematic correspondence was undertaken during the Sung-Chin-Yüan period;³¹ it signified the attempt to analyze the primary qualities of each medicinally used drug and, on the basis of this information, to ascertain its secondary qualities, so that all dimensions of healing—from symptom and diagnosis to appropriate remedy and its therapeutic effects—could be incorporated within one inclusive theoretical system. In other words, pharmaceutical (pen-ts'ao) literature, prior to the Sung-Chin-Yüan epoch, contained the information that a certain drug x possessed the primary qualities y (thermo-influence) and z (flavor) and that the

same drug could alleviate the symptoms a, b, c. There were no indications, however, of a causal connection between y and z, on the one hand, and the effects on a, b, and c, on the other hand. But the Huang-ti nei-ching su-wen contained the information that the primary qualities y and z developed the specific secondary qualities p and q in the body and, consequently, could influence the symptoms a, b, and c. The concrete pharmacology of the Sung-Chin-Yüan era brought these scattered and incomplete efforts together, permitting the argument that a certain drug x, on the basis of its primary qualities y and z, developed the secondary qualities p and q in the body, and therefore could influence the symptoms a, b, and c.³²

To erect such a system that integrated medical theory and pharmaceutical practice, it was first necessary to establish the exact primary qualities of each individual drug. In addition to the already indicated variables of thermo-influence, color, and flavor, other such empirically determinable qualities as form, odor, and weight were taken into consideration. Second, in order to incorporate each primary quality into the complex system of yinyang and the Five Phases, detailed information regarding both the manner and the location of its effects had to be provided, as required by the physiological insights and diagnostic possibilities recorded in the Huang-ti nei-ching and subsequent theoretical texts.

The second of these conditions was already at least partially fulfilled in the Huang-ti nei-ching: Sung-Chin-Yüan authors refined and completed this impulse. The drug work T'ang-yeh pen-ts'ao (Materia Medica of Boiled Potions) by Wang Hao-ku (fl. 1246-1248) represents the zenith of these efforts. In his work, Wang Hao-ku combined the central concepts of his teacher Li Kao, and Li Kao's teacher Chang Yüan-su, concerning pharmacology with his own deliberations, citing, in addition, other contemporary scholars, such as Ch'eng Wu-i and K'ou Tsung-shih (fl. 1116), who had studied such problems. The following sections illustrate the scope and complexity of the conceptual edifice created by these theoreticians, to the extent required for understanding both the difficulties raised by a desire to combine theory and practice in drug therapy and the solutions that were eventually achieved.³³

7.2.3.1. The Fourfold Categorization of Drug Qualities

In agreement with the Huang-ti nei-ching su-wen, Sung-Chin-Yüan scholars assumed that the primary quality flavor (wei) was associated with yin and the primary quality thermo-influence (ch'i) with yang. Following the cyclical transformational character of the yinyang concept, whereby a continuous transition of mature yin (yin in yin) to immature yang (yang in yin) and then to mature yang (yang in yang) and finally to immature yin (yin in yang) occurs before the cycle begins anew, the primary qualities of drugs were now categorized in a four-part scheme. "Strongly developed" flavors (sour, bitter, salty) were identified by Sung-Chin-Yüan scholars as belonging to the yin-in-yin category. "Weakly developed" flavors (acrid, sweet, neutral) were recognized as belonging to the yang-in-yin category. Similarly, the "strong" thermo-influences (warm, hot, balanced) were assigned to the yang-in-yang category, and "weak" thermo-influences to the yin-in-yang category.

An additional possibility of characterizing qualitative distinctions among primary properties at a theoretical level was created by combining flavors and thermo-influence from the four subcategories

of the yinyang order. Thus, for instance, a "strong" flavor could be expressed by the combination cold-sour, since cold and sour were both associated with the yin phase of their subcategory. A "strongly developed" thermo-influence could be indicated by the combination warm-sweet, since both warm and sweet belonged to the yang phases of their subcategories.

