

Bangor University

DOCTOR OF PHILOSOPHY

The Anatomy of Acupuncture

Shaw, Vivien

Award date:
2020

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The Anatomy of Acupuncture

Rediscovering the anatomical basis of acupuncture meridians
and points



PRIFYSGOL
BANGOR
UNIVERSITY

A thesis submitted to Bangor University by Vivien Shaw in candidature for the
degree of Doctor of Philosophy

School of Natural Sciences
Bangor University

August 2020

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This PhD thesis comprises four peer-reviewed papers together with a 10,000 word synthesis (as required for Route E at Bangor University). Bangor's PhD regulations stipulate that certain sections should be included, and Table 1 below indicates where to find each. Some sections (e.g. abstract) are repeated in each paper while others are split across several parts of the work. Page numbers are continuous for the 10,000 word synthesis but the original pagination from the journal is used for papers.

Table 1 How to find different elements of this thesis

Item	Synthesis (overall)	Meridians Under the Skin (pp 75-81)	Chong Meridian- an ancient Chinese description of the vascular system? (pp 279-285)	Was acupuncture developed by Han dynasty Chinese anatomists? (pp 643-659)	Hiding in Plain Sight- Ancient Chinese Anatomy (pp 1-43, proof pages)
Abstract	2	75	279	643	2
Literature Review	Throughout	75-79	279-280	643-645	3-8
Objectives	6	75	279 & 280	645	3
Method(s)	9-23	79-81	280- 281	645-646	Integrated throughout
Results	7-9, 9-23 This section integrates what I did with what I found	79-81	281-282	646-655	8-14 and appendices on 22-43
Discussion	23-26	Incorporated into results and conclusion	282-284	655-658	15-16
Conclusion(s)	26	81	284	Part of discussion	17
References	27-34	81	284	658-659	18-20

Glossary of Chinese Texts and Terms

Chinese	English
Historical Books and texts:	
Han Era	
<i>Huangdi Neijing (Neijing)</i>	Yellow Emperor/Thearch's Canon of Internal Medicine
<i>Su Wen</i>	Simple/Basic Questions; the 1st section of the <i>Neijing</i>
<i>Ling Shu</i>	Spiritual/Numinous Pivot; the 2nd section of the <i>Neijing</i>
<i>Mawangdui</i>	<i>Mawangdui</i> medical texts
<i>Han Shu</i>	The Book of Han
<i>Nan Jing</i>	The Classic of Difficult Issues
Song Era	
<i>Cun Zhen Tu</i>	Anatomical Atlas of Truth
Chinese Terms:	
<i>Qi</i> 氣	Vital force/energy
<i>Si</i> 素	Silk
<i>Jing mai</i> 經脈	Meridian
<i>Jing luo</i> 經絡	Meridian network

The Anatomy of Acupuncture

Rediscovering the anatomical basis of acupuncture meridians
and points

Abstract

Acupuncture is the medical practice of inserting fine needles at specific places in the body, named acupoints. These points are located on pathways (called meridians) that run through the body, normally depicted as lines on the body's surface. According to the medical paradigm of the Han era (206BCE–220CE) these are areas where the *Qi* or vital essence of the body can be accessed and manipulated to engender harmony and balance, thereby promoting health. Meridians and acupoints are widely considered to be esoteric in nature, and how they were originally discovered is an enduring mystery. Today, the exact nature of meridians and acupoints, along with the mechanism through which acupuncture acts, are the subject of substantial debate and research.

The first descriptions of meridians are found in the ancient Chinese *Mawangdui* medical manuscripts, which were found in the *Mawangdui* tomb, closed in 168BCE and reopened in 1973CE. This initial exposition is developed in the later *Huangdi Neijing*, a substantial collation of medical texts spanning the whole Han dynasty.

In the four papers that comprise this thesis, I resolve this ancient mystery by uncovering how these meridians and acupoints were arrived at. I hypothesise that Han era physicians conducted *systematic anatomical examination of the body* over an extended period of time (>300 years) and that the meridians and acupoints are detailed descriptions of their observations.

This early anatomical research is roughly contemporaneous with the early Greek anatomists Herophilus and Erasistratus whose works were destroyed in the fire at the library of Alexandria. The ancient Chinese texts, by contrast, survived. The *Mawangdui* manuscripts are thus the earliest surviving anatomical atlas in the world based on humans.

The papers that comprise my thesis are presented in the order in which they were written:

The first is about the use of the Chinese character for silk as part of the name for the meridian network. I show that fascia has a silk-like visual and textural quality, and suggest that the meridian pathways may be related to fascial pathways.

The second is a study of parts of the later *Huangdi Neijing* describing a single meridian, '*chong*'. This paper shows, again through dissection, that the character for '*chong*' describes the vasculature of the body, primarily veins. The same character is used in the names for acupoints which lie over key vascular landmarks.

The third paper is an extended exploration of the relationships between the various anatomical structures found at acupoints, and the characters used in their naming. I show extensive correlations between naming conventions and anatomical structures.

The fourth is an exposition of the *Mawangdui* medical texts. We explain how the texts refer to particular parts of the body and the structures that pass through them. Many of these structures are only visible on dissection and some, like the perforating veins in the leg, require careful and methodical dissection to visualise. This strengthens the argument that this was dissection carried out for the purpose of anatomical examination.

All four papers thus demonstrate that these works constitute an anatomical atlas that was arrived at through direct observation of the human body through dissection. They show what is being described, and how that knowledge was embedded into Han medical culture.

This has implications for Chinese medical history, which can now fill a gap that has existed for millenia. That meridians and acupoints form an anatomical atlas rather than a network of physiologically 'special' areas also requires that modern researchers re-evaluate what they are investigating. My work thus establishes a new foundation for medical studies of acupuncture and the history of medicine in the Han dynasty.

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The Anatomy of Acupuncture

Rediscovering the anatomical basis of acupuncture meridians and points

Confucius said:

“The beginning of wisdom is to call things by their proper name.”¹

Introduction

The four papers presented in this thesis are the result of an extended (7+ year) period of study exploring the idea that ***the original descriptions of acupuncture meridians and points constitute a descriptive anatomical atlas***. This is also the central argument of the current text, which will critically evaluate the field, summarise how my contributions fit into and change our existing knowledge, and develop a new synthesis upon which future acupuncture research can build.

This central idea runs contrary to the commonly held belief that acupuncture meridians and points are esoteric structures through which Qi (氣) or ‘vital energy’ flows in an intangible and invisible way. In my published works, I have demonstrated that traditional techniques for studying anatomy, particularly dissection, were used in Han dynasty China (206 BC–220 AD). Furthermore, the correlations that I have shown between the texts and human anatomy strongly support the hypothesis that physicians in Han dynasty China were engaged in *systematic* anatomical investigation and research. This systematic research was conducted in ways that were analogous to the methods for investigating the human body that anatomists still use today.

Methods used by these ancient physicians included direct examination of human tissue, debate about the function and interconnection of the structures found, and building on the ideas of those who had gone before. All of these scholarly activities led over time to a gradual evolution and development of anatomical understanding.

The Han dynasty is famous for its scientific prowess in many different areas including: mathematics (zero and negative numbers), agriculture (ploughing with horses in harness and seed drills), engineering (the world’s first contour canals that are still in use today), the invention of paper, the wheelbarrow, astronomy and quantitative cartography which together with the invention of the rudder allowed for sea travel, the creation and use of precision measuring instruments (e.g. calipers)^{2–4} and extensive materia medica⁵. I show, here and in my prior works, that the anatomy which underpins the practice of acupuncture is grounded in the same rigorous empirical method that led to these scientific successes, and that is so characteristic of this period in Chinese history.

This research is ground-breaking in that it shows that the anatomy of acupuncture has been, since its inception, firmly rooted in the physical body, and arrived at by the practice of anatomical examination. The papers already in the public domain^{6–10} open up an entirely new field of enquiry into not only the history of acupuncture, but also how we conduct

research into the mechanism(s) of acupuncture in the modern day. I therefore start this thesis with a section that summarises my contributions to my field.

Summary of my contributions

I have written four public-domain, peer-reviewed articles on the anatomy of acupuncture to date, either alone or with my co-authors Claire Aland⁸, Amy McLellan⁶, Rui Diogo and Izzy Winder⁹. In them, we have argued that the core medical texts of the Han era, upon which acupuncture theory and practice are based, were the products of an extended period of close anatomical examination of the body. We show that the most logical explanation for the detailed descriptions presented in the *Mawangdui* texts and the succeeding *Huangdi Neijing* (henceforth “the *Neijing*”; transliterated Chinese terms are in italics throughout), is that they are based on direct observation of the dissected human body.

In ‘Meridians Under the Skin’⁸, written with Claire Aland, I began to explore this theme through a discussion of the Chinese character for silk (素). This character recurs in both the name for individual meridians (*jing mai* 經脈), and for the meridian network (*jing luo* 經絡). I hypothesised that this character could be a direct reference to the fascia in the body, which is all pervading and bears a close physical resemblance to silk, and noted that:

“If this hypothesis holds true, then the Chinese characters that were originally used to describe the meridian network could literally describe the nature of the physical substrate for acupuncture – the silk-like fascial tissue of the body.”⁸

This paper was the precursor to a series of conference presentations^{11–16} and, later, papers (discussed below), which provided detailed accounts of the concordances between these ancient Chinese texts and the physical anatomy of the human body. The next paper was called ‘*Chong* meridian—an ancient Chinese description of the vascular system?’⁷ The *Chong* meridian is one of 8 so-called ‘extraordinary’ meridians. These are 4 pairs of meridians which define the structure of the body in the broadest sense. Two pairs describe the anterior and posterior midline, one pair describes a horizontal plane that runs across the iliac crests and pubis, meeting at L4 in the back, and *Chong* (with its paired meridian) passes from the uterus/pelvic bowl through the centre of the body. Of these extraordinary meridians, *Chong* is unique in that it shares its name with a series of acupuncture points. I collated a list of all of these ‘*chong*’ points, and made extensive dissections of both the points and the meridian pathway described in the *Neijing*. I also made my own translations of the key Chinese texts from the *Neijing* that discuss this meridian, along with the classical commentaries that are not available in English (Appendices C&D).

The aim was to see if there were any clear indications that the character ‘*chong*’ was being used in a consistent way to describe specific physical structures. The conclusion to this question was that:

“The dissections clearly show that the Chong meridian correlates to certain main blood vessels in the body, particularly the vena cava. Similarly, most chong acupuncture points have a strong correspondence with blood vessels, marking terminal arteries on the hands, feet and forehead, and anastomoses on the face, body and feet.”⁷

This initial example of a particular Chinese word/character that was clearly correlated with specific physical structures led to a broader exploration of acupuncture point names, to see

if these showed the same kinds of patterning. In ‘Was acupuncture developed by Han Dynasty Chinese anatomists?’⁶ I used a variety of acupuncture point compendia^{17–20} to find as many of the names given to individual points as I could. Some points have been given more than one name over their approximately two thousand-year histories, and my aim was to find the earliest ones.

I collated a list of 60 points that shared at least one character in their names with another point, put them into tables organised by the character(s) they shared, and performed an initial assessment of correlations with physical structures based on my own anatomical knowledge. This was followed by marking each point on the skin, and systematically dissecting it to see if there were qualitative anatomical correlations between points which share a name. I found that:

“The preliminary results presented here indicate that specific acupuncture point names clearly correlate with specific anatomical features. This correlation supports the hypothesis that acupuncture is based on anatomical investigation of the material qualities of the human body.”⁶

I wrote my findings up in collaboration with my colleague Amy McLellan, an anthropologist who contributed most of the information on the ethnographic context of naming traditions found in the discussion of our paper (for a detailed specification of author contributions to each paper, see Appendix E).

My findings in these three papers strongly supported my initial idea that the naming of acupuncture meridians and points in the *Neijing* is systematic and intended to give physicians throughout China a shared and specifically *anatomical* language. In this early anatomical atlas, at least some of the meridian pathways map onto contiguous structures that travel through the body, while the names of points identify individual parts of the body that presumably were perceived as having special medical importance.

In the fourth and most recent paper in the series described here, ‘Hiding in Plain Sight – Ancient Chinese Anatomy’⁹, I looked at the so called ‘ordinary’ meridians for the first time. In modern acupuncture there are 12 ordinary meridians, each associated with an organ, and organised into 6 pairs. These classifications have remained unchanged since the *Neijing*. There is, however, an earlier medical volume called the *Mawangdui* that clearly pre-dates the *Neijing*. The *Mawangdui* is quoted directly in certain passages of the *Neijing*, describes 11 rather than 12 meridians, does not associate meridians with organs, and contains no mention of either acupuncture or acupuncture points. This text was part of the early Han-era transition from a medical paradigm that was largely based on the concept of sickness as a form of demonic possession in need of exorcism, to a medical tradition based on more scientific ideas.

Donald Harper says:

“What is noteworthy about them [the Mawangdui texts] is that the application of vessel theory to physiology is evidently at an early stage of development and is not yet established doctrine. It seems that in the second and first centuries B.C. Chunyu Yi and like-minded physicians were justifying a new understanding of illness based on vessel theory.”⁵

The channels described in these early anatomical texts are commonly seen as having no observable physical correlates (see section on ‘Received Wisdom’ below). To establish the physicality of the meridian pathways, I used a similar methodology as for my earlier work on

acupuncture points. First, each of the three texts describing a particular meridian was compiled into a spreadsheet, along with the most literal translation possible (which I made see Appendix A and/or the Supplemental Information accompanying the published paper). These translations were then compared to those made by Harper to check that my translations were broadly aligned with his (more authoritative) ones. The meridians were organised into the categories given by their authors – *yin* and *yang*, and leg (full body) or arm (and head). I then made an initial assessment of plausible and likely anatomical correlates for each meridian, and tested it via extensive dissection (completed with my co-author Izzy Winder). We found that:

“we have shown how the text of the Mawangdui medical manuscripts maps onto the structures visible in a human cadaver. We propose, based on the close alignment we find between body and text, that the pathways the Mawangdui describes are not esoteric. Instead, they represent the earliest surviving anatomical atlas, designed to provide a concise description of the human body for students and practitioners of medicine in ancient China.”⁹

My work has thus shown that both the *Mawangdui* and the *Neijing* are, in fact, anatomical atlases. They were written over an ~400-year period, and provide similar broad overviews of the body in the form of meridian descriptions. The *Neijing* adds an additional meridian, more detailed meridian descriptions, and the first descriptions of acupuncture points, and can therefore be seen as developing and expanding upon the information in the earlier *Mawangdui*. For both texts to be based on direct anatomical examination, the practice of human dissection must have been carried out in a sustained and state-sanctioned way.

Moreover, the standardisation of written language, knowledge and science is a distinctive feature of the culture of Han-era China. My argument that this included a systematic scientific endeavour to map the human body and name significant anatomical landmarks fits firmly within the culture and ethos of the era. Taken in the round, my four papers originated this view of ancient Chinese anatomical science and have progressed the argument substantially. By linking characters, translations and anatomical structures, I have moved from an initial hypothesis that the imagery of ‘silk’ might refer to fascia to producing the first systematic demonstrations that early acupuncture texts had a physical anatomical basis. The next section contains a critical survey of the field, and how my work fits with and progresses on from it.

Studying ancient Chinese anatomy: my approach

To develop my original intuition that the anatomy of acupuncture meridians and points was a physical phenomenon, not a magical one, I drew upon ideas and methodologies from three different subject areas: anatomical science, ancient history, and the history and philosophy of medical science.

From anatomical science I adopted the traditional methods of dissection and observation. The translation and study of the original Chinese texts, and the placing of that knowledge within the context of the culture of the time, are methods drawn from the field of ancient history. The history of anatomy, furthermore, is a well-explored area of the broader history of medicine.

The translated texts were not meaningful on their own, but their meaning became apparent through studying them alongside the dissected human body. Likewise, putting ancient Chinese anatomy into cultural context had to be followed by historical work looking at how that knowledge had been transmitted, and also lost, through the ages that followed. Finally, only by putting all three of these strands together was I able to build a convincing argument that drew on foundations grounded in multiple disciplines.

This approach is underpinned by the idea of “consilience”²¹. This is the idea that if you have congruence between multiple different lines of evidence, they provide a better explanation than any single one can alone. This means that even if an individual line of evidence would not be sufficient to substantiate a particular claim, several congruent ones can be. The more lines of evidence that are congruent, the stronger the theory. Evidence from independent, unrelated sources can ultimately also converge on an even stronger conclusion than would be possible from drawing on any *single* source alone. I come back to consilience towards the end of my critical review, before the ‘significance’ section that wraps up this thesis.

1. Ancient history: textual evidence of ancient Chinese knowledge of anatomy

Received wisdom (see Table 1) is that in Han dynasty China, dissections of human bodies were rare and culturally unacceptable – and, *therefore*, that acupuncture theory and practice is esoteric rather than having a physical scientific basis. This wisdom is directly challenged in my work. My arguments to the contrary are based on new analyses of the early acupuncture texts and their cultural and historical contexts. For these analyses, I drew on my own translations (Appendices A-D) and those done by others. In my translation of the key text, ‘On Meridians’ (*Ling Shu* chapter 10. Appendix B), I additionally translated the classical Chinese commentaries that accompany it found in the ‘Complete Collection of Illustrations and Writings from the Earliest to Current Times’²². This is not available in English, and was particularly important as it allowed me to see the discussions of this text that had occurred over time.

Table 1: A summary of the views on anatomy and dissection in the works of key experts on Han dynasty China

Author	Explanation
Lloyd ²³	Dissection as punishment- probably a single occurrence rather than a systematic one
Kuriyama ²⁴	Dissection as part of standardisation of measurements for a unified State- probably a single occurrence rather than a systematic one
Needham ²⁰	Surgery and anatomy as a neglected area of Chinese medicine, no mention of dissection
Unschuld ²⁵ 1985	Anatomy of physiological functions based on environmental symbolism, not dissection
Unschuld ²⁶ 2016	Anatomy of body dimensions analogous with social order and the State, no mention of dissection as a means of acquiring knowledge
Harper ⁵ 1998	Mawangdui texts are the birth of 'channel theory'. Anatomical research not discussed
Shaw (this document)	Anatomical examination through dissection was carried out systematically over an extended period of time during the ~400-year period of the Han era

In the text below I will briefly introduce the texts I translated and worked on, and summarise their historical role and significance.

Mawangdui medical texts

The *Mawangdui* medical texts are the earliest known Chinese medical texts. When they were discovered in 1978CE the manuscripts had been entombed since 168BCE, and the tombs in which they were found were those of very high-ranking individuals: the Marquis of Dai, his wife Lady Dai, and their son. Other books were found on exercise, nutrition, materia medica of herbal remedies, war, astronomy, astrology and engineering. Education in Han dynasty China was, as is true for many cultures today, a mark of high status and the prerogative of the aristocracy²⁷. The ability to read showed the rank of the reader, and ownership of a personal library was restricted to members of the Marquis' class. The value of these particular books is clear from the fact that they were selected from their personal library to accompany the family into the after-life⁵. The preponderance of texts relating to health show that medicine was a highly prized subject area.

There are 3 separate manuscripts which have large areas of overlap, but are not identical⁵. This shows that they have different authors, implying that this was an area of ongoing research and debate. Eleven meridians are named in these texts. The anatomical pathway of

each meridian is described, along with the ailments that are associated with each, for example this text on ailments of the arm *Tai Yin* meridian:

(illegible characters are marked (1))

“When this (vessel) is moved, one ails from: (vapor) ascending (1) and racing to the heart; bloated abdomen; a tendency to belch; wanting to vomit after eating-when able to defecate and pass vapor there is welcome relief. For these (ailments), the Great Yin vessel controls the treatment.

The ailments that it produces are: feverishness of the heart by itself- death occurs; heart pain and bloated abdomen- death occurs; inability to eat, inability to sleep, and strained yawning- when the three are combined, death occurs; muck and leaking slop- death occurs; water and blockage- when combined, death occurs- making ten ailments.”⁵

Huangdi Neijing

Acupuncture itself has a clear beginning in the Yellow Thearch/Emperor’s Inner Classic or *Huangdi Neijing*²⁸. The *Neijing* is a compilation of texts which span the full ~400-year period of the Han Dynasty, and enjoys great status in China as both an historical text and a repository of knowledge of the Five Phase medical paradigm. The importance of this ‘canonical’²⁹ text cannot be overemphasised. The *Neijing* is one of the most significant and revered medical tomes in Chinese culture.

The Five Phase medical doctrine describes the body as a microcosm of the greater macrocosmos. The macrocosmos obeys natural laws as the energy of the universe flows annually through five seasons: winter, spring, high summer, late summer/harvest, and autumn. Each season follows the previous one in turn, and when there is balance, the world thrives. The same is true for human beings, and all living creatures - all are subject to the same natural laws.

In his 2003 book on the *Neijing*, Paul Unschuld says:

‘Knowledge of a distinct regularity uncovered in frequent climatic changes not only permitted an understanding of the generation, growth, maturity, and death of numerous phenomena in nature in general; even more important, it enabled man to integrate himself into eternal laws governing all existence.’³⁰

The *Neijing* is written in two sections, the *Su Wen* (Simple/Basic Questions)³¹, and the *Ling Shu* (Numinous/Spiritual Pivot)³². Contemporaneous to the *Huangdi Neijing* is the *Huangdi Bashi yi Nanjing*³³ (The Huang Emperor’s Canon of Eighty-One Difficult Issues/The Classic of Difficult Issues) which expands on some of the topics explained in the *Neijing*.

Unschuld & Tessenow translated the first part of the *Neijing*, the *Su Wen*, in 2011³¹, creating a separate dictionary³⁴ to support their translations. Although the *Neijing* has traditionally been considered to be one book with two halves, in the introduction to his seminal 2016 translation of the second part, the *Ling Shu*³², Unschuld views the *Su Wen* and *Ling Shu* as separate books. They were both compiled in the Han era and reflect the emergence of acupuncture as a medical discipline, but have different historical backgrounds. He refers to the *Su Wen*, the *Huangdi Bashi yi Nanjing*, and the *Ling Shu* as ‘sister works’ which together comprise the Yellow Thearch trilogy²⁶.

Notable scholars have devoted enormous care to the preservation and accurate understanding of the *Neijing*. Wang Bing, writing during the Tang dynasty (618-907CE), spent 12 years collating all the texts, organising them into the order in which they have remained since. He added extensive commentary, finally finishing his magnum opus in 762CE³⁰. Li Dong Yuan 李東垣 (1180-1250), Ma Shi 馬蒔 (dates unknown, but lived during the Ming dynasty 1368-1644), Huá Bó Rén 滑伯仁 (1304-1386), Zhāng Zhì Cōng 張志聰 (1630-1674), and Shang Yu Gong 尚御公 (no dates) also wrote commentaries. There are few other medical texts that have merited this level of care, which is more reminiscent of the scholarship accorded religious texts such as the Torah and associated Talmud, Qur'an or Bible.

The Five Phase doctrine from the *Neijing* was the philosophical basis of medicine in China for millennia. During the Cultural Revolution, Mao Ze Dong decided that Traditional Chinese Medicine (TCM) should be part of the medical provision of the new Communist China, alongside Western medicine. Government policy was that doctors should be trained in both^{35,36}. This proved crucial to the new 'barefoot doctor' programme which was instigated during the Cultural Revolution to create a new kind of Chinese doctor, who could work in remote areas with the local rural population and provide a link between these people and urban doctors who had greater Western medical expertise^{37,38}.

During this time, China was moving away from the old Five Phase system and towards a new paradigm for acupuncture theory, the theory of 'Eight Principles'. This theory was seen as more 'scientific', and is based on four sets of complementary and opposite qualities: *yin/yang*, hot/cold, external/internal, excess/deficiency. TCM is now the standard methodology used to train doctors in Chinese Medicine both within China and throughout the world.

These developments all contributed to the ongoing medical dialogue that started with the *Mawangdui* and *Neijing*. These volumes thus led to a constantly evolving understanding of the physiology of the human body based on a general principle of describing the flow of *Qi* in health and disease. This dialogue continues to the present day within the different forums and academic institutions which discuss and teach TCM.³⁹

In this text and my published works, which go into much more detail on specific aspects of particular texts, I have shown that the ancient Chinese valued anatomical knowledge by looking at their original texts (*Mawangdui* and *Neijing*). In the following section, I look at how they *arrived at* their anatomical/medical knowledge.

2. Anatomical science: the significance of dissecting the human body

Cultural differences in how the body is viewed in death have shaped the study of human anatomy throughout the ages. Understandings of anatomy and the consequent development of medicine are intimately intertwined, with anatomical education underpinning various different paradigms of medical science. In my experience working as an anatomist for many years, no-one is unmoved by the thought of dissection of human beings. The responses people have to this practice vary from strong approval and curiosity to revulsion and disgust. The cultural and legislative norms of each society inform the type of anatomical enquiry that their anatomists engage in, with the use of human cadavers being prohibited in some cultures, and permitted in others.

Laws can be highly variable on this point, and interpretation of them can be different, even within the same legal system. For example, in the UK, the Human Tissue Act 2004⁴⁰ states that all human tissue can only be given by the individual concerned, with their full informed consent⁴¹. This applies in all parts of the UK: England, Scotland, Northern Ireland, and Wales. Body parts for transplantation fall under the same legislation, but there are differences in provision in different parts of the country.

Consent for transplantation is tied to the driving licence so that if an individual donor dies in a car accident, the transplant team can be notified immediately to enable their organs to be harvested speedily. Road traffic accidents are one of the most common causes of death for otherwise healthy people in the UK, and hence a very important source of organs suitable for transplant⁴². In Scotland, England and Northern Ireland, organ donation is an option that you need to 'opt in' to on your licence. In Wales however, for some time organ donation has been the default option. As a new driver, you are made aware of this when you are awarded your licence. You then need to 'opt out' if you do not wish to be a donor. Having observed how this works in Wales⁴³, England will be adopting the 'opt out' system from May 20th 2020⁴⁴, to combat the challenges associated with higher demand for organs than can be supplied by those individuals who are currently willing to 'opt in' to donating.

*"The law is being changed to help save and improve more lives. Every day across the UK, someone dies waiting for a transplant."*⁴⁴

In the UK, there has been legislation regarding human tissue since the 'body snatchers'. The Anatomy Act was instigated in the UK in 1832⁴⁵ to create a legal framework around the use of human bodies for medical education and research. It has been updated several times since, and ultimately led to the Human Tissue Act 2004 referred to above. Now, any individual wishing to leave their body to medical science must do so in writing, with witnesses, and be capable of signing the donation forms. In the US however, the family of the deceased can make this decision for a family member after their passing, unless that individual has stipulated their wishes for the disposal of their remains in their will. Additionally, if an individual dies in hospital in e.g. New York, and their body remains unclaimed by their family, the State has the authority to use it for medical education and research. This is still in line with the original (UK) Anatomy Act 1832, which was adopted in Pennsylvania in 1831⁴⁶.

The core legal point of difference between the US and the UK is therefore around who has decision-making authority⁴⁷. An individual has sovereignty over their own body during their lifetime in both cultures. At death however, the individual in the UK retains authority over what happens with their bodily tissue, whereas in the US, they do not. This is an example of two cultures with a shared language, many similar cultural norms, and who used to have the same core legislation governing human tissue. The UK has nevertheless developed a new imperative— a change from taking to giving⁴⁸ – on which their subsequent legislation is based⁴⁹, and this has resulted in a substantial change in what happens with a person's body after death.

Use of human cadavers for medical education in ancient China

A similar process of change in cultural norms, and the laws which reflect them, can be seen in Chinese history. Each Imperial court established their own legal, ethical and cultural frameworks which governed the society of their time.

In Han dynasty China, the Confucian law of filial piety,⁵⁰ which underpinned society and culture in the Han era, made the mutilation of the body of an ancestor illegal.⁵¹ Ancestors were respected and venerated, and their bodies treated with the same respect in death as in life. This did not necessarily apply to the body of the obedient child, however. There were 24 exemplary stories used as a guide to practical behaviour about the morals of male and female protagonists. In one of these stories, the son cuts a piece of flesh from his thigh to use as an ingredient in his mother's medicine⁵². This practice was banned in later dynasties, and in 1189 the Confucian Zhang Gao said:

*"Alas, our body and limbs, hair and skin, we got them altogether from our parents, as so we have no right to maim or wound them. Could any parents, even if dangerously ill, possibly desire their offspring to mutilate their limbs, and make them eat their bones and flesh? These are the ideas of stupid people."*⁵²

For criminals however, mutilation of the body could be a part of punishment. The five mutilating corporal punishments were a part of the Chinese legal process for centuries: tattooing of the face, amputation of the nose, amputation of the foot (left, right, or both) castration and death. They were banned during the Han dynasty in BCE 167 and replaced with other punishments such as penal servitude, hard labour, and beating⁵³. The reason for the ban was that mutilated individuals lived a life of everlasting shame as partial human beings. A mutilated body was seen as a mutilated spirit, and there was no hope of rehabilitation once the body was permanently disfigured⁵³.

Although the mutilating corporal punishments were banned, the death penalty was retained, and initially had two variations with scaled severity of punishment. The least bad variation was hanging - it was quick, and the body remained intact. The next level of death penalty was decapitation or cutting in half - also quick, but the body was in two parts, and so no longer complete. In later dynasties, *Ling shi*, known in the West as the infamous death by a thousand cuts⁵⁴, was reserved for the most heinous crimes like treason. The criminal was hung up in a public place, and sliced with a small sharp knife over a period of time until they eventually died⁵⁵.

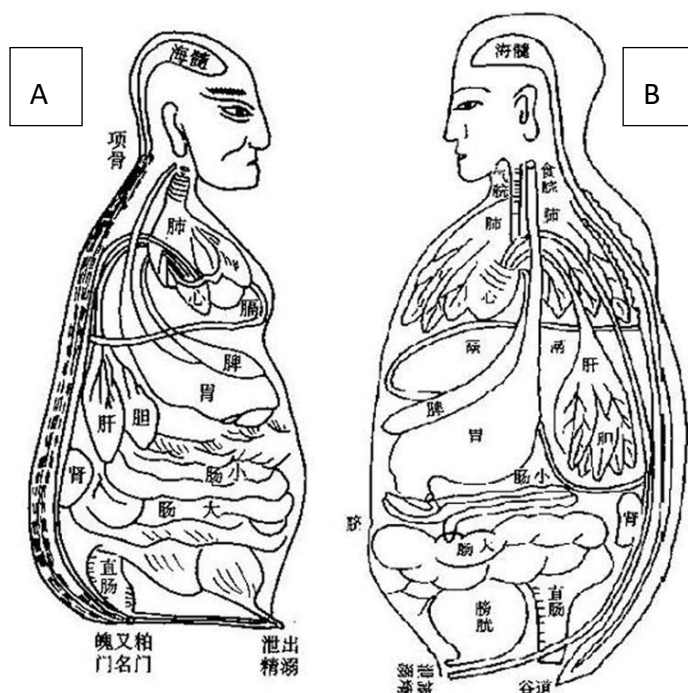
The implications are that during the Han dynasty, anatomical examination and dissection of upright citizens are practices which were culturally taboo. This taboo did not however extend to criminals, as shown in the documented evidence of the dissection of a criminal as part of his punishment in the Book of Han⁵⁶⁻⁵⁸. Dissection as an additional form of punishment associated with the death penalty is not mentioned again until it is seen in the later Song dynasty dissections of a criminal gang, which also formed the basis for the first anatomical atlas that is in the Chinese historical record as having been made from looking at dissected criminals, the *Cun Zhen Tu* 'Anatomical Atlas of Truth'.⁵⁹

A distinctive feature of the *Mawangdui* and *Neijing* corpora, compared to the Song dynasty texts, is the lack of images contained within them to support the text. Subsequent interpretations and drawings made based on these texts have therefore relied on the imagination of artists working without any access to the original material that informed them.

This is very different for the later Song dynasty anatomy where extensive drawings were made directly from cadavers (Figure 1). I discussed the distinctive qualities that underpin a good atlas in a poster¹⁶ which looked at two of the pictures from this atlas, and identified 3 key characteristics, namely:

1. Commitment to veracity
2. Dissection of many cadavers to arrive at a 'norm', i.e. reproducible images
3. Labelling to allow for ease of recognition and teaching

Figure 1: sagittal views of the brain and internal organs from the Song dynasty Anatomical Atlas of Truth⁶⁰. In these pictures, the left-hand drawing (A) shows the normal relations of thoracic and abdominal organs, with the diaphragm as a horizontal line dividing the two. The right-hand drawing (B) shows the diaphragm curving down from the midline along the line of the costal margin to insert into the lumbar region. The organs identified in both drawings are: brain with spinal cord passing along the vertebral column in A, and inside the vertebral column in B, lungs with trachea showing cartilage rings, heart with inferior vena cava and aorta which passes into the abdomen behind the diaphragm in the lumbar region in B, stomach continuous with oesophagus above, large and small intestines, rectum and anus below, spleen, liver and gallbladder, kidney with ureter, bladder with urethra. Interestingly, the connection of the ureter from the kidney into the trigone of the bladder is incorrect in both. The navel is labelled on B to give a landmark on the abdomen. In both drawings, the lungs and liver both show the distinctive branching patterns that are characteristic of these organs.



On examining these images, I noted that:

*"These two stylised drawings can therefore be seen to be correct in both gross anatomical, and relational aspects. They fulfil the three criteria of veracity, reproducibility and accurate labelling identified above as being crucial for reliable anatomical drawing."*¹⁶

To sum up, placing the analysis of the *Neijing* and *Mawangdui* texts in direct juxtaposition with the visible human body forms the foundation of my body of work. This analysis is then placed into the historical and cultural context of Han dynasty China to show that this type of scientific endeavour is both reasonable and in keeping with the mores of that time. The history of medicine (and of anatomy) is full of similar examples of dissection being used to establish ‘anatomical truth’, from ancient Greece to the present day. This line of evidence thus also adds to the strength of my argument that ancient meridian and acupuncture point texts were detailed anatomical atlases.

3. History and philosophy of science: how knowledge is transmitted

In the (interlinked) discussions of ancient history and anatomical sciences above, I have shown how anatomical science was carried out in ancient China. In this third section, I will establish how it is possible that the anatomical veracity of such an important part of medical research has been ‘lost’. The key question I aim to answer is ‘why has the assumption that the ancient Chinese did not practise dissection been so prevalent?’ This text therefore builds and expands upon the summary of others’ views provided in Table 1, as a means of explaining how these authorities had come to their conclusions. Kuriyama says:

“Doctors in China missed much of the detail observed by Greek dissectors and incorporated invisible features that dissection could never justify. This especially is what makes the acupuncture man seem a mystery – the blind indifference to the claims of anatomy.”²⁴

Sinology and anatomy are infrequent bedfellows, and most of the most eminent scholars whose work defines the ‘received wisdom’ in this field have based their studies on extensive knowledge of ancient medical systems in general, with particular emphasis on the West. Many parallels have therefore been drawn with ancient Greek medicine^{20,23,24,26,61–63}. In regard to the practice of dissection in ancient China, and how it compares to the use of dissection in the West, Lloyd is clear that;

“So far as our extant evidence goes, it is clear that it suggests that dissection was developed earlier, and used more extensively in Greece than in China.”²³

The only undeniable historical record of dissection in the Han dynasty is found in the *Han Shu*⁶⁴, in a record of the criminal Wang-sun Ch’ing’s fate at the hands of the Emperor Wang Mang:

“Wang (Mang) sent the Grand Physician and the Master of Recipes, with a skilled butcher, all together to dissect and flay (him), to measure and examine his five viscera, so as to find out their beginnings and ends, saying that (thereby) they would know how to cure illness.”⁶⁴

When Lloyd discusses this text in ‘Adversaries and Authorities²³’, he does not see it as describing a primarily medical undertaking:

“it may be that the intent was, in the first instance, punitive. Moreover the whole episode may have been recorded, in the Hanshu, partly to illustrate Wang Mang’s cruelty.”²³

Sivin and Lloyd also briefly discuss this passage of the *Han Shu* in ‘The Way and the Word⁶⁵’, concluding that:

*"The Chinese lack of interest in structure was related to the fact that before A.D. 200 physicians did not perform therapeutic surgery, even trepanation.....We know of only one dissection (A.D. 16, by 'skilled butchers') for the purpose of investigating anatomy before the eleventh century. It's uniqueness, like the omission of surgery, appears to be due to a taboo against opening the body. Still, one cannot assume that frequent medical dissections would inevitably have deepened anatomical understanding. If directed by questions centred on processes, opening of the body more likely would have led to a new range of functional answers, just as Aristotle's quest for formal and final causes affected what his dissections of animals showed him."*⁶⁵

Kuriyama, however, disagrees. When discussing the same text he says:

*"Mikami Yoshio hypothesized half a century ago that there was a punitive aspect to this dissection. The possibility can't be ruled out. It wouldn't have been the first time that curiosity and cruelty worked in concert [...] But Mikami's hypothesis suffers from the difficulty that the Hanshu account itself breathes not a word about vengeance, and that the procedures it recounts betray no malice. We are directed explicitly, instead, to another goal: acquiring insights useful in healing."*²⁴

Kuriyama goes on to develop his own interpretation of this text, noting the confidence with which this anatomical examination was undertaken:

*"the dissection of Wangsun Qing was ostensibly the first, and quite possibly the only dissection ever conducted in ancient China. We would have expected to find the dissectors less sure about how to proceed; but the Hanshu account betrays no uncertainty. On the contrary, it evinces a remarkable confidence about both the method of investigation and the usefulness of the resulting knowledge. The dissectors knew exactly what they wanted to know. Apparently without hesitating, they moved straight to measuring and weighing the viscera, and tracing the course of the blood vessels."*²⁴

He contextualises this examination as part of the broader *"ethos of the unified state"*²⁴.

The Han dynasty was the first time in Chinese history when the whole country was united as a single great country. Part of this unification was the development of a single Chinese script that was used regardless of the individual dialects and languages used in different Chinese regions. As well as standardising language, the Han dynasty Emperors introduced the standardisation of weights and measurements - a key element for any State that requires uniformity and the payment of taxes. Kuriyama sees the desire to measure and weigh the human body expressed in the *Neijing* as part of an overall program of measuring and cataloguing the world:

"When the Yellow Emperor says in Lingshu treatise 14, 'I would like to hear about the dimensions of commoners. What are the girths and lengths of the bone and joints in someone seven and a half chi tall?' we can hear the voice of a Staatswissenschaft intent on framing human diversity within numerical norms."

Ultimately, he concludes that this dissection was a singular event, however - not part of a broader anatomical exploration:

"The dissection of Wangsun Qing was a rare, perhaps unique exception. Overall, anatomical inspection left only faint impressions on the ancient Chinese conception of the body [...] When dissectors inspected the body in ancient China, they didn't see the nerves and muscles that Greek anatomists found so arresting. They lingered instead on measurements that Galen and his predecessors entirely ignored."

Writing in 1985, Unschuld was also of the opinion that systematic dissection was not part of Chinese medical research at the time, but rather that anatomical explanations were based in environmental symbolism:

“Since we have no clues indicating that the passage quoted earlier from the Huang-ti nei-ching (sic), referring to a circulation of ch’i (sic-Qi) influences and blood through the organism, was legitimated by any anatomical proof, we may hypothesize that the ‘recognition’ of this circulation in China at some time during the second or first century BC was stimulated by environmental symbolism. We might even go so far to claim that, given the means to observe anatomical structures available at that time, this ‘discovery’ might have been prevented by other, less accurate insights if systematic dissections had been performed.”²⁵

By the 2016 introduction to his translation of the *Ling Shu*, Unschuld’s opinion had changed somewhat. Quoting an excerpt from *Ling Shu* chapter 12 which, like the chapter 14 passage referred to by Kuriyama, describes quantification and precise measurements of the body, he says:

“The morphological identification of the organs in ancient Chinese texts such as the Ling Shu, the Su Wen and the Nan Jing is, without any doubt, largely identical with the morphology of the organs as it was known in Europe as well since ancient times.”³²

“Location, capacity, size and other parameters are described with precision in the Ling Shu. Especially chapters 32 and 49 provide this information.”³²

He does not, however, expand on how this knowledge was arrived at. Instead, his focus is more on the analogies that the Chinese used between the body and the State to explain normal functioning and health:

“In the Ling Shu and Su Wen the terminology and concepts of the individual body and the body politic the state are largely identical. The new medicine offered not only a new approach for dealing with individual healthy and sick bodies. It also embedded this approach within a very definite social order. The bureaucracy essential for the functioning state appeared in the body as well.”³²

Needham, furthermore, notes that:

“both the surgery and the anatomy of the ancient Chinese have been greatly undervalued by medical historians in general⁶².”

This shows us that knowledge of what the ancient Chinese actually knew about anatomy is minimal. The core belief that anatomical examination was not used has led to a variety of interpretations of how anatomy was done. In turn, the way that culture and history have been interpreted has shaped the ways that we understand ancient anatomists’ methods.

My work challenges this - in order to justify that challenge, and a new perspective, we need to be able to explain how and why knowledge of anatomy by dissection specifically was lost.

Transmission of knowledge after the Han era

Some existing records of how the understanding of the anatomy of the body was arrived at would have been lost as the Han dynasty collapsed leading to a period of war. The wars following the Han dynasty resulted in the repartitioning of what had been a unified China into the Three Kingdoms (220-280 CE). There are few to no surviving medical texts from this period, and no indication that any anatomical research continued. The texts written during

the Han era were therefore handed down, being copied and recopied over the centuries. This continued until a resurgence of dissection-based enquiry a thousand years later in the Song era (960- 1279CE).

The Song 'Anatomical Atlas of Truth'⁶⁰ is based on the dissection of a gang of 56 criminals, and the content of the atlas is the basis for the creation of the Bronze Man acupuncture teaching figurine (Figure 2)⁶⁶. The figurine is hollow inside, and has the acupuncture meridians drawn as lines onto the surface. Plastic figurines (Figure 3) with the meridian lines drawn on the surface are freely available to buy, and are still used for teaching acupuncture point location today⁶⁷.



Figure 2: Song dynasty bronze man, National Museum of China, Tiananmen Square¹²⁹

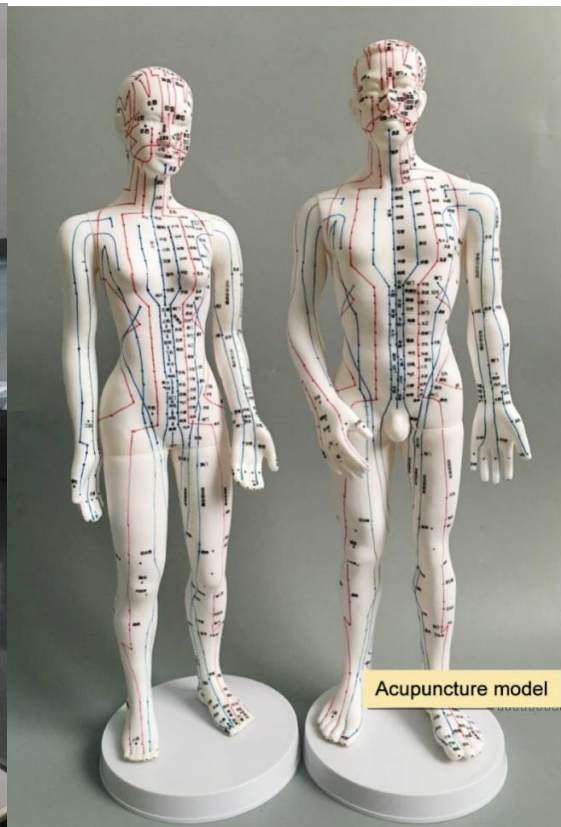


Figure 3: Modern plastic human acupuncture point models¹³⁰

Acupuncture points in the bronze man were marked as small holes drilled through the bronze (little dots on the meridian lines in the modern plastic versions). For examination of trainee acupuncturists, the holes were sealed with wax, and the figurine was filled with water. The student was required to measure exactly where the point was using a proportional measuring system where a thumb width is one 'inch' (*cun*). They then inserted the needle and if water flowed, they passed. This type of examination of the student's ability to accurately locate the acupoints is therefore very precise. The correct and unadulterated transmission of this information through successive generations of acupuncturists is clearly of the highest importance.

The Song dynasty anatomical research therefore affirms the connection between dissection, and the physicality of meridian pathways (which are symbolically represented as lines on a

body thereafter). These descriptions form an anatomical basis for the location of acupuncture points, found by proportional body measurements which remain consistent over time, and across individuals.

The name 'Anatomical Atlas of Truth', and the fact that the results of their anatomical examinations were literally 'cast in bronze', further suggests that this information was considered valuable. It also implies that there had been a loss of 'anatomical truth' in the ~millennium since the original *Neijing* texts. The opportunity to re-establish that truth, based in empirical observation of the bodies of these criminals, fitted the dual purpose of giving the criminals a more severe punishment than simple death, and advancing science. Song dynasty physicians and anatomists were endeavouring to establish a scientific and anatomical legacy of the basis of acupuncture meridians and acupoints that would endure through time, and which could not become corrupted again.

Translation - and how anatomical knowledge come to be lost in it

To date, ancient Chinese texts have been studied either by Chinese scholars working in China and writing in Chinese, or by Western sinologists based in Germany, the UK or the US who write in either English or German. Sinology in Germany dates back to the 19th century⁶⁸, but the establishment of University positions in the discipline was interrupted by the rise of Nazism and the 2nd World War, when many German scholars fled to the United States after 1933 when Jews were banned from holding academic posts^{69,70}. Although these original scholars are now retired, the historical legacy of German sinology can still be seen in the USA today.

Hermeneutics is concerned with how to maintain fidelity to the spirit of a text when you may not have the concepts and language required to be able to translate it literally⁷¹. The discipline arose out of the study of ancient Western literature, in particular the Bible and the ancient Greek texts, but hermeneutical concerns are also relevant for the translation of these canonical Chinese texts. There are many possible interpretations of the same (often highly succinct) lines of text, as interpretation, some of it associated with the unconscious biases of translators, is inherently part of the process. Even great scholars like Richard Wilhelm, who created the seminal translations of multiple Chinese texts including the 'Book of Changes'⁷² (*Yijing*), have their own personal belief systems which can influence their work⁷³.

In modern times, Paul Unschuld is a giant in the field of translation of the Han era Classics of Chinese medicine^{25,26,30,31,33,34}. The WorldCat entry for him lists 187 works in 587 publications in 4 languages, and 18,054 library holdings⁷⁴. This impressive record establishes him as one of the foremost sinological scholars of our time. His translations are the most authoritative written, and there are significant differences between his translations, and those of others.

There are 13 different English language translations of the *Neijing* in total⁷⁵, some partial and some complete, with each author giving a slightly different interpretation of the text. None of the translations of these texts is written from the perspective that they might be based on direct anatomical examination. They all differ in what they think the aims of the writers were, which means there can be wide variance in interpretation.

When I started this work, Unschuld had not yet published his translation of the *Ling Shu* which has been a crucial core text. To be able to check the precise meaning of the original text, I found it important to work with translations that contain the Chinese directly juxtaposed alongside the English. The only available translation of the *Ling Shu* that fulfilled this criterion at the time was Wu and Wu²⁸. The necessity for me to read in the original became increasingly apparent as I started to see the differences between translations informed by different authors' varying experiences and world views. My world view is informed by a deep study of anatomy, making my translations (which were done with the assistance of Yong Xian Ren, then a colleague at Oxford, and are included in full as appendices A-D) unique to me. The following example (Table 2) is one of many showing how diverse translations of the same passage can be (and is by no means the most extreme example!).

Table 2 *Ling Shu* chapter 10

Author	Text
Liansheng Wu, Qi Wu ²⁸	<i>"One can determine the survival or death of the patient, can treat various diseases and find out whether the disease is of sthenic or asthenic according to the condition of the channel, and one must understand it."</i> ²⁸
Jing-Nuan Wu	<i>"The major channels are able to decide life and death. They are the dwellings of the hundred diseases, but also the harmonizers of hollowness and solidity. This cannot be done if they cannot be understood."</i> ⁷⁶
Paul Unschuld	<i>"The conduit vessels enable one to determine death and survival, to cope with the hundred diseases, and to balance depletion and repletion. It is inappropriate not to be knowledgeable about them."</i> ³²
Shaw and Ren	<i>"Talk about jing mai, they can make the difference between life and death, they can process one hundred diseases, they balance excess and deficiency, cannot not (must) pass through/connect/open (create a passageway)."</i> ⁷⁷

This example shows the variety of possible interpretations of the same text, and that the importance of being able to verify a translation by referring to the original cannot be over emphasised. "Although there are now reliable, authoritative translations of all my core texts

available in libraries (references), I believe that it was only by doing my own translations as well that I was able to truly test my own hypotheses and intuitions. My translations therefore form a core part of the evidence base supporting my published works and this thesis' core argument."

Discussion

I have now critically surveyed three separate lines of evidence that cut across different fields of study, and explored their state at the beginning of my seven years of research and today. Evidence from each distinct area of study (anatomy, ancient history and history of medicine), supports my central argument in different, but congruent ways. Together, they allow us for the first time to explain that these Han dynasty medical texts are anatomical descriptions of the body, arrived at through an extended period of anatomical research.

The evidence in my first paper looking at the silk-like qualities of fascia⁸ is, taken alone, relatively weak. It is certainly insufficient to substantiate a claim that contradicts the received wisdom of the best scholars in the field who have studied these same texts. However, in the subsequent three papers^{6,7}, I have shown how descriptions of meridians from the *Mawangdui* and the *Neijing* map onto the physical body, and how significant subsections of acupuncture names describe consistent anatomical landmarks. I have also shown that the Han dynasty has a record of dissection of a criminal for the purposes of medical examination, and this practice was therefore State-sanctioned. Furthermore, I have explained how the difficulties involved in access to human cadavers under Confucian law would have limited direct knowledge of the substance of these texts to a select few anatomists, who then wrote down what they saw for others to learn from, but crucially did not draw pictures. This explains why knowledge of the cadaveric origin of these Han texts was lost when dissection ceased.

The ability to conduct anatomical investigations of *any* kind is still highly restricted. As an anatomist working within a UK University, I am in a rare and privileged position which allows me to have the extensive access to cadaveric material that has been required to arrive at this body of work. This is combined with a knowledge of acupuncture based on 25 years of clinical experience as a practising acupuncture physician - a combination of professional abilities that come together only rarely.

In my papers I have focussed on showing directly the structures that I believe the texts to be describing, using photographs of dissections made for this purpose. It is only in the last ~40 years that the invention of digital cameras has made it possible to share anatomical information so directly. Had the original Chinese texts been accompanied by detailed anatomical drawings, as the later Song dynasty ones were, then perhaps the knowledge would have been retained through the intervening period and up to the present day, rather than having to be rediscovered in the twenty-first century.

The significance of my ideas

Through my work I have shown that 'received wisdom' regarding the understanding of anatomy, and the processes through which that understanding was arrived at in Han dynasty China is not correct. This means that we need to reassess the original

interpretations of the *Mawangdui* and the *Neijing* using this new perspective that recognises them as anatomical atlases. This changes their function within Han dynasty China and has significant implications for modern acupuncture medicine, too.

My understanding of these texts is that their primary function was to record the findings of anatomical examination, and to share that knowledge throughout Imperial China as part of the broader Han dynasty focus on creating a unified country based on what was for them the most modern and up to date scientific discoveries and medicine.

If I am right, then this completely changes this portion of medical history, and effectively creates a new field of enquiry. This new field is fundamentally interdisciplinary, and will require specialists to collaborate extensively to take these ideas further. There is still a lot to be done - for instance, detailing exactly how the 11 meridians in *Mawangdui* developed into 12 meridians in the *Neijing*. This further research has key implications both for ancient Chinese medical history and for ongoing research into the physiology and effects of acupuncture treatment. I have already articulated the main effects on the former field, so focus here on the latter.

Today the debates that fuel academic research and thus drive the furtherance of knowledge occur in subject specific journals. Publication in a relevant journal is a requirement for any research endeavour, and the quality of the research is examined and verified through peer review. There are currently 31 journals⁷⁸ dedicated to acupuncture research, and many more dedicated to the broader arena of TCM which also includes herbal remedies. Research into acupuncture uses many scientific exploratory techniques such as fMRI⁷⁹, biomechanical effects⁸⁰ localised chemical changes⁸¹, empirical studies (Randomised Controlled Trials-RCTs)⁸², and the use of animal models⁸³ to try to uncover the underlying mechanism(s) for acupuncture.

All such investigations, at present, are founded in the belief that the anatomy of the meridians and points that they are choosing to use in their experiments is intangible, not physical. There are authors who have performed anatomical studies in order to establish correlations between acupuncture meridians and points, and specific anatomical structures^{84, 85, 86, 87}, but they all assume that the original descriptions found in the ancient texts are not based on dissection of physical anatomy. Most of the current research and anatomical interest focusses on the nervous system as many of the points lie over named nerves^{88, 89}. To show that the acupuncture points are physical descriptions of the body which have no particular physiological association is therefore contrary to the basis of most acupuncture research models currently in use⁹⁰.

This is because the starting point that underpins all modern acupuncture research is the core assumption that acupuncture points are intrinsically physiologically 'different' to other parts of the body. It also assumes that the originators of acupuncture somehow 'knew' this, and that physiological efficacy was the reason for naming and using these particular body landmarks.

Based on this assumption, and the many correlations with nerve structures, fMRI has become a major tool for acupuncture research, particularly in China. The use of fMRI started with the Cultural Revolution when there was a focus on making Chinese medicine more scientific⁹¹. To identify the prevalence of fMRI in current acupuncture research, I did a PubMed search using 'acupuncture, fMRI' as the search term. This returned 708 papers, with 507 of these published in the last 10 years, and 295 in the last 5 years. This shows a

steady increase in the quantity of fMRI-based studies over the last 20 years that are of sufficient quality to appear in this peer-reviewed database.

The majority of the authors of these studies have Chinese names. I looked at the author information for the first 20 papers and excluded 5 because they were either written in Chinese, or were study protocols for proposed trials. Of the authors of the remaining 15 papers, 8 are from authors working entirely in China^{92–99}, 3 are Chinese authors working in collaboration with authors in the US^{100–102}, another 3 are collaborations between authors in Korea, the US and the Netherlands^{103–105}, and one is a collaboration between Taiwanese authors and King's College London¹⁰⁶. The clinical conditions being investigated were highly diverse, including back pain, migraine, Alzheimer's, Parkinson's, carpal tunnel syndrome, inter subject synchronisation, tobacco cravings, gender differences in response to the same acupuncture treatment, depression and hypertension.

A second search through PubMed with the keywords 'acupuncture, study protocol' limited to the last 5 years returned 784 papers describing proposed studies. The first 15 consist of 3 systematic reviews, 1 Delphi protocol and 11 Randomised Controlled Trials (RCT). Again, the preponderance of authors are Chinese (9)^{107–116}, with 2 Korean^{117,118}, 3 American^{119–121}, and 1 Israeli study¹²². Again, the topics vary widely and include poststroke depression, knee arthritis, constipation, irritable bowel syndrome, cognitive decline, dyspepsia, sciatica, carpal tunnel syndrome, delirium, breech presentation of a baby, allergic rhinitis, migraine and angina.

This short assessment of the available literature in PubMed is in no way comprehensive, but it does nevertheless give an indication of the types of acupuncture research currently being engaged in, the types of study that are preferred, and the breadth of clinical conditions under investigation. If acupuncture is investigated using fMRI, then the responses of the nervous system are the only results that can be seen, as this is the type of information that fMRI gives us. This may or may not be correlated with clinical effects, depending on the scope of the study. If a study is an RCT, then clinical outcomes are the data that result from the trial.

In both cases, there is an underlying assumption that 'acupuncture' is a unitary intervention. Studies use either manual or electro acupuncture which interface with the body differently. In the case of manual acupuncture, the physical interaction between the needle and the recipient's body has been shown to be one where the needle connects with the fascial or connective tissue of the body. In manual acupuncture the needle is twisted after insertion until a sensation of '*de Qi*' is felt by the patient. This can be a heavy sensation, or feeling of fullness around the needle. Langevin et al. have shown^{123–127} that when the needle is inserted into tissue and twisted, that the fascia or connective tissue will wrap itself around the tissue to form a whorl. This mechanical interface in turn mediates a variety of different responses in the tissue. Electro acupuncture by contrast introduces a small electrical current into the body at the acupuncture point. Both methods are used in trials interchangeably, even though there is evidence to show that they do not have the same outcomes¹²⁸.

In my view, the perceived interchangeability of needle stimulation types, and the belief that there is a single mechanism for acupuncture whether it be connective tissue distortions and the subsequent effects, or stimulation of the nervous system, is rooted in the conception of acupuncture points as fundamentally physiological entities. This assumption of acupuncture points being defined by their supposed shared physiological characterisation is one that my

thesis of acupuncture points as an anatomical atlas fundamentally challenges. Taking my work as a basis, those investigating acupuncture's effects and mechanisms must take seriously the possibility that both may be multiple and complex, rather than unitary and (in theory) simple to understand. At the same time, the idea that 'inconsistency' in the results of acupuncture clinical trials or studies indicates a lack of efficacy for the treatment *as a whole* must also be questioned.

Conclusions

In this thesis, and my published works, I have argued that:

1. Acupuncture is not magic – that is, acupuncture points and meridians are not intrinsically esoteric;
2. There is and was a solid scientific (anatomical) foundation for the description of acupuncture meridians and texts;
3. Understanding this dramatically and positively affects our understanding of the history of ancient China. In particular, it explains how medical theory and science fit harmoniously with the ethos of medicine in Han China as it moved away from theories based in demonology and shamanism to a new rational medical paradigm;
4. There are good cultural and historical reasons why the knowledge of Han dynasty anatomy was lost, and the insight that forms the basis of this seven-year body of work was not possible before;
5. Although there is still a lot left to do in this area to flesh out the detail, my work has established a new framework within which future scholars can develop their own ideas, and may lead to fairer and more fruitful research in interconnected parts of both history and science.

A complex combination of events has had to come together to allow acupuncture theory to be understood once again through the lens of anatomical examination. The time for this anatomical knowledge to once again be a part of our greater body of knowledge has now come.

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TRADITIONAL CHINESE MEDICINE

Meridians under the skin

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Abstract

The physical nature of the acupuncture meridian system is currently the subject of enquiry. The original structural descriptions of the meridian system contained in the *Huangdi Neijing*, the ancient Chinese medical text also known as the *Yellow Emperor's Canon of Internal Medicine*, are detailed and specific. The *Huangdi Neijing* states that dissection was used as a tool for investigating the anatomy of the human body. If dissection formed part of the basis for the anatomical essays in the original text, then it should still be possible to use it to find the same physical structures today. The words used in the *Huangdi Neijing* to describe meridians repeatedly contain the character for silk. This occurs in Jing Luo, the character for the meridian network, and in Jing Mai, the character for an individual channel. The fascia of the body resembles silk in appearance. It pervades the body, wrapping around every structure, and either separating or connecting these body parts. An obvious question arises, was the character for silk chosen to describe meridians because this was what was observed during dissections performed by the authors of the *Huangdi Neijing*? If this hypothesis holds true, then the Chinese characters that were originally used to describe the meridian network could literally describe the nature of the physical substrate for acupuncture – the silk-like fascial tissue of the body.

Keywords: acupuncture, anatomy, dissection, fascia, *Huangdi Neijing*.

Introduction

Over the past 20 years, there has been much debate about the physical nature of acupuncture meridians. Theories about the physical substrate for these meridians variously involve the nervous system, the connective tissue and the lymphatic system, and invoke physiological hypotheses of changes to the electrical properties of tissue or alterations to the calcium flux across cell membranes in interstitial fluid. At present, there is no consensus on how these physical structures and physiological processes might interconnect to explain changes in the health of patients receiving acupuncture.

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In the *Huangdi Neijing*, the seminal ancient Chinese medical text also known as the *Yellow Emperor's Canon of Internal Medicine* (Wu & Wu 1997), it is stated that the anatomy of the meridian system, the Jing Luo, was elucidated by the use of dissection, Jie Pou. The choice of the word “dissection” implies that the meridian network has a physical structure that can be seen with the naked eye.

The present paper analyses the etymology of the language originally used to describe the Jing Luo, and examines contemporary dissections of the human body in the light of this language and the relevance that it may have for current research. The relevant Chinese words and corresponding Chinese characters, along with English translations, are listed in Table 1 in the order that these appear in the text.

Table 1. Chinese words, corresponding Chinese characters and English translations

Chinese word	Chinese character(s)	English translation
Jing Luo	經絡	Meridian network
Jie Pou	解剖	Dissection
Qi	氣	Vital energy
Xue	血	Blood
Xue	腧	Acupuncture point
Huangdi Neijing	黃帝內經	Yellow Emperor's Canon of Internal Medicine
Su Wen	素問	Simple Questions
Ling Shu	靈樞	Celestial Pivot
Xin Bao	心包	Pericardium
Nei Guan	內關	Inner Pass
Da Ling	大陵	Great Mound
Jing	經	Meridian
Su	糸	Silk
Jing	𡿨	Underground watercourse, warp, canon
Luo	絡	Network
Ge	各	Phonetic part of Luo
Jiepouzhe	解剖者	Dissector
Jiepoudao	解剖刀	Scalpel
Jiepouxue	解剖學	Human anatomy
Jie	解	Divide, explain
Pou	剖	Cut open, analyse
Jing Mai	經脈	Channel
Mai	脈	Blood vessel
Roux	肉	Flesh

Acupuncture meridians

The meridian network or Jing Luo is considered to be the anatomical basis for acupuncture. It is conceived as a series of pathways through which vital energy, Qi, and blood, Xue, flow. Within it, there are holes or acupoints, Xue, and the insertion of a fine needle into these can regulate the Qi. Jing Luo pathways are described in the *Huangdi Neijing*, a compilation of essays written between c. 400 and 200 BCE. The text follows the literary convention of the time by taking the form of conversations between the Yellow Emperor and his chief physicians. It is the original textbook according to which acupuncture has been practised for the past 2500 years. The *Huangdi Neijing* is divided into two sections: the first part is called “Basic Questions” (Su Wen) and the second is known as the “Spiritual Pivot” (Ling Shu). Most of the present paper will focus on the Ling Shu, and Scroll 1, Chapter 1, and Scroll 3, Chapters 10 and 12, in particular.

In Scroll 1, Chapter 1, of the Ling Shu (Wu 2004, pp. 493–501), the Yellow Emperor states his intentions for this acupuncture textbook:

“I have compassion for the people [. . .] they fall ill constantly. I want to treat them with a fine needle inserting into the skin instead of giving them any medicine or applying any stone needle for to dredge the channel, adjust the energy and blood, promote the circulation of the blood, causing the agreeable and adverse conditions of the channel and the coming and going of the energy and blood to be complementary with each other. [. . .] Therefore it is necessary to draw up a statute for acupuncture, to facilitate its application and make it unlikely to be forgotten, so that the acupuncture method may not be obliterated and lost.” (Wu 2004, p. 493)

This quote illustrates the author's belief that acupuncture is a superior form of medicine to all others because it is sophisticated, effective and without adverse effects, and so needs to be preserved for posterity.

The *Huangdi Neijing* gathers together essays on acupuncture theory and practice written by many authors over a period of approximately 200 years, and was intended to be the definitive

textbook on acupuncture. Since its contents were written by the most learned philosophers, doctors, scientists and scholars of the time, a reasonable assumption would be that each word and every sentence was the result of much careful thought. The development of a common Chinese script was a key factor in the unification of a country that had many different languages. In writing the *Huangdi Neijing*, a careful choice of language would be crucial because the written word formed a cornerstone for the country to function as a whole.

The Chinese medical theory of acupuncture is one part of a general cosmological theory of how the macrocosm of the natural order works, and in this case, it is applied to the microcosm of the human body. The same theory applies equally to society and the state, and within acupuncture theory, the analogy of the state is used to describe the relationships between organs; for example, the heart is the Emperor and the liver is the general. For this reason, the boundaries between science, medicine, philosophy and scholarship were not well defined as these are in our time and culture, and the cross-fertilization of ideas between disciplines was normal.

Etymology of anatomical descriptions

The anatomical descriptions of the meridian network in the *Huangdi Neijing* are likely to have been chosen with deliberation. The *Shuo Wen Jie Zi* or *Explanation of Simple Graphs and Complex Characters*, the earliest extant dictionary of the Chinese language, was written c. 58–147 CE. There are many different dialects and languages in China, some of which also have their own script, but the Chinese script remains the same across the country, facilitating mutual intelligibility regardless of distance and dialect. Through looking at this dictionary, it is possible to trace the etymology and history of particular words, and the *Shuo Wen Jie Zi* contains many of the medical terms written in the *Huangdi Neijing*, such as Jing and Mai, which are still in active use today. The careful choice of the words in the *Huangdi Neijing* has much in common with the aim of modern anatomical terminology. Contemporary anatomical nomenclature is chosen to allow precise descriptions of the structures in the

body and their spatial relationships. The function of the structure is also often described in its name. The choice of anatomical words can be the subject of much debate by the International Anatomical Nomenclature Committee before new nomenclature is decided upon and allowed into common use (IANC 1989).

One example of the similarities between the Western and Eastern approaches is the word for the covering of the heart. Pericardium is a Latinized version of the Greek word *perikardion*. This is derived from *peri* (“around, about”) and *kardia* (“heart”). Put together, the two words mean “membrane around the heart”. This describes both the structure of the pericardium as an enveloping material, and the spatial relationship between the pericardium and the heart, where the heart is that which is enveloped. The function of the pericardium, i.e. to contain/anchor and enclose the heart, is implicit in the naming. This function of containment is very important. If the pericardium were not present, the heart would move excessively with each beat and damage surrounding structures. The enveloping pericardium maintains the position of the heart, protects surrounding structures, and provides a layer of lubrication between it and the heart, facilitating the primary function of this organ.

The Chinese word for pericardium is Xin Bao. This has two parts, Xin (“heart”) and Bao (“envelop”). Put together, it means “that which envelops the heart”. This initial interpretation is similar in meaning to pericardium. However, Chinese script is very different from Roman writing. English or Roman script is formed from letters that represent the sound of a word when these are read aloud. There is no direct relationship between the shape of the letter and the sound that they represent. The same letter will occur in multiple words, and sometimes multiple times within the same word, but each occurrence is divorced from any meaning other than the phonetic sound. If the correct letters are present, or even if letters that together produce a phonetically similar sounding word are present, meaning can be deduced both aurally and visually. However, if a mistake is made using letters such that these will not produce a recognizable pronunciation, then the meaning is lost. If the arrangement of letters in a word is unfamiliar,

even if it can be pronounced as written, meaning cannot be deduced simply from the letters or their arrangement.

If a word can be recognized from its sound, then what the text is referring to will be understood. If a mistake is made in reading the correct pronunciation of a word, then the text will be meaningless to the reader. If a word is unfamiliar, even if it has been pronounced correctly, it will still be meaningless. When reading silently to oneself in English, there is still an internal dialogue of sound.

Conversely, Chinese script is written using characters or graphs. Single characters are stylized representations that can be pictographs representing things, or ideographs describing concepts and ideas, and these can combine with other characters to give complex meanings. The characters may also have a phonetic component that guides pronunciation. The phonetic component may add to the meaning or may simply give information on sound. The characters of Chinese script have the added dimension of being depictions of the object as well as sharing a phonetic component with the letters of Roman script.

As described above, pericardium in Chinese is Xin Bao, a combination of the characters Xin, which is a stylized drawing of the heart and its different chambers, and Bao, which is a stylized drawing of a child (the small square in the centre) enclosed in the womb (the structure around the child) (Wiseman & Zhang 2003). This implies that Xin Bao is not just describing an organ contained within an envelope, but that something very precious is contained within another thing that keeps it safe and nurtures it (the heart enveloped in its wrapping as safely and carefully as a baby in the womb), an implication/interpretation that is missing from the word pericardium.

In Chinese medicine, the heart is identified as the seat of consciousness and is considered to be the place where the spirit resides. It is regarded as the physical, emotional and spiritual centre of the body, and is described as the “Emperor” of the organs. The cultural importance or preciousness of this organ is reflected by the choice of the “child in a womb” pictograph that denotes the wrapping part of the pericardium. Another, more literal, translation of the Chinese word for pericardium would be “heart protector”, which

exemplifies more of the functions that this structure is regarded to have than a simple translation of pericardium would, since the latter only implies the spatial relation of the heart to the surrounding tissue. Xin Bao gives the reader information not only on the physical level, but also in terms of mind and spirit. In a clinical setting, acupoints on the Pericardium (PC) channel are often used to help people overcome the effects of shock and emotional disturbance. The different layers of meaning contained within the character Xin Bao offer the physician additional knowledge. This valuable information enables the acupuncturist to select points on this channel, such as Nei Guan (“Inner Pass”, PC6), to “[r]egulate the heart and calm the spirit”, or Da Ling (“Great Mound”, PC7), to “[c]lear heat from the heart and calm the spirit.” (Deadman *et al.* 1998, pp. 365–385).

If analysed in same way, the etymology of Jing Luo (Yellowbridge online etymological Chinese dictionary; <http://www.yellowbridge.com/>), usually translated as “meridian network”, contains a wealth of meaning. Jing consists of two characters: Su, “silk”; and Jing, which means, variously, underground watercourse, warp of fabric or loom, canon, classic, or seminal text. Jing is also the phonetic component and gives the sound of the word. Likewise, Luo consists of two characters, Su and Ge. Su is again the character for silk, and in this character, Ge gives the phonetic pronunciation only and plays no part in the meaning of the word. Taken as a whole word, Luo means a network when used as a noun, and denotes “to net” when employed as a verb (Wiseman & Zhang 2003). Su, the character reiterated in both Jing and Luo, originally meant unreel silk or stringy fibre. Sericulture or silk production can be dated back to c. 2700 BCE from written records. There is archaeological evidence in the form of engravings on bronze vessels of silkworm cultivation dating back to c. 5000 BCE. Silk production was of enormous importance to China, and anyone moving in academic circles would have been familiar with the texture of woven silk and might well have seen raw silk fibres being spun from a cocoon. If the physicians contemporary with the Ling Shu section of the *Huangdi Neijing* used these specific words to describe a body structure with the same precision as they characterized the

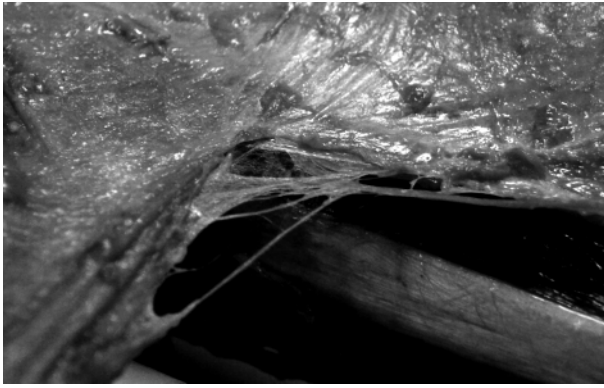


Figure 1. Thin strands of fascial tissue from the fascia lata of the lower limb.

pericardium, then the phrase Jing Luo could literally mean a silk-like net/network, fabric or underground watercourse within the body. This is in contrast with the current less-precise and less-descriptive definition “meridian network”. However, it can be argued that the various meanings can be reconciled by direct observation of the anatomy of the meridian network in the human body.

