



# Evolution of the Xulao (Consumptive Disease) Diagnostic–Therapeutic System in the Tang—Song Dynasties and Its Impact on the Development of Chinese Materia Medica

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**Abstract:** Xulao (consumptive disease) constitutes a major category among the internal damage and miscellaneous disorders in Chinese medicine. The Tang and Song dynasties witnessed an increasing refinement of medical and pharmaceutical theories, together with a vibrant expansion of medicinal practice, which fostered a genuinely comprehensive deepening of the understanding of xulao. This paper examines how the evolving diagnostic and therapeutic system for xulao during the Tang–Song period shaped the development of its associated materia medica. It argues that a core framework of pattern differentiation and treatment for this disease was successfully constructed in that era, essentially completing the crucial leap of its materia medica foundations from empirical accumulation to theoretical systematization. This achievement exerted a profound and enduring influence on the later diagnosis, treatment, and pharmaceutical development of xulao.

**Keywords:** Tang and Song dynasties; Consumptive disease (xulao); Materia medica; Evolution of therapeutic effects

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## 1. Evolution of understanding of consumption disease

Consumption disease falls under the category of internal injuries and miscellaneous diseases in traditional Chinese medicine (TCM). As a chronic debilitating condition, it leads to a series of syndromes characterized by dysfunction of the Zang-fu organs and deficiencies in Qi, blood, Yin, and Yang, which form the fundamental pathological mechanisms. The understanding of consumption disease in TCM has evolved over time. As early as the pre-Qin and Western Han Dynasties, rudimentary concepts of consumption disease emerged, scattered among descriptions of symptoms such as weakness, debility, and fatigue<sup>[1]</sup>. “Synopsis of Prescriptions of the Golden Chamber” first dedicated a specific chapter to the pulse, symptoms, and treatment

of blood stasis and consumption disease, systematically discussing consumption disease as an independent condition. This marked the initial establishment of a theoretical framework. Zhang Zhongjing believed that the causes of the disease were often rooted in the loss of essence through undigested food, hemorrhage, and seminal emission, leading to depletion of essence and blood, as well as deficiency in both Yin and Yang, resulting in symptoms such as yin deficiency with inadequate nourishment and Yang deficiency with inadequate warmth<sup>[2]</sup>. The prescriptions recorded in this chapter emphasized using sweet and warm herbs to support Yang and strengthen the middle Qi, such as Xiaojianzhong Decoction and HuangQi Jianzhong Decoction. However, the treatment approach already contained elements of syndrome differentiation based on the different attributes of Yin-Yang deficiency and excess, laying the foundation for the differentiation and treatment of consumption disease in later generations<sup>[3]</sup>.

During the Sui and Tang Dynasties, China experienced unprecedented territorial expansion, and through the Silk Road, exchanges flourished among various countries and tribal groups. The Tang emperor was revered as the universal sovereign (Tian Kehan). During this period, different medical theories inevitably collided and integrated, leading to enriched exchanges and inheritance among TCM schools. The systematization of medical theory and unprecedented enrichment of clinical practice resulted in more comprehensive and detailed differentiation and treatment of consumption disease. Chao Yuanfang discussed the etiology, pathogenesis, and symptoms of various diseases, subdividing consumption disease into “five types of fatigue, six extremes, and seven injuries”, deepening TCM’s understanding of etiology and the patterns of disease transmission and transformation<sup>[4]</sup>. Meanwhile, “Essential Secrets from the Outer Terrace” included a large number of prescriptions for treating consumption disease, indicating that Tang Dynasty physicians had accumulated extensive diagnostic and therapeutic experience. During this period, physicians generally emphasized Zang-fu syndrome differentiation, markedly different from Zhang Zhongjing’s six-meridian syndrome differentiation in the Han Dynasty<sup>[5]</sup>. Sun Simiao, who only inherited Zhang Zhongjing’s “Treatise on Febrile and Miscellaneous Diseases” in his later years, lamented that “many physicians in the Jiangnan region kept Zhang Zhongjing’s key prescriptions secret and did not pass them on, yet they proved highly effective when used”. Tang Dynasty physicians, when treating consumption disease, placed particular emphasis on nourishing the kidneys to replenish essence and blood, while also considering multiple organs such as the lungs, liver, spleen, and stomach, flexibly applying various methods such as clearing heat, nourishing Yin, and calming the mind.