The secondary qualities developed by drugs in the body were also brought into harmony with this system: the "purgative" (hsieh) secondary quality was assigned to the yin-in-yin category, the "penetrating" (t'ung) secondary quality, for unblocking obstructions, to the yang-in-yin category, the "heating" (fa-je) secondary quality to the yang-in-yang, and, finally, the "dissipating" (fa-hsieh) secondary quality was assigned to the yin-in-yang category. The integration of the empirical dimensions of primary and secondary qualities with the theoretical concepts of yinyang are summarized in the following table:

TABLE 1.
THE FOURFOLD CATEGORIZATION OF DRUG QUALITIES

Theoretical dimensions	yin		yang	
Empirical dimensions	Flavor (<i>wei</i>)		Thermo-influence (<i>ch'i</i>)	
Phases of theoretical dimensions	yin-in-yin (mature yin)	yang-in-yin (immat. yin)	yang-in-yang (mature yang)	yin-in-yang (immat. yang)
Phases of empirical dimensions	strongly developed flavor	weakly developed flavor	strongly developed thermo-influence	weakly developed thermo-influence
Primary qualities of drugs (1. Definition)	sour bitter salty	spicy sweet neutral	warm hot balanced	cold cool
Primary qualities of drugs (2. Definition)	cold-sour cold-bitter cold-salty	balanced-sour balanced-bitter balanced-salty	warm-spicy warm-sweet hot-spicy hot-sweet	cold-spicy cold-sweet cold-neutral cool-spicy cool-sweet cool-neutral
Secondary qualities of drugs	purgative (<i>hsieh</i>)	penetrating (<i>t'ung</i>)	heating (<i>fa-je</i>)	dissipating (<i>fa-hsieh</i>)

7.2.3.2. The Six-fold Categorization of Drug Qualities

With the aid of the four-fold categorization, how drugs function in the organism could be explained and predicted. An understanding of these functions was, however, not nearly exhausted by the four secondary qualities outlined above. A much more important function ascribed to drugs was supplying

individual palaces and depots, in case of depletion, with the necessary influences or, when repletion was present, to dissipate the influences in question. On the basis of these preliminary concepts, the development of a pharmacology required the demonstration of theoretical connections between drugs, on the one hand, and the location of their effects and the conduits leading to these locations, on the other hand. To accomplish this, Sun-Chin-Yüan scholars incorporated the drugs into a six-part categorization of yinyang phases that had already been utilized in the Huang-ti nei-ching su-wen to indicate correspondences between the conduits and the depots and palaces. To the older notion that conduits in the body could conduct stimuli triggered by needles, heat, or even pressure, theoreticians of the Sung-Chin-Yüan period added the idea that drug properties could also be transported over the same channels. Thermo-influence and flavor were, in the final analysis, nothing more than yin and yang influences, which could be supplied to the body as needed. In his treatise *Chen-chu nang*, Chang Yüan-su therefore included in the description of each individual drug, following the indication of primary qualities, information he considered essential—namely, which conduits the substance could penetrate. During the Sung-Chin-Yüan period, this concept was refined to include the idea of "guiding drugs," drugs that exhibited a particular affinity for certain channels and could therefore lead other drugs directly to the desired location. In addition, scholars recognized that the affinity of drugs for specific conduits, as determined by the primary qualities, could be modified through pharmaceutical or technological means. It was known, for example, that raw drugs worked primarily in the upper half of the body, while prepared drugs acted in the lower half. The yang influence of a drug, and thus its efficacy in yang-associated body regions, could be controlled by treating the substances with wine, since wine itself was defined as a yang substance. The specific type of wine treatment also permitted subtle distinctions. Wang Hao-ku, for instance, commented:

