Thinking Through Lurking Pathogens: A Pragmatic Approach to Clinical Application.

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One of the most evocative concepts in the modern clinical practice of Chinese medicine is that of lurking pathogens (伏邪*fú xié*).[1] Today Chinese medical practitioners most often evoke the notion of a lurking pathogen as a means of understanding the course of intractable modern diseases characterized by pathogens, often viruses, which lay dormant prior to their active such as Epstein-Barr, Hepatitis C, and AIDS. This approach, while valid, imposes some inherent limitations on our application of the Chinese medical idea of lurking pathogens.[2] In this paper I will discuss lurking pathogens as treatment methodology as opposed to pathogens with a specific etiology characterized by dormancy. I will then present a case history illustrating this perspective, and finally I will examine whether this strategy yielded the most skillful and expeditious treatment outcome.

The classical notion of a lurking pathogen is rooted in Chapter Three of the *Basic Questions* which states: "if the body is attacked by cold in the winter, the person will suffer from a warm disease in the spring."[3] This has been extrapolated to include any pathogenic factor that is contracted at sometime in the past, with or without presenting symptoms, and that lies dormant for an indeterminate period of time prior to its active expression.

One of the reasons that the Chinese medical idea of lurking pathogens is so compelling is that, at least superficially, it resembles our current biomedical understanding of the pathology of the deadly and intractable diseases mentioned above. From there, it is a short leap to modeling the consequences of antibiotic suppression and immunization in the context of lurking pathogens in the hopes that Chinese medicine has something to offer these very modern medical challenges. An inherent pitfall of this project, however, is that the biomedical model exerts its own influence on our understanding of lurking pathogens. In our efforts to forge an integrative understanding of disease, our biomedical thinking often clouds our Chinese medical thinking. In the end we are left with a number of unspoken, and typically unexamined assumptions regarding lurking pathogens that may or may not be clinically applicable in a Chinese medical context. By linking the Chinese medical notion of a lurking pathogen to a dormant spirochete, a virus, its attenuated vaccine, or an antibiotic, we fix our attention on one of the least promising aspects of the lurking pathogen paradigm. When we focus on the bug and not the process we limit the scope of our application of this paradigm considerably.

What then makes a lurking pathogen a lurking pathogen from the perspective of clinical practice? We can, of course, invoke the above-mentioned *Basic Questions* definition of lurking pathogens, but we rapidly run into two interrelated problems.

The first is that despite allusions to dormancy in theoretical discussion of lurking pathogens, even a cursory review of the warm disease case history literature reveals that the term *fú xié* is most often used to refer not to pathogens that have actually disappeared from the clinical landscape for some period of time but rather those that simply persist or become intractable. We see this even in the case histories of some of the most influential pre-modern thinkers on lurking pathogens.[4] Hence, we cannot limit the term or the concept of lurking pathogens to pathodynamics that are characterized by a period of dormancy.

The second problem is that even when modern case histories evoke a lurking pathogen diagnosis, it is not uncommon for the actual prescriptions to look a great deal like standard *wenbing* or even TCM

zangfu treatment fare. It may be labeled a lurking pathogen but it can be hard to tell from the treatment alone. This is at least partially because the principles for treating lurking pathogens are fundamentally the same as those for treating any warm pathogen. For instance, the principle of shifting a pathogen from the construction to the qi aspect is by no means the sole province of a treatment strategies pertaining to lurking pathogens. These commonalities become especially poignant when a pathogen never actually disappears from the clinical landscape.

One thing we can say regarding lurking pathogens is that: "Lurking warm disease progresses by moving from the interior to the exterior."[5] Above and beyond the etiology or nature of the pathogen, a propensity toward exteriorization is a defining characteristic of lurking pathogens. Unfortunately, not all lurking pathogens exteriorize spontaneously, and in fact, the most intractable ones do not. According to *Liu Bao-Yi*, " Pathologically speaking, it is a good sign when a lurking heat pathogen comes out from the interior to the exterior, and it is a bad sign when it remains in the interior and cannot reach the exterior."[6] The implication of this is that we cannot limit our administration of lurking pathogen treatment strategies to those pathogenic processes that exteriorize on their own.