Contemporary dissection

The human body contains a structure that resembles silk. This is a form of connective tissue primarily consisting of collagen fibres that is referred to as fascia when arranged in certain ways. Silk is biologically compatible with the body, and although there is no direct archaeological evidence, it is reasonable to assume that any suturing would have been done using silk, and that the compatibility of silk fibres with the human body may well have been known to ancient Chinese physicians. Fascia appears in a multiplicity of forms: as stringy fibres, as translucent sheets, as fibres arranged in rows and as sheets with fibres oriented in different directions. Depending on its function, it can vary in quality from loose and delicate to tight and tough. It encircles neurovascular bundles, and separates and defines structures while also connecting them one to the other. The fascia can be viewed as a single interconnected structure that pervades the whole body, providing continuity between the skin, muscles, bones and organs.

Figures 1–4 show the use of dissection to demonstrate different aspects of fascial tissue within the human body. These examples are all taken from the lower limb of the cadaver of an

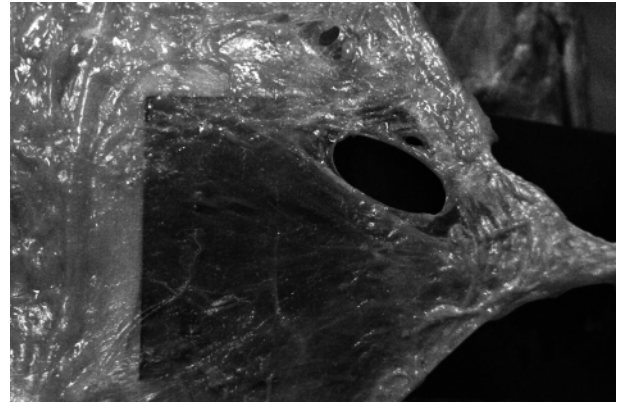


Figure 2. Gossamer-thin fascial tissue over the dorsum of the foot.

82-year-old man who had no history of connective tissue disorders. He was embalmed using the “soft mix” embalming method. This method of embalming, unlike “traditional medical school” embalming, maintains the flexibility of the joints and the texture of the tissue in a cadaver.

The Chinese word Jie Pou translates into English as dissection or autopsy. The character is



Figure 3. Fascial fibres over the tibialis anterior muscle with clear strands like the warp and weft of fabric.

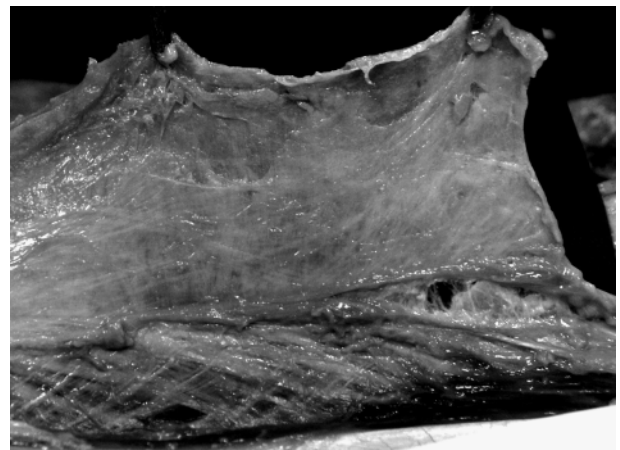


Figure 4. Fascia on the lower limb showing fibres oriented in different directions.



Figure 5. Neurovascular bundle with the fascial sheath dissected in the centre to show: (A) the tibialis anterior artery; (B) the venae comitante; (C) the nerve with (D) the fascial sheath still covering the bundle on the right; and (E) fascial tissue connecting the neurovascular bundle to the fascia lata.

used almost exclusively in this sense. It is also part of the compound characters for dissector (Jiepouzhe), scalpel (Jiepoudao) and human anatomy (Jiepouxue, which can be literally translated as “dissection-ology”). The etymological root of the character Jie means “to divide, separate, explain, understand, a solution”, while Pou denotes “to cut open or analyse”. The imagery in these characters is that of explaining by cutting open and analysing: “I cut open in order to understand.” The English word autopsy has a similar etymological root meaning “a seeing with one’s own eyes”. The purpose of using dissection to study the human body today is still the same. It enables the viewer to make sense of the whole by studying in detail the individual parts and their relationships with each other. This concept is succinctly conveyed in Chinese in two characters. If the ancient Chinese writing the essays in Scroll 3, Chapter 12, of the *Ling Shu* were indeed using dissection, then they would have been looking at the same structures that we are examining at now. The text describing dissection in this part of the *Ling Shu* reads:

“[T]he body of a grown-up man has the skin, muscle and channel. To a living man, one can inspect him by touching, to a dead body, one

can examine it carefully by dissection (Jie Pou).” (Wu 2004, p. 578)

Jing Mai is the word for an individual channel or blood vessel, whereas Jing Luo refers to the whole meridian system. The character for Jing, meaning silk and warp/underground water-course, is the same as that used in Jing Luo. The character for Mai is composed of the character used to denote flesh (Roux) in a complex character (it means moon on its own) on the left and tributaries joining a main river on the right. The pictograph for tributaries flowing into a main river on the right does not exist on its own. This word is translated as “blood vessels”.

By following the same process of etymological analysis combined with dissection to explore what this word might be referring to, Jing Mai indicates a physical structure resembling water-courses that flow like small streams into larger rivers and are connected with silk-like tissue. The obvious interpretation is that this represents arteries and veins since blood vessels commonly travel with nerves as part of neurovascular bundles contained within a sheath that is made of the silk-like fascial tissue. The sheath encloses each individual structure, and binds these together while also protecting them. The fascial sheath can be seen to delineate a common pathway for

all of the structures that traverse the length and breadth of the body (Fig. 5).

Conclusion

The question remains, are the characters originally chosen for the key ideas in the present acupuncture theory, i.e. Jing Luo and Jing Mai, words chosen to communicate the nature of the meridian system throughout China and throughout time, intended as literal descriptions of what the authors of the texts in Scroll 3, Chapter 12, of the Ling Shu observed?

There is a fundamental philosophical difference between the holistic, interconnected and integrated approach of acupuncture, which aims to understand and treat a person by looking at the physical interconnectedness of the body, and the reductionist approach of modern medical science. In a sense, the latter aims to continue the process of dissection by dividing the body into smaller and smaller parts, and seeks to achieve understanding by finding generalizable knowledge in ever-increasing detail. If the above arguments about the primacy of fascia are correct, this difference may be exemplified by the view of acupuncture and the Ling Shu that the fascia (Jing Luo) binds and connects the structures and functions of the body. Conversely, most modern anatomical texts and approaches to studying the human body remove or downplay the biological roles of the fascia in order to focus on the underlying structures. However, without the binding of the fascia, these underlying structures are reduced into discrete entities. Interestingly, there has been a recent resurgence of interest in the fascia within anatomical research.

The resemblance that the fascia bears to silk is striking. The prevalence of the character for silk in the original acupuncture nomenclature for meridians is equally striking. Modern research shows that an acupuncture needle interacts with the body by mechanically coupling with the fascia despite ongoing arguments as to its ultimate mechanism (Langevin & Yandow 2002; Langevin *et al.* 2011). Perhaps this is not a coincidence.

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In 2007, as part of her continuing professional development, Vivien attended anatomy courses that examined cadavers and became fascinated with this way of learning. In 2010–2011, she deepened her studies by doing some further courses on dissection that were an extraordinary and enlightening experience. Upon looking at the fascia in the human body for the first time, she had a “Eureka!” moment and became convinced that the fascial tissue must be the physical substrate that explains how acupuncture functions.

Since then, Vivien has studied anatomy and Classical Chinese in order to be able to pursue this idea. She has been generously supported in carrying out this research by the University of Oxford Anatomy Department, where she also demonstrates anatomy and prepares teaching prosecutions.

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Chōng meridian 衝脈 an ancient Chinese description of the vascular system?

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ABSTRACT

The objectives of this research are, first, to establish if the extraordinary acupuncture meridian known as *Chōng* (衝脈), Penetrating Vessel or Sea of Blood, is in essence a description of certain macroscopic parts of the underlying vascular system and, second, by extension, to show that it is likely that cadaveric dissection would have been used as a tool to arrive at this understanding. Generally accepted scholarly opinion holds that the ancient Chinese rarely used dissection in order to explore the anatomy of the human body, and that the meridians are therefore invisible metaphysical structures corresponding to lines drawn on the body. However, the seminal text, 'The Yellow Emperor's Classic of Internal Medicine', describes using palpation to examine the living and dissection to examine the dead. This implies that the original authors of these texts were observing physical structures visible to the naked eye. Dissection has therefore been used to compare the descriptions of the *Chōng* meridian in 'The Yellow Emperor's Classic of Internal Medicine' with the vascular anatomy of the human body. Fifteen acupuncture points located on various different ordinary meridians but bearing the same name, *Chōng* (衝/沖), were also examined to see if they bore any relationship to the vascular system. The dissections clearly show that the *Chōng* meridian correlates to certain main blood vessels in the body, in particular the vena cava. Similarly, most *Chōng* acupuncture points have a strong correspondence with blood vessels, marking terminal arteries on the hands, feet and forehead and anastomoses on the face, body and feet. These findings strongly suggest that the ancient Chinese texts relating to this meridian are likely to have been a 'description' of the vascular system. Furthermore, the ancient Chinese apparently had a high degree of anatomical skill in the practice of dissection and acute powers of observation.

INTRODUCTION

The meridian network is traditionally depicted as lines drawn on an image of a person. The lines shown do not correlate with any known anatomical structure. As the stated purpose of meridians is to transport Qi 氣 or energy, they have been assumed by Chinese medical scholars to be metaphysical in nature. Despite a specific reference to dissection (jiě pōu 解剖) in the original acupuncture texts, general opinion is that the ancient Chinese did not engage in anatomical exploration^{1–3} but rather inferred the existence of meridians and points from palpation, massage, meditation and exercises to develop Qi.⁴ It is, however, entirely possible that there was an original anatomical basis to the meridians, but that this has been lost. In my occupations both as acupuncturist and anatomy demonstrator, I became aware of a similarity between blood vessels and a particular meridian, *Chōng mài* 衝脈, Penetrating Vessel, and decided to explore the possible correlation in greater detail. Dissection was used as a tool to observe the gross anatomy of the structures being described in the *Chōng* texts in order to establish the likelihood of this meridian being a physical rather than a metaphysical structure.

The original descriptions for the *Chōng* meridian were therefore translated to see if they might describe a directly observed structure. *Chōng* is one of eight 'extraordinary' meridians. It is also called *Xuè Hǎi* 血海, Sea of Blood, and is considered to have a primary function of nourishing the whole body and the organs. It differs from the ordinary meridians, which have the majority of acupuncture points located along them, in that it has no meridian points of its own. Various

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abdominal points on the kidney meridian are, however, considered to be closely related to it. Acupuncture points with the same name were also studied to determine if they had any direct relationship with the meridian; if true, it would imply that they may have been so named in order to draw attention to this relationship.

METHODS

The study was carried out in the Anatomy Suite of the Department of Physiology, Anatomy and Genetics at Oxford University using cadavers donated for anatomical teaching and research under the Human Tissue Act (2004). Six human cadavers (three male, three female, average age 82) embalmed by standard procedures (Vickers Leeds formalin embalming fluid) were dissected to expose the anatomy underlying the areas described in the texts and the *Chōng* points. Six cadavers were used to ensure that the findings were consistent and to demonstrate any difference between individuals. In the torso and limbs no variations were found, but there were some variations in the terminal arteries to the forehead where the vessels to BL4 did not reach all the way to the hairline in two of the six individuals.

Descriptions of the *Chōng* meridian were translated from two passages found in the seminal acupuncture text 'The Yellow Emperor's Classic of Internal Medicine' (*Huángdì Nèijīng* 黄帝内经).⁵ The *Chōng* meridian descriptions translated here are found in the second section, the Spiritual Axis (*Líng Shū* 靈樞). These descriptions were compared with dissections of the human body, anatomical textbooks^{6–10} and acupuncture point manuals, both European^{4 11–14} and Chinese.^{15–17}

In order to facilitate the discussion of different passages, short phrases from the translated passages have been numbered consecutively from 1–18 (using superscript numbers). This numbering has been retained in both images and in the text to enable the reader to refer easily between translations, images and discussion (box 1).

Texts and translations

Passage A in box 1 describes the more superficial aspect of the body. It starts in the forehead and descends into the Yang area below it, then passes into the *Shǎo Yīn* (Lesser Yin/Kidney) meridian on the trunk. A lower part starts in the groin at ST30, Qí Street, and runs down the medial leg to the plantar surface of the instep of the foot. Passage B starts in the uterus and travels upwards in front of the spine to the base of the throat where the meridian diverges and finishes by encircling the mouth. This deeper pathway also connects to the surface at ST30. These two descriptions combine to describe the pathway of the *Chōng* meridian as we know it today.

Box 1 Original text and translations

(A) Spiritual Axis, chapter 38

夫衝脈者，五臟六腑之海也，五臟六腑皆稟焉。其上者出於頤頰，滲諸陽，灌諸精；其下者，注少陰之大絡，出於氣街，循陰股內廉，入臍中，伏行脰骨內，下至內踝之後屬而別；其下者，並於少陰之經，滲三陰；其前者伏行出跗屬下，循跗，入大指間，滲諸絡而溫肌肉。

Chōng meridian, is the sea of the five solid organs and the six hollow organs, it is the basis for the five solid organs and the six hollow organs. It goes out from the forehead,¹ leaks into the Yang,² irrigates essence; the lower part pours to the big network of Shao Yin,³ exits at Qí Street,⁴ follows the inner aspect of the thigh,⁵ to the centre of the space at the back of the knee,⁶ travels hidden along the inside of the shinbone,⁷ passes down and arrives behind the inside of the ankle⁸ where there is another branch; the meridian comes down joined with Shao Yin meridian, it permeates the 3 Yin; the front part is hidden and circulates to exit below the instep,⁹ and the meridian follows the instep to the space between the big toe,¹⁰ it permeates through and the meridian network keeps the muscles and flesh warm.¹¹

(B) Spiritual Axis, chapter 65

衝脈任脈，皆起於胞中，上循背裏，為經絡之海；其浮而外者，循腹右上行，會於咽喉，別而絡唇口。
Chōng meridian and rèn meridian both come out from inside the uterus,¹² they travel up along the inside of the back¹³ and are the sea of the meridian system;¹⁴ there is a part which goes to the exterior,¹⁵ it circulates and travels up the right side of the abdomen¹⁶ and meets in the throat¹⁷ where it diverges and wraps around the mouth.¹⁸

Chōng acupuncture points

Fifteen acupuncture points whose name includes the character(s) *Chōng* 冲/衝 were dissected to determine their underlying anatomy. 'Grasping the Wind', an authoritative textbook on acupuncture point names, was used as the source book. It lists nine points where *Chōng* is the commonly used name and six where *Chōng* is an alternative name.¹¹ There are two characters, 衝, 冲, both pronounced *Chōng*, which have similar meanings and which have been given the same character 冲 in modern simplified Chinese.¹⁸ They have similar meanings but 冲 is usually translated as 'surge' whereas 衝 is translated as 'thoroughfare' or 'hub'. They can be variant names for the same point; for example, LR3 太冲 Great Surge, 太衝 Great Thoroughfare. This study includes the points which have either one of these characters in their name, translated as either 'surge' or 'thoroughfare' depending on which *Chōng* character is used. All points are listed in table 1.

Table 1 Acupuncture points named *Chōng* 冲/衝

	Point	Location	Anatomical correlates
Hand	HT9 少冲 <i>Shào Chōng</i> , Lesser Surge	On the little finger, radial to the distal phalanx, 0.1 <i>fen</i> proximo-lateral to the radial corner of the little fingernail	Digital vessels. Terminal artery
	TE1 關冲 <i>Guān Chōng</i> , Pass Surge	On the ring finger, ulnar to the distal phalanx, 0.1 <i>fen</i> proximal to the ulnar corner of the finger nail	Digital vessels. Terminal artery
	PC9 中衝 <i>Zhōng Chōng</i> , Central Thoroughfare	On the middle finger, at the centre of the tip of the middle finger	Digital vessels. Terminal artery
Wrist	HT7 神門 <i>Shén Mén</i> , Spirit Gate *兌冲 <i>Duì Chōng</i> , Protuberant Surge	On the anteromedial aspect of the wrist, radial to the flexor carpi ulnaris tendon, on the palmar wrist crease (at the end of the 'protuberant' (ulna) bone	Ulnar vessels
Arm	LI14 臂臑 <i>Bì Nào</i> , Upper Arm *頭冲/衝 <i>Tóu Chōng</i> , Head Surge, Head Thoroughfare 頸冲/衝 <i>Jǐng Chōng</i> , Neck Surge, Neck Thoroughfare	On the lateral aspect of the arm, just anterior to the border of the border of the deltoid muscle, 7 <i>cun</i> superior to LI11	Profunda brachii artery and radial nerve wrap around the humerus close to this point but do not directly correlate with it
Face	BL3 眉冲 <i>Méi Chōng</i> , Eyebrow Surge	On the head, superior to the frontal notch, 0.5 <i>cun</i> superior to the anterior hairline	Supratrochlear vessels. Terminal artery
	BL4 曲差 <i>Qū Chā</i> , Deviating Turn *鼻衝 <i>Bí Chōng</i> , Nose Thoroughfare	On the head, 0.5 <i>cun</i> superior to the anterior hairline, 1.5 <i>cun</i> lateral to the anterior median line	Supraorbital vessels. Terminal artery
	LI20 迎香 <i>Yíng Xiāng</i> , Welcome Fragrance *冲陽/衝陽 <i>Chōng Yáng</i> , Surge/Thoroughfare yang	On the face, at the same level as the midpoint of the philtrum, inferior to the lateral margin of the nostril	Superior labial artery (branch of facial artery), anastomosis with inferior labial artery encircles the mouth
	GB9 天衝 <i>Tiān Chōng</i> , Celestial Thoroughfare	On the head, directly superior to the posterior border of the auricular root, 2 <i>cun</i> superior to the hairline	None identified
Head	GV19 後頂 <i>Hòu Dǐng</i> , Behind the Vertex *交冲, 交衝 <i>Jiāo Chōng</i> , Intersection Surge/Thoroughfare	On the head, 5.5 <i>cun</i> superior to the posterior hairline, on the posterior median line (1 <i>cun</i> caudal to the vertex)	On the top of the skull, the central cerebral vein runs along the midline inside the cranium
Torso	SP12 冲門 <i>Chōng Mén</i> , Surge Gate	In the groin region, at the inguinal crease, lateral to the femoral artery	Femoral artery
	ST30 氣冲 <i>Qì Chōng</i> , Qi Surge *氣街 <i>Qì Jiē</i> , Qi Street (the name originally given to this point in the Spiritual Axis) *羊屎 <i>Yáng Shǐ</i> , Sheep Droppings	In the groin region, at the same level as the superior border of the pubic symphysis, 2 <i>cun</i> lateral to the anterior median line, over the femoral artery	Anastomosis between external iliac and inferior epigastric vessels. Sheep Droppings could refer to the lymph nodes in this area
Foot	ST42 冲陽 <i>Chōng Yáng</i> , Surging Yang	On the dorsum of the foot, at the joint of the base of the second metatarsal bone and the intermediate cuneiform bone, over the dorsalis pedis artery	Dorsalis pedis artery
	LR3 太冲 <i>Tài Chōng</i> , Great Surge *太衝 Great Thoroughfare *大冲 <i>Dà Chōng</i> , Big Surge	On the dorsum of the foot, between the first and second metatarsal bones, in the depression distal to the junction of the bases of the two bones, over the dorsalis pedis artery	Anastomosis between dorsalis pedis and plantar vessels
	KI1 湧泉 <i>Yǒng Quán</i> , Bubbling Spring *地冲, 地衝 <i>Dì Chōng</i> , Earth Surge, Earth Thoroughfare *足下中央之脈 <i>Zú Xià Zhōng Yāng Zhī Mài</i> , Blood Vessel in the Centre of the Bottom of the Foot	On the plantar surface of the foot in the depression formed when the toes are flexed	Deep plantar artery where it passes through the first intermetatarsal space

cun is a proportional measurement which corresponds to the width of the individual's thumb; *fen* is a small amount approximately one-fifth of a *cun*. WHO standard point locations.¹⁴

*Common usage names are given first, alternative point names are starred.

Putting the texts together with the points and the anatomy

To aid clarity in this section, the complete meridian is shown in the digital painting in figure 1. Both figures 1 and 2 are the result of collaboration between the author and an artist, where an image of a body model was taken and further images of dissections—for

example, heart and great vessels, pelvis—were superimposed onto the model. These layered images were then integrated to create a coherent anatomically accurate whole, and the image was given a 'painterly' style rather than the more medical style of the dissections in figure 3. Text from passage A is written in black with text from passage B in blue to differentiate

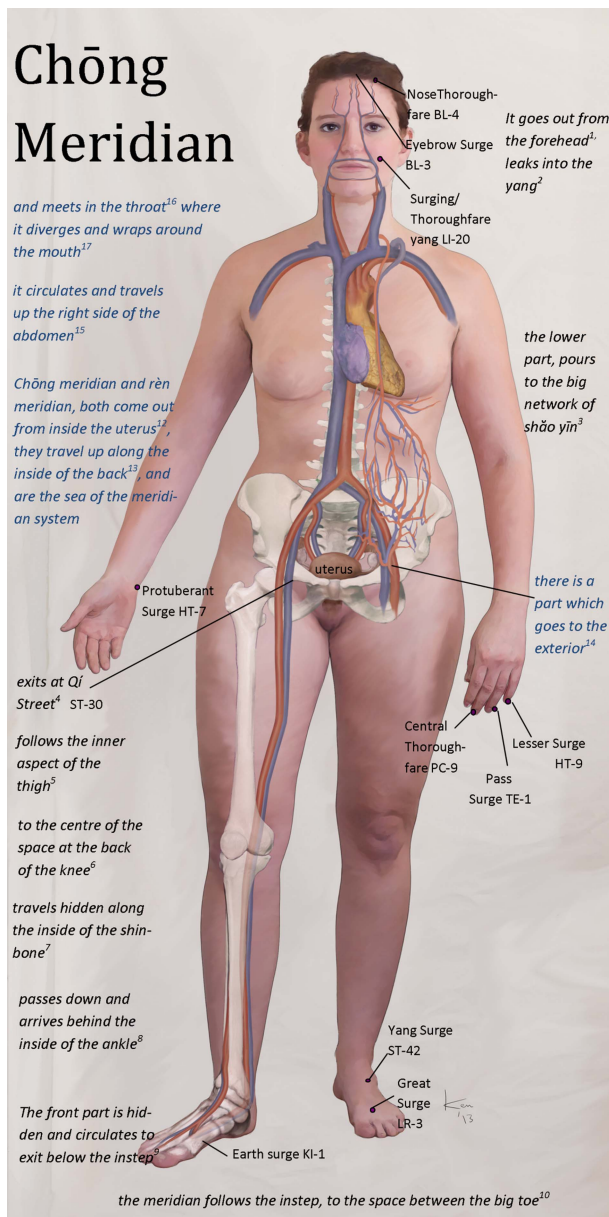


Figure 1 Proposed pathway of the Chōng meridian.

them, and superscript numbering identifies the different phrases.

The direction of ‘flow’ follows the Chinese texts. This contrasts with physiological blood flow where arteries are blood vessels leading away from the heart and veins go towards it. With the exception of Chōng, English language names have been used.

The start of the Chōng meridian is in the forehead “It goes out from the forehead¹” (A). There are two points on the forehead, BL3 ‘Eyebrow Surge’ and BL4 ‘Nose Thoroughfare’ which both overlie terminal arteries. The meridians below the forehead in the centre of the face are meridians of Shining/Bright Yang “leaks into the yang²” (A). The main vessels in the front of the face run down along the side of the nose and beside the mouth which is surrounded by a

ring of vessels “wraps around the mouth¹⁶” (B). LI20 ‘Surge/Thoroughfare Yang’ is situated in the nasolabial grooves over the origins of this ring of vessels.

The carotid arteries and external jugular veins both pass from the face along either side of the neck where they meet with the arch of the aorta and the brachiocephalic veins “meets in the throat where it diverges¹⁵” (B). The kidney (Shāo Yīn) meridian loosely correlates with vessels which anastomose to form a continuous abdominal vascular structure running between the subclavian vessels at the base of the neck and the external iliac vessels in the pelvis, “pours to the big network of Shāo Yīn³” (A). The “part which goes to the exterior¹⁴” (B) correlates with the anastomosis of this structure between the inferior epigastric vessels and the external iliac vessels. This anastomosis is also referred to in passage A as the acupuncture point ST30 “exits at Qi Street⁴”.

The vena cava and aorta together correspond to the structure described in passage B as the “sea of the meridian system¹⁴”, which travels along the inside of the back, directly in front of the spine. The aorta is in the centre of the body, anterior to the spine “they travel up along the inside of the back¹²”, and probably correlates to the Rèn (conception vessel) meridian referred to in “Chōng meridian and Rèn meridian, both come out from inside the uterus¹¹” (B). The vena cava lies to the right side of the aorta and is the only singular right-sided structure passing through the trunk, “circulates and travels up the right side of the abdomen¹⁵”.

The lower portion of the meridian “exits at Qi Street⁴” (ST30) (A). From here the pathway follows the femoral blood vessels through the medial aspect of the thigh to the centre of the popliteal fossa where they divide into anterior and posterior tibial vessels. The posterior tibial vessels, which travel deeply between the tibia and fibula ‘hidden’ in the deep posterior compartment of the leg correspond to “travels hidden along the inside of the shinbone⁶” (A). The posterior tibial vessels emerge from behind the Achilles tendon in the lower part of the calf, “passes down and arrives behind the inside of the ankle⁷” (A), and pass behind the medial malleolus on the inside of the ankle. They then pass underneath the muscular body of abductor hallucis longus, “the front part is hidden⁸” (A), and travel along the sole of the foot as the lateral plantar vessels “circulates to exit below the instep⁹” (A). They follow the tarsal bones and pass through the first intermetatarsal space to form an anastomosis between KI1 ‘Earth Surge’ and LR3 ‘Great Surge’ on the dorsum of the foot, “the meridian follows the instep to the space between the big toe¹⁰”, it permeates through and the meridian network keeps the muscles and flesh warm¹⁰” (A).

DISCUSSION

The correlations between the main pathways of the vascular system in the body, the pathway of the Chōng meridian and the positioning of Chōng points are

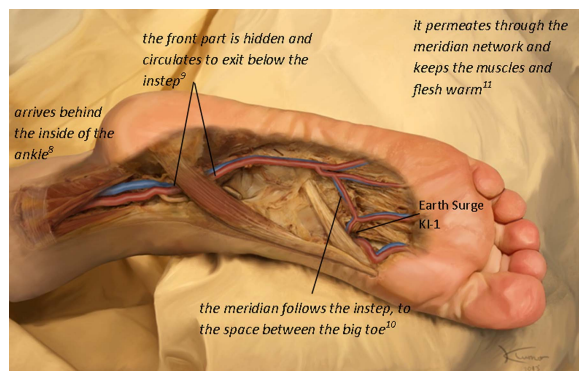


Figure 2 Plantar surface of the foot showing KI1 and lateral plantar vessels.

both direct and obvious. Internally, the vena cava is described with great accuracy from its connections with the uterus deep in the pelvis, passing up through the trunk on the right hand side, branching into two brachiocephalic veins at the throat and finishing by circling around the lips. It is the only right-sided structure running through the trunk, and passage B is unambiguous on this point.

The broader context of the description in passage B of the vascular connection between the uterus and the mouth is that it forms part of a traditional explanation as to why men have beards and women and eunuchs do not. The reason given for this phenomenon is that sufficient blood is required to fill up the vessels to reach the face and provide nourishment for the beard to grow. When women menstruate they lose blood

from the uterus and so have insufficient blood left to travel to the face and nourish a beard. A modern understanding of the same phenomenon would describe the sex hormones being transported in the bloodstream from the gonads to the face and thus forming the physiological basis for the presence or absence of beard growth. Putting the blood pathway together with physiological function in this way implies that the author had clinical knowledge of the female menstrual cycle, and anatomical knowledge of the similarities and differences in the pelvic anatomy of both men and women, sufficient to make the connection between anatomical structure and perceived function.

Clinical relevance is also found in the vascular structures in the foot. KI1, usually called 'Bubbling Spring', will be familiar to practitioners of Tai Chi or Qi Gong as being the part of the foot which is said to connect with the earth. If the foot was injured at this point, then the blood would indeed bubble up from underneath through the deep plantar artery. A key clinical use of the dorsalis pedis pulse ST42 lies in its use for diagnosing the patency of the anastomosis in the first intermetatarsal space. If the artery is functional, then "*it permeates through and the meridian network keeps the muscles and flesh warm*" (A). If, on the other hand, it is occluded, then the foot will be cold.

In the case of LR3 and KI1, the *Chōng* name may well have been given in order to draw attention to their relationship with the vascular anastomosis in the foot rather than as markers for terminal arteries as seen in the hand. A similar anatomical structure is also found on the radial side of the hand. The Chinese placed great significance on the radial artery as a diagnostic tool. It is found on the lateral side of the forearm, corresponds to the anterior tibial artery in the leg and is similar to the dorsalis pedis artery in that, after it has curved around the base of the thumb to pass into the hand on the dorsal aspect, it passes through the space between the first and second metacarpals at the acupuncture point LI4 to form an anastomosis with the deep palmar arch of the hand. In this respect LI4 is the anatomical mirror of LR3, and the two are used clinically as a point prescription for stress.

Another area of anatomical knowledge demonstrated by the Chinese is that of internal structures which mirror each other. The body is arranged in six divisions which consist of matching areas in the hands and feet. The 12 ordinary meridians are named in pairs as the hand or foot meridian of whichever division they belong to. The Lesser Yin division mentioned in the texts, for example, is on the medial side of the leg going to the sole of the foot (Kidney meridian) and on the medial side of the arm going to the palm and little finger (Heart meridian). Both the lateral plantar artery in the foot and the ulnar artery

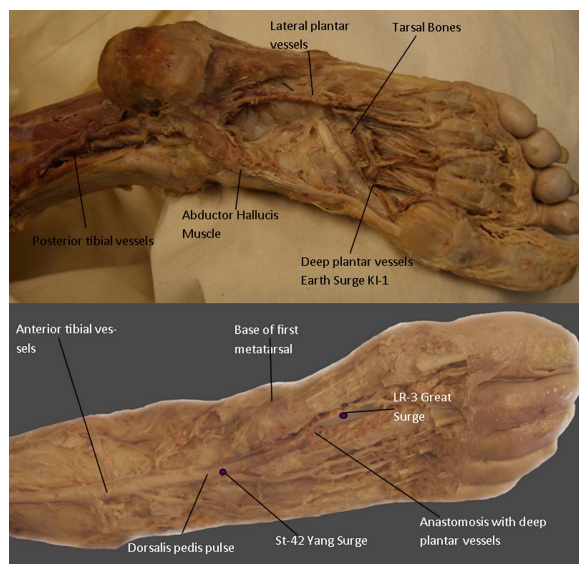


Figure 3 Plantar and dorsal surfaces of the foot showing the deep plantar vessels forming an arch as they follow the plantar surface of the tarsal bones in a curve before passing through the first intermetatarsal space where they anastomose with the dorsalis pedis pulse.

in the hand supply the little digits and the two digits next to them, and the placement of the *Chōng* acupuncture points in the hand demarcates the place at which the ulnar blood vessels enter into the hand at HT7 and of their terminal branches to the medial three fingers at SI1, HT9 and TE1. The Chinese anatomical position correlates the palm of the hand with the sole of the foot and therefore, given that (1) *Chōng* acupuncture points in the hands correlate with the ulnar vessels, (2) the *Chōng* pathway in the foot correlates with the posterior tibial vessels, and (3) these vessels mirror each other, it seems likely that the purpose of naming them would be to draw attention to this anatomical mirroring.

This also suggests that the *Chōng* meridian focuses on the ulnar vessels rather than the radial vessels because of their connection with the little finger. The final point on the little toe is called 'Extremity of Yin', which suggests that, for the Chinese, it marks the nethermost (most Yin) part of the body. It is homologous with the little finger, so the implication is that the Chinese would see the little finger and toe as being the furthest point from the centre (the heart) and therefore the nethermost point of the blood flow. The little fingers and little toes could therefore be considered to mark the outermost reaches of the vascular system.

Observation of these vascular structures requires a very high level of anatomical skill that can only be elucidated by careful dissection as the structures involved lie at the deepest levels of the body. The results of this study therefore show a substantial correlation between the descriptions of both the pathway and the acupuncture points with the architecture of the main blood vessels of the body. It is argued that the correlation between the *Chōng* meridian and points found in 'The Yellow Emperor's Classic of Internal Medicine' is purposeful, and the physical anatomy of the vascular system is being described. The observations made in this paper rely extensively on dissection, and this is a necessary process to reveal at least some of the structures described. The clear implication is that the passage in 'The Yellow Emperor's Classic of Internal Medicine' stating the use of dissection to explore the human body is, in all likelihood, literally true and the description of this meridian at least is physical rather than metaphysical.

CONCLUSION

The pathway described in the texts can be interpreted as a succinct detailed anatomical description of the main vascular pathways of the body. The right-sided structure, which connects through the right side of the body between the uterus and the labial vessels encircling the mouth, is, according to this study, the vena cava. Qi Street, where the *Chōng* meridian is said to emerge, correlates with the anastomosis between the external iliac vessels and the inferior

epigastric vessels, and the description of the pathway along the leg and into the foot correlates with the posterior tibial artery. Of the 15 acupuncture points which have been given the *Chōng* name, 11 have an obvious correlation with either a terminal artery or a significant vascular feature. Taken together, this series of correlations implies purpose rather than coincidence. The knowledge required to make this a description of blood in the body may have been acquired in part through clinical observation of blood flow, but the highly detailed level of structural anatomical knowledge of mirrored structures and anastomoses can only have been acquired post mortem when the blood had ceased to flow. The texts describing this meridian and the choice of *Chōng* acupuncture points therefore appear to be describing the vascular system and also to be based, to a considerable degree, on anatomical dissection. The 'Yellow Emperor's Classic of Internal Medicine', as it so clearly states, would indeed appear to be firmly based in the physical anatomy of the body.

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***Chong* meridian ?? an ancient Chinese description of the vascular system?**

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Was Acupuncture Developed by Han Dynasty Chinese Anatomists?

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ABSTRACT

Anatomical dissection has begun to reveal striking similarities between gross anatomical structures and the system of nomenclature used in traditional Chinese acupuncture. This paper argues that acupuncture point nomenclature is rooted in systematic anatomical investigation of cadaveric specimens, and that acupuncture points and meridians are purposefully named to reflect observable physical form. Two types of evidence are compared: observations of physical structures based on anatomical dissection, and translation and analysis of original Chinese texts. Evidence is contextualized through in-depth practical understanding of acupuncture. Points designated as 天 *tian* (heavenly/superior), 下 *xia* (below/inferior), 髃 *liao* (bone-hole), 飛 *fei* (flying), 委 *wei* (bend), and 谿 *xi* (mountain stream/ravine) are investigated. These acupuncture point names: (a) specify position; (b) reflect function and/or form; (c) indicate homologous structures; (d) mark unusual structures; and/or (e) describe the physical appearance of a deep (dissected) structure by likening it to a homologous everyday object. Results raise intriguing possibilities for developing an understanding of acupuncture points and meridians firmly based in the material and functional anatomy of the human body. Such an understanding has the potential to open new fields of thought about functional anatomy. It also has implications for future investigations into the mechanisms of acupuncture, and gives some insights into the possible origins of this iconic area of Chinese medicine. *Anat Rec*, 299:643–659, 2016. © 2016 Wiley Periodicals, Inc.

Key words: acupuncture; gross anatomy; Chinese medicine; history of anatomy; anatomical nomenclature; acupuncture point nomenclature

Acupuncture is a branch of Traditional Chinese Medicine in which fine needles are inserted into specific locations in the body known collectively as acupuncture points. Points are arranged along meridians, pathways along which vital energy is said to flow. Acupuncture has formed a key part of the medical system in Asia for over 2,000 years, where it is currently offered in hospitals as an optional part of mainstream medicine. Within the UK health service there are two National Institute for Health and Care Excellence (NICE) recommendations for the use of acupuncture, to treat chronic lower back pain (National Collaborating Centre for Primary Care, 2009) and migraine headaches (NICE, 2012). These recommendations are based on systematic

Cochrane reviews (Furlan et al., 2005; Linde et al., 2006). Acupuncture and its therapeutic potential therefore warrant further attention.

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The mechanisms by which acupuncture exerts its effects remain unknown. Physiological investigations focus on the electrical properties of particular acupuncture points using both direct recording in animal models (Wang et al., 2010; Zhang et al., 2012) and fMRI in humans (Napadow et al., 2007; Zhao, 2008; Zhao et al., 2014). Others investigate vasodilation (Zhang et al., 2014), fluid dynamics (Zhang et al., 2013), fascia (Langevin and Yandow, 2002), epigenetics (Wang et al., 2015), adenosine production (Goldman et al., 2013), and more. Social scientists investigate acupuncture using other (nonbiomedical) explanatory models, including focusing on phenomenological experience, the ritual performance of healing, patient-healer relationship, and ecological imbalances (Unschuld, 1985; Kaptchuk, 2000; Fukuda et al., 2005; Hsu, 2012).

The historical origins of acupuncture techniques also continue to be debated (Kaptchuk, 2000); however, it is generally accepted that acupuncture was developed during the Han Dynasty (206 BC–221 AD). The *Mawangdui* medical texts were found in a tomb which was closed in 168 BC. They describe anatomical features of the body, 11 meridians, treatment using bloodletting and cauterization, but no acupuncture points or needling (Harper, 1998). These texts were followed by the *Yellow Emperor's Classic of Internal Medicine* (黃帝內經) (Wu and Wu, 1997) which describes 12 meridians, needling technique and specific acupuncture points. This seminal text was developed and written by many authors over a 400-year period during the Han Dynasty (206BC–220AD). It refers directly to the *Mawangdui* corpus (Keegan, 1988), indicating an evolution of ideas between the *Mawangdui* text and the *Yellow Emperor's Classic of Internal Medicine*.

The research presented in this paper contributes to both the debate about the mechanisms of acupuncture, and the debate about its origins. It begins with a brief overview of anatomical investigation and acupuncture naming conventions in China, and the historical and cultural contexts in which these developed. Data are then sourced from two intersecting fields of investigation: anatomical dissection, and translation and analysis of original Chinese acupuncture texts. Comparative analysis of results suggests that acupuncture points are distinguished neither by their physiological properties nor their cosmological qualities. Instead, points appear to be named according to gross anatomical characteristics. In this case, Han Dynasty texts describing meridians and acupuncture points would have been developed and written by anatomists with a highly developed and detailed understanding of the observable, physical properties of the human body. Results suggest that an improved understanding of acupuncture may come from functional anatomical research, combined with close linguistic, cultural, and historical examination of the original nomenclature used to describe acupuncture points, and attention to how this nomenclature has been transmitted and has changed over time. Some implications of this hypothesis are discussed.

History of Human Dissection in China

Human dissection has a long history in China. The first recorded dissection details the fate of the criminal Wang-sun Qing and is found in the Book of Han, a chrono-

nological history of the Han Dynasty from 206 BC to 23 AD:

The Imperial physician, master herbalist and a skilful butcher together disemboweled and flayed him, measured his five organs, and with fine bamboo poles, the length of his blood vessels, to know where they begin and end, so that a person can use this [knowledge] to heal illness.

Ban, Ban, & Ban, 111AD

The Han Dynasty in which such dissections were taking place ended in war in 221 AD. There are no further known records of dissection in China until nearly 1,000 years later.

There was a well-documented resurgence of anatomical study in China during the Song Dynasty (960–1279AD). Many criminals were executed and dissected as part of their punishment. These investigations formed the basis for *The Anatomical Atlas of Truth* (存真圖) (Yang, 1106), which contains detailed images of the internal anatomy of the torso and drawings of all 12 meridians with the series of five cardinal phase points marked. At this time the bronze man acupuncture-point models (Wang, 1026) were also made. These bronze acupuncture models are hollow life-sized teaching models with small holes for the acupuncture points. They were used for examination purposes. The bronze body would be filled with water and the holes obscured with wax; the student would then have to accurately find the point by inserting a needle which, if positioned correctly, would pierce the wax so that water would flow. From this time onwards, the location of acupuncture points was, quite literally, cast in bronze. In 1247, the first known book on forensics was written (Sung, 1247). It is unclear what happened after this. By 1835 AD, when the first American missionary doctors arrived in China, dissection was not used in Chinese medicine (Cowdry, 1921). It was reintroduced at this time, from the West, by American doctors (Xu, 2012).

The historical development and transmission of anatomical knowledge in China was not widespread or consistent. There was a general taboo surrounding dissection: mutilation of the body was forbidden under Confucian law (which underpinned the Han Dynasty and which continues to have significance in China today) and dissection was a punishment reserved for criminals. The transmission of ancient knowledge was also affected by the simplification of traditional Chinese script during the Cultural Revolution (1966–1976). At this time, the ability to read Classical Chinese became a specialized skill and the study of the original texts—once considered a basic requirement for any trainee doctor—was no longer widely accessible.

Acupuncture Naming Conventions

In Chinese medical practice, as described in the *Yellow Emperor's Classic of Internal Medicine*, knowledge of the material structure of the body is interpreted and contextualized through the holistic lens of Five Element or Five Phase (五行) theory. This theory is used to explain both human physiology and the natural order of the world; it underpinned the Chinese world view of

both nature and the state at the time of the development of acupuncture (Unschuld, 1985; Lloyd and Sivin, 2002), and has endured as a medical paradigm throughout the intervening 2,000 years. The organization of the state is used as an analogy for the organization of the body in Five Element theory. The heart is the Emperor, the liver is the General, the lung is the Prime Minister, the spleen/pancreas are the Granaries, the kidneys are the Minister of Health, and the pericardium is a Civil Servant (Lloyd and Sivin, 2002).

According to the Five Element paradigm the body is in a state of dynamic homeostasis governed by regular physiological patterns which cycle through the elements of fire, earth, metal, water and wood. When the passage through these cycles is smooth and harmonious, then the person will be healthy. Disease occurs when the normal patterns of change become disrupted. The function of medicine, and in particular acupuncture, is to restore normal homeostatic boundaries.

Acupuncture is one of nine modalities of Chinese medicine within the Five Element paradigm; others include Chinese herbal medicine and *Qi gong* exercise. Acupuncture points are specific locations in the body where a fine needle is inserted in order to effect change. *The Yellow Emperor's Classic of Internal Medicine*, in which acupuncture points are first described, is organized into two sections: *Simple Questions* (素問) and *The Spiritual Pivot* (靈樞). The first part is primarily concerned with physiology, and elucidation of how the Five Element theory applies to the human body. The second part contains texts that were written later; it includes most of the anatomical texts, and is the main focus of the present paper. The location of the meridian pathways and the positioning of the major acupuncture points that were originally described in these texts remains the same today, although the numbers and names that describe these points today are a result of deliberate simplification and systematization.

As acupuncture moved from China to the West in the 19th and 20th centuries, each point became designated by a numbering system according to the meridian on which it is located. The Chinese numbering system classifies the body according to six longitudinal whole-body slices (or divisions) which travel from the midline laterally, three anterior, and three posterior. These are then further divided into the upper (hand) and lower (foot) parts, to give a total of 12 meridians; as a result of this pairing, some point names are homologous upper and lower body points. Each of the 12 named meridians along which acupuncture points are positioned is designated as belonging to one of these divisions.

The point naming system used by non-Chinese speaking acupuncturists is based around these twelve Primary Meridians: Lung (LU), Large Intestine (LI), Stomach (ST), Spleen (SP), Heart (HT), Small Intestine (SI), Bladder (BL), Kidney (KI), Pericardium (PC), Triple Energizer (TE), Gallbladder (GB), and Liver (LR). Different amounts of points are located on each meridian. For example, there are 45 points found on the Stomach meridian: ST1, ST2, ST3, and so on to ST45, while the Large Intestine meridian (LI) has 20 points: LI1, LI2, LI3, and so on to LI20. These two meridians together form the division known as *yang ming* or "Shining Yang." It is rare for acupuncturists (especially those who are trained in the West) to know the translated point

names in simplified Chinese, and rarer still for them to be able to read the names in classical Chinese. The processes of translation—from Classical to simplified Chinese to English, or from names to numbers—may have served to obscure the correlations highlighted in this article.

The corpus of Chinese medical literature is vast, reflecting two millennia of sustained medical investigation and transmission of this knowledge in varied oral and written formats. Correspondingly, many individual acupuncture points have more than one name. The World Health Organisation (WHO) has recently systematized the naming of points (World Health Organisation, 1993) and locations (World Health Organisation, 2008) and now usually only one name will appear alongside the point number in an acupuncture point manual (Lim, 2010). It is unclear why or how one point name and translation was prioritized over others in this process. A much wider selection of names exists, as there is some variation in point naming between different Chinese sources over time. The present paper considers all of these names (rather than only the WHO standardized names) as they appear in *Grasping the Wind* (Ellis et al., 1989), an authoritative textbook on acupuncture point naming.

The aims of this article are to (a) identify acupuncture points which share similar characters in their original Chinese names, (b) anatomically dissect these acupuncture points to elucidate whether these points also share common anatomical features, and (c) consider whether acupuncture point names (in ancient Chinese) might be anatomical designators. Findings have implications for understanding the origins and mechanisms of acupuncture, as well as for contemporary functional anatomy. If acupuncture point names are deep anatomical designators, this would suggest that anatomical research was carried out in the Han Dynasty, at which time the point names were used to convey information about the gross anatomy of the body and interactions between different parts. If acupuncture is founded in gross anatomical investigation, then it provides a different frame through which to interpret the function of the body system.

MATERIALS AND METHODS

This investigation involves two different strands of research:

- Translation and textual analysis of Classical Chinese acupuncture point names; and,
- Gross anatomical dissection of the human body.

Research was carried out by VS (Diploma of Acupuncture [DipAc] and Member of the British Acupuncture Council [MBAcC]), a certified and practicing acupuncturist with over 20 years of clinical experience.

Translation and Textual Analysis

Point numbers and Chinese point names are listed in *Grasping the Wind* (Ellis et al., 1989), which contains both the WHO standard acupuncture point names (World Health Organisation, 1993) and also any alternative names recorded for each point. Translations of non-standard point names into English are done by VS using a variety of point location resources (Ellis et al., 1989; Deadman et al., 1998; Yan, 2003; Lade, 2005; Yin Yang

House, 2015), and classical Chinese dictionaries (Wieger, 1965; YellowBridge, 2013; Kroll, 2014) for reference.

Chinese words are often composed of two or more characters which are combined together to form a noun phrase. The meaning of the phrase is often more than the sum of its parts, and each part will contribute to the meaning of the whole. For example, 水 *shui* means water, and words or noun phrases which contain this character will have something to do with water. Six characters are examined in detail in this paper: 天 *tian* (heaven/upper), 下 *xia* (below), 髑 *liao* (bone-hole), 飛 *fei* (flying), 委 *wei* (bend), and 谿 *xi* (ravine or mountain stream). Each of these characters occurs in the name of more than one acupuncture point, alongside other characters.

Anatomical Dissection

Acupuncture point location was established on the surface of the body. This typically requires observation, palpation and proportional measurements. The proportional measurement used as standard in acupuncture is 寸 *cun* (the width of a patient's thumb at the knuckle) (World Health Organisation, 2008). It may also involve movement of a limb to make depressions or spaces between structures apparent. The position was then dissected to reveal underlying anatomical structures at, near or underlying the site of needle insertion. Anatomical features at the acupuncture point site were derived from gross anatomical dissection carried out by VS in the Anatomy Suite of the Department of Physiology, Anatomy and Genetics at the University of Oxford.

Six human cadavers ($n = 6$; three male, three female, average age 82 years), embalmed by standard procedures (Vickers Leeds formalin embalming fluid), were dissected to expose the anatomy underlying acupuncture points. This required careful removal of at least skin and subcutaneous fat. Six cadavers were used to ensure that the findings were consistent and to highlight any inter-individual variation. All cadavers were donated for anatomical teaching and research under the Human Tissue Act (2004). Only gross anatomical information that is clearly visible when the area has been dissected by hand is included; structures requiring microscopic or technological enhancement are not reported.

RESULTS

Acupuncture point tables for 天 *tian* (heavenly/superior), 下 *xia* (below/inferior), 髑 *liao* (bone-hole), 飛 *fei* (flying) and 委 *wei* (bend), and 谿 *xi* (mountain stream/ravine) are given as Tables (1–6), respectively. These tables include the following details for all 60 acupuncture points investigated: standardized point numbers and names, alternative Chinese point names and their English translations, and acupuncture point location. They also include descriptions of anatomical features at each point investigated, and highlight possible links between these anatomical structures and the Chinese point names.

天 *Tian* (Heavenly/Superior)

Tian occurs as a character in the names of 20 different points; it is the most commonly used character in acupuncture points. All 20 point names and their ana-

tomical positions are given in Table 1. The word *tian* in normal speech means “heaven/sky/day”; *Grasping the Wind* translates the same character as “celestial.” All 20 points were dissected in each of the six cadavers ($n = 120$). All 20 points were located in the upper part of the body in all cadavers ($n = 120$; 100%). It is commonly accepted that *tian* refers to this anatomical region.

The most inferior of the *tian* points is 天樞 *tian shu* (Heaven Pivot, ST25). This was positioned either side of the umbilicus ($n = 6$; 100%). This point's designation of “pivot,” along with its position both in the centre of the body, and as the lowest of the *tian* points, suggests that the umbilicus is the pivot point which is situated between upper and lower parts of the body.

天 *tian* does not have an obvious modern anatomical term which is similarly used as an absolute, rather than a relative term. The closest modern anatomical equivalent may be “upper,” as in upper limb.

下 *Xia* (Below/Inferior)

There are 13 different points which start with *xia*, meaning below. All 13 point names and their anatomical positions are given in Table 2. All points were dissected in each of the six cadavers ($n = 78$). Of these, 10 points (83%) were clearly located inferior to the waist ($n = 60$; 100%).

The three points which did not lie clearly above the waist are 下關 *xia guan* (Lower Pass, ST7), 下都 *xia dou* (Middle Water Margin, TE3) and 下廉 *xia lian* (Inferior Edge, LI8). Lower Pass (ST7) was found inferior to the zygoma, anterior to the condyle of the mandible ($n = 6$; 100%); an alternative name for it is Lower Joint. The name indicates the location of the lower jaw and this point is used clinically for problems relating to mastication. Middle Water Margin (TE3) was found on the dorsum of the hand just proximal to the fourth knuckle; it hangs below the waist when standing in the standard anatomical position ($n = 6$; 100%). It is also, with the exception of the fingers, the most distal acupuncture point on the upper limb. An alternative point name that exists for it is Lower Metropolis or Lower City. Inferior Edge (LI8) is located on the posterolateral aspect of the forearm, distal to the cubital crease. An alternative name for it is Lower Ridge; this name also appears as an alternative name for the point Lower Great Void (ST39). These points are in homologous positions on the arm and leg in the upper and lower sections of the same *yang ming* division.

下 *xia* does not have an obvious modern anatomical term which is similarly used as an absolute, rather than a relative term. The closest modern anatomical equivalent may be “lower,” as in lower limb.

Also of note here is the Chinese noun phrase 天下 *tian xia*, a combination of *tian* (broadly designating “upper”) and *xia* (broadly designating “lower”). Taken as a single noun phrase, *tianxia* means “the whole world/land under heaven/the whole of China.” This term designates “the whole [anatomical] body,” but at the same time reflects Five Phase theory which draws analogies between human physiology and the larger world ecology.

髑 *Liao* (Bone-Hole)

There are 19 points which have *liao*, or “bone-hole,” as the second part of their name. All points were

TABLE 1. All acupuncture points which include the character 天 *tian* in their name

Point no.	Standardized name (WHO, 1993) Alternative point names (from Ellis <i>et al.</i> , 1989; Translations by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO, 2008)	Possible explanations of point name(s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
Head face and neck			
GV20	百會 <i>bai hui</i> (Hundred Meeting) 天滿 <i>tian man</i> (Upper Fullness)	On the head, 5 <i>cun</i> superior to the anterior hairline, on the anterior median line	Arachnoid granulations on the dura over the superior sagi- tal sinus give a visual impression of convergence and fullness
BL7	通天 <i>tong tian</i> (Reaching Heaven) 通天 <i>tong tian</i> (Upper Connection) 天白 <i>tian bai</i> (Upper White) 天伯 <i>tian bo</i> (Upper Old Person) 天臼 <i>tian jiu</i> (Upper Bone Socket) 天舊 <i>tian jiu</i> (Upper Ancient)	On the head, 4 <i>cun</i> superior to the anterior hairline, 1 <i>cun</i> lateral to the anterior median line	Lies superficial to the frontal suture (connection, bones); in old age, the hair here is white (indicator of old age)
CV24	承漿 <i>cheng jian</i> (Receiving Fluid) 天池 <i>tian chi</i> (Upper Pool)	On the face, in the depression in the centre of the mentola- bial sulcus	Sweat (and soup) can pool here
GB9	天衝 <i>tian chong</i> (Heaven Gushing) 天衝 <i>tian chong</i> (Upper Thoroughfare) 天沖 <i>tian chong</i> (Upper Surge) 天衢 <i>tian qu</i> (Upper Walking)	On the head, directly superior to the posterior border of the auricle, 2 <i>cun</i> superior to the hairline	Pulsation of the posterior auricular artery can be felt surging or flowing through here
SI17	天容 <i>tian rong</i> (Upper Abundance) 天容 <i>tian rong</i> (Upper Face)	In the anterior region of the neck, posterior to the angle of the mandible, in the depression anterior to the sternocleidomastoid muscle	Marks the facial artery
LI17	天鼎 <i>tian ding</i> (Heaven Ancient Cooking Vessel with Two Loop Handles) 天鼎 <i>tian ding</i> (Upper Cooking Pot) 天頂 <i>tian ding</i> (Upper Crown) 天頂 <i>tian xiang</i> (Upper Nape)	On the anterior aspect of the neck, at the same level as the cricoid cartilage, just posterior to the border of the sternocleidomastoid muscle	<i>ding</i> 頂 (crown) is a homo- phone of <i>ding</i> 鼎 (a tradi- tional 3 legged cooking pot); this may be a reference to sternocleidomastoid looking like the legs to the cooking pot of the head
ST9	人迎 <i>ren ying</i> (Mankind Meet) 天五會 <i>tian wu hui</i> (Upper Five Convergences)	In the anterior region of the neck, at the same level as the superior border of the thyroid cartilage, anterior to the sternocleidomastoid muscle, over the bifurcation of the common carotid artery	Location of bifurcation of the carotid artery, a major blood vessel to the face and brain
SI16	天窗 <i>tian chuang</i> (Upper Part Window) 天窗 <i>tian chuang</i> (Upper Window)	In the anterior region of the neck, posterior to the sterno- cleidomastoid muscle, at the same level as the superior border of the thyroid cartilage	
CV22	天突 <i>tian tu</i> (Heaven Chimney) 天突 <i>tian tu</i> (Upper Chimney) 天瞿 <i>tian ju</i> (Upper Startled)	In the anterior thoracic region, in the centre of the suprasternal fossa, on the anterior median line	Over the trachea as it descends into the mediasti- num like a chimney
BL10	天柱 <i>tian zhu</i> (Heaven Pillar) 天柱 <i>tian zhu</i> (Upper Vertebra)	In the posterior region of the neck, at the same level as the superior border of the spinous process of the sec- ond cervical vertebra (C2), in the depression lateral to the trapezius muscle	Over the atlas (the upper vertebra)
TE16	天牖 <i>tian you</i> (Upper Window)	In the anterior region of the neck, at the same level as the angle of the mandible, in the depression posterior	

TABLE 1. (continued).

Point no.	Standardized name (WHO, 1993) Alternative point names (from Ellis <i>et al.</i> , 1989; Translations by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO, 2008)	Possible explanations of point name(s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
		to the sternocleidomastoid muscle	
Body			
ST12	缺盆 <i>que pen</i> (Empty Basin) 天盖 <i>tian gai</i> (Upper Cover)	In the anterior region of the neck, in the greater supra- clavicular fossa, 4 <i>cun</i> lat- eral to the anterior median line, in the depression supe- rior to the clavicle	The investing cervical fascia forms a cover here
ST25	天枢 <i>tian shu</i> (Heaven Pivot) 天枢 <i>tian shu</i> (Upper Pivot)	On the upper abdomen, 2 <i>cun</i> lateral to the centre of the umbilicus	Most inferior of <i>tian</i> points (i.e., links upper and lower)
SP18	天谿 <i>tian xi</i> (Heaven Valley) 天谿 <i>tian xi</i> (Upper Ravine)	In the anterior thoracic region, in the 4 th intercostal space, 6cm lateral to the anterior median line	Brachio-costal artery passes between axillary artery and the 4 th intercostal space, as if flowing through a ravine
SI11	天宗 <i>tian zong</i> (Upper Respect) 天宗 <i>tian zong</i> (Upper Ancestor)	In the scapular region, in the depression between the upper one third and lower two thirds of the line con- necting the midpoint of the spine of the scapula and the inferior angle of the scapula	
TE15	天髎 <i>tian liao</i> (Heaven Foramen) 天髎 <i>tian liao</i> (Upper Depression) 天聽 <i>tian ting</i> (Upper Hearing)	In the scapular region, in the depression superior to the superior angle of the scapula	Over insertion of levator scap- ulae, which forms a depres- sion when the arm is abducted
PC1	天池 <i>tian chi</i> (Heaven Pool) 天池 <i>tian chi</i> (Upper Pool) 天會 <i>tian hui</i> (Upper Convergence)	In the anterior thoracic region, in the 4 th intercostal space, 5 <i>cun</i> lateral to the anterior median line	
Upper limb			
PC2	天泉 <i>tian quan</i> (Heaven Spring) 天泉 <i>tian quan</i> (Celestial Spring) 天溫 <i>tian wen</i> (Upper Warmth) 天濕 <i>tian shi</i> (Upper Moistness)	On the anterior aspect of the arm, between the two heads of biceps brachii, 2 <i>cun</i> dis- tal to the anterior axillary fold	At the most proximal anterior portion of the arm; this area can often be moist and warm from sweat
LU3	天府 <i>tian fu</i> (Heaven Place) 天府 <i>tian fu</i> (Upper Storehouse)	On the anterolateral aspect of the arm, just lateral to the border of biceps brachii muscle, 3 <i>cun</i> inferior to the anterior axillary fold	
TE10	天井 <i>tian jing</i> (Heaven Well) 天井 <i>tian jing</i> (Upper Well)	On the posterior aspect of the elbow, in the depression 1 <i>cun</i> proximal to the promi- nence of the olecranon	

dissected in each of the six cadavers (n = 114); their names, locations and the anatomical features at each location are given in Table 3.

In total, 12 of the 19 points (63%) are positioned directly at gaps, holes or spaces in bone (n = 72; 100%). Of these, four indicate the four sacral foramina: 上髎 *shang liao* (Upper Foramen, BL31), 次髎 *ci liao* (Second Foramen, BL32), 中髎 *zhong liao* (Middle Foramen, BL33), and 下髎 *xia liao* (Lower Foramen, BL34; n = 24; 100%). Eight are

in bony depressions in the face, such as in the infratemporal fossa and around the ridges of the orbit. For example, 颧髎 *quan liao* (Zygoma Foramen, SI18) was immediately inferior to the zygomatic arch in the infratemporal fossa (n = 6; 100%), 耳和髎 *er he kou liao* (Ear Harmony Foramen, TE22) was lateral to Zygoma Foramen, anterior to the superior border of the tragus (n = 6; 100%), and 瞳子髎 *tong zi liao* (Pupil Foramen, GB1) was lateral to the orbital ridge of the eye (n = 6; 100%).

TABLE 2. All acupuncture points which include the character 下 *xia* in their name

Point no.	Standardised name (WHO 1993) Alternative point names (from Ellis <i>et al.</i> 1989; Translations by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO 2008)	Possible explanations of point name(s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
Torso and abdomen			
CV10	下腕 <i>xia wan</i> (Inferior Stomach) 下腕 <i>xia wan</i> (Lower Stomach) 下管 <i>xia guan</i> (Lower Duct)	On the upper abdomen, 2 <i>cun</i> superior to the centre of the umbilicus, on the anterior median line	On a transverse plane with the pyloric sphincter and the curve of the duodenum at the inferior portion of the stomach
KI11	橫骨 <i>hen gu</i> (Henggu - the ancient name for the pubis) 下極 <i>xia ji</i> (Lower Extreme)	On the lower abdomen, 5 <i>cun</i> inferior to the centre of the umbilicus, 0.5 <i>cun</i> lateral to the anterior median line	Most inferior of the abdominal kidney points; on a transverse plane with the pubic ramus
CV6	氣海 <i>qi hai</i> (Primary Sea) 下胃 <i>xia huang</i> (Lower Fatty Tissue) 下氣海 <i>xia qi hai</i> (Lower Sea of Qi)	On the lower abdomen, 1.5 <i>cun</i> inferior to the centre of the umbilicus, on the anterior median line	This area is a focal point for meditation as the centre of qi or vital energy in the body; 'sea' here refers to a gathering point
CV4	關元 <i>guan wan</i> (Storage Primary qi) 下胃 <i>xia huang</i> (Lower Fatty Tissue) 下紀 <i>xia ji</i> (Lower Regulator)	On the lower abdomen, 3 <i>cun</i> inferior to the centre of the umbilicus, on the anterior median line	This area can be fatty
CV1	會陰 <i>hui yin</i> (Crossing Genitalia) 下極 <i>xia ji</i> (Lower Extreme) 下陰別 <i>xia yin bie</i> (Lower Yin Divergence)	In the perineal region, at the midpoint of the line connecting the anus and the posterior border of the scrotum in the male, and the posterior commissure of the labia majora in the female	The most inferior point on the torso; yin is inferior relative to yang
BL34	下髎 <i>xia liao</i> (Lower Foramen) 下髎 <i>xia liao</i> (Lower Foramen)	In the sacral region, in the fourth posterior sacral foramen	Most inferior of the sacral foramina
Lower limb			
ST36	足三里 <i>zu san li</i> (Lower Limbs Three Cun) 下陵 <i>xia ling</i> (Lower Mound) 下陵三里 <i>xia ling san li</i> (Lower Mound Three Miles) 下氣海 <i>xia qi hai</i> (Lower Sea of Qi) 下三里 <i>xia san li</i> (Lower Three Miles)	On the anterior aspect of the leg, 3 <i>cun</i> distal to the inferior border of the patella, level with the tibial tuberosity, 1 finger's breadth lateral to the tibial crest	The tibial tuberosity is a bony prominence (mound) where the patellar ligament of the quadriceps muscle attaches to the tibia; dorsiflexion causes the anterior tibial muscle to bulge here
ST39	下巨虛 <i>xia ju xu</i> (Lower Great Void) 下巨虛 <i>xia ju xu</i> (Lower Great Hollow) 下廉 <i>xia lian</i> (Lower Ridge)	On the anterior aspect of the leg, 9 <i>cun</i> distal to ST 35, on a line connecting ST35 with ST41	Shares a homologous name with L18; both form part of the <i>yang ming</i> division
SP6	三陰交 <i>san yin jiao</i> (Three Yin Meridians Crossing) 下三里 <i>xia san li</i> (Lower Three Miles)	On the tibial aspect of the leg, posterior to the medial border of the tibia, 3 <i>cun</i> superior to prominence of the medial malleolus	
BL60	崑崙 <i>kun lun</i> (Kunlun – a mountain in West China) 下崑崙 <i>xia kun lun</i> (Lower Kun Lun Mountains)	Midway between the high point of the external malleolus and tendocalcaneus	Kunlun Mountains (where the Yellow Emperor was said to reside) may be a reference to the high point of the external malleolus
Anomalous			
ST7	下關 <i>xia guan</i> (Lower Pass) 下關 <i>xia guan</i> (Lower Joint)	On the face, in the depression between the midpoint of the inferior border of the zygomatic arch and the mandibular notch	Inferior and anterior to the joint of the mandible

TABLE 2. (continued).

Point no.	Standardised name (WHO 1993) Alternative point names (from Ellis <i>et al.</i> 1989; Translations by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO 2008)	Possible explanations of point name(s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
TE3	中渚 <i>zhong du</i> (Middle Water Margin) 下都 <i>xia du</i> (Lower Metropolis)	On the dorsum of the hand, between the 4 th and 5 th metacarpal bones, in the depression proximal to the 4 th metacarpophalangeal joint	Most distal point on the hand, not including the fingers
LI8	下廉 <i>xia lian</i> (Inferior Edge) 下廉 <i>xia lian</i> (Lower Ridge)	On the posterolateral aspect of the forearm, on a line connecting LI5 with LI11, 4 <i>cun</i> distal to the cubital crease	Shares a homologous name with ST39 (on the lower limb); both form part of the <i>yang ming</i> division

TABLE 3. All acupuncture points which include the character 膠 *liao* in their name

Point no.	Standardized name (WHO, 1993) Alternative point names (from Ellis <i>et al.</i> , 1989; Translations by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO, 2008)	Possible explanations of point name(s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
Eye and forehead			
GB1	瞳子膠 <i>tong zi liao</i> (Pupil Foramen) 瞳子膠 <i>tong zi liao</i> (Pupil Depression)	On the head, in the depression 0.5 <i>cun</i> lateral to the outer canthus of the eye	In depression lateral to the orbital over the pterion in line with the pupil
ST1	承泣 <i>cheng qi</i> (Receive Tears) 面膠 <i>mian liao</i> (Face Foramen)	On the face, between the eyeball and the infraorbital margin, directly inferior to the pupil	Inside the eye socket, over the bony canal leading from the infraorbital fissure to the infraorbital foramen; where tears collect in the bottom of the eyelid
TE23	絲竹空 <i>si zhu kong</i> (Slender Bamboo Space) 巨膠 <i>ju liao</i> (Great Depression) 目膠 <i>mu liao</i> (Eye Depression) 月膠 <i>yue liao</i> (Moon Depression)	On the head, in the depression at the lateral end of the eyebrow	In the curved depression lateral and superior to the orbital ridge; the shape of the bony curve resembles a sickle moon
GB13	本神 (Essential Mind) 肋膠 <i>lei liao</i> (Rib Foramen)	On the head, 0.5 <i>cun</i> anterior to the anterior hairline, 3 <i>cun</i> lateral to the anterior median line	
Face and jaw			
ST3	巨膠 <i>ju liao</i> (Huge Foramen) 巨膠 <i>ju liao</i> (Great Fossa)	On the face, directly inferior to the pupil, lateral to the inferior border of the ala of the nose	In the infratemporal fossa
SI18	顴膠 <i>quan liao</i> (Zygoma Foramen) 顴膠 <i>quan liao</i> (Cheek Fossa) 權膠 <i>quan liao</i> (Influent Fossa) 椎膠 <i>zhui liao</i> (Hammer Fossa)	On the face, inferior to the zygomatic bone, in the depression directly inferior to the outer canthus of the eye,	In the infratemporal fossa
TE22	耳和膠 <i>er he liao</i> (Ear Harmony Foramen) 耳和膠 <i>er he liao</i> (Ear Harmony Depression) 和膠 <i>he liao</i> (Harmony Depression)	On the head, posterior to the temple hairline, anterior to the auricular root, posterior to the superficial temporal artery	Depression is found on the posterior border of temporalis when the jaw is opened and shut; it is used to treat ear problems
LI19	口禾膠 <i>kou he liao</i> (Mouth Grain Foramen)	On the face, at the same level as the midpoint of the philtrum, inferior to the lateral margin of the nostril	In the bony groove between the roots of the incisor and first molar where food can get stuck

TABLE 3. (continued).

