Epidemic Diseases and Chinese Medicine: Example of Severe Acute Respiratory Syndrome and COVID-19

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Abstract

Epidemic diseases, known and studied in China since antiquity, are one of the main chapters of the School of Exogenous Febrile Diseases (温病学派). Along with the legends about epidemic demons, China has developed over the centuries a medical approach based on the teachings of Huang Di Nei Jing (《黄帝内经》Internal Classic), Nan Jing (《难经》Classic of Difficulties), and Shang Han Lun (《伤寒论》Treatise of Harmful Cold). However, it was in the 17th century, after the great break of the Song, Jin, and Yuan eras that an innovative spirit Wu Youxing (吴有性) first foresaw the existence of microorganisms as we know them now. His Wen Yi Lun (《瘟疫论》Treatise on Pestilences) foreshadows an original approach to epidemic diseases, particularly emerging infectious diseases of the 21st century: severe acute respiratory syndrome 2003–2004 and the COVID-19 pandemic are perfect examples. In this first article, which will be followed by two others, we will examine the classical and modern Chinese definitions of these dreadful plagues.

Keywords: Ancient and modern terminology, epidemic geniuses and demons, pestilences, severe acute respiratory syndrome and COVID-19, traditional medical approach

INTRODUCTION

Epidemic febrile diseases have been known and studied in China since ancient times. Their causes, circumstances of appearance, diagnosis, and treatment have been discussed and tested for centuries. However, it was not until the middle of the 17th century AD that a specialized medical school gradually formed and then systematized to become a discipline in its own right, known as the School of Febrile Diseases by the Heat (温病学派), which we will more simply call School of Heat Diseases or School of Exogenous Febrile Diseases [Note 1] [1,2]. This term actually means contagious and noncontagious febrile illnesses.

In the following pages, I will outline the history of this medical adventure which is rooted in the original statements of Huang Di Nei Jing (《黄帝内经》Internal Classic of the Yellow Emperor) and continues to the present day. I will focus on the concepts of contagion and epidemic to try to better bring out the main phases of this historical evolution punctuated by the observations and discoveries of the most famous doctors of ancient times. Then, I will fly over the progress of the following centuries, marking the break between the 12th and 14th centuries followed by uninterrupted extensions from the Ming period (1368–1644) until the systemization which took place under the Qing (1644–1911). The School of Heat Diseases can indeed be considered as an original contribution, in medicine, of this historical period. But, I will deliberately neglect the issue of variolization and vaccination, which should be dealt with separately.

In the wake of world health news, taking it as an example, I will return to the epidemic of severe acute respiratory syndrome (SARS, in Chinese 非典 – the abbreviated form of 非典型肺炎 for an atypical pneumonia – which occurred in China and various countries during the years 2003–2004). This will serve a good basis for understanding some aspects of the current pandemic of SARS-CoV-2 or COVID-19 (新冠病毒肺炎), which also falls within the traditional framework of
the “Pestilences (瘟疫),” as will be explained later. I will try
to give an idea of what these old methods can still, or should
still, bring to the table of contemporary medicine, challenged
by the emergence of new infectious diseases [Note 2].

By the way I stopped on the singular figure of a 17th century
doctor, Wu Youxing (吴有性) alias Wu Youke (吴又可)
(1582–1652) who first foresaw the existence of microorganisms
and found himself to be the true precursor of this School of
Heat Diseases, even if he was not the main organizer.

The sources used in this article, cited progressively, will be
grouped in the bibliography. A doctoral thesis defended in 2011
at the Nanjing University of Chinese Medicine was particularly
useful to me [Note 3].

PART ONE: ETYMOLOGY
Contagion and epidemic in ancient texts
Modern definitions
In modern Chinese, epidemic is called Liu Xing (流行),
contagion is called Chuan Ran (传染), infection or infestation
Gan Ran (感染), so that epidemic disease is called Liu Xing
Bing (Bing refers to disease), contagious or infectious disease
is called Chuan Ran Bing (传染病) and acute infectious
diseases Jixing Chuanranbing (急性传染病). However, we
would be hard pressed, apart from the word “illness,” to find
these terms as they are in ancient texts.