In terms of how it is actually treated, the defining characteristic of a lurking pathogen is that it is evicted through multiple layers in a sequential manner. Discussions of the treatment of lurking pathogens in the pre-modern source literature speak of working through layers during course of treatment. It is typically a stepped process. For example, one of the lengthier cases used by *Liu Bao-Yi* to illustrate his approach to lurking pathogens contains the comment:

> If one hopes to get to the root of disease one must carefully attend to the details. Lurking warm pathogens such as this have many layers. After resolution and a cessation [of symptoms over the course of] one to two days, one may proceed to evict through the next layer. Moreover, the pathogen of subsequent layers will invariably be worse than the first. [7]

Here, Liu is talking about moving inward, peeling the layers of a pathological onion, although other physicians clearly think in terms of moving from the inside outward. The common thread is the sequencing of the treatment. For myself, the notion of a lurking pathogen is best understood as a therapeutic process rather than a specific pathogen. I do not approach the concept of lurking pathogens as referring to a *thing* to be eliminated, but more as an *approach* to treatment that indicates a methodology that is clinically effective and in the case that follows it proved helpful. In practical terms, what makes a pathogen a *lurking* pathogen has less to do with the nature of the pathogen or even how it got there, than it does with the strategy adopted for treating it. A lurking pathogen paradigm helps us to more skillfully plan and guide the course of therapy.

This raises another issue pertaining to our understanding of lurking pathogens. As simple as its pathodynamics may appear, the etiology of this case is still relatively messy and as such, it is representative of the cases most of us see in clinic every day. My patient had also done a number of other therapies along the way that most likely contributed substantially to the situation. In truth, it is difficult to say exactly where the lurking heat came from. This is in fact one of the central points of the case. I believe that etiological ambiguity such as this is such a common scenario in clinical practice that I am of the opinion that efforts to identify and treat the biomedical pathogen caused by a specific pharmacological or biomedical entity are largely a waste of time. It is unproductive to agonize over whether the situation one is trying to treat is he result of antibiotic treatment, homeopathic treatment, or a vaccination received during childhood when all one really needs to identify is whether the presenting symptom complex is one of wind, heat, damp etc.

Despite these ambiguities, once we have framed the presenting symptoms and signs within a Chinese

medical context we have the tools we need to treat the condition. Once again, it is the method of treatment and not the etiology that ultimately defines a lurking pathogen.

Naturally, it would have been preferable if had my patient simply recovered after the first sip of the first cup of her first packet of herbs. Nevertheless, she did manage to recover in what I perceived as an orderly manner, and the progression of events was both instructive and conceptually satisfying. While the case could have been approached in a variety of very different and possibly more skillful ways, the manner in which I did manage it resulted in the pathogen moving from the inside outward in an unambiguous progression. We saw a pathogen that had penetrated deep into a patient, wend its way back outward, triggering old symptoms along the way.

The Case

A close colleague of mine had been going through a period of great emotional upheaval that culminated in symptoms of palpitations, chest tightness, and poor sleep. She had taken a homeopathic preparation called “CoroCalm” that relieved all of her symptoms almost instantly. Unfortunately, within a few days of taking this preparation she developed a severe urinary tract infection with obvious hematuria. It was her impression that there had been heat in her heart that had been vented to her small intestine and on to her urinary bladder. She then took *Ba Zheng San* and a homeopathic vaginal suppository that initially seemed to hold the symptoms at bay. However, the hematuria persisted. She finally resorted to a sulfa drug when she felt the pain moving further into her pelvis and then up into her back. My colleague initially responded so violently to the antibiotic that she was convinced she was going to die but by the fifth day of this regimen her urinary symptoms had largely abated. Nevertheless, she still felt terrible, and she was profoundly exhausted and nauseated. At this point she asked me to write a prescription for her.

First Visit:

Her tongue was dry and red, with slightly raised red papillae and her pulse was wiry and strong. She had extremely cold hands and feet and had a bad taste in her mouth. She complained of being “very mucousy,” was averse to drinking water, and she still had some slight urinary burning.