Point no.	Standardized name (WHO, 1993) Alternative point names (from Ellis <i>et al.</i> , 1989; Translations by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO, 2008)	Possible explanations of point name(s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
	口禾膠 <i>kou he liao</i> (Mouth Grain Foramen) 長膠 <i>chang liao</i> (Long Foramen)		
Upper limb and torso			
LI12	肘膠 <i>zhou liao</i> (Elbow Foramen) 肘膠 <i>zhou liao</i> (Elbow Depression)	On the posterolateral aspect of the elbow, proximal to the lateral epicondyle of the humerus, anterior to the lateral supraepicondylar ridge	In the depression proximal to the high point of the muscle over the elbow joint
TE13	臑會 <i>nao hui</i> (Muscle Prominence of the Upper Arm Confluence) 臑膠 <i>nao liao</i> (Upper Arm Depression)	On the posterior aspect of the arm, posteroinferior to the border of the deltoid muscle, 3 <i>cun</i> inferior to the acromial angle	In the fascial plane between deltoid and triceps
TE14	肩膠 <i>jian liao</i> (Shoulder Foramen) 肩膠 <i>jian liao</i> (Shoulder Depression)	On the shoulder girdle, in the depression between the acromial angle and the greater tubercle of the humerus	With the arm fully abducted; a depression is found in the joint crease between the humerus and scapula
TE15	天膠 <i>tian liao</i> (Heaven Foramen) 天膠 <i>tian liao</i> (Upper Depression)	In the scapular region, in the depression superior to the superior angle of the scapula	At the insertion of levator scapulae; a depression is felt when the arm is abducted
LR13	章門 <i>zhang men</i> (Screen Door) 肪膠 <i>fang liao</i> (Lard Depression)	On the lateral abdomen, inferior to the free extremity of the 11 th rib	On palpation the point is found where the finger slides off the tip of the bone onto the flesh; this is often a fatty area
Lower limb			
GB29	居膠 <i>ju liao</i> (Reside Foramen) 居膠 <i>ju liao</i> (Squatting Depression)	In the buttock region, mid-point of the line connecting the anterior superior iliac spine and the prominence of the greater trochanter	On the crease formed over the hip when squatting
GB35	陽交 <i>yang jiao</i> (Yang Crossing) 足膠 <i>zu liao</i> (Leg Depression)*	On the fibular aspect of the leg, posterior to the fibula, 7 <i>cun</i> proximal to the prominence of the lateral malleolus	In the fascial plane between the fibula and gastrocnemius
Sacral foramina			
BL31	上膠 <i>shang liao</i> (Upper Foramen) 上膠 <i>shang liao</i> (Upper Foramen)	In the sacral region, in the 1 st posterior sacral foramen	In the 1 st sacral foramen
BL32	次膠 <i>ci liao</i> (Second Foramen) 次膠 <i>ci liao</i> (Second Foramen)	In the sacral region, in the 2 nd posterior sacral foramen	In the 2 nd sacral foramen
BL33	中膠 <i>zhong liao</i> (Middle Foramen) 中膠 <i>zhong liao</i> (Central Foramen)	In the sacral region, in the 3 rd posterior sacral foramen	In the 3 rd sacral foramen
BL34	下膠 <i>xia liao</i> (Lower Foramen) 下膠 <i>xia liao</i> (Lower Foramen)	In the sacral region, in the 4 th posterior sacral foramen	In the 4 th sacral foramen

The remaining seven of the 19 points which contain *liao* (37%) are found in depressions in the muscle. Three of these appear when a limb is either passively or actively moved (n = 42; 100%). For example, 肩膠 *jian liao* (Shoulder Foramen, TE14) was positioned on the shoulder girdle where a depression forms in the joint crease

between the humerus and scapula when the arm is fully abducted (n = 6; 100%). The remaining four are found in depressions in the flesh, for example, 章門 *zhang men* (Screen Door, LR13) was found inferior to the free extremity of the 11th rib where, on palpation, the finger slides off the tip of the bone onto the flesh. Another name for this

TABLE 4. All acupuncture points which include the character 飛 *fei* in their name

Point no.	Standardized name (WHO, 1993) Alternative point names (from Ellis <i>et al.</i> , 1989; Translations by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO, 2008)	Possible explanations of point name(s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
BL58	飛陽 <i>fei yang</i> (To Fly Lifting) 飛陽 <i>fei yang</i> (Flying Yang)	On the posterolateral aspect of the leg, between the inferior border of the lateral head of gastrocnemius muscle and the calcaneal tendon, 7cm proximal to the high point of the lateral malleolus	Divergent branch of sural nerve “flies” off of the main branch, leads lateral border of popliteal fossa
TE6	支溝 <i>zhi gou</i> (Limbs Ditch) 飛虎 <i>fei hu</i> (Flying Tiger)	3cm proximal to the dorsal wrist crease between the radius and ulna on the radial side of extensor digitorum	Radial nerve travels or “flies” in the extensor compartment along the forearm

TABLE 5. All acupuncture points which include the character 委 *wei* in their name

Point no.	Standardized name (WHO, 1993) Alternative point names (from Ellis <i>et al.</i> , 1989; Translations by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO, 2008)	Possible explanations of point name(s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
BL39	委陽 <i>wei yang</i> (Crooked Yang) 委陽 <i>wei yang</i> (Bend Yang)	On the posterolateral aspect of the knee, just medial to the biceps femoris tendon in the popliteal crease	Where the lateral cutaneous sural nerve meets the fibular nerve in the popliteal fossa; where the knee crease is on flexion
BL40	委中 <i>wei zhong</i> (Crooked Middle) 委中 <i>wei zhong</i> (Bend Middle)	On the posterior aspect of the knee, at the midpoint of the popliteal crease	Where the sural nerve and short saphenous vein arrive in the popliteal fossa; where the knee crease is on flexion

point is Lard Depression; this is a fatty area when dissected (n = 6; 100%).

髌 *liao* in Chinese medicine appears to describe structures for which modern anatomical terms are “foramen,” “fossa,” and “depression.”

飛 *Fei* (Flying) and 委 *Wei* (Bend)

The character 飛 *fei*, “to fly,” occurs in the name of only two acupuncture points, 飛陽 *fei yang* (Flying Yang; an alternative name for To Fly Lifting, BL58) and 飛虎 *fei hu* (Flying Tiger; an alternative name for Limbs Ditch, TE6) (Fig. 1 and Fig. 2). Both points were dissected in each of the six cadavers (n = 12); Table 4 summarises the results of this dissection and compares it to the point names and translations. Both points were located at similar positions on the surface of the limb; Flying Yang on the calf and Flying Tiger on the dorsal forearm. This homologous naming and positioning draws attention to the similarities between the two points. Deep dissection at both points revealed nerves: Flying Tiger was superficial to the posterior interosseous nerve (n = 6; 100%), and Flying Yang was superficial to the lateral cutaneous sural nerve (n = 6; 100%). The lateral cutaneous sural nerve ran parallel to the medial cutaneous sural nerve and small saphenous vein, finishing at the lateral border of the popliteal fossa where it joined with the fibular nerve (n = 6; 100%). Although it is omitted in some standard anatomical atlases (Clemente, 2009; Drake *et al.*, 2010), our findings here are consistent with other studies (Ricci *et al.*, 2010).

In both upper and lower limb cases, the shared nomenclature draws attention to the anatomy of two nerves which have branched away from the neurovascular bundle, that is, “flying” away from a main trunk. This is a characteristic that can only be ascertained through dissection. It is also only a characteristic that is evident when taking the historical and nonstandardized acupuncture point names into account.

Comparing Flying Yang with a point that shares part of its name, 委陽 *wei yang* (Crooked Yang or Bend Yang, BL39), supports the above association (Table 5 summarises the point names and anatomical positions of these points). There are two acupuncture points in the popliteal fossa: 委中 *wei zhong* (Crooked Middle, BL40) is in the centre of the fossa (n = 6; 100%), and 委陽 *wei yang* Bend Yang (BL39) which is on the lateral border of the popliteal fossa, lying superficial to the area where the lateral cutaneous sural nerve joins the main body of the fibular nerve (n = 6; 100%). Flying Yang and Bend Yang are both anomalous points for similar reasons: the main trunk of the meridian and the points on it pass directly along the midline of the leg, except for at Flying Yang and Bend Yang, which each meridian branches off laterally. Flying Yang appears to mark the point of departure of the lateral cutaneous sural nerve, and Bend Yang marks the nerve's endpoint in the lateral popliteal fossa (Fig. 2).

飛 *Fei* may indicate an anatomical characteristic found in the location of the points it designates in both the upper and lower limb: a structure which branches away from the main neurovascular bundle and “flies”

TABLE 6. All acupuncture points which include the character 溪 *xi* in their name

Point no.	Standardized name (WHO, 2008) Alternative point names (from Ellis <i>et al.</i> , 1989; translated by VS)	Acupuncture point location (proportional measurement is <i>cun</i> (a patient's thumb-width)) (WHO, 2008)	Possible explanations of point name (s) following anatomical dissection (n=6; observed in 100% of cases unless stated otherwise)
Head and face			
ST1	承泣 <i>cheng qi</i> (Receive Tears) 谿穴 <i>xi xue</i> (Ravine Cave)	On the face, between the eyeball and the infraorbital margin, directly inferior to the pupil	Inside the eye socket, over the bony canal leading from the infraor- bital fissure to the infraorbital foramen; where tears collect in the bottom of the eyelid
GV16	風府 <i>feng fu</i> (Pathogenic Wind Place) 曹谿 <i>cao xi</i> (Ministry Official's Ravine)	In the posterior region of the neck, directly inferior to the occipital protuberance, in the depression between the trapezius muscles	The anastomosis of the vertebral arteries to make the basilar artery lie deep to this point; the two vertebral arteries could be analogous to government officials who support the main basilar artery leading into the brain
Upper limb			
LI5	陽谿 <i>yang xi</i> (Yang Brook) 陽谿 <i>yang xi</i> (Yang Ravine)	On the posterolateral aspect of the wrist, at the radial side of the wrist crease, distal to the radial styloid process, in the depression of the anatomical snuffbox	Where the radial artery crosses under brachioradialis tendon slip to the dorsum of the wrist; it flows in a space bounded on both sides by the radial and scaphoid bones
Body			
SP18	天谿 <i>tian xi</i> (Heaven Valley) 天谿 <i>tian xi</i> (Upper Ravine)	In the anterior thoracic region, in the 4th intercostal space, 6cm lat- eral to the anterior median line	In the upper part of the body, the brachio-costal artery passes between axillary artery and the 4 th intercostal space to disappear into the thorax
ST25	天樞 <i>tian shu</i> (Heaven Pivot) 長谿 <i>chang xi</i> (Long Ravine)	On the abdomen, 2 <i>cun</i> lateral to the centre of the umbilicus	Point lies between two long muscle bellies of rectus abdominus in which the inferior epigastric vessels are also situated
ST29	歸來 <i>gui lai</i> (Return Arrival) 谿 <i>xi gu</i> (Ravine Valley) 谿穴 <i>xi xue</i> (Ravine Hole/Cave)	On the lower abdomen, 4 <i>cun</i> infe- rior to the centre of the umbili- cus, 2 <i>cun</i> lateral to the anterior median line, level with CV3	The tributaries of the inferior epigastric vessels in the rectus abdominus muscle join together to form a single vessel which plunges into the abdomen to anastomose with the external iliac vessels like a river plunging below the surface to join with a main underground river
Lower limb			
KI3	太谿 <i>tai xi</i> (Great Canyon) 太谿 <i>tai xi</i> (Great Ravine)	On the posterolateral aspect of the ankle, in the depression between the prominence of the medial malleolus and the calcaneal tendon	Posterior tibial vessels and nerve pass deep in the "valley" between the malleolus and the Achilles tendon
ST41	解谿 <i>jie xi</i> (Separation Stream) 解谿 <i>jie xi</i> (Divided Ravine)	On the anterior aspect of the ankle, in the depression at the centre of the front surface ankle joint, between the tendons of extensor hallucis longus and extensor digi- torum longus	Anterior tibial vessel enters the dorsum of the foot through this space where the tendons form the sides of a "valley"
GB43	俠谿 <i>xia xi</i> (Pinched Ravine)	On the dorsum of the foot, between the 4th and 5th toes, proximal to the web margin, at the border of the red and white flesh	Blood vessels and nerve to 4 th and 5 th toes travel through a narrow space here

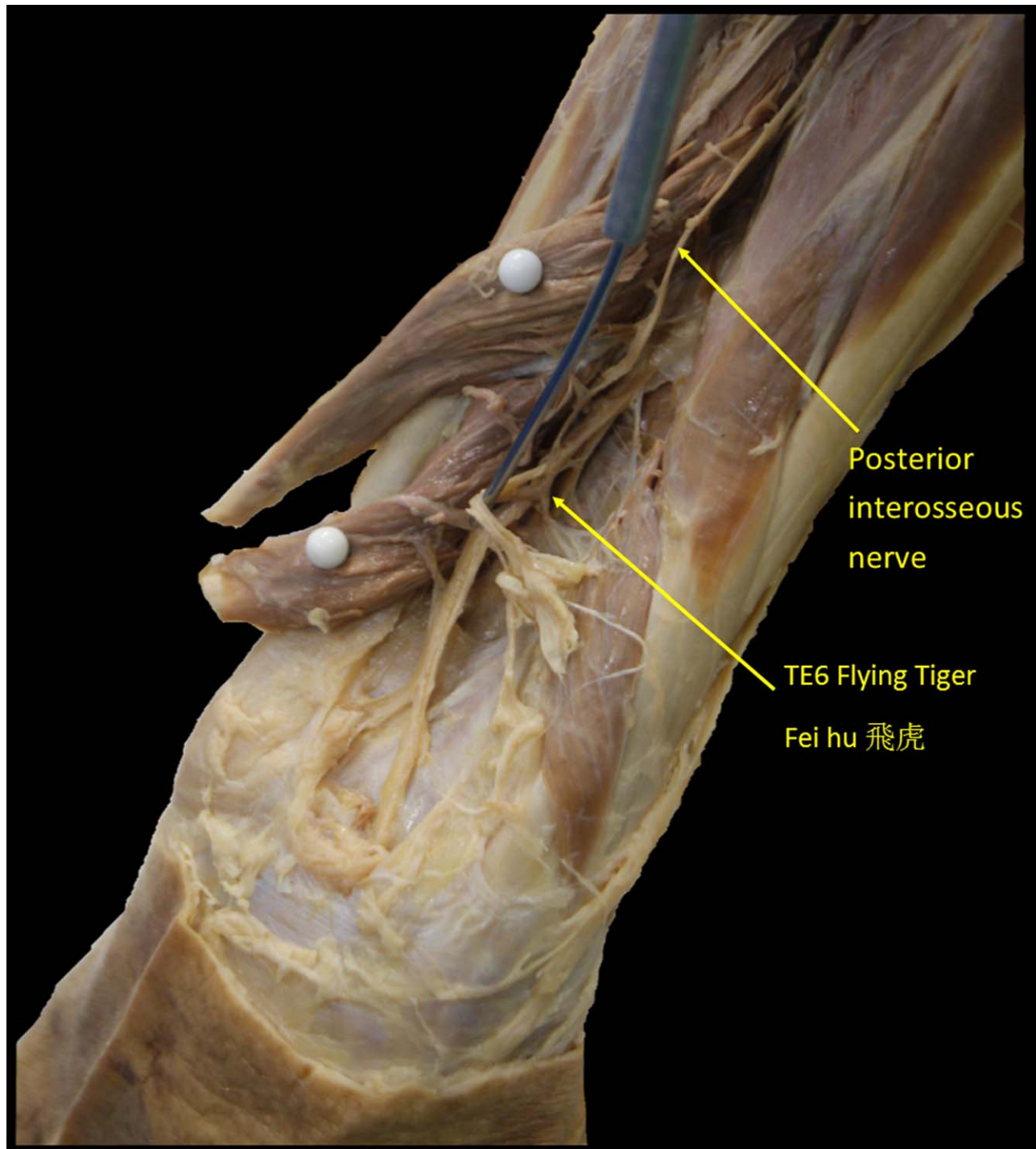


Fig. 1. Dissection of the dorsal forearm of an embalmed cadaver at Flying Tiger (TE6) indicates posterior interosseous nerve “flying” away from the main neurovascular bundle to pass through the extensor muscles of the dorsal forearm.

alone through the tissue. There is no modern anatomical term for this, although the naming of the *vagus* nerve (Latin for “wandering”) has some similarity.

委 *Wei*, in the context that it is used in these points, may indicate the bending of the joint.

溪 *Xi* (Mountain Stream/Ravine)

溪 *xi* translates into English as “ravine/creek/valley/gorge/mountain stream,” and appears in nine acupuncture point names ($n = 54$). All nine point names and their anatomical positions are given in Table 6. All points designated

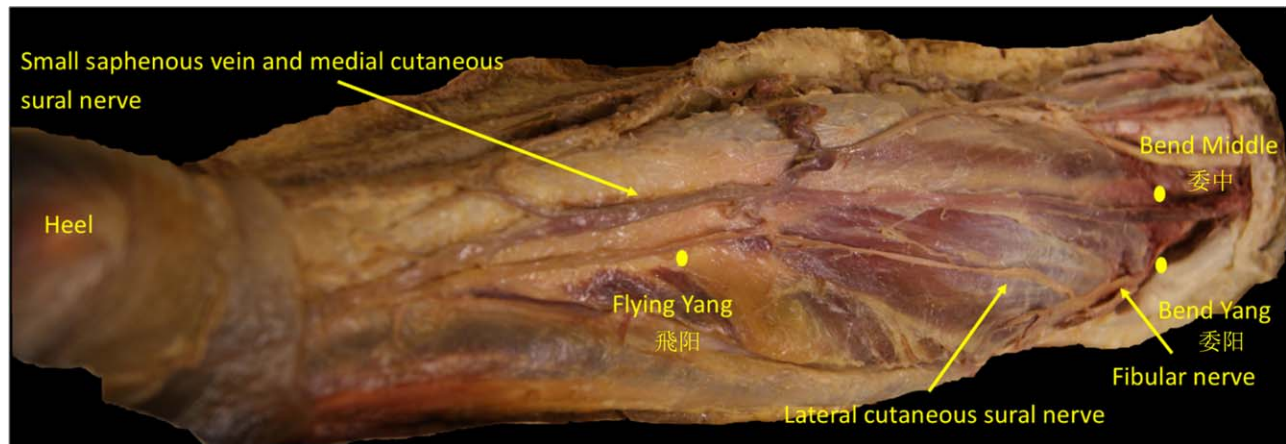


Fig. 2. Dissection of the posterior leg of an embalmed cadaver indicates the positioning of Flying Yang (BL58) and Bend Yang (BL39) over the lateral cutaneous sural nerve where it “flies” away from the midline to join the fibular nerve. Bend Middle (BL40) is also shown in the popliteal fossa medial to Bend Yang (BL39); these two points are the only two uses of the character meaning “bend.”

by *xi* share a common characteristic of a pulsating blood vessel which is briefly close to the surface of the body before it runs deep into a cleft between high-sided structures (n = 54; 100%). This implies a visual metaphor between anatomical structures and ecological ones.

From an anatomical perspective, the most visually striking example of this anatomical/ecological analogy is at 谿穴/谷 *xi xue/gu* (Ravine Hole/Valley; an alternative name for Return Arrival, ST29). This point is located on the lower abdomen where the inferior epigastric vessels branch from the external iliac vessels onto the posterior surface of rectus abdominis on the abdominal wall (n = 6; 100%) (Fig. 3). The standardized WHO name for this point is 归来 *gui lai* (Return Arrival, ST29). *Grasping the Wind* explains that this translation is applied because the point designates a “branch of the stomach channel that diverges from the main channel at ST12, passes downward through the stomach, and then rejoins the main channel at ST30, the point where the divergent channel returns” (p. 83). ST12 is located in the supraclavicular fossa in the area where the internal thoracic vessels branch from the subclavian to pass along the anterior thoracic wall (n = 6; 100%). ST30 is immediately inferior to ST29 and is the pulse point in the groin over the external iliac vessels (Shaw, 2014). It is possible that the “channels” described in the *Grasping the Wind* text are actually anatomical structures: the internal thoracic (mammary), superior epigastric and inferior epigastric vessels on the anterior wall of the torso which anastomose to form a continuous vascular structure between the clavicle and the groin.

Two *xi* points, 解谿 *jie xi* (Divided Ravine; an alternative name for Separation Stream, ST41) and 陽谿 *yang xi* (Yang Ravine; an alternative name for Yang Brook, LI5) are in homologous *yang ming* locations (Figs. 4 and 5), being respectively found on the dorsum of the ankle between the tendons of extensor hallucis longus and extensor digitorum longus (n = 6; 100%), and on the wrist in the anatomical snuffbox (n = 6; 100%). The vessels deep to these points are the dorsalis pedis and radial arteries (respectively); they pass from the leg and the forearm,

around the ankle and the wrist, and onto the dorsal surface. They then dive into the first intermetatarsal/intermetacarpal space to form an anastomosis with the lateral plantar artery and the deep palmar arch respectively.

谿 *Xi* may be a metaphor for a vascular structure whose surroundings resemble a mountainous landscape with a fast flowing stream passing through it. There is no modern anatomical term for this, and although they are superficial to arterial vessels it seems unlikely that they are pulse points detected by palpation alone, as these are normally designated by 冲 *chong* (surging/gushing) (Shaw, 2014).

DISCUSSION

The preliminary results presented here indicate that specific acupuncture point names clearly correlate with specific anatomical features. This correlation supports the hypothesis that acupuncture is based on anatomical investigation of the material qualities of the human body. Acupuncture point names investigated here appear to: specify anatomical position (*tian* broadly designates “superior” and *xia* designates “inferior”); reflect function and/or form (*liao* designates “foramen,” “fossa,” or depression); indicate homologous structures and mark unusual structures (*fei* indicates a sole nerve flying away from a main bundle); and/or describe the physical appearance of a deep structure by likening it to a homologous everyday object (*xi* describes a vascular structure in a cleft). Correlations between acupuncture point names (both standardized and alternative names which exist for each point) and the anatomical features at each of the 60 points studied here are elaborated in the final column of Tables (1–6).

Results offer a new paradigm through which to interrogate the mechanisms by which acupuncture exerts its effects. Some results call attention to specific collections of structures; *fei* and *xi*, for example, have specific designations and so appear to be important in acupuncture, but have attracted less attention elsewhere. Likewise, and as elaborated elsewhere, the acupuncture term 絲 *si* (silk) calls for greater attention to be paid to

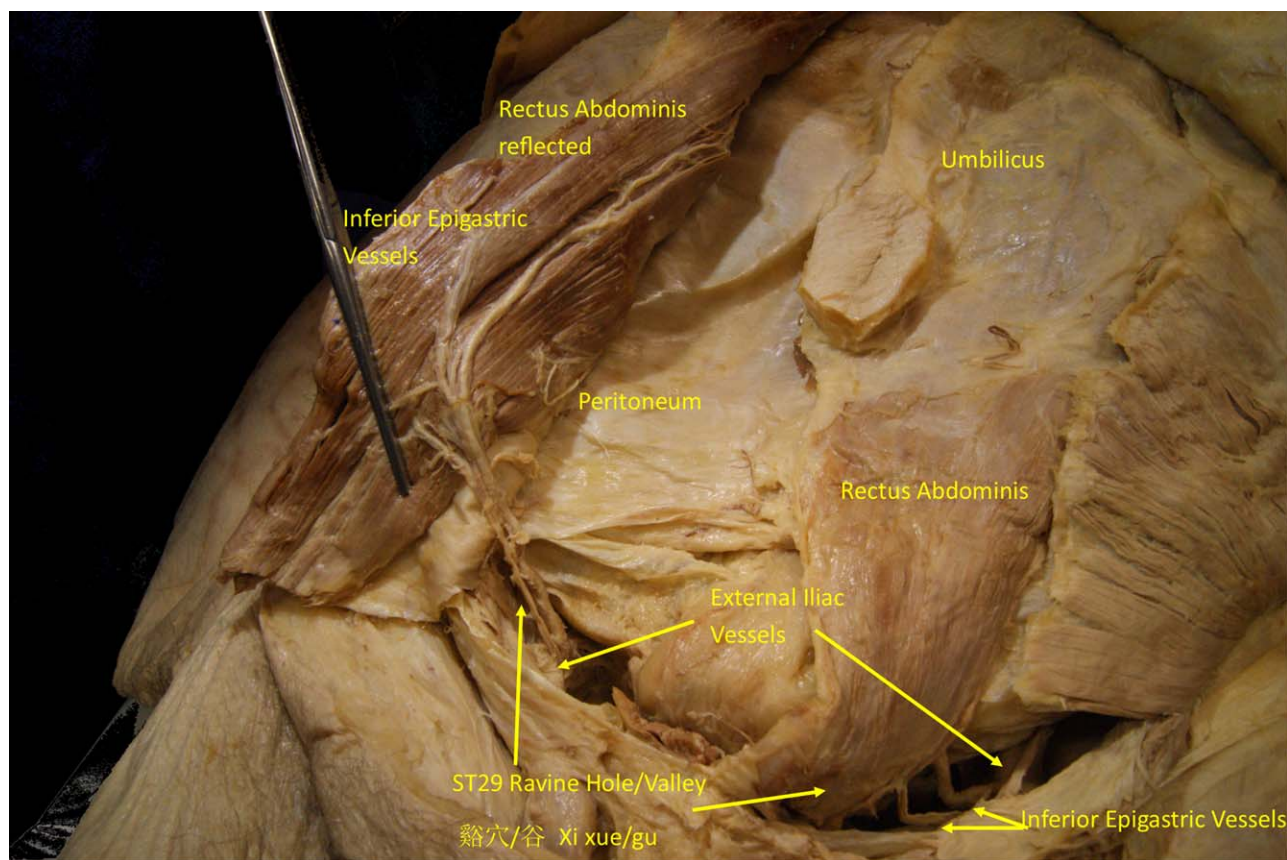


Fig. 3. Dissection of the abdomen of an embalmed cadaver at Ravine Hole/Valley (ST29) shows inferior epigastric vessels running between two bellies of rectus abdominis. They appear as tributaries which join together to form larger vessels descending into the abdomen to form an anastomosis with the external iliac vessels. There is no indication in Chinese terminology of directionality of flow (flow would be difficult to observe if research was being carried out on cadavers).

fascia, which has only recently started attracting attention in the biomedical sciences (Shaw and Aland, 2014). In this case, the unifying theory of acupuncture is neither one particular physiological system nor cosmological worldview, but instead the material, dissectible human body.

Results also offer new insights into a novel explanation for the historical development of acupuncture. Taken in conjunction with previous work, which argues that the points and meridian sharing the character 冲/衝 *chong* (surging/gushing) form a description of the extent of the vascular system (Shaw, 2014), a pattern is beginning to emerge of a medical culture focussed on the importance of blood—both its physical anatomical properties as it courses through the body, and its metaphysical properties as the carrier of the life force (*Qi*)¹ which travels with it. This is exemplified in the importance of pulse taking which forms

the cornerstone of diagnosis in Chinese medicine (Keiji, 1991; Wang, 1997; Kuriyama, 2002; Hsu, 2005).

This research highlights similarities between two sophisticated medical philosophies which are commonly considered to be opposed to each other. This is not to say that acupuncture is biomedical or objective (bearing in mind that objectivity itself is the product of a socially constructed style of knowing (Hsu, 2012)). But nor is it devoid of in-depth understandings of internal material form and function of the human body derived from systematic anatomical investigations (Schnorrenberger, 2008).

Where the two medical systems do diverge is in the sociocultural contexts in which anatomical investigations were carried out, and the worldviews through which anatomical knowledge was interpreted and incorporated into healing practice. For example, common anatomical naming conventions are to group structures together according to function (e.g., the flexors of the forearm) or to name structures located physically near each other similarly (e.g., blood vessels and nerves near the tibia are named anterior tibial artery and posterior tibial artery). This reflects the broader biomedical philosophy of compartmentalising and thinking reductively about the body. Acupuncture nomenclature, on the other hand, appears to be consistent in highlighting recurring

¹The character for *Qi* 氣 is made up of characters for 'air' and 'rice'. It has no direct single translation and the exact meaning changes with context. It usually denotes some kind of invisible life force and has been variously translated as breath/energy/physiological responses whose mechanism is not visible to the naked eye.

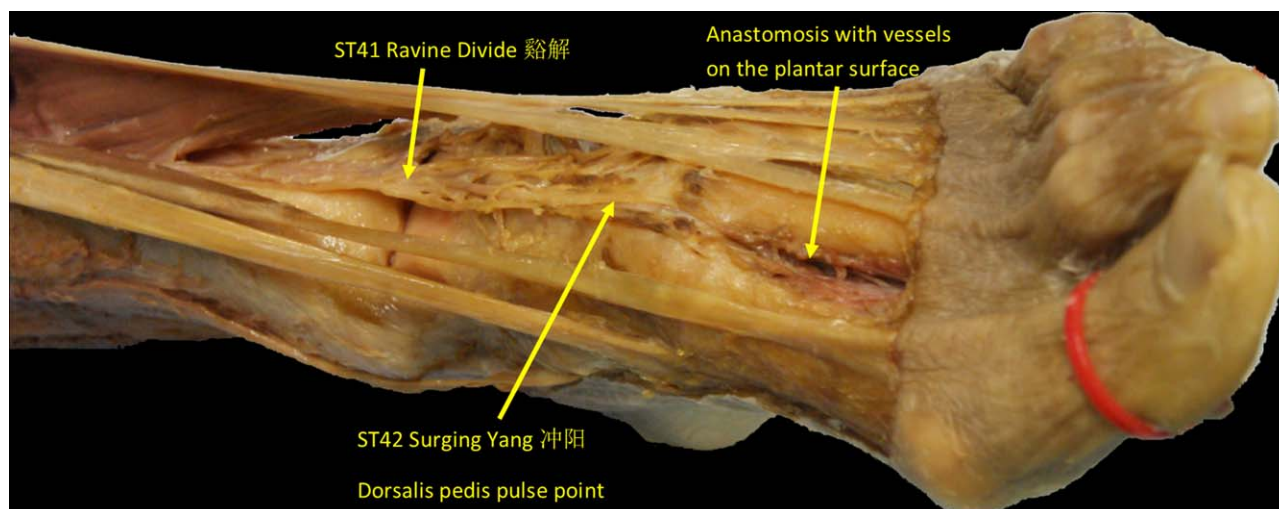


Fig. 4. Dissection of the anterior leg and foot of an embalmed cadaver at Ravine Divide (ST41) shows the anterior tibial vessels emerging from beneath extensor digitorum longus to pass over the ankle, between extensor digitorum longus and extensor hallucis longus, whose tendons form a high-sided "valley" through which the vessel passes.

anatomical features across the body, and in drawing attention to blood flow and interconnections both within the body; and between the body and the external world (e.g., *tian* as a name that designates the upper-body but does so through ecological reference to the sky or outer space, or *tianxia* which designates the whole body but also makes ecological reference to both the whole world and the whole of China).

The hypothesis that acupuncture is underpinned by careful and systematic anatomical investigation has intriguing implications for scholars of Chinese medicine as well as those in biomedicine. For example, if acupuncture has its roots in detailed anatomical investigation, might phenomena such as *Qi* have foundations in human anatomical structure in addition to intersubjective experience? Could interpreting anatomy in the context of a

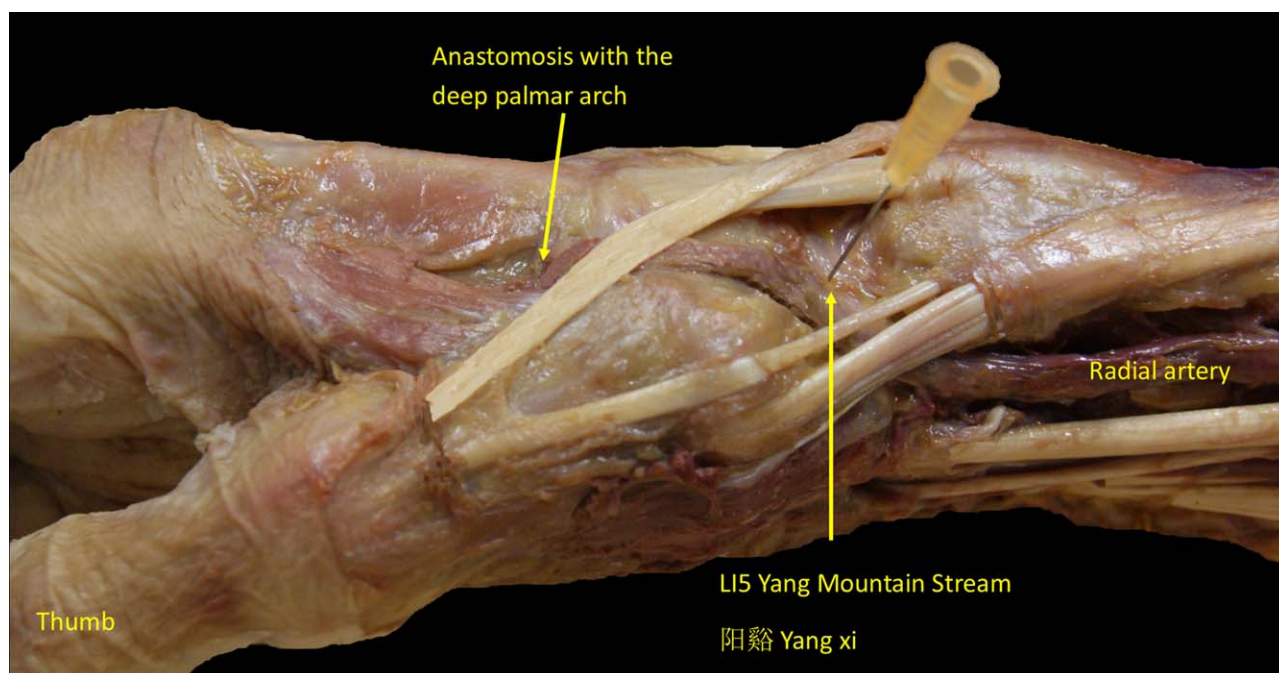


Fig. 5. Dissection of the forearm and wrist of an embalmed cadaver at Yang Ravine (LI5) shows the radial artery passes under the tendon slip of brachioradialis into the anatomical snuffbox, where it flows between the radius and scaphoid bones before it plunges between the first and second interosseus muscles toward the deep palmar arch of the hand.

holistic worldview (as occurs in the case of acupuncture) offer new avenues for developing more holistic and ecologically grounded approaches to health, wellbeing and the body in biomedical practice? Such thinking has the potential to open new fields of thought about bodily function and dysfunction. This is especially timely given emerging calls in the West to reframe health as a product of complex human interrelationships with natural (Coutts et al., 2014), microbial (Benezra et al., 2012) and political economic (eco)systems (Ottersen et al., 2014). It may also lead to novel forms of therapy that move beyond the dichotomous choice of either targeted (often pharmaceutical and individualized) treatment or complementary (often holistic and social) approaches.

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Hiding in Plain Sight-Ancient Chinese

Anatomy

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Abstract

For thousands of years, scientists have studied human anatomy by dissecting bodies. Our knowledge of their findings is limited, however, both by the subsequent loss of many of the oldest texts, and by a tendency towards a Eurocentric perspective in medicine. As a discipline, anatomy tends to be much more familiar with ancient Greek texts than with those from India, China or Persia. Here we show that the *Mawangdui* medical texts, entombed in the Mawangdui burial site in Changsha, China 168BCE, are the oldest surviving anatomical atlas in the world. These medical texts both predate and inform the later acupuncture texts which have been the foundation for acupuncture practice in the subsequent two millennia. The skills necessary to interpret them are diverse, requiring the researcher firstly to read the original Chinese, and secondly to perform the anatomical investigations that allow a re-viewing of the structures that the texts refer to. Acupuncture meridians are considered to be esoteric in nature, but these texts are clearly descriptions of the physical body. As such, they represent a previously hidden chapter in the history of anatomy, and a new perspective on acupuncture.

Anatomy, acupuncture, meridian, Han era, anatomical atlas

Introduction

Studying anatomy via direct dissection of the human body has been the ‘gold standard’ in Western medicine since the Renaissance (1300-1600CE) (Porter, 2017). There are records of even earlier anatomical dissections and physiological experiments by Herophilus (335-280BCE) and Erasistratus (304–c. 250BCE), but their original works were lost in the fire of the library at Alexandria (von Staden, no date). Galen (129-c.210CE) followed in their footsteps, and his surviving animal-based works, which formed the basis of Western anatomy for the subsequent thousand years, indicate that he was familiar with theirs. Our histories of anatomy are highly Eurocentric. Great emphasis is placed on anatomical discoveries made in Europe (especially Greece), but there is usually very little mention of China (Shaw and McLennan, 2016), Persia (Alghamdi, Ziermann and Diogo, 2017), or India (Wujastyk, 2009). This pattern persists even though these cultures have long and proud medical traditions. The first records of cataract surgery come from India in the 5th century BCE (Grzybowski and Ascaso, 2014; Davis, 2016) well before Herophilus. Prior to the flourishing of anatomy in Renaissance Europe, Chinese anatomical studies led to the creation of the Anatomical Atlas of Truth (*Cun Zhen Tu*)(Yang, 1106), and Ou XiFan’s Anatomical Illustrations (*Ou Xifan Wuy Zang Tu*) (Chiang, 2015) in the Song dynasty (960-1279CE) (*The Song Dynasty (960~1279)*, no date). In Persia, Ibn Sina (980-1037CE) wrote the Canon of Medicine in 1025CE (Koh, 2009), whereas in Europe Vesalius’ famous *De Humani Corporis Fabrica* (On the Fabric of the Human Body) was only published in 1543 (Vesalius, 1543)(*Newly Digitized 1543 Edition* / *Vesalius*, no date).

Here we argue that the ancient Chinese ‘*Mawangdui* texts’ (dating to the 2nd-3rd century BCE) (Yimou *et al.*, 1988) constitute one of the very earliest anatomical atlases based on systematic human anatomical study comparable to that found in ancient Greece. Crucially, where the early Greek texts perished, the Chinese ones survived. The study of the *Mawangdui* medical texts thus offers us both a unique window into ancient Chinese anatomical knowledge, and a chance to rediscover this way of seeing and mapping the human body.

The establishment of these texts as an atlas also informs some of the most basic assumptions about the anatomical basis for acupuncture meridians and points. This has major implications for current scientific research into the mechanism(s) of acupuncture. It challenges the widespread belief that there is no scientific foundation for the

‘anatomy of acupuncture’, by showing that the earliest physicians writing about acupuncture were in fact writing about the physical body.

The *Mawangdui* medical texts

The *Mawangdui* medical manuscripts were entombed at the Mawangdui burial site in Changsha, Hunan Province, China in 168BCE. This site comprises three separate tombs closed at different times, containing the bodies of the Marquis Dai, his wife Lady Dai and their son (Harper, 1998). Many artefacts were found in the tombs including treatises on medicine, war, personal cultivation, materia medica, and recipes for foods that would be considered healthy or medicinal. There are three anatomical manuscripts which differ in their details but generally contain similar material (*Changsha Mawangdui Han Dynasty Tombs Exhibition* | 湖南省博物館, no date). They were written around 300-200BCE (Yimou *et al.*, 1988), broadly contemporaneously with the now-lost dissection-based texts of Herophilus and Erisastratus (Lloyd and Sivin, 2002).

The texts describe the organisation of the human body in the form of divisions or pathways, each of which has associated disease patterns. These eleven pathways carry the same names as the acupuncture meridians described in the later *Huangdi Neijing* or Yellow Emperor’s/Yellow Thearch’s Classic of Internal Medicine (henceforth ‘the *Neijing*’) (Huangdi Neijing, no date). The *Neijing* is the canonical text of ancient Chinese medicine and has great status in Chinese history and culture. It is recognised as the repository of medical thought at the time of the Han dynasty (206BCE-220CE), and contains the earliest exposition of acupuncture theory, points and clinical practice, and we have discussed the anatomical content found in it in other papers (Shaw, 2014; Shaw and Aland, 2014; Shaw and McLennan, 2016). Unlike the entombed *Mawangdui* texts, the *Neijing* was copied and recopied over time, has volumes of commentary associated with it, and remained current throughout Chinese history to the present. There are sections from the *Mawangdui* texts copied verbatim into the *Neijing*, suggesting that the older texts became subsumed into the bigger, more detailed compendium. The key difference in content between the two is the addition of an extra meridian (*arm jue yin*) to the *Neijing* that is not found in *Mawangdui* (Unschuld, 1985, p. 81). There is also no mention of either acupuncture, or acupuncture points found in *Mawangdui*. This information is all

contained in the later *Neijing* text, which clearly indicates that mapping the body was an area of active anatomical research in the Han era, with a progression of ideas over time.

Both the *Neijing* and *Mawangdui* describe a system of meridians or pathways through the body in which *Qi* (vital energy) circulates. How this description was arrived at, however, is the subject of considerable debate. In ancient China, the development of anatomy is generally considered **not** to have involved dissection (Harper, 1998; Lloyd and Sivin, 2002), in contrast to what was broadly contemporaneous in the West. This is because Han-era China was governed by Confucian law. Under Confucian law each person had their place and the stability of the State and social order was maintained through a rigid social structure. One of the laws underpinning that structure was that of 'filial piety' (Confucianism, 1996), under which it was a child's duty to respect and worship their parents and ancestors. The human body was considered sacred, and dissection was seen as a mutilation of one's ancestor, and therefore forbidden (Lloyd and Sivin, 2002). For this reason, it is widely assumed that the anatomy described in *Mawangdui* and the *Neijing* was arrived at through some means that did *not* involve direct examination of the body (Unschuld, 1985; Lloyd and Sivin, 2002).

However, the *Han Shu* (Book of Han) records the dissection of the criminal Wang Sun-Qing in CE16 (Schnorrenberger, 2008). The *Han Shu* is a complete history of the Han Dynasty from 206BCE-23CE, and this record of dissection forming part of Wang Sun-Qing's punishment shows that in the case of criminals, the law of filial piety did not apply. The penal system at the time included the '5 Punishments': tattooing of the face, cutting off the nose, chopping off the feet, castration, and the death penalty (Yang, 2015). The death penalty could be carried out by strangling, decapitation, or slicing. Decapitation was a more serious penalty than strangulation because it mutilated the body, thereby humiliating the person and denying them a fate for their mortal remains that was in compliance with the law of filial piety. Death by slicing was more severe still, as the offender was tied to a post and cut whilst still alive, until they died. The record of dissection would fit with a punishment system that considered mutilation of the body the most severe form of the death penalty (Kim and LeBlang, 1977). We argue here that the *Mawangdui* texts record anatomy arrived at via dissection (as does the succeeding *Neijing*). If this assessment is correct, they are not only the

oldest Chinese anatomy texts, but also the oldest surviving anatomical atlases in the world, predating Galen by a thousand years.

(Con)fusing medical paradigms

The *Mawangdui* medical texts were only discovered forty years ago. Nobody has yet proposed that they are an anatomical atlas (Liu, 2016). We suggest that the primary reason for this is not that Confucianism renders anatomical study through dissection inherently implausible, instead, we propose that reading these texts requires the ability to view the anatomy of the body through a naive lens that is significantly different to our modern perception of science and medicine.

Additionally, reading ancient Chinese is a specialist skill. The creation of a single Chinese script that is consistent across all the different Chinese languages and dialects was a key part of the unification of China in the Han era. Formation of the written text was a crucial step that allowed for central governance. Traditional Chinese script is highly complex, and was simplified during the 1950s and 60s to encourage literacy and make printing easier. The ideas contained within it are from a historical era that was underpinned by the philosophy of yin/yang (described below). To read these texts therefore requires not only the ability to read the traditional script, as well as modern simplified script. It also represents a substantial paradigm shift for scholars, especially those from the West accustomed to explanations of the universe that are based in modern science. Traditional Chinese Medicine is based on the doctrine of *yin* and *yang*. This is a broad philosophical concept of complementary opposites that has underpinned the Chinese understanding of the universe since the Han dynasty and before. The paradigm continues to the present day, and the *yin/yang* symbol (Figure 1) has been adopted into some parts of Western culture that have been influenced by Eastern spiritualism.

FIGURE 1: THE YIN/YANG SYMBOL. IN THIS IMAGE, THE DARK IS YIN, AND THE LIGHT IS YANG.

Yin 陰, 阴 is defined as ‘the dark negative feminine principle in Chinese dualistic cosmology’, with additional connotations of overcast (weather), cloudy, shady, moon, implicit, hidden(*yin* 翻译 - 英汉词典 - *Chinese-English Dictionary; Thesaurus - YellowBridge*, no date).

Yang 陽, 阳 is defined as ‘the bright positive masculine principle in Chinese dualistic cosmology’, with additional connotations of; positive, sun, male principle (Taoism)(*yin* 翻译 - 英汉词典 - *Chinese-English Dictionary; Thesaurus - YellowBridge*, no date).

The terms *yin* and *yang* are also used to describe human anatomy, in ways that fit with these general principles but have different English translations depending on context. For example, they can be used as relational terms to describe location: the head is *yang* (superior) in relation to the abdomen; the abdomen is *yin* (inferior) in relation to the head. The back is *yang* (dorsal/posterior) in relation to the front; the front is *yin* (ventral/anterior) to the back. The skin is *yang* (exterior) in relation to the bone; bone is *yin* (interior) in relation to the skin.

Being able to interpret, based on context and deep philosophical understanding, which of the meanings of *yin* is being used in a given text can be challenging. In this case, we also have to add the complexity of describing a body in symbolic terms, based on presumably limited (and variable) source material, and the fact that any anatomy based on cadavers is missing significant functional information. In modern anatomy, for instance, it is taken for granted that we distinguish between nerves, arteries and veins. However, this knowledge was arrived at through investigation of the living, not examination of the dead. When looking at these structures in a cadaver, all that can be seen are a collection of tubes which travel through the body together, which the naïve viewer will interpret according to their own understanding.

For example, in the cadaver, arteries have an open lumen and are empty of blood. This led the ancient Greeks to conclude that air (*pneuma*) flowed through arteries, and blood only flowed in veins (Aird, 2011). There is no way to tell simply by looking that blood travels towards the heart in veins, and away from the heart in arteries. Nerves in a cadaver are dense white structures with neither lumen nor blood. It is impossible to tell that electrical impulses are conducted via the nerves both to and from the brain. All that can be deduced by their position is that they must have something in common with the empty tubes (arteries), and the blood-filled ones (veins). All three structures tend to

travel together as neurovascular bundles, often wrapped in a common fascial sheath, and pass along the same fascial planes in between muscles. Without knowledge of the physiologically different functions that they perform, there is no reason to differentiate between them beyond the purely structural.

Finally, a substantial shift of paradigm like that required to merge ancient Chinese and modern Western world-views also requires that we learn to see the strange in the familiar and the familiar in the strange (ideas with a long history in anthropology and sociology) (Willermet, no date). Our modern tendency to describe the body as a series of functional systems – nervous, respiratory, circulatory etc. – although so familiar that we may not even notice it, is by no means ‘obvious’ or objective. Seeing the anatomy in the *Mawangdui* texts thus requires an effort to shift out of our familiar paradigms and explore the body from a viewpoint that to us is new.

Results

The *Mawangdui* meridians in the flesh

The *Mawangdui* arm meridians are much simpler than those of the leg, so we treat them first. Arm and leg meridians are each split into *yin* and *yang*. The patterns each set displays are themselves useful illustrations of the naming conventions and paradigms of ancient Chinese anatomical studies, as represented in the *Mawangdui*.

In what follows, we are dealing with three discrete but inter-related sets of information: the original Chinese texts (characters), direct translations of those texts that are as literal as possible (in English), and the anatomical descriptions that we believe align most closely with the pathways described.

The Table of Translations (found in the supplementary information) gives the original Chinese texts and our translations of them. As there are usually 3 texts per meridian, we also provide a collated translation which is a summary of the combined texts for each meridian.

In the main body of our results section, we take these detailed documents as the basis for our interpretation. Tables 1-11, and Figures 2-12, therefore act to unify and integrate the text, translation and anatomical structure. We name the physical structures that we have identified through dissection and anatomical examination as the most likely structures being described in the *Mawangdui*. These sections summarise our evaluation of the physical actuality of the meridians described. In the main text, we alternate between modern anatomical terminology and references to the translations. For clarity, the original Chinese terminology is given in italics and our translations of the texts are referred to in quotation marks. The translations are included where they are relevant to understanding the reasons for our interpretations.

The contextual information is about how these structures relate to the translated texts, and the overall patterns that emerge. Where we name a meridian but do not specify a single version (e.g. where we describe ‘the arm meridians’), the text that follows describes points of congruence between translated text and physical anatomy. In the case of the arm meridians in particular, there are many places where the individual meridian descriptions seem to have large amounts of overlap, so we adopt an approach that highlights both congruence, and difference.

Arm meridians

Yang.

The three *yang* meridians of the arm (*tai yang*, *shao yang*, *yang ming*) do not each describe discrete structures (Tables 1-3). Rather, together they describe the network of veins in the arm starting from the back of the hand and travelling to the face. These veins flow initially from either the little (*tai*) (Figure 2), middle (*shao*) (Figure 3), or index (*yang ming*) (Figure 4), fingers of the hand to the elbow, where they connect with each other via the median cubital vein. From here the veins of the arm (as defined in modern anatomy) have two possible pathways. The cephalic vein remains on the surface, and continues to the top of the shoulder before joining into the subclavian vein. The brachial vein travels deep in the plane between biceps brachii and brachialis before flowing into first the subclavian, then the brachiocephalic veins, and thus into the heart.

In the *Mawangdui* anatomical paradigm however, these three arm meridians are defined as *yang*- best translated in this context as ‘superficial’. The pathway described therefore follows the cephalic vein along the arm. At the

shoulder it connects *not* with the subclavian, but instead with the external jugular vein. From here the veins travel along the neck with three main branches; the suprascapular vein to the shoulder (*shao yang*), the auriculotemporal vein to the ear (*tai yang*) and the facial vein to the mouth (*yang ming*).

Yin.

The *yin* pathways of the arm also describe blood vessels (Tables 4 & 5). The ulnar artery (*tai/greater yin*) (Figure 5) is the most direct, starting in the palm of the hand and passing out along the ulnar side of the forearm. The radial artery (*shao/lesser yin*) is not as prominent in the hand, and continues through the forearm on the radial side. Both connect into the brachial artery at the elbow. *Tai yin* continues to the heart presumably via the subclavian artery and the arch of the aorta, whereas *shao yin* (Figure 6) finishes in the armpit where there are multiple vascular connections into the thorax.

Leg meridians

Yang.

The leg meridians are longer, starting at the feet/ankles and finishing at the head. By comparison to the arm meridians, they are both more complex and more diverse. They do not describe single continuous structures like veins or arteries, but rather are composed of a series of different structures, some neurovascular and some muscular. These have fascial connections with each other, creating visual rather than functional connections to form diverse yet continuous pathways through the body.

The *yang* meridians are concerned with what lies in the most superficial layers of the body. *Foot tai yang* (big/greater *yang*) (Table 6) describes the short saphenous vein as it drains the lateral side of the foot and joins into the popliteal vein (Figure 7). From the back of the knee, the pathway continues by following the sciatic nerve as it passes up through the posterior thigh into the gluteal area. The nerve passes through the pelvis at the greater sciatic notch and goes towards the spine. At this point, the nerve fibres disappear from view and the meridian description changes to something that is 'wedged around the spine'. The best correlate for this is the deep extensor muscles which flank the spine and have tendinous attachments into the lateral processes of the vertebrae. The extensor muscles continue up either side of the spine, blend into the muscles of the neck which in turn attach into the occiput. Here they meet the temporalis muscle and, as this muscle, flow under the zygomatic arch towards the eye and jaw.

Similarly, *foot shao yang* (lesser *yang*) (Table 7) starts at the ankle with the superficial fibular nerve (Figure 8). It continues along the lateral side of the leg to the head of the fibula where the nerve passes through into the back of the knee. The meridian continues from the head of the fibula as the iliotibial tract and tensor fascia lata, passing along the lateral side of the leg to the iliac crest. The pathway continues with latissimus dorsi from its attachments along the iliac crest and the spinous processes of the vertebrae up to the inferior border of the scapula where it 'sends out a weak branch to the shoulder'. This is the tendon attaching into the humerus, forming the posterior border of the axilla (with teres major). Trapezius muscle overlaps with latissimus dorsi, similarly attaching into the spinous processes. This muscle therefore forms the next part of the meridian as it continues up the back to attach into the

base of the skull at the occiput (pillow bone). From here the pathway is the same as for *tai yang*, with muscular continuity with temporalis as it passes under the zygoma to connect with the face and corner of the eye.

Foot yang ming (Table 8) is the first meridian to discuss the ‘fish thigh’. We interpret the fish thigh as the adductor muscles containing the adductor hiatus (Figure 9). This is a significant anatomical landmark which allows the femoral artery and vein to pass around the thigh from the anterior surface into the back of the knee. The adductor hiatus is formed by a tunnel of connective tissue through which the vessels pass, protecting them from being compressed when the muscle contracts. The section of this meridian below the knee is the anterior tibial artery. In the thigh it is the femoral vessels, travelling upwards to the point where they cross the pelvic brim. There is then a network of blood vessels that cover the surface of the belly and thorax; epigastric in the abdomen and internal thoracic in the thorax, which eventually resolve into the subclavian. To our way of viewing anatomy, this system then drains into the heart. However, following the Chinese priority of describing superficial pathways already seen in the *yang* arm meridians, the vascular pathway continues up the external jugular to the face. Here it encircles the mouth, passes along the nose to the inner canthus of the eye and, via the auriculotemporal vein, travels past the ear.

YIN:

The *yin* vessels of the leg deal with the medial/deep aspects of the leg, and the blood vessels that are found there.

Foot shao yin (lesser *yin*) (Table 9) is described as originating in the calf (Figure 10), going along the inside of the leg to the thigh, to the belly and along the inside of the spine to the liver, gallbladder and kidneys. This we identify as the veins that travel with the posterior tibial artery in the deep compartment of the leg. The deep veins drain into the popliteal vein, which passes through the adductor hiatus to become the femoral vein. From here it passes over the pelvic brim to go deeply into the pelvis as first the external, then the common iliac vein. These then drain into the vena cava which passes along the right side of the spine to seemingly disappear into the liver. The renal veins also connect to the kidneys and are a part of the pathway described. The rest of the meridian from the heart up to the face is referred to in passing here as ‘and wraps around the tongue’. The internal jugular veins from the heart to the face are very prominent, and disappear from view in the neck behind the jaw where they go through the jugular foramen into the skull, seeming to pass behind the tongue.

Foot tai yin (greater *yin*) (Table 10) describes the pathway of the long saphenous vein (Figure 11), starting as it drains the venous arch of the foot and runs along the medial side of the leg and thigh before connecting to the femoral vein, which passes along the inside of the thigh. The description says something equivalent to ‘and connects’ at several points, and there are several consistent, large perforating veins in the leg and thigh to which this probably refers (Crockett’s, Boyd’s and Dodd’s perforators and the saphenofemoral junction). From the femoral vein at the top of the thigh the structure described branches to go to the epigastric veins. From here, the *Mawangdui* description of *foot tai yin* is very similar to that for *foot yang ming* as the blood courses over the abdomen.

The similarity in the paths of *foot tai yin* and *foot yang ming* meridians begs the question ‘why is a yin (deep) meridian mapped principally onto a superficial vein, and a yang (superficial) meridian mapped onto deeper structures?’

In this context, the best explanation we find is that the superficial (greater saphenous) vein is ‘*tai’ yin*, i.e. greater *yin*. It is located on the median (*yin*) aspect of the leg, and describes the greatest and most superficial of the blood vessels found there. The superficial vein connects directly from the surface with the deeper *shao yin* (lesser *yin*)

vessel. Blood is considered to be an inherently *yin* substance, so these two vessels for the more superficial (greater) and deeper (lesser) blood vessels on the *yin* (medial) surface of the lower limb.

The *yang* of *foot yang ming* refers to its location on the anterolateral aspect of the leg, and later, on the surface of the abdomen. It is the anastomosis between the greater saphenous vein and the femoral vein that connects these two meridians explaining the similarity from there onwards, however their individual descriptions below the groin contain a large degree of internal logic, following the general principles of *yin*/medial, *yang*/lateral.

Foot jue yin (hidden *yin*) (Table 11) is the final foot meridian. This pathway is clearly that of the arterial supply to the leg and foot (Figure 12). There is an anastomosis between dorsalis pedis on the dorsum of the foot and the lateral plantar artery in the first webspace, which we have shown elsewhere is considered significant in later texts (Shaw 2014). We therefore consider that this anastomosis is the 'connection with the big toe of the foot that follows the foot instep'. The lateral plantar artery passes under the foot, comes around and runs between the medial malleolus and the Achilles tendon on the medial side, where it becomes the posterior tibial artery and the posterior tibial pulse can be felt. The artery (and the entire posterior neurovascular bundle) passes up along the inside of the calf into the 'hidden' deep compartment of the leg. From here it travels to the back of the knee and follows the same pathway that has already been described through the 'fish thigh' to the lower abdomen together with *foot tai yin*.

Discussion

In the text above (and the Supplemental Information), we have shown how the text of the *Mawangdui* medical manuscripts maps onto the structures visible in a human cadaver. We propose, based on the close alignment we find between body and text, that the pathways the *Mawangdui* describes are not esoteric. Instead, they represent the earliest surviving anatomical atlas, designed to provide a concise description of the human body for students and practitioners of medicine in ancient China.

In keeping with the philosophical and social structures in which they were created, these pathways do not describe the body the way we would today. Instead of being viewed as a series of systems linked by functional relationships, the *Mawangdui* meridians divide the body into *yin* and *yang*, and within that, into greater and lesser and sometimes other categories (*jue* or ‘hidden’, and *ming* or ‘bright’). In many cases, the difference in perspective and priorities leads to clear distinctions between how we would interpret structures today and how they were understood in ancient China. As just one example, for the writers of the *Mawangdui* a pathway could transition from one ‘type’ of structure to another provided it remained *yin* or *yang* as appropriate, while for a modern anatomist, linking (say) vein and muscle or fascial tract and artery as part of the same structure would be incomprehensible.

The *yin/yang* distinction seems to be the primary component of the *Mawangdui* divisions. Modern medicine has a systematic means of naming bodily structures which was codified in the *Nomina Anatomica* (Subcommittees of the International Anatomical Nomenclature Committee, 1989), but prior to this there was

much more variation in Western naming conventions too. A modern anatomist reading Galen, Herophilus or Erasistratus would need a new paradigmatic lens, albeit perhaps a more familiar one, just as one does for reading the *Mawangdui*. Nevertheless, we can clearly see specific pieces of anatomy reflected in the *Mawangdui* manuscripts, and this greatly strengthens our interpretation of these texts as anatomical atlases. The multiple connections in *foot tai yin* are clearly the perforating veins, which are consistently present but sufficiently well-hidden and specialised that many major anatomical atlases (Abrahams, Marks and Hutchings, 2003; Drake, Vogl and Mitchell, 2010) we use today do not give their names. Likewise, the descriptions of the branch of the latissimus dorsi

to the humerus, or of *arm shao yang* running in the deltopectoral groove, are too closely aligned to anatomical reality to plausibly reflect the work of physicians who have never seen the dissected human body.

That said, there remain places in the *Mawangdui* where multiple interpretations are possible for a single pathway. The process of identifying the most likely anatomical structures to fit the texts was often confusing, and the subject of considerable debate between the authors. The meridians described in *Mawangdui* are in some cases very similar to the modern acupuncture meridian pathways (e.g. *yang ming*), but in other cases they are distinct from their modern counterparts (e.g. the arm vessels named tooth, shoulder and ear). Knowledge of the modern meridian pathways therefore sometimes aided the process of identification, but also created an unconscious bias of expectation of similarity and congruence. In order to maintain objectivity, we avoided giving the meridians their commonly used and more familiar names which are associated with organs, e.g. bladder, kidney, stomach etc. Instead, we only referred to them by their Chinese name, as we have in this paper. New translations or interpretations may yet change our understanding, and we welcome the prospect of future developments. We propose that the multiple texts in the *Mawangdui* compendium, and remaining discrepancies between them, most likely reflect the fact that the authors were engaged in ongoing conversation about the body and its function. This would further suggest that there was a progression in efforts to map the body that was supported by the Han Imperial Court, as scientists would require access to executed criminals to do this work.

We have already highlighted the many ways in which the *Mawangdui* manuscripts appear similar in form to the more familiar texts by contemporary ancient Greek anatomists. Disagreement between authors in print, the existence of multiple versions of a text, wholesale copying, extensive commentary, and distinctive world-views all appear in both, and support our drawing analogies between them. Interpreting these features as indicating the existence of ongoing scientific discussion and debate, in a social context where bodies were rare commodities and socio-political support was required to make anatomy respectable, would make sense of the fact that both seem to reflect similar working contexts. The *Mawangdui* manuscripts later became subsumed into the *Neijing*, which also describes acupuncture points. We have argued elsewhere that these also have anatomical correlates (Shaw and McLennan, 2016) and reflect an intimate knowledge of the interior of the human body.

To conclude, in this paper we have demonstrated that the 300-200 BCE *Mawangdui* medical texts represent the oldest surviving anatomical atlas in the world, predating Galen by about a thousand years. Reading these texts as anatomy rather than esoterica allows us exciting new insights into the history of acupuncture and medicine, as well as access to a view of science and the world that has been largely hidden since they were sealed away. This new knowledge will also have a major impact on the design of scientific research investigating the mechanisms for acupuncture by demonstrating that acupuncture was originally an anatomical science.

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Author Contributions

VS- original idea and project design

VS, ICW- dissections and data collection

VS, ICW, RD- wrote and edited the article

Competing Interests

The authors have no competing interests



Figure 1: the yin/yang symbol. In this image, the dark is yin, and the light is yang. Within the dark is the seed of the light, and vice versa. Both flow into each other, as day flows into night, and night flows through to become day again.

40x40mm (1200 x 1200 DPI)

TABLE 1- ARM TAI YANG

Name	Test description
Arm <i>tai yang</i> (ear vessel)	Greater <i>yang</i> meridian of the arm, ear vessel- “It rises up from the little finger/back of hand, goes along the space on the outside of the two bones. It goes up the bone to the lower corner to the centre of the elbow. It passes along the soft muscle ridge up to the shoulder, and passes along the back of the neck to join into the eye and the ear.”
Anatomical pathway	<ul style="list-style-type: none"> A. This is the most medial of the three <i>yang</i> meridians, and starts on the little finger. It passes along the arm on the extensor surface of the forearm as the basilic vein. B. It joins with the cephalic vein as the median cubital vein in the elbow, and continues along the edge of biceps brachii to the shoulder as the cephalic vein. C. It progresses up along the neck as the external jugular and branches to the eye and ear as the auriculotemporal vein.

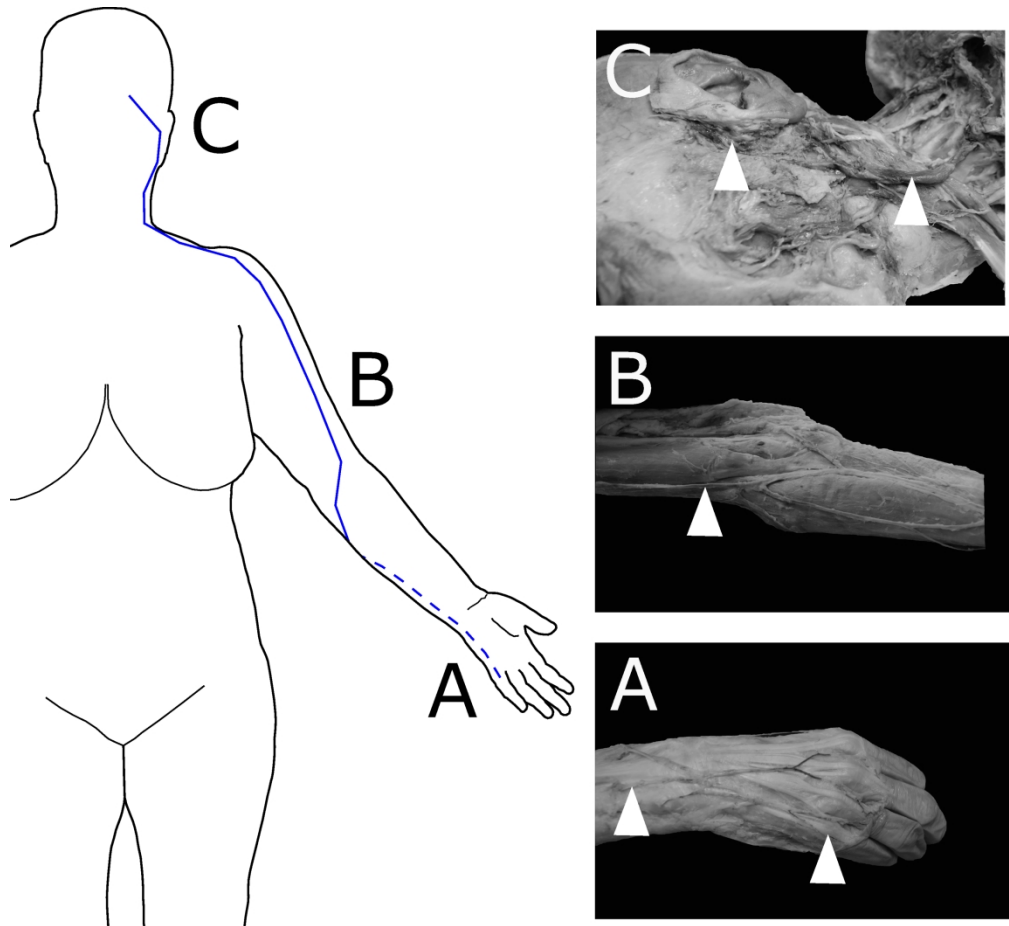


FIGURE 2- ARM TAI YANG
LEFT: SCHEMATIC DRAWING OF ARM TAI YANG MERIDIAN PATHWAY
RIGHT: A- VEIN FROM LITTLE FINGER LEADING TO BASILIC VEIN IN THE POSTERIOR FOREARM, B-
CEPHALIC VEIN IN ARM, C- EXTERNAL JUGULAR VEIN WITH AURICULOTEMPORAL VEIN TO ANTERIOR EAR
AND EYE

150x138mm (600 x 600 DPI)

TABLE 1- ARM SHAO YANG

Name	Test description
Arm <i>shao yang</i> (shoulder vessel)	Lesser <i>yang</i> meridian of the arm, shoulder vessel– “It rises up from behind the ear, goes below (into) the shoulder, exits along the upper arm along the outside ridge, goes along the outside of the bicep, goes to the upper ridge of the (middle) finger.”
Anatomical pathway	<p>The pathway of this vessel is very similar to the ear vessel of arm <i>tai yang</i>, and all three of the manuscripts also mention the shoulder vessel starting at the ear.</p> <p>The name of the vessel is however ‘shoulder’ so we interpret this pathway as following the same route along the external jugular vein as the ear and tooth vessels.</p> <p>D. It then differs in that this pathway includes specific mention of the veins which pass from the external jugular into the shoulder. It then passes along the cephalic vein in the arm, as do the other two <i>yang</i> meridians.</p> <p>E. It passes into the hand where it finishes on the middle finger.</p>

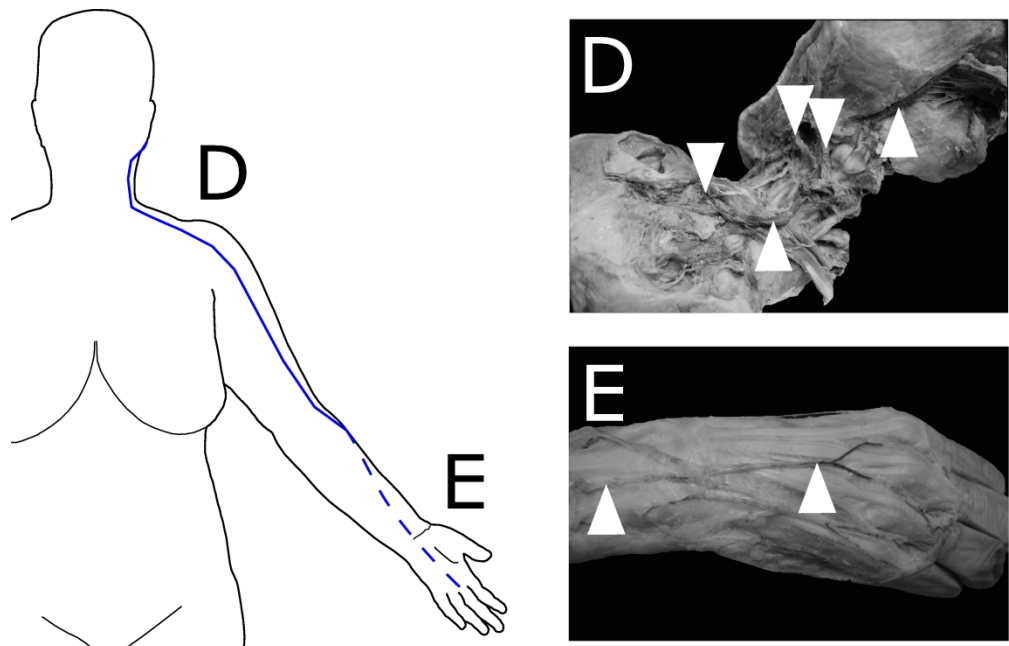


FIGURE 3 ARM SHAO YANG
LEFT: SCHEMATIC DRAWING OF ARM SHAO YANG MERIDIAN PATHWAY
RIGHT: D- AURICULOTEMPORAL VEIN TRAVELS FROM THE POSTERIOR EAR, FLOWS INTO THE EXTERNAL JUGULAR, TWO BRANCHES PASS TO THE TOP OF THE SHOULDER, THE VEIN CONTINUES INTO THE ARM AS THE CEPHALIC VEIN IN THE DELTOPECTORAL GROOVE. E- BASILIC VEIN CONTINUES INTO THE DORSUM OF THE HAND TO THE MIDDLE FINGER

157x101mm (600 x 600 DPI)

TABLE 1- ARM YANG MING

Name	Test description
Arm <i>yang ming</i> (tooth vessel)	Brilliant <i>yang</i> meridian of the arm, tooth vessel- “It rises from the second finger (index) and from the big finger (thumb), goes to the upper ridge of the arm, joins in the centre of the elbow, follows bicep, to the cheek, joins into the teeth centre and connects with the nose.”
Anatomical pathway	<p>F. This vessel starts from the lateral dorsum of the hand at the thumb and index finger, and continues along the forearm as the cephalic vein.</p> <p>G. It joins with the basilic vein at the median cubital vein in the elbow, and then continues along the edge of biceps brachii to the deltopectoral groove as the cephalic vein.</p> <p>H. It passes up along the external jugular vein to the face and goes to the mouth as the facial vein.</p>

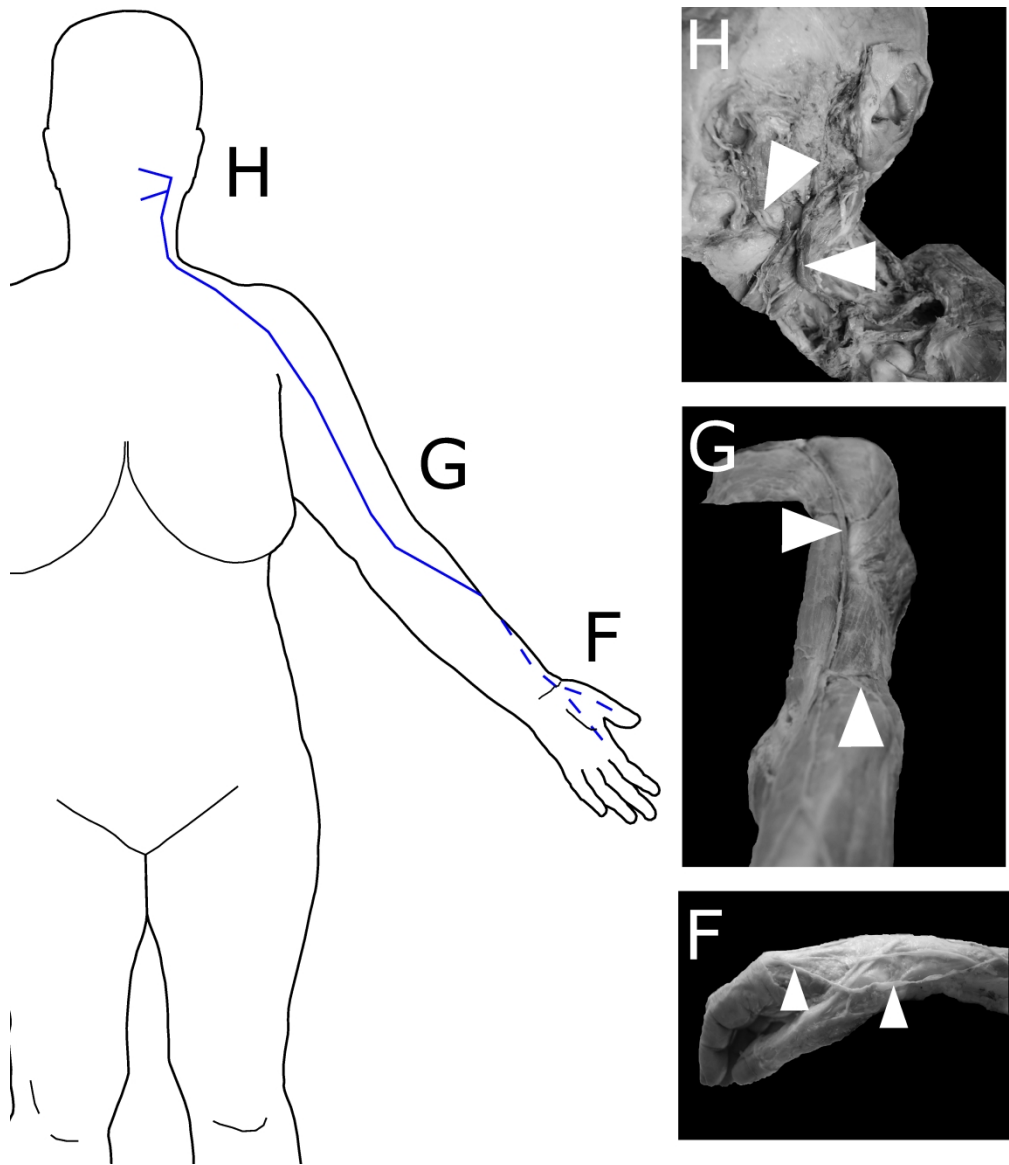


FIGURE 4- ARM YANG MING
LEFT: SCHEMATIC DRAWING OF ARM YANG MING MERIDIAN PATHWAY
RIGHT: F- VEIN FROM THE HAND STARTING AT THE THUMB AND FOREFINGER, G- MEDIAN CUBITAL VEIN
AT THE ELBOW CONTINUES AS CEPHALIC VEIN, H- EXTERNAL JUGULAR VEIN IN NECK BECOMES FACIAL
VEIN (AND ARTERY) TO MOUTH

151x174mm (600 x 600 DPI)

TABLE 1- ARM TAI YIN

Name	Test description
Arm <i>tai yin</i>	Greatest <i>yin</i> meridian of the arm- “It starts in the centre of the palm, goes along the forearm between the two bones following straight along the tendons, travels below the sinew into the bicep, to the armpit, and connects with the heart.”
Anatomical pathway	<ul style="list-style-type: none"> I. This is a description of the ulnar artery starting in the palm of the hand, and passing along the ulnar side of the forearm to the elbow. J. It passes under the bicipital aponeurosis, and joins into the brachial artery on the medial side of the arm, in the fascial plane formed between brachialis muscle and biceps brachii. From here it passes up through the axilla, subclavian artery, brachiocephalic artery (right) or arch of the aorta (left), ascending aorta to join into the left ventricle.