Chinese characters of epidemic diseases in ancient texts
Classical Chinese indeed uses other characters to translate
the feverish and epidemic nature of diseases. Let us look at
the main ones:
• Yi (疫).

It is the most important. It means “epidemic, contagion,
plague,” a bit like the Latin pestis: “epidemic, destruction,
plague.” Associated with the character of the disease – Yi
Bing (疫病) – today it designates all forms of “pestilence”,
yany contagious disease characterized by high mortality. It is
used in particular for all serious epidemic febrile illnesses.

Bubonic plague, the black plague due to the bacillus of
Yersin, in Chinese antiquity was called Shu Yi (鼠疫), with
the character Shu which is the generic name of rats, mice, and
other rodents – because it is transmitted to humans by rats. In
contemporary Chinese, we would rather say, with reference
to modern Western terminology, Hei Sing Bing (黑死病)
to mark its darkness and its deadly nature, or Hei Shu Bing
(黑鼠病) which literally means “black disease transmitted
by rats” (Ricci c. 2364). Without being so expressive, these
last terms therefore always imply the seriousness and the
contagiousness of this disease.

In fact, the character Yi has a broad meaning which hardy
allows us to conclude, when we meet it, with the exact nature
of the disease in question except that it is rather “cold” or
“hot,” produced by a “epidemic breath” or by a “mixed”
epidemic-agent – Cold Pestilence (寒疫), Warm Pestilence
(温疫), Pestilent Qi(疫气), and Miscellaneous Pestilence
(杂疫). Above all, it shows, in the context that it appears
in several documents that preceded the Qin era (先秦,221–207
BC) that Men from these distant times were already faced
with serious epidemics, causing loss of many human lives and
great social damage.

Within the upper part the radical of the disease 广(ne) which
represents the shape of a man leaning against, lying on a bed
with dots which represent sweating [Note 4].疫 is formed by
a figure 疾 which is pronounced shu and which means “stick”
“hit” “a stick to hit people.”

This long stick of octagonal section with sharp edges was made
of assembled bamboo or cut wood. He was the weapon of the
guard who walked in front of a military tank. The inscriptions
on the turtle shell further suggest a hand brandishing this
weapon or a club [Note 5]. More than long speeches, these
pictograms suggest the violence and anonymity with which
any epidemic plague strikes, which is found in fairly similar
terms in Western legends. Émile Littré, for example, in a
book made up of fragments devoted to medicine, followed
the first quarantine of his study on “great epidemics”, by
other quarantine devoted to “talking tables and striking spirits
[Figure 1 and Note 6]”

- Wen 墓.

Another equivalent ancient character of Yi, to say epidemic
diseases, is Wen(墓). Formed with the radical of the disease, it
should not be confused with its namesake Wen (温) constructed
with the radical of water and which indicates a notion of
temperature, therefore of heat; this Wen (温) character largely
structures the nosological frameworks of febrile affections in
traditional Chinese medicine, as we will see below.

Figure 1: (a and b) Etymology of the character Wu, magician, diviner,
represents the movement of the sleeves during chants and shamanic
dances. Su Wen “Yi Jing Bian Qi Lu Bian Di Shi San” (《素问·移精
变气论篇第十三） Plain Questions “Discourse on Moving the Essence
and Changing the Qi”) keeps the memory of very distant times when
shamans (巫医 wu yi) treated the sick just by invocations, to move the
Essences and transform the Qi.
The two characters Wen (瘟) and Yi (疫) associated Wen Yi (瘟疫) had in ancient times the general and asserted sense of epidemic, as reported by the Ci Yuan (《辞源》Great Dictionary of the Chinese Language of the Beginning of the 20th Century [1915]):

“Wen stands for epidemic disease Yi, acute contagious diseases which affect humans or domestic animals and backyard birds.”

But sometimes, Wen (瘟) was able to replace Yi (疫) with the same sense of contagiousness, gravity, and epidemic dissemination, and it is common to see Wen Yi (瘟疫) replaced by Wen (瘟) or by Yi (疫) at all. On the other hand, Yi (疫) associated with the character Wen (瘟) carrying the graphic source of water – Wen Yi (瘟疫) – will first indicate the hot, feverish nature of such a contagious disease. Wen Yi (瘟疫) connotes all species of contagious diseases, whether feverish or not, all kinds of epidemic diseases whether in humans and animals. Hence the title of the work published in 1642 by Wu Youxing, precursor of the School of Heat Diseases: Wen Yi Lun (《瘟疫论》The Treatise on Pestilence).