The Song Dynasty was a crucial period for the inheritance and innovation of consumption disease theory, as well as a stage of vigorous clinical practice. Official medical compilations of the Song Dynasty, such as “Formulas from the Bureau of Peaceful Benevolent Dispensary” and “Tai Ping Imperial Grace Formulary”, not only included a large number of prescriptions for consumption disease but also refined the classification of the disease into categories such as “wind fatigue”, “cold fatigue”, “heat fatigue”, and “acute fatigue”. The diagnosis and treatment during this period had distinct characteristics of the era, with recorded symptoms of consumption disease widely involving the chest, abdomen, diet, defecation, and systemic manifestations. Treatment not only continued the methods of tonification and longevity extension, as well as pungent dispersion and dredging of meridians from the Han and Tang Dynasties, but also showed a greater emphasis on analyzing the patient’s constitution and the presence or absence of exogenous pathogens in medication selection<sup>[6]</sup>. Sweet and warm, as well as pungent and warm herbs such as cassia twig, poria, ginseng, astragalus, and aconite were frequently chosen, aiming to replenish Qi and nourish blood, tonify the

kidneys and replenish essence, while also considering dispelling wind and releasing the exterior, promoting Qi circulation and dredging meridians. This reflected the Song Dynasty's academic thought of supporting the upright and eliminating pathogens, as well as treating both the exterior and interior simultaneously in the treatment of consumption disease. In addition, the economic and cultural prosperity of the Song Dynasty promoted a trend among literati to pursue medicine, leading to the inclusion of a wealth of medical cases and effective prescriptions in numerous notebooks and formula books, facilitating the accumulation and dissemination of diagnostic and therapeutic experience for consumption disease<sup>[7]</sup>. The flourishing pharmaceutical industry also provided a richer resource of medicinal materials and more standardized guarantees for drug circulation in treatment<sup>[8]</sup>.

In modern times, the treatment of consumption disease is often classified into syndrome types such as spleen deficiency with phlegm-dampness, deficiency of Qi and blood, deficiency of both Qi and Yin, deficiency of both spleen and kidney, and deficiency of both Yin and Yang<sup>[9-11]</sup>. Although tonic herbs, with an emphasis on Qi-tonifying herbs, still dominate medication use, there is a high emphasis on Zang-fu localization, with strengthening the spleen and tonifying the kidneys as the core<sup>[12]</sup>. The properties of the herbs are mainly warm and neutral, with sweet, bitter, and pungent flavors being common. The meridian tropisms are concentrated on the spleen, kidney, lung, and liver meridians. These patterns not only continue the thought of strengthening the middle Qi from "Synopsis of Prescriptions of the Golden Chamber" but also develop the academic lineage from the Tang and Song Dynasties that emphasized considering multiple organs such as the spleen and kidneys.

Overall, the concept of consumption disease has evolved from simple descriptions to a systematic theory, shifting from a single focus on tonification to syndrome differentiation and treatment, and from an emphasis on formulas and herbs to considering the transmission and transformation of pathogenesis. The Han and Tang Dynasties established the core framework of pathogenesis and treatment principles, while the Song Dynasty achieved crucial expansions in the refinement of syndrome differentiation and the comprehensiveness of treatment. Subsequent and even modern clinical practices have deepened and innovated upon this foundation. The evolution of consumption disease reflects the continuous progress in TCM's understanding of chronic debilitating diseases and provides a key theoretical basis for understanding the application context of herbal medicine for consumption-like conditions in the Tang and Song Dynasties.

## **2. Development of herbal medicine for consumption Disease in the Tang and Song dynasties**

### **2.1. Development of the theory on drug compatibility for consumption disease**

With the accumulation of clinical practice and deepened understanding of herbs in the Tang and Song Dynasties, as well as the continuous development of TCM theory, physicians of the time refined the general principle of "tonifying deficiency when there is deficiency" for treating consumption disease to the specific efficacy and compatibility patterns of individual herbs, gradually establishing a medical philosophical and logical system that transformed the abstract concept of tonifying deficiency into a concrete framework of herbal medicine.