My diagnosis was damp heat in the shaoyang complicated by phlegm and I gave her the following formula.

Herba Artemesiae Annuae (*Qing Hao*) 9g., added in the last 10 minutes.
Radix Scutellaria Baicalensis (*Huang Qin*) 6g.,
Radix Codonopsis Pilosulae (*Dang Shen*) 6g.,
Radix Glycyrrhizae Uralensis (*Gan Cao*) 6g.,
Rhizoma Zingeberis Officianalis (*Sheng Jiang*) 3g.,
Rhizoma Alismatis Officianalis (*Ze Xie*) 6g.,
Herba Lopatheri Gracilis (*Dan Zhu Ye*) 9g,.
Caulis Bambusae in taeniis (*Zhu Ru*) 9., and
Herba Eupatorii Fortunei (*Pei Lan*) 9g.

Given my diagnosis, *Xiao Chai Hu Tang* was an obvious possibility as a base prescription. However, although *Xiao Chai Hu Tang* could easily have been modified to address the component of dampness in my patient’s presentation, my patient had a long history of sensitivity to medications of all sorts and Radix Bupleuri (*Chai Hu*) in particular. In light of this I felt that administering *Chai Hu* as a sovereign medicinal was much too harsh and upbearing for her. I needed something that would vent the pathogen from the shaoyang/qi aspect with a softer touch. *Hao Qing Wen Dan Tang* was another possibility that actually addressed the damp-heat in her condition more closely.

Qing Hao struck me as a much more appropriate sovereign medicinal for my patient. According to Wang Tian Ru (王天如), *Qing Hao* is bitter, slightly acrid, and cold in nature. Its qi is light and it is aromatic. *Qing Hao* is typically used to abate bone-steaming fevers and to clear externally contracted summerheat dampness and repletion heat. It enters the spleen, stomach, liver, heart and kidneys. *Qing Hao* is bitter but does not damage the yin; it is cold but does not create dampness. It is acrid and transforms turbidity. It is light and clearing and evicts pathogens Its three major functions are in draining heat, rectifying taxation and resolving summerheat. It can be used for warm disease pathogens in any aspect: defense, qi, construction or blood. It can be used as a sovereign or assistant medicinal depending on how it is combined with other medicinals. [8] Given the weakened condition of my patient, and the presence both heat and dampness, *Qing Hao* was a good call. In my experience, it is only effective in evicting pathogens when decocted for 10 minutes or less..

Then there was the question of how much dampness was actually present. My colleague complained of being very "mucousy," reflecting phlegm with form. She also reported a frank aversion to fluids, although her tongue was quite dry. These symptoms I interpreted as dampness constraining the waterways. Thus, I took this as an opportunity to drain some more heat along with dampness while still protecting her fluids using *Zhu Ye, Zhu Ru and Pei Lan.* Since this was predominantly a qi aspect problem, and my colleague still had some heat in her urinary tract, I mildly vented heat through diuresis with *Ze Xie* rather than hitting it harder with the Green Jade Powder (碧玉散Bì Yù Sàn)

She decocted 1 packet of herbs in 6 cups of water, simmered down to 3 cups, and took 1 cup 3 T.I.D.

Next Visit.

My colleague felt remarkably better after the taking her first cup of the medication. The following morning she reported that her cold extremities had disappeared, as had her urinary burning, and the bad taste in her mouth. Her thirst was now normal. However, she nevertheless woke feeling exhausted and asthmatic, an old symptom for her. Based on pure intuition, she took a dose *Sheng Mai San*, which provided significant, if short-lived relief. Her chest was tight and she was having difficulty breathing. She reported that her face felt as if it was vibrating and she had a slight nasal drip. Her tongue was slightly less red with red papillae, and the moisture had returned. Her pulse was rapid and replete. She didn't feel great, but she was certainly better than the day before.