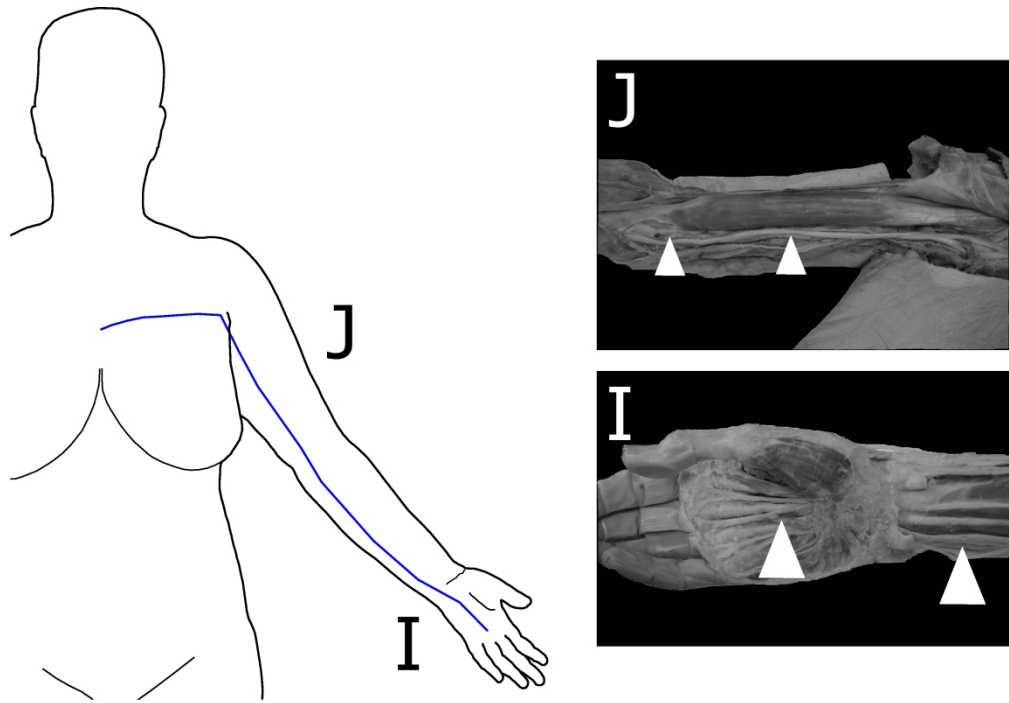


FIGURE 5- ARM TAI YIN
LEFT: SCHEMATIC DRAWING OF ARM TAI YIN MERIDIAN PATHWAY
RIGHT: I- ULNAR ARTERY IN THE PALM AND MEDIAL FOREARM, J- BRACHIAL ARTERY IN THE ARM

144x100mm (600 x 600 DPI)

TABLE 1- ARM SHAO YIN

Name	Test description
Arm <i>shao yin</i>	Lesser <i>yin</i> meridian of the arm- “It travels straight from the lower corner of the sinews (at the wrist), to the upper ridge of the lower bone. It passes below the sinew, along the bicep of inner <i>yin</i> to the armpit, exits the armpit and assembles in the flank.”
Anatomical pathway	<ul style="list-style-type: none"> K. This is the radial artery from the point where it passes under brachioradialis tendon at the wrist to travel along the radial side of the forearm to the elbow. L. It passes under the bicipital aponeurosis to join into the brachial artery, and travels along in the plane between brachialis and biceps brachii to the armpit. M. From the axillary artery as it passes into the subclavian to leave the armpit. There are also multiple branches that connect between the armpit and the side of the thorax.

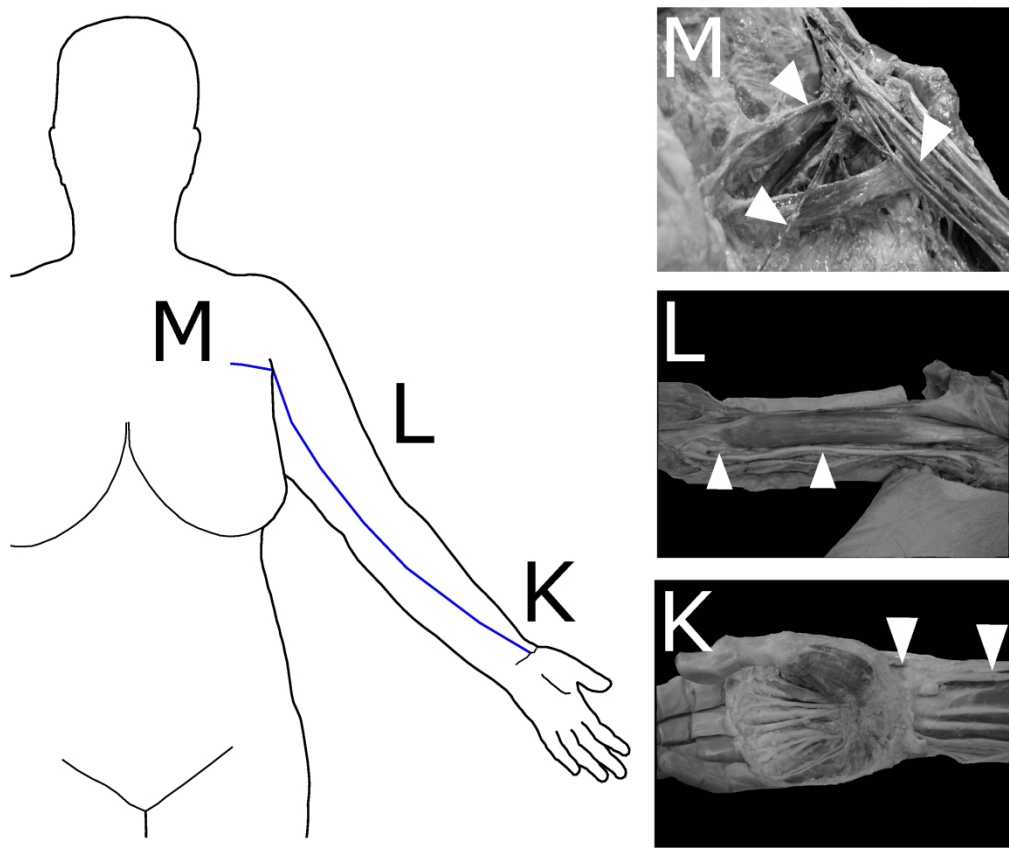


FIGURE 6- ARM SHAO YIN
LEFT: SCHEMATIC DRAWING OF ARM SHAO YIN MERIDIAN PATHWAY
RIGHT: K- RADIAL ARTERY IN WRIST AND FOREARM, L- BRACHIAL ARTERY IN ARM, M- BRACHIAL ARTERY
WITH COSTOBRACHIAL BRANCHES TO THORAX

128x108mm (600 x 600 DPI)

TABLE 1- FOOT TAI YANG

Name	Test description
Foot <i>tai yang</i>	Greatest <i>yang</i> meridian of the foot- “Exits at the cavity outside the ankle, goes up in the centre, penetrates up, exits at the hip, wraps around the backbone, exits along the back of the neck, to the corner of the head, goes down the face, wraps around (X) to the inner corner of the eye.”
Anatomical pathway	<p>N. The venous return for the lateral foot flows into the short saphenous vein, which is found in the centre of the posterior leg, and which connects into the neurovascular bundle in the popliteal fossa. From here the text is describing the pathway of the sciatic nerve which travels straight up through the posterior thigh to the gluteal region.</p> <p>O. The sciatic nerve passes through the greater sciatic notch into the pelvis where it becomes the lumbosacral plexus and disappears through the intervertebral foramina into the spinal cord. The extensor muscles fan out either side of the spine, until they reach the neck where the combined splenius capitis muscles and ligamentum nuchae join the thorax and ribcage to the occiput.</p> <p>P. Temporalis muscle covers the lateral aspect of the head and goes under the zygomatic arch into the face and the corner of the eye.</p>

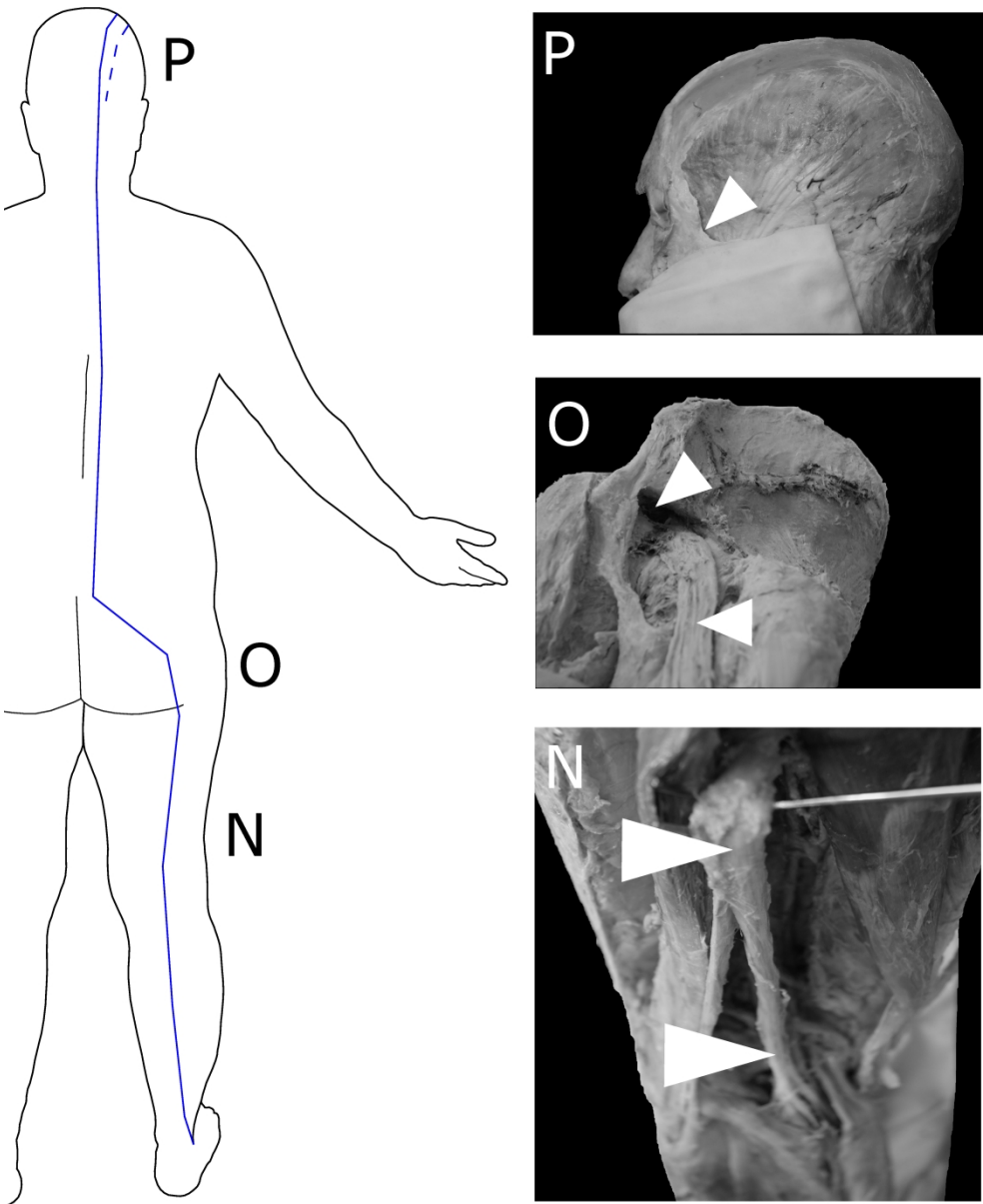


FIGURE 7- FOOT TAI YANG
LEFT: SCHEMATIC DRAWING OF FOOT TAI YANG MERIDIAN PATHWAY
RIGHT: N- SCIATIC NERVE IN POPLITEAL FOSSA AND POSTERIOR THIGH, O- SCIATIC NERVE PASSING THROUGH GREATER SCIATIC NOTCH, P- TEMPORALIS MUSCLE PASSING UNDER THE ZYGOMATIC ARCH

176x216mm (600 x 600 DPI)

TABLE 1- FOOT SHAO YANG

Name	Test description
Foot <i>shao yang</i>	<p>Lesser <i>yang</i> meridian of the foot- “It goes out in front of the ankle; a branch goes to the gap in the bone, goes straight up to the outside of the knee and connects. It goes out along the outside of the thigh/rump, along the ribs and sends out a weak branch to the shoulder. It goes straight to the armpit, goes out to the nape of the neck, to the ear; exits. It goes to the pillow bone and to the outside of the eye where it seeps into the eye socket.”</p>
Anatomical pathway	<p>Q. This meridian starts with superficial fibular nerve which becomes the fibular nerve running in the interosseous space between the tibia and fibula. At the knee, the nerve passes around the head of the fibula to connect into the sciatic nerve. From the head of the fibula, the iliotibial tract runs along the lateral aspect of the thigh to become tensor fascia lata muscle, passing over the gluteal muscles to form a tendinous attachment into the iliac crest.</p> <p>R. Latissimus dorsi attaches along the iliac crest, and covers the back medially to the spinous process in the midline. It rises to the level of the inferior border of the scapula, and attaches laterally into the humerus, forming the posterior border of the axilla.</p> <p>S. Trapezius muscle overlays the more superior part of latissimus dorsi, and also attaches to the spinous process in the midline. It runs out to the shoulder along the spine of the scapula, and rises along the neck to attach to the occiput. From here, the meridian continues into temporalis as with foot <i>tai yang</i>.</p>

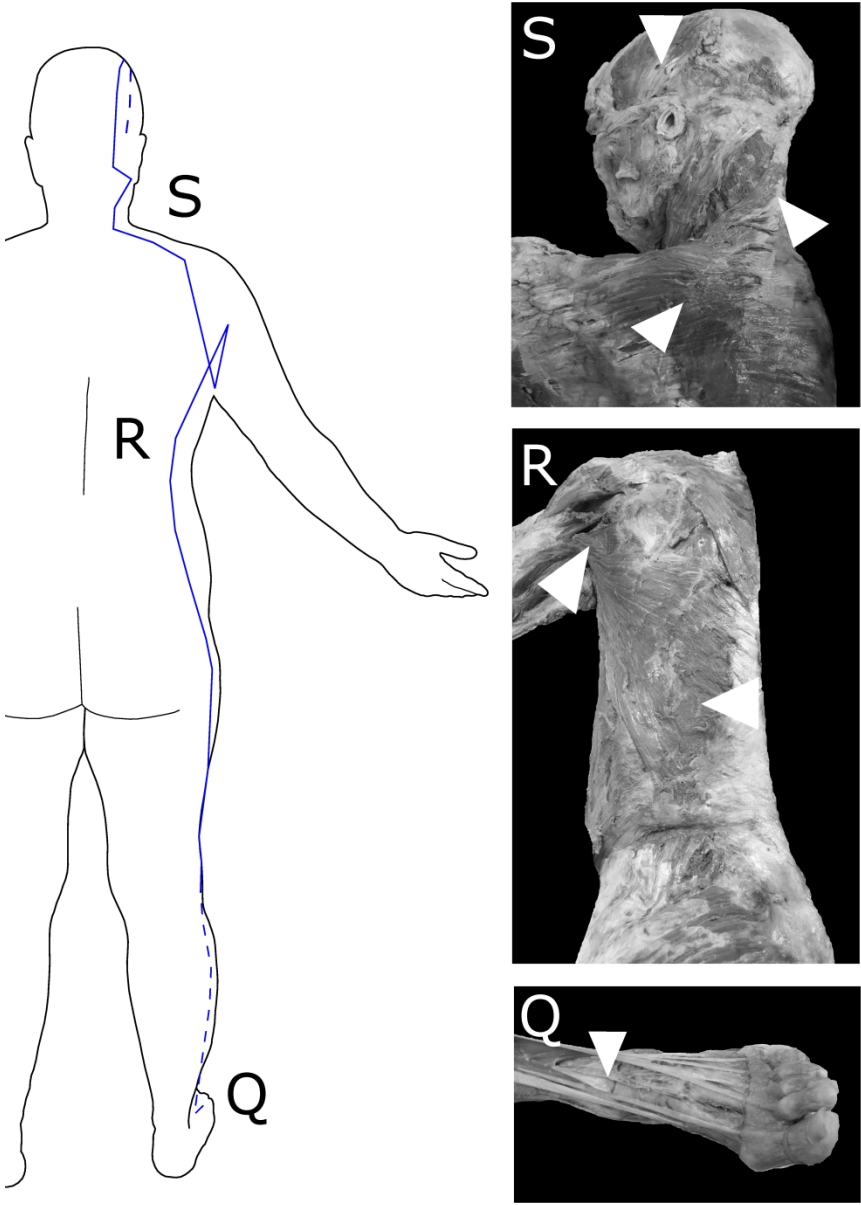


FIGURE 8- FOOT SHAO YANG
LEFT: SCHEMATIC DRAWING OF FOOT SHAO YANG MERIDIAN PATHWAY
RIGHT: Q- SUPERFICIAL FIBULAR NERVE AT ANKLE, R- LATISSIMUS DORSI MUSCLE WITH INSERTION TO HUMERUS, S- TRAPEZIUS MUSCLE OVER THE SCAPULA TO THE OCCIPUT, AND TEMPORALIS MUSCLE

163x227mm (600 x 600 DPI)

TABLE 1- FOOT YANG MING

Name	Test description
Foot <i>yang ming</i>	Brilliant <i>yang</i> meridian of the foot- “It follows the centre of the calf/ the tibia, goes up to the centre of the knee and the kneecap. It exits along the fish thigh, wraps around the lower belly, goes up and joins to the inside of the nipples/breast. It goes up to the throat, encircles the mouth, goes up to the nose.”
Anatomical pathway	<ul style="list-style-type: none"> T. This is the pathway of the anterior tibial neurovascular bundle, which connects into the popliteal vein at the back of the knee. The pathway passes through the adductor hiatus as the femoral artery, and continues on the anterior surface of the thigh to the ramus of the pubis. U. From here there is a connection with the epigastric vessels which form a network over the belly, and connects with the vascular network of the internal thoracic vessels to join with the subclavian vessels. V. The vessels continue to rise up to the mouth and face, in the same way as the <i>yang</i> vessels of the arm also continue from the cephalic veins upwards until they terminate.

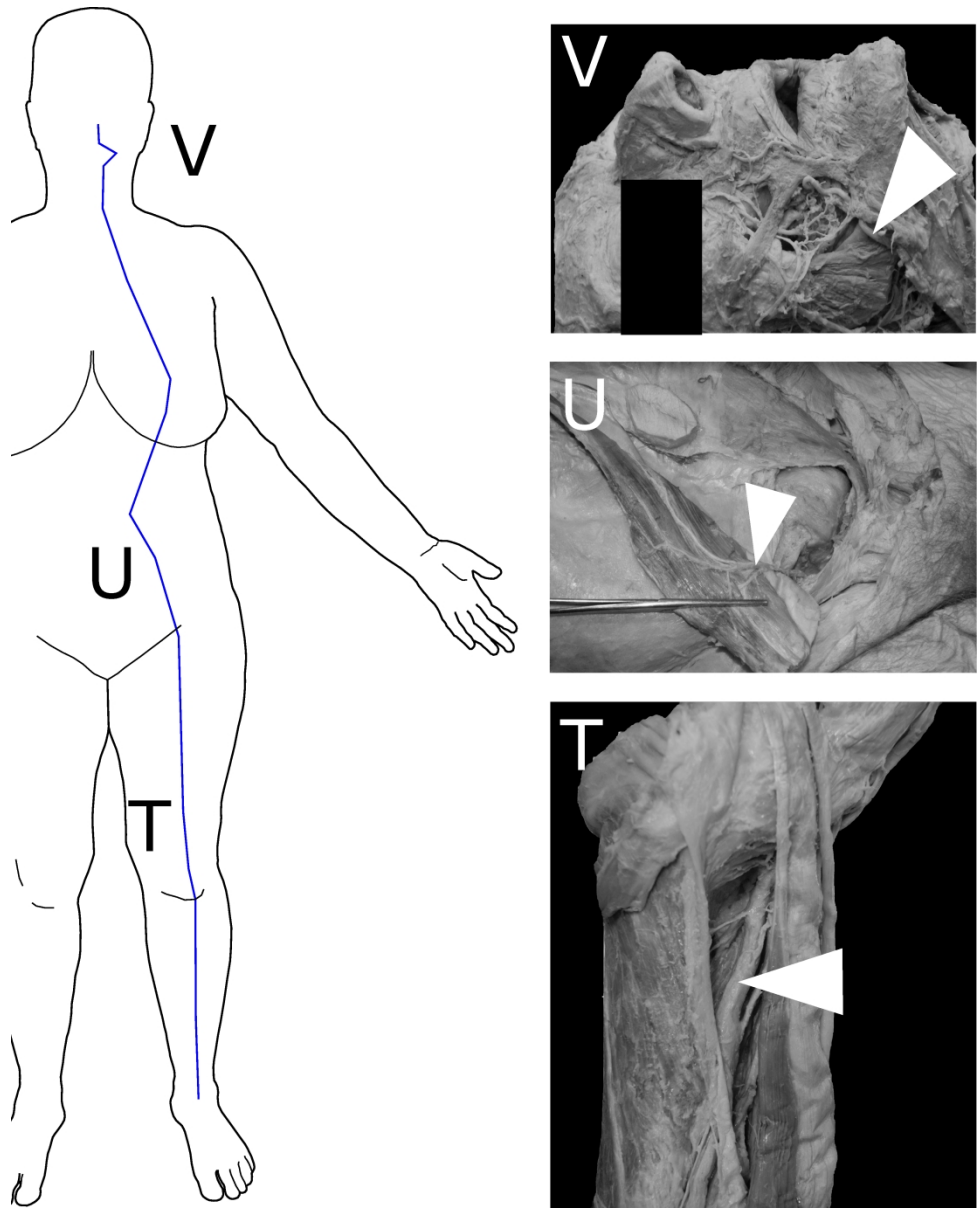


FIGURE 9- FOOT YANG MING
LEFT: SCHEMATIC DRAWING OF FOOT YANG MING MERIDIAN PATHWAY
RIGHT: T- FEMORAL ARTERY IN THE ADDUCTOR HIATUS, U- EPIGASTRIC VESSELS RISING FROM THE
PUBIS TO PASS INTO THE ABDOMEN, V- FACIAL ARTERY PASSING OVER THE ANGLE OF THE JAW TO THE
MOUTH AND NOSE

147x182mm (600 x 600 DPI)

TABLE 1- FOOT SHAO YIN

Name	Test description
Foot <i>shao yin</i>	Lesser <i>yin</i> meridian of the foot- “It exits in the space between the Achilles tendon and the ankle, runs through the inside of the calf, joins into (the knee), goes through the thigh to the abdomen. From here it passes into the centre of the body and the liver and gallbladder. It connects with the kidneys, penetrates the backbone, and passes to the tongue.”
Anatomical pathway	<p>W. These are the veins that travel with the posterior tibial artery in the deep compartment of the leg. They are variable, and so are known as <i>venae comitantes</i> (veins that travel with). As in <i>yang ming</i>, these now become the popliteal vein, and pass through the adductor hiatus to become the femoral vein. Here they pass over the pelvic rim and descend into the pelvis as the external iliac and common iliac veins.</p> <p>X. The common iliac veins join to form the inferior vena cava which rises on the right-hand side of the vertebral column to seemingly disappear into the liver. The renal veins also connect into the vena cava just below the liver. The rest of the pathway up to the face is referred to without any further detail as it rises to the tongue.</p>

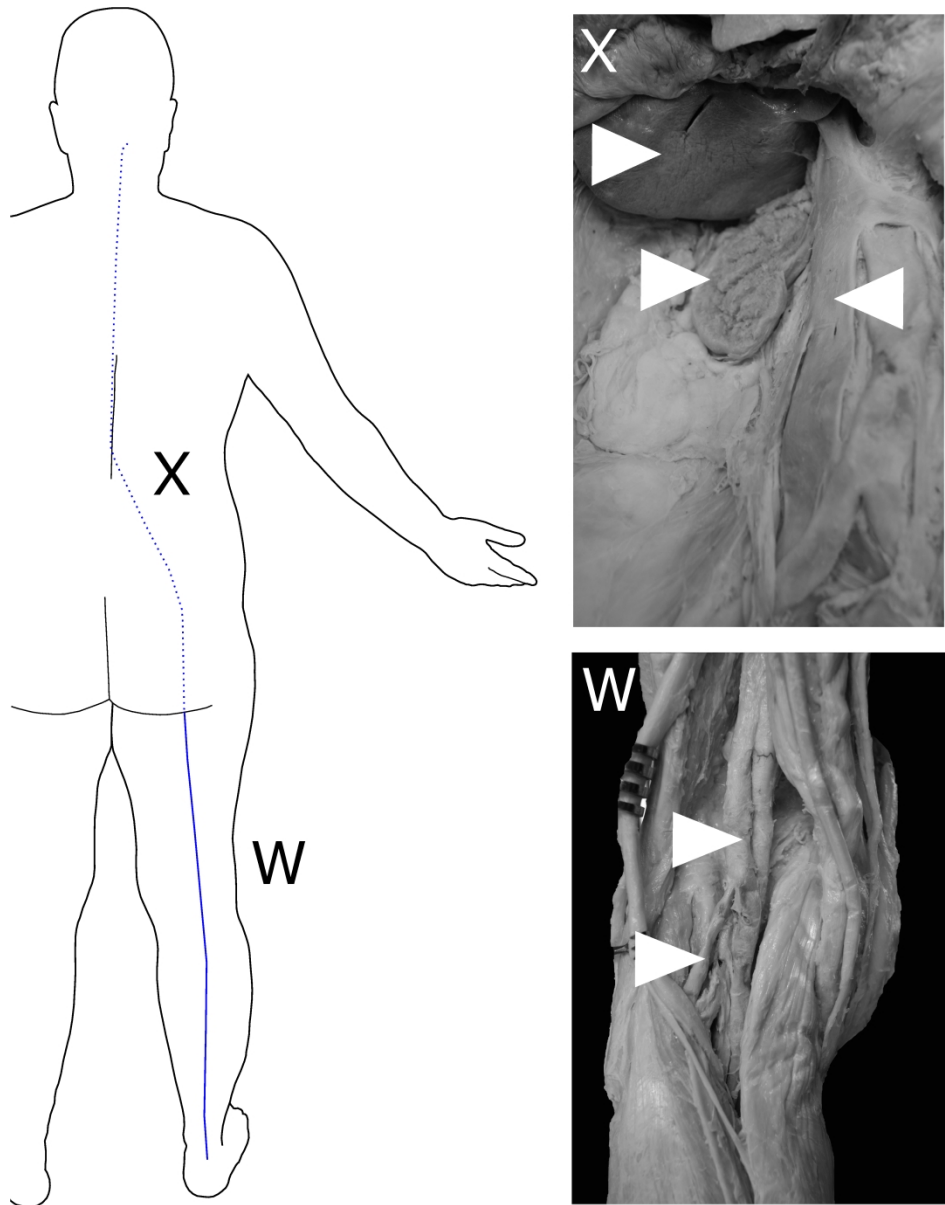


FIGURE 10- FOOT SHAO YIN
LEFT: SCHEMATIC DRAWING OF FOOT SHAO YIN MERIDIAN PATHWAY
RIGHT: W-VENAE COMITANTE OF THE LEG JOINING THE FEMORAL ARTERY IN THE POPLITEAL FOSSA, X-
INFERIOR VENA CAVA FLOWING TO THE LIVER WITH THE RENAL VEIN AND KIDNEY (DISSECTED TO SHOW
RENAL MEDULLAS) ON THE LEFT

168x216mm (600 x 600 DPI)

TABLE 1- FOOT TAI YIN

Name	Test description
Foot <i>tai yin</i>	Greatest <i>yin</i> meridian of the foot- “Starts at the big toe and runs along the medial surface of the leg and thigh. Connects at the ankle, knee and thigh. It travels along the adductors of the thigh, and covers the abdomen.”
Anatomical pathway	<p>Y. This is the pathway of the long saphenous vein, commencing at the dorsal arch of the foot to travel along the medial side of the foot, pass anterior to the medial malleolus, rise along the medial aspect of the leg and thigh.</p> <p>Z. At the groin the saphenous vein forms an anastomosis with the femoral vein at the saphenofemoral junction.</p> <p>AA. There are perforating veins in the calf (Crocketts), leg (Boyd) and thigh (Dodds). From the groin, the vein connects with the epigastric vessels which form a network over the belly, and connect with the venous network of the internal thoracic vessels to drain into the subclavian. Strong similarities are also seen in the pathways of foot <i>yang ming</i>, and foot <i>jue yin</i>.</p>

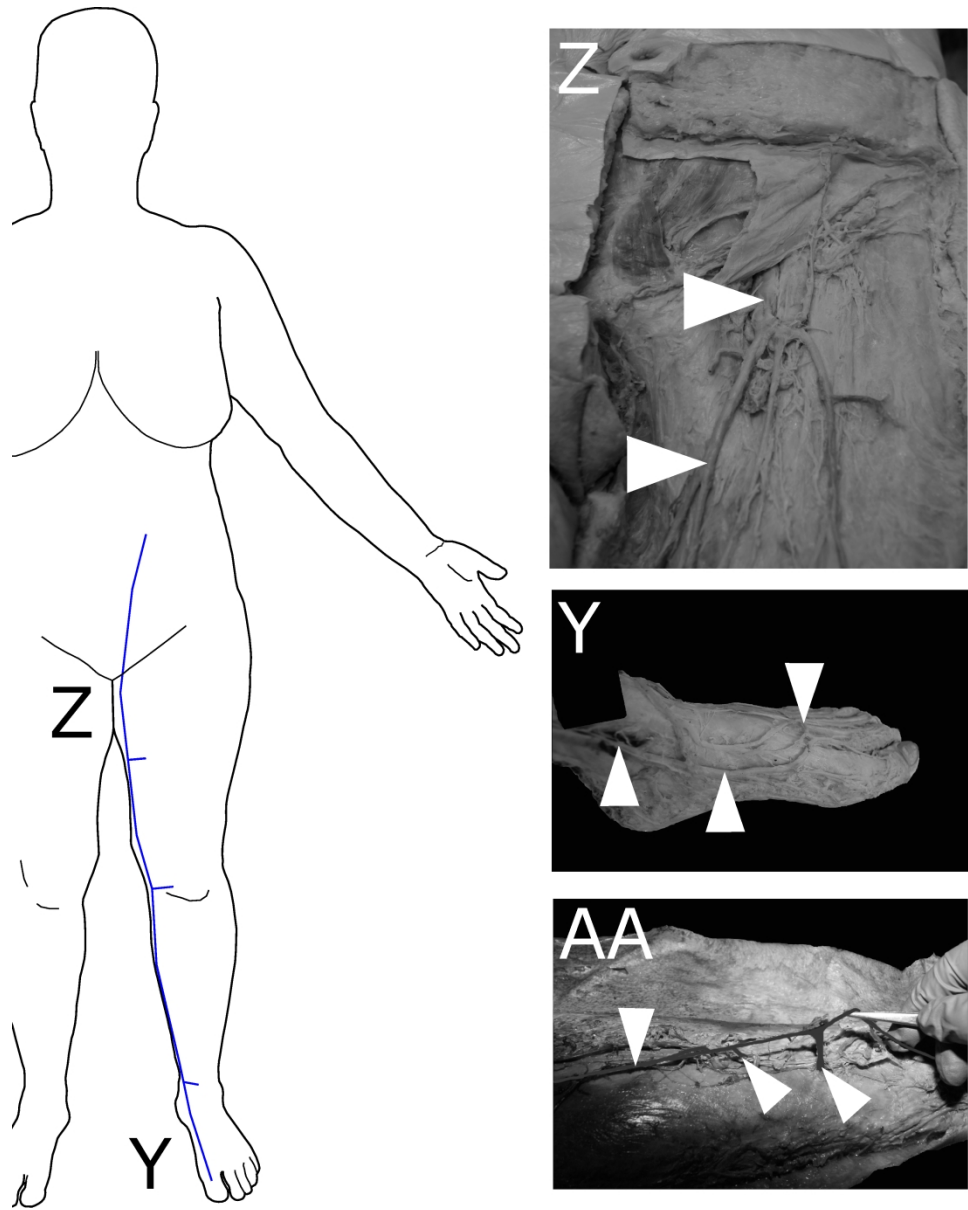


FIGURE 11- FOOT TAI YINLEFT: SCHEMATIC DRAWING OF FOOT TAI YIN MERIDIAN PATHWAYRIGHT: Y- DORSAL VENOUS ARCH OF THE FOOT LEADING TO LONG SAPHENOUS VEIN, Z- SAPHENOFEMORAL JUNCTION, AA- PERFORATING VEINS IN POSTERIOR CALF

145x182mm (600 x 600 DPI)

TABLE 1- FOOT JUE YIN

Name	Test description
Foot <i>jue yin</i>	Hidden <i>yin</i> meridian of the foot- “It starts in the first web-space next to the big toe, goes inside the calf and joins with <i>tai yin</i> meridian, goes into the thigh and exits at the fish muscle (adductors), travels to the lower abdomen.”
Anatomical pathway	<p>BB. This is description of the arterial supply to the foot, commencing at the point where the lateral plantar artery forms an anastomosis with dorsalis pedis. The artery passes into the deep compartment of the leg with the venae comitante (see also <i>shao yin</i>) and progresses to the popliteal fossa.</p> <p>CC. It joins into the popliteal artery, and passes through the adductor hiatus with <i>tai yin</i> and <i>yang ming</i>. From the groin, the vein connects with the epigastric vessels which form a network over the belly, and connect with the venous network of the internal thoracic vessels to drain into the subclavian. Strong similarities are also seen in foot <i>yang ming</i>, and foot <i>tai yin</i>.</p>

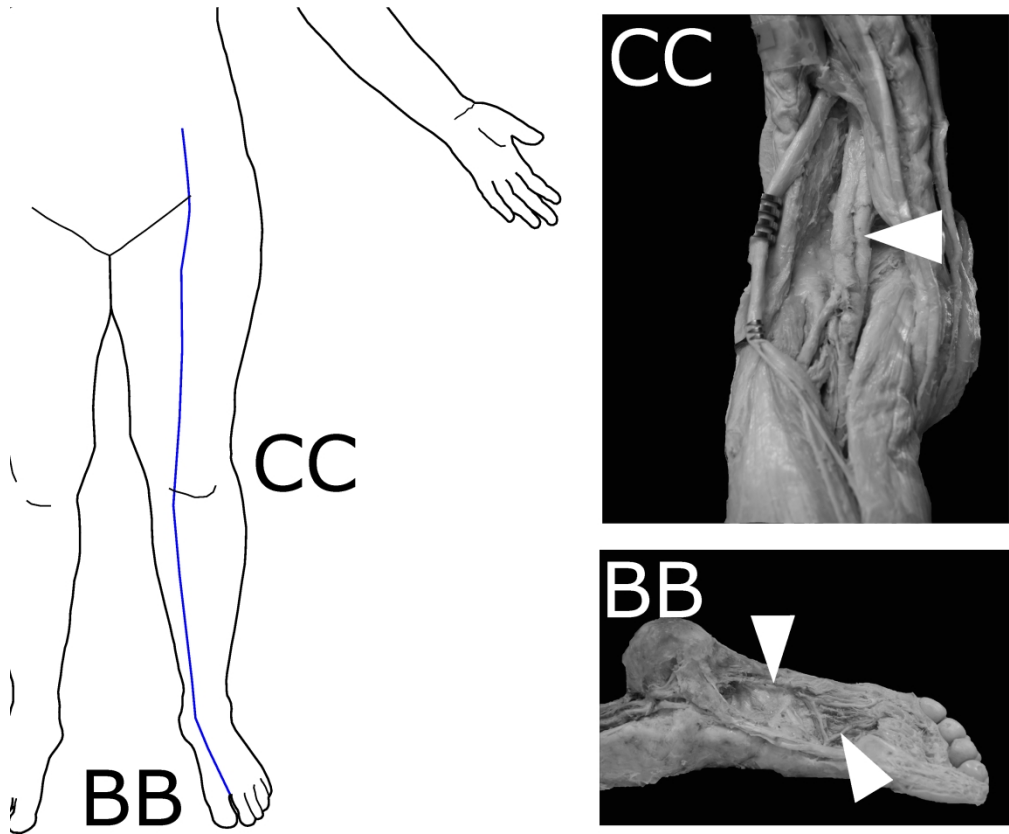


FIGURE 12- FOOT JUE YINLEFT: SCHEMATIC DRAWING OF FOOT TAI YIN MERIDIAN PATHWAYRIGHT: BB- LATERAL PLANTAR ARTERY AND BRANCH FORMING ANASTOMOSIS IN THE 1ST WEB SPACE, CC- POPLITEAL ARTERY

138x114mm (600 x 600 DPI)

Table of Mawangdui text(s) with our translations

Text	Meridian name	Transcription	English translation	Composite interpretation
MSVI.A	Foot tai yang	足足泰（太）陽・（脈）：出外踝窠（婁）中，上貫膊（・），出於・（・）；枝之下・；	Extremely grand (big) yang. (vessel): Exits at the cavity outside the ankle, goes up (through the muscle/thigh?), stems from (.); a branch goes down.;	Exits at the cavity outside the ankle, goes up in the centre, penetrates up, exits at the hip, wraps around the backbone, exits along the back of the neck, to the corner of the head, goes down the face, wraps around (X) to the inner corner of the eye.
		其直者貫□，夾（挾）脊，□□，	it goes straight up through (UC), is wedged around the spine, (2xUC),	
		上於豆（脰）；枝顏下，之耳；其直者貫目內瀆（眚），之鼻。	Goes up the nape; (goes up the neck to the head) branch goes down the face (goes to 之 has the same pronunciation as 枝 branch, so could be goes to the face), to the ear; it goes straight to the eye and seeps into the corner of the eye socket, and goes to the nose.	
MSVI.B	Large yang	【鉅陽脈（脈）：潼外踝婁中，出・中，上穿・，	Great yang meridian (vessel): is high above the centre of outside of the ankle, goes out in the centre and goes up and penetrates.,	
		出猷（厭）中，夾（挾）脊，出於項，□頭角，下顏，夾（挾）（髕），・（繫）目內廉。	it goes and loathes the centre, and wraps around the backbone, comes out at the nape of the neck at the angle of the head, goes down to the face and wraps around the bridge of the nose, connects with the inside of the eye ridge.	

Table of Mawangdui text(s) with our translations

MSVII.B		<p>【巨陽脈?】 滄外・（踝） 婁中，出・中，上穿・，出 獸（厭）中，夾（挾）脊， 出於項，□頭角，下顏，夾 （挾）・，・（繫）目內 廉。是僮（動）則病：滄 （腫），頭</p>	<p>Great yang vessel? High outside , ankle goes out, in the centre penetrates up, exits at the hip, wraps around the backbone, exits along the back of the neck, to the corner of the head , goes down the face, wraps around-,to the inner corner of the eye. Movement here causes disease: Swelling, is a cause of disease: swelling, headache,</p>	
MSVI.A	Foot shao yang	<p>?足少陽・（脈）：出於踝前，枝於骨間，上貫膝外兼（廉），出於股外兼（廉），出脅；枝之肩薄（・）；</p>	<p>Foot shao yang. Vessel: goes out in front of the ankle, branch goes to the gap in the bone, goes straight up to the outside of the knee and connects, goes out along the outside of the thigh/rump, goes along the ribs and sends out a weak branch to the shoulder;</p>	<p>It goes out in front of the ankle; a branch goes to the gap in the bone, goes straight up to the outside of the knee and connects. It goes out along the outside of the thigh/rump, along the ribs and sends out a weak branch to the shoulder. It goes straight to the armpit, goes out to the nape of the neck, to the ear; exits. It goes to the pillow bone and to the outside of the eye where it seeps into the eye socket.</p>
		<p>其直者貫腋，出於項、耳，出・（枕），出目外漬（眚）。</p>	<p>It goes straight to the armpit, goes out to the nape of the neck, to the ear, exits. Goes to the pillow bone (occiput) and to the outside of the eye where it seeps into the eye socket.</p>	
MSVI.B		<p>【少】陽脈（脈）：・（繫）於外踝之前廉，上出魚股之【外，出】□上，【出目前。】是動則病：【心與脅痛，</p>	<p>Shao yang meridian (Vessel): starts at the outside of the ankle and goes straight up, passes up along the outside of the fish thigh (vastus medialis) (UC) up, goes out to the eye. This is the source of disease: Aching of the heart and ribs,</p>	

Table of Mawangdui text(s) with our translations

MSVII.B		<p>二病】。【少陽】脈?・ (繫)於外踝(・)之前 廉,出【魚股之】外,出□ 上,出目前。是動則病:心 ・脅痛,不可以反 則(側),甚則無膏,足外 【反,是】為陽厥,是少陽 脈主治。其</p>	<p>Shao yang vessel? Connects from the front ridge of the outside of the ankle, goes up along the fish on the outside of the thigh, exits upX, goes to the front of the eye. If there is movement there is disease: the heart, the ribs ache, not able to turn the body when you are sleeping, great lack of fat, on the outside of the foot rebels, it is yang rebellion, these are the things that are governed/treated by shao yang vessel.</p>	
MSVI.A	Foot yang ming	<p>?足陽明・(脈):循胕 中,上貫膝中,出股,夾 (挾)少腹,上出乳內兼 (廉),出臑(嗑),夾 (挾)口,以上之鼻。</p>	<p>Meridian: follows the centre of the calf, goes up to the centre of the knee, exits along the thigh, wraps around the lower belly, goes up and joins to the inside of the nipples/breast, goes up to the throat, encircles the mouth, goes up to the nose.</p>	<p>It follows the centre of the calf/ the tibia, goes up to the centre of the knee and the kneecap. It exits along the fish thigh, wraps around the lower belly, goes up and joins to the inside of the nipples/breast. It goes up to the throat, encircles the mouth, goes up to the nose.</p>
MSVI.B		<p>陽明脈(脈):【・ (繫)】於胕骨外廉,循胕 而上,穿臑,出魚股□□□ □,穿【乳】,穿頰,【出 目外】</p>	<p>Connects goes straight up the outside of the tibia, follows the shinbone and rises, penetrates the kneecap, exits along the fish thigh (UC) (UC) (UC) (UC), goes to the nipples and goes to the jaw, exits at the outside corner of the eye,</p>	
MSVII.B		<p>陽明脈?・(繫)於胕骨外 廉,循(循)胕骨而上,穿 實(臑),出魚【股】</p>	<p>Yang ming vessel? Starts from the outside ridge of the shin bone, follows the shinbone and goes up, penetrates the knee cap, exits along the thigh at the fish</p>	

Table of Mawangdui text(s) with our translations

		□□□□，【穿】乳，穿 頰，出目外廉，環顏□。	XXXX, penetrates the nipples, penetrates the cheek, goes up the outer corner of the eye, to the ring on the face X.	
MSVI.A	Foot shao yin	足少陰・（脈）：出內踝窠 （婁）中，上貫膊（・）， 入・（・），出股，入腹， 循脊內□兼（廉），出肝， 入肱，・（繫）舌□。	Meridian: exits at cavity at the inside of the ankle , goes up the calf . joins . goes up the thigh, joins the belly, connects and follows the inside of the spine (UC), exits at the liver, joins the ?gallbladder (腹 could be simplified 膽?). Joins the tongue (UC)	It exits in the space between the Achilles tendon and the ankle, runs through the inside of the calf, joins into (the knee), goes through the thigh to the abdomen. From here it passes into the centre of the body and the liver and gallbladder It connects with the kidneys, penetrates the backbone, and passes to the tongue.
MSVI.B		少陰脈（脈）：・（繫）於 內・（踝）外廉，穿・，出 ・（・）【中】央，上穿脊 之□廉，・（繫）於腎，夾 （挾）舌。【	Shao yin vessel: attaches on the inside at the ridge on the outside of the ankle, perforates, exits, it goes to the centre rises and penetrates the spine along the (UC) ridge, attaches to the kidneys, pinches/crosses the tongue.	
MSVII.B	Foot shao yin	少陰脈：・（繫）於內・ （踝）外廉，穿・，出	Lesser yin vessel: connects to the outside ridge of the inner ankle, penetrates goes out to the middle, goes up and penetrates the X ridge of the spine, connects with the kidney, and wraps around the tongue,	
MSVII.B	Foot shao yin	【中央，上穿脊之□廉，繫 於腎，挾舌，	From the centre it penetrates the ridge of the backbone, connects to the kidney, wraps around the tongue,	
MSVI.A	Foot tai yin	?足泰（太）陽・（脈）： 出大指內兼（廉）骨蔡 （際），出內踝上兼 （廉），循肱內【兼 （廉）】，□膝內兼 （廉），出股內兼（廉）。	Meridian: goes out from the big toe connects with the upright bone at the border, goes out along the inside travels up to the ankle and connects, follows the inside of the calf, (UC) connects to the inside of the knee, goes along the inside of the thigh and connects.	Starts at the big toe and runs along the medial surface of the leg and thigh. Connects at the ankle, knee and thigh. It travels along the adductors of the thigh, and covers the abdomen.

Table of Mawangdui text(s) with our translations

MSVI.B	Tai yin	大（太）陰脈（脈）：是胃脈（脈）・（也）。彼（被）胃，出魚股陰下廉，・上廉，出【內】踝之上廉。是動則病：上【當】	Tai yin vessel: is the stomach vessel. Covers the stomach, goes out along the fish of the thigh lower ridge, upper ridge, goes to the inner ankle upper ridge. Is the rule of many diseases:	
MSVI.B	Tai yin cont.	走心，使復（腹）張（脹），善噫，食欲歐（嘔），得後與氣則忤然衰，是鉅陰脈（脈）主治。其所【產病】：	Goes up toward the heart, goes up to the abdomen and swells, big belching desire for food and vomiting, it goes behind and the qi will falter, this big yin vessel governs treatment. The disease which is generated by it:	
MSVII.B	Tai yin	【巨陰】脈：是・（胃）脈也。被胃，出魚股陰下廉，・上廉，出內果（踝）之上廉。	Great yin vessel: is the vessel of the stomach. By the stomach, goes out along the fish below the ridge of the upper ridge of the thigh, and exits on the upper ridge of the inner ankle.	
MSVI.A	Foot jue yin	?足趺（厥）陰・（脈）：循大指間，以上出脗內兼（廉），上八寸，交泰（太）陰・（脈），口股內，上入脗間。	follows the space between the big toe, goes up straight along the inside of the calf, goes up 8 cun, joins with tai yin (meridian), (MC) thigh inside, goes up and enters between the脗 (flesh used for sitting?)	It starts in the 1st web-space next to the big toe, goes inside the calf and joins with tai yin meridian, goes into the thigh and exits at the fish muscle (adductors), travels to the lower abdomen.
MSVI.B		厥陰脈（脈）：・（繫）於足大指叢（叢）【毛】之上，乘足【跗上廉】，去內・（踝）一寸，上【・（踝）】五寸而【出大（太）陰之後】，	Jue yin vessel: connects with the foot big toe hair goes up, follow the foot instep up to the ridge, goes up the inside of the ankle one cun, goes up ? ankle 5 cun and exits behind tai yin,	

Table of Mawangdui text(s) with our translations

MSVI.B		上出魚股內廉，觸少腹，大漬（眚）旁。是動則【病：丈】夫隤（・）【山（疝），婦人則少腹腫（腫），要（腰）痛】	Goes up and exits on the fish muscle of the thigh and follows the inner ridge, touch lower abdomen, big stain (eye socket) beside. It is the rule for diseases: men collapse, hernia men will be impotent or women will have a swollen belly, aching loins	
MSVII.B	Foot jue yin	厥陰脈：・（繫）於足大指𦰇（叢）毛上，乘足・（跗）上廉，去內・（踝）一寸，上・（踝）五寸【而】出於大（太）陰【之】後，上出魚股內廉，觸少腹，大資（眚）旁	Jue yin vessel: connects with the big toe of the foot at the bushy hairs, follow the foot. Follow the ride, to the inside of the ankle one cun, go up above the ankle 5 cun and exit to behind tai yin, go up and exit at the fish, the inside ridge of the thigh, to the lower abdomen, to the side of the corner of the eye.	
MSVI.B	Arm tai yin	臂臂泰（太）陰・（脈）：循筋上兼（廉），以奏（湊）臑內，出夜（腋）內兼（廉），之心。其病：心痛，心煩而意（噫）。諸病	follows straight along the upright tendons, gathers along the inner arm, exits at the armpit and goes inside straight to the heart. It's diseases: ache in the heart, anxiety and hysteria. It has many diseases	It starts in the centre of the palm, goes along the forearm between the two bones following straight along the tendons, travels below the sinew into the bicep, to the armpit, and connects with the heart.
MSVI.A		上（之）間，下骨上痛（廉），筋之下，出臑內陰，入心中。是動則病：心甬（痛），嗑【乾欲】飲，此為臂厥，是臂少陰脈主治。其所產病：脅甬（痛），為一病。	Below the bone above the ridge, below the sinew, exits along the inner yin surface of the bicep, joins with the heart. If it is affected then disease: aching in the heart dryness in the throat and desire to drink, this is arm reversal, this is what is controlled and treated by arm shao yin vessel. When affected this creates disease: rib aching, one disease.	
MSVI.B		臂鉅陰脈（脈）：在於手掌中，出內陰兩骨之間，上骨下廉，筋之上，出臂【內陰，入心中。】	Arm Great Yin vessel (vessel): is located in the centre of the palm, exits on the yin surface between the 2 bones, up to the lower ridge of the upper bone, above the sinew, exits along	

Table of Mawangdui text(s) with our translations

			the arm on the inner yin surface, enters into the heart .	
MSVII.B	Arm tai yin	臂巨陰脈：在於手常（掌）中，出內陰兩骨【之間，上骨】下廉，筋之上，出臂內陰，入心中。	Arm great yin vessel: located in the palm of the hand, exits along the inside yin between both bones in the space, goes up the bone below the ridge, above the sinew, exits along the yin interior of the upper arm, joins into the heart.	
MSVII.B	Upper arm tai yin	上〈之〉間，下骨上痛〈廉〉，筋之下，出臍內陰，入心中。	Below the bone above the ridge, below the sinew, exits along the inner yin surface of the bicep, joins with the heart.	
MSVI.A	Arm shao yin	陰【𦰩（脈）】：循筋下兼（廉），出臍內下兼（廉），出夜（腋），奏（湊）脅。其病：脅痛。諸病【此】物者，皆【久（灸）】	Yin [𦰩 (vessel)]: goes down straight between the lower corner of sinews, exits the biceps and goes to lower corner, exits the armpit, assembles in the flank. It has diseases, and of the flank. It has various diseases this is that which you moxa,	It travels straight from the lower corner of the sinews (at the wrist), to the upper ridge of the lower bone. It passes below the sinew, along the bicep of inner yin to the armpit, exits the armpit and assembles in the flank.
MSVI.B		臂少陰脈（脈）：起於臂兩骨之間之間，之下骨上廉，筋之下，【出】臍內陰。【是動則病：心】	Arm lesser yin vessel: rises up along the arm in the space between two bones, until it reaches the upper ridge of the lower bone, below the sinew, exits along the bicep of inner yin When the vessel is affected there is disease: aching in the heart	

Table of Mawangdui text(s) with our translations

MSVI.A	Arm tai yang	臂泰（太）陽・（脈）：出小指，循骨下廉（廉），出臑下廉（廉），出肩外廉（廉），出項□□□【目】外漬（眚）。	Arm most (big) yang. (vessel) : goes out at the little finger, goes straight down the lower corner of the bone, goes down the soft lower ridge, goes to the outside of the shoulder ridge, goes to the back of the neck □□□ [eye] to the outside of the eye socket.	It rises up from the little finger/back of hand, goes along the space on the outside of the two bones. It goes up the bone to the lower corner to the centre of the elbow. It passes along the soft muscle ridge up to the shoulder, and passes along the back of the neck to join into the eye and the ear.
MSVI.B	Ear vessels	耳脈（脈）：起於手北（背），出臂外兩骨之間，【上骨】下廉，【出肘中】，入耳中。是動則病：耳聾	Blood vessels of the ear: rise up and start from the back of the hand, go along the outside in the space between the two bones, goes up the bone the lower corner, goes to the centre of the elbow, joins into the ear. It has various diseases if touched: tinnitus	
MSVII.B	Ear vessels	耳脈?起【於手】北（背），【出臂外兩骨】之間，上骨下廉（廉），出肘中，入耳中。是動則病：耳聾輝輝諄諄，啞腫，是耳脈主治	Ear vessel rises from the back of the hand, goes out along the outside of the arm in the space between both bones, goes up the bone below the ridge, goes out to the centre of the elbow, joins into the ear.	
MSVI.A	Arm shao yang	?臂少陽・（脈）：出中指，循臂上骨下廉（廉），奏（湊）耳。其病：產聾，□痛。?諸病	goes out from the middle finger, goes along the lower ridge of the upper arm bone, close to the ear. It has diseases: deafness and □ aching.	It rises up from behind the ear, goes below (into) the shoulder, exits along the upper arm along the outside ridge, goes along the outside of the bicep, goes to the upper ridge of the (middle) finger.
MSVI.B	Shoulder vessels	肩脈（脈）：起於耳後，下肩，出臑外【廉】，出□□□，乘手北（背）。是【動則病：啞痛，頷腫（腫）】，不可以顧，肩	Shoulder blood vessels: Rise up and connect to the ear, start from the outside of the upper arm, go (UC) (UC) (UC), following back of hand. If it's touched/moved it has disease: aching throat, swollen jowl, not able to look over the shoulder joint	

Table of Mawangdui text(s) with our translations

MSVII.B	Shoulder vessels	肩脈【?起於耳後，下肩，出臑】外廉，出臂外，出指上廉。【是動則病：嗑痛，頤】腫甬（痛），不可以顧，肩以（似）脫，臑以（似）折，是肩【脈】主治。	Shoulder vessel rises up from behind the ear, goes below the shoulder, exits along the upper arm along the outside ridge, goes along the outside of the bicep, goes to the upper ridge of the finger. If it is affected then you will find disease: aching in the throat, chin is painful and swollen, not able to turn the head from side to side, the shoulder looks like it is disjointed, the upper arm looks like it is broken/fractured, treat on the shoulder vessel.	
MSVI.A	Arm yang ming	?臂陽明・（脈）：出中指間，循骨上廉（廉），出臑□□上，奏（湊）・（枕），之口	goes out from the space between the fingers, goes along the upper arm, goes to the biceps □□ up, collects, occiput, to the mouth.	It rises from the second finger (index) and from the big finger (thumb), goes to the upper ridge of the arm, joins in the centre of the elbow, follows bicep, to the cheek, joins into the teeth centre and connects with the nose.
MSVI.B	Tooth vessel	齒脈（脈）：起於次指與大指上，出臂上廉，入肘中，乘臑，【穿】頰，入齒中，夾（挾）鼻。是【動】	Tooth vessel: rises from the second finger in and up from the big finger (thumb), goes to the upper ridge of the arm, joins in the centre of the elbow, follows bicep, to the cheek, joins into the teeth centre and connects with the nose.	
MSVII.B	Tooth vessel	齒脈?起【於】□指上，出臂上廉，入肘中，乘臑，穿頰，入齒中，夾（挾）鼻。	Tooth vessel rises from the top of the X finger, goes out along the ridge of the arm, joins into the centre of the elbow, follows the bicep, penetrates the cheek, joins into the teeth, interconnects with the nose.	

Appendix A

Ma Wang Dui texts

(UC=unknown character- denoted by a box in the text)

足臂十一脈灸經釋文注釋 P.3

The literature to explain the 11 foot and arm vessel meridians that you moxa.

- 1 足足泰（太）陽·（脈）：出外踝窠（婁）中，上貫膊（·），出於·（·）；枝之下·；其直者貫□，夾（挾）脊，□□，
Foot tai yang. (meridian/blood vessel): Exits at the cavity outside the malleolus of the ankle, goes up (through the muscle/thigh?), stems from (·); a branch goes down.; it goes straight up through (UC), is wedged around the spine, (2xUC),
- 2 上於豆（脰）；枝顏下，之耳；其直者貫目內瀆（眚），之鼻。
Goes up bean shaped in the neck; (goes up the neck to the head) branch goes down the face (goes to 之 has the same pronunciation as 枝 branch, so could be goes to the face), to the ear; it goes straight to the eye and seeps into the corner of the eye socket, and goes to the nose.
- 3 其病：病足小指廢，膊（·）痛，·（·）·（攣），肱痛，產寺（痔），要（腰）痛，夾（挾）脊痛，□痛，項痛，手痛，
Its sicknesses: Sickness is dysfunction in the smallest toe of the foot, (should be arm, maybe thigh) (·) ache, · (·) . cramps in the vertebra, Aches, creates piles, aching in the loins (kidney), wedged (wrapped around) paravertebral pain in the spine, (UC) ache, pain in the back of the neck, hand pain,
- 4 顏寒，產聾，目痛，·（𩑦）·（𩑦），數瘖（癰）疾。諸病此物者，皆久（灸）泰（太）陽·（脈）。
Coldness/white/pallor in the face, deafness, eye aching, · bloody nose, madness, insanity disease. This creates various diseases, moxa them all for a long time for tai yang meridian diseases.

足臂十一脈灸經釋文注釋 P.3-4

Foot and arm 11 meridians moxa this commentary elucidates the text P.3-4

- 5 足少陽·（脈）：出於踝前，枝於骨間，上貫膝外廉（廉），出於股外廉（廉），出脅；枝之肩薄（·）；
Foot shao yang. Vessel: goes out in front of the ankle, branch goes to the gap in the bone, goes straight up to the outside of the knee and connects, goes out along the outside of the thigh/rump, goes along the ribs and sends out a weak branch to the shoulder;
- 6 其直者貫腋，出於項、耳，出·（枕），出目外瀆（眚）。
It goes straight to the armpit, goes out to the nape of the neck, to the ear, exits. Goes to the pillow bone (occiput) and to the outside of the eye where it seeps into the eye socket.

- 7 其病：病足小指次【指】廢：肱外兼（廉）痛，肱寒，膝外兼（廉）痛，股外兼（廉）痛，脾（髀）外兼（廉）痛，脅痛，□

It's diseases: it has diseases of the little toe that is next in sequence at the termination (of the meridian), joins with the calf and aches, calf is cold, goes to the outside of the knee joins and aches, joins the outside of the thigh and aches, joins with the outside of the thigh bone and aches, pain in the flank, (UC)

- 8 痛，產馬，缺盆

- 9 痛，·（·），聾，·（枕）痛，耳前痛，目外漬（眚）痛，脅外種（腫）。?諸【病】此物者，皆

Aches, 產馬? aching in St-12 empty basin, . . , deafness, . ache in the occiput, pain in front of the ear, pain seeps into the outside of the eye and eye socket. Speaks about diseases of different kinds

- 10 久（灸）少陽·（脈）。
moxa shao yang meridian

足臂十一脈灸經釋文注釋 P.4

Foot and arm 11 meridians moxa commentary that elucidates P.4

- 11 ?足陽明·（脈）：循肱中，上貫膝中，出股，夾（挾）少腹，上出乳內兼（廉），出臑（嗑），夾（挾）口，以上之鼻。

Foot yang ming. Meridian: follows the centre of the calf, goes up to the centre of the knee, exits along the thigh, wraps around the lower belly, goes up and joins to the inside of the nipples/breast, , goes up to the throat, encircles the mouth, goes up to the nose.

- 12 其病：病足中指廢，肱痛，膝中種（腫），腹種（腫），乳內兼（廉）痛，□外種（腫），頰痛，·（鼫）·（衄），數

It's diseases: Disease at the terminal part in the middle toe, aching in the calf, swelling in the centre of the knee, swelling in the abdomen, aching in the inside where it joins the breast, swelling around the outside of the mouth?(UC), pain in the cheekbone, . congested nose. Bloody nose, frequently

- 13 熱汗出，脰瘦，顏寒。?諸病此物者，皆久（灸）陽明·（脈）。

Heat makes you sweat, mincemeat (acne 瘰/ gland 胞) makes your face emaciated and cold. This speaks of various diseases, moxa yang ming meridian

足臂十一脈灸經釋文注釋 P.4

Foot and arm 11 meridians moxa commentary elucidates the text P.4

- 14 ●足少陰·（脈）：出內踝窻（婁）中，上貫腓（·），入·（·），出股，入腹，循脊內□兼（廉），出肝，入肱，·（繫）舌□。

Foot shao yin. Meridian: exits at cavity at the inside of the ankle , goes up the arm . joins . goes up the thigh, joins the belly, connects and follows the inside of the spine (UC), exits at the liver, joins the ?gallbladder (腹 could be simplified 膽?). Joins the tongue (UC)

- 15 其病：病足熱，膊（·）內痛，股內痛，腹街、脊內兼（廉）痛，肝痛，心痛，煩心，溷□□□□
It's diseases: hot disease of foot , arm. Pain inside, pain inside the thigh, stomach street (St-30 early name?), joins to the inside of the spine with pain, liver pain, heart pain, anxiety, soak (UC) (UC)(UC)(UC)

- 15 舌輅□旦尚□□數·（喝），牧牧耆（嗜）·以效。？【諸】病此物【者，皆久（灸）】足少陰【·

（脈）】。Tongue carriage (UC) still dawn (UC)(UC)(UC)several. Call out old shepherd have a fondness for .laughter/cough. This book talks about various diseases, moxa foot shao yin

足臂十一脈灸經釋文注釋 P.5

Foot and arm 11 meridians moxa elucidate the literature P.5

- 16 ？足泰（太）陽·（脈）：出大指內兼（廉）骨蔡（際），出內踝上兼（廉），循肱內【兼（廉）】，□膝內兼（廉），出股內兼（廉）。

？ foot tai yang. Meridian: goes out from the big toe connects with the upright bone at the border, goes out along the inside travels up to the ankle and connects, follows the inside of the calf, (UC) connects to the inside of the knee, goes along the inside of the thigh and connects.

- 17 其病：病足大指廢，肱內兼（廉）痛，股內痛，腹痛，腹張（脹），復□，不耆（嗜）食，善意（噫），心□，善肘。

It's diseases: disease at the end of the big toe, joins with the inside of the calf and aches, aches along the inside of the thigh, the belly swells and inflates, returns, returns (UC) you don't want to eat food, belches a lot, heart (UC) , good (tendency of leaning on?) elbow.

- 18 ？諸病此物者，皆久（灸）足泰（太）陰·（脈）。

足臂十一脈灸經釋文注釋 P.5

This has several diseases, all moxa foot tai yin. Meridian.

Foot and arm 11 vessels moxa meridian elucidation of the text P.5

- 19 ？足崙（厥）陰·（脈）：循大指間，以上出肱內兼（廉），上八寸，交泰（太）陰·（脈），□股內，上入脛間。

？ Foot jue (hidden) yin (meridian): follows the space between the big toe, goes up straight along the inside of the calf, goes up 8 cun, joins with tai yin (meridian), (MC) thigh inside, goes up and enters between the 脛 (flesh used for sitting?)

- 20 其病：病脛瘦，多溺（溺），耆（嗜）飲，足桴（跗）腫（腫），疾界（痺）。？諸病此物者，【久（灸）】崙（厥）陰·（脈）。

It has disease: The disease of emaciation of the sitting flesh, much urine, desire to drink, swollen instep of the foot, paralysis/numbness. There are various diseases, use moxa on jue yin vessel.

- 21 皆有此五病者，有（又）煩心，死。三陰之病亂，【不】過十日死。搦·（脈）如三人參春，不過三日死。
All have 5 diseases, has anxiety, and death, multiple diseases of 3 yin, death within 10 days. Touch(take pulse), if it's like 3 people grinding with a pestle, dead within 3 days.
- 22 溫·（脈）絕如食頃，不過三日死。煩心，有（又）腹張（脹），死。不得·，有（又）煩心，死。唐（滄）【泄】
Warm/metaphor for a particular pulse quality (aka the phrase above)
metaphor=vanishes in a very short time, dead within 3 days. With anxiety and a swollen, extended belly, then death. Not allowed, has anxiety then death. Regular semi-soft stool
- 23 恒出，死。三陰病雜以陽病，可治。陽病北（背）如流湯，死。陽病折骨絕筋而無陰病，
Then death. Diseases of the 3 yin mixed with diseases of the yang, can be managed. Yang diseases if you sweat in your back like a hot flush after soup, then death. Yang diseases fracture the bone, snap the tendons and not female diseases,
- 24 不死。
no death.

足臂十一脈灸經釋文注釋 P.6

11th chapter to explain the foot and arm meridian with moxa

- 25 臂臂泰（太）陰·（脈）：循筋上兼（廉），以奏（湊）臍內，出夜（腋）內兼（廉），之心。?其病：心痛，心煩而意（噫）。?諸病
Arm tai yin meridian: follows straight along the upright tendons, gathers along the inner arm, exits at the armpit and goes inside straight to the heart. It's diseases: ache in the heart, anxiety and hysteria. It has many diseases

- 26 此物者，皆久（灸）臂泰（太）陰·（脈）。

This is that which you moxa is the arm tai yin meridian.

《馬王堆漢墓帛書(肆)五十二病方等》：8：.《馬王堆漢墓帛書(肆)》？ 足臂十一脈灸經釋文注釋 P.6

Ma wang dui has the medicine to treat 52 diseases on the silk scrolls: 8: The book which describes eleven meridians of the arm and leg Page.6

- 26 ?臂少陰【·（脈）】：循筋下兼（廉），出臍內下兼（廉），出夜（腋），奏（湊）脅。?其病：脅痛。?諸病【此】物者，皆【久（灸）】

Arm shao yin meridian: goes down straight between the lower corner of sinews, exits the biceps and goes to lower corner, exits the armpit, assembles in the flank. It has diseases, ain of the flank. It has various diseases this is that which you moxa,

- 27 臂少陰【·（脈）】。

arm shao yin meridian

- 28 臂泰（太）陽·（脈）：出小指，循骨下廉（廉），出臑下廉（廉），出肩外廉（廉），出項□□□【目】外瀆（眚）。【其病】：

Arm Tai yang meridian: goes out at the little finger, goes straight down the lower corner of the bone, goes down the soft lower ridge, goes to the outside of the shoulder ridge, goes to the back of the neck □□□[eye] to the outside of the eye socket. [it has diseases]

- 29 臂外廉（廉）痛。諸病此物者，皆久（灸）臂泰（太）陽·（脈）。

Outer arm ridge disease. This is the thing that creates various diseases, both moxa arm tai yang vessel.

- 30 臂少陽·（脈）：出中指，循臂上骨下廉（廉），奏（湊）耳。其病：產聾，□痛。諸病【此物者，皆】

Arm shao yang vessel: goes out from the middle finger, goes along the lower ridge of the upper arm bone, close to the ear. It has diseases: deafness and □ aching. Various diseases [this creates]

- 31 久（灸）臂少陽之·（脈）。

Moxa arm shao yang vessel

- 32 臂陽明·（脈）：出中指間，循骨上廉（廉），出臑□□上，奏（湊）·（枕），之口。【其】病：病齒【痛】，□□□□。

Arm yang ming vessel: goes out from the space between the fingers, goes along the upper arm, goes to the biceps □□ up, close to the occiput, to the mouth. This has disease: disease of aching in the teeth, □□□□.