The early theory of tonifying deficiency succinctly proposed the principle of "tonifying deficiency when there is deficiency" as a major treatment approach for the pathogenesis of deficiency in Qi, blood, Yin, and Yang. Correspondingly, in herbal medicine, it required that the efficacy of herbs must have clear operability.

Therefore, early classic works such as “Shennong’s Classic of Materia Medica” provided general descriptions of herb efficacy, using overarching terms such as “tonifying deficiency” and “tonifying the middle”, and classified herbs like ginseng, licorice, and rehmannia as top-grade tonic herbs based on their toxicity or lack thereof. The flavors of these herbs were mostly sweet and neutral or sweet and warm; a sweet flavor has the effects of tonification, harmonization, and alleviating urgency and is regarded as the core flavor for filling deficiencies. The warm property can stimulate Yang Qi and promote the production and transformation of Qi and blood, and the combination of the two constitutes the main body of the properties of tonic herbs <sup>[13]</sup>.

During the Tang and Song Dynasties, through repeated practice, physicians gradually deepened their understanding of consumption disease and further clarified the herbal characteristics for treating it. For example, in works such as “Supplement to ‘Shennong’s Classic of Materia Medica’” from the Tang Dynasty, descriptions like “a certain herb treats a certain Zang disease” began to appear. For instance, astragalus “tonifies lung Qi and strengthens the skin and hair”, ginseng “tonifies the five Zang organs and calms the spirit”, and angelica “tonifies the five Zang organs and generates muscle”. Herbs for treating consumption disease were mostly related to the spleen, lungs, and kidneys—the three Zang organs closely associated with congenital primordial Qi, acquired Qi, and the production and distribution of Qi and blood. For example, those emphasizing tonifying the spleen and replenishing Qi mostly chose sweet and warm herbs that enter the spleen meridian, while those nourishing the kidneys and replenishing essence mostly used sweet and moist herbs that enter the kidney meridian <sup>[14]</sup>. This refined selection based on Zang-fu theory marked the evolution of the application of tonic herbs from macroscopic tonification to precise regulation and treatment, reflecting the anchoring of theory to the specific properties of herbs and refinement to specific Zang-fu targets.

The accumulation of extensive clinical practice objectively promoted the systematization of the theory on drug compatibility. Physicians found that single tonification was difficult to cope with complex conditions accompanied by excess syndromes (such as Qi stagnation and damp turbidity), thus forming a compatibility logic centered on sweet and warm Qi-tonification, supplemented by pungent herbs to promote Qi circulation and bitter herbs to consolidate Yin. For example, in terms of strengthening the spleen and replenishing Qi, the compatibility of ginseng, *Atractylodes*, poria, and licorice in Sijunzi Decoction takes into account promoting Qi circulation while tonifying Qi; in terms of nourishing blood and regulating the nutritive aspect, the combination of *Angelica*, *Rehmannia*, white peony, and *Ligusticum* in Siwu Decoction considers promoting blood circulation while nourishing blood. The prototypes of these core combinations have been continuously verified and reinforced in later formula books, becoming classic compatibilities for treating consumption disease. It is precisely through the maturation and solidification of compatibility that the successful realization of the transition from tonic theory to clinical efficacy has been achieved.

## 2.2. Development of the theory on the nature, flavor, and meridian tropism of herbs for consumption disease

The construction of the theory on the nature, flavor, and meridian tropism of herbs has undergone profound theoretical reconstruction throughout history. Before the Sui and Tang Dynasties, continuous wars plagued the land until Emperor Taizong of the Tang Dynasty stabilized the country and strengthened its power. At this time, physicians generally inherited the five-flavor theory from “Huangdi’s Classic of Internal Medicine”, with relatively simplistic theoretical explanations. For example, “Newly Revised Materia Medica” focused on collecting and inheriting the experiences of previous generations in recording the nature and flavor of herbs, with the labeling of flavors dominated by basic flavors and taste-tested flavors <sup>[15]</sup>.