• Li (疠).

This other classical character also sometimes has a meaning identical to that of Yi (疫). It is found in certain texts of Chinese literature or in local chronicles, an inexhaustible source of information on the events of ancient Chinese life. Thus, Shan Hai Jing Guo mentions:

“Li, these are epidemic diseases” (疠, 疫病也).

A more complete study of ancient medical terms relating to epidemiology should focus on a number of proper names. For example, Zhang Yi (瘴疫), the meaning of which varies according to the case between “miasma, pestilential vapor,” “epidemic disease,” or even “malaria, falciparum malaria;” Huo Luan (霍乱), the graphic expression of which well expresses the sudden disorganization which the body causes cholera morbus or acute gastroenteritis; Lan Hou Sha (烂喉痧), very formerly used to say scarlet fever; Da Tou Wen (大头瘟), literally “infection with swollen head,” name of mumps seen as the result of an attack by an “epidemic wind-heat;” or even Ke Yi (咳疫) for whooping cough or pertussis, where the cough is associated with contagion ideogram [Note 7].

But, all these terms, as we can see, are names of well-defined contagious diseases and were never taken as generic terms for epidemic diseases.

In sum, and although the questions of nosology compared with distant times are far from simple – they are sometimes insoluble – it is nowadays admitted that the characters examined above cover a whole class of infectious, febrile epidemic diseases whose characteristics are to be suddenly triggered, very aggressive, and easily contracted, regardless of age or sex.

These general notions should be remembered by those who wish to study the theoretical and practical lessons of the Chinese School of Heat Diseases as they are currently transmitted in the Universities of Traditional Medicine of China.

**Legendary explanations of epidemic plagues**

In Chinese High Antiquity, epidemics were explained by the intervention of one or more particular geniuses or demons who indiscriminately “struck” the entire populations [Note 8]. Mythology mentions a deity of the Wind (风神) named Bo Qiang.

In an old commentary on the Elegies of Chu, this deity, whose memory was perpetuated in a poem of the 19th century, is considered as the entity responsible for the epidemics:

“Boqiang is the name of the deity of epidemics, when it manifests it harms human health” (伯强为疫鬼名, 所致伤人 [Figure 2]).

Another work of antiquity, the Ancient Rituals of Han Officials, in its supplement, reports a legend that three children who died at birth became demon-guards of epidemics [Note 9]. One became the evil genius of malaria, the second the genius of the waters, and the third, hidden behind doors in men’s apartments, now terrorizes children. The story told by Littré of werewolves which terrorized children is somewhat in Chinese mode [Note 10].

These beliefs in demons responsible for epidemics or collective mental disorders are in fact very widespread in ancient Chinese texts. We find traces of it even in medical texts. Thus, the famous Compendium of Needles and Moxas, published in 1601 by Yang Ji Zhou, reproduces Sun Zhen Ren Zhen Shi San Gui Xue (《孙真人针十三鬼穴》The Song of the Thirteen Vital Points of Sun Simiao) deemed to treat “ghost diseases,” in fact psychiatric disorders [Note 11]. It precedes it with a “charm,” with a therapeutic talisman (符咒), accompanied by incantatory formulas, entitled Zhen Xie Mi Yao (《针邪秘要》Essential Secrets for the Puncture of Harmful Influences). This charm present in all editions of Dacheng until the mid-20th century has been removed – superstition requires! – in the 1963 edition and unfortunately also in the following, which are otherwise excellent. I reproduce it below after the third edition of this work, dated 1657 [Figure 3].

These explanations were convenient for the people; popular Buddhism and Taoism added other elements which were not without influencing the prophylactic recommendations of these plagues. This is how specific rites to expel epidemic demons were part of the techniques of conjuring up harmful
influences Nuo (傩), of which there are still many traces today in China [Note 12].