- 33 【諸】病此物者，皆久（灸）臂陽明·（脈）。上足·（脈）六、手【·（脈）五】。

This has various diseases, of arm yang ming vessel. up to the 6th vessel of foot and the 5th vessel of hand.

- 34 【鉅陽脈（脈）：潼外踝婁中，出·中，上穿·，出厭（厭）中，夾（挾）脊，出於項，□頭角，下顏，夾（挾）

Steel yang vessel: is high above the centre of outside of the ankle, goes out in the centre and goes up and penetrates, it goes and loathes the centre, and wraps around the backbone, comes out at the nape of the neck at the angle of the head, goes down to the face and wraps around

- 35 ·（顴），·（繫）目內廉。是動則病：潼（腫），頭痛，□□□□脊痛，要（腰）以（似）折，脾（髀）不可以運，臑

Bridge of the nose, connects with the inside of the eye ridge. It is the cause of disease: swelling and pain in the head, □□□□ aching in the spine, loins seem to snap/bend, inability to raise the thigh, popliteal fossa

- 36 如結，·如【裂，此】為蹠蹠（厥），是鉅陽脈（脈）【主治。其所產病：頭痛，耳聾，項痛，耳

Like a knot, the ankle feels like it will snap, the giant yang pulse governs and regulates.

This brings forth many diseases: headache, deafness in the ear, pain in nape, ear

- 37 彊，】瘡，北（背）痛，要（腰）痛，尻痛，·（痔），·（·）痛，·痛，【足小指痺，為十】二病。

Deafness, malaria, back disease, aching in the loins, aching at the sacrum/end of spine, .piles, aching..aching.. paralysis of the small toe, there are 12 diseases.

陰陽十一脈灸經甲本釋文注釋 P.9

- 38 【少】陽脈（脈）：·（繫）於外踝之前廉，上出魚股之【外，出】□上，【出目前。】是動則病：【心與脅痛，

Lesser (shao) yang vessel: starts at the outside of the ankle and goes straight up, passes up along the outside of the fish thigh (vastus medialis) (UC) up, goes out to the eye. This is the source of disease: Aching of the heart and ribs,

- 39 不】可以反稷（側），甚則無膏，足外反，此為陽【蹶（厥）】，是少陽【脈（脈）主】治。其所產病：□□□【頭

Cannot turn onto the side while sleeping, lose all fat, outside of the foot turns laterally, this disease is called 陽蹶, small yang vessel governs. It is the source of diseases: (UC) (UC) (UC)

- 40 頸】痛，脅痛，瘡，汗出，節盡痛，脾（髀）【外】廉【痛】，【□痛】，魚股痛，【膝外廉】痛，振寒，【足中指】

Pain in head and neck, rib ache, malaria, sweating, joint ache and pain, pain along the outside of the tibia, (UC) aching, vastus medialis pain, aching on the outside of the knee, shivering, Central toe of foot

- 42 踝（痺），為十二病。

陰陽十一脈灸經甲本釋文注釋 P.10

Paralysis, 12 diseases.

This is the book to elucidate the 11 yin and yang vessels that you moxa P.10

- 43 陽明脈（脈）：【·（繫）】於髀骨外廉，循髀而上，穿臄，出魚股□□□□，穿【乳】，穿頰，【出目外】

Yang ming vessel: Connects goes straight up the outside of the tibia, follows the shinbone and rises, penetrates the kneecap, exits along the fish thigh (UC) (UC) (UC) (UC), goes to the nipples and goes to the jaw, exits at the outside corner of the eye,

- 44 廉，環【顏】□。是動則病：洒洒病寒，喜龍，婁（數）吹（欠），顏【黑，病種（腫），病至則惡人與火，聞】

Circling the face (UC). Disease moves in it: shivering cold disease, happy dragon, much yawning, dark swollen face, dislike people and fire with this disease,

- 45 木音則·（惕）然驚，心腸（惕），欲獨閉戶牖而處，【病甚】則欲【登高而歌，棄】衣【而走，此為】

Can't bear the sound of wood. Fearful and frightened, heart is fearful, desire to be alone and close the doors and windows, when this disease is extreme long to climb high and take off clothes and sing and run

46 鼯蹶（厥），是陽明脈（脈）主治。其所產病：顏痛，鼻·（鼯），領（頷）【頸痛，乳痛，】心與脇痛，

Shinbone stumble, this is controlled by yang ming vessel. It gives forth disease: pain in the face, bloody nose, chin and neck pain, nipple pain, heart and flank pain,

47 腹外種（腫），陽（腸）痛，膝跳，付（跗）□□，【為】十【病】。

陰陽十一脈灸經甲本釋文注釋 P.10

Stomach swells out, intestine pain, knee jump, instep (UC) (UC), makes 10 diseases.

P.10

P.10

48 肩脈（脈）：起於耳後，下肩，出臑外【廉】，出□□□，乘手北（背）。是【動則病：噤痛，頤種（腫）】，不可以顧，肩

Shoulder blood vessels: Rise up and connect to the ear, start from the outside of the upper arm, go (UC) (UC) (UC), following back of hand. If it's touched/moved it has disease: aching throat, swollen jowl, not able to look over the shoulder joint

49 以（似）·脫，臑以（似）折，是肩脈（脈）主治。【其所產病】：領（頷）【痛，喉痹，臂痛，肘】痛，為四病。

陰陽十一脈灸經甲本釋文注釋 P.11

Take off the arm like it is snapped, those disease is governed by the blood vessels of the shoulder. {The disease created by it} Aching chin, paralysis in the throat, aching in the arm and elbow, there are four diseases.

P.11

50 耳脈（脈）：起於手北（背），出臂外兩骨之間，【上骨】下廉，【出肘中】，入耳中。是動則病：耳聾

Blood vessels of the ear: rise up and start from the back of the hand, go along the outside in the space between the two bones, goes up the bone the lower corner, goes to the centre of the elbow, joins into the ear. It has various diseases if touched: tinnitus

51 焯焯··，噤種（腫），是耳脈（脈）主治。其所產病：目外漬（眚）痛，頰【痛】，耳聾，為三病。

Swollen throat, mainly treated/governed by the ear blood vessels. There are disease which come from here: Aching at the outside corner of the eye, aching cheeks, deafness, three diseases.

《馬王堆漢墓帛書(肆)五十二病方等》: 15: .《馬王堆漢墓帛書(肆)》? 陰陽十一脈灸經甲本釋文注釋 P.11

52 齒脈（脈）：起於次指與大指上，出臂上廉，入肘中，乘臑，【穿】頰，入齒中，夾（挾）鼻。是【動】

Tooth vessel: rises from the second finger in and up from the big finger (thumb), goes to the upper ridge of the arm, joins in the centre of the elbow, follows bicep, to the cheek, joins into the teeth centre and connects with the nose.

53 則病：齒痛，臑（·）種（腫），是齒脈（脈）主治。其所產病：齒痛，臑（·）種（腫），目黃，口乾，臑痛，為五【病】。

This has diseases: toothache, swollen gum, this is mainly governed by the blood vessels of the teeth. There are diseases that you can create here: toothache, swollen gums, yellow eyes, dry mouth, aching biceps, makes five diseases.

陰陽十一脈灸經甲本釋文注釋 P.11

54 大（太）陰脈（脈）：是胃脈（脈）·（也）。彼（被）胃，出魚股陰下廉，·上廉，出【內】踝之上廉。是動則病：上【當】

Tai yin vessel: is the stomach vessel. Covers the stomach, goes out along the fish of the thigh lower ridge, upper ridge, goes to the inner ankle upper ridge. Is the rule of many diseases:

55 走心，使復（腹）張（脹），善噫，食欲歐（嘔），得後與氣則忼然衰，是鉅陰脈（脈）主治。其所【產病】：

Goes up toward the heart, goes up to the abdomen and swells, big belching desire for food and vomiting, it goes behind and the qi will falter, this big yin vessel governs treatment. The disease which is generated by it:

56 □□，心煩，死；心痛與復（腹）張（脹），死；不能食，不能·，·吹（欠），三者同則死；唐（溏）泄，死；【水與】

(UC) (UC), irritation, death; aching in the heart and swollen belly, death; not able to eat, not able?, breath, if you have all three symptoms then death; diarrhoea, death;

57 閉同則死，為十病。

Water and close in the meantime then death, 10 diseases.

陰陽十一脈灸經甲本釋文注釋 P.11-12

58 厥陰脈（脈）：·（繫）於足大指叢（叢）【毛】之上，乘足【跗上廉】，去內·（踝）一寸，上【·（踝）】五寸而【出大（太）陰之後】，

Jue yin vessel: connects with the foot big toe hair goes up, follow the foot instep up to the ridge, goes up the inside of the ankle one cun, goes up ? ankle 5 cun and exits behind tai yin,

59 上出魚股內廉，觸少腹，大漬（眚）旁。是動則【病：丈】夫隕（·）【山（疝），婦人則少腹腫（腫），要（腰）痛】

Goes up and exits on the fish muscle of the thigh and follows the inner ridge, touch lower abdomen, big stain (eye socket) beside. It is the rule for diseases: men collapse, hernia men will be impotent or women will have a swollen belly, aching loins

60 不可以印（仰），甚則噤乾，面疵，是厥陰脈（脈）主治。【其】所產病：熱中，【降（癢），隕（·），扁（偏）山（疝），】□□

Not able to look up, great rule is dry throat, flawed face, this jue yin vessel governs treatment. It creates those diseases: heat in the centre, retention of urine and weakness, hernia, (UC) (UC)

61 有而心煩，死，勿治·（也）。有陽脈（脈）與之【俱】病，可治·（也）。

Irritation, death, cannot be treated. If there are a yang vessel and disease, can be treated.

陰陽十一脈灸經甲本釋文注釋 P.12

62 少陰脈（脈）：·（繫）於內·（踝）外廉，穿·，出·（·）【中】央，上穿脊之□廉，·（繫）於腎，夾（挾）舌。【是動則病：】

Shao yin vessel: attaches on the inside at the ridge on the outside of the ankle, perforates, exits, it goes to the centre rises and penetrates the spine along the (UC) ridge, attaches at the kidneys, pinches/crosses the tongue. There are various diseases:

63 ·（喝）·（喝）如喘，坐而起則目瞶（·）如毋見，心如縣（懸），病飢，氣【不足】，善怒，心腸（惕），恐【人將捕之，】

Gasp as if breathing heavily, sit and rise eye is hazy as if cannot see, heart as if suspended, starvation sickness, qi [deficiency], easily angered, heart is cautious and fearful, afraid that a man will catch him,

64 不欲食，面黧若·（炏）色，欬則有血，此為骨蹶（厥），是少【陰】脈（脈）主【治】。其【所產病：】□□□□□□

No desire for food, face has colour like a candle (red), blood in the sputum in cough, this is bone reversal disease, shao yin vessel governor which generates diseases: (UCx6)

65 舌柢（拆），噤乾，上氣，噎（噎），噤中痛，瘡，耆（嗜）·，欬，音（瘖），為十病。【少】陰之脈（脈），【久（灸）則·食產肉，緩帶，】

Tongue is split, throat is dry, qi rises/difficulty breathing, choking and aching in the centre of the throat, sputum, be fond of (something) cough, inability to speak (mute) makes 10 diseases. Shao yin vessel, moxa, food makes flesh, open the belt,

66 皮（被）髮，大丈（杖），重履而步，久（灸）幾息則病已矣。

陰陽十一脈灸經甲本釋文注釋 P.12

Loose hair, large cane, heavy shoes and walk, moxa, when the moxa is almost finished then the disease is gone.

67 臂鉅陰脈（脈）：在於手掌中，出內陰兩骨之間，上骨下廉，筋之上，出臂【內陰，入心中。】

Arm Great Yin vessel: is located in the centre of the palm, exits on the yin surface between the 2 bones, up to the lower ridge of the upper bone, above the sinew, exits along the arm on the inner yin surface, enters into the heart.

68 是動則病：心澹澹如痛，缺盆痛，甚【則】交兩手而戰，此為臂蹶（厥），【是臂鉅陰脈（脈）主】

When this channel is affected then disease: heart palpitations like aching, ST12 is aching, in extreme condition when you cross your two hands (across your body) you will shiver/shake, this is called 'arm reversal', the arm great yin vessel mainly treats the governor.

69 治。其所產病：·（胸）痛，·（腕）痛，【心痛】，四末痛，·（瘕），為五病。

It creates diseases: aching in the chest, aching inside the stomach, aching in the heart, aching in the four peripheral limbs, constipation, makes 5 diseases

《馬王堆漢墓帛書(肆)五十二病方等》：20：《馬王堆漢墓帛書(肆)》？ 陰陽十一脈灸經甲本釋文注釋 P.13

Mawangdui Han dynasty tomb 52 disease recipes/prescriptions

70 臂少陰脈（脈）：起於臂兩骨之間之間，之下骨上廉，筋之下，【出】臑內陰。【是動則病：心】

Arm lesser yin vessel: rises up along the arm in the space between two bones, until it reaches the upper ridge of the lower bone, below the sinew, exits along the bicep of inner yin When the vessel is affected there is disease: aching in the heart

71 痛，益（嗑）渴欲飲，此為臂蹶（厥），是臂少陰脈（脈）主治。其所產【病：脅】痛，為【一病】。

Thirst in the throat and desire to drink, this is arm reversal, the arm shao yin vessel mainly treats the governor. This place gives birth to diseases: Rib/flank ache, one disease.

脈法釋文注釋 P.17

72 以脈（脈）法明教下，脈（脈）亦聽（聖）人之所貴·（也）。氣·（也）者，到下一□□□□□□□□□□

82 之少陰，臂之大（太）陰、少陰。氏□□□則□此□□□□□□□□□□□□□□□□

Of shao yin, arm tai yin, shao yin.

83 脈（脈）之縣（玄），書而熟學之。季子忠謹，學□□□□見於為人□□□□□□

Mysterious vessel, you should study and follow the book. Youngest brother should be prudent and careful, learning (UC) (UC)... see, do people

84 言不可不察·（也）。

You have to make it clear.

陰陽脈死候釋文注釋 P.21

The book to explain symptoms and death due to yin yang vessels

85 凡三陽，天氣·（也），其病唯折骨列（裂）膚一死。凡三陰，地氣·（也），死脈（脈）·（也），□病而亂，則【不】

Talk about three yang, qi of heaven, it has disease only of broken bone and broken skin. Talk about three yin, it is the qi of the earth, it is a dead vessel, (UC), (UC) disease and confusion/disorder, it is

86 過十日而死。三陰·（腐）臧（臟）煉（爛）腸而主殺，□□五死：唇反人盈，則肉【先死】；□□□□，【則】

Death within ten days. three yin zang fu intestine and governs festering/ulcerating, (UC) (UC) die in five days: lips reverse man overflowing, then flesh die first;

87 骨先死；面黑，目環（·）視·（·），則氣先死；汗出如絲，傳而不流，則血先○死；舌陷（陷）·（卵）卷，【則筋】

Bone die first; if the face is black, if the eye around.look., then qi dies first; if sweat exits like silk, assist and no flow, if you die of blood first; tongue is sinking and the tendons curl backwards

88 先死。五者扁（·）有，則不沽（活）矣。

Die first. If you have all five signs, then you will surely die.

陰陽十一脈灸經乙本釋文注釋 P.89

11 yin yang vessels of moxa pathways, the book to interpret and elucidate

- 1 【巨陽脈？】潼外·（踝）婁中，出·中，上穿·，出厭（厭）中，夾（挾）脊，出於項，□頭角，下顏，夾（挾）·，·（繫）目內廉。是僮（動）則病：潼（腫），頭

Great yang vessel? High outside, ankle goes out, in the centre penetrates up, exits up along the inside, wraps around the backbone, exits along the back of the neck, to the corner of the head, goes down the face, wraps around-,to the inner corner of the eye.

Movement here causes disease: Swelling, is a cause of disease: swelling, headache,

- 2 【痛】，□□□□【脊】痛，要（腰）以（似）折，脾（髀）不可以運，【臑如結，是為踝】厥，是巨陽脈主治。其所產病：頭痛，耳聾，項痛，耳彊，·（瘡），北（背）痛，要（腰）尻【痛】，·（痔），·（·）痛，·痛，足小指【痺】，為【十

XXXX aching in the backbone, waist feels like it will snap, spleen cannot transport, hollow as if knotted, we call it ankle jue, this is generally treated by great yang vessel. This creates many diseases, head ache, ear deafness, aching of the neck, stubborn ear, malaria, back ache, waist and lower back ache, piles, ---aching, -aching, little toe paralysis, 12 diseases.

陰陽十一脈灸經乙本釋文注釋 P.89

- 3 二病】。【少陽】脈?·（繫）於外踝（·）之前廉，出【魚股之】外，出口上，出目前。是動則病：心·脅痛，不可以反側（側），甚則無膏，足外【反，是】為陽厥，是少陽脈主治。其

Shao yang vessel? Connects from the front ridge of the outside of the ankle, goes up along the fish on the outside of the thigh, exits upX, goes to the front of the eye. If there is movement there is disease: the heart, the ribs ache, not able to turn the body when you are sleeping, great lack of fat, on the outside of the foot rebels, it is yang rebellion, these are the things that are governed/treated by shao yang vessel.

- 4 【所產病】：□□□頭頸痛，脅【痛】，虐（瘡），汗出，節盡【痛，髀外】廉痛，【□痛】，股痛，膝外【廉】痛，振寒，足中指澀（痺），為十二病。陽明脈?·（繫）於胛骨外廉，循（循）胛骨而上，穿實（髕），出魚【股】

The movement creates diseases: XXX head and neck ache, aching in the ribs, malaria, exit of sweat, tired and aching joints, aching on the corner on the outside of the spleen, X ache, thigh ache, aching on the corner of the outside of the knee, shivering cold, toe in the middle of the foot paralysis, 12 diseases. Yang ming vessel? Starts from the outside ridge of the shin bone, follows the shinbone and goes up, penetrates the knee cap, exits along the thigh at the fish

陰陽十一脈灸經乙本釋文注釋 P.89

- 5 □□□□，【穿】乳，穿頰，出目外廉，環顏□。【是動則病：洒洒】病寒，喜信（伸），數吹（欠），顏黑，病腫，病至則亞（惡）人與火，聞木音則易（惕）然驚，欲獨閉戶牖而處，病甚【則

XXXX, penetrates the nipples, penetrates the cheek, goes up the outer corner of the eye, to the ring on the face X. In movement it has diseases: Shivering cold disease, like extend outwards, yawning, black face, swelling disease, disease where has a strong dislike of people and fire, can't bear the sound of wood, easily anxious and scared, wants to shut the door and be left alone, great disease [you go to high places and sing songs,

- 6 欲登高】而歌，棄衣而走，此為肝厥，是【陽明脈】主治。其所產病：顏甬（痛），鼻·（鼽），頷（頤）頸甬（痛），乳甬（痛），心·肱痛，腹外腫，腸甬（痛），膝足·（痿）澀（痺），為十病。

Take off your clothes and walk, this is shinbone rebellion, which you treat using yang ming vessel: neck ache, face, jaw and throat ache, heart, feels open and aching, swelling on the outside of the belly, intestinal ache, knee foot weird sensations and numbness, 10 disease.

陰陽十一脈灸經乙本釋文注釋 P.89

- 7 肩脈【?起於耳後，下肩，出臑】外廉，出臂外，出指上廉。【是動則病：噤痛，頷】腫甬（痛），不可以顧，肩以（似）脫，臑以（似）折，是肩【脈】主治。其所產病：頷（頤）頸甬（痛），侯（喉）澀（痺），臂甬（痛），肘甬（痛），

Shoulder vessel rises up from behind the ear, goes below the shoulder, exits along the upper arm along the outside ridge, goes along the outside of the bicep, goes to the upper ridge of the finger. If it is affected then you will find disease: aching in the throat, chin is painful and swollen, not able to turn the head from side to side, the shoulder looks like it is disjointed, the upper arm looks like it is broken/fractured, treat on the shoulder vessel. The disease that are generated by it: Chin ache, paralysis of the throat, biceps ache and elbow pain,

《馬王堆漢墓帛書(肆)五十二病方等》: 329: .《馬王堆漢墓帛書(肆)》? 陰陽十一脈灸經乙本釋文注釋 P.89

- 8 為四病。耳脈?起【於手】北（背），【出臂外兩骨】之間，上骨下兼（廉），出肘中，入耳中。是動則病：耳聾輝輝諄諄，噤腫，是耳脈主治。其所產病：日外·（眚）甬（痛），頰甬（痛），耳聾，為

陰陽十一脈灸經乙本釋文注釋 P.89-90

Makes 4 disease. Ear vessel rises from the back of the hand, goes out along the outside of the arm in the space between both bones, goes up the bone below the ridge, goes out to the centre of the elbow, joins into the ear. If it is touched then there will be diseases: deafness in the ear, throat is swollen, treat on the ear vessel. This generates diseases: the outside of the eye aching, cheek pain and deafness

- 9 三病。齒脈?起【於】口指上，出臂上廉，入肘中，乘臑，穿頰，入齒中，夾（挾）鼻。是動則病：齒甬（痛），臄（·）腫，是齒脈主治。其所產病：齒甬（痛），臄（·）腫，目黃，口乾，臑甬（痛），為五病。

陰陽十一脈灸經乙本釋文注釋 P.90

3 diseases. Tooth vessel rises from the top of the X finger, goes out along the ridge of the arm, joins into the elbow, follows the bicep, penetrates the cheek, joins into the teeth, interconnects with the nose. If it is touched there are diseases: tooth ache, swollen gums, treat on the tooth vessel. This generates diseases, tooth ache, gum swelling, yellow eyes, dry mouth, bicep ache, 5 diseases.

10 【巨陰】脈：是·（胃）脈也。被胃，出魚股陰下廉，·上廉，出內果（踝）之上廉。是動則病：上當走心，使腹張（脹），善噫（噫），食則欲嘔（嘔），【得後】·氣則逢然衰，是巨陰

Great yin vessel: is the vessel of the stomach. By the stomach, goes out along the fish below the ridge of the upper ridge of the thigh, and exits on the upper ridge of the inner ankle. If it is touched then there are diseases: Goes up and inattentiveness, causes the stomach to expand and inflate, good belching, eat then want to vomit, afterwards, qi will surely decline, treat on the great yin vessel.

11 【脈主治。其所產病】：□□，心煩，死；心甬（痛）·腹張（脹），死；不食，不·，強吹（欠），三者同則死；唐（溏）泄，死；水·閉同則死，為十病。少陰脈：·（繫）於內·（踝）外廉，穿·，出

It generates diseases: XX, anxiety, death, aching in the heart, belly inflated, death, not eat, not, strong yawning, if you have these 3 symptoms then death; watery stool, death; water blocked up the same then death, 10 diseases. Lesser yin vessel: connects to the outside ridge of the inner ankle, penetrates goes out to the middle, goes up and penetrates the X ridge of the spine, connects with the kidney, and wraps around the tongue, If it is touched then there are disease:

陰陽十一脈灸經乙本釋文注釋 P.90

12 【中央，上穿脊之□廉，繫於腎，挾舌，是動則病：喝喝如喘】，坐而起則目芒然無見，心如絕，病飢，氣不足，善怒，心易（惕），恐人將捕之，不欲食，面黧如燠色，欬

From the centre it penetrates the ridge of the backbone, connects to the kidney, wraps around the tongue, if it is affected then there will be disease: panting like gasping, if you go from sitting to standing and then cannot see, the heart is separating, hungry/abnormal/digestive disease, deficiency of qi, easily angry, heart is fearful, fear that men will come and arrest you, no appetite, face is the colour of lacquered firewood, blood in the cough

13 【則】有血，此為【骨厥，是少】陰之脈主治。其所【產病】：□□□□□□【舌坼，喘乾，上氣，噎】，□□□喘中甬（痛），單（痺），耆（嗜）·，欬，音（瘖），為十病。少陰之脈，久（灸）則強食產肉，【緩帶】，

This is bone reversal, lesser yin governs blood. This creates disease: XXXXX split tongue, dry throat, difficulty breathing in and choking, XXX dryness and aching, fondness, dryness, cough, mute, 10 diseases. Vessels of lesser yin, moxa to force to eat to generate flesh, loosen the belt,

14 大杖，被髮，重履而步，久（灸）希息則病已矣。厥陰脈：·（繫）於足大指岐（叢）毛上，乘足·（跗）上廉，去內·（踝）一寸，上·（踝）五寸【而】出於大（太）陰【之】後，上出魚

陰陽十一脈灸經乙本釋文注釋 P.90

Big cane, loosen the hair, walk with heavy shoes, moxa will stop the progression of the disease. Jue yin vessel: connects with the big toe of the foot at the bushy hairs, follow the foot. Follow the ride, to the inside of the ankle one cun, go up above the ankle 5 cun and exit to behind tai yin, go up and exit at the fish

- 16 股內廉，觸少腹，大資（皆）旁。是動則病，丈夫則隤（·）山（疝），婦人則少腹腫，要（腰）甬（痛）不可以仰（仰），甚則噤乾，面疵，是厥陰之脈主治。其所產病：熱中，降（癰），隤（·），扁（偏）山（疝），□□

The inside ridge of the thigh, to the lower abdomen, to the side of the corner of the eye. If it is affected then there is disease, in man ruin hernia, in the man the lower abdomen is swollen, lie down and unable to move, because the waist is aching, face is flawed, these things are governed by jue yin vessel. This generates disease: heat in the centre, retention of urine, disease in private parts, leaning to the side hernia, XX disease,

- 17 病，病有煩心，死，勿治也；有陽脈與俱病，可治也。臂巨陰脈：在於手常（掌）中，出內陰兩骨【之間，上骨】下廉，筋之上，出臂內陰，入心中。是動則病：心滂滂【如】

Disease with symptoms of anxiety, death, cannot treat; if yang vessel also have disease, can be treated. Arm great yin vessel: located in the palm of the hand, exits along the inside yin between both bones in the space, goes up the bone below the ridge, above the sinew, exits along the yin interior of the upper arm, joins into the heart. If this is affected then there is disease: heart makes heartbeat sound X ache

陰陽十一脈灸經乙本釋文注釋 P.90

- 18 痛，·（缺）汾（盆）甬（痛），甚則交兩手而單（戰），此為臂厥，是臂巨陰之脈主治。其所產病：胸甬（痛），·（腕）甬（痛），心甬（痛），四·甬（痛），假（瘕），為五病。臂少陰脈：起於臂兩骨

Empty basin aching, in extreme condition if you cross both arms and shiver, this is upper arm reversal, this is governed by the vessel of upper arm great yin. This creates the following diseases: chest ache, stomach ache, heart ache, four (limbs) achings, constipation, 5 diseases. Upper arm shao yin vessel: start from the 2 bones of the arm goes upward in the space,

陰陽十一脈灸經乙本釋文注釋 P.90-91

- 19 上〈之〉間，下骨上痛〈廉〉，筋之下，出臑內陰，入心中。是動則病：心甬（痛），噤【乾欲】飲，此為臂厥，是臂少陰脈主治。其所產病：脅甬（痛），為一病。

Below the bone above the ridge, below the sinew, exits along the inner yin surface of the bicep, joins with the heart. If it is affected then disease: aching in the heart dryness in the throat and desire to drink, this is arm reversal, this is what is controlled and treated by arm shao yin vessel. When affected this creates disease: rib aching, one disease.

Appendix B Ling Shu ch. 10

Accessed at <http://ishare.edu.sina.com.cn/?retcode=0>
愚按

5/4/2013

Gujin Tushu Jicheng 古今圖書集成 ‘Complete Collection of Illustrations and Writings from the Earliest to Current Times’

Ling Shu with commentary from Ma Shi 馬蒔 (Dates unknown, Ming dynasty 1368-1644), Huá bó rén 滑伯仁 (1304-1386), Zhāngzhìcōng 張志聰 (1630-1674), Li dong yuan 李東垣 (1180-1250), Shang yu gong 尚御公 (no date)

Ling shu ch. 10 with commentary, point name and location codes

雷公問于黃帝曰：禁脈 [禁脈：張注本“脈”作“服”] 之言，凡刺之理，經脈為始，營其所行，制其度量，內次五臟，外別六腑，願儘聞其道。

Original text; Leigong asked the Yellow Emperor; speaking of Jing Mai (in a different commentators version mai is written as 服 Fu (clothes, suit, take medicine)) . To talk about acupuncture theory, jing mai is the beginning, it manages to pass/move, controls and makes the measurement, it's internal sequence/relation is with 5 zang and external leaving/sequence/relationship with 6 fu. I wish to hear all the theory about it.

(In order to learn about acupuncture, you need to first about Jing mai and understand the relationship that the channels have with the zang and the fu)

黃帝曰：人始生，先成精，精成而腦髓生，骨為干，脈為營，筋為綱，肉為牆，皮膚堅而毛髮長，穀入于胃，脈道以通，血氣乃行，雷公曰：願卒聞經脈之始生，皇

帝曰：經脈者，所以能決死生，處百病，調虛實，不可不通。

Original text; Huangdi said, at the beginning of man's creation, first formed is essence, after essence is formed comes brain and spinal cord, bone is the main trunk, blood vessels build the nutritional camp, sinews/muscles make the structure, flesh makes the wall, skin becomes hard and the hair begins to grow. Nutrients enter into the stomach, the blood vessels become communication tracts, blood and qi pass through them. Leigong said: I wish to hear about the beginning of the jing mai. Huangdi said: Talk about jing mai, they can make the difference between life and death, they can process one hundred diseases, they balance excess and deficiency, cannot not (must) pass through/connect/open (create a passageway)

Commentary; Ma Shi (Ming dynasty age unknown)

【馬蒔曰：此言十二經脈，故以經脈名篇，實學者習醫之第一要義，不可不究心熟玩也。後世能言不識十二經絡，開口動手便錯，而於此懵然，惜哉！滑伯仁《十四經發揮》、《鍼灸聚英》等書，各本於此，但不若此篇尤詳。凡《內經》全書之經絡，皆自此而推之耳。】

Ma Shi said; This paper is about the 12 jing mai. Hence the title of the chapter is jing mai because that is what it is about. It is the most essential thing for the scholar of medicine who should be profoundly familiar with the text. If you don't know about the 12 jing lu then whatever you say or do will be wrong, but will not necessarily realise that you are wrong. It is regrettable!

Huá bó rén (1304-1386) Yuan-Ming dynasty wrote at least 10 books on medicine, 《十四經發揮》 14 vessels commentary, 《鍼灸聚英》 Collecting the essence of acupuncture. These books are rooted in an understanding of the jing mai, but are not as detailed as this chapter.

The jing lu (essential structure) of the whole book of the Neijing is related to this chapter on jing mai, and is developed from this point.

Original text;雷公問於黃帝曰：禁服之言，凡刺之理，經脈為始，營其所行，制其度量，內次五臟，外別六腑。願盡聞其道。黃帝曰：人始生，先成精，精成而腦髓生，骨為幹，脈為營，筋為剛，肉為牆，皮膚堅而毛髮長。穀入於胃，脈道以通，血氣乃行。雷公曰：願卒聞經脈之始生。黃帝曰：經脈者，所以能決死生，處百病，調虛實，不可不通。(1st section of Ling Shu ch 10 text)

Ma shi commentary continues;

【馬蒔曰：此帝因雷公之問，必原脈道之所以行，而示以經脈之所當知也。人之始生，先成於精，精成而腦髓生，以腎通於腦也。其骨為幹，其脈為營，其筋為剛，其肉為牆。至皮膚堅而後毛髮長，及其已生，必穀入於胃，則脈道以通，而血氣乃行。此經脈者，可以決死生，處百病，而調虛實，乃人之不可不知也。】

Commentary; Ma shi said: Because lei gong has asked the emperor, we must go back to the origin of why the mai make flow possible. So he (Huangdi) shows why we must know about jing mai. At the beginning of the creation of man, The first formed is jing (essence). When essence has been formed then the brain and essence of brain are created, because the kidneys also communicate with the brain. Bone is the main branch, vessels are the nutritional camp/barracks, ligaments (sinews) are the structure/skeleton, flesh is the wall. And when the skin hardens then hair will grow. When it is already created, nutrients enter the stomach, then the vessels unclog/attain flow, and blood and qi can pass. To emphasise jing mai, it can be used to determine life and death, to treat/deal with one hundred diseases and balance excess and deficiency. The scholar of Chinese medicine cannot not understand i.e. must know it.

【張志聰曰：此篇論臟腑十二經脈之生始出入，營行脈中，衛行脈外，始於手太陰肺，終於足厥陰肝，周而復始，循度環轉之無端也。人始生先成精者，本於先天水火之精氣，而先生兩腎，腦為精髓之海，腎精上注於腦，而腦髓生。骨為幹者，骨生於水臟，如木之幹也。營者，猶營舍之所以藏血氣也。筋為剛者，言筋之強勁也。肉為牆者，肉生於土，猶城牆之外衛也。皮膚堅而毛髮長，血氣之充盛也。此言皮膚脈肉筋骨，乃五臟之外合，本於先天之精氣也。穀入於胃，脈道以通，血氣乃行，言營衛氣血，生於後天水穀之精也。按血氣之生始出入，陰陽之離合盛衰，非神靈睿聖，焉能洞鑒隔垣？《靈》、《素》二經，君臣諮訪，欲證明斯道也。】

Commentary; Zhāngzhìcōng (1630-1674) said; This chapter is talking about zang fu, 12 jing mai, and their functions of creation/beginning, transportation between external and internal. [The last 4 characters are intended to make a phrase together]. Nutrition (yingqi) 營 is flowing inside the mai. Guarding wei (衛) is outside the mai. It begins with Hand Tai yin lung and at foot jue yin liver. They

make a circle and repeatedly begin, [next four characters also make a phrase which means almost the same as the previous four characters, but emphasises the flow where the first phrase emphasises the beginning and end.] Sentence ends it carries on without end. The root of the human being is rooted in the innate essence of water and fire. First created are the 2 kidneys. Brain is the sea of essence and sea of marrow. Kidney jing goes up to the brain and the brain marrow is created. The main skeleton is made of bone, bone is made from the water zang. (kidney), as a branch of wood. The place where the ying is stored is in the qi and the blood. [Huangdi said] 'sinews make strength', to talk about the strength of sinews. 'Flesh makes the walls', flesh is made by earth which is guarding the exterior like a walled city. 'When the skin is hard then hair will grow, blood and qi should be abundant and full.' This is talking about skin vessels flesh sinews and bone. These structures are the outside correlates/partners of the Five zang, they are the root of the heavenly innate essence. 'The stomach is the receiver of food, the vessels are used to pass through, blood and qi make the flow,' to talk about nutritional and guarding qi and blood. Post natal development of the essence from water and food. Huangdi is so intelligent that he can elucidate those things about qi and blood, internal and external, yin and yang, separate and united, flourishing and decline. He is so intelligent that he could only be a magic spirit. Ling (ling shu), (Su) su wen, those 2 books, The question and response between the king and his officer, in order to clarify this theory. (theory 道=same character for dao as in dao de ching)

Lung meridian (Hand tai yin)

肺手太陰之脈，起於中焦，下絡大腸，還循胃口，上膈屬肺，從肺系橫出腋下，下循臍內，行少陰心主之前，下肘中，循臂內上骨下廉，入寸口，上魚，循魚際，出大指之端。其支者，從腕後直出次指內廉，出其端。是動則病，肺脹滿膨膨而喘欬，缺盆中痛，甚則交兩手而瞀，此為臂厥。是主肺所生病者，欬，上氣喘渴，煩心胃滿，臍臂內前廉痛厥，掌中熱。氣盛有餘則肩臂痛，風寒汗出中風，小便數而欠；氣虛則肩臂痛寒，少氣不足以息，溺色變。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛，以經取之。盛者寸口大三倍於人迎，虛者則寸口反小於人迎也。【臍，音猓。數，音朔。】

Original text; Vessel of lung tai yin, starts from the middle jiao, descends to connect with large intestine, passes through the mouth of the stomach (oesophageal sphincter), it passes up through the diaphragm into the lung, from whence it travels laterally through the lung to the armpit. It travels down the bicep on the inside before it proceeds to the pericardium meridian down to the centre of the elbow, it travels along the inside of the arm to the 'up bone, bottom corner' (上骨下廉) (base of the first metacarpal). They enter the radial pulse at the wrist, travel along fish border (most lateral part of the first metacarpal bone) to the top to the end of the thumb. It has a branch which goes to the inside corner of the second finger, it goes out to the extremity. This action regulates disease, if the patient has full, bloated lungs and is coughing and gasping. Aching in the supraclavicular fossa (empty basin), in an extreme case the patient can't see clearly if he crosses his hands over each other (which will compress the chest cavity). This can be called reversal cold in the arm. The lung is the place which governs the beginning of disease, cough, the breath rises and you pant and are thirsty, the chest is full and you feel anxious, pain along the inside of the biceps, heat in the centre of the palm. If the qi is excessive then there will be shoulder and arm pain. Sweating from wind cold will lead to stroke, infrequent urination. Deficient qi leads to cold in the shoulder and arm. Lack of qi leads to shortness of breath, colour changes to the colour of drowning. To treat those kinds of disease, you use the method of draining excess, you repair emptiness, the law of heat is that it creates disease, the law of cold is that it creates stagnation. If qi is low or submerged, treat with

moxa, (so that the patient ends up) not excessive, not deficient, this is the way of the classic book. In excess, the radial pulse will be 3 times stronger than the carotid pulse. In deficiency the radial pulse will be weaker than the carotid pulse. Commentary [The first nao 臑 is a homophone of the second nao 猯. The correct character is 猯 which means monkey with yellow hair. The first shuo 數 is a homophone of the second shuo 朔 which means north or 1st lunar month]

【馬蒔曰：此言肺經脈氣之行，乃為第一經之經脈也。言肺者，即手太陰經之脈也。凡言手者，以其井榮俞經合等穴，自手而始也。凡言足者，以其井榮俞經合等穴，自足而始也。後凡各經分手足者，以此起發也。中焦者，中脘也，在(臍)齊上四寸。胃口，胃之上脘，在齊上五寸。絡，猶兜也，如今人橫線為絡而兜物也。循，巡也。膈，隔也。凡人心下有膈膜，前齊鳩尾，後齊十一椎，周圍著脊，所以遮隔濁氣，不使上熏心肺也。肺系者，喉嚨也。喉以候氣，下接於肺。胃旁肋下，謂之腋。膊內肱處，謂之臑，肩肘之間也。臑盡處為肘，肘以下為臂。廉，隅也。手掌後高骨旁動脈為關，關前動脈為寸口。

Commentary; Ma Shi said: These words refer to the passage of qi through the lung meridian, it is the first vessel. The words speak of the lungs, and also the meridian of hand tai yin.

When we are referring to the hand, the well transporting points are where the meridian joins and pauses in the acupoint hole, and only then from the hand begins to move. When we talk about the foot, (phrase repeated from before), the well transporting points are where the meridian joins and pauses at the acupoint hole, and only then from the foot begins to move. From every meridian in the hand and foot, it is from here that (the flow) begins to move.

In the central burner, Ren12, (Zhong Wan), 4 cun above the navel. The mouth of the stomach (pylorus/oesophageal sphincter?) Ren13 (Shang Wan), is 5 cun above. To explain , It is a network like a string pouch, like modern people use a string bag to contain things. To explain 循 it is the same word as 巡 to follow a regular path. 膈 diaphragm is also a partition. There is generally a diaphragm below the heart of people, CV15 鳩尾 dove's tail lies an equal length in front, at the back it is level with the 11th vertebra, it forms a circle which links to the spine (crus of the diaphragm). It is a place to separate the unclean/turbid qi, to not allow the turbid qi to pollute the heart and the lung. The lung is connected to the larynx and the throat. The throat is used to greet the qi, below it connects to the lung. Beside the chest/breast, under the ribs is the axilla. The inside of the upper arm is the biceps, it is between the shoulder and the elbow. The elbow is at the end of the biceps, below the elbow is the arm. To explain the word 廉, it means corner or cheap, but 隅 only means corner and this is the meaning we should use. At the back of the palm (the proximal part of first metacarpal) next to a high bony landmark (the aforementioned corner) is a vessel, this blood vessel is the radial pulse.

魚謂掌骨之前大指本節之後，其肥肉隆起處，統謂之魚。魚際，則其間之穴名也。端，秒也。瞽，目垂貌。按本經營衛生會、五味、邪客、刺節真邪等篇，言人身有前三焦者，宗氣出於上焦，即所謂積於胷中，又謂之積於膻中也，出喉嚨以司呼吸。其營氣者，陰精之氣也，由中焦之氣，陽中有陰者，隨上焦之氣，以降於下焦而生此陰氣，故謂之清者為營，又謂之營氣出於中焦者是也。然營氣陰性精專，隨宗氣以運行於經隧之中，故謂之營行脈中者是也。其衛氣者，陽精之氣也，由下焦之氣，陰中有陽者，隨中焦之氣，以升於上焦而生此陽氣，故謂之濁者為衛，又謂之衛氣出於下焦者是也。然衛氣陽性慄悍，不隨宗氣而行，而自行於各經皮膚分肉之間，故謂之衛行脈外者是也。

At the root of the big finger (thumb) is the part called the fish at the joint of the thumb, (the thenar eminence) is plump abundant flesh which stands up, broadly speaking it is the fish. Lu10 Yu ji (Fish Border), is the name of the acupoint inside the fish (possibly fish spine?). To explain 端 duan (end/head/beginning), it is 秒 the head of grain at the end of the stalk. Indistinct vision, with droopy eyes. (In the phrase which talks about if you cross your arms across your chest you affect your vision in the case of extreme disease). According to this book in the chapter on guarding and creating (chapter 18), there are 5 tastes (chapter 56), evil guest (chapter 71), 刺節真邪 (chapter 75), etc, those chapters all say in the human body there are 3 burners, the ancestral qi goes from the upper burner, in other words it accumulates in the centre of the chest, in other words it accumulates in the solar plexus in order to be able to govern the inhalation and exhalation. Talk about ying qi (barracks qi), it is the qi of the yin essence, it follows the qi of the central burner, there is yin inside yang, it follows the qi of the upper burner, then it descends to the lower burner and generates yin qi, hence we say that the ying qi is clean, also we say that the ying qi goes from the central burner. But ying qi especially has the character of yin essence, follows the ancestral qi and passes inside the tunnel of the vessel, hence we say ying passes through vessels. Talk about the wei qi, it is the qi of the yang essence, follows from the qi of the lower burner, there is yang inside of yin, which follows the qi of the central burner, upward to the upper burner and generates this yang qi, hence we say wei (guarding) qi is turbid, and we also say that wei qi goes out from the lower burner. But wei qi has a very yang male characteristic,

It does not follow the ancestral qi, and it travels alone through the space in the superficial flesh and skin, hence we say wei qi travels outside the normal arteries/meridians.

茲手太陰之脈，起於中焦，下絡大腸，還循胃口，上膈屬肺，從肺系橫出腋下，下循臍內，行少陰心主之前，下肘中，循臂內上骨下廉，入寸口，上魚，循魚際出大指之端者，本言宗氣與營氣同行，而衛氣不與焉者也。即營衛生會篇所謂與營俱行於陽二十五度，行於陰亦二十五度一周

也，故五十度而復大會於手太陰矣，然此特言肺經運行之始耳。起於中焦者，即營衛生會篇所謂中焦亦並胃中出上焦之後，此所受氣者，泌糟粕，蒸津液，化其精微，上注於肺脈者是也。

This vessel of lung tai yin begins in the middle burner, descends along the network to tai yang, also follows the mouth to the stomach (oesophagus? oesophageal sphincter?), up through the diaphragm to the lungs, from which it passes laterally through the lung to the axilla (intercostobrachial nerve?), it descends along the soft interior aspect of the arm (biceps), and passes forward to the heart governor (pericardium) lesser yin, below the centre of the elbow, it follows the interior aspect of the arm along the high point of the bone down to the 廉 ridge and joins the radial pulse, on top of the fish (thenar eminence), it passes along the fish border (first metacarpal bone, lateral edge) to the end of the big finger (thumb), we say it is the root of the ancestral 宗 qi and the ying 營 qi which travel together, and the protective 衛 qi is then not there.

This section in chapter 18 describes how the zhong qi and the ying qi circulate together through 25 degrees of yang? (This chapter only talks about the beginning and the pathway of the lung channel where chapter 18 describes the whole passage way around the body). Then they move through 25 degrees of yin also, 50 ancient degrees (bring you back to the beginning?) are the meeting point in the lung tai yin vessel, this promises that good luck flows through the lung channel it starts in the ear. It begins in the middle burner, this essay chapter 18 is about meeting together and start in the stomach in the middle burner and go out from the central burner to the upper burner afterwards, this accepts the qi, the dregs trickle/seep out, the steam becomes the jin ye (津液) humours, it changes to become subtle, the upper part enters into the lung meridian.

言由穀氣入胃，其精微之氣，起於中焦，下絡大腸，以肺與大腸相為表裏也。轉循胃之上口，屬之於肺，即從肺系橫出腋下，蓋由胷部第四行之中府、雲門，以出腋下，下循臍內，歷天府、俠白，行於手少陰心經、手厥陰心主包絡兩經之前，下入肘中，抵尺澤穴，即營衛生會篇所謂上焦出於胃上口，並咽以上貫膈而布胷中，走腋，循太陰之分而行者也。既下肘中，乃循臂內上骨之下廉，歷孔最、列缺，入寸口之經渠、太淵以上魚，又循魚際出大指之端，至少商穴而止也。

其支者，如木之有枝，以其自直行之脈而旁行之也。臂骨盡處為腕。脈之大隧為經。交經者為絡。蓋本經經脈，雖終於大指之端，而絡脈之行，從腕後之列缺穴，循合谷上

行於食指之端，交於手之陽明經，而由合谷、三間、二間，以至於商陽穴，又隨商陽而上行也。

Now we will talk about the qi from food entering into the stomach, the subtle qi comes from inside the middle burner, downward it connects to the large intestine, because the lung and large intestine have an interior/exterior relationship. It turns to follow the upper mouth of the stomach (oesophageal sphincter and entrance to stomach), so it belongs to the lung, it quickly connects laterally to the axilla through the system of the lung, because lu 1 中府 and lu2 雲門 belong to the 4th rib of the chest and following down along the biceps to lu3 天府 and lu4 俠白, passing before the pericardium hand shrinking yin meridian and the hand shao yin heart meridian, downward to the centre of the elbow, to lu5 尺澤, chapter 18 talks about how the upper burner comes out of the upper mouth of the stomach (oesophageal sphincter), it goes upward to the throat passing through the diaphragm and spreads inside the chest, passing the axilla, following the division of tai yin and circulating.

Talk about the branch, as a tree has branches, so it travels straight and next to the blood vessels (to branch out). At the end of the arm bone is the wrist. The meridian is a large underground tunnel of the blood vessels. The luo network is the union of the meridians. This book is on jing mai, although the chapter ends at the thumb (as opposed to describing the whole system?), and the passage of the vessel network (絡脈), passing by lu7 列缺 which is at the back of the wrist it goes to Co4 合谷 and upwards to the end of the index finger, and unites with hand yang ming channel (Large Intestine), and from Co4, to Co3 三間 and Co2 二間, to Co 1 商陽 and follows Co1 upward.

My doubled up translation!

Talk about how the qi from grain gets into the stomach, its essence is qi, it begins in the middle burner, the network descends to the large intestine, by means of the internal external relationship of the lung and large intestine. It moves through the upper mouth (oesophageal sphincter) of the stomach, in the category of the lungs, from where it quickly sends out a lateral line to the lower armpit, and passes from the protection of the chest through the 4th intercostal space, at Yun Men (lu2 cloud gate), therefore it goes out to the lower armpit, this takes place at tian fu (lu3 celestial storehouse), xia bai (lu4 guarding white), passes through the heart hand shao yin vessel, it passes through 2 meridians the pericardium hand shrinking yin channel, descends to the centre of the elbow, to chi ze (lu5 cubit marsh) point, in this chapter, immediately the wei and ying qi are made they pass out through the oesophageal sphincter into the upper burner, they go through the diaphragm into the centre of the chest and up along the sides of the pharynx, it leaves the armpit, and travels in the tai yin division. Since below the centre of the elbow, it is upright and follows the line of the upper bone (radius) along the inside of the arm, it takes place at kong zui (lu6 collection hole), lie que (lu7 broken sequence), passes through jing qu (lu8 channel ditch) to the radial pulse, tai quan (lu9 big abyss) by means of shang yu (upper fish not a point name), and it follows yu ji (lu10 fish border) along to the end of the big finger (thumb), it passes to the shao shang (lu11 lesser shang) point and stops. It has a branch, as trees have branches, by which it travels from the straight line and passes along near to the blood vessel. The radial bone finishes at the wrist. The blood vessel passes through a tunnel. The meridian connects with the network. This book protects the root of the meridians, although finally at the end of the big finger (thumb), and passes through the meridian network, from behind the wrist is lie que (lu7 broken sequence) point, it follows he gu (Co 4 union valley) up to the tip of the index finger, and joins to the meridian of hand yang ming, and from he gu (Co4 union valley), to san jian (Co3 third space), er jian (Co2 second space), and leads to shang yang (Co1 Shang Yang) point, and it follows shang yang (Co1 shang yang) to the top.

及其動穴驗病，肺發脹滿，致膨膨然而喘急欬嗽，缺盆中痛，甚則交兩手而掣脅者，此之謂臂氣厥逆。蓋肺脈由中

府出腋，循臑下肘入手也。是皆肺經所生之病耳。然又有諸病，或出本經，或由合經，為欬，為上氣，為喘，為渴，為煩心，為胃滿，以肺脈貫膈而布胃中也。為臑臂內前廉痛，為厥掌中熱，脈行手少陰心主之前也。邪氣有餘則為肩臂痛，絡脈交於手上肩背也。於風寒為汗出中風，為小便頻數，而發之為欠，母病及子也。正氣不足，則為肩臂疼痛寒冷，其絡行手陽明也，為少氣不足以息，此本經病也。為溺色變，邪及子也。其諸病有如此者。然盛則當瀉之，虛則當補之。熱則瀉者，疾去其鍼。寒則補者，久留其鍼。脈陷下者，則用艾以灸之。若不盛不虛，則止以本經取之，而不必求之手陽明也。所謂盛者，何以知之？寸口較人迎之脈，三倍而躁，則肺經為實，如終始篇所謂瀉手太陰肺，而補手陽明大腸者是也。虛者何以知之？寸口較人迎之脈，三倍而小，則肺經為虛，如終始篇所謂補手太陰肺，而瀉手陽明大腸者是也。

You can test for disease at the acupuncture points, the lungs swell and emit fullness, and certainly sending swelling will cause bloating, gasping, urgent cough and clearing the throat, and deficient pain in the central bowl (St 12 que pen empty basin, midpoint of supraclavicular fossa), at the extreme if the patient crosses his hands over one another he will get blurred vision, in this case we call it the 'qi of the arm is rebellious'. The diaphragm causes the meridians from the lung to pass out from the lu1 (zhong fu central treasury) to the armpit, it follows the bicep to the elbow and down into the hand. Indeed, all sickness in the ear is created in the lung meridian. Yes, and several illnesses have this, perhaps the meridian is the root for travel, perhaps the meridians join, to govern cough, govern the upper qi, govern gasping, govern thirst, govern a vexed mind (anxiety?), govern a full chest, by means of the lung meridian goes through the diaphragm and the fabric of the centre of the chest. It governs the dull ache in the biceps on the inside of the arm, it governs heat in the centre of the palm, before the meridian passes to hand shao yin pericardium. Excessive evil qi has the nature to cause pain in the biceps and shoulder, meridian network joins the hand with the back of the shoulder. In wind cold is that which governs sweating and causes wind stroke, it governs several small repetitive things and becomes deficient, the illness reaches from the mother to the child. Zheng (good) qi is not enough, the law which governs the shoulder and arm aches and pains from cold and chill, its network moves to hand yang ming. It governs that too few/insufficient qi which is inadequate, this then is the source of disease in the meridian. It changes the colour of the stool/complexion of drowning, the evil reaches the child (the disease has passed from the lung to the paired colon). If a disease has these symptoms (then it is the mother child relationship). Certainly leaking is the rule (to fix) of abundance, if deficiency then repair it. If it is hot then leak it, quickly leave with (remove) a needle. If cold, then fix, be slow and retain the needle. Blood vessel sinks, use mugwort to do moxibustion. If it's neither abundant nor empty, then only consider the meridian to be the root of the disease, and there is no need to go to the hand yang ming. Speaking about extreme qi, how to recognise it? Compare the pulse at radial pulse and carotid pulse and when the

radial pulse is three times more excited than the lung meridian is solid, like in chapter 9 it's a method to drain lung hand tai yin, and repair large intestine hand yang ming verily. How to distinguish deficiency? Compare the radial pulse and the carotid pulse, when the carotid pulse is 3 times stronger than the radial pulse, then the lung meridian is deficient, then, like it says in ch 9, repair lung hand tai yin and drain the large intestine hand yang ming.

按《難經》二十二難，以是動為氣，所生為血，即動生二字，分為氣血，且以氣先血後為難，不知肺經則言肺所生病，大腸則言津液所生病，胃則言血所生病，脾則言脾所生病，心則言心所生病，小腸則言液所生病，膀胱則言筋所生病，腎則言腎所生病，心主則言脈所生病，三焦則言氣所生病，膽則言骨所生病，肝則言肝所生病，何嘗以所生之病，皆定為血也。今詳本篇前後，辭義分明，不以所動屬氣，所生屬血，明矣。又按至真要大論云：所謂動者，知其病也。蓋言凡知太衝、衝陽、尺澤等穴氣絕，為死不治。正以其動則可以驗病，不動則氣絕。此篇是動之義，正言各經之穴，動則知其病耳。再按自此肺經以至肝經，及兩躄督任，共計一十六丈二尺之脈。宗氣主呼吸而行脈絡，一呼脈行三寸，一吸脈行三寸，呼吸定息，脈行六寸。

According to [difficult texts Nan Jing] ch.22 difficulty, by means of the action of qi, blood is created by qi, these 2 words, dong (movement) and sheng (life) are distinguished by qi and blood respectively, moreover qi comes first and blood comes behind (second) is difficult, if you don't know the pathway of the lung meridian then you can't understand lung disease, talking about the laws of the large intestine, salivary fluid is the cause/creation of disease, talk about the stomach, blood is the cause of disease, talk about the spleen, the spleen itself is the cause of disease, talk about the heart, the heart itself is the cause of disease, talk about the small intestine, fluid is the cause of disease, talk about the bladder, the sinews are the cause of disease, talk about the kidney, the kidney itself is the cause of disease, talk about pericardium, the blood vessels are the cause of disease, talk about the triple heater, qi is the cause of disease, talk about the gallbladder, the skeleton (gu qi is moral fibre, backbone, courage etc, all associated with courage in the gallbladder) is the cause of disease, talk about the liver, the liver itself is the cause of disease, what is it that creates disease?, why is blood judged to be the reason? Now take a clear look at the thoroughness of this chapter, the meaning of the words are very clear, it is not treating movement as being something that belongs to qi, that which is created belongs to blood, it has been made clear. Again, according to ch 74 of the Su Wen, which emphasises movement, to understand disease. Generally speaking, when we know tai chong (liv 3), chong yang (St42, Co20), chi ze (lu5), etc acupoint qi vanishes, then it is a sign of death. By means of this method it is possible to investigate disease, where there is no movement then the qi stops (death). The meaning in this chapter, it is talking about correct movement, actually it is talking about the acupoints of several vessels, movement allows you to perceive disease. Again the qi from the lung meridian passes through to the liver meridian, they rely on both yin and yang qiao mai and du and ren mai, altogether they are 16 zhang 丈 (5333 cm, 5.3m), 2 feet (66cm) of blood vessels. Zong (original) qi is in charge of breathing in and

out and of circulation through the vessel network, in one outbreath, blood flows 3 cun (10cm) through the artery, in one inbreath blood flows 3 cun (10cm), inspiration and expiration correlates to a fixed level of blood flow, blood moves 6 cun (in one breath cycle).

漏水下一刻，計一百三十五息，脈行八丈一尺；二刻，計二百七十息，脈行一十六丈二尺為一周身；漏水下百刻，計一萬三千五百息，脈行八百一十丈，晝夜共行五十度周於身，並非言手太陰行於寅時，手陽明行於卯時，足陽明行於辰時，足太陰行於巳時，手少陰行於午時，手太陽行於未時，足太陽行於申時，足少陰行於酉時，手厥陰行於戌時，手少陰行於亥時，足少陽行於子時，足厥陰行於丑時。至後世子午流注鍼灸等家，始有為此說者，更為分時註釋。如果十二經分配十二時，則一時止行得一經，何以能八刻之一千八百息，脈行六十四丈八尺，而四度周於身也？又何以能十二時之一萬三千五百息，脈行八百一十丈，而五十度周於身也？況每經體有長短，穴有多寡，假如手少陰心止有九穴，左右計一十八穴，不過自手小指至肘上臑內而已。

Drip water down one quarter hour (water clock time measurement?), plan 135 rest (breath), blood vessels move 8x3.3m and one foot; 2 quarter hours, calculate 270 rest (breath), blood vessels pass 16x3.3m and 2 foot to make one circumference of the body; water drips down hundred quarter hours, calculate 13500 rest(breath), blood passes 810 quarter hours, in total day and night passes 50 degrees around the circumference of the body, equally not speak of hand tai yin passing to the time of the 3rd terrestrial branch (3-5am), hand yang ming passes to the 4th terrestrial branch (5-7am), foot yang ming passes to the 5th earthly branch (7-9am), foot tai yin passes to the 6th earthly branch (9-11am), hand shao yin passes to the 7th terrestrial branch (noon, 11-1pm), hand tai yang passes to the 8th terrestrial branch (1-3pm), foot tai yang passes to the 9th terrestrial branch (3-5pm), foot shao yin passes to the 10th terrestrial branch (5-7pm), hand jue yin passes to the 11th terrestrial branch (7-9pm), hand shao yin passes to the 12th terrestrial branch (9-11pm), foot shao yang passes to the 1st earthly branch (11-1am), foot jue yin passes to the 2nd earthly branch (1-3am). Arrive behind earthly branches and treat with needles and moxa accordingly, he says only then can you begin to govern, you interpret and explain divisions of units of time. If the result is that you can match 12 meridians with 12 earthly branches, whereby 8 quarter hours may become 1800 rests (breaths), blood passes 64x3.3m and 8 feet, and makes 4 circuits of the body? And whereby 12 divisions make 13500 rests (breaths), vessels pass 810 feet, and 50 circuits of the body? Moreover each meridian has its own short length, they have many numbered acupoints, supposing as if the hand shao yang meridian of the heart has 9 acupoints, left and right together that makes 18 acupoints, only passing from the tip of the little finger to the elbow and up along the inner arm (bicep) and then stopping.

今曰行於午時，其一時當得一千一百二十五息，脈行六十七丈五尺。較之足太陽膀胱經有六十三穴，左右共計一百二十六穴，直自目之內眥，上行於頭，轉至項後行背四行，下行委中，以至足之小指外側，其穴道身體盡一身之長，今曰行於申時，則一時之中，亦止得息數一千一百二十五息，脈數止得六十七丈五尺乎？其餘各經長短不同，又皆息數脈數，俱以一時之中而盡合乎？所謂一時止行一經者，實理勢之所必無也。彼或以二十三難，始從中焦始字，遂指寅為肺，便以卯為大腸，而直輪至丑為肝經耶？殊不知紀漏者，必始寅初一刻，而經脈運行之始，始於肺經，謂之始於寅時一刻則可，若泥定肺經，止行於寅時則非也。故自二刻一周身之後，又從中焦而起，一日一夜有五十次，起於中焦，合晝夜而皆然。不但寅時而已，何可以始於一刻，而遂指肺之脈行於寅時也。至有以餘時配各經者，又繆之繆矣。李東垣《此事難知集》、《鍼灸聚英》及歷朝太醫院刊勒諸

經穴名於石碑者，亦以各經分配各時，蓋相仍於後世醫籍，而未究經典耳。考《靈》、《素》，始知非軒岐之本旨也。】

Now we say that it circulates at noon, 1125 breath in one hour (@2 hours modern calculation), vessels pass 67 chang (3.3m) and 5 foot. Compared to bladder foot tai yang which has 63 acupoints, roughly adds up to 126 points, straight from out of the inner eye socket, passing upwards to the head, it turns to arrive at the back of the nape of the neck and then goes to the fourth vertebra of the back, it descends to BL40 wei zhong, to the outside edge of the little toe, the vessel pathway and acupoints passes along the length of the whole body, now we say it circulates at 3-5pm (9th earthly branch), in one hour, also you only count 1125 breaths, blood vessels travel 67 chang (3.3m) and 5 feet? The remaining vessels are shorter or longer and have different lengths, again both vessels and breath counting, how could they all match up the same? So called, in one hour only passes one vessel (disputing this theory), actually this is surely not logical.

[Other people say that in one hour the vessel will travel the length of one meridian but this is illogical as vessels have different lengths. He has taken the heart as the shortest vessel and the bladder as the longest vessel to illustrate this point.]

He might, according to the Nan Jing, chapter 23, only start counting from the middle jiao, so indicating the lung governed by 3-5am (3rd branch), and the 4th branch (5-7am) is governed by the large intestine, and it circulates around to the final branch which is the liver meridian? He might not

know about the water clock time measurements, the first quarter hour (of the whole cycle) must initially start from 3-5am (3rd branch), and the beginning of the vessels working starts with the lung vessel, if we say that the first quarter of the 3rd branch is governed by the lung vessel, but assuming that the lungs decide for the whole is not the rule for the whole of the 3rd branch.

Aka; he can agree that the circadian cycle starts at the 3rd branch at 3-5am but it is illogical to say that all meridians occupy the same length of time because in order for that to be true, they would all have to be the same physical length.

Hence after 2 quarter hours you make one circuit of the body, again, start from the middle jiao, there are 50 times (circuits) in one day and one night, and so match up/ no difference (join) daytime and night time. Not only does the 3rd branch start and stop, how can (you justify saying that if) it start from one quarter hour, and it follow that the passage of the vessels of the lung meridian would be pointing at the 3rd branch. It would have to therefore be that every remaining hour matched with a meridian, it is error upon error.

Li dong yuan (1180-1250) [This affair is difficult to understand] (his book)

Assembled flowers of acupuncture and moxibustion (book) and in ancient times, the medicine for the court published the names for the meridians and acupoints on a stone tablet, also using the matched pair of time and vessel movement, they copy them from previous generations as a medical record, and they haven't examined the classical texts. The ling shu and su wen, that it is not the original theory of Huang di.

...李東垣《此事難知集》、《鍼灸聚英》及歷朝太醫院刊勒諸經穴名於石碑者，亦以各經分配各時，蓋相仍於後世醫籍，而未究經典耳。考《靈》、《素》，始知非軒岐之本旨也。】

【張志聰曰：曰肺曰脈者，乃有形之臟腑經脈；曰太陰者，無形之六氣也。血脈內生於臟腑，外合於六氣，以脈氣分而論之，病在六氣者，見於人迎氣口，病在氣而不在脈也。病在臟腑者，病在內而外見於臟腑所主之尺寸也。合而論之，臟腑經脈內合五行，外合六氣，五六相得而各有合也。故曰，肺手太陰之脈，概臟腑經脈陰陽之氣而言也。此篇論營血，營行脈中，始於手太陰肺，終於足厥陰肝，腹走手而手走頭，頭走足而足走腹，環轉無端，終而復始。六臟之脈屬臟絡腑，六腑之脈屬腑絡臟，臟腑相連，陰陽相貫，先為是動，後及所生。是動者，病在三陰三陽之氣，而動見於人迎氣口，病在氣而不在經。故曰，盛則瀉之，虛則補之，不盛不虛，以經取之。謂陰陽之氣偏盛，淺刺絕皮益深，絕皮以瀉陰陽之盛，致穀氣以補陰陽之虛，此取皮腠之氣分而不及於經也。如陰陽之氣不盛不虛，而經脈不和者，則當取之於經也。所生者，謂十二經脈，乃臟腑之所生，臟腑之病外見於經證也。夫是動者，病因於外，所生者病因於內。

Zhang zhi cong says: speak of lung and speak of vessels, zang, fu and jing mai have physical form; speak of tai yin, 6 kinds of qi have no form. Blood vessels grow inside the zang fu, blood vessels join together outside with six qi, by means of qi and blood you can distinguish, disease is located in the 6 qi, it will show up on the radial pulse, disease is located in qi and not located in blood. When disease is located in the zang fu, the internal disease can be seen externally, the relevant part of the body will show the state of the zang and the fu. Generally talking, zang fu, jing mai unite internally via the 5 phases, and externally with 6 qi, they harmonise together reciprocally. Hence, hand lung tai yin is a vessel, then we would talk about the qi of that meridian in terms of zang fu, jing mai, yin yang. This chapter is talking about ying qi and blood, ying passes inside of the blood vessels, starting with the

hand tai yin lung, and finish at foot jue yin liver, it passes from the belly to the hand and from the hand to the head, from the head to the foot and from the foot to the belly, in a cycle without end, which restarts at the end. The vessel of the six zang belongs to the zang which is connected to the fu, the vessel of the six fu belongs to the fu which is connected to the zang, zang fu join reciprocally, yin yang reciprocally go through, the first action is movement, afterwards comes birth (things being created/parented). Movement is that which, disease is in the qi of three yin or three yang, and movement can be seen at ren ying (St9, carotid pulse) and at qi kou (cun kou, radial pulse), disease is located in qi and not located in vessels. Hence, in fullness you drain, in emptiness you strengthen, if not full or empty, you choose by the vessel. Talk about yin yang when the qi has a tendency to be full, you would do well to prick shallowly just below the skin, in order to drain the fullness of yin and yang, you send nutrient qi to fix emptiness of yin and yang, this affects the qi just below the skin and doesn't reach to the vessel. If the qi of yin and yang is neither full nor empty, and the blood vessels are not in harmony, then you should pick the vessel. When there is creation, is called the 12 jing mai, the zang fu is created, evidence of external disease of zang fu can be seen in the jing. In terms of that which make actions, when disease is caused externally, it creates in turn the cause of internal disease.

凡病有因於外者，有因於內者，有因於外而及於內者，有因於內而及於外者，有外內之兼病者，本篇統論臟腑經氣，故曰，肺手太陰之脈，曰是動，曰所生，治病者當隨其所見之證，以別外內之因，又不必先為是動，後及所生，而病證之畢俱也。是動則病，肺脹膨膨而喘欬，缺盆中痛，甚則交兩手而脅，此為臂氣厥逆之所致。蓋三陰三陽之氣，各循於手足之經氣，逆於外而病見於內也。所生者，肺臟所生之病，而外見於經證。夫五行之氣，五臟所主，而六腑為之合，故在臟則曰主肺、主脾、主心、主腎、主肝，在腑則曰主津、主液、主氣、主血、主骨、主筋，此皆臟腑所生之病，而外見於經證也。是主肺所生之病，故欬喘上氣，渴而煩心。肺主氣而為水之生原，肺乃心之蓋也，胸滿，膈臂痛，掌中熱，皆經脈所循之部而為病也。氣之盛虛者，謂太陰之氣也。肺俞在肩背，因氣而痛於俞，所謂氣傷痛也。溺色變者，氣虛而不化也。夫三陰三陽之氣，本於陽明胃腑所生，從手陽明之五里，而散行於膚表，肺主氣而外主皮毛，是以手太陰與手足陽明論氣之盛虛，其餘諸經，略而不論也。夫三陰三陽之氣，有因於本氣之盛虛，有因於外感風寒以致氣之盛者，故提於十二經之首，曰風寒汗出中風，蓋以申明三陰三陽之氣在表，而合於天之六氣也。為此是動所生諸病，盛則瀉之，虛則補之，熱則疾出其鍼以瀉其熱，寒則留之，以俟鍼下熱也。艾名冰臺，舉冰向日，能於冰中取火，故氣陷下者灸之，謂能起生陽之氣於陰中也。如陰陽之氣，無有盛虛，而所生之經脈不調者，則當取之於經矣。經者，肺手太陰之脈也。所謂氣之盛者，寸口大三倍於人迎，虛者，寸口反小於人迎也。】

Common diseases have an external cause, those which have an internal cause, external diseases can become internal, internal diseases can become external, there is a connection between internal and external diseases, the root of this chapter is to discuss how the zang, fu and channels govern qi, there is an old saying, vessel of lung tai yin, we say is movement, we say it creates/generates, it is that which governs disease which can be proven by looking at its location and trajectory, this makes it possible to differentiate between and internal or external cause, and it must not govern this first action, after it reaches the place of beginning, and it all ending is the proof of the disease. Indeed movement governs disease, lungs swell and bloat and gasp and cough, deficient ache in the central bowl, this governs the crossing of both hands and loss of vision, this then governs the location of rebellious qi of the arm. The qi that is hidden in three yin and three yang (channels), each complies with the qi vessels of the hand and the foot, rebellion on the outside will show internal disease. That

which is the location of life, the organ of the lung is the location of the birth of disease, and the meridians show evidence which can be seen in the exterior. The husband is the qi of the 5 phases, five zang govern location, and union is governed by six fu, the ancient law about the locations of the zang says the lung is the governor, governs spleen, governs heart, governs kidney, governs liver, the place of the fu is to govern fluid/humours, govern liquid (ye), govern qi, govern blood, govern bone, govern sinews, in this case all disease is located in the zang and the fu, and the evidence can be seen in the meridians at the exterior of the body. Indeed the birthplace of disease is in the lung, ancient coughing and gasping is qi rising up, thirst and anxiety. The lungs are the birthplace which governs qi and fluid, the lungs protect the heart, fullness in the chest, ache in the inner arm, heat in the centre of the palm, all meridians comply with the divisions and govern disease. Fullness and emptiness of qi, we call the qi of tai yin. Lung shu point is on the back of the shoulder, because there is pain at the shu point, so we say 'qi wound pain' (氣傷痛). Colour changes to the colour of drowning, and no change is emptiness of qi. Those qi of 3 yin and 3 yang, are the root of stomach yang ming and the birthplace of the fu, starting from hand yang ming 5 li point, (Co 13) and it scatters to display superficially in the skin, the lung governs qi and external skin and hair, indeed with hand tai yin and hand and foot yang ming is the discourse on emptiness and fullness of qi, it's excess in several meridians, approximately and not discussed. The qi of 3 yin and 3 yang, have the cause of emptiness and fullness rooted in qi, have the external causes of emptiness and fullness of qi in emotions, wind, cold, because first they are held in the 12 meridians, we say cold sweats are produced by wind stroke, qi is displayed by the 9th terrestrial branch of ming in the 3 yin and 3 yang, and the 6 qi unite in heaven. In this case we say that movement is the birthplace of many diseases, in case of excess then drain, in case of deficiency then nourish, in the case of hot disease, prick with a needle to drain heat, in cold retain the needles, and by means of the needle you can reduce fever. Moxa is called the platform of ice, it raises up ice toward the sun, it can take fire into the centre of ice, because moxa can submerge qi, we say that yin is at the core of qi which enables the beginning of yang. If yin and yang qi, does not have emptiness and fullness, and the birthplace does not move through the jing mai, this is the law which governs the meridians. On meridians, lung hand tai yin is the vessel. We say it is the qi of abundance, if the radial pulse is 3 times stronger than the carotid pulse, in deficiency, if the radial pulse is, on the contrary, 3 times weaker than the carotid pulse.