This characteristic was particularly evident within the framework for diagnosing and treating consumption disease. During the Tang Dynasty, herbal books did not have clear meridian tropisms, but the nature and flavor of herbs used for consumption disease directly corresponded to the specific therapeutic effects of formulas recorded in works such as “Thousand Golden Prescriptions” and “Essential Secrets from the Outer Terrace”.

The theory of meridian tropism was directly linked to the traditional efficacy and indicated target areas of herbs, carrying obvious empirical characteristics, reflecting that the understanding of the mechanism of action of herbs at that time still remained at the stage of intuitive correspondence with Zang-fu functions. In the second year of Jiayou of the Northern Song Dynasty, the government established the “Bureau for the Collation of Medical Books” and printed works such as Zhang Zhongjing’s “Treatise on Febrile Diseases” and “Synopsis of Prescriptions of the Golden Chamber”. At this time, the rise of Neo-Confucianism’s speculative thinking and the widespread participation of literati and scholars in medical writings significantly promoted the development of the academic paradigm of herbal medicine<sup>[16]</sup>. Physicians were no longer satisfied with merely listing the efficacy of herbs but devoted themselves to exploring the mechanism of herb properties, more deeply and systematically integrating the theories of Yin-Yang, five elements, Zang-fu organs, and meridians into the interpretation of the nature, flavor, and meridian tropism of herbs. They subdivided consumption disease into different stages and types, such as five types of fatigue, six extremes, and seven injuries, and attempted to correspond each type of deficiency syndrome with specific patterns of imbalance in Zang-fu organs, meridians, Qi, blood, Yin, and Yang, resulting in a significant increase in the proportion of theoretical flavors<sup>[17]</sup>.

This reconstruction made the descriptions of the nature and flavor of herbs for consumption disease go beyond mere taste or empirical efficacy, endowing them with richer pathological correspondences and therapeutic associations. For example, for conditions such as essence exhaustion syndrome and Yin deficiency syndrome in consumption disease, herbal books of the Song Dynasty emphasized the use of herbs with sweet and cold or salty and cold flavors that enter the Shaoyin kidney meridian and the Foot Jueyin liver meridian, which have the properties of nourishing kidney Yin and liver Yin. For patients with consumption disease who had external wind pathogens attacking or incomplete resolution of exterior pathogens, emphasis was placed on selecting herbs that not only had tonic effects but also had exterior-releasing effects, entering the lung and bladder meridians.

This shift from simply treating symptoms to syndrome differentiation and treatment was sufficient to deeply drive the expansion and refinement of the connotation of the nature, flavor, and meridian tropism theory.

It cannot be ignored that the emergence of a large number of formula books and medical cases in the Song Dynasty allowed physicians to more systematically observe and summarize the synergistic and restrictive effects of different herbs in various prescriptions.

A herb, due to its dominant efficacy in different compatibility environments, was endowed with more complex descriptions of meridian tropism with emphasis; the transformation from the properties of a single herb to the property cognition in the context of a formula gradually made the theory on the nature, flavor, and meridian tropism become an important dynamic tool for guiding clinical formula composition.

Meanwhile, the flavors of many commonly used herbs for consumption disease may have been supplemented or adjusted in Song Dynasty herbal books, often not based on taste-testing but on theoretical

deductions based on efficacy such as tonification, moistening, and astringency. This approach of deducing flavors based on efficacy and then guiding compatibility with flavor theory marked the leap of the nature and flavor theory from empirical description to explanatory theory<sup>[18,19]</sup>

**Table 1.** A brief analysis of the potential theoretical interpretation shifts in the records of nature and flavor from the Tang to Song dynasties, using representative drugs for asthenia diseases as examples