If the illness is located in the finger tips, in the forehead, or in the skin, the [drugs] *huang-ch'i*, *huang-lien*, *huang-po*, and *chih-mu* must be boiled with wine. In this way, the ability of wine to ascend in the body can be utilized. [If the illness is located] below the throat and above the navel, [one need only] rinse [the drugs] with wine.³⁴

Numerous additional pharmaceutical-technological measures enabled a very precise control of the path taken by drugs and the location of the effects. The most important paths were the twelve major conduits; the numerous other network branches and secondary conduits can only be touched upon here. Six of the primary conduits were associated with yin and six with yang. Three of the yin conduits ran from the chest to a hand and three from a foot to the chest, and were therefore termed hand or foot conduits. Similarly, three of the yang conduits ran from one hand to the heart or from the head to a foot, and were also termed hand or foot conduits. Within the yin category, one hand and one foot conduit, respectively, was assigned to one of three qualitative phases—great yin (*t'ai-yin*), minor-yin (*shao-yin*), and ceasing yin (*ch'üeh-yin*), while within the yang category, one hand and one foot conduit, respectively, belonged to one of three phases—great yang (*t'ai-yang*), yang-brilliance (*yang-ming*), and minor yang (*shao-yang*). These relationships are summarized in the following table, which also includes information about associated earth branches—indicating connections with cosmic-seasonal tendencies—and the corresponding times of day, enabling the

determination not only of the path to be taken by a drug and the desired location, but the desired time of action as well.

TABLE 2.
THE SIXFOLD CATEGORIZATION OF COURSE, LOCATION, AND TIME OF EFFECT

Yin				Yang			
Depot	Conduit	Earth branch	Time of day	Palace	Conduit	Earth branch	Time of day
lung	hand great-yin	yin	3–5	large intestine	hand yang-brilliance	mao	5–7
spleen	foot great-yin	ssu	9–11	stomach	foot yang-brilliance	ch'en	7–9
heart-enclosing network	hand ceasing yin	hsü	19–21	triple burner	hand minor-yang	hai	21–23
liver	foot ceasing yin	ch'ou	1–3	gall	foot minor-yang	tzu	23–1
heart	hand minor-yin	wu	11–13	small intestine	hand great-yang	wei	13–15
kidneys	foot great-yin	yu	17–19	bladder	foot great-yang	shen	15–17

Although Chang Yüan-su had included in individual drug descriptions in the *Chen-chu nang* the conduits in which the substance developed its efficacy, and Wang Hao-ku, in the *T'ang-yeh pen-ts'ao*, had been the first to arrange drugs into a twelve-part table according to the conduits, in both cases the authors did not indicate which criteria had been used in their classification. A study of individual substances reveals only that drugs assigned to the yin phase in the four-fold categorization are associated here in the six-fold categorization with a yang conduit and vice versa. The reader does not learn why a certain yin drug, for example, is assigned to a yang-brilliance conduit and not to a major-yang conduit. Unlike the four-fold categorization, there is no direct classification of primary drug qualities in accordance with the six-part division. It seems likely that conclusions about the effects of substances within the organism were derived in reverse from the observed reactions.

7.2.3.3. The Five-fold Categorization of Drug Qualities

A third system for the classification of primary and secondary drug qualities which Sung-Chin-Yüan scholars developed on the basis of the *Huang-ti nei-ching su-wen* consisted of arranging the primary properties first in accordance with the five categories of the Five Phases concept. Since these Five Phases were also correlated with the depots and palaces, as well as through the celestial stems with the five circulatory phases and six climatic influences, the result was an additional method for

differentiating the properties of medicinal substances according to location and time. As the following table indicates, a correlation between the four-fold yinyang division and the Five Phases was established, ultimately producing an intricate, extremely complex system of correspondences.