肺臟形象之圖

A picture of lung zang

見圖 see diagram (no diagram!)

【尚御公曰：臟腑之氣，候見於手太陰之寸關尺，人迎氣口，左右之寸口也，候法不同，各有分別，故首提曰肺手太陰之脈，復曰氣有盛虛，曰人迎氣口。書不盡言，義已櫟括，讀者當繹思之。金西銘曰：終始篇云，少氣者，脈口人迎俱少而不稱尺寸也。言人迎氣口，轉應於尺寸，是尺寸與人迎氣口各有分別。張玉師曰：人迎氣口，以左右分陰陽。臟腑之脈，以尺寸分陰陽。】

Shang Yu gong says: Qi of the zang fu, in the three distal (寸 cun), middle (關 guan) and proximal (尺 chi) pulses, expect to see hand tai yin, carotid pulse and radial pulse, radial pulse is on the left and the right, diagnose if not the same, each has its own quality, hence first hold the vessel of lung hand tai yin, again it will say if there is excess or deficiency of qi, radial pulse or carotid pulse will say. The book cannot explain everything, the meaning is already hidden in it, he who studies it should undertake to interpret it with much careful consideration. Western gold/metal engraving says (or 金 could be the name of a dynasty, person, engraving): the start and finish chapter says, small qi, blood vessel of carotid pulse is small and has no size. Talk about carotid pulse and radial pulse, should have size, indeed the size of carotid pulse is individual on each side (left and right). 張玉師 says: carotid pulse and radial pulse, by means of the left and right you can tell the difference between yin and yang. Vessels of zang and fu, can tell the difference in yin and yang by the size.

【《難經》云：肺重三斤三兩。六葉兩耳，凡八葉。主藏魄，四垂如蓋，附著於脊之第三椎中，有二十四空，行列分布諸臟之氣，為諸臟之華蓋。人有二喉，前喉為喉嚨，通於五臟，主氣出入。《靈樞》憂患無言篇云：咽喉者，氣之所以上下者也。後喉為咽，主納水穀，通於六腑。憂患無言篇云：咽者，水穀之道也。《難經》云：喉嚨重十二兩，廣二寸，長一尺二寸，九節。咽門重十二兩，廣二寸半，至胃長一尺六寸。腸胃篇伯高曰：咽門重十兩，廣長同。《素問》靈蘭秘典論云：肺者相傳之官，治節出焉。《靈樞》本臟篇云：肺小則少飲，不病喘喝；肺大則多飲，善病胷痺，喉痺，逆氣。肺高則上氣喘息，欬；肺下則居賁迫肺，善脅下痛。肺堅則不病欬上氣，肺脆則苦病消瘵易傷。肺端正則和利難傷，肺偏傾則胸偏痛也。又云：白色小理者肺小，粗理者肺大；巨肩反膺陷喉者肺高，合腋張脅者肺下；好肩背厚者肺堅，肩背薄者肺脆；背膺厚者肺端正，脅偏疏者肺偏傾也。】

Nan Jing says: the lung weighs 3x half kilo and 3x 50g. 6 leaves and 2 ears, adds up to 8 leaves. It is the master which conceals the spirit (po 魄), four hang down/droop like a cover, adhere to the backbone at the level of the middle of the third vertebra, there are 24 empty spaces, qi of the zang circulates through various ranges, a flowery cover (canopy) which governs various zang, Man has 2 喉 (throat/ gullet/ larynx (2 pipes in the throat?)), The forward throat (trachea) is the throat throat, passes through to 5 zang, governs the exit of qi from the man. It is 2 cun wide, and 1 foot, 2 inches long,

Ling Shu ch 69 says: Pharynx and larynx, is the place where the qi goes up and down, back gullet is the throat throat, governs the admittance of water and grain, goes through to the 6 fu. Ch69 says: The gullet is the way for water and food. Nan Jing says: The gullet weighs 12x50g (600g), with 9 sections. Swallowing gate (gullet) weighs 12x50g (600g), 2.5 cun wide, distance to the stomach is one foot and 6 inches (cun). Intestine stomach 腸胃篇伯高 chapter says: the gullet weighs 10x 50g (500g), and width is the same as the length.

Su Wen ch 8 says: The lungs are the official which reciprocally pump, control the breathing.

Ling Shu ch47 says: if the lung is small then there will be fewer swallow (breath in?), no sickness panting and shouting, with a big lung is much swallow (breath in), fullness and distension disease and paralysis of the chest, throat paralysis, and rebellious qi. If the lungs are lifted then the qi rises up and gasping/panting stops, cough; if the lungs are down then they force, coerce and there will be

pain in the lower ribs. If the lungs are strong then there is no disease or cough and the qi rises, if the lungs are brittle/ fragile then there is suffering, sickness, dryness and you easily fall ill. If the lungs are correct then it is hard to fall ill, if the lungs are slanted then there will be pain and the chest will be slanted.

And again: A small white colour is the sign of small lungs, he who has large lungs will be rough and coarse (robust?). He who has large lungs will have a deep throat, large shoulders and an inverted chest, join the armpits and stretch the ribcage for small (inferior) lungs, he who has strong lungs has good shoulders and a thick back, he who has fragile lungs has a weak back, he who has upright lungs has a thick chest and back, he whose lungs are inclined to one side has careless slanting ribs.

【馬蒔曰：欲明經脈，須熟穴名，徐氏歌俱自井榮而始，殊非本篇各經起止正義。滑氏歌合於起止，似無意味，讀者難之。今各陰經照滑氏，陽經照徐氏，則合於起止，且長短句法，亦照徐氏，學者頗便。惟先熟穴名，而經脈自了然矣。

俗醫云：吾大方脈，非鍼灸科，何須識各穴名？此所以為庸下，而不能入軒岐正脈也。】

Ma shi said: I want to make clear the jing luo, you must be familiar with acupoint names, the teaching songs (odes?) of xu 徐氏 begin with the well points, it is different with this chapter each meridian starts and stops according to its proper conduct. The odes of hua 滑氏 match the stop and start with this chapter, but it seems to lack meaning, he reads that which is difficult to understand. Now each yin meridian according to hua's ode, yang jing luo reflect the xu ode, their union fits with starting and stopping, moreover the sentence is the law of short and long (rhythm), this is also according to the xu ode, this learning is very convenient. But first the student must be familiar with acupoint names, and then certainly you will be familiar with the jing luo.

Low level doctor says: We know about a big area of blood vessels, and we are not in the needle and moxa science department, why must we recognise every acupoint? Actually this is mediocre, and you will not be able to join the straight road of the Yellow Emperor and Qi Bo.

【[肺經諸穴歌]手太陰，十一穴，中府雲門天府列；俠白下尺澤，孔最見列缺；經渠太淵下魚際，抵指少商如韭葉。古離爪甲如韭，今如米許。】

'Lung vessel ode of several points',

11 acupoints, central storehouse (lu 1), cloud gate (lu2), celestial storehouse (lu 3) in a line: white guard (lu 4) is below foot marsh (lu5), great hole (lu 6) sees broken sequence (lu7); in the channel ditch (lu 8) and great abyss (lu9) is below fish border (lu10), opposite the finger fewer shang (lu11) is the distance of a leek leaf from the fingernail. As if it is the distance of a Chinese scallion leaf away from the fingernail, now it is like a grain of rice.

【[分寸歌]太陰肺兮出中府，雲門之下一寸許。雲門璇璣旁六寸，巨骨之下二骨數。天府腋下三寸求，俠白肘上五寸主。尺澤肘中約橫紋，孔最腕上七寸取。列缺腕側一寸半，經渠寸口陷中是。太淵掌後橫紋頭，魚際節後散脈舉。少商大指端內側，此穴若鍼疾減愈。】

【Small thumb song】

Lung tai yin exits at central storehouse (lu 1), cloud gate (lu 2) is one cun below. Cloud gate (lu 2) is next to jade pearl/big dipper/plow (Ren 21) 6 cun, large bone (Co16) is under 2 bones (acromioclavicular joint). Celestial fu (lu3) is found 3 cun below the armpit, white knight is five cun above the elbow. Foot marsh is in the centre of the elbow on the horizontal crease, extreme opening (lu 6) is 7 cun proximal to the wrist crease. Broken sequence (lu 7) is 1.5 cun beside the wrist, branch ditch (lu 8) is sinking on the radial pulse. Great abyss (lu 9) is on the horizontal crease proximal to the palm of the hand, fish border (lu 10) is past the joint where the blood vessels scatter. lesser shang (lu 11) is on the thumb on the inside of the thumb nail, if you prick these points then disease will diminish.

【雲門：巨骨下，俠氣戶旁二寸陷中，去中行任脈六寸。氣戶：巨骨下，去俞府兩旁各二寸陷中，去中行任脈四寸，去膺窗四寸八分。俞府：巨骨下，璇璣旁二寸陷中。璇璣：天突下一寸。天突：結喉下四寸宛宛中。凡十一穴。】

Cloud gate (lu 2): is below the large bone (Co 16), is 2 cun lateral to qi door (St 13) sinking into the hole, it is 6 cun lateral to ren mai. Qi door (St 13): is below big bone (Co 16), it is on the same level as Shu storehouse (K 27) both side by side 2 cun in the sinking into the central space between the ribs, away from the centre about 4 cun lateral to ren mai, 4 cun 8 fen lateral to breast window (St 16). Shu storehouse (K27): is below big bone (Co 16), near to jade big dipper (Ren 21) 2 cun sinking into the centre. Jade big dipper (Ren 21): is one cun below celestial chimney (Ren 22). Celestial chimney (Ren 22): four cun below the laryngeal

prominence and seems in the centre. All 11 acupoints.

【右挨穴之法，由天突起至璇璣，由璇璣至雲門，其法甚簡。後倣此。】

This is the law for remembering acupoints, from tian tu (Ren 22) you reach jade big dipper (Ren 21), from jade big dipper (Ren 21) you reach cloud gate (lu 2), this rule is succinctly put, the following text imitates this.

Colon meridian

(Ling Shu ch 10 Jing Mai) 大腸手陽明之脈，起於大指次指之端，循指上廉，出合谷兩骨之間，上入兩筋之間，循臂上廉，入肘外廉，上臑外前廉，上肩出髃骨之前廉，上出於柱骨之會，上下入缺盆，絡肺下膈屬大腸。其支者，從缺盆上頸貫頰，入下齒中，還出挾口，交人中，左之右，右之左，上挾鼻孔。是動則病齒痛頸腫。是主津液所生病者，目黃口乾，鼽衄喉痺，肩前臑痛，大指次指痛不用。氣有餘則當脈所過者熱腫，虛則寒慄不復。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛以經取之。盛者人迎大三倍於寸口，虛者人迎反小於寸口也。【髃，音魚。鼽，音求。衄，女六切。】

Meridian of Colon hand yang ming, starts at the end of the finger that points (index) next to the thumb, goes up the finger to the upper ridge of the forearm (Co 9 上廉), exits at he gu (co 4 合谷) between 2 bones, goes up between 2 sinews, follows the line of the arm to Upper Ridge (Co 9), enters the elbow at the outer ridge, goes up the soft outside of the upper arm on the outer ridge, goes up to the shoulder and exits at the collarbone in front of the ridge, goes up and exits at the meeting of the pillar bone (acromioclavicular joint), it goes and then goes down to join with Empty Basin (St 12 缺盆), connects with the lungs and descends through the diaphragm to the large intestine. It has a branch which goes up through the throat to the jaw/cheek, joins down into the teeth, also goes out through the mouth, to join at human centre (Du 26 人中), left to right and right to left, underneath the nostrils. Verily pain is in swelling and pain of the teeth and throat, the birthplace of disease is governed by the saliva, yellow eyes and dry mouth, clogged nose and numbness/paralysis of the throat, pain in the front of the shoulder and the soft upper arm (bicep/tricep), you do not use when there is pain in the thumb and index finger. When there is excess qi then the pathways will be hot and swollen, when there is deficiency there will be cold and shivering. This is the rule of several diseases, the rule of excess is to drain, the rule of deficiency is to repair, the rule of hot disease is to expel, the rule of cold is to detain the needles, if it is sinking then use moxa, if it neither full nor deficient then take the meridian/vessel. If it is 3 times bigger at the carotid pulse than at the radial pulse, if it is deficient then the carotid pulse is less than the radial pulse.

[pronunciation of words in brackets]

【馬蒔曰：此言大腸經脈氣之行，乃為第二經也。大指次指者，手大指之次指，即第二指名食指也。肺經本出於大指，而大腸經則出於次指，茲言大指次指者，乃大指之次指，非言既出於大指，而又出於次指也。循指之指，正次指也。合谷者，本經穴也，俗名虎口。肩端兩骨間為髃骨。肩髃上際處為天柱骨。缺盆在結喉兩旁之高骨，形圓如缺盆，然乃足陽明胃經穴也。頭莖為頸，耳以下曲處為頰。

Ma Shi said: This talks about the pathway of movement of qi of the large intestine, it is the 2nd meridian. It is not about the thumb and index finger, thumb of the hand and index finger, the name of the 2nd finger is 食指. Lung meridian exits at the thumb, and the large intestine exits from the index finger, this is talking about the index finger, the one next in sequence to the big finger (thumb), it's not talking about the meridian coming from the thumb, it's just coming from the index finger. The correct finger in the sequence is the second finger or index finger. Talk about He gu (Co4), is an acupoint of this meridian, it's proper name is tiger's mouth. At the end of the shoulder there are 2 holes in the bone space which is governed by the clavicle bone (Co15 髃骨). The high point of the shoulder bone is the place which governs the celestial pillar (Bl16 天柱) bone (occiput?). It connects to Empty Basin (St 12) which is located at the high point of the bone either side of the gullet, (supraclavicular space), the shape is round like an empty basin, but it an acupoint of the foot yang ming stomach meridian. The head is on top of the stem of the throat, in the position below the ear where the jaw bends.

言大腸者，乃手陽明經之脈，受手太陰之交，遂起於次指之端，循此次指之商陽、二間、三間之上廉，出合谷穴，在兩骨之間，又上陽谿穴，即兩筋之間，又循臂之上廉，偏歷、溫溜、下廉、上廉、三里，入肘外廉之曲池穴，上循臑外之前廉，歷肘髃、五里、臂臑以上肩之肩髃穴，

又出髑骨之前廉，循巨骨穴上出天柱骨之會，上會於大椎，自大椎而下入缺盆，循足陽明經脈外絡繞肺臟，復下膈當天樞之外，會屬於大腸也。其支別者，雖由偏歷而入，又自缺盆上行於頸，循天鼎扶突上貫於頰，入下齒縫中，復出挾口兩吻，相交於人中之內，左脈往右，右脈往左，上挾鼻孔，循禾膠、迎香而終，以交於足陽明胃經也。

Talk about the large intestine, the meridian of hand yang ming, it connects to hand tai yin, the end of it begins at the next finger in sequence, shang yang (Co 1) obeys this following sequence, 2nd space (Co2). 3rd space (Co 3) rise straight up, the acupoint exits at he gu (Co 4), located in the space between 2 bones, and moves up to acupoint yang ravine (Co 5), and follows straight up the arm, to inclined to one side passageway (Co 6), warm dwelling (Co 7), lower ridge (Co 8), upper ridge (Co 9), 3 Miles (Co 10) (matches zu san li), joins straight at the outside of the elbow to pool at the bend acupoint (Co 11), it goes straight up in front along the outside of the soft part of the upper arm (biceps), to elbow bone hole (Co 12), 5 miles (Co 13), it goes up along the soft part of the arm to the high point of the shoulder to acupoint shoulder bone (Co 15), and exits in front of shoulder bone (Co 15), it follows great bone (Co 16) and exits straight to join with celestial pillar bone (Bl 10, occiput), it rises and joins with Du 14, and from big hammer (Du 14) it descends and joins to empty bowl (St 12), it follows the foot yang ming meridian and wraps around the outside of the lung organ, it returns under the diaphragm and goes to the outside of celestial pivot (St 25), joins with the large intestine. Its branch separates, although it can cause it to join and be slanted, and it moves up from empty bowl (St 12) into the throat, passes to celestial tripod (Co 17) and protuberance assistant (Co 18) and goes up through to the jaw, it comes and joins into the gaps between the teeth (alveolar nerve?), turns and exits into the mouth and the 2 lips, which mutually intersect at the centre of the inside of the man (Du 26)(joining of facial artery in philtrum?), the blood vessel goes from left to right, the blood vessel goes from right to left, it rises up to the nostrils, and becomes grain bone hole (Co 19) and finally ends at welcome fragrance (Co 20), the meridian can join here with the foot yang ming stomach meridian.

及其動穴驗病，則為齒痛，以脈入齒縫也；為頸腫，脈上行也。是主津液所生之病耳。又有諸病之生，或出本經，或由合經。為目黃，大腸內熱也。為口乾，脈挾口也。為齕為衄，脈挾鼻孔也。為喉痺，脈出挾口也。為肩之前臑痛，脈上臑肩也。為大指之次指不能舉用，井榮五俞，皆由次指而上也。其邪氣有餘而實，則凡脈所經過者，皆熱而腫；其正氣不足而虛，則為寒慄不能遽復。然盛則當瀉之，虛則當補之，熱則瀉者疾去其鍼，寒則補者久留其鍼，脈陷下者則用艾以灸之，若不盛不虛，則止以本經取之，而不必求之手太陰肺經也。所謂盛者，何以知之？人迎較寸口之脈，三倍而躁，則大腸經為實，如終始篇所謂瀉手陽明大腸而補手太陰肺者是也。虛者何以知之？人迎較寸口之脈，三倍而小，則大腸經為虛，如終始篇所謂瀉手太陰肺，而補手陽明大腸者是也。】

You can examine the movement at the acupoint to test for disease, the laws which govern toothache, by means of the arteries that enter into the teeth; the laws of swelling of the neck, by means of the vessel which passes up. Indeed saliva (parotid gland?) is the governor which gives birth to diseases. And has various diseases that it engenders, or which go out through the root of this meridian, or cause to unite in this meridian. When there is yellow in the eyes, (which indicates?) large intestine internal fire. It governs dryness of the mouth, with the blood vessels which clasp/ join at the mouth. When there is blocked nose or a bleeding nose, the blood vessels join together at the nose. It governs paralysis of the throat, the blood vessels exit together at the mouth. It governs pain in the

soft tissue in the front of the shoulder, blood vessels go up along the soft tissue of the shoulder. It governs not being able to raise or use the finger next in sequence (index) to the big finger (thumb), the movement of fluid at the well point is 5 transporting points, and is the cause for moving up along the sequence, evil qi in this finger has excess and solidity, this is a common rule where blood vessels pass through, and there will be heat and swelling; if the good/correct qi is deficient, then there will be cold and shivering will not allow to recover rapidly. In the case of excess then drain, in the case of deficiency then strengthen, in the case of cold then repair and retain the needles, when the blood vessels sink then use moxa, if there is neither excess nor deficiency, then retain to treat the root of the meridian, and you do not need to treat on the meridian of lung hand tai yin. To talk about excess, how can you tell? The carotid pulse can be compared to the radial pulse, if it is three times more and excited, then large intestine meridian is solid, if at the end and the beginning this chapter deals with the names of the places where you drain in the hand yang ming large intestine meridian and indeed where you repair on the meridian of hand tai yin lung.

【張志聰曰：是動則病齒痛頸腫者，蓋氣傷痛，形傷腫，因氣以及形也。大腸傳導水穀，變化精微，故主所生津液病則津液竭而火熱盛，故為目黃口乾衄衄喉痺諸證。肩髃及大指之次指，皆大腸經脈所循之部分，如腑氣有餘，則當脈所過之處熱腫，腑氣虛則寒慄不復，手陽明之主氣也。為此是動所生諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛以經取之。盛者，人迎大三倍於寸口，虛者，人迎反小於寸口也。蓋申明盛虛者，乃三陰三陽之氣，如氣不盛，虛則當取之於經。】

Zhang zhi cong says: When there is disease in the teeth and swelling in the neck, would be hiding that the qi has been injured and gets pain, when the body is injured you get swelling, because qi manifests as the bodily form. Large intestine transmits the pathway of water and food, transforms and changes (water and food) into essence, hence it governs the birthplace of fluid based diseases and when saliva is exhausted then then heat and fever will flourish, so when the eyes are yellow mouth is dry nose is clogged and bloody these are the symptoms of various diseases. From shoulder and upper arm and going to index finger, is the area that is governed by the large intestine meridian, if the bowels have excess qi, then where the vessel passes will be hot and swollen, when the qi of the bowel is deficient then there will be cold and cannot stop shivering, it governs the qi of hand yang ming. Then this is the birthplace of various diseases, in the case of excess, then drain, in the case of deficiency repair, when heat then use the needles quickly, retain for cold, if the vessel is sinking use moxa, if neither excessive nor deficient then treat on the meridian. If it is flourishing then the carotid pulse will be 3 times stronger than the radial pulse, if it is deficient then the carotid pulse will be less than the radial pulse. This will clarify deficiency and excess, in the qi of 3 yin and 3 yang, if qi is neither flourishing, nor empty then it will pass through the meridian.

【平人絕谷篇伯高曰：迴腸大四寸，徑一寸寸之少半，長二丈一尺，受穀一斗，水七升半。《難經》云：大腸重二斤十二兩，長二丈一尺，廣四寸，徑一寸，當齊右迴十

In 32nd chapter of Ling Shu 伯高(bo gao)says: The circumference of the large intestine is 4 cun, the diameter is 1 cun then it is less than half, the length is 2 units one foot, can contain about one measure of grain, water 7.5 measures.

Nan Jing says: large intestine is about 2x0.5 kilos and 12 ounces, length is about 2 chang and 1 foot, width is 4 cun, diameter is one cun, it circles in a clockwise direction 10 times

大腸腑形象之圖

Diagram of the large intestine bowel shaped like an elephant

見圖

See diagram

大腸經諸穴之圖

Diagram of the acupoints of the large intestine meridian

見圖

See diagram

六曲。《素問》靈蘭秘典論云：大腸者，傳導之官，變化出焉。《靈樞》本臟篇云：肺應皮。皮厚者大腸厚，皮薄者大腸薄；皮緩腹裏大者大腸大而長，皮急者大腸急而短；皮滑者大腸直，皮肉不相離者大腸結。】

6 crooked. [su wen] The secret treatise of the Spiritual Orchid says: large intestine, large intestine is the official which guides and transmits, then change goes out. [Ling shu] chapter on the root of the zang says: lung is related to skin. If you have thick skin you have thick large intestine, if you have thin skin you have thin large intestine; if skin covers a large abdomen then the large intestine will be large and long, if the skin is pressing then the large intestine will be short and hurried; if the skin is slippery then the large intestine will be upright/proper, if the skin and flesh are not mutually separate, then the large intestine is knotted.

【[大腸經諸穴歌]手陽明，廿穴名，循商陽二間三間而行，歷合谷陽谿之俞，過偏歷溫溜之濱。下廉上廉，三里而近。曲池肘髎，五里之程。臂臑肩髃，上於巨骨，天鼎紆乎扶突，禾髎脣連，迎香鼻迫。】

[Ode for the points of large intestine meridian]

hand yang ming, 20 acupoint names, follow shang yang (Co1) 2nd space (Co2) 3rd space (Co 3) and circulate, pass through to union valley (Co4) yang ravine (Co5) transporting points, move on to inclined passageway (Co6) warm dwelling (Co7). Lower ridge (Co8) and upper ridge (Co9), three miles (Co10) and approach. Crooked Pool (Co11) Elbow foramen (Co12), five miles (Co13) sequence. Upper arm (Co14) Shoulder clavicle (Co15), up to Great Bone (Co16), Celestial tripod (Co17) bent Protruberance Assistant (Co18), Grain foramen (Co 19) joins at the lips to Receive Fragrance (Co20).

【[分寸歌]商陽食指內側邊，二間來尋本節前。三間節後陷中取，合谷虎口岐骨間。陽谿上側腕中是，偏歷腕後三寸安。溫溜腕後去五寸，池前五寸下廉看。池前三寸上廉中，池前二寸三里逢。曲池曲骨紋頭盡，肘髎大骨外廉近。大筋中央尋五里，肘上三寸行向裏。臂臑肘上七寸

量，肩髃肩端舉臂取。巨骨肩尖端上行，天鼎喉旁四寸真。扶突天突旁三寸，禾髃水溝旁五分。迎香禾髃上一寸，大腸經穴自分明。左右凡四十穴。】

[Ode to divide into inches (i.e. how to locate)]

Shang yang (Co1) is on the index finger on the slanting medial side, 2nd space (Co2) is in front of the root of the joint. 3rd space (Co3) is behind the joint, where you sink into the middle, union valley (Co4) is the tiger's mouth in the fork between the bones. Yang ravine (Co5) moves up into the centre of the slant of the wrist, inclined passageway (Co6) is 3 cun behind the wrist. Warm dwelling (Co7) is five cun away behind the wrist, below the pool, 5 cun, you will find lower ridge (Co8) [i.e. 5 cun below Co11 曲池 crooked/at the bend pool] . Below the pool 3 cun in the upper part is upper ridge (Co9) (returning to the other distances in CICM and GtW), below the pool 2 cun you will come upon 3 miles (Co-10). Pool at the bend (Co11) is on the line at the top of the crooked bone, elbow foramen (Co12) is on the outside of the bone near to the upright bone. In the centre of the large tendon you look for 5 miles (Co13), above the elbow, 3 cun, you move towards the interior. Upper arm (Co 14) is measured above the elbow, 7 cun, shoulder foramen (Co15) is at the end of the shoulder when you lift up the arm. Great bone (Co 16) is at the end of the fork in the shoulder as you pass up, celestial tripod is on either side of the throat, 4 cun. Support protruberance is close to celestial protruberance 3 cun, grain foramen is 5 fen from the side of the water ditch (corner of the mouth where drool comes from?). welcome fragrance is above grain foramen 1 cun, large intestine acupoints locations are made clear. Left and right in total makes 40 acupoints.

Stomach meridian

胃足陽明之脈，起於鼻之交頰中，旁約太陽之脈，下循鼻外，上入齒中，還出挾口環脣，下交承漿，卻循頤後下廉，出大迎，循頰車，上耳前，過客主人，循髮際至額顙；其支者，從大迎前下人迎，循喉嚨入缺盆，下膈屬胃絡脾；其直者，從缺盆下乳內廉，下挾臍，入氣街中；其支者，起於胃口，下循腹裏，下至氣街中而合，以下髀關，抵伏兔，下膝臑中，下循脛外廉，下足跗，入中指內間；其支者，下廉三寸而別，下入中指外間；其支者，別跗上，入大指間，出其端。是動則病洒洒振寒，善呻數欠，顏黑，病至則惡人與火，聞木聲則惕然而驚，心欲動，獨閉戶塞牖而處，甚則欲上高而歌，棄衣而走，賁響腹脹，是為飧厥。是主血所生病者，狂瘧溫淫，汗出鼽衄，口喎脣胗，頸腫喉痺，大腹水腫，膝臑腫痛，循膺、乳、氣街、股、伏兔、飧外廉、足跗上皆痛，中指不用。氣盛則身已前皆熱，其有餘於胃，則消穀善饑，溺色黃。氣不足則身已前皆寒慄，胃中寒則脹滿。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛以經取之。盛者人迎大三倍於寸口，虛者人迎反小於寸口也。【頰，音遏。顙，音盧。髀，音彼。臑，音賓。數，音朔。飧，音干。喎，苦乖切。】

Stomach foot yang ming meridian, arises by the nose (a. in the small gap on the bridge of the nose) (b. and makes a bridge which joins in the centre), not far away from tai yang (bladder meridian BL-1)), it goes down the outside of the nose, goes up and joins in the teeth, (trigeminal nerve V3?) it also goes out around the mouth and encircles the lips, but follows straight down and behind the jaw, exits at da ying (St 5), it travels up to joint of the lower jaw bone (St-6), and goes through GB-3 (客主

人 ke zhu ren, alternate name for shang guan, upper gate), it arrives at the hairline at the forehead of the skull; There is branch, by which St-5 great welcome goes down to St-9, man's welcome, (facial artery to common carotid), it follows the throat and comes down into empty basin St-12, it goes down through the diaphragm to wrap around the stomach and spleen; this is that which is straight, from St-12 empty basin it goes straight down to the inside of the breast, down to the side of the umbilicus, joins with qi street (St-30); This branch, goes up to the mouth of the stomach, through the inside of the abdomen, goes down to qi street (St-30) and unites, goes down to thigh joint (St-31) (outer aspect of the inguinal region, lateroanterior aspect of the thigh), it presses against St-32 hidden rabbit, and goes down to the kneecap, it goes straight down the outside of the shin, to the instep of the foot, it joins to the central toe in the internal space; There is a branch, which goes straight down 3 cun and divides, it goes down to the central toe in the outside space; there is a branch, which goes to the top of the instep, it joins with the space by the big toe, and exits at the end. Disease arising from shivering and cold, the face is black, when the disease is extreme he loathes people and fire, at the sounds of wood he will be alarmed and surprised, his heart is agitated, he locks himself up alone, seals himself away from his family and from windows, he goes up to high places to sing, he takes off his clothes and runs around, he forges ahead, makes sound and his abdomen swells, this is the way of the shinbone 肝厥(liver reversal 肝厥).

【馬蒔曰：此言胃經脈氣之行，乃為第三經也。山根為頰，頰下為頤，頤中為頤，頤上為髮際，髮際前為額顙，股內為髀，髀前膝上起肉處為伏兔，伏兔後為髀關，挾膝筋中為臄，脛骨為胛，足面為跗也。足陽明胃經之脈，受手陽明之交，起於鼻之兩旁迎香穴，上行而左右相交於頰中，過睛明之分，下循鼻外，歷承泣、四白、巨髃，上入齒中，還出挾口兩吻地倉，環繞唇下左右，相交於承漿，卻循頤後下廉，出大迎，循頰車，上耳前，歷下關，過客主人，循髮際，行懸釐、頤厭之分，經頭維會於額顙之神庭。其支別者，從大迎前下人迎，循喉嚨，歷水突、氣舍入缺盆，行足少陰肱府之外，下膈當上脘、中脘之分，屬胃絡脾。其直行者，從缺盆而下，下乳內廉，循氣戶、庫房、屋翳、膺窗、乳中、乳根、不容、承滿、梁門、關門、太乙、滑肉門，下挾臍，歷天樞、外陵、大巨、水道、歸來諸穴，而入氣衝中。又其支者，自屬胃處起胃下口，循腹裏，過足少陰肱府之外，本經之裏，下至氣衝中，與前之入氣衝者合，既相合於氣衝，乃下髀關，抵伏兔，歷陰市、梁丘，下入膝臄中，經犢鼻，下循胛外廉之三里，巨虛上廉，條口，巨虛下廉，豐隆，解溪，下足跗之衝陽、陷谷，入中指外間之內庭，至厲兌穴而終也。

Ma shi said; this talks about the passage of the qi of the stomach meridian, this is the 3rd meridian in the sequence. 山根 (shan gen, mountain root, area between the inner canthi of the eye) is at the root of the bridge of the nose, 頤 (chin) can be found below 頰 (the cheek), the jaw is found at the centre of the jaw, the corner of the hairline is up from the cheek, the forehead of the skull is in front of the corner of the hairline, inside the thigh is the thighbone (femur), from the thigh it goes forward along the highest part of the muscle of the thigh to (伏兔 St-32 hidden rabbit), from hidden rabbit it goes behind to 髀關 St-31 thigh pass, down to the knee tendons in the centre of the kneecap, along the shinbone, to the face (top) of the instep of the foot (dorsum). The blood vessel of foot yang ming meridian, is joined to the hand yang ming, both start off together by the side of the nose at 迎香 Co-20 Welcome Fragrance acupoint, they pass up and reciprocally interchange from left to right at the centre of the nose, pass through 睛明 BL-1 Bright Eyes, go down on the outside of the nose, to

承泣 St-1 Receive Tears, 四白 St-2 Four Whites, 巨髎 St-3 Great Foramen, goes up to join in the centre of the teeth, and goes out around the lips to 地倉 St-4 Earth Granary, it forms a ring around the lips from left to right, reciprocally exchanges and becomes Ren 24 承漿, Cheng Jiang receive broth, it follows the line of the jaw and passes straight down, and exits at 大迎 St-5 Great Welcome, it follows 頰車 St-6 cheek carriage (zygoma?), and goes up in front of the ear, to 下關 St-7 Lower Gate, it passes through 客主人 GB-3 Guest, Master man, and goes up to the hairline, it goes to GB-6 懸釐 suspended tuft, and close to 額厭 GB-4 Forehead Fullness, and passes through the head to the forehead to meet at GV-24 Spirit Courtyard. It has a branch which separates, and goes to St-9 人迎 Man welcome, it follows the gullet, to St-10 water prominence, St-11 qi abode joins to 缺盆 St-12 Empty Basin, it circulates outside around foot shao yin Kid 27 acupoint treasury, and goes down through the diaphragm to the highest point of the stomach, between 中脘 Ren 12 centre of the stomach, the stomach is connected to the spleen. This is the path which goes straight (main part), it goes from St-12 Empty Basin, down to the inside of the breast, follows 氣戶 St-13 Qi Door, 庫房 St-14 Storehouse, 屋翳 St-15 Building Screen, 膺窗 St-16 Breast Window, 乳中 St-17 Centre of the Nipple, 乳根 St-18 Breast Root, 不容 St-19 Not Welcome, 承滿 St-20 Inherit and Fill, 梁門 St-21 Beam Gate, 關門 St-22 Pass Gate, 太乙 St-23 Great 2nd heavenly stem, 滑肉門 St-24 Slippery Meat Gate, down to wrap around the umbilicus, takes 天樞 St-25 Celestial Pivot, 外陵 St-26 Outer Mound, 大巨 St-27 Big Great, 水道 St-28 Aqueduct/Sewer, 歸來 St-29 Return Home various acupoints, and join inside 氣衝 St-30 Qi Chong. Also there is a branch, which belongs to the stomach channel which goes from around the mouth down, and follows on the inside of the abdomen, and passes through foot shao yin to the outside of 育俞 Kid-16 Huang shu, it is inside the root of the meridian, and goes down to join with 氣街 St-30 Qi Street, and in front they meet at St-30 Qi Street and combine together, since they reciprocally combine at St-30 Qi Street, then to 髀關 St-31 Thigh Pass, offset to 伏兔 St-32 Crouching Hare, to 陰市 St-33 Yin Market, 梁丘 St-34 Beam Hill, comes down to join in the centre of the kneecap, pass through 犢鼻 St-35 Calf's Nose, it goes down following the outer face of the shinbone to St-36 three miles, St-37 Upper great empty hollow, St-38 ribbon mouth, St-39 Lower Great Empty Hollow, St-40 Bountiful Bulge, St-41 Ravine divide, to the instep of the foot at 衝陽 St-42 Yang chong, 陷谷 St-43 Hidden Valley, down to the space in between the outside of the toe 內庭 St-44 Inner Courtyard, arrive at 厲兌 St-45 Grind and Barter where the meridian ends.

其絡脈之支別者，自膝下三寸，循三里穴之外別下，歷上廉、條口、下廉、豐隆、解谿、衝陽、陷谷，以至內庭、厲兌而合也。又其支者，別跗上衝陽穴，別行入大指間，出足厥陰行間穴之外，循大指下，出其端，以交於足太陰也。及其動穴驗病，陽明虛則洒洒振寒，善呻且數，數而欠。瘡論云：陽明虛則寒慄鼓頤，其顏則黑，如病至時，則惡人與火，聞木音則惕然而驚，心欲動也。《素問》陽明脈解篇云：陽明主肉，其脈血氣盛，邪客之則熱，熱甚則惡火。又云：陽明厥則喘而惋，惋則惡人。又曰：胃者土也，故聞木音而驚者，土惡木也。又脈解篇云：所謂甚則惡人與火，聞木音則惕然而驚者，陽氣與陰氣相搏，水火相惡，故惕然而驚也，獨閉戶塞牖而處。

This meridian network has a branch which separates, at 3 cun below the knee, at the 3 mile point (St-36) there is a branch which goes down on the outside, goes straight to St-37 upright top, St-38 stick mouth, St-39 lower top, St-40 abundant bulge, St-41 divide ravine, St-42 thoroughfare yang, St-43 submerged valley, to reach inner courtyard, and unite at sharpen banter. In addition there is a branch, which separates at the high point of the instep St-42 yang thoroughfare, the branch travels

and joins at the space between the big toe, exits outside the foot jue yin liv-2, moving between, acupoint, it follows down under the big toe, and goes to the end, where it connects with foot tai yin. You can palpate the acupoint to determine disease. If yang ming is empty then there will be shivering and cold, there will be a tendency to groan/yawn, frequently and be deficient.

Nue lun (book) says: yang ming emptiness is cold, shivering and your jaw chatters, his face is black, the season that the disease comes, be afraid of people and fire, if you hear banging of wood then be cautious and frightened, heart moves easily (is frightened).

[Su Wen] yang ming meridian explaining chapter (30): yang ming governs/controls flesh, this meridian has abundant blood and qi, external evil causes heat, great heat causes fear of fire. Again (su wen) says: yang ming has shortness of breath and a feeling of oppression, oppression and fear of men. Again it says: Stomach belongs to earth, when the ancients heard the sound of wood, earth fears wood. Again meridian explaining chapter says: it talks about the extent of fearing men and fire, hearing the sound of wood makes you cautious and afraid, yang qi and yin qi reciprocally conflict, water and fire are loathe each other, makes you cautious and afraid, you close the door and seal up the windows.

脈解篇云：所謂欲獨閉戶牖而處者，陰陽相搏也。陽盡而陰盛，故欲獨閉戶牖而處也，甚則欲上高而歌，棄衣而走。陽明脈解篇岐伯曰：四肢者，諸陽之本也。陽盛則四肢實，實則能登高也。熱盛於身，故棄衣而走也。為賁響腹脹，以陽明火盛而與水相激，故有聲及脹也。其氣厥逆，則從髀而厥，脈自足次指從脘外廉上行，是乃陽明血分所生之病耳。然又有諸病或出本經，或由合經，為狂為瘡，其氣溫熱而淫洩，為汗出，為鼽為衄，脈循鼻外也。為口喎，為唇胗，挾口環脣也。為頸腫，循頤出大迎也。為喉痺，循喉嚨入缺盆也。

The meridian explaining chapter says: It talks about closing the door and sealing up the windows, yin and yang reciprocally conflicting. Yang is exhausted and yin is flourishing, because you want to be alone and shut the door and close the windows, with a desire to sing in high places, and take off your clothes. The same chapter says: the four limbs, we talk of as the basis of yang (meridian). If yang is abundant then it makes the four limbs full/strong, if strong then you can climb up high. If you have fever flourishing in your body, then you take off your clothes and run around. You make energetic noises and your stomach swells, if yang ming fire is abundant then water will be reciprocally excited, this is the reason why the voice and belly both expand. When the qi is rebellious, then it (something shinbone) and faint, the blood vessels from the 2nd toe go outwards and pass straight up, indeed this is the disease that is created in the yang ming blood aspect pattern.

There are several diseases which have this root, which cause the meridians to be joined, it can be madness it can be malaria, this extreme heat and warmth of qi causes licentiousness and lewdness, and causes sweating, it cause a clogged nose and a bloody nose, the nose bleeds easily. It gives you a wry mouth, and pustules around the lips, which makes a circle around the lips. It causes swelling in the throat, it follows the jaw to St-5 big welcome. It causes paralysis of the gullet, it follows the gullet and throat to St-12 empty basin.

為大腹水腫，循腹裏也。為膝臃腫痛，膝臃本經穴也，又循膺窻、乳中、乳根、氣街，股之梁丘、陰市、伏兔，胛外廉三里，足跗上陷谷、衝陽、解谿皆痛，為足中指不能舉用，脈行於次指而中指相連也。如邪氣盛，則身已前皆熱，其熱有餘於胃，則消穀善饑，為溺色黃，胃熱，下入膀胱也。如正氣不足，則身已前皆寒慄，如胃中寒則脹滿。且邪氣盛則當瀉之，正氣虛則當補之，熱則速去其鍼而瀉之，寒則久留其鍼而溫之。脈下陷者，則用艾以灸之，若不盛不虛，則以本經取之，而不必求之於足太陰脾經也。所謂盛者，何以驗之？人迎較寸口之脈，大者三倍，則胃經為實。如終始篇所謂瀉足陽明胃，而補足太陰脾者是也。虛者何以驗之？人迎較寸口之脈，小者三倍，則胃經為虛。如終始篇所謂補足陽明胃，而瀉足太陰脾者是也。】

A large belly, swollen with fluid, is in accordance with the inside of the abdomen. Pain and swelling in the knee and kneecap, the knee and kneecap is the origin of the acupoints of the meridian, and follows St-16 Breast Window (3rd intercostal space), St-17 Breast Centre (4th intercostal space), St-18 Breast Root, St-30 qi Thoroughfare, to the thigh St-34 Beam Hill, St-33 Yin Market, St-32 Crouching hare, passes along the outer face (of the limb) to St-36 Three Miles, it follows the top of the instep to St-43 Sunken Valley, St-42 Thoroughfare yang (dorsalis pedis), St-41 Divide Ravine are all tender, (the patient) is unable to raise the middle toe of the foot, the blood vessels move into each toe and mutually interconnect. If the flourishing qi is evil, then the front of the trunk of the body will be hot, this heat will have excess in the stomach, the grain will vanish and (the patient) will starve, the skin colour will be the yellow of drowning, stomach fire, descends into the bladder. If upright qi is not enough, the front of the body will be cold and will shiver, if the centre of the stomach is cold then it will swell and fill. Moreover if evil qi is abundant then the rule is to drain, if the upright qi is empty then the rule is to repair/fill, if there is heat then the rule is to quickly withdraw the needle and drain/(leak?), if there is cold then the rule is to retain the needle and warm. Those blood vessels which sink, the rule is to use moxa and heat/cauterize, if there is neither excess nor deficiency, the rule is to treat the root of the meridian, and not request of the foot tai yin spleen meridian. This talks about excess, how can you test for this? St-9 blood vessel (carotid pulse) can be compared with Lu-9 blood vessel (radial pulse), if it is three times greater, then the rule is to work with the stomach meridian,. If at the end and the beginning of this chapter it says drain foot yang ming stomach, and strengthen foot tai yin spleen. How will we test to know if there is emptiness? Carotid pulse blood vessels will be three times smaller than the radial pulse, the rule for emptiness of the stomach meridian. The chapter 9 is speaking about foot yang ming stomach, and drain that which is foot tai yin spleen.

【張志聰曰：胃足陽明之脈，是動則病洒洒振寒，蓋陽明者午也，陽盛而陰氣加之，故洒洒振寒也。善呻者，陽氣鬱而欲伸出之。數欠者，陽欲引而上也。顏黑者，陰氣加於上，此病在陽明之氣也。病至者，病氣而至於經脈也。陽明之脈病，則惡聞人與火，聞木音則惕然而驚，胃絡上通於心，故心欲動也。陰陽相搏，故欲獨閉戶牖而居。陽盛則四肢實，實則登高而歌，熱盛於身，故棄衣而走也。陽明之脈，下膈屬胃絡脾，故賁響腹脹，此陽明之氣，厥逆於經，而為此諸證，故曰是為飢厥。蓋陽明之經脈，循脛胛而下也。夫有病氣而不及於經者，有病在氣而見經證者，有經氣之兼病者，有病氣而轉入於經者，故曰，可分而可合也。

Zhang zhi cong says: stomach foot yang ming vessels, when the vessel is moved then there will be sickness, shivering and cold, the 7th terrestrial branch (also noon and fire in 5 phases) protects yang

ming, if yang is excessive and yin qi augments, hence you get shivering when you are cold. Those who moan a lot, yang qi is luxuriant and there is a desire to stretch up and go out. That which is yawning, the yang wants to stretch and go up. If the face is black, yin qi augments and goes up, the disease is located in the qi of yang ming. Disease arrives, if the qi is diseased then it arrives in the network vessel. Yang ming blood vessel disease, follows the law of loathing the sounds of men and fire, when you hear the sound of wood you become cautious and frightened, the stomach network goes up and joins with the heart, hence the heart desires movement. Yin and yang reciprocally fight each other, hence you wish to stay alone, block the door and window. If yang is excessive then the four limbs will be strong, if they are strong then you climb up to high places and sing, if heat is excessive in the body, hence you take off your clothes and walk. Yang ming blood vessel, goes below the diaphragm belongs to the spleen and stomach network, hence you are energetic and noisy and your stomach expands, the qi of yang ming, can run in counterflow, this has several kinds of symptom, hence we call it reverting yin. Abundance in yang ming network vessel, follows the shinbone and goes down. Talk about qi disease and it does not reach into the network, the location of the diseased qi will show itself in the network, the qi and the network combine in disease, if you have sickness of qi then that will move and come into the network, hence it is said, you can divide and join.

本經曰：穀入於胃，脈道以通，血氣乃行。平脈篇曰：水入於經而血乃成。胃為水穀之海，主生此營血，是故主血所生病者，為狂為溫瘧。汗出者，胃氣熱而蒸發水液之汗也。鼽衄者，經氣熱也。口喎脣胗，頸腫喉痺，腹腫膝痛，膺股骭跗皆痛者，陽明經脈之為病也。如陽明氣盛於外，則身以前皆熱，盛於內則有餘於胃，而消穀善饑，溺色黃。如氣不足則身以前皆寒慄，胃中寒則脹滿。經云：三陽為經，二陽為維，一陽為遊部。蓋陽明經氣維於身之前，太陽經氣經於身之後，少陽之氣為游行出入之樞也。為此是動所生諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不虛不實以經取之。夫氣生於陽明，而主於手太陰，故在手太陰手足陽明，論氣之有餘不足，在諸經止論是動所生。】

This book (Ling Shu itself) says: grain comes into the stomach, it passes through the blood vessels, blood and qi then move. Ping mai chapter (chapter on normal pulses from the Shang han lun (cold diseases book)) says: water comes into the network and blood is then completely formed. Stomach is the sea of water and grain, it controls the creation of ying and blood, it hence controls diseases of blood creation, such as insanity and warm malaria. Sweat exits, stomach qi is hot and so water and fluids are turned into sweat. You have a clogged nose, the qi of the network is hot. If the mouth is wry and the lips have pustules, then the neck is swollen and the throat is paralysed, the breast thighs shinbone and instep all hurt, the yang ming network is diseased. If the qi of yang ming is flourishing on the outside, then the front of the body will be hot, if the abundance is in the interior then there will be excess in the stomach, and the grain will disappear and it will be easy to starve, if you have the yellow colour of drowning. If the qi goes down to the foot then the front of the body will be cold and shiver, the centre of the stomach will be cold and bloat and feel full. The book says: three yang meridians, two yang which maintain, one yang which wanders in the section. The anterior of the body maintains the qi of the yang ming meridian, the qi of shao yang is a hinge which goes out and joins and moves. This movement creates disease, the law of excess is to drain, the law of deficiency is to repair, the law of heat is to be swift, the law of cold is to retain, if it sinks down use moxa, if it is neither empty nor full then treat the meridian network. The qi which gives birth to yang ming, and

governs hand tai yin, hence the location of hand tai yin hand and foot yang ming, this debates excess and deficiency of qi, located in several vessels is arising disease and created disease.

【平人絕谷篇伯高曰：胃大一尺五寸，徑五寸，長二尺六寸，橫屈受水穀三斗五升，其中之穀，常留二斗，水一斗五升而滿。《難經》云：胃重二斤一兩。《素問》靈蘭秘典論云：脾胃者，倉廩之官，五味出焉。《靈樞》本臟篇云：脾應肉。肉(脰)堅大者胃厚，肉(脰)麼者胃薄；肉(脰)小而麼者胃不堅，肉(脰)不稱身者胃下，胃下者下脘約不利；肉(脰)不堅者胃緩，肉(脰)無小裏累者胃結胃結者上脘約不利也。】

chapter 32 of Ling shu 伯高 (bo gao, one of the characters in Ling shu who discusses with Huang di) says: Big stomach is 1 foot and 5 cun, it's diameter is 5 cun, it's length is two foot six cun, it's lateral bend receives 3pecks, five uprights of water and grain, the grain is in it, commonly 2 pecks remain, water one peck, 5 uprights and it is full. The Nanjing says: stomach weighs 2 catties and one ounce. Su wen says in the treatise on the spiritual orchid: the spleen and the stomach, are the officials of grain and granary, five odours come from here. Ling shu in essay 47 on the root of the organs says: spleen must be flesh. Flesh (fat in the abdomen/omentum/intestine) will be big and hard if the stomach is thick, flesh (fat in the omentum) will be insignificant if the stomach is small and stingy, flesh (fat in the omentum) will be small and tiny if the stomach is not hard, flesh (fat in the omentum) will not be below the stomach in the trunk, that which is below the stomach and below the internal cavity (also CV 10) will not thrive, flesh (fat in the omentum) if the stomach is not firm will be slow, flesh (fat in the omentum) if the stomach knot (sphincter?) is small and weedy then the top stomach knot (CV-13) of the stomach will not prosper.

胃腑形象之圖

Diagram of the shape of the stomach organ

見圖

See diagram

【[胃經諸穴歌]足陽明四十五，自承泣四白而數，巨髃有地倉之積，大迎乘頰車之夥，下關頭維及人迎，水突氣舍與缺盆。氣戶兮庫房屋翳，膺窗兮乳中乳根。不容承滿，梁門關門；太乙滑肉，天樞外陵。大巨從水道歸來，氣衝入髀關之境。伏兔至陰市梁丘，犢鼻自三里而行。上巨虛兮條口，下巨虛兮豐隆。解谿衝陽入陷谷，下內庭厲兌而終。】

[Stomach meridian points song]

foot yang ming has 45, St-1 eye tear container St-2 four whites and count, St-3 great foramen St-4 earth granary accumulates, St-5 big welcome St-6 jaw bone combine, St-7 below the joint St-8 head corner and St-9 man welcome, St-10 water prominence St-11 qi abode and St-12 empty basin. St-13 qi door St-14 storehouse St-15 room canopy, St-16 breast window and St-17 breast centre St-18 breast root. St-19 not contained St-20 receive fullness, St-21 beam gate St-22 pass gate; St-23 great

unity (also a star HIP66798 and symbol of Imperialness) St-24 slippery flesh, St-25 celestial pivot St-26 outer mound. St-27 great gigantic St-28 waterway St-29 return and arrive, St-30 qi street joins the border with St-31 thigh joint. St-32 crouching hare until St-33 yin market St-34 beam hill, St-35 calf's nose walks to St-36 three miles. St-37 upper great vacuity and St-38 ribbon opening, St-39 lower great vacuity and St-40 bountiful bulge. St-41 divide ravine St-42 yang thoroughfare joins St-43 sunken valley, below St-44 inner court St-45 severe mouth and it ends.

胃經諸穴之圖

Diagram of several acupoints on the stomach meridian

見圖

See diagram

【[分寸歌]胃之經兮足陽明，承泣目下七分尋。四白目下方一寸，巨髎鼻孔旁八分。地倉夾吻四分近，大迎頰下寸三分。頰車耳下八分穴，下關耳前動脈行。頭維神庭旁四五，人迎喉旁寸五真。水突筋前迎下在，氣舍突下穴相乘。缺盆舍下橫骨內，各去中行寸半明。氣戶璇璣旁四寸，至乳六寸又四分。庫房屋翳膺窻近，乳中正在乳頭心。次有乳根出乳下，各一寸六不相侵。卻去中行須四寸，以前穴道與君陳。不容巨闕旁三寸，卻近幽門寸五新。其下承滿與梁門，關門太乙滑肉門。上下一寸無多少，共去中行三寸尋。天樞臍旁二寸間，樞下一寸外陵安。樞下二寸大巨穴，樞下四寸水道全。樞下六寸歸來好，共去中行二寸邊。氣衝鼠鼯上一寸，又去中行四寸專。髀關膝上有尺二，伏兔膝上六寸是。陰市膝上方三寸，梁丘膝上二寸記。膝髌陷中犢鼻存，膝下三寸三里至。膝下六寸上廉穴，膝下七寸條口位。膝下八寸下廉看，膝下九寸豐隆系。卻是踝上八寸量，比那下廉外邊綴。解谿去庭六寸半，衝陽庭後五寸換。陷谷庭後二寸間，內庭次指外間現，厲兌大指次指端，去爪如韭胃井判。】

[Divide into inches song]

stomach meridian of foot yang ming, St-1 tear container is below the eye 7 fen. St-2 four whites is below the eye a square 1 cun, St-3 great foramen is at 8 fen beside the nose. St-4 earth granary is close to the lips 4 fen, St-5 big welcome is below the jaw 1 cun 3 fen. St-6 jaw bone acupoint is below the ear 8 fen, St-7 lower gateway is in front of the ear over the moving blood vessel. St-8 head safeguard is side by side with GV-24 spirit courtyard four or five (fen?), St-9 is next to the larynx, five cun, St-10 water prominence is below St-9 in front of the muscle, St-11 qi dwelling is below Ren-22 acupoint and they are very close. St-12 empty basin is below St-11 qi dwelling on the clavicle, each moves from here is clear. Qi door St-13 is next to CV-21 beautiful pearl 4 cun, arrive at the breast St-14 is 8 cun and four fen. St-15 room canopy is close to St-16 Breast window, breast centre is straight at the centre of the nipple. St-17 breast root is below the nipple, each is one cun six (fen?) to not encroach on the other. Still leaves and circulates 4 cun lateral, the acupoints are asserting a pathway in the front. St-19 not contained is 3 cun lateral to Ren-14 great gate, still near Kid-21 dark gate 1 cun 5 fen. Below here is St-20 assuming fullness and St-21 beam gate, St-22 pass gate St-23 great 2nd heavenly stem St-24 slippery flesh gate. Above and below about one cun, together they pass 3 cun from the centre. St-25 celestial pivot is 2 cun lateral to the navel, below pivot one cun is St-26 outer mound. 2 cun below St-25 celestial pivot is St-27 great gigantic acupoint, 4 cun below St-25 is St-28

water passageway. 6 cun below pivot is St-29 return, together they pass 2 cun lateral to the midline. St-30 qi thoroughfare is one cun above the groin, is four cun lateral to the midline. ST-31 thigh gate is located 2 feet above the knee, St-32 crouching hare is above the knee 6 cun. St-33 yin market is above the knee 3 cun, St-34 beam hill is above the knee 2 cun. St-35 calves nose is inside the kneecap, below the knee 3 cun is St-36 three miles. 6 cun below the knee is St-37 upper ridge, 7 cun below the knee is St-38 ribbon mouth. 8 cun below the knee is St-39 lower ridge to be seen, 9 cun below the knee is linked with St-40 abundant and prosperous. This is 8 cun above the ankle, to link St-37 lower ridge and the outside edge together. St-41 ravine divide is behind courtyard 6.5 cun, St-42 thoroughfare yang is behind the courtyard 5 cun. St-43 is behind courtyard 2 cun in the space between, St-44 inner courtyard is next in sequence visible on the outside of the second toe, St-45 whetstone barter is by the second toe at the corner of the nail and this is where the sequence concludes.

【神庭：督脈穴，在中行髮際上五分。頭維：去神庭四寸五分。氣舍：在水突下。自氣戶至乳根六穴，上下相去各一寸六分，去中行任脈各四寸。巨闕：任脈穴，臍上六寸五分。幽門：腎經穴，巨闕旁一寸五分，在胃經任脈二脈中。鼠蹊，橫骨盡處。解谿去庭者，去內庭也。內庭：在足大指次指外間陷中。】

Du-24 spirit courtyard: is the point which oversees the blood vessels, it is located in the hairline five fen. St-8 hair border: is four cun five fen lateral to Du-24. Qi Dwelling: is below water prominence St-10. From qi door to the root of the nipple there are 6 acupoints, the distance between each other is one cun six fen, they are 4 cun lateral to the centre line. CV-14 great palace: is an acupoint on the ren vessel, 6 cun 5 fen above the navel. CV-10/Kid21/pylorus: is the kidney channel acupoint, near to CV-14 one cun five fen, it is between the stomach and ren meridian. Groin, is the horizontal place where the skeleton finishes. St-41 ravine divide leaves the courtyard St-43, to inner courtyard St-43. St-43 inner courtyard: is located on the foot in the space between the big toe and the second toe.

【愚按足陽明胃經穴，自缺盆、氣戶、庫房、屋翳、膺窗、乳中、乳根，去中行各四寸，上下相去各一寸六分；自不容、承滿、梁門、闕門、太乙、滑肉門，去中行各三寸，上下相去各一寸；自天樞、外陵、大巨、水道、歸來，去中行各二寸，上下相去不等，其氣衝一穴，則又去中行二寸，鼠蹊上一寸，其屈曲有如此者。徐氏鍼灸書皆以二行言之，誤矣。左右各四十五穴，凡九十穴。】

I palpate foot yang ming stomach meridian points, from St-12 empty basin, St-13 qi door, St-14 storehouse, St-15 house screen, St-16 breast window, St-17 breast centre, St-18 breast root, four cun lateral to the centre line. And one cun four fen apart from each other: from St-19 not contained, St-20 receive fullness, St-21 beam gate, St-22 palace gate, St-23 great unity, St-24 slippery flesh gate, are all three cun from the centre line, the distance between them is one cun; from St-25 spiritual pivot, St-26 outer hill, St-27 big greatness, St-28 water passageway, St-29 revert and return, are all 2 cun from the midline, they are not equidistant, Again St-30 qi thoroughfare is one acupoint, it is 2 cun lateral to the midline, above the groin 1 cun, as if it was twisted. In the book of 徐(Xu person) about acupuncture and moxibustion he uses 2 lines to describe these points, it is a mistake (i.e. it's twisted so can't be the straight lines depicted by Xu). Each side has 45 points, 90 points in total.

Spleen meridian

脾足太陰之脈，起於大指之端，循指內側白肉際，過核骨後，上內踝前廉，上踰內，循脛骨後，交出厥陰之前，上膝股內前廉，入腹屬脾絡胃，上膈挾咽連舌本，散舌下；其支者，復從胃別上膈注心中。是動則病舌本強，食則嘔，胃脘痛，腹脹善噯，得後與氣則快然如衰，身體皆重。是主脾所生病者，舌本痛，體不能動搖，食不下，煩心，心下急痛，溏瘕泄，水閉，黃疸，不能臥，強立股膝內腫厥，足大指不用。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛以經取之。盛者寸口大三倍於人迎，虛者寸口反小於人迎也。【踝，胡瓦切。】

Spleen foot tai yin meridian, starts at the end of the big toe, follows the medial side of the toe along the border of the white flesh, passes behind the knobble of the bone, goes up along the inside of the ankle, passes up the inside of the heel, follows the inside of the back of the shinbone, joins in front with jue yin, goes up the inside of the knee and the thigh, joins with the stomach meridian, goes up through the diaphragm, wraps around the throat to connect to the root of the tongue, this is why it rules eating and vomiting, from the tongue it disperses down; it has a branch, it returns back along via the stomach, a separate branch does not go through the diaphragm but goes into the centre of the heart. This is the reason why there is strong disease in the movement at the root of the tongue, the reason behind eating and vomiting, pain in the internal cavity of the stomach, the stomach expands and gives a good belch, and if there is gas behind then there will be a guaranteed speedy decline, the whole of the trunk will become heavy. This governs the creation of disease in the spleen, aching at the root of the tongue, body is not able to move and swing, food does not go down, anxiety, an urgent pain below the heart, wet stool (diarrhoea), blockage of water, jaundice, not able to bend down, standing gives swelling along the knee and thigh, the big toe of the foot cannot be used. This is the rule for various diseases, the rule of excess is to drain, the rule of emptiness is to strengthen/repair, the rule for heat is to take the needles out quickly, the rule for cold disease is to retain them, if the pulse is sinking use moxa, in there is neither abundance nor emptiness then use the meridians. In the case of abundance the cun kou (radial) pulse will be 3 times stronger than ren ying (carotid) pulse, in emptiness the radial pulse will be less than the carotid pulse. [Ankle, how you spell it]

【馬蒔曰：此言脾經脈氣之行，乃為第四經也。核骨一作覈骨，俗云孤拐骨，即足跟後兩旁起骨是也。腓腹為脛，髀內為股，臍上為腹。咽以嚥物，居喉之前，至胃長一尺六寸，為胃之系。舌本，舌根也。足太陰脾經之脈，起於足大指之隱白穴，受足陽明之交也。循大指內側白肉際大都穴，過核骨後，歷太白、公孫、商丘，上內踝前廉之三陰交，又上脛內，循脛骨後之漏谷，上行二寸，交出足厥陰之前，至地機、陰陵泉，上循膝股前廉之血海、箕門，迤邐入腹，經衝門、府舍、中極、關元，復循腹結、大橫，會下脘，歷腹哀，過日月、期門之分，循本經之裏，下至中脘之際，以屬脾絡胃。又由腹哀上膈，循食竇、天谿、胃鄉、周榮，曲折向下至大包。

Ma Shi said: This talks about the pathway of the qi and blood of the spleen meridian, it is the 4th meridian. It goes along the side of the bone in the foot (bunion?) and goes along the shinbone, social customs say malleolus bone, quickly from the foot and behind the heel both rise up together along

the shinbone. It is the body of the calf, spleen follows the inside of the thigh, goes up inside the abdomen to the navel. By means of the throat they allow swallowing, they reside in front of the throat, the stomach is one foot and 6 fen long, this is the stomach department. The root of the tongue, is the same as the root of the tongue (different characters). The meridian of foot tai yin spleen, goes out from the big toe of the foot at the acupoint Sp1 hidden white, it joins here with foot yang ming. It follows along the inner surface of the big toe at the junction of the white flesh at Sp-2 big metropolis acupoint, to the bunion bone, goes past to Sp-3 big white, Sp-4 yellow emperor (gong sun), Sp-5 shang hill, goes up inside and in front of the ankle to Sp-6 3 yin crossing, and also up inside the heel, goes up along the shinbone to Sp-7 leaking valley, passes up 2 cun, joins with foot jue yin in front, to Sp-8 earth's crux, Sp-9 yin earth spring, up in front of the knee and the thigh in front to Sp-10 xue hai, blood sea, Sp-11 sieve gate, it takes a meandering route into the stomach, passes Sp-12 thoroughfare gate, Sp-13 bowel abode, CV-3 central pole, CV-4 origin pass, return and Sp-14 tie into the stomach, Sp-15 big horizontal, meet under the internal cavity of the stomach, take Sp-16 abdominal mournful, pass through GB-24 sun and moon, Liv-14 time period gate, follows the root of the meridian to the inside, reach below the boundary of the internal cavity of the stomach, by means of the network mesh between the spleen and stomach. Again from Sp-16 mournful stomach it passes up through the diaphragm, follows Sp-17 food hole, Sp-18 celestial ravine, Sp-19 thorax country, Sp-20 circumference prosper, bends and changes direction to travel under to Sp-21 great embracement.

又自大包外曲折向上會中府，上行人迎之裏，挾喉連舌本，散舌下而終。其支行者，由腹哀別行，再從胃部中脘穴之外上膈，注於臍中之裏，心之分，以交於手少陰心經也。及其動穴驗病，則為舌本強，脈挾咽連舌本，散舌下也。為食則嘔，脾主化食。為胃脘痛，絡於胃也。為腹脹，脈入腹也。為善噫，本經口問篇：寒氣客於胃，厥逆從下上散，復出於胃，故為噫。得去後與泄氣，則病快然如衰，脾氣輸泄也。身體皆重，脾主肉也。是皆本經所生之病也。

And it goes from Sp-21 great embracement outside and bends to go up and join in the centre of the bowel, up and passes to ST-9 mans welcome inside, it wraps around the throat and goes to the root of the tongue, it disperses under the tongue and ends. There is a branch that circulates, it separates at Sp-16 mournful belly, it goes again into the stomach at the acupoint in the Ren-12 centre of the stomach goes up the outside of the diaphragm, goes to the inside of the solar plexus, close to the heart, it exchanges/ joins with hand shao yin heart meridian. Palpation at this point can be used to test for disease, rule of the root of the tongue should be strong, blood vessels wrap around the throat and connect to the root of the tongue, disperse under the tongue. To eat food and vomit, spleen governs the transformation of food into energy. Explaining why stomach pain is in the centre of the stomach, because it is connected to the stomach. Explaining why there is a feeling of swelling in the belly, because the blood vessels come into the belly. Explaining why there is a good belch, this chapter (28) asks about the root of the meridian: cold qi invades the stomach, it rebels and disperses above and below, it returns to the stomach, because of a good belch. It goes away behind and discharges gas, this is a disease which is quickly degenerating, spleen qi transports flow. The flesh of the body is heavy, spleen governs flesh. It is the root of the meridian which creates disease.

又有諸病之生，或由本經，或由合經，其舌本痛，體不能動搖，較上舌本強，身體重為甚。食不下，不但嘔而已。煩心，心下急痛，脈注心中也。澹瘕泄，脾氣不實也。水閉即六元正紀大

論有甚則水閉跗腫，言水蓄於內，而大小便皆閉也。黃疸不能臥，強立股膝內如血海、期門、衝門、等處腫厥，足大指如隱白、大都、太白等處不能舉用。然邪氣盛者則瀉之，正氣虛者則補之，熱則疾去其鍼，寒則久留其鍼，脈陷下者則用艾以灸之，若不盛不虛，則以本經取之，而不必求之足陽明胃經也。所謂盛者何以驗之？寸口較人迎之脈大者三倍，則脾經為實，如終始篇所謂瀉足太陰脾，而補足陽明胃者是也。虛者何以驗之？寸口較人迎之脈小者三倍，則脾經為虛，如終始篇所謂補足太陰脾而瀉足陽明胃者是也。】

And it is the creator of several diseases, perhaps the meridian is the root cause, perhaps the meridian is the reason for the union, the root of the tongue aches, the body is not able to move and shake, compare the strength of the top to the root of the tongue, the body becomes very heavy. Food does not go down, and you cannot stop vomiting. Anxiety, with a dull ache below the heart, blood vessels concentrate in the centre of the heart. Semisoft stool leaks, spleen qi is not solid. Quick water obstruction is the subject of this great discourse which has the explanation of why water blockage causes swelling in the instep, it speaks of water being stored in the interior, and all obstructions; large and small. If someone has yellow jaundice, they are unable to lie down, they are strong standing up in the thigh and knee at Sp10 sea of blood, (this acupoint is pronounced?) Liv-14 period of time gate, Sp-12 thoroughfare gate, are places of swelling, the big toe of the foot is hidden and white, Sp-2 big metropolis (for the most part; on the whole; metropolitan; Dadu, capital of China during the Yuan Dynasty (1280-1368), modern day Beijing Yellowbridge), Sp-3 great white are places that you are not able to lift up (can't raise your big toe or evert the foot). Yea, if evil qi is flourishing then drain, if upright qi is deficient then repair, if there is heat then needle quickly, if there is cold then retain the needle, if the blood pulse is sinking then cauterize with moxa, if there is neither excess nor deficiency, then use the root of the meridians, and surely must not seek out the foot yang ming stomach meridian. How can we test for abundance? If the radial pulse is greater by three times than the carotid pulse, it is the nature of the spleen to be solid, if the end then this passage says to drain the foot tai yin spleen meridian, and repair the foot yang ming stomach meridian. How will we know if there is deficiency? The radial pulse will be three times less than the carotid pulse, this will show that the spleen meridian is empty, as like ch.9 of ling shu then this passage is saying to repair the foot tai yin spleen meridian and to drain the foot yang ming stomach meridian.

【張志聰曰：脾足太陰之脈，是動則病氣而及於經，從經而及於臟腑，故為舌本強，食則嘔，胃脘痛，腹脹諸證。善噫者，脾氣上走心為噫。得後與氣則快然如衰者，厥逆從上下散也。身體皆重，太陰之氣逆也。是主脾所生之經脈病者。舌本痛，蓋病太陰之氣，則為舌本強。食則嘔，氣逆之為病也。在脾臟所生之經脈病者，則為舌本痛，食不下，經脈之為病也。氣主响之，病在氣，故身體皆重。經脈者，所以濡筋骨而利關節，病在血脈，故體不能動搖，此太陰之是動，脾臟之所生，外內出入而見證之少有別也。脾脈注心中，故煩心，心下急痛，脾家實則為痼泄水閉黃疸，此臟病之在內也。不能臥，強立膝股內腫，足大指不用，經病之在外也。此太陰經脈脾臟之病，內外出入之見證也。明乎臟腑陰陽經氣出入之理，本經大義，思過半矣。】

Zhang zhi cong said: meridian of spleen foot tai yin, disease of qi arises when this channel is stirred and moves through the meridians, through the meridians and into the zang fu, therefore the root of the tongue is strong, it governs food and vomiting, pain inside the stomach, various reasons why the stomach swells. It is easy to belch, the belch of the upright qi of the spleen goes to the heart. This qi

in this disease process will rapidly decline, it will rebel, go above and below and scatter. The flesh of the body will be heavy, rebellious qi of tai yin. The spleen governs the creation of disease in the meridian system. The root of the tongue aches, it covers the qi of the disease in tai yin, the rule is for the root of the tongue to be strong. The rule of food and vomiting, when qi rebels there will be disease. Disease of the meridian system is created in the organ of the spleen, the rule of the tongue aching, food does not descend, there is disease in the meridians. Qi governs breath, the site of disease is in the qi, because the flesh of the body is heavy. The meridians, are therefore damp in the muscles and bones and knotted in the joints, if disease is located in the blood vessels, because the body is not able to move and shake, this is the movement of tai yin, the spleen organ creates, a exits externally and internally joins and is evidence of not being small. Spleen vessel is focussed in the heart, because anxiety, with a low down pressing ache, the spleen governs diseases of the bowel with alternate constipation and diarrhoea, it is located in the interior if there is disease in the organ. You will not be able to lie down, strength in the the knees and thighs when standing up and internal/medial swelling. The big toe of the foot cannot move, pain in the meridian is located on the outside. This is disease of the tai yin meridian of the spleen organ, various diseases can be seen to join and go to the outside and inside. The logic of the exits and joining of the yin and yang meridians becomes clear, the root of the meridians is righteous, my thoughts of half the possible conditions.