My sense was that we had vented the heat from the shaoyang to the qi aspect of the lung and that it was already moving on to the exterior. I considered giving her
Ma Xing Shi Gan Tang to clear the constrained heat from her lungs, however, we knew that the patient tended toward hypersensitive responses to Herba Ephedrae (*Ma Huang*) and without a vigorous venting influence like (*Ma Huang*) to balance it out, I was concerned that the Gypsum (*Shi Gao*) would just constrain the heat further.[9] Instead, I took a milder approach that better reflected my patient's constitution.
Cortex Mori Albae Radicis (*Sang Bai Pi*)15g.,
Cortex Lycii Chinensis (*Di Gu Pi*) 15g.,
Rhizoma Anemarrhenae (*Zhi Mu*) 12.,
Radix Panacis Ginseng (*Ren Shen*) 9g.,
Semen Pruni Armeniacae (*Xing Ren*) 12g.,
Semen Soja Preparatum (*Dan Dou Chi*) 6g. added in the last seven minutes Herba seu Flos Schizonepetae Teniufoliae (*Jing Jie*) 9g.,

1 packet of herbs was decocted in 6cups of water, simmered down to 3 cups with a cup taken 3 times per day.

Since a tight chest and shortness of breath are reliable indicators of some sort of constraint it is reasonable to wonder why I didn't employ more qi movers in this prescription. As I alluded to above, many strong, cold heat-clearing medicinals such as *Huang Qin* and Radix Coptidis Chinesnsis (*Huang Lian*) do nothing to actually move the qi and if not paired with qi-moving medicinals, will often constrain the heat further, leaving one to wonder why their double digit doses aren't working. In this case, however, there was already a propensity for movement. There were signs of constraint, of course, but the qi was already pushing toward the exterior. My inclination was to simply make sure the door was open with a gentle, slightly warm, acrid, and outthrusting pairing of *Dan Dou Chi*, and *Jing Jie* 9g.

In my first prescription I utilized two vectors for draining heat, venting outward while transforming dampness with aromatic herbs like *Qing Hao* and *Pei Lan*, and draining downward through the urination with *Ze Xie*.

By now the waterways had normalized and things were moving so I decided to leave well enough alone and to continue to vent heat exclusively through the exterior.

By and large, *wenbing* theory takes a dim view of supplementation too early in the course of treatment, before a pathogen has been fully expelled. I too, believe that using supplementation to push out a heat pathogen often doesn't work very well. How then could I justify my use of *Ren Shen*? My colleague's spontaneous experiment with *Sheng Mai San* that morning encouraged me to break the rule, otherwise I probably not have included a supplementing component in the in the prescription at that time. It occurred to me that *Sheng Mai San* had probably been helpful for her because it not only boosted the qi but because is also engendered fluids. I rationalized my use of *Renshen* by remembering its use in *On Cold Damage* (傷寒論Shāng Hán Lùn) for engendering fluids, as well as for boosting the qi.

THIRD VISIT

Again, she immediately improved after the first dose and the following morning she reported that she felt had nearly recovered. She was feeling cold again, and her nose was runny, although she still had some sense of dryness and tightness. Her tongue was definitely still on the red side, but her pulse was floating and relaxed, suggesting that the pathogen could finally be expelled through the exterior.

The use of *Gui Zhi Tang* to treat early stage warm disease is hotly debated in the wenbing literature but the general consensus is that this is a bad idea. Taking all of this under advisement, I still used *Gui Zhi Jia Hou Po Xing Zi Tang* as my base formula for the following reasons. First, with the exception of her tongue, my colleague's symptoms fit the *Gui Zhi* presentation. Then too, she had often taken *Gui Zhi Tang* in the past with great success in treating wind cold conditions. Finally, I am of the opinion that even if a wind cold pathogen transforms to heat early in a disease process, it may be useful to address that pathogen as wind cold at some point in the course of treatment. Such an opportunity had presented itself.