| Drug                               | Representative records in the Tang dynasty                                                                                                                                                                             | Representative records or theoretical tendency in the Song dynasty                                                                                                                                                                                                                                                                                           | Key points of theoretical analysis                                                                                                                                                     |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ginseng                            | Sweet taste, slightly cold, slightly warm, nontoxic. Tonifies the five viscera, calms the spirit, stabilizes the soul, stops palpitations and fright... <sup>[20]</sup>                                                | Ginseng (sweet and warm) treats deficiency of lung and spleen Yang Qi, as well as lung Qi wheezing, shortness of breath, lack of Qi... <sup>[21]</sup> Enters the HandTaiyin and FootTaiyin meridians...                                                                                                                                                     | Nature changed from “slightly cold” to “warm”; meridian tropism specified to Lung and Spleen meridians, with a stronger association with “tonifying Qi” to treat consumptive diseases. |
| Rehmannia                          | Sweet, bitter, cold, nontoxic. Treats fractures, broken tendons, internal injury, dispels blood stasis, fills bone marrow, grows muscles... treats five types of taxation and seven injuries in men... <sup>[22]</sup> | Steamed and dried then warmtonifying; raw and dried then milddispersing, use accordingly... Assists heart and gallbladder Qi, calms the soul, treats palpitations and fatigue, heart and lung damage, hematemesis... <sup>[23]</sup> Enters the FootShaoyin and FootJueyin meridians.                                                                        | Efficacy description shifted from specific trauma to abstract pathogenesis; differentiation of processing methods introduced; clearly attributed to Kidney and Liver meridians.        |
| Astragalus                         | Sweet, warm, enters Spleen meridian. Moves Qi, stabilizes exterior deficiency, treats blood stagnation... <sup>[24]</sup>                                                                                              | Astragalus (sweet and warm) treats consumptive spontaneous sweating, supplements lung Qi, consolidates the skin, drains lung fire. If the pulse is stringy with sweating, spleen-stomach weakness; also good for sores, blood stagnation, internal support; a mustuse for Yinpattern sores <sup>[25]</sup> . Enters the HandTaiyin and FootTaiyin meridians. | Efficacy description evolved from simple to complex; pulse methods and symptoms recorded in detail; meridian tropism clearly defined.                                                  |
| <i>Angelica sinensis</i> (Danggui) | Sweet, pungent, warm, greatly warm, nontoxic... treats deficient cold, tonifies five viscera, grows muscles <sup>[22]</sup> .                                                                                          | Sweet, pungent, warm in nature. When using, first remove dust and the hard tips, and soak in wine overnight. To break blood, use the hard upper part; to stop pain and bleeding, use the tail. If used all together, it is less effective <sup>[26]</sup> . Enters the HandShaoyin, FootTaiyin, and FootJueyin meridians.                                    | In the Song Dynasty, Danggui was divided into head, body, and tail; efficacy and processing methods became more elaborate than in the Tang.                                            |

The influence on the development of the theory of nature, flavor, and channel tropism is bidirectional. On the positive side, it enhances the depth and systematic nature of herbal medicine theory, providing a more rational basis for the use of drugs for asthenia diseases and promoting the refinement of clinical syndrome differentiation and treatment. On the negative side, however, an excessive reliance on theoretical deduction may lead to discrepancies between the recorded nature, flavor, and channel tropism of some drugs and their original empirical foundations, or result in overly complex theories.

### 3. Conclusion

In summary, during the Tang and Song dynasties, as understanding of asthenia diseases gradually improved, the evolution of the diagnostic and treatment system for these conditions profoundly influenced the development of herbal medicine. By deepening the understanding of the targeted diseases and systematizing the theory of drug properties, while creating treatment methods and solidifying knowledge of fixed

prescriptions, the depth of understanding and precision of differentiation regarding the nature, flavor, and channel tropism of drugs were gradually advanced. This process was not merely passive recording of drug properties but actively shaping them with a theoretical framework, establishing cognitive standards and evaluation systems, and successfully constructing the core framework for syndrome differentiation and treatment of asthenia diseases; that is, the principles, methods, formulas, and medications became mature and refined.

The nourishing factors contributing to this outcome include the cultural blending during the Tang and Song dynasties, a relatively stable social atmosphere, a prosperous economy, social and cultural trends, and advancements in science and technology. This evolutionary process, accumulating and expanding layer by layer, saw the Song dynasty's pharmaceutical practices embrace and develop the theoretical experiences of the Tang dynasty. It selected and innovated based on more complex social and medical needs, objectively accelerating the accumulation and dissemination of knowledge about medicinal materials. This allowed the theoretical understanding of the nature, flavor, and channel tropism of herbs for treating asthenia to move away from early vague and symbolic descriptions towards a more refined and evidence-based direction, laying a solid practical foundation for future herbal medicine studies.

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