【《難經》云：脾重二斤三兩，扁廣三寸，長五寸，有散膏半斤，主裹血，溫五臟，主藏意。

《素問》靈蘭秘典論云：脾胃者，倉廩之官，五味出焉。《靈樞》本臟篇云：脾小則臟安，難傷於邪也。脾大則苦湊(月少)而痛，不能疾行。脾高則(月少)引季脅而痛。脾下則下加於大腸，下加於大腸，則臟苦受邪。脾堅則臟安難傷。脾脆則善病消瘴易傷。脾端正則和利難傷。脾偏傾則善滿善脹也。又云：黃色小理者脾小，粗理者脾大；揭脣者脾高，脣下縱者脾下；脣堅者脾堅，脣大而不堅者脾脆；脣上下好者脾端正，脣偏舉者脾偏傾也。】

Nan jing says: spleen weighs 2 catties 3 ounces, it is flat and 3 cun wide, it has half a catty of grease scattered over it, it governs and encircles blood, it warms the 5 zang, it governs and stores ideas.

Su Wen 靈蘭秘典論 chapter 8 says: The spleen and stomach, are the officials of grain (food/nutrition), the 5 odours go out from here.

Ling shu 本臟篇 chapter 47 says: if the spleen is small then it will be in good condition organ, difficult to wound and have evil. If the spleen is hard/resolute then it will be difficult for it to become ill. If the spleen is dry/ brittle then goodness will fade away and it will become easily diseased and wounded. If the spleen is big then bitterness will encroach and it will ache, sickness will not be able to move, if the spleen is very tall then there will be pain in the ribs and the armpits, if the spleen is below then it will join with the large intestine, then evil and bitterness manifests in the zang. If the end of the spleen is upright and follows the proper rules then it will be difficult for it to become diseased. If the spleen is slanted then it will overflow and become swollen and diseased.

Again this passage (ch.47) says: A small yellow colour is the logic (sign) of a small spleen, coarse logic is the sign of a big spleen; he who has a high spleen will have full upper lip, lower lip fullness will be a sign for a low spleen; lips that are firm are a sign of a firm spleen, lips that are big and not firm

show a brittle spleen; lips that are evenly balanced above and below show a well-balanced spleen, lips that are slanting to one side show a slanting spleen which will overflow.

脾臟形象之圖

Spleen organ elephant shape diagram

見圖

See diagram

【[脾經諸穴歌]足太陰脾中州，二十一穴隱白遊。赴大都兮瞻太白，訪公孫兮至商丘。越三陰之交，而漏谷地機；可即步陰陵之泉，而血海箕門是求。入衝門兮府舍軒豁，解腹結兮大橫優游。腹哀食竇兮，接天谿而同派；胷鄉周榮兮，綴大包而如鉤。】

Spleen meridian ode of acupuncture points

foot tai yin spleen central division, 21 points start from Sp1.

【[分寸歌]大指端內側隱白，節後陷中求大都。太白內側核骨下，節後一寸公孫呼。商丘內踝陷中遭，踝上三寸三陰交。踝上六寸漏谷是，踝上五寸地機朝。膝下內側陰陵泉，血海膝臚上內廉。箕門穴在魚腹取，動脈應手越筋間。衝門期下尺五分，府舍期下九寸看。腹結期下六寸入，大橫期下五寸半。腹哀期下方二寸，期門肝經穴道現。巨闕之旁四寸五，卻連脾穴休胡亂。自此以上食竇穴，天谿胸鄉周榮貫。相去寸六無多寡，又上寸六中府換。大包腋下有六寸，淵液腋下三寸絆。】

[Measurement chart]

Sp-1 (yin white) is found on the incline on the medial side of the big toe, Sp-2 (great metropolis) is found in the depression after (distal to) the knobby bone. Sp-3 (great white) is on the incline below the kernel bone (proximal to the bunion), in the depression proximal 1 cun is found Sp-4 (yellow emperor). Sp-5 (trade hill) is at the crossing point on the inner ankle in the depression, above the ankle 3 cun is found Sp-6 (3 yin exchange). 6 cun above the ankle is Sp-7 (leaky valley), above the Sp-7 5 cun is Sp-8 (earth machine) dynasty. Below the knee in the depression on the inside is Sp-9 (yin mound spring), Sp-10 (blood sea) is above the knee on the inside straight up. Sp-11 (sieve gate) point is located on the belly of the fish, the blood vessels move through (a handwidth/pulsation?) space between the muscles and tendons . Sp-12 (thoroughfare gate) is appointment (gate LR-14) point 1 foot five fen, Sp-13 (bowel abode) can be seen 9 cun below LR-14. Sp-14 abdominal bind is joined 6 cun below the LR-14, Sp-15 (great horizontal-refers to transverse colon) is below the 5.5 cun. Sp-16 (mournful belly) is a square 2 cun below LR-14 point of the liver meridian becomes visible here. CV-14 (great tower gate) is alongside 4 cun 5, be careful not to mess it up with connects with spleen points to stop foolish chaos. By this means it goes up to Sp-17 (food hole). Sp-18 great ravine , Sp-19 chest village, Sp-20 all round flourishing. They are reciprocally roughly 6 cun apart. And 6 cun above is central storehouse (lu1). Sp-21 (great embracement) is below the armpit 6 cun, GB-22 humor abyss is looped to 3 cun below the armpit.

脾經諸穴之圖

Diagram of spleen meridian points

見圖

See diagram

【陰陵泉：與陽陵泉穴相對。期門：肝經穴，巨闕旁四寸五分。巨闕：任脈穴，臍上六寸五分。中府：肺經穴。淵液：膽經穴，腋下三寸，與下脾經大包穴相連。】

Yin mound spring (Sp-9): and yang mound spring (GB-34) points are mutually opposing. Appointment gate (LR-14): is a liver meridian point, great watch tower (CV-14) is four cun 5 fen beside it. CV-14: is a ren mai acupoint, it is above the navel 6 cun 5 fen. Central bowel (Lu-1): is a point on the lung meridian. Abyss humor is a point on the gallbladder meridian, 3 cun below the armpit, and Sp21 great embracement is found below on the spleen meridian they mutually interconnect.

【愚按：中府，肺經穴也。周榮、胸鄉、天谿、食竇，脾經穴也。期門，肝經穴也。肝經之下，有脾經之腹哀、大橫、腹結、府舍、衝門諸穴，則中行開四寸五分。三經之穴，上下相連。左右計四十二穴。】

I humbly press down with the hand on LU-1 central bowel/treasury, it is a point of the lung meridian. SP-20 circumference flourishing, SP-19 chest village, SP-18 celestial ravine, SP-17 food hole/burrow, are all points of the spleen meridian. LR-14 appointment gate, is a point of the liver meridian. Below the liver meridian, SP-16 abdominal lament is located on the spleen meridian, SP-15 great horizontal, SP-14 abdominal connection, SP-13 bowel abode, SP-12 thoroughfare gate all points, they are located at 4cun 5 fen lateral to the centre line. Points of three meridians above and below reciprocally join. Together they add up to 42 points.

Heart Meridian

心手少陰之脈，起於心中，出屬心系，下膈絡小腸；其支者，從心系上挾咽，繫目系；其直者，復從心系卻上肺，下出腋下，循臑內後廉，行手太陰心主之後，下肘內，循臂內後廉，抵掌後銳骨之端，入掌內後廉，循小指之內出其端。是動則病噎乾，心痛，渴而欲飲，是為臂厥。是主心所生病者，目黃脅痛，臑臂內後廉痛厥，掌中熱痛。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之。不盛不虛，以經取之。盛者寸口大再倍於人迎，虛者反小於人迎也。

Heart hand shao yin meridian, comes out from the centre of the heart, goes out and links to the heart, goes down through the diaphragm and wraps around the small intestine; it has a branch, which goes up and connects to wrap around the pharynx, and connects to the eye; it is straight, it returns to the heart and goes to the top of the lungs, it goes down and exits under the armpit, it goes along the soft inner aspect of the arm, goes below the elbow, goes behind tai yin (lung) and heart governor (PC), follows the back inside of the arm, goes to the palm past the end of the

protuberant bone, joins behind the inside of the palm, finishes at the end of the little finger. Indeed this is the rule for dry throat, cardiac pain, thirst and a desire to drink, is reversal cold in the arm. It governs the heart and creates diseases, yellow eyes and pain in the flank, with pain along the soft inner aspect of the arm, heat and pain in the centre of the palm. There are various diseases, in the case of excess then drain, in the case of deficiency then nourish, in hot sickness remove the needles quickly, in cold sickness retain the needles, with a sinking pulse then use moxa. If there is neither deficiency nor excess, treat on the meridian. Excess is found when the radial pulse is greater than the carotid pulse, deficiency is the opposite when the carotid pulse is lesser.

【馬蒔曰：此言心經脈氣之行，乃為第五經也。心系有二，一則上與肺相通而入肺大葉間，一則由肺葉而下曲折向後，並脊裏而與細絡相連貫。脊髓與腎相通，正當七節之間，蓋五臟系皆通於心，而心通五臟系也。手少陰經起於心，循任脈之外，屬心系，下膈，當臍上二寸之分，絡小腸。其支者，從心系出任脈之外，上行而挾咽繫目也。其直者，復從心系直上至肺臟之分，出循腋抵極泉也。自極泉下循臍內後廉，行手太陰心主兩經之後，歷青靈穴，下肘內廉，抵少海。手腕下踝為兌骨。自少海而下，循臂內後廉，歷靈道、通里，至掌後兌骨之端，經陰郄、神門入掌內廉，至少府，循小指端之少衝而終。以交於手太陽也。及其動穴驗病，則為嗑乾，以脈上挾咽也。

Ma shi said: this passage speaks about the pathway of the blood and qi of the heart, it is the 5th in the sequence. The heart has 2 connections, the first connection is up and into the lung which it reciprocally passes through and joins with the space between the great leafs of the lung, the other goes from the leaf of the lung descends and bends towards the back, it goes either side of the spine on the inside and interconnects continuously with fine threads. It reciprocally passes through the essence/bone marrow and the kidneys, it is in the 7th intercostal space because the five zang are all connected through it to the heart, and the heart connects with the 5 zang. Hand shao yin meridian rises straight out of the heart, it follows ren mai/aorta to the outside, belong to the classification of the heart, passes through the diaphragm, to just above the navel 2cun and a bit, connects with the small intestine. It has a branch, from which the heart exits to the outside of ren mai/aorta, it passes up and wraps around the throat and goes to the eye. It goes straight, and passes straight back down to connect with the upper part of the lung division, goes out to under the armpit to HT-1 extreme fountain. From HT-1 extreme fountain it passes down along the soft inner side of the arm toward the back in a straight line, behind both the pathway of hand tai yin and pericardium, to HT-2 green/essence spirit point, goes down for some time along the inside, to HT-3 lesser sea. The hand and wrist follow the protuberant bone. From HT-3 lesser sea it goes down, and follows the back of the inside of the arm, to HT-4 spirit path, HT-5 connecting inside, to reach the end of the skeleton at the palm of the hand, HT-6 yin cleft, HT-7 soul gate joins to the inside of the palm, reaches HT-8 lesser residence, and passes to the end of the little finger at HT-9 small thoroughfare where it ends. This exchanges with hand tai yang (small intestine). The acupuncture points can be used to test for illness, they govern dryness of the throat, because the blood vessels pass up and wrap around the throat.

心痛為本經病，渴而欲飲，心火內炎也。是乃臂氣逆而上行，脈循臂而上肘臍腋也。此心所生之病也。又有諸病之生，或出本經，或由合經。為目黃，脈繫目系也。為脅痛，脈出腋下也。臍臂內後廉痛厥，脈循臂臍後廉也。掌中熱痛，心包絡所屬，心為君主，病同。然邪氣之盛者

則當瀉之，正氣之虛者則當補之，熱則瀉者疾去其鍼，寒則溫者久留其鍼，脈陷下者則用艾以灸之。若不盛不虛，則止取之本經，而不必求之手太陽小腸經也。所謂盛者，何以驗之？寸口較人迎之脈大者，二倍而躁，則心經為實，如終始篇所謂：瀉手少陰心而補手太陽小腸者是也。虛者何以驗之？寸口較人迎之脈小者，二倍而不躁，言人迎大二倍而躁也。此則心經為虛，如終始篇所謂：補手少陰心而瀉手太陽小腸者是也。】

Heart pain is a disease of this meridian, thirst and a desire to drink, heart fire has inner heat. Then the qi of the arm rebels and moves upwards, the blood follows the arm and goes up the soft side past the elbow to the armpit, this is how the heart creates disease. There are various diseases, which go out from this meridian, or are caused by union of the meridian. The eyes become yellow, because blood connects with the eye. Pain in the flank, because blood goes out from the armpit and down. There is pain along the soft inner side of the arm, associated with the blood vessel down the soft inside of the arm. The centre of the palm is hot and aching, this is the area of the heart protector (pericardium), the heart is the sovereign lord, it has the same diseases. Yes, if evil qi is flourishing then drain it, if upright qi is empty then the rule is to nourish, if hot the rule is to drain the needle makes the sickness depart, if cold the rule is to warm and to retain the needle, if the pulse is sinking then apply moxa. If there is neither deficiency nor excess, then the rule is to treat via the meridian, and must not use the meridian of hand tai yang small intestine. By which means should you know what the place that is flourishing is called? The radial pulse is compared to the carotid pulse to see if the blood flow is greater, if it is twice as full and tight/tense/irritable, then the heart meridian is true, as this chapter says: drain from the hand shao yin heart meridian to fix the hand tai yang small intestine meridian. How will we know if there is emptiness? We can compare the radial and the carotid pulse to see which has least blood, if it is twice as full and not tight/tense/irritable, we say that the carotid pulse is twice as strong and irritable. The rule of emptiness in the heart meridian, as this chapter (LS ch.9) says: fix hand shao yin heart by draining from hand tai yang small intestine.

【張志聰曰：少陰之上，君火主之，故是動則病噤乾，心痛，渴而欲飲，少陰之氣盛也。是主心所生病者，目黃，心系上繫於目，心火盛故黃也。臑臂，掌中心脈所循之部分，蓋心所生之病，而外及於經脈也。】

Zhang zhi cong says: shao yin goes up, it is the master which governs fire, this is the reason of movement which in disease makes the throat dry, heart is aching, thirst and desire to drink, is qi excess in tai yin. The heart governor creates disease, yellow eyes, the heart connects upwards and connects with the eye, deficiency of heart fire is the reason for the yellowness. The soft arm, is the division that goes down to the palm of the hand, it covers the place which gives rise to disease, and reaches out to the outside of the jing mai.

【心重一十二兩，附著於脊之第五椎，居肺下膈上，中有七孔三毛，盛精汁三合，主藏神。《素問》靈蘭秘典論：心者君主之官，神明出焉。】

The heart weighs 12 ounces, it attaches to the spine at the level of the 5th vertebra, it is under the lungs and above the diaphragm, the centre has 7 orifices and 3 hairs? When it is flourishing then 3 essences combine together, control the zang and the shen. [Su Wen] ch. On the secret discourse of the spiritual orchid: the heart is the sovereign master of the official (mandarin), shen ming exits how.

【《靈樞》本臟篇云：心小則安，邪弗能傷，易傷以憂；心大則憂不能傷，易傷於邪。心高則滿於肺中，悞而善忘，難開以言；心下則臟外易傷於寒，易恐以言。心堅則臟安守固；心脆則善病消瘵熱中。心端正則和利難傷；心偏傾則操持不一，無守司也。赤色小理者心小，粗理者心大；無(骨曷)𦵏者心高，(骨曷)𦵏小短舉者心下；(骨曷)𦵏長者心下堅，(骨曷)𦵏弱小以薄者心脆；(骨曷)𦵏直下不舉者，心端正，(骨曷)𦵏倚一方者，心偏傾也。】

Ling Shu chapter 47? root of the organs says: a small heart will be tranquil, evil will not be able to affect it, sadness will easily injure it,; a big heart will not be injured by grief, evil will easily affect it. A tall heart will fill the centre of the lungs, and will forget virtue, will have difficulty starting speech (stutter?); if the heart is low down then cold is able to injure the organ from the outside, speech will be fearful. If the heart is firm then the organs will be peaceful and well protected; if the heart is fragile then there will be heat and dryness in the centre and disease will make virtue melt away. If the heart is straight at the end then there will be harmony and it will be difficult to injure; if the heart is slanted to the side then it will overflow and it will not be possible to take charge and protect it to sustain control. A small red colour is the logic (sign) that shows that the heart is small, green is the logic (sign) that shows that the heart is big; not the shinbone (where in the skeleton) is the heart tall, (where in the skeleton) if the shinbone is short and lacking then the heart will be below; (where in the skeleton) if the shinbone is long then there will be firmness under the heart, (where in the skeleton) if the shinbone is brittle and small then the heart will be weak and fragile; (where in the skeleton) if the shinbone is straight down then it will not raise up, the heart will be straight at the top, (where in the skeleton) if the shinbone relies on a rectangle, then the heart will lean to one side and overflow.

心臟形象之圖

Diagram of the heart from the ivory figurine

見圖

See diagram

【[心經諸穴歌]手少陰九穴成，極泉青靈少海行。自靈道通里，過陰郄神門，抵於少府，少衝可尋。】

[Heart meridian various acupuncture point ode]

Hand shao yin has nine acupuncture points, HT-1 highest spring HT-2 cyan spirit HT-3 lesser sea travels. From HT-4 spirit pathway to HT-5 connecting village, goes over to HT-6 yin cleft HT-7 soul gate, opposite (the gap between ulna and hand?) is HT-8 lesser government, HT-9 lesser thoroughfare may be sought.

心經諸穴之圖

Diagram of various acupuncture points of the heart meridian

見圖

See diagram

【[分寸歌]少陰心起極泉中，腋下筋間脈入胷。青靈肘上三寸取，少海肘後五分容。靈道掌後一寸半，通里腕後一寸同。陰郄腕後方半寸，神門掌後兌骨隆。少府節後勞宮直，小指內側取少衝。】

Measuring ode Heart lesser yin

meridian rises up from the centre of HT-1 highest spring, it goes under the armpit to the space where the blood vessels enter the thorax. HT-2 cyan spirit is above the elbow 3 cun, HT-3 lesser sea is five fen behind the centre of the elbow. HT-4 spirit path is behind the palm 1 and a half cun, HT-5 connecting village is behind the wrist 1 cun similarly. HT-6 yin cleft is behind the wrist half a cun, HT-7 soul path is behind the palm a fen by the prosperous bone. HT-8 lesser government is behind the knot in the bone level with PC8- palace of toil, HT-9 lesser thoroughfare is on the little finger on the inside edge.

【極泉：循臂內腋下筋間動脈入胷。青靈：伸肘舉臂取之。少海：肘內廉節後大骨，外去肘端五分，屈肘向頭得之。左右凡一十八穴。】

HT-1 extreme fountain/highest spring: follows the inside of the arm below the armpit where the blood vessels pass through the tendons to the thorax. HT-2 cyan spirit: is found if you stretch out the arm and raise the elbow. HT-3 lesser sea: is straight on the inside of the elbow behind the knobble on the big bone, on the outside of the elbow five fen from the end, you find it by flexing the elbow. All together they come to 18 points

經脈篇第十 【中】

This meridian is the tenth chapter in sequence, (of the Ling Shu)(in the middle)

16/01/2014

Small Intestine

小腸手太陽之脈，起於小指之端，循手外側上腕，出踝中，直上循臂骨下廉，出肘內側兩筋之間，上循臑外後廉，出肩解，繞肩胛，交肩上，入缺盆，絡心，循咽下膈抵胃，屬小腸；其支者，從缺盆循頸上頰，至目銳眦，卻入耳中；其支者，別頰上(出頁)抵鼻，至目內眦，斜絡於顴。是動則病噤痛，頰腫不可以顧，肩似拔，臑似折。是主液所生病者，耳聾目黃，頰腫頸頰肩臑肘臂外後廉痛。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛，以經取之。盛者人迎大再倍於寸口，虛者反小於寸口也。 【(出頁)，音拙。】

Small Intestine hand tai yang meridian, rises straight up from the end of the little finger, travels along the outside of the hand to the wrist, goes to the centre of the ankle?wrist, goes straight up and follows along the underside of the bone, exits the elbow at the inside in the space between 2 sinews, goes straight up the outside of the inner arm at the back, exits the shoulder joint, winds around the shoulder blade, exchanges with the top of the shoulder, joins to ST-12 empty basin, connects with the heart, follows the pharynx down through the diaphragm to the stomach, to the

category of the small intestine; it has a branch, which goes from ST-12 empty basin up along the throat to the jaw, to the corner of the eye socket, it joins with the inside of the ear; it has a branch, which goes from the cheek and goes along (bone below the eye socket) to the flat side of the nose, to the inside of the eye socket, it slants and wraps around the cheekbone. It controls diseases of aching and choking in the throat, swelling of the chin and not being able to turn the head around, the shoulders seem to be pulled out, the inner arm seems to be snapped. Indeed it is the place that is the origin of fluid diseases, deafness and yellowness of the eyes, swelling in the cheeks jaw and throat pain and ache in the shoulder, outside back part of the soft upper arm and elbow. It is the place of many diseases, in fullness drain, in emptiness repair, in heat remove the needles quickly, in coldness retain them, if the pulse is sinking use moxa, if there is neither excess nor deficiency, treat along the meridian. In excess the carotid pulse will be twice as strong as the radial pulse, in deficiency it will be half less than the radial pulse. [bone below the eye socket].

【馬蒔曰：此言小腸經脈氣之行，乃為第六經也。臂骨盡處為腕，腕下兌骨為踝，脊兩旁為膂，膂上兩角為肩解，肩解下成片骨為肩胛，目外角為銳眥，目下為(出頁)，目內角為內眥也。手太陽小腸經之脈，起於小指少澤穴，受手少陰心經之交也，由是循外側之前谷、後谿上腕，出踝中，歷腕骨、陽谷、養老穴，直上循臂骨下廉支正，出肘內側兩筋之間，歷小海穴，上循臑外廉，行手陽明少陽之外，上肩，循肩貞、臑俞、天宗、秉風、曲垣、肩外俞、肩中俞諸穴，乃上會大椎左右，相交於兩肩之上，自交肩下入缺盆，循肩向腋下行，當臑中之分，絡心，循胃系下膈，過上脘抵胃，下行任脈之外，當臑上二寸之分，屬於小腸。

Ma shi said: These words describe the blood and qi of small intestine meridian, it is the 6th meridian in sequence. It uses up the arm bone to the wrist, the wrist is below the styloid process of the ulna, they are two either side of the spine, the shoulder joint is above the corner either side of the backbone, the shoulder joint is below the fixed joint of the shoulder blade, to the outside corner of the eye socket, it goes below the eye (bone below the eye socket), inside the corner of the eye socket. Hand tai yang small intestine meridian, rises straight up from the little finger at SI-1 lesser marsh point, exchanges and connects with hand tai yin heart meridian, because it goes straight up the outside slant to SI-2 front valley, SI-3 back ravine is above the wrist, goes out to the centre of the wrist, passes through to the ulna bone, SI-4 yang valley, SI-5 support the aged point, it goes straight up along the arm bone, exits at the inner elbow in the space between 2 tendons, at SI-8 lesser sea point, it goes straight up and follows the outside arm, passes outside hand yang ming and lesser yang, goes up to the shoulder, follows SI-9 true shoulder, SI-10 upper arm transportation point, SI-11 celestial gathering, SI-12 grasping the wind, SI-13 crooked wall, SI-14 outer shoulder transportation point, SI-15 central shoulder transportation point, various acupuncture points, then they all meet at GV-14 great hammer left and right, reciprocally exchange with the tops of both, shoulders, from the joining of the shoulders comes down and joins with St-12 empty basin, follows the shoulder and goes down to the armpit, goes to the centre of the chest, connects with the heart, follows the stomach line through the diaphragm, pass through the top part of the stomach, goes down the ren vessel to the outside, to 2.5 cun above the navel, to the small intestine.

其支行者，從缺盆循頸之天窻、天容上頰，抵顴髎，上至目銳眥，過瞳子髎，卻入耳中，循聽宮而終焉。其支別者，別循頰，上(出頁)抵鼻，至目內眥睛明穴，以斜絡於顴，而交於足太陽

經也。及其動穴驗病，則為噤痛，為頷腫不可以顧，以脈循咽、循頸上頰也。為肩似拔而痛，以脈出肩解繞肩胛也。為臑似折而難舉，以脈循於臑也。

There is a branch which goes, from ST-12 empty basin follows up to SI-16 celestial window, SI-17 celestial countenance goes up to the jaw, to SI-18 cheek bone foramen, goes up to reach the corner of the eye socket, passes through the foramen of the pupil of the eye, and joins with the centre of the ear, follows SI-19 auditory palace and ends there. This has a branch, that follows the jaw, goes up to the side of the nose (where in the body), goes to the inside of the eye socket to BL-1 bright eye point, therefore meshes with the side of the cheekbone, and exchanges with the foot tai yang meridian. Movement at this point can be used to test for sickness, with pain/choking in the throat, with swelling of the jaw and inability to look behind, this vessel follows the pharynx, follows the throat to the top of the jaw. Pain as if the shoulder is being pulled out, this vessel exits at the shoulder and explains the winding around the shoulder and shoulder blade. As if the arm feels like it is going to snap and is difficult to lift, because this vessel follows the arm.

是主心液不足而生病也。又有諸病之生，或出本經，或由合經。為耳聾，以脈入耳中循聽宮也。為目黃，支脈入目銳眥內眥也。為頰腫，支脈上頰別循頰也。為頸頷肩臑肘臂外後廉痛，是皆經脈所過之處。故邪氣盛則瀉之，正氣虛則補之，熱則疾去其鍼，寒則久留其鍼，脈下陷者，則用艾以灸之。

If the fluid of the pericardium is insufficient creates disease. It is the location which creates many diseases, maybe goes out from this meridian, maybe is the reason for joining in this meridian. It is the reason for deafness in the ear, this vessel joins with the centre of the ear and follows SI-19 auditory palace. Yellow eyes, this vessel joins to the corners of the inside of the eye socket. The reason for swelling of the jaw, this vessel goes up to the jaw and has a branch which follows the jaw. The reason for pain along the neck, chin, shoulder, upper arm, elbow, outer back arm straight, these are the places that this vessel passes through. If evil qi is flourishing then drain, if upright qi is deficient then repair, in the case of heat sickness then depart with the needle, in the case of cold then retain the needle, if the vessel is sinking, then use moxa.

若不盛不虛，則止取之本經，而不必求之手少陰心經也。所謂盛者，何以驗之？人迎較寸口之脈大者，二倍而躁，則小腸經為實，如終始篇所謂瀉手太陽小腸而補手少陰心者是也。人迎較寸口之脈小者，二倍而不躁，則小腸經為虛，如終始篇所謂補手太陽小腸而瀉手少陰心者是也。】

If it is neither deficient nor excessive, then use the meridian to treat, and not necessary to use the hand shao yin heart meridian. If the place that is abundant, how will you tell? The carotid pulse will be greater than the radial pulse, twice and irritable, then the small intestine meridian is solid, if that is the case then this chapter says the place to drain is the hand tai yang small intestine and the place to repair is the hand tai yin heart. If the carotid pulse is less than the radial pulse, twice and irritable, then the small intestine is empty, if this it the case then this chapter says the place to repair is the hand tai yang small intestine and the place to drain is the hand tai yin heart.

【張志聰曰：小腸手太陽之脈，是動則病噤痛，頷腫，乃病氣而及於有形，故復曰似拔似折，皆形容氣逆之所致也。小腸為受盛之官，化水穀之精微，故主液，小腸所生病者，為耳聾，目黃，頰腫，頸項肘臂痛，皆經脈所循之部分而為病也。

Zhang zhi cong said: small intestine hand tai yang meridian, is the source of pain and sickness in the throat, swelling of the jaw, if the qi is diseased then it will reach up and manifest, because if it is returning it is as if it snaps or bends, this is the place where it appears when the qi rebels. Small intestine is the servant which receives excess, changes water and grains into essence, because it is the controller of fluids, small intestine is the place where disease is created, it is the place for deafness, yellow eyes, swollen jaw, pain along the neck, nape, upper arm and elbow, all meridians pass through this division and it therefore is the cause of disease.

尚御公曰：臟腑雌雄相合，並受五行之化，故在臟主臟，以合五行，在腑則以六腑所生之血氣津液筋骨而為病，蓋病則所主之氣不足，而病生於外矣。】

Shang yu gong said: zang and fu, male and female, reciprocally unite, they equally receive and change in the five phases, because the zang are the master of the fu (fu?), they join in the 5 phases, in the bowels it is the rule that the 6 fu is the place where blood, qi, essence, fluids, sinews, bones are created and also disease, the rule of how disease is covered is where it is created qi insufficient, and sickness is created on the outside.

【《靈樞》平人絕穀篇云：小腸大二寸半，徑八分分之少半，長二丈二尺，受穀二斗四升，水六升三合合之大半。

又腸胃篇云：小腸後附脊左，環迴周疊積其注於迴腸者，外附於臍上，迴環十六曲，大二寸半徑八分分之少半，長三丈三尺。

《素問》靈蘭秘典論云：小腸者，受盛之官，化物出焉。

《靈樞》本臟篇云：心應脈，皮厚者脈厚，脈厚者小腸厚；皮薄者脈薄，脈薄者小腸薄；皮緩者脈緩，脈緩者小腸大而長；皮薄而脈衝小者，小腸小而短；諸陽經脈皆多紆屈者，小腸結。】

Ling Shu chapter 32 level people digest grain says: small intestine is 2.5 cun big, diameter is 8 fen less than half, length is 2 zhang 2 foot, it receives 2 peck 4 sheng of food, water 6 sheng 3 unions more than half.

Chapter 31 bowels and intestines chapter says: small intestine adhere to the spine on the left, they curve around repeat to amass and become compact by circling around the intestine, at the outside they adhere to the navel, they circle around 16 times, largest is 2 cun of which there are 8 divisions roughly less, length is 3 zhang 3 foot

Su Wen chapter 8 the secret treatise of the spiritual orchid says: small intestine, is the servant which receives abundance, it changes this and sends out the product.

Ling Shu chapter 47 the root of the zang says: heart and blood vessels, if the skin is thick then the blood vessels are thick, if the blood vessels are thick then the small intestine is thick; if the skin is thin then the blood vessels are thin, if the blood vessels are thin then the small intestines are thin; if the skin is sluggish then the blood vessels will be sluggish, if the blood vessels are sluggish then the small intestine will be big and long; if the skin is thin and the blood vessels have a small pulse, then

the small intestine will be small and short; various yang meridians vessels are bent and twisted, the small intestine connects them.

小腸腑形象之圖

Small intestine bowel ivory figurine diagram

見圖

See diagram

【[小腸經諸穴歌]小腸穴十九中，從少澤步前谷後谿之隆，遵腕骨觀陽谷養老之崇，支正小海肩貞相從。值臑俞兮遇天宗，乘秉風兮曲垣通。肩外俞兮肩中俞，啟天窻兮見天容，由顴髎造聽宮。】

Ode of the various points on the small intestine meridian:

small intestine points are 19, from SI-1 lesser marsh it steps to SI-2 front valley to SI-3 back ravine is prosperous, follow SI-4 wrist bone observe SI-5 yang valley SI-6 support the aged and esteem, SI-7 branch to the correct SI-8 lesser sea SI-9 true shoulder reciprocates. SI-10 upper arm shu encounters SI-11 celestial gathering, climb SI-12 grasping the wind SI-13 crooked wall and pass through. SI-14 outer shoulder shu yea SI-15 central shoulder shu, open SI-16 celestial window sea SI-17 celestial countenance, from SI-18 cheek foramen make SI-19 listening palace.

【[分寸歌]小指端外為少澤，前谷外側節前覓。節後捏拳取後谿，腕骨腕前骨陷側。兌骨下陷陽谷討，腕上一寸名養老。支正腕後量五寸，小海肘端五分好。肩貞胛下兩骨解，臑俞大骨下陷討。天宗秉風後骨中，秉風髎外舉有空。曲垣肩中曲胛陷，外俞胛後一寸從。肩中二寸大杼旁，天窻扶突後陷詳。天容耳下曲頰後，顴髎面頰銳端量。聽宮耳端大如菽，此為小腸手太陽。】

Measuring ode (small intestine)

of the outside of the little finger SI1 Lesser Marsh, to SI2 Front Valley along the outside slope of the front joint seek. Behind the joint make a fist gives SI3 Back Ravine, SI4 Wrist Bone at the wrist in front of the bone on the side where you sink. At the protuberant bone go under and sink to look for SI5 Yang Valley, go down from the wrist one cun is called SI6 Provide for the Elderly. SI7 Straight Branch is along the wrist 5 cun, SI8 Lesser Sea is good at 5 fen behind the elbow. SI9 True Shoulder is under the shoulder blade 2 bones divide, SI10 upper arm shu is where you sink in below the big bone. SI11 Celestial Ancestry SI12 Grasping the Wind are at the centre of the back of the bone, SI12 Grasping the Wind is in the hollow when you raise your arm. SI13 Crooked Wall is in the centre of the shoulder in the dip along the crooked ridge, SI14 outer shoulder shu is behind it one cun following. SI15 central shoulder is 2 cun lateral to SI11 Great Shuttle, SI16 Celestial Window is behind SI18 Protuberance Support in the dip. SI17 Celestial Countenance is below the ear on the bend behind the jaw, SI18 Cheek Foramen is to be measured on the pointed end of the cheekbone. SI19 Auditory Palace is at the end of the ear like a big soya bean, this is small intestine hand tai yang.

【肩貞：曲胛下兩骨解間肩髃後陷中。臑俞：大骨下胛上廉，舉臂取之。秉風：天髎外肩小髃後，舉臂有空。外俞：即外肩俞，肩胛上廉，去脊三寸陷中。天窓：在頸大筋間前，曲頰下，扶突後，動脈應手陷中。顴髎：面頰骨下廉銳骨端陷中。聽宮：耳中珠子，大如赤小豆形。左右凡三十八穴。】

SI 9 True Shoulder: is below the spine of the scapula where both bones come apart in the space below the back of the shoulder where you sink. SI10 Upper Arm Shu: is below the big bone under the shoulder blade straight up, found when you lift the arm. SI 12 Grasping the Wind: is in the big foramen on the outside of the shoulder below and behind the small shoulder bone, it forms a hollow when you raise the arm. SI14 Outer Shu: is immediately above the spine of the scapula, you go along the scapula spine 3 cun and sink. SI 16 Celestial Window: is located in the throat in the space in front of the big sinew, below the bend of the jaw, behind LI18 Protuberance Support, where the blood vessel is the hand should sink. SI 18 Cheek Bonehole: is on the face under the pointed end of the end of the cheekbone where there is a dip. SI19 Auditory Palace: is in the jewel at the centre of the ear, large and shaped like a bean. Both together make 38 points.

小腸經諸穴之圖

Diagram of small intestine meridian various points

見圖

See diagram

Bladder Meridian

膀胱足太陽之脈，起於目內眥，上額交巔；其支者，從巔至耳上角；其直者，從巔入絡腦，還出別下項，循肩膊內，挾脊抵腰中，入循膂，絡腎屬膀胱；其支者，從腰中下挾脊貫臀，入臑中；其支者，從膊內左右別下，貫胛挾脊，內過髀樞，循髀外，從後廉下合臑中以下，貫踇內，出外踝之後，循京骨至小指外側。是動則病衝頭痛，目似脫，項如拔，脊痛，腰似折，髀不可以曲，臑如結，踇如裂，是為踝厥。是主筋所生病者，痔瘡，狂癲疾，頭顙項痛，目黃，淚出，眦衄，項背腰尻臑踇腳皆痛，小指不用。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛，以經取之。盛者，人迎大再倍於寸口，虛者，人迎反小於寸口也。

【膂，音旅。臀，音屯。臑，音國。踇，同蹠。】

Bladder Foot Tai Yang Meridian, rises up from the inner corner of the eye, goes up and joins to the forehead: it has a branch, from the summit of the mountain which goes down to the corner of the ear; it goes straight, from the vertex and joins with the brain, and goes down to exit at the nape of the neck, it follows the shoulder and the inner upper arm, wraps around the backbone to go to the kidney, joins with and follows the spine, wraps around the kidneys and bladder; it has a branch, which goes from the waist and wraps around the spine to descend to the buttocks, it joins into the hollow in the centre; there is a branch, from the inside of the arms left and right which divides and goes down, it goes through the shoulder blade and wraps around the spine, inside the GB 30 Pivot of the Buttock, it travels down the outside of the buttock, and goes straight down the back to where it joins in the hollow, from here it goes down, it goes through the inside where you kick, and exits on

the outside of the ankle at the back, it follows the capital bone to finish at the extremity of the outside of the little toe. It is the reason for diseases of movement and aching rushing to the head, protuberance from the eye, feeling like the neck is being uprooted, aching in the spine, feeling like the waist/kidneys will snap, inability to bend the thigh, like a hollow knot, as if it will break if you kick, this is to the ankle. It governs sinews and the creation of diseases, in the case of fullness then drain, in the case of emptiness then repair, in heat take the needles out quickly, in cold retain, if there is sinking then use moxa, if there is neither fullness nor excess then treat on the meridian. In fullness the carotid pulse will be greater than the radial pulse 2 times, in the case of emptiness the carotid pulse will be less than the radial pulse 2 times. [Spine sounds like 旅, buttock sounds like 屯, hollow sounds like 國. Kick sounds like 蹯.

【馬蒔曰：此言膀胱經經脈之行，乃為第七經也。目大角為內眥，髮

際前為額，頭頂上為巔。腦，頭髓也。腦後為項，肩後之下為肩膊，椎骨為脊，尻上橫骨為腰，挾脊為膂，挾腰髖骨兩旁為機，機後為臀，腓腸上膝後曲處為臑。

Ma shi said: This passage describes the pathway of the bladder meridian, it is the 7th meridian in the sequence. It starts at the big corner of the eye at the inner canthus, it goes forward on the forehead to the hairline, to the top of the head at the vertex. Also to the brain and head marrow. From the brain it goes to the nape of the neck, to behind the shoulder where it goes down the shoulder, to the bony spinous processes of the spine, from the sacrum it goes up to the pubic bone to the pelvic bone, it wraps around the backbone and spinal column, and wraps around the waist and both hipbones, 機 and pivot, pivot (SP8, CV4&5, BL35) is behind the buttocks, from the calf go up to behind the knee at the hollow where it bends.

膂內為膂，即挾脊肉也。股外為髀，捷骨之下為髀樞，腓腸為臑也。足太陽膀胱經之脈，起於目內眥睛明穴，受手太陽之交也。上額循攢竹，過神庭，歷曲差、五處、承光、通天，自通天斜行左右，交於頂上之百會。其支行者，從巔至百會，抵耳上角，過率谷、浮白、竅陰穴，所以散養於筋脈也。其直行者，由通天、絡卻、玉枕入絡腦，復出下項以抵天柱，又由天柱而下過大椎、陶道，卻循肩膊內挾脊兩旁，相去各一寸半，下行歷大杼、風門、肺俞、厥陰俞、心俞、膈俞、肝俞、膽俞、脾俞、胃俞、三焦俞、腎俞、大腸俞、小腸俞、膀胱俞、中膂內俞、白環俞，由是抵腰中，入循膂絡腎，下屬膀胱。其支別者，從腰中循腰髖，下挾脊，歷上髎、次髎、中髎、下髎、會陽下貫臀，至承扶、殷門、浮郤、委陽，入臑中之委中穴。

The inside of the spine goes to the shoulder blade, it quickly wraps around the flesh of the backbone. The outside of the thigh and thighbone, the hinge under the buttock is the bone at the end of the skeleton, the calf also kicks. Foot tai yang bladder meridian, rises up from the inner canthus of the eye BL1 bright eye point, it receives and joins with hand tai yang (SI). Goes up to the forehead to BL2 Gather Bamboo, passes through GV24 Spirit Courtyard, past BL4 Crooked Pass, BL5 5th Place, BL6 Light Guard, BL7 Celestial Communication, it communicates with the sides and the top on both sides, connects at the top of the head at GV20 Hundred Meetings. There is a branch which goes, from the vertex to GV 20 Hundred Meetings, which goes to the upper corner of the ear, passes GB8 Through Valley, to GB10 Drifting White, to GB11 head yin point, this is the place where the tendons and blood vessels rise up to and scatter. It travels straight, from BL7 Celestial Connection, to BL8 Declining Connection, BL9 Jade Pillow joins and meshes with the brain, it returns and goes down the nape of the neck to BL10 Celestial Pillar, and from BL10 celestial pillar goes down and connects with

GV14 Great Hammer, GV13 Ceramic Path, it follows the shoulders and the upper arms to then go down either side of the backbone, reciprocally 1.5 cun lateral, it passes down to pass through BL11 Great Shuttle, BL12 Wind Gate, BL13 lung shu, BL14 jue yin shu, BL15 Heart Shu, BL17 Diaphragm shu, BL18 Liver Shu, BL19 Gallbladder Shu, BL20 Spleen Shu, BL21 Stomach Shu, BL22 Triple Heater Shu, BL23 Kidney Shu, BL24 Colon shu, BL27 Small Intestine Shu, BL28 Bladder Shu, BL29 Centre of the inside of the Backbone Shu, BL30 White Circle Shu, from here it goes to the waist, it joins with the backbone and wraps around the kidneys, the bladder is it's subordinate. There is a branch which divides, from the centre of the waist and goes to the hip, it passes down and wraps around the backbone, to BL31 Upper Foramen, BL32 Second Foramen, BL33 Central Foramen, BL34 Lower Foramen, BL35 Meeting of Yang goes down through the buttocks, to BL36 Carry Support, BL37 Gate of Abundance, BL38 Superficial Cleft, BL39 Bend Yang, joins in the popliteal fossa at the centre at BL40 Bend Middle point.

其支別者，為挾脊兩旁第三行，相去各三寸之諸穴，自天柱而下，從膊內左右別行，下貫脾髻，歷附分、魄戶、膏肓、神堂、譙譙、膈關、魂門、陽綱、意舍、胃倉、肓門、志室、胞肓、秩邊，下歷尻臀過髀樞，又循髀樞之裏，承扶之外一寸五分之間，而下與前之入臚中者相合，下行循會陽，下貫臚內，歷承筋、承山、飛揚、附揚，出外踝後之崑崙、僕參、申脈、金門，循京骨、束骨、通谷，至小指外側之至陰穴，以交於足少陰腎經也。及其動穴驗病，則為邪氣衝頭而痛，脈上額交巔，入絡於腦也。目似脫，脈起目內眦也。

There is a branch which divides, which wraps around the backbone and passes on both sides at side by side in sequence at 3 (cun?), various points reciprocally go and wraps 3 cun lateral, from BL11 Great Shuttle down, from the upper arms on the inside left and right it divides and travels, straight down from the spine of the scapula, BL41 Attached Branch divides, BL42 Po Door, BL43 Gao Huang, BL44 Spirit Hall, BL45 Sighing, BL46 Diaphragm Pass, BL47 Hun Gate, BL48 Yang Headrope, BL49 Idea Abode, BL50 Stomach Granary, BL51 Huang Gate, BL52 Will Chamber, BL53 Bladder/uterus Huang, BL54 End of Sequence, it goes down from the end of the spine through the buttocks and to the hip pivot GB30, and follows the hip pivot to the interior, BL36 Carry Support is in the space 1cun 5 fen to the outside, and down and forward to the central hollow (popliteal fossa) where they reciprocally unite, it goes down to follow BL55 Union of Yang, and goes straight down on the inside of the kicking muscles, To BL56 Support Sinews, to BL57 Support Mountain, BL 58 Fly Upwards BL59 Instep Scatter exits outside the ankle at BL60 kun lun, BL61 Subservient Visitor, BL62 Extended Vessel, BL63 Metal Gate, along BL64 Capital Bone, BL65 Bundle Bone, BL66 Pass Through Valley, goes to the outside slope of the little toe to BL67 Extremity of Yin point, this joins with foot shao yin kidney meridian. These points can be examined for diseases, if evil qi surges then there will be aching at the top of the head, the vessel goes up to the forehead and the vertex, it joins and wraps around the brain. It seems to strip off the eye because the blood vessels rise up to the inner canthus of the eye.

項如拔，脈還別下項也。脊痛，脈挾脊也。腰似折，脈抵腰中也。脾不可以曲，脈過髀樞也。臚如結，脈入臚中也。端如裂，脈貫端內也。是皆外踝脈氣所過之所，其氣厥逆上行，而生此諸病也。又有諸病之生，或出本經，或由合經。為痔，脈貫臀也。為瘡，為狂癲疾，為頭顙項痛，脈上額交巔，入腦下項也。為目黃，為淚出，脈起目內眦也。為鼯衄，為項背腰尻臚端腳皆痛，皆脈氣所經之處，為足小指不能舉用。

As if they are coming out of the nape of the neck blood vessels separate and go down the nape of the neck. Rachialgia, is because blood vessels wrap around the spine. The waist seems like it will

snap, is because blood vessels oppose in the waist. If you cannot bend at the spleen it's because the blood vessels pass through the hip joint (GB30). If the popliteal fossa is knotted it is where the blood vessels go to the centre of the hollow. If where you walk feels like it will split open it is the blood vessels which travel along the inside of the calf. Indeed all the blood vessels and qi pass through the outside of the ankle, rebellious qi will travel upwards, and create various diseases. It creates various diseases, perhaps it goes from the meridian, perhaps the joining of the meridian is the cause. In the case of piles the blood vessels pass through the buttocks. In the case of malaria and insanity, in the case of pain in the top of the head and the nape of the neck, blood vessels rise to the forehead and connect to the vertex where they enter the brain and travel to the nape of the neck. If the eyes are yellow, and crying it is the blood vessels that rise to the inner canthus of the eye. If the nose is clogged, and there is pain from the nape of the neck through the back the buttocks the popliteal fossa the calf and the bottom of the foot, all the blood and qi passes through these places to the end of the little toe which cannot be lifted.

故邪氣盛則瀉之，正氣虛則補之，熱則疾去其鍼以瀉之，寒則久留其鍼以溫之，脈下陷者則用艾以灸之，若不盛不虛，止以本經取之，而不必求之足少陰腎經也。所謂盛者，何以驗之？人迎較寸口之脈大者二倍，則膀胱經為實，如終始篇所謂：瀉足太陽膀胱而補足少陰腎者是也。人迎較寸口之脈小者二倍，則膀胱經為虛，如終始篇所謂補足太陽膀胱而瀉足少陰腎者是也。】

In the case of evil qi drain, If upright qi is deficient then repair, the rule of hot sickness is to take the needle out quickly and drain, the rule of cold sickness is to retain the needle and warm, if the blood vessel is sinking then use moxa, if there is neither excess nor deficiency then treat the root of the meridian and do not use the foot shao yin kidney meridian. The place of various deficiencies, how will we know? Carotid pulse, radial pulse etc.

【張志聰曰：膀胱足太陽之脈，是動則病衝頭痛，目似脫，項如拔，腰似折，臍如結。曰似曰如者，病在太陽之氣，而有似乎形證也。太陽之氣，生於膀胱水中，而為諸陽主氣，陽氣者柔則養筋，故是主筋所生之病則為痔。經云：筋脈橫解，腸澼為痔。蓋太陽所主之筋，膀胱所生之脈，橫逆而為痔也。經絡沉以內簿則為瘡，厥逆於下則為癰為狂。囟?頁項顛目腰背臍端諸證，皆經脈所循之部分而為病也。】

Zhang zhi cong said: Bladder foot tai yang vessel, is the rule for disease which rush to the head and cause pain, the eye feels peeled, the nape of the neck feels like it is being pulled out, the waist feels like it will snap, the popliteal fossa feels knotted. We say that the disease is in the qi of tai yang, and to prove this. Qi of foot tai yang, water is born in the bladder, and yang controls qi disease, yang qi is the basis of muscles and sinews and is the cause of piles. This passage (from the Su Wen ch. 3) says: muscles and blood untie, intestines clean cause piles. Tai yang is the basis of the sinews and the bladder is the place where the vessels start that rebel horizontally and cause piles. The meridian network passes to the inside in the case of malaria it passes down and causes madness and insanity. The chimney, nape of neck, eye, blocked nose, waist, back, popliteal fossa, calf, are various sources of evidence, the meridian and vessels pass through these places and cause disease.

【尚御公曰：《傷寒論》云：太陽之為病，脈浮，頭項強痛而惡寒。又曰：太陽病頭痛至七日以上自愈者，以行其經盡故也。夫傷寒六經相傳，七日來復，於太陽止病。三陰三陽之六氣，而不涉於有形，然頭項強痛，又有似乎經証，蓋氣舍於形，未有病氣而不見於形証者也。】

Shang yu gong says: Shang han lun says: Tai yang has diseases, blood vessels travel to the nape of the neck and the head and then evil cold causes pain. It says: Tai yang reaches the top of the head in 7 days by itself, but more and more becomes depleted. In chapter six of the shang han the 7 days mutually interact and if tai yang halts then there is disease. 3 yin and 3 yang make 6 qi, and they do not have form, yet there will be strong pain at the top of the head, and this is like proof, if the qi has no form then it cannot be seen but when it is diseased then this will show where it travels.

【膀胱重九兩二銖，縱廣九寸，居腎之下，大腸之側，小腸下口，乃膀胱上口，水液由是滲入焉。盛溺九升九合。《素問》靈蘭秘典論云：膀胱者，州都之官，津液藏焉，氣化則能出矣。《靈樞》本臟篇云：腎應骨，密理厚皮者，三焦膀胱厚；疏理薄皮者，三焦膀胱薄；疏腠理者，三焦膀胱緩；皮急而無毫毛者，三焦膀胱急；毫毛美而粗者，三焦膀胱直；稀毫毛者，三焦膀胱結也。】

Bladder weighs 9 pair and 2 weights, it lives 9 cun below the kidneys, the slant of tai yang, shao yang is below the mouth, the bladder is above the mouth, how then can water arrive and enter into the bladder. If excessive then there will be urinating with 9 (volume) above and 9 (volume) joining.

Su Wen treatise of the spiritual orchid says: the bladder is the official by which all fluid and humors are collected and stored so that they can be changed and evacuated by the qi.

Ling Shu chapter on the basis for internal organs (47) says: the kidneys have a relationship with bone, this can logically be seen in the skin if it is thick, the triple heater and the bladder being great; if there is looseness between the skin and the flesh this is the logic between the triple heater and the bladder being slow; if the skin is quick and has no hair then the relationship between the triple heater and bladder is quick; if the skin and hair are thick and beautiful then the triple heater goes straight to the bladder; if there is sparse hair then the triple heater and bladder are knotted.

【[膀胱經諸穴歌]足太陽，六十三。睛明攢竹，詣曲差五處之鄉；承光通天，見絡卻玉枕之行。天柱高兮大杼抵，風門開兮肺俞當。厥陰心膈之俞，肝膽脾胃之藏。三焦腎兮大腸小腸，膀胱俞兮中膂白環。自從大杼至此，去脊中寸半之旁。又有上次中下四膠，在腰四空以相將。會陽居尻尾之側，始了背中二行。仍上肩胛而下，附分二椎之旁。三椎魄戶，四椎膏肓。神堂噫嘻兮鬲關，魂門兮陽綱，意舍兮胃倉。肓門志室，秩邊胞育。承扶浮郄與委陽，殷門委中而合陽。承筋承山到飛揚，附陽崑崙至僕參。申脈金門，探京骨之場；束骨通谷，抵至陰小指之旁。】

Ode of the bladder meridian points

Foot tai yang, 63. BL1 Bright Eye, BL2 Bamboo Gathering, BL4 Crooked Errand, BL5 Fifth Place is rural; BL6 Carry Light, BL7 Celestial Connection, to BL8 Declining Connection, BL9 Jade Pillow goes. BL10 Celestial Pillar is high! BL11 Great Shuttle opposes, BL12 Wind Gate opens! BL13 Lung Shu undertakes. BL14 Pericardium BL15 heart and and BL17 diaphragm shu, BL18 liver, BL19 Gallbladder, BL20 spleen, BL21 stomach are storehouses. BL22 Triple Heater, BL23 kidney, BL25 Large Intestine, BL27 Small Intestine, BL28 Bladder shu, BL29 central backbone, BL30 White Circle. From BL11 this arrives, either side of the spine 1.5 cun. And again it has from the centre down to the four foramina (BL31-34), at the waist there are four reciprocal holes. BL35 Meeting of Yang is at the tip of the ischial tuberosity, then both travel to the centre of the backbone. Still up at the shoulder blade and going down, BL41 Attached Division is level with the second spinous process. At the 3rd spinous process is BL42 Po Door, Fourth spinous process is BL43 Gao Huang. BL44 Spirit Hall, BL45 yi xi

(sighing/happy sound), BL46 Diaphragm Pass, BL47 Hun Door, BL48 Yang Headrope, BL49 Thought Residence, BL50 Stomach Granary. BL51 Huang Gate, BL52 Will Chamber, BL54 Sequence Limit, BL53 Uterus Membrane. BL36 Support floats and gives yang to BL37 Gate of Abundance which sends to the centre to BL55 Yang Union. BL56 Support Sinew, BL57 Support Mountain, arrive at BL58 Flying Upward, BL59 Instep Yang, BL60 Kun Lun arrives at BL61 Subservient Visitor, BL62 Extended Vessel, BL 63 Metal Gate, find BL64 Capital Bone passage, BL65 Bundle Bone, BL66 Passage Valley, go to BL67 Reaching Yin on the little toe where it stops.

膀胱腑形象之圖

Diagram of bladder organ from the ivory figurine

見圖

See diagram

【[分寸歌]足太陽兮膀胱經，目內眥角始睛明。眉頭陷中攢竹取，曲差髮際上五分。五處髮上一寸是，承光髮上二寸半。通天絡卻玉枕穴，相去寸五調勻看。玉枕夾腦一寸三，入髮二寸枕骨現。天柱項後髮際中，大筋外廉陷中獻。自此夾脊開寸五，第一大杼二風門。三椎肺俞厥陰四，心俞五椎之下論。膈七肝九十膽俞，十一脾俞十二胃。

Measuring ode of Foot tai yang bladder

meridian, it begins at the inner canthus of the eye at BL1 Bright Eyes. From the eyebrow it goes up to the head and sinks into the centre to BL2 Bamboo Gathering, takes BL4 Crooked Turn into the hairline up below five fen. From BL5 Fifth place it goes up 1 cun, to BL6 Guard Light into the hair 2.5 cun. BL7 Celestial Connection BL8 Declining Connection BL9 Jade Pillow points, you will see at about 1.5 cun intervals. BL9 Jade Pillow connects with the brain 1 cun 3, joins at 2 cun inside the hairline where the occiput is visible. BL10 Celestial Pillar is in the nape of the neck inside the hair, on the outside of the big sinew where you sink in. This then opens beside the spine 1.5 cun, the first in sequence is BL11 Great Shuttle second BL12 Wind Gate. Third spinous process is BL13 lung shu, BL14 jue yin shu is 4th, BL15 heart shu is 5th spinous process discuss below. BL 17 diaphragm shu is 7th, BL18 liver is 9th BL19 Gallbladder is 10th, 11th is BL20 Spleen shu 12th is BL21 stomach.

十三三焦十四腎，大腸十六之下推。小腸十八膀十九，中膂內俞二十椎。白環廿一椎下當，已上諸穴可排之。更有上次中下髎，一二三四腰空好。會陽陰尾尻骨旁，背部二行諸穴了。又從脊上開三寸，第二椎下為附分。三椎魄戶四膏肓，第五椎下神堂尊。第六噫嘻膈關七，第九魂門陽綱十。十一意舍之穴有，十二胃倉穴已分。

13th is BL22 triple heater 14th is BL23 kidney, BL25 large intestine makes 16th to push below. BL27 small intestine is 18th BL28 Bladder shu is 19, BL29 central backbone inner shu is 20th push. BL30 shu of white jade ring is found under the 21st process, to finish the many points in a row. More exist from the top to the centre of the foramina, 1,2,3,4, are in the sacrum hollows. BL35 Union of Yang and CV1 yin meet either side of the tail bone at the end of the spine BL35 meeting of yang, they circulate twice in the back various points. And start again from the top 3 cun either side of the spine with BL41 Attached Divide. At the 3rd process is BL42 Po Door 4th is Gao Huang Shu, below the 5th process is BL43 Spirit Hall is honoured. The 6th Sighing 7th Diaphragm Pass, 9th Hun Gate BL48 Yang Heavy

Rope is 10th. 11th is BL49 Reflection Abode points, 12th BL50 Stomach Granary point finishes the division.

十三肓門端正在，十四志室不須論。十九胞肓廿秩邊，背部三行諸穴勻。又從臀下陰紋取，承扶居於陷中主。浮郤扶下方六分，委陽扶下寸六數。殷門扶下六寸長，臍中外廉兩筋鄉。委中膝骨約紋裏，此下三寸尋合陽。承筋腳跟上七寸，穴在腓腸之中央。承山腓下分肉間，外踝七寸上飛揚。輔陽外踝上三寸，崑崙後跟陷中央。僕參亦在踝骨下，申脈踝下五分張。金門申脈下一寸，京骨外側骨際量。束骨本節後陷中，通谷節前陷中強。至陰卻在小指側，太陽之穴始周詳。】

13th is BL51 Huang Gate is at the end, 14th BL52 Will Chamber must not discuss. 19th BL53 Womb Membrane 20th BL54 End of Sequence, these are various points on the back 3 cun apart. From below the buttocks take the yin line, to BL36 Support in the dip where you sink in in the centre. BL37 Gate of Abundance supports 6 cun below BL36 'Support' in length, BL38 Floating Cleft 6 fen above BL39. BL39 Bend Yang supports 6 cun down at the outside of the popliteal fossa between 2 sinews. BL40 Bend Middle is on the crease in the centre of the knee joint, below it 3 cun is BL55 Yang Union. BL56 Sinew Support is above the heel 7 cun, the point is in the centre of the calf. BL57 Support Mountain is in the calf below the space in the flesh, above the lateral malleolus 7 cun is BL58 Flying Upwards. BL59 Protect/Instep Yang is above the lateral malleolus 3 cun, BL60 Kunlun Mountains is behind the heel where you sink in. BL61 Servant Advisor is also below the ankle bone, BL62 Extending Vessel is below the ankle 5 fen. BL63 Metal Gate is below BL62 1 cun, BL64 Capital Bone is on the outside border of the slope. BL65 Bundle Bone is at the root of the sinew at the back where you sink in, BL 66 Pass Through Valley is in front of the sinew where you sink in. BL67 Arrive at Yin is found at the little toe end, Tai Yang points the complete circuit.

膀胱經諸穴之圖

Bladder meridian various points diagram

見圖

See diagram

【附分：二椎下兩旁，去脊中三寸。白環俞對腰俞。】

BL41 Attached/Double division: from the 2nd spinous process down it goes 3 cun either side of the backbone. BL32 White Ring point is opposite the sacrum

【愚按：魄戶對肺俞，神堂對心俞，魂門對肝俞，意舍對脾俞，志室對腎俞，蓋以肺藏魄，心藏神，肝藏魂，脾藏意，腎藏志，是謂五神臟也。左右凡一百二十六。】

Palpate: BL42 Po door is facing BL13 lung shu, BL44 Spirit Hall is facing BL14 Heart shu, BL49 Reflection Abode is opposite BL20 Spleen shu, BL52 Will Chamber is opposite Kidney shu, because the lungs store the Po, the heart stores the shen, the spleen stores reflection, the kidneys store the will, these are the various 5 stores of spirit. All together makes 126 points.

Kidney Foot shao yin meridian

腎足少陰之脈，起於小指之下，邪趨足心，出於然谷之下，循內踝之後，別入跟中以上踰內，出臑內廉上股內後廉貫脊，屬腎絡膀胱；其直者，從腎上貫肝膈，入肺中，循喉嚨挾舌本；其支者，從肺出絡心，注胃中。

Rises up from under the little toe, evil accumulates at the heart of the foot (KI1), it goes out under KI2 Blazing Valley, it goes along the inside of the ankle, a branch joins inside the heel and goes up along the inside of the calf, it goes up to the popliteal fossa and straight up the thigh on the inside along the back to pass to the backbone, the kidneys belong to the category that connects with the bladder; it is the one that is straight, the kidney channel follows up to the stomach, liver, diaphragm, joins with the lungs, it follows the throat and pharynx and wraps around the root of the tongue; there is a branch, from the lung it exits and connects to the heart, concentrates in the centre of the chest.

是動則病饑不欲食，面如漆柴，欬唾則有血，喝喝而喘，坐而欲起，目(目荒)(目荒)如無所見，心如懸若饑狀，氣不足則善恐，心惕惕如人將捕之，是為骨厥。是主腎所生病者。口熱，舌乾，咽腫，上氣，喘乾及痛，煩心，心痛，黃疸，腸澼，脊股內後廉痛，痿厥，嗜臥，足下熱而痛。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛，以經取之。灸則強食生肉，緩帶披髮，大杖重履而步。盛者寸口大再倍於人迎，虛者寸口反小於人迎也。

【(目荒)，音荒。強，上聲。】

These are the kinds of diseases associated with it starving and lack of appetite, face like dried lacquer, cough with blood in the sputum, to call out then pant and gasp, to sit then have desire to stand, watery eyes as if unable to see, heart hanging as if hungry, qi not in the feet and feeling fearful, heart very cautious as if someone going to seize them, this is the disease of the 骨厥 bone reversal. This governs the place of the kidney and creates diseases. The mouth is hot, the tongue is dry, the throat is swollen, the qi rises, the throat feels like it is choking and aching, anxiety, aching in the heart, jaundice, diarrhoea, backbone and thigh on the back and the inside are aching, paralysis impotence, wish to lie down, heat on the sole of the foot and aching. Use moxa and strong food to create flesh, release the belt in the middle and leave hair loose, use a big cane and strong shoes and walk. If there is excess then the radial pulse will be 2x bigger than the carotid pulse, in the case of deficiency the radial pulse will be less than the carotid pulse. [(Eye watery) sounds like huang, desolate. Strong, top note.]

【馬蒔曰：此言腎經脈氣之行，乃為第八經也。趨，向也。跟，足根也。足少陰腎經之脈，起於足小指之下，斜趨足心之 泉，轉出內踝前起大骨下之然谷，下循內踝後之太谿，別入跟中之大鍾、照海、水泉，乃折自大鍾之外，上循內踝，行於厥陰太陰兩經之後，經本經復溜、交信穴，過脾經之三陰交上臑內，循築賓，出臑內廉，抵陰谷，上股內後廉貫脊，會於督之長強，還出於前，循橫骨、大赫、氣穴、四滿、中注、育俞，當育俞之所，臍之左右屬腎，下臍，過任脈之關元、中極而絡膀胱焉。其直行者，從育俞屬腎處而上行，循商曲、石關、陰都、通谷諸穴，貫肝，上循幽門上膈，歷步廊入肺中，循神封、靈墟、神藏、彘中、俞府，而上循喉嚨，並人迎挾舌本而終也。

Ma Shi said: This passage talks about the pathway of the qi and blood vessels of the kidney meridian, it is the 8th meridian in sequence. Hurry toward 趨, Means go/direction. 跟 means Heel of the foot. Foot shao yin kidney meridian blood vessels, rise up from underneath the little toe of the foot, the well (KI1) is in the heart of the sole, it moves and goes out along the inside of the foot to the big bone at KI2 Navicular Valley, it goes down and adheres to the inside of the ankle at KI3 Great Canyon/Ravine, a branch joins into the ankle at KI4 Big Heel/Goblet, KI6 Shining Sea, KI5 Water Spring, it bends at KI4 Big Heel/Goblet to the outside, goes up and follows the inner ankle, passes behind to both jue yin (Liver) and tai yin (Spleen), the root of the meridian passes to KI7 Continuing Flow, KI8 Crossing Belief/Earth point, it passes through the spleen meridian at SP6 Three Yin Crossing and goes up the inside of the calf, it follows KI9 Strong Knee/Guest Building, goes out to the popliteal fossa and goes straight up the inside, to KI10 Yin Valley, goes up the thigh along the inside at the back straight to along the backbone, it joins to GV1 Long Strong, goes out to the front, follows KI11 Pubic Bone, KI12 Great Plenty, KI13 Qi Point, KI14 Fourth Fullness, KI15 Central Flow, KI16 Membrane Shu, accept KI16 huang shu is located here, the kidneys are to the left and right of the navel, below the navel, passes through Ren Mai CV4 Origin Pass, CV3 Exact Centre (of the body) and this is how/why it connects with the bladder. It is that which travels straight, from KI16 Membrane Shu it connects to the kidney and then continues straight, follows KI17 Metal Sound Bend, KI18 Stone Gate, KI19 Yin Gathering, pass through the valley (KI20) several points, passes through the liver, goes up to KI21 Hidden Door to the diaphragm, takes KI22 Walk along the Corridor and joins into the lungs, follows KI23 Spirit Envelope, KI24 Spirit Ruins, KI25 Spirit Storehouse, KI26 Luxuriant Centre, KI27 Shu Fu, and travels up the throat to ST9 Carotid Pulse and ends by connecting to the root of the tongue.

其支者，自神藏別出繞心，注胃之臆中，以交於手厥陰心包絡之經也。及其動穴驗病，則病饑而又不欲食，蓋虛火盛則饑，而不欲食者脾氣弱也。面如漆柴，漆則腎之色。黑者形於外而如漆柴，則腎主骨者瘦矣。欬唾則有血，以脈入肺中則為欬，而唾中有血，則腎主有損。喝喝而喘，以脈入肺中，循喉嚨挾舌本，火盛水虧之象也。

There is a branch from KI25 Spirit Storehouse which splits off and wraps around the heart, the centre of the chest is at CV17 Chest Centre, from here it wraps around Hand Jue Yin Pericardium and connects with the meridian. At this points you can test for disease, the symptom of disease is to be hungry but have no desire to eat, if you have abundant empty fire then you will be hungry and have no desire to eat this is a symptom of weak spleen qi. The face is the like varnished the colour of firewood, it is the colour of the kidneys. The face is a black shape on the outside like the colour of firewood varnish, this is because the kidneys control the bones and the patient is emaciated. Cough has blood in the sputum, this is because the meridian joins into the lungs which controls cough, so sputum with blood in it is a sign of injured kidneys. If you call out and gasp heavily it is because the blood vessels come into the lungs, it follows the throat to the root of the tongue, abundant fire damages fluid see image.

坐而欲起，陰虛不寧也。目(目亢)(目亢)無所見，水虧肝弱也。心如懸若饑狀，以脈之支者，從肺出絡心也。氣不足則善恐，心惕惕如人將捕之。腎在志為恐，恐傷腎也。此皆腎主於骨，骨之氣逆而厥，故為腎所生之病也。然又有諸病之生，或出本經，或由合經。為口熱，為舌乾，為咽腫，為上氣，為喘乾及痛，脈循喉嚨挾舌本也。為煩心，為心痛，脈從肺絡心也。為黃疸，

為腸澀，為脊股內後廉痛，脈所經等處也。為痿，為厥，為嗜臥，骨痿則嗜臥也。為足下熱而痛，脈起足心涌泉也。故邪氣盛則瀉之，正氣虛則補之。

Sitting and wanting to stand is yin deficient and not able to be restful. Eye (watery eye)/huang shivering/dazzle is not able to see, because there is insufficient fluid in the liver. The heart is as if suspended and hungry, by means of blood vessels it has branches which go out to connect with the lung. The qi of the foot is not good the heart is apprehensive, as if cautious that people will come and capture it. Fire controls various diseases, maybe go out from the root of the meridian, maybe joins with the meridian. This is why the mouth is hot, this is why the tongue is dry, this is why the throat is swollen this is why the qi rises, the throat is dry and aching, the blood vessels are the place of the meridian. This is why there is paralysis, if a person has a weakness of the skeleton they will wish to lie down, this is what paralysis is. Why the sole of the foot is hot and aching, the blood vessels rise from the heart of the foot (KI1) Yong Quan Gushing Spring. If evil qi is abundant then drain, if upright qi is weak then repair.

熱則疾去其鍼以瀉之，寒則久留其鍼以溫之。脈陷下者，則用艾以灸之。若不盛不虛，則止取本經，不必求之於足太陽膀胱經也。如灸者，則當勉強進食，必生長其肉，又寬緩其帶，散披其髮，扶大杖，著重履以緩步之。蓋不太勞動，以腎氣之衰弱也。餘經不言此法，而唯腎經詳言者，以腎經屬水，為身之本，而病人多犯其戒，故獨言之詳。所謂盛者，何以驗之？寸口較人迎之脈大者二倍，則腎經為實，如終始篇所謂瀉足少陰腎而補足太陽膀胱者是也。虛者何以驗之？寸口較人迎之脈小者二倍，則腎經為虛，如終始篇所謂補足少陰腎而瀉足太陽膀胱者是也。】

In the case of heat then the illness will depart by pricking with the needle, if cold then place the needles and retain to warm. If the pulse is sinking, then use moxa. If there is neither excess nor deficiency then the rule is to treat via the meridian, do not use the foot tai yang bladder meridian. If using moxa, force the patient to eat food, this will create length and flesh, and if it is broad and slow then release the belt and free the hair, they will need a large cane and heavy shoes to walk slowly. They will not be able to do heavy labour if their kidney qi is weak. The rest of this chapter explains in detail about the kidney meridian, the kidney is the basis by which water controls the body, it is the root of flesh, and disease of many men are warned of violation, because of the explanation of this thing alone. It is the place of various excesses, how will we know what they are? If the radial pulse is 2x greater than the carotid pulse, then the kidney meridian is solid, if at the end Chapter 9 this passage tells us to drain the foot tai yin kidney meridian and repair the foot tai yang bladder meridian. How will we know if it is deficient? If the radial pulse is 2x less than the carotid pulse, then the kidney meridian is deficient, in this case the passage tells us to repair foot tai yin kidney meridian and drain foot tai yang bladder meridian.