Ramulus Cinnamomi (*Gui Zhi*) 9.,
Herba seu Flos Schizonepetae Teniufoliae (*Jing Jie*) 9g.,
Radix Paeoniae Albae (Bai Shao) 4g.,
Fructus Zizyphi Jujubae (*Da Zao*) 6g.,
Radix Glycyrrhizae Uralensis (*Gan Cao*) 9g.,
Cortex Magnoliae Officianalis (*Hou Po*) 12g.,
Semen Pruni Armeniacae (*Xing Ren*) 12g.,
and Radix Panacis Ginseng (*Ren Shen*) 6g.,

My misgivings about the *Ren Shen n*otwithstanding, it seemed to be facilitating the ultimate resolution

of the problem so I left it in the prescription. *Hou Po* is an obvious modification of *Gui Zhi Tang* for opening the chest, and it may be that if I had moved the qi in the chest just a bit more in the previous formula I wouldn't have needed it now.

In retrospect, my inclusion of *Jing Jie* in this prescription may have been less than an optimal choice. My thought at the time was that her situation required slightly more extrerior resolution than that provided by the base prescription. *Yi Fan-Yan* describes *Jing Jie* as "a gentle herb that is warm without drying that is particularly effective for expelling wind."[10] While this fit the bill, it was most likely unnecessary, and I probably should have left well enough alone. Nevertheless, by the next day, she felt fine. On her own initiative, my colleague resumed taking *Sheng Mai San*, which appears to have been a fruitful decision in so far as her health continued to improve.

An alternative Ending?

A good rule of thumb to follow when reading case histories is not to ask yourself why the physician failed to treat their patient they way you would have, but instead to try to understand why he or she did what they did. One is much more likely to learn something this way and there's always time for second-guessing later. Nevertheless, those of us who remain at all thoughtful in our clinical practice probably spend a considerable amount of time second-guessing ourselves. For better or worse, this part of the therapeutic endeavor is largely reserved for 'failed cases' and is rarely discussed when the case is actually deemed a success. Sometimes though what a physician *didn't* do, can be as informative as what she *did* do. This clinical soul-bearing has often been helpful for myself because it forces me to articulate decisions that are frequently almost unconscious. Finally, it is all too easy to say 'look how clever I was in solving this conundrum' and more challenging to ask oneself, 'how could I have done it any better"

What would have happened if I had taken a more vigorous approach in my first prescription, including a stronger diuretic and downbearing component inherent in the original version of *Qing Hao Wen Dan Tang*? Might I then have vented the lurking heat in a single stroke? Perhaps. Some of Ye Tian-Shi's case histories seem to indicate that he achieved resolution of a lurking pathogen with the administration of a single treatment strategy.[11] Might a more aggressive treatment strategy have further debilitated an already weakened patient? I think that this is equally likely. My only justification for this is my previous experience in treating this patient.

In deconstructing this case, it may be worth asking why we should bother with this wenbing business at all? The first two interviews in this case are easily interpreted within the context of established TCM *zangfu* theory. Strictly speaking, by the time I became involved in the case, it is hard to say that the overall situation demanded an external pathogen perspective at all. One can imagine a different treatment strategy focusing on liver heat due to emotional constraint, which subsequently invaded the lungs. Tomato, Tomatoe? Perhaps. It is difficult to imagine how one might rationalize the final symptoms as anything other than an exterior condition. On the other hand, it is conceivable that they represented a secondary attack, occurring in an individual whose correct qi had already become compromised. One could argue that the final exterior symptoms represented a separate, albeit related condition.

While this case could have been approached in a variety of different ways, a lurking pathogen perspective provided me with the overall sense of the propensity or flow (勢 *shi*) of the case that was central to its resolution It is the capacity to respond proactively to this propensity as opposed to simply reacting to it that makes the difference between simply grabbing the tigers tail and being prepared to whack it on the head when it turns around to bite you.

A Question of Orthodox Methodology.

The treatment of lurking pathogens is often the most satisfying in situations like the case above where we get to see a pathogen pop back out through the exterior like a boil coming to a head. This is as close as most of us are going to get to the experience of those Pilipino faith healers who reach into your stomach and pull out neoplasm, chicken entrails or both. In my clinical practice, at least, this is not the norm. Lurking pathogen or not, things are usually more messy than this.