Under the brilliant Tang Dynasty (618–907), such rites were even practiced in all classes of the society, from the peasant world to the highest dignitaries of the Imperial Court. It is now proven that they went back in a direct line to the Western Zhou Dynasty (1066–221 BC). Yao He (姚合), a poet of that time, left the memory:

“The candle of the year just out as the rooster announces
against the epidemics are heard the Nuo
with the spring welcoming libations.”

It would be difficult these days to properly assess these practices. Their efficiency was linked to the representations of man and the cosmos totally different from ours. As Marcel Granet noted, it was still believed in the time of the Han that the Earth and the Sky gradually increased in volume. The distance between them grew. They once stood, when Spirits and Men lived in promiscuity, so close together (the Earth offering Heaven its back and Heaven holding it embraced) that one could “ascend and descend” at any moment from one to the other [Note 13].

Notes

Note 1: French Chinese Medical Dictionary. Beijing: People’s Medical Publishing House; 1992. p. 1513. Great Dictionary of Needles and Moxas Commented. Paris: Desclée de Brouwer; 2001. volume VI p. 599.

Note 2: Several dozen since 2000.

Note 3: Wang Wenyuan, under the supervision of Pr Yang Jin: Concepts and Methods of Epidemic Prevention in Ancient China and their Modern Applications Research. Nanjing.

Note 4: Morel P., Xu GuangCun. The 214 Keys to Chinese Writing. Editions You Feng, Paris. 1997 p. 104.

Note 5: Ibid p. 79.

Note 6: Littré É. Medicine and Doctors. Paris: Academic Bookstore (Librairie Académique); 1872.

Note 7: Analysis of the inscriptions on the shell of turtles (甲骨文) in the 20th century revealed in fact the existence during the Yin dynasty (殷代, 1401–1222 BC) of more than a hundred proper names of contagious diseases. Like again malaria (疟) or scabies (疥). Cf Li Zhaohua. Chuan Ran Bing Zheng Zhi Cong Xin (新传染病证治从新) New Approach to the Diagnosis and Treatment of Contagious Diseases, Popular Editions of Hebei, Shijiazhuang 1981 pp. 1-3. The modern Chinese name for pertussis is “cough for a hundred days (百日咳),” presumably because the coughing fits of this disease which normally last 2 to 4 weeks often prolong episodes of dry cough. But, we see that the modern name of the disease no longer contains the meaning of contagion.

Note 8: Lee T’ao, a medical historian in the 1930s, noted that “the original meaning of epidemics in Chinese is Yi (疫), which means evil spirits making people sick” Lee T’ao History of Medicine – A short history of the acute infectious diseases in China “Chinese Medical Journal 1936, 50, 172-83. Source: GERA (Study and Research Group in Acupuncture, Toulon). Note that in this article, 仿疫 is translated by typhoid, whereas it means in traditional texts “reached by the cold” as we will see later.

Note 9: Han Guan Jiu Yi (《汉官旧仪》 A Work Dating from the East Han [AD 25–220]).

Note 10: É. Littré, Medicine and Doctors, Academic Bookstore (Librairie Académique), Paris 1872.

Note 11: Yang Jizhou (杨继洲). Zhen Jiu Da Cheng (《针灸大成》Compendium of Needles and Moxas) first edition 1601. Zhen Jiu Da Cheng Jiao Shi (《针灸大成校释》Compendium of Needles and Moxas Commented), under the supervision of the Heilongjiang Province Research Institute, People’s Medical Publishing House. 1984 pp. 1186-1189.

Note 12: Dr Rouffiandis Vincent (medical doctor assistant – major, 1st class of colonial troops): Chinese theories on the plague cf. GERA database. The author makes a rather folk recension of the popular ceremonies which he witnessed at Fu Zhou at the beginning of the 20th century. He is mistaken about the name of the bubonic plague (鼠疫) which he mixed with that of “pestilential diseases” in general, 瘟疫. On the other hand, the West through Catholicism specially has kept old prayers, still current today, for cases of epidemics in humans or animals as we have seen recently in Europa. The action in the 15th century of St François de Paule (1416–1507) against the plague epidemics in the south of France was remembered. There are thus constants on this subject, interesting to observe within civilizations as different and distant from us as the Far Eastern civilization.
**Note 13:** Granet M., La pensée chinoise, Paris: Albin Michel 1968. p. 288.

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