TABLE 3.
THE FIVEFOLD CATEGORIZATION OF DRUG QUALITIES

Phases	wood	fire	soil	metal	water
Depots	liver	heart	spleen	lung	kidneys
Palaces	gall	sm. intestine triple burner	stomach	large intestine	bladder
Flavor	salty	sour	sweet	bitter	spicy
Thermo-infl.	warm	hot	balanced	cool	cold
Celestial stem	<i>ting-jen</i>	<i>mou-kuei</i>	<i>chia-chi</i>	<i>i-keng</i>	<i>ping-hsin</i>
Yinyang categories	yang-in-yin	yang-in-yang	—	yin-in-yang	yin-in-yin

7.2.3.4. The Determination of Primary Qualities

To provide the pharmacological system as described thus far with a concrete significance, it was necessary to fulfill the first condition cited above, namely, to investigate in detail the primary qualities of each drug, so as to establish the connection between a substance and its actual effects, on the one hand, and the pharmacological-theoretical construct, on the other hand. The primary qualities of drugs, it must be stressed, constituted the critical connecting link.

Sung-Chin-Yüan scholars already had access to information on the flavor, thermo-influence, color, and so forth of individual drugs in the older pharmaceutical literature. Such information was, however, incomplete and undifferentiated, and researchers sought to verify their own deliberations by comparing the ideal results, that is, the effects to be expected on the basis of a drug's primary qualities within the theoretical system, with the actual results reported by earlier authors. In addition, they contributed missing information on the primary qualities and had to decide how the flavor and thermo-influence of substances could be determined. Both tasks presented the scholars with difficult problems. There were no objective criteria by which primary qualities, so essential for the pharmacological determination of drugs, could be rendered demonstrable for everyone. Since only a few of the drugs possessed a distinct flavor, to say nothing of the even more formidable task of defining thermo-influence, scholars naturally disagreed. Chang Yüan-su, for example, concluded that the thermo-influence of croton seeds was weak-hot and the flavor weak-bitter. Since the drug was also heavy and descended in the body, he assigned it to the yin category. His pupil Li Kao, in contrast, classified croton seeds as a yang substance, since he determined that it possessed a hot thermo-influence and acrid flavor and, moreover, remained suspended in the body rather than

descending. Such a variance in classification, of course, led the authors to different conclusions concerning location, course, and time of a drug's action.

In some cases, it could be shown that the theoretically expected results did not agree with the empirically observed effects of drugs. If so, it was possible to eliminate the contradiction through the notion that each yin phase already contained a nascent yang phase (yang-in-yin) and vice versa. Such an approach, however, simultaneously removed from the system any force of expression and definition. Characteristic of this tendency is a passage from the T'ang-yeh pen-ts'ao by Wang Hao-ku:

[The drug] fu-ling has a neutral flavor and corresponds to the yang of heaven. [Since it belongs to the] yang [category], it should ascend in the body. But why does [the drug] nonetheless function as a diuretic, thus dissipating through the lower part of the body? In the scripture it is written: "That which has a weak flavor belongs to the category yang in yin." For this reason fu-ling is diuretic, dissipating through the lower [parts of the] body.³⁵

A second method for eliminating such contradictions was utilized primarily by Chu Chen-heng (1281-1358), the last original thinker of this era, and involved the recognition that each individual drug had at the same time several primary qualities. By arguing that a single substance was simultaneously acrid, sweet, and sour, each effect could be easily explained by means of the theoretical associations of those qualities. It appears that in all these uncertain cases, the theoretical primary qualities were deduced in reverse from the observed actions of the drugs.