It is clear that even lurking pathogens that have become lodged in the construction aspect may be vented through the exterior. For instance, *Qing Ying Tang* contains Flos Lonicera Japonicae (*Jin Yin Hua*) and Fructus Forsythia Suspensae (*Lian Qiao*) not only because they clear heat and resolve toxin, but because they guide the pathogen to the exterior. Of course, this begs the question of whether we should actually *see* exterior symptoms in the course of outwardly evicting a lurking pathogen. The venting of a pathogen to the exterior is not necessarily the same thing as inducing an exterior symptom complex wenbing specialist *Guohui Liu* is of the opinion that the appearance of defense level symptoms at the end stage of treating a lurking pathogen is an unambiguously positive development.[12] The *Shäng Hán Lùn* provides us with some further justification for interpreting exterior symptoms in a positive light. Line 149 informs us that subsequent to the administration of *Xiao Chai Hu Tang*, the patient may experience "steaming and quivering, then heat effusion and sweating" [by which the disease] resolves.[13]

In a wenbing framework we *know* that we've successfully vented a pathogen from the construction to the qi aspect when we cease seeing construction level symptoms and begin seeing qi level symptoms. Once a pathogen is established back in the qi aspect, we have a variety of options for finally expelling it, one of which is through the exterior. However, even when medicinals are included to vent a pathogen through the exterior, the case history source literature typically reflects a resolution of the pathogen from the qi aspect *without* the development of overt exterior symptoms.

One might point to the eruption of a rash as an obvious indicator of heat venting through the exterior. Rashes, however, are rather ambiguous signs Although rashes may represent an opportunity to more fully vent heat to the exterior they -also indicate that the pathogen has penetrated to the constructive/blood levels. The development of a rash can actually be quite onerous. Moreover, in the majority of case histories that I am aware of, although the eruption of a rash in the course of treating a deep-seated pathogen represents a workable situation, it is not generally considered an optimal development. Most wenbing clinicians aren't actively trying to induce a rash as a means of venting a pathogen to the exterior, but they will do so should the opportunity arise.

All of this leaves us wondering whether the most skillful expression of having drained a lurking pathogen from the qi aspect might be characterized by the absence of overt exterior symptoms. Either way, the absence of exterior symptoms at the end stage of treatment is another reason why many case histories that invoke a lurking pathogen diagnosis often bear a remarkable similarity to ordinary garden-variety wenbing cases.

A final question that comes to mind concerns the question of whether we ever really eliminate lurking pathogens at all. The source literature speaks of some constitutional weakness, most often in the kidneys that allows for a pathogen to become lodged. While this is a neat model, real patients are messy. Over the course of a lifetime people tend to develop many predisposing imbalances and as we have already discussed, they sustain multiple pathological assaults that are often incompletely resolved. If we are going to apply the notion of lurking pathogens to a real person with a continually evolving constitutional pattern then we have to recognize that pathogens may lurk on multiple interrelated layers. In most cases it is probably more accurate to speak of a "lurking pathogen complex" than a single pathogen. In this case, it is likely that what was eliminated was only the most superficial stratum of a lurking pathogen complex. The conventional wisdom on lurking pathogens is that the course of treatment tends to be quite

protracted. *Wang Meng-Ying* speaks of "drawing a piece of silk from a cocoon. When pulling the thread, it almost seems as if there is no end in sight."[14] In my experience, the treatment of patients with lurking pathogen complexes is often an ongoing process and it is quite difficult to say when it is finished. A patient may exhibit remarkable signs of both objective and subjective improvement, but some evidence of the pathogen usually remains. It typically becomes a part of their background constitutional pattern.

Conclusions.

Identifying biomedical disease entities characterized by periods of dormancy as lurking pathogens (伏邪*fú xié*) does not mean that a lurking pathogen methodology is necessarily the treatment strategy of choice for these conditions. Conversely, clinical scenarios that are not obviously lurking pathogen cases may be treated effectively with this methodology. However fruitful an integrated Chinese medical/biomedical understanding may prove to be, it is equally important to understand the concept of lurking pathogens or any Chinese medical idea in its richest context, which is within the framework of Chinese medicine. In light of this, the most effective approach to lurking pathogens I have found frames this idea primarily as a treatment methodology, as opposed to an etiology.