The Sung-Chin-Yüan authors appear to have recognized fully the difficulties inherent in their efforts. Their works are marked by detailed annotations that attempt to answer all questions and remove all contradictions. Nonetheless, it must be concluded that they were unable to create a concrete pharmacology that represented anything more than an interpretation of known drug effects derived after the fact on the basis of a universally accepted conceptual framework. It was impossible to take an unknown substance, objectively determine its primary qualities, and, based on this information, deduce the secondary qualities, that is, the expected effects, the path, and the location with such certainty that the subsequently observed reality corresponded to expectations with no significant contradiction. Although practitioners were thus provided with a means of explaining and possibly understanding the use of drugs and effects with old concepts from the Huang-ti nei-ching, a more important requirement for a concrete pharmacology went unfulfilled. The practitioner could not, having diagnosed that a patient suffered from repletion or depletion in a depot or palace, and after having qualitatively differentiated the yinyang character of the ailment, as well as having defined the required location and course of action, now consult drug literature for a substance possessing the appropriate primary qualities and initiate therapy on that basis. It is therefore not surprising that drug works of the Sung-Chin-Yüan era, in addition to numerous theoretical explanations, also contained a section labeled simply "Treatment of Symptoms." Here, without any pharmacological embellishment, the reader was advised to use the drug x for headache and, for some other illness, the drug y.

If this discussion of these efforts and their results has a negative tone—since it appears that Sung-Chin-Yüan scholars ultimately failed to develop a concrete pharmacology—we should nevertheless ask ourselves if such a critical assessment is perhaps not historically incorrect, since it is based on our own criteria for a concrete pharmacology. We do not know whether it was even the

intention of Sung-Chin-Yüan researchers to provide practitioners with just such a tool. Perhaps they desired only to integrate existing pragmatic pharmaceutical knowledge into classical theories of systematic correspondence without fulfilling our own notions of the practical implications of a pharmacology. As long as we lack any explicit statements from any of the theoreticians involved, we must restrict ourselves to a presentation of the events themselves and judge their success, if at all, only with great reservation.

Unschuld's Footnotes (from Unschuld, 1985, pp. 377-8).

1. Ch'en 1964, pp. 204-206.
2. Franke and Trauzettel 1968, p. 152.
3. Eichhorn 1973, p. 176.
4. Ibid., p. 199.
5. Cf. *Medicine in China: A History of Pharmaceutics*, pp. 230-232.
6. Franke and Trauzettel 1968, p. 185.
7. Porkert 1974, p. 59.
8. Ibid.
9. Franke and Trauzettel 1968, p. 165.
10. Ibid., pp. 193-195.
11. Ibid., p. 200.
12. Needham 1970, pp. 309-315.
13. Ch'en 1964, p. 400.
14. Needham 1956, p. 452.
15. Ibid., pp. 444, 471.
16. Ch'en 1964, p. 395.
17. Ibid.
18. Needham 1956, p. 453.
19. Cf. *Medicine in China: A History of Pharmaceutics*, pp. 30-43 and 72-82.
20. U. Unschuld 1972, pp. 88-92.
21. Taki Mototane 1956, p. 830.
22. Peking Academy of Chinese Medicine 1968a, pp. 56-58.
23. Ibid., pp. 58-59.
24. Chin-kuei yao-lüeh, 1966, chap. 1, p. 1b.
25. Cf. *Medicine in China: A History of Pharmaceutics*, pp. 104-106.
26. P. Unschuld 1978a.
27. Cf. *Medicine in China: A History of Pharmaceutics*, pp. 104-108.
28. Peking Academy of Chinese Medicine 1968a, pp. 59ff.; P'i-wei lun, 1975.
29. Yamada Keiji 1979, pp. 68-69; P. Unschuld 1982b, p. 93.
30. Huang-ti nei-ching t'ai-su, 1981, pp. 14-20.
31. At that time the T'ai-su version of the Huang-ti nei-ching must have been regarded as completely obsolete in comparison with the Su-wen; not surprisingly it was lost in China after the Sung and was

not mentioned again in bibliographies. An almost complete manuscript of the T'ai-su was discovered in a Japanese library earlier this century. This manuscript appears to be a copy of a Chinese original from the ninth century. Huang-ti nei-ching t'ai-su, 1981, preface pp. 1-3.

32. U. Unschuld 1977, pp. 228-229.

33. The following data are based on U. Unschuld 1977.

34. T'ang-yeh pen-ts'ao, 1956, p. 14.

35. Ibid., p. 6.