The thumbnail sketches of ideas like lurking pathogens presented in modern Chinese medical texts are at best only referents to a much broader scope of sometimes contradictory understandings. The historical literature on lurking pathogens is particularly unsystematic in its vision of how to go about treating them. Textbook presentations inevitably filter Chinese medical ideas such as these in a manner that renders them static and divorces them from the flow of treatment. The case history literature is much more facile in illuminating this aspect of clinical practice. After all, most clinicians advance their theories based on how they've actually treated people. A case history cuts closer to the bone than a theoretical exegesis. Finally, above and beyond simply presenting what did or did not work for a given clinician in a given situation, case histories provide a forum for the critical analysis of our thinking at every step of the therapeutic encounter.

End.

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[1] When the term lurking pathogen is used in this essay, it refers only to the Chinese medical concept and not to any potential biomedical medical corollary.

[2] Whether it is actually clinically helpful to model such diseases in the context of the historical concept of lurking pathogens is very much an open question for me. It may well be that the most effective Chinese medical methodologies that are eventually developed to treat diseases such as Hepatitis C and AIDS bear little resemblance to the historical Chinese medical notion of *fú xié*.

[3] *黃帝內經素問文校釋* (*Huang Di Nei Jing Su Wen Jiao Shi-Annotated Huang Di's Inner Classic: Elementary Questions*), People's Health & Hygiene Press, Beijing, 1980:pg 46

[4] See for instance, the case histories of two of the most important thinkers on lurking pathogens, Ye Tian Shi's (葉天士) *Clinical Guide to Patterns Based on Case Studies* (臨証指南醫案 *Lin zheng zhi nan yi an),* and Liu Bao Yi's (柳寶冶) *Liu's Select Case Histories From Four Currents*. (柳選四家医案 *Liu xuan si jia yi an).*

[5] Liu, Guo Hui, 2000:66

[6]Liu Bao Yi, Journey to the Origin of Warm-Febrile Disease (溫熱逢原Wen Re Feng Yuan), An Encyclopedia of Chinese [Medical] Classics 中華醫典*Zhong Hua Yi Dian*-on CD ROM 2000 Hongyu@public.cs.hn.cn.

[7] *Liu's Select Case Histories From Four Currents*. 柳選四家医案-*Liu Xuan Si Jia Yi An* Zhong Guo Zhong Yi Yao Chu Ben Shu, Beijing:1997 . This is an anthology of four case collections written by You Zai Jing (尤在涇), Bo Ren (伯仁) Wang Xu Gao(王旭高), and Zhang Zhong Hua (張仲華). Liu is the anthologist and comments on each of the cases. The passage cited here appears in the context of a case in Wangs's *Case Histories of the Grass Court of the Encircling River* 環溪草堂醫案*Xuan Huan Xi Cao Tang Yi An*

[8] Wang Tian Ru (王天如) in An Anthology of Wen Bing 溫病專輯Wen Bing Zhuan Ji, Beijing, Zhong Yi Gu Zhu Chu Ban Shu:1988; 146-147

[9] Most textbooks attribute pathogen-evicting properties to Shigao, however, this property is dependent upon its combination with Mahuang.

[10] Yan, Yi-Fan, Chinese Herbal Medicines, Comparisons and Characteristics, Churchill Livingstone, 2002:29

[11] This, of course, calls into question the entire premise of this paper. On the other hand, Ye has many cases where a sequenced strategy was required.

[12] Personal correspondence, Seattle, March 3003.

[13] Mitchell, Ye and Wiseman, Shang Han Lun, On Cold Damage, Brookline Mass. Paradigm Publications, 2000,: p 235 (line 149)

[14] *Wang Meng Ying*, Warp and Woof of Warm Febrile Diseases (溫熱經微Wen Re Jing Wei) in 中華醫典