【張志聰曰：少陰之上，君火主之。腎足少陰之脈。是動為病，則上下之氣不交，故飢不欲食，心如懸，若饑狀。氣不足於下則善恐，不足於上，心惕惕如人將捕之。少陰屬腎，腎上連肺，而腎為生氣之原，面如漆柴者，少陰之氣不升也。

Zhang zhi cong said: above shao yin, fire is the lord which governs. Foot kidney shao yin meridian. It moves and causes disease, the rule is for it to go up and down if the qi is not connected, so there is starving with no desire to eat, heart/mind is as if suspended (undecided) and looks like it is starving. If the qi does not reach the foot then one will be fearful and unable to raise the foot, the heart will

be cautious as if someone will come to arrest them. Shao yin is the category for the kidney, kidney rises and connects to the lung, and the kidney is the source that creates qi, if the face looks like lacquered firewood, the qi of shao yin has not been able to rise.

欬唾則有血，喝喝而喘者，少陰之生氣，不上交於肺而肺氣上逆也。坐而欲起者，躁動之象，少陰之氣厥於下而欲上也。骨之精為瞳子，目(目亢)(目亢)無所見者，精氣不升也。此少陰腎臟之生氣厥逆於下，而為此諸病，故為骨厥也。夫腎主藏精，如主腎所生之病，則精液不能上滋，而為口熱、舌乾、噤痛、煩心諸証。

If there is cough with blood in the sputum and if you call out you pant heavily, shao yin has not created qi, it has not risen to connect with the lung and the lung qi will go upwards in reverse (and cough). Sit and desire to rise, the image of tense irritable movement, the qi is below desires to rise up. Essence of bone is seen in the pupil of the eye, wateriness of the eye means you cannot see, the essential qi of the eye does not rise. The shao yin kidney zang creates qi which rises, and when this descends it causes diseases, because of bone reversal 骨厥. Kidney governs the essence of zang, as if the governing kidney is the place where disease is created, the rule of fluid is that it should not move upwards, and the mouth is hot, the tongue is dry, the heart is anxious, these things are the evidence.

蓋水不上濟，則火盛於上矣。氣逆於下，則為痿厥諸證矣。生當作牲，強食牲肉，以助腎氣上升，而與火土之相合也。緩帶者，取其伸舒也。夫腎臟之精，奉心神化赤而為血，髮乃血之餘也，披髮者，使神氣之下交也。大杖重履者，運筋骨之氣也。夫陰陽之氣，有厥於臂者，有厥於胛者，有厥於踝者，有厥於骨者。此章論少陰之氣，厥逆於下，而曰強食牲肉，曰緩帶披髮，蓋少陰為陰陽生氣之原也。

Water is covered and not supposed to help rise, the nature of excess fire it that it goes upward. If qi rebels and goes downward then the evidence for this is in paralysis. To make an animal strong you need to eat meat flesh, by means of the kidneys the qi rises up and joins together fire and earth in a connection. If he loosens the belt then he can stretch out and be comfortable. Kidney yang essence, receives heart shen and turns blood red, the hair then has excess blood, flowing hair therefore shows you that qi and shen have descended and connected. Large cane and heavy shoes, transport the qi of sinew and bone. The qi of yin and yang, have the inner arm, have the shinbone, have the ankle, have the bone. This chapter discusses how rebellious qi of shao yin travels down, and says strong food makes flesh, talks of loosening the belt and letting the hair flow, shao yin is the source of yin and yang qi.

尚御公曰：陷下者，謂氣之下陷也。少陰之上，君火主之，水火陰陽之氣，發原於腎臟，故於少陰腎經，則曰強食生肉，緩帶披髮，拽杖步履。蓋欲陰陽之生氣上升，而環轉出入也。是陰陽六氣，本於臟腑五行之所生，故曰，是動者，謂六氣運用於外，應司天在泉上下升降，動而不息。所生者，謂神機化運，從內而生，外內出入，生化無窮，是氣之生於內而運動於外也。】

Shang yu gong said: If it is sinking down, we call it sinking down qi. Shao yin goes up, it governs fire, the qi of fire water yin and yang, it goes out from the source in the kidney zang, because it is the shao yin kidney meridian, the rule is that strong food makes flesh, loosen the girdle, loosen the hair, use a cane and shoes. Covers and desires yin and yang to create qi and rise up, and to turn in a circle,

exit and rejoin. Shao yang has six types of qi, the root has 5 zang and pathways which are the place where they are created, it says it is because, this is what moves, the various six qi move and carry to the outside, must take charge of heaven at the spring (KI1) to control above and below rising and falling, movement without end. This is the place which creates, the passage says shen and machine change and transport, move from the inside and create, exit and join between the interior and exterior, create and change not be destitute, qi is created so can move between the interior and the exterior.

腎臟形象之圖

Image from the ivory figurine of kidney zang

見圖

See diagram

【腎有兩枚，重一斤二兩，狀如石卵，附著於脊之十四椎下，各開一寸半。《素問》靈蘭秘典論云：腎者作強之官，伎巧出焉。《靈樞》本臟篇云：腎小則臟安難傷；腎大則善病腰痛，不可以俛仰，易傷以邪。腎高則苦背脊痛，不可以俛仰；腎下則腰尻痛，不可以俛仰，為狐疝。腎堅則不病腰背痛，腎脆則苦病消痺易傷。腎端正則和利難傷，腎偏傾則苦腰尻痛也。黑色小理者腎小，粗理者腎大；高耳者腎高，耳後陷者腎下；耳堅者腎堅，耳薄不堅者腎脆；耳好前居牙車者腎端正，耳偏高者腎偏傾也。】

Kidney has 2 stalks, it weighs 1 catty 2 ounces, it looks like an egg-shaped stone and is next to the backbone just below the 14th vertebra, each space is 1.5 cun. Su Wen ch.8 says: kidney is the official which makes strength, it goes out with skill and ingenuity. Ling Shu ch.47 says: if the kidney is small then the internal organ is tranquil and difficult to injure, if the kidney is big then good disease and lumbago, not able to raise and lower the head easily hurt by evil. If the kidneys are tall then there will be bitter pain either side of the backbone, not able to raise and lower the head; if the kidneys are below the waist there will be pain in the buttocks, inability to raise or lower the head, foxy hernia. If the kidneys are hard there will not be disease but the waist will ache at the back, if the kidneys are brittle then there will be disease and dryness and easily injured. If the kidneys are upright then there will be harmony and it will be difficult to fall ill, if they are slanted then they will overflow and there will be pain in the waist and sacrum. Black colour and small ankles mean small kidney, if there is roughness that indicates that the kidneys are large; tall ears indicates tall kidneys, ear is behind and sunken indicates a low kidney; ear is hard indicates the kidneys are hard, ear is thin indicates that the kidneys are weak and fragile; if the ear is well placed by the molars next to the zygomatic bone this indicates that the kidneys are upright, if the ear is inclined to one side and high up then the kidneys will be slanted.

【[腎經諸穴歌]足少陰兮廿七，涌泉流於然谷。太谿大鍾兮水泉綠，照海復溜兮交信續，從築賓兮上陰谷，掩橫骨兮大赫麓。氣穴四滿兮中注，肅肅上通於商曲。守石關兮陰都寧，閉通谷兮幽門肅。步廊神封而靈墟存，神藏臄中而膻府足。】

Ode for kidney meridian points

Foot shao yin has 27, KI1 Bubbling Spring flows to KI2 Hot Valley. KI3 Great Ravine, KI4 Big Goblet, KI5 Water Spring green, KI6 Shining Sea, KI7 Recovering Flow, KI8 Intersection Trust continues, KI9

Guest House has a visitor goes up to KI10 Yin Valley, covers KI11 Pubic Bone to KI12 Great Manifestation. KI13 Qi Cave, KI14 Fourfold Fullness, KI15 Central Flow, KI16 Huang Shu goes up and travels to KI17 Shang Bend. Defend KI18 Stone Pass to repose at KI19 Yin Capital, blockages at KI20 Passage Through the Valley, KI21 Tranquil Gate pay respects. KI22 Stroll along the Corridor, KI23 Shen Seal and KI24 Spirit Ruins lives, KI25 Spirit Storehouse, KI26 Lively Centre and KI27 Acupuncture point Prefecture.

腎經諸穴之圖

Diagram of various kidney meridian acupuncture points

見圖

See diagram

【[分寸歌]足掌心中是涌泉，然谷踝下一寸前。太谿踝後跟骨上，大鍾跟後踵中邊。水泉谿下一寸覓，照海踝下四寸安。復溜踝上前二寸，交信踝上二寸聯。二穴止膈筋前後，太陰之後少陰前。築賓內踝上臑分，陰谷膝下曲膝間。橫骨大赫並氣穴，四滿中注亦相連。各開中行止寸半，上下相去一寸便。上膈肓俞亦一寸，肓俞臍旁半寸邊。肓俞商曲石關來，陰都通谷幽門開。各開中行五分俠，六穴上下一寸裁。步廊神封靈墟存，神藏臍中俞府尊。各開中行計二寸，上下寸六六穴分。俞府璇璣旁二寸，取之得法有成功。】

Measurement ode

The heart at the centre of the sole is where the fountain (KI1) bubbles up, KI2 Hot Valley is below the ankle 1 cun in front. KI3 Great Ravine is behind the ankle above the ankle bone, KI4 Large Goblet is behind the ankle at the central edge of the heel. KI5 Water Spring is found below Ravine (KI3) 1 cun, KI6 Shining Sea is below the ankle 4 cun secure. KI7 Recovering Flow is above the ankle and in front 2 cun, KI8 Intersection Trust is above the ankle 2 cun united. These two points assist the diaphragm in front and behind, Greater Yin is behind, lesser yin is in front. KI9 Guest House is above the inside of the ankle in the calf division, KI10 Yin Valley is below the knee in the bend at the knee crease. KI11 Pubic bone KI12 Large Manifestation and KI13 Qi Cave, KI14 Fourfold Fullness KI15 Central Flow also mutually interconnect. Each travels inside the gap that goes straight 0.5 cun, above and below mutually go 1.5 cun apart. Up to the diaphragm KI16 Huang Shu and 1 cun, KI16 Huang Shu is by the side of the navel 0.5 cun. KI16 Huang shu KI17 Shang Bend KI18 Stone Gate intersect, KI19 Yin Capital KI20 Passage Through Valley KI21 Tranquil Gate opens. Each opens from the centre and goes out 5 fen, 6 points up and down 1 cun apart. KI22 Stroll along the Corridor KI23 Spirit Seal KI24 Spirit Ruins exist, KI25 Spirit Storehouse KI26 Lively Centre KI27 Acupuncture Point honour. Each opens in the pathway 2 cun from the centre, above and below cun 1.6 apart, points. KI27 Acupuncture point is next to CV21 Jade Pivot (on the manubrium) 2 cun, it has its own rule and is completed.

【然谷：內踝前一寸。大鍾：足跟後踵中大骨上兩筋間也。交信：踝上二寸，前旁骨是復溜，後旁骨是交信，二穴只隔一條筋。】

KI2 blazing valley: in front of the inner ankle 1 cun. KI4 Great Goblet: on the instep of the foot behind the heel in the centre of the big bone between 2 sinews. KI8: intersection trust: above the ankle 2 cun, in front beside the bone is KI7 Recover Flow, behind beside the bone is KI8 Intersection Trust, 2 points are separated by one tendon.

【愚按：陰都，中脘旁五分。通谷，上脘旁五分。幽門，巨闕旁五分。又按：下自橫骨、氣穴、四滿、中注，上下各去一寸，所謂橫骨在肓俞下五寸，有以也。但自橫骨至中注各開中行一寸半，肓俞、商曲、石關、陰都、通谷、幽門各開中行五分，自步廊、神封、靈墟、神藏、或中、俞府去中行各二寸，其屈曲有如此。徐氏鍼灸書皆以二行言之，誤矣。左右凡五十四穴。】

(I commentate) Palpate KI19 Yin Capital, it is 5 fen from the centre of the stomach. KI20 Open Valley, is above the centre of the stomach and 5 fen beside. KI21 Dark Gate, is 5 fen beside CV 14 Great Tower Gate. And (I commentate again) press: below KI11 the Pubic Bone, KI13 Qi Point, KI14 Fourfold Fullness, KI15 Central Flow, above and below each go 1 cun, we say that the pubic bone (KI11) is the place that is 5 cun below KI16 Huang Shu, it exists. Only at KI11 Pubic Bone in arrives KI15 Central Flow each travel in the space that is from the centre 0.5 cun, KI16 Huang Shu, KI17 Shang Bend, KI18 Stone Portal, KI19 Yin Capital, KI20 Passage Valley, KI21 Dark Gate each are in the space that travels 5 fen from the centre, from KI22 Corridor Walk, KI23 Shen seal, KI24 Spirit Ruins, KI25 Shen Zang, KI26 Lively Centre, KI27 Shu Fu goes from the centre each 2 cun, these have a bend. 徐氏 Xu shi (clan?) book on acupuncture and moxibustion says there are 2 pathways which is a mistake. Both together makes 54 points.

Heart Governor hand jue yin heart envelope/pericardium connection vessel.

心主手厥陰心包絡之脈，起於胷中，出屬心包絡，下膈，歷絡三焦；其支者，循胷中，由脅下腋三寸，上抵腋下，循臍內，行太陰少陰之間，入肘中下臂，行兩筋之間，入掌中，循中指出其端；其支者，別掌中循小指次指出其端。是動則病心中熱，臂肘攣急，腋腫，甚則胷脅支滿，心中憺憺大動，面赤目黃，喜笑不休。是主脈所生病者，煩心，心痛，掌中熱。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛，以經取之。盛者寸口大一倍於人迎，虛者寸口反小於人迎也。

Rises from the centre of the thorax, exits the category of heart envelope connection, goes below the diaphragm, connects with the triple heater; it has a branch which goes to the centre of the thorax, from the flank three cun below the armpit, goes upward and touches below the armpit, follows the inner arm, travels in the space between tai yin and shao yin, joins at the centre of the elbow below the arm, travels in the space between the two sinews, joins the centre of the palm, follows the central finger and exits at its end; it has a branch, that divides at the centre of the palm and follows the finger that is next in sequence to the little finger (ring finger). There are many diseases associated with heat in the heart, the arm and elbow are trembling, the armpit is swollen, the ribs and flank feel swollen, the heart has big movement, the face is red the eyes are yellow and cannot stop giggling. The heart governor creates diseases, anxiety, aching in the heart, heat in the palm of the hand. These various diseases, in the case of excess then drain, in the case of deficiency then repair, in the case of heat withdraw the needle rapidly, in the case of cold retain the needle, if the pulse is sinking then use moxa, if there is neither deficiency nor excess then treat according to the meridian. In excess the radial pulse will be greater by one than the carotid pulse, in the case of deficiency then it is the reverse and the radial pulse is less than the carotid pulse.

【馬蒔曰：此言心包絡經脈氣之行，乃為第九經也。脅上際為腋。小指次指，即手小指之次指無名指也，蓋自小指而逆數之，故云然也。手厥陰心包絡經之脈，起於胷中，出屬心下之包絡，受足少陰腎經之交也。由是下膈，歷絡於臆中、中脘及陰交之三焦。歷者，謂三焦各有部署，在胃脘上中下之間，其脈分絡於三焦也。其支者，自屬心包上循胷，出脅下腋三寸天池穴，而上行抵腋下，下循臆內之天泉，以介手太陰肺經手少陰心經兩經之中間，入肘中之曲澤穴，又由肘中下臂，行臂兩筋之間，循郄門、間使、內關、大陵，入掌中勞宮，循中指出其端之中衝也。

Ma shi said: This talks about the pathway of the envelope around the heart connecting meridian blood vessel qi, it is the ninth meridian in sequence. At the junction of the ribs and armpit. The finger next to the little finger, the finger on the hand that is immediately next to the little finger does not have a name, because it can't reverse/turn from the little finger. Hand jue yin heart envelope connecting meridian vessel, rises up from the centre of the palm, exists along the arm at the connecting envelope below the heart, it connects with foot shao yin kidney meridian. It goes below the diaphragm, and wraps around the centre of the chest, the centre of the wrist it connects on the yin surface with the triple heater. That which is the triple heater each has its own division, from the inside of the stomach above and below in the space, this vessel is connecting the division of the three heaters. There is a branch, it belongs to the envelope around the heart and follows the thorax, it exits from below the armpit 3 cun at the Great Pool point PC1, and the pathway goes up to below the armpit, it follows down the inner arm to Heavenly Spring PC2, it goes inbetween hand tai yin lung meridian and hand shao yin heart meridian in the central space between both meridians, it joins to the elbow at PC3 Crooked Marsh point, and from the elbow under the centre of the arm, the pathway goes along the arm between 2 tendons, it follows the Cleft Gate PC4, Space Between messenger PC5, Inner Gate PC6, Large Mound PC7, joins the centre of the palm at Labour Palace PC8, follows the central finger to exist at the end at Central Pulse PC9.

其支別者，從掌中循無名指出其端，而交於手少陽三焦之經也。及其動穴驗病，則為心中熱，為臂肘攣急，為腋腫，甚則胷脅支滿，皆脈所經處也。為心中憺憺大動，心宜靜而反動也。為面赤，心之色為赤也。為目黃，目為五臟之精，心病則目黃。為喜笑不休，心在聲為笑也。是皆心主脈所生之病也。又有為煩心，為心痛，為掌中熱之諸病。

There is a branch, which goes from the centre of the palm and follows along the finger which has no name to its end, and connects with hand shao yang triple heater meridian. Movement at this point can be tested for disease, the rule is if there is heat in the heart, then the inner arm and elbow will be trembling, there will be swelling in the armpit, the great rule is that the branch to the ribs and flank will be full all the blood vessels are passing. There is big movement in the peace of the heart, the heart is supposed to be still and the reverse is movement, the face is red, (because) the colour of the heart is red. The eye is yellow, the eye shows the essence of 5 zang, diseases of the heart show in yellow eyes. Like to smile and cannot stop, the heart is the place of the sound of laughter. Both diseases are generated by the vessels which is governed by the heart governor. And makes anxiety, the heart aches, there is heat in the centre of the palm, various diseases.

故邪氣盛則瀉之，正氣虛則補之。熱則瀉者疾去其鍼，寒則溫者久留其鍼。脈陷下者，則用艾以灸之。若不盛不虛，則止以本經取之，而不必求之手少陽三焦經也。然所謂盛者，何以驗之？寸口較人迎之脈大者，一倍而躁，則心包絡為實，如終始篇所謂瀉手厥陰心包絡而補手少陽三

焦者是也。虛者何以驗之？寸口較人迎之脈小者，一倍而不躁，則心包絡為虛，如終始篇所謂補手厥陰心包絡而瀉手少陽三焦者是也。】

So for evil qi is abundant then drain, for upright qi is deficient then repair. For heat drain and take the needle out quickly, for cold retain the needle. If the blood vessel is sinking, use moxa to cauterize. If there is neither excess nor deficiency, then treat according to the meridian, and if it is not then don't take from the triple burner meridian. This speaks of deficiency of heat, how will we test?, if the radial pulse is greater than the carotid pulse, one time and irritable, the rule is that the connecting envelope around the heart is solid, as (ch.9) says to drain from the hand jue yin meridian and repair the hand shao yang triple heater. How will we know if there is deficiency? If the radial pulse is less than the carotid pulse, one time and irritable, then the connecting envelope around the heart is deficient, so ch.9 says to repair hand jue yin and to drain from hand shao yang triple burner.

【張志聰曰：心主手厥陰心包絡之脈，是動則病心中熱，臂肘攣急，腋腫，經氣之病於外也。甚則胷脅支滿，心中憺憺大動，面赤目黃，喜笑不休。蓋甚則從外而內，其有餘於內也。心主血，而包絡代君行令，故主脈，是主脈之包絡所生病者，煩心，心痛，掌中熱，蓋自內而外也。脈口一盛而躁，病在手厥陰，故盛者寸口大一倍於人迎，虛者寸口反小於人迎也。】

Zhang zhi cong said: heart governor hand jue yin connecting heart envelope vessel, the rule of movement is hot disease of the heart, the inner arm and elbow are trembling quickly, the armpit is swollen, the qi of the meridian makes the disease go to the outside. The great rule is that the branch fills up that goes to the ribcage and flanks, the heart has great movement, the face is red and the eyes are yellow, cannot stop giggling. Because in extreme conditions the disease goes from the outside to inside, is that there is excess on the inside. The blood of the heart governor, and the connecting envelope follows the command of the sovereign (heart), disease of heart jue yin, if there is deficiency then the radial pulse will be greater than the carotid pulse by one time, if there is deficiency then the radial pulse will rebel and be smaller than the carotid pulse.

【心包絡，在心下橫膜之上，豎膜之下。與橫膜相粘而黃脂裹者心也。其脂膜之外，有細筋膜如絲，與心肺相連者，心包也。此經本有名有形，其經絡起於腋下之天池，而止於中指之中衝；其臟在心之下，有黃脂裹心者是也；其脈在右手尺中。《靈樞》本輸篇云：心出於中衝云云。邪客篇云：心主之脈出於中指之端云云。又曰：少陰，心脈也，心者，五臟六腑之大主也，精神之所舍也，其臟堅固，邪弗能容也，容之則心傷，心傷則神去，神去則死矣。故諸邪之在於心者，皆在於心之包絡。包絡者，心主之脈也，故獨無輸焉。黃帝曰：少陰獨無輸者不病乎？岐伯曰：其外經病而臟不病，故獨取其經於掌後銳骨之端，其餘出入屈折，其行之疾徐，皆如手少陰心主之脈行也。故本輸者，皆因其氣之虛實疾徐以取之。】

Heart envelope connections, below the heart (and above the diaphragm) there is a horizontal membrane, below there is a vertical membrane. And the horizontal membrane is viscous and encircles the heart with yellow fat. The fatty membrane is on the outside, it has fine membranous tendons like silk, and the heart and lung are mutually connected, it is the heart envelope. This meridian pathway has name and form, it is the jing luo/connecting pathway which rises to the armpit at PC1 Heavenly Pool, and follows straight to the middle finger PC9 central chong; It is

located below the heart organ, it wraps around the heart with yellow grease; this vessel is on the right side hand foot centre.

Ling Shu chapter 2 says: the heart goes out and follows PC9 central chong. Chapter 71 (evil guest) says: the vessel of the heart governor follows the central finger to the end again it says. And it goes on: shao yin, is the heart vessel, of the heart, it is the big lord of the five zang six fu, it creates an abode/home for essence and shen, if its zang are firm and resolute, then evil will not be able to have form, the wounding of the heart has form, if the heart is injured then the shen will leave, if the shen leaves then death. Because there are various evils in the heart, there is an enveloping connection which is located around the heart. The connecting envelope, is the vessel of the heart governor, how will we know if it cannot transport? Huangdi said: if shao yin cannot transport then there will not be disease? Qi bo said: If this outer pathway has disease then the organ will not have disease, because it alone takes the pathway to the palm behind the end of the pointed bone, the surplus goes out and joins at crooked bend, this moves and the sickness develops slowly, if it is in the hand shao yin heart governor vessel pathway. Because it is the root of transport, because if its qi is deficient or excessive then the disease will develop slowly.

心包絡臟形象之圖

Heart governor connecting zang image diagram

見圖

See diagram

【[心包絡經諸穴歌]手厥陰心包之絡，計有九穴之奇。自天池天泉而始，逐曲澤鄰門而馳。間使通乎內關，大陵近於勞宮。既由掌握，抵於中衝。】

Heart envelope connecting pathway many points ode

Hand jue yin heart envelope connections, the plan has 9 unusual points. From PC1 Heavenly Pool PC2 Heavenly Spring and begin, individually PC3 Marsh at the Bend PC4 Cleft Gate and speed up. PC5 Gap Messenger pass through to PC6 Inner Gateway, PC7 Great Mound is close to PC8 Labour Palace. Then from the palm of the hand take hold and go to PC9 Central Chong.

【[分寸歌]心包起自天池間，乳後一寸腋下三。天泉曲腋下二寸，曲澤屈肘陷中央。鄰門去腕方五寸，間使腕後三寸量。內關去腕止二寸，大陵掌後兩筋間。勞宮屈中名指取，中指之末中衝良。】

【天池：腋下三寸，乳後一寸。勞宮：屈中指無名指兩者之間取之。凡九穴。】

Measuring Ode

Heart envelope rises up from PC1 Heavenly Pool in the gap, behind the nipple 1 cun and bel

ow the armpit 3 cun. PC2 Heavenly Spring in the bend below the armpit 2 cun, PC3 Bend Marsh is where you sink in at the centre of the elbow when it is flexed. PC4 Cleft Gate goes from the angle of the wrist 5 cun, PC5 Gap Messenger is behind the wrist 3 cun measured. PC6 Inner Portal goes from

the wrist straight 2 cun, PC7 Great Mound is in the gap between 2 sinews behind the palm of the hand. PC8 Labour Palace bend the central named finger to get, the middle finger is the end where PC9 Central Chong is virtuous.

PC1 Heavenly Pool: below the armpit 3 cun, behind the nipple 1 cun. PC8 Labour Palace: bend the middle finger not the finger next to it in sequence that has no name (ring finger). Makes 9 points.

Triple Heater hand shao yang vessel

三焦手少陽之脈，起於小指次指之端，上出兩指之間，循手表腕，出臂外兩骨之間，上貫肘，循臑外上肩，而交出足少陽之後，入缺盆，布膻中，散絡心包，下隔，循屬三焦；

Rises up from the little finger at the end of the next finger in sequence, it exits up along the space between 2 fingers, follows the hand to the wrist, exits along the outside of the arm between 2 bones, goes up to go through the elbow, follows the outside of the upper arm up to the shoulder, and joins and exits behind foot shao yang, joins with ST12 Empty Basin, distribute to CV17 Central Chest, scatter and connect with the envelope around the heart, goes down through the diaphragm, follows the category of the triple heater;

其支者，從膻中上出缺盆，上項，繫耳後，直上出耳上角，以屈下頰至(出頁)；

其支者，從耳後入耳中，出走耳前，過客主人，前交頰，至目銳眦。是動則病耳聾，渾渾惺惺，噤腫喉痺。是主氣所生病者，汗出，目銳眦痛，頰腫，耳後肩臑肘臂外皆痛，小指次指不用。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛，以經取之。盛者人迎大一倍於寸口，虛者人迎反小於寸口也。【惺，音屯。】

there is a branch, from CV17 Central Chest it goes up and exits at ST12 Empty Basin, goes up to the nape of the neck and attaches behind the ear, it goes straight up to the top angle of the ear and then passes down to the cheekbone where it arrives and send out a sheet;

there is a branch, which goes from behind the ear and joins into the centre of the ear, goes out to walk in front of the ear, it goes to the GB3 Guest Host Man, in front and exchanges with the cheek, it arrives at the corner of the eye socket. This is why there is deafness in the ear, muddy muddy turbid turbid, swelling in the throat and paralysis of the larynx. The governor qi creates many diseases, sweating, pain in the corner of the eye sockets, swollen cheek, ear to back of the shoulder upper arm elbow outside of the arm to the finger aching, little finger and the one next to it don't work. The reason for many diseases, in the case of excess then drain, in the case of deficiency then repair, if there is heat then remove the needle quickly, if there is cold then retain, if there is sinking down then use moxa, if you use the meridian. Excess will show when the carotid pulse is stronger than the radial pulse by 1, deficiency will show when the carotid pulse is the reverse when it is less than the radial pulse. [tun sounds like tun]

心包絡經諸穴之圖

Heart envelope connecting meridian many points diagram

見圖

See diagram

【馬蒔曰：此言三焦經脈氣之行，乃為第十經也。臂骨盡處為腕，臑盡處為肘，膊下對腋處為臑，目下為(出頁)也。手少陽三焦經之脈，起於小指次指之端關衝穴，即第四指也。上出歷液門、中渚四指之間，循手表腕之陽池，出臂外兩骨之間至天井穴，從天井上行，循臂臑之外歷清冷淵、消鑠，行手太陽之裏，手陽明之外，上肩循臂臑，會肩髃、天髃，交出足少陽之後，過秉風、肩井，下入缺盆，復由足陽明之外，而交會於膻中之上焦，散布絡繞於心包絡，乃下膈入絡膀胱，以約下焦，附右腎而生也。

Ma shi said: This passage is on the triple heater meridian blood vessels and qi, it is the 10th meridian in sequence. The arm bone goes to the wrist, the upper arm goes to the elbow, the upper arms (tricep) are below the shoulder armpit facing the bicep, under the eye there goes out a sheet. Hand shao yang triple heater meridian vessel, rises up and follows from the little finger the next finger in sequence (ring finger) from the TE1 Pass Chong point, immediately in sequence it is fourth. It exit up to TE2 Fluid Gate, TE3 Central Island is in the gap between the fourth finger, it follows the hand to the dorsum of the wrist to TE4 Yang Pool, it exits along the outside of the arm and travels in the space between 2 bones to reach TE10 Heavenly Pool point, This is its pathway up to TE10 Heavenly Pool, it follows the arm and the upper arm to TE11 Cear Cold Abyss, TE12 Dispersing Riverbed, follows hand tai yang inside on the outside of hand yang ming, goes up to the shoulder and follows the soft arm, joins with TE14 Shoulder Foramen, TE15 Heavenly Foramen, exchanges and exits behind foot shao yang, pass through SI12 Grasping the Wind, TE14 Shoulder Well, goes down and joins with ST12 Empty Basin, returns from outside foot yang ming, and exchanges and meets with CV17 Central Chest in the upper burner, disseminates and connects to wrap around the heart envelope network, it goes down through the diaphragm and joins with the network of the bladder, by means of the lower burner, it is created and sticks to the right kidney.

其支行者，從膻中而上出缺盆之外，上項過大椎，循天牖上耳後，經翳風、瘰脈、顱顙，直上出耳上角，至角孫，過懸釐、頷厭，及過陽白、睛明，屈曲耳頰至(出頁)，會顴髃之分也。其又支者，從耳後翳風穴，入耳中，過聽宮，歷耳門、禾髃[禾髃：據《甲乙》卷十二第五及《素問》氣府論王冰註，當為和髃。以下凡三焦經之禾髃均為和髃，不另註。]，卻出至目銳眦，會瞳子髃，循絲竹空而交於足少陽膽之經也。

The pathway branches, from CV17 Central Chest and exits upwards to ST12 Empty Basin on the outside, it goes up to the nape of the neck and passes through GV14 Great Mallet, it follows TE16 Heavenly Window and goes up to behind the ear, it passes to TE17 Wind Screen, TE18 Spasm Vessel, TE19 Skull Rest, goes up to exit the ear at the TE20 vertex of the ear (Upper Angle), to reach the angle, pass through SI19 Auditory Palace, to TE21 Ear Gate, LI19 Grain Foramen: take possession [book] chapter 12 number 5. Su Wen qi fu discusses the Wang Bing commentary and explains, undertake LI19 Grain Foramen. Grain foramen should say Harmony (he is homonym of he) foramen

by means of passing down through all three burners, not another explanation. Still goes out and reaches the corner of the eye socket, joins the foramen of the pupil, passes through TE21 Silk Bamboo Hole and exchanges with foot shao yang gallbladder meridian.

及其動穴驗病，則為耳聾，渾渾然惛惛然，甚覺不聰，以脈從耳後入耳中出走耳前也。為咽腫，為喉痺，脈下交頰也，是皆氣分所生之病也。然又有諸病之生，或由本經，或出別經。為汗出，汗為心液，三焦為心包絡之表也。為目銳眦痛，脈至目銳眦也。為頰腫，脈交頰也。為耳後肩臑肘臂外皆痛，脈所經之處也。為手小指次指不能舉用。故邪氣盛則當瀉之，正氣虛則當補之，熱則瀉者疾去其鍼，寒則補者久留其鍼，脈陷下者則用艾以灸之。若不盛不虛，則取之本經，而不必求之手厥陰心包絡經也。然所謂盛者，何以驗之？人迎較寸口之脈大者，一倍而躁，則三焦經為實，如終始篇所謂瀉手少陽三焦而補手厥陰心包絡者是也。人迎較寸口之脈，小者一倍而不躁，則心包絡為虛，如終始篇所謂補手少陽三焦而瀉手厥陰心包絡者是也。】

Palpate the movement of these points to assess disease, there is deafness, tinnitus, difficulty hearing clearly, this vessel goes to the network of the ear and joins into the ear exits and goes to the front of the ear. Swelling in the throat, paralysis of the larynx, this vessel goes down and joins with the jaw/cheek, it moves qi and creates disease. Yes and there are several diseases which it creates, either the root cause is in the meridian, or it goes out from the meridian. Sweat exits, sweat is fluid in the heart, if in the triple heater then it is on the outside of the connecting heart envelope. Ache at the sharp corner of the eye socket. Swollen jaw is because there is a vessel which interconnects with the jaw. The ear connects with the shoulder upper arm elbow outer forearm all aching, the vessel locates deficiency in the meridian. The finger next to the little finger of the hand is not able to point. If evil qi is excessive then drain, if upright qi is deficient then repair, if there is heat then drain and remove the needle quickly, if there is cold then retain the needle, if the blood vessel is sinking then treat using moxa. If there is neither excess nor deficiency, then use the meridian, and if not must ask from the jue yin heart envelope connecting meridian. Yea creates excess, how will we know? Carotid pulse will be comparatively greater than the radial pulse, by one time and agitated then use the triple heater meridian to make it solid, if at the end this chapter (10) says to drain from hand shao yang triple heater and repair hand jue yin heart envelope connector, Carotid pulse is compared to the radial pulse, is less by one and not tense, then the heart envelope connection is deficient, if this then this chapter (10) says to repair hand shao yang triple heater and drain from heart jue yin heart envelope connector.

【張志聰曰：少陽之上，相火主之，故三焦手少陽之脈，是動則病耳聾，渾渾惛惛，咽腫喉痺，相火之有餘於上也。少陽乃一陽初生之氣，故主氣所生病者，汗出，陽加於陰則汗出也。目銳眦痛，頰腫，耳後肩臑肘臂，小指次指，皆經脈所循之部分而為病也。人迎一盛而躁病在手少陽，故盛者人迎大一倍於寸口，虛者人迎反小於寸口也。】

Zhang zhi cong said: shao yang goes up, both the lord of the heart (pericardium), is the reason for the triple heater hand shao yang vessel, if palapated it shows diseases deafness, tinnitus?, swollen throat paralysis of the larynx, they both go up and have an excess of fire. Shao yang is the qi created by the beginning of yang qi, hence it governs the disease created by qi, then sweat will leave, if yang augments yin then sweat will leave. The sharp corner of the eye aches, the cheek is swollen, the ear the back of the shoulder upper arm elbow forearm, finger next to the little finger, all meridian and

vessel in this place follow and this division is where there is disease. If the carotid pulse is one excess and irritable then the disease is located in hand shao yang, if excess then carotid pulse is one less than radial pulse, if deficient then the carotid pulse rebels and is less than the radial pulse.

【此經本有名有形，其經絡起於手無名指之關衝，而止於面部之耳後絲竹空，其腑附於右腎，後世以為有名無狀者非。其脈見於右手尺部，與手厥陰心包絡經為表裏。《素問》靈蘭秘典論云：三焦者決瀆之官，水道出焉。《靈樞》本臟篇云：腎應骨。密理厚皮者，三焦膀胱厚；粗理薄皮者，三焦膀胱薄；疏腠理者，三焦膀胱緩；皮急而無毫毛者，三焦膀胱急；毫毛美而粗者，三焦膀胱直；稀毫毛者，三焦膀胱結也。】

This meridian has both name and form, the meridian network rises from the hand burner named finger TE1 Thoroughfare Chong, and goes straight to the face behind the ear and TE 23 Silk Bamboo Hole, its fu adhere to the right side of the kidneys, later generations thought it has a name but no form. This vessel can be seen in the right hand and foot divisions, and hand jue yin heat envelope connecting meridian both internally and externally.

Su Wen chapter 8 says: triple heater is like a gutter, why is it the official which makes water go out? Ling Shu chapter 57 says: kidney makes bone. Logic dictates that if it is thick then the skin will be thick, if the triple heater is thick then the bladder will be thick; thick logically means that if the skin is thin, the triple heater and the bladder will be thin; logic says that if there is laxness in the skin then the triple heater and bladder will be slow; if the skin is quick and there are no fine hairs then logically the triple heater bladder will be quick; if the hair is sparse then the triple heater bladder will be knotted.

三焦腑形象之圖

Triple heater fu form diagram

見圖

See diagram

【[三焦經諸穴歌]手少陽三焦之脈，二十三穴之間。關衝液門中渚，陽池外關通連。支溝會宗三陽絡，四瀆天井清冷淵。消灤臑會，肩髃相聯。天髎處天牖之下，翳風讓癰脈居先。顙顙定而角孫近耳，絲竹空而禾髎接焉。耳門已畢，經穴已全。】

Triple heater meridian ode of points

23 point spaces. TE1 Portal Thoroughfare TE2 Fluid Gate TE3 Central Island, TE4 Yang Pool TE5 Outer Portal, pass through and join. TE6 Branch Ditch TE7 Meeting of the Clan TE8 Three Yang Network, TE9 Four Rivers TE10 Heavenly Well TE11 Clear Cold Abyss. TE12 Dispersing Riverbed TE13 Upper Arm Convergence, TE14 Shoulder Foramen interact. TE15 Heavenly Foramen is the place TE16 Heavenly Window is below, TE17 Wind Screen allows TE18 Spasm Vessel to live first. TE19 Skull Rest decides and TE20 Angle Vertex approaches the ear, TE23 Silk Bamboo Hole and TE22 Grain Foramen connect, TE21 Ear Gate and finish, meridian points stop.

【[分寸歌]無名之外端關衝，液門小次指陷中。中渚液下去一寸，陽池腕上之陷中。外關腕後方二寸，腕後三寸支溝容，腕後三寸內會宗，空中有穴細心攻。腕後四寸三陽絡，四瀆肘前五寸著。天井肘外大骨後，骨罅中間一寸摸。肘後二寸清冷淵，消瀝對腋臂外落。臑會肩前三寸量，肩髃臑上陷中央。天髃缺盆陷處上，天牖天容之外旁。翳風耳後尖角陷，脈癰耳後青脈現。顙顙亦在青絡脈，角孫耳廓中間上。耳門耳前起肉中，禾髃耳前動脈張。欲知絲竹空何在，眉後陷中仔細量。】

Measuring Ode

No name outside at the end TE1 Portal Thoroughfare, TE2 Fluid Gate in the depression of the finger next to the little finger. TE3 Central Islet is below TE2 1 cun, TE4 Yang Pool is above wrist inside the depression. TE5 Outer Portal is behind the wrist in a square at 2 cun, behind the wrist 3 cun is TE6 Branch Ditch allowed, behind the wrist 3 cun on the inside is TE7 Convergence of the Clan, in the hollow there are acupuncture point which you can very clearly get. Behind the wrist 4 cun is TE8 Three Yang Connection, TE9 Four Rivers is behind the elbow 5 cun. TE10 Celestial Pool is on the outside of the elbow behind the big bone, the bone has a fissure which makes a gap that you can feel at 1 cun. Behind the elbow 2 cun is TE11 Clear Cold Abyss, TE12 Dispersing Riverbed is on the outside of the arm opposite to the armpit. TE 13 Upper Arm convergence is in front of the shoulder 3 cun measured, TE14 Shoulder Foramen is above the upper arm where there is a dip in the centre. TE15 Heavenly Foramen is in the dip above ST12 Empty Basin, TE16 Heavenly Window is on the outside close by to SI17 Celestial Countenance. TE17 Wind Screen is behind the ear in the dip at the corner angle, TE 18 Spasm Vessel is behind the ear where the blue vessels are apparent. TE19 Skull Rest is also where there are the blue/black vessels, TE20 Angle Vertex is in the central space above the broad part of the ear. TE21 Ear Gate is in front of the ear and rises up inside of the flesh, TE22 Harmony Bonehole is in front where the blood vessels move and expand. If you want to know where TE23 Silk Bamboo Hole is, it is in the small fine depression behind the eyebrow.

【支溝：臂外三寸兩骨間。臑會：肩前廉去肩頭三寸宛宛中。天牖：頸大筋外，缺盆上，天容後，天柱前，完骨下，髮際上。翳風：耳後尖角陷中，按之引耳中。癰脈：耳本後雞足青絡脈。耳門：耳前起肉，當耳缺陷中。】

TE6 Branch Ditch: is on the outside of the arm between the gap in the 2 bones. TE13 Upper Arm Convergence: in front of the shoulder along the ridge that goes to the shoulder 3 cun from the crooked centre. TE16 Heavenly Window: is in the neck on the outside of the big sinews above ST12 Empty Basin, behind SI17 Celestial Countenance, in front of BL10 Celestial Pillar, at the end below the bone, above the hairline. TE17 Wind Screen: is behind the ear in the dip behind the sharp angle, pull out the ear to palpate. TE18 Spasm Vessel: is behind the root of the ear at the chicken foot like mesh of blood vessels. TE21 Ear Gate: is in front of the ear where the flesh rises, inside the gap.

【愚按：周身之穴，惟頭奇最難，徐氏以行分之，誤矣。左右凡四十六穴。】

Palpate: to feel the points, however the head is difficult so it is necessary to go slowly and measure to avoid mistakes. Left and right makes 46 points.

三焦經諸穴之圖

Triple Heater meridian various points diagram

見圖

See diagram

Gallbladder Foot Shao Yang Meridian

膽足少陽之脈，起於目銳眦，上抵頭角，下耳後，循頸，行手少陽之前，至肩上，卻交出手少陽之後，入缺盆；其支者，從耳後入耳中，出走耳前，至目銳眦後；其支者，別銳眦，下大迎，合手少陽抵於(出頁)，下加頰車，下頸，合缺盆以下膻中貫膈，絡肝屬膽，循脅裏，出氣街，繞毛際，橫入髀厭中；其直者，從缺盆下腋，循胛，過季脅下，合髀厭中，以下循髀陽出膝外廉下外輔骨之前，直下抵絕骨之端，下出外踝之前，循足跗上入小指次指之間；其支者，別跗上入大指之間，循大指岐骨內出其端，還貫爪甲出三毛。

Rises up from the sharp corner of the eye socket, goes up to the vertex and down behind the ear, it follows the throat, passes in front of hand shao yang, goes to the top of the shoulder, retreats and connect behind hand shao yang, joins to ST12 Empty Basin; it has a branch, from behind the ear it connects into the ear, leaves home to go to the front of the ear, goes behind the sharp corner of the eye socket; there is a branch, from the corner of the eye socket, it goes down to ST9 Man's Welcome, joins with hand shao yang opposes (goes out to a leaf/sheet), goes down to the cheek and down the throat, unites with ST12 goes down via the throat to the diaphragm, connects with the liver and gallbladder, it goes down and follows the yang side of the thigh and exits at the outside of the knee goes along the ridge down and in front of the outside of the assisting bone (fibula), goes straight under GB39 Severed Bone to finish, goes down and exits in front of the outside of the ankle, follows the instep of the foot and rises to join in the space between the little toe and the toe next in sequence; it has a branch, from the ankle it goes up and joins the space by the big toe, follows the big toe to the fork in the skeleton and goes out to the end, goes out to the toenail beside 3 hairs.

是動則病口苦，善太息，心脅痛不能轉側，甚則面微有塵，體無膏澤，足外反熱，是為陽厥。是主骨所生病者，頭痛，頷痛，目銳眦痛，缺盆中腫痛，腋下腫，馬刀俠癭，汗出振寒，瘡，胛脅肋髀膝外至脛絕骨外踝前及諸節皆痛，小指次指不用。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛以經取之。盛者人迎大一倍於寸口，虛者人迎反小於寸口也。

Movement causes disease and bitterness in the mouth, extreme sorrow/melancholy/depression, heart and ribcage aching and not able to turn over in bed, great rule is that the face looks like it has small marks like ash, body has no fat, outside of the foot is rebellious and hot, this is yang reversal. It governs disease which is created by bone, headache, jaw ache, aching at the corner of the eyes, swelling and aching at ST12 Empty Basin, swelling below the armpit, scrofula, sweating with shivering cold, malaria in the chest, rib, flank, thigh, outer knee, going to the distal fibula, extending forward from the outside of the ankle various knots and aching, not able to use the toe next to the little toe. This is why of the various diseases, in the case of excess then drain, in the case of deficiency then repair, in the case of heat remove the needle quickly, in the case of cold then retain, if there is sinking then use moxa, if there is neither excess not deficiency then treat on the meridian.

In the case of excess then the carotid pulse will be one time greater than the radial pulse, in the case of deficiency then it will be the opposite and the carotid pulse will be less than the radial pulse.

【馬蒔曰：此言膽經脈氣之行，乃為第十一經也。腋下為脅，脅又名肱。曲骨之外為毛際，毛際兩旁動脈為氣衝。捷骨之下為髀厭，即髀樞也。脅骨之下為季脅，屬肝，穴名章門。肱骨為輔骨，外踝以上為絕骨，足面為跗，足大指本節後為岐骨，大指爪甲後為三毛也。足少陽膽經，起於目銳眦之瞳子膠，由聽會過客主人，上抵頭角，循頤厭，下懸顙、懸釐，由懸釐上循耳，上髮際，至曲鬢、率谷，由率谷外折下耳後，循天衝、浮白、竅陰、完骨，又自完骨外折，循本神，過曲差，下至陽白，會睛明，復從睛明上行，循臨泣、目窗、正營、承靈、腦空、風池至頸，過天牖，行手少陽之脈，前下至肩上，循肩井，卻左右交出手少陽之後，過大椎、大杼、秉風，當秉風前入缺盆之外。

Commentary

Ma shi said: this passage talks about the pathway of the qi and blood vessels of the gallbladder meridian, it is the 11th meridian in sequence. Below the armpit are the ribs, the ribs are also named open. There is the boundary of hair on the outside of the curved bone, the boundary of the hair is at ST30 Qi Thoroughfare over the pulsing vessels that are on each side. The wing bone is below the buttocks on the thigh bone, next to GB30 Hip Joint. The rib bone is below the ribcage, liver category, point named LR13 Chapter Gate. Calf bone then assisting bone, outside of the ankle go up and you reach severed bone, the face of the foot is the instep, the big toe of the foot is the root of joint behind which is the fork in the skeleton, at the big toenail behind the 3 hairs. Foot shao yang gallbladder meridian, rises up from the corner of the eye socket at the GB1 Foramen of the Pupil, because passes through GB2 Converge and Hear to GB3 Guest Host Person, goes up to the apex of the head, follows GB4 Forehead Fullness, goes down to GB5 Suspended Skull, to GB6 Suspended Tuft, it goes up to follow the ear, goes up to GV24 Hairline, from GB7 Hair Curve, GB8 Lead to the Valley, because GB8 Lead to the Valley on the outside it turns around and goes behind the ear, it follow GB9 Celestial Thoroughfare, GB10 Floating White, GB11 Portal Yin, GB12 End Bone, and from GB12 End Bone it turns around, to follow GB13 Root of the Spirit, passes through BL4 Deviating Turn, goes down to pass through GB14 Yang White, joins with BL1 Bright Eyes, return from BL1 Bright Eyes and go up, follow GB15 Overlooking Tears, to GB16 Eye Window, GB17 Upright Ying, GB18 Spirit Support, GB19 Brain Hollow, GB20 Wind Pool arrive at the throat, follow TE16 Celestial Window, pathway of hand shao yang meridian, goes in front and down to the top of the shoulder, follows GB21 Shoulder Well, left and right interconnect and go out at the back with hand shao yang, follows GV14 Big Hammer, BL11 Big Shuttle, SI12 Grasping the Wind, from SI12 Grasping the Wind it goes in front and joins to the outside of ST12 Empty Basin.

其支者，自耳後顙顙間過翳風之分，入耳中過聽宮，復自聽宮至目銳眦瞳子膠之分也。其支別者，自目外瞳子膠而下大迎，合手少陽於(出頁)，當顙膠之分，下臨頰車下頸，循本經之前，與前之入缺盆者相合，下膺中天池之外貫膈，即期門之所，絡肝，下至日月之分，屬於膽也。

There is a branch, from the back of the ear to the space by the temple it goes to the division by TE17 Wind Screen, joins into the ear at SI19 Auditory Palace, return from SI19 Auditory Palace and goes to the corner of the eye at GB1 Pupil Foramen. There is a branch, from the outside of the eye at GB1 Pupil Foramen and goes down to ST5 Great Welcome, unites with hand shao yang (sends out a leaf), to SI18 Cheek Foramen, it goes down and descends to ST6 Cheek Carriage, down the throat, it

follows this meridian in front, and reciprocally unites in front with ST12 Empty Basin, it goes down to the centre of the chest at PC1 Celestial Pool to the outside to go through the diaphragm, immediately to LR14 Time Gate, it enmeshes the liver, it goes down through GB24 division, in the category of the gallbladder.

自屬膽處，循脅內章門之裏，至氣衝邊毛際，遂橫入髀厭中之環跳穴也。其直行者，從缺盆下腋，循胛歷淵液、輒筋、日月，過季脅，循京門、帶脈、五樞、維道、居髎，入上髎、中髎、長強而下，與前之入髀厭者相合，乃下循髀外，行太陽陽明之間，歷中瀆、陽關，出膝外廉，抵陽陵泉，又自陽陵泉下於輔骨，前歷陽交、外丘、光明，直下抵絕骨之端，循陽輔、懸鍾而下，出外踝之前，至丘墟，循足面之臨泣、五會、俠谿，乃上入小指次指之間，至竅陰而終也。其支別者，自足跗面臨泣，別行入大指，循岐骨內出大指端，還貫入爪甲出三毛，以交於足厥陰肝之經也。

From the category of the gallbladder location, it follows the inside of the ribcage to the inside of LR13 Chapter Gate, goes through ST30 Qi Thoroughfare at the margin of the hair at the pubic bone, follows the horizontal to join with the line of the middle of the buttock at GB30 Jumping Round point. It travels straight, from ST12 Empty Basin down below the armpit, it follows the chest to GB 22 Armpit Abyss, to GB23 Sinew Seat, GB24 Sun and Moon, follows LR13 Free Ribs, follows GB25 Capital Gate, GB26 Belt Vessel, GB27 Fifth Pivot, GB28 Linking Path, GB29 Squatting Foramen, joins with BL31 Upper Foramen, BL32 Middle Foramen, GV1 Long Strong and goes down, and joins with the hip joint in front and mutually exchanges, it goes down and follows the outside of the thigh, it is in the pathway in the space between tai yang and yang ming, to GB32 Central Ditch, GB33 Yang Joint, goes along the ridge at the outside of the knee, at GB34 Yang Mound Spring, and from GB34 Yang Mound Spring it goes down along the assisting bone, in front it passes through GB35 Yang Intersection, GB36 Outer Hill, GB37 Shining Light, goes straight down to the distal fibula at GB39 Severed Bone, it follows GB38 Yang Assistance, GB39 Suspended Bell and down, it exits in front of the outside of the ankle, it goes to GB40 Hill Ruins, follows the face of the foot to GB41 Overlooking Tears, GB42 Fifth Meeting, GB43 Pinched Ravine, and goes up and joins in the space between the little toe and the toe next to it, goes to GB44 Portal Yin and meshes. There is a branch, from the instep of the foot at GB42 Overlooking Tears, it separates and joins with the big toe, it follows the fork in the inside of the bone and exits at the end of the big toe, it goes forward and joins at the corner of the toenail where there are 3 hairs, this interconnects with foot jue yin.

及其動穴驗病，則為口苦，以膽汁味苦也。為善太息，膽氣不舒也。為心脅痛不能轉側，脈循脅裏出氣街也。甚則面微有塵，體無膏澤，脈所歷處，少陽氣鬱為病也。足外反熱，脈循髀陽出膝外廉，下外輔骨，抵絕骨下外踝也。

Movement over these points to examine for diseases, bitter taste in the mouth, the gallbladder makes bitter smelling fluid. If not being contented it is the gallbladder qi does not unfold. Aching in the heart and ribcage, not able to turn over in bed, blood vessels follow ribs and flank and exits at ST30 Qi Thoroughfare. The face is the colour of ash, body is not greasy or moist, this is where the vessels are created, qi of shao yang is luxuriant so there is disease. The outside of the foot has rebellious heat, vessel follows thigh yang and exits at the ridge on the outside of the knee, goes down the outside of the assisting bone (fibula), GB39 Severed Bone is on the outside of the ankle.

是膽本屬少陽，而陽氣上厥使然也。凡此皆主骨所生病耳。又有諸病之生，或出本經，或由合經。為頭痛，脈行於頭也。為頷痛，脈加頰車也。為目銳眦痛，脈起於目也。為缺盆中腫痛，脈入缺盆支合缺盆也。為腋下腫，脈從缺盆下腋過脅也。

The gallbladder is the root of shao yang, and yang qi goes up rebelliousness causes blazing. All this governs bone and creates diseases in the ear. Again the generation of several diseases either from this meridian or from several combined meridians. If there is headache, passage of the blood vessels goes to the head. If there is jaw ache, it is the vessels which increase the jawline, if there is aching at the corner of the eye socket, the vessel rises up to the eye. If there is swelling at ST12 Empty Basin, the vessels join to branch unites with ST12 Empty Basin. If there is swelling below the armpit, the vessel from ST12 Empty Basin goes down to the armpit and travels to the ribs.

為馬刀俠癭，皆頸項腋脅所生之瘡。為汗出，少陽有火也。為振寒瘧，少陽為一陽，居陽之裏，內有三陰，乃為半表半裏，故為振寒瘧。為胷脅肋髀膝外至脛絕骨外踝及諸節皆痛，皆脈所經歷處也。為足小指之次指不能舉用。然邪氣盛則當瀉之，正氣虛則當補之，熱則瀉者疾去其鍼，寒則溫者久留其鍼，脈陷下者則用艾以灸之，若不盛不虛，則以本經取之，而不必求之足厥陰肝經也。所謂盛者，何以驗之？人迎較寸口之脈，大者一倍，則膽經為實，如終始篇所謂瀉足少陽膽而補足厥陰肝者是也。虛者何以驗之？人迎較寸口之脈，小者一倍則膽經為虛，如終始篇所謂補足少陽膽而瀉足厥陰肝者是也。】

Scrofula, boils in the neck, nape, armpit, ribcage. If sweat exits, shao yang is hot. If quivering with cold malaria, shao yang is one yang, if yang lives in the interior, then the interior has three yin, so if half shows half is inside, because it causes quivering with cold malaria. If the flank and ribcage below the buttock and the outside of the knee meridian to the outside of the assisting bone to the ankle has various knots and aching, the vessels that the create meridian are located here. If the toe next to the little toe of the foot cannot move it is selected. So if evil qi is excessive then drain, if the straight qi is deficient then repair, if hot then withdraw the needle to make the sickness go away prick with the needle, if cold then warm and retain the needle for a long time, if the vessels are sinking down then use moxa, if there is neither deficiency nor excess, then treat on the meridian, and do not seek from foot jue yin liver meridian. If there is excess, how will we know? Carotid pulse will be greater than the radial pulse, greater by 1 time, then the gallbladder meridian is solid, this chapter (10) says that in that case drain from the foot shao yang gallbladder and repair the foot jue yin liver. If there is deficiency how will we know? If the carotid pulse is less than the radial pulse by one time, then the gallbladder meridian is deficient, in which case this passage (10) says to repair foot shao yang gallbladder and drain foot jue yin liver.

【張志聰曰：膽，足少陽之脈，是動則病口苦，善太息，心脅痛不能轉側，少陽之氣不升也。少陽主初陽之生氣，故膽氣升，十一臟腑之氣皆升。經云：精明五色者，氣之華也。Zhang zhi cong said: Gallbladder, foot shao yang meridian, if it moves in disease you get bitterness in the mouth, scrofula, heart and ribcage aching not able to turn over in bed, shao yang the qi does not advance. Shao yang governs the qi of the beginning of yang, so gallbladder qi advances, for 11 zang fu the qi moves and advances. The classic says: essence and brightness has 5 colours, it is the essence of qi.

平脈篇云：陽氣長則其色鮮，其顏光，其聲商，毛髮長。少陽之動氣為病，則厥逆而不升，故甚則面微有塵，體無膏澤。少陽相火主氣，足外反熱者，火逆於下也。是為陽氣厥逆之所致也。少陽屬膽，故主骨所生病者。為頭痛，頷痛，目銳眦痛，缺盆腋下胸脅髀膝脛踝皆痛，乃足少陽經脈所循之部分而為病也。血脈留滯則為馬刀俠癭，陽加於陰則為汗出，陽逆於下則為振寒，少陽主骨，故諸節皆痛也。】

Peaceful Vessel Chapter 16 of Shang han lun says: if yang qi is growing then the colour will be fresh, the face will be bright, the sound will be shang, the hair will be long and luxuriant. Shao yang has disease if angry/touched/affected, it rebels and cannot advance, hence face will appear a little bit ashen, the body will have no fat. Shao yang qi reciprocally governs fire, the outside of the foot is hot when it rebels, when fire rebels it travels down. This is caused by the rebellion of yang qi. Shao yang gallbladder category, hence it governs bones it creates diseases. Headache, jaw ache, aching at the corner of the eye socket, from ST12 Empty Basin to the armpit down along the flank and ribcage thighbone knee shinbone ankle if movement and aching, foot shao yang meridian and vessels is the division that has disease. Blood vessels stop moving and become stagnant leads to scrofula, yang adds to yin and causes sweating, yang rebels and goes down to cause shivering cold, hence shao yang governs bone, because various joints ache.

【膽重三兩三銖，長三寸，在肝之短葉間，盛精汁三合。《素問》靈蘭秘典論云：膽者中正之官，決斷出焉。《靈樞》本臟篇云：肝應爪。爪厚色黃者膽厚，爪薄色紅者膽薄；爪堅色青者膽急，爪濡色赤者膽緩；爪直色白無約者膽直，爪惡色黑多紋者膽結也。】

The gallbladder weighs 3 liang and 3 catties, it is 3 cun long, it is located in the space inferior to the liver, 3 measures of essence and fluid gathers. Su Wen chapter 8, secret treatise of the spiritual orchid says: gallbladder is the mandarin official of honesty, it is the source of decision making. Ling Shu chapter 47 origins of viscera says: liver must claws. If the claws/toenails are thick and yellow then the gallbladder is substantial, if the claws are thin and red then the gallbladder is thin; if the claws are black then the gallbladder is quick; if the claws are damp and red then the gallbladder is slow; if the claws are straight and white then the gallbladder is not straight; if the claws are an evil shade of black with stripes in them then the gallbladder is knotted.

膽腑形象之圖

Gallbladder fu ivory figurine diagram

見圖

See diagram

【[膽經諸穴歌]足少陽兮四十三，瞳子髆近聽會間。客主人在頷厭集，懸顙懸釐曲鬢前。率谷天衝見浮白，竅陰完骨本神連。陽白臨泣目窗近，正營承靈腦空安。風池肩井兮淵液，輒筋日月京門聯。帶脈五樞而下，維道居髆相沿。環跳風市抵中瀆，陽關之下陽陵泉。陽交外丘光明穴，陽輔懸鍾穴可瞻。丘墟臨泣地五會，俠谿竅陰膽經全。】

Ode Gallbladder meridian point

Foot shao yang has 43 points, GB1 Pupil Foramen near GB2 Auditory Convergence is close by. GB3 Guest Host Man located at GB4 Dislike Chin assembles, GB5 Suspended Skull GB6 Suspended Tuft GB7 Hairline Curve in front. GB8 Lead to the Valley GB9 Heavenly Thoroughfare GB10 sees Floating White, GB11 Portal of Yin GB12 End Bone GB13 Root of Spirit leads. GB14 White Yang GB15 Arrive at Tears GB16 Eye Window close by, GB17 Upright Ying GB18 Spirit Support GB19 Brain Hollow is content. GB20 Wind Pool GB21 Shoulder Well to GB22 Fluid Abyss, GB23 Sinew Seat GB24 Sun and Moon GB25 Capital Gate unites. GB26 Belt Vessel GB27 Fifth Pivot and down, GB28 Linking Path GB29 Squatting Foramen reciprocates with the thigh. GB30 Circle and Leap GB31 Wind Market presses against GB32 Central River, GB33 Yang Joint go down to GB34 Yang Mound Spring. GB35 Yang Exchange GB36 Outside Hill GB37 Shining Bright point, GB38 Yang Assistance GB39 Suspended Bell points may look out for. GB40 Hill Ruins GB41 Arrive at Tears GB42 Five Earth Convergence, GB43 Pinched Ravine GB44 Portal of Yin this is the whole of the gallbladder meridian.

【[分寸歌]足少陽兮四十三，頭上廿穴分三折。起自瞳子至風池，積數陳之次第說。瞳子膠近眥五分，耳前陷中聽會穴。客主人名上關同，耳前起骨開口空。額厭懸顱之二穴，腦空上廉曲角下。懸釐之穴異於茲，腦空下廉曲角上。曲鬢耳上髮際隅，率谷耳上寸半安。天衝耳後入髮二，浮白入髮一寸間。竅陰即是枕骨穴，完骨之上有空連。完骨耳後入髮際，量得四分須用記。本神神庭旁二寸，入髮一寸耳上係。陽白眉上方一寸，髮上五分臨泣用。髮上一寸當陽穴，髮上寸半目窗責。正營髮上二寸半，承靈髮上四寸諦。腦空髮上五寸半，風池耳後髮陷寄。

Measuring ode Gallbladder

Foot shao yang has 43 points, twenty points are on the head arranged in 3 branches. It rises from the pupil of the eye and goes to GB20 Wind Pool, the order and sequence explains how they accumulate. GB1 Pupil Foramen is near the eye socket 5 fen, In front of the ear nearby is GB2 Auditory Convergence point. GB3 Guest Host Man is also named Upper Joint, in front of the ear rises the bone that opens the mouth. GB4 Reject Chin and GB5 Suspended Skull are 2 points, GB19 Brain Hollow is above the ridge on the corner below the angle. GB6 Suspend and Manage is in a different place, it is above GB19 Brain Hollow which is below the ridge on the corner of the angle. GB7 Crooked Hair is above the ear inside the hairline, GB8 Lead to the Valley is above the ear 1.5 cun and contented. GB9 Heavenly Thoroughfare is behind the ear inside the hairline two, GB10 Floating White is inside the hairline in the space at 1 cun. GB11 Portal of Yin is next to the occiput point, GB12 End Bone is above the hollow join. GB12 is behind the ear and joins with the edge of the hair, measure 4 fen and use the whiskers for reference. GB13 Root of the Spirit is next to GV24 Spirit Courtyard 2 cun, it joins with the hair 1 cun above in relation to the ear. GB14 Yang White is above the eyebrow 1 cun, above the hairline 5 fen is GB15 Arrive at Tears. Above the hair 1 cun is Dang Yang point Directing Yang, above the hairline 1.5 cun is GB16 Eye Window, GB17 Upright Ying is above the hairline 2.5cun, GB18 Spirit Support is above the hairline 4cun to be examined. GB19 Brain Hollow is above the hairline 5.5 cun, GB20 Wind Pool is behind the ear where it sinks in.

肩井肩上陷中求，大骨之前一寸半。淵液腋下方三寸，輒筋期下五分判。期門卻是肝經穴，相去巨闕四寸半。日月期門下五分，京門監骨下腰絆。帶脈章門下寸八，五樞章下四八貫。維道章下五寸三，居髎章下八寸三。章門緣是肝經穴，下肱之旁九寸含。環跳髀樞宛宛中，屈上伸下取穴同。風市垂手中指盡，膝上五寸中瀆論。陽關陽陵上三寸，陽陵膝下一寸從。陽交外踝上七寸，踝上六寸外丘用。踝上五寸光明穴，踝上四寸陽輔分。踝上三寸懸鍾在，丘墟踝前之

陷中。此去俠谿四寸五，卻是膽經原穴功。臨泣俠谿後寸半，五會去谿一寸窮。夾谿在指岐骨間，竅陰四五二指中。】

GB21 Shoulder Well is above the shoulder where you sink in in the middle, 1.5 cun in front of the big bone (acromio-clavicular joint). GB22 Fluid Abyss is below the armpit 3 cun, GB23 Sinew Seat is 5 fen below discriminated. GB24 Sun and Moon is by the liver meridian point, it reciprocally goes to CV14 Great Tower Gate 4.5 cun. GB24 Sun and Moon is below LR14 Period Gate 5 fen, GB25 Capital Gate is below the direct bone belt loop. GB26 Girdle Vessel is below LR13 Chapter Gate 8 cun, GB27 Fifth Pivot is below LR13 4 goes around all sides. GB28 Preserve the Path is below LR13 Chapter 5 cun 3, GB29 is below LR13 8 cun 3. Because LR13 Chapter Gate is liver meridian point, below the cavity of the stomach either side 9 cun. GB30 Circle and Jump is in the crooked hip joint, crouch go up and extend under to find the point the same. GB31 Wind Market dangle the hand and it's where the finger points, above the knee 5 cun in the ditch discuss. GB32 Yang Portal is above GB33 Yang Mound 3 cun, GB34 Yang Mound (spring) is below the knee 1 cun. GB 35 Yang Interconnects above the outside of the ankle 7 cun, above the ankle 6 cun is GB 36 Outer Hill. Above the ankle 5 cun is GB37 Shining Bright point, above the ankle 4 cun is GB38 Yang Assisting (bone). Above the ankle 3 cun is GB39 Suspended Bell found, GB40 Hill Ruins is in front of the ankle in the dip. Go out to GB41 Chivalrous Ravine 4 cun 5 (fen?), this is the source point of the gallbladder meridian. GB42 Arriving at Tears interconnects with GB41 Chivalrous Ravine behind 1.5 cun, GB43 Five Convergences goes past GB41 Ravine 1 cun exhausted. GB41 Wedged Between Ravine is located at the fork in the space between 2 bones. GB44 Yin Portal is 5 (cun?) 2 (fen) on the toe.

膽經諸穴之圖

Gallbladder meridian many points diagram

見圖

See diagram

【聽會：耳微前陷中上關下一寸。腦空：即顛顛也。其額厭懸顛二穴，在曲角下腦空上。曲鬢：耳上髮際曲隅陷中。率谷：在耳上些。天衝：耳後入髮際二寸。浮白：亦耳後些。竅陰：在完骨上枕骨下，動搖有空。臨泣：目上直入髮際五分陷中。風池：耳後顛顛後腦空下髮際陷中。至此計二十穴，分作三折：向外而行，始自瞳子膠，至完骨是一折；又自完骨外，折上至陽白，會睛明是一折；又自睛明上行，循臨泣風池是一折。緣其穴曲折多，難以分別，故作歌以二十次第。歌曰：一瞳子膠二聽會，三主人兮額厭。四五懸顛兮六懸釐，第七數兮曲鬢隨。

GB2 Auditory Convergence: is in the dip in front of the ear above and below portal 1 cun. GB19 Brain Hollow: is on the pterion. GB4 Chin Resist and GB5 Suspended Skull are 2 points, located below the corner of the angle GB19 Brain Hollow above. GB7 Crooked Hairline: Is above the ear at the corner at a bend in the hairline where you sink into a dip. GB8 Lead to the Valley: is located just above the ear. GB9 Celestial Thoroughfare: Is behind the ear inside the hairline 2 cun. GB10 Floating White: is also just behind the ear. GB11 Yin Portal: is located above the end bone and below the occiput, if you move the head it makes a hollow. GB12 Leading to Tears: is directly above the eye just inside the hairline in a dip at 5 fen. GB20 Wind Pool: is behind the ear behind the pterion below GB10 Brain Hollow in the dip inside the hairline. Reach this far with 20 points, the division has 3 branches: the same outside and moves, begins at GB1 Pupil Foramen, one branch finishes at the outside of GB12

End Bone, it goes up from here to GB14 Yang White, meets at BL1 Bright Shining is 1 branch; and from BL1 Shining Bright a pathway goes up, follows GB15 Leading to Tears to GB20 Wind Pool is 1 branch. The margin is the point where the corner branches again, it is difficult to distinguish because there are too many diversions, hence the ode describes the first 20 in sequence. The ode says: 1 is GB1 Pupil Foramen 2 is GB2 Auditory Convergence, 3 is GB3 Master and Man yea GB4 Dislike Chin. 4 and 5 is GB5 Suspended Skull 6 is GB6 Suspend and Manage, the 7th in sequence is Hairline Curve which follows.

八率谷兮九天衝，十浮白兮之穴從。十一竅陰來相繼，十二完骨一折終。又自十三本神始，十四陽白二折隨。十五臨泣目下穴，十六目窗之穴宜。十七正營十八靈，十九腦戶廿風池。依次細心量取之，膽經頭上穴吾知。肩井：肩上陷中，缺盆上，大骨前一寸半，以三指按取，當中指陷中。京門：監骨下腰中季脅本夾脊，腎之募。五樞：去帶脈三寸，季脅下四寸八分。環跳：髀樞中側，臥屈上足，伸下足，以右手摸穴，左手搖撼取之。中瀆：髀外膝上五寸肉間陷中。按手足少陽之穴，在頭者最難覓，若不知慎，禍不旋踵。左右凡八十六穴。】

8 is GB8 Lead to the Valley yea 9 is GB9 Celestial Thoroughfare, 10 is GB10 Floating White and from this point. 11 is GB11 Yin Portal connects reciprocally with to continue, 12 is GB12 End Bone is the end of 1 branch, start from GB13 Root of Spirit 14 is GB14 Yang White follows the 2nd branch. 15 GB15 Leading to Tears the eye is below the point, 16 GB16 Eye Window is a suitable point, 17 GB17 Straight Ying 18 GB18 Spirit, 19 GB19 Brain Door 20 GB20 Wind Pool. The sequence is attentively measured, the head points of the gallbladder meridian are now comprehended. GB21 Shoulder Well: is above the shoulder where it sinks in, above ST12 Empty Basin, in front of the big bone (acromioclavicular joint) 1.5.cun, press down with 3 fingers to get the point, take the central finger and sink in. GB22 Capital Gate: is at the free rib below the waist in the centre of the rib cage either side of the spine, it recruits the kidneys. GB27 Fifth Pivot: goes to GB26 Belt Vessel 3 cun, below the rib and flank 4 cun 8 fen. GB30 Jump and Circle: press at the thigh joint and slanted, lie and crouch go above the foot, stretch below the foot, use your right hand to touch the point and your left hand to manipulate the leg. GB32 Central River: is on the outside of the thigh above the knee five cun in the gap in the flesh where you sink in. Press with hand and foot shao yang point, located at the head are the most difficult to find, if you don't act with care, trouble is never far away. All together makes 86 points.

Liver Foot Jue Yin Meridian

肝足厥陰之脈，起於大指叢毛之際，上循足跗上廉，去內踝一寸，上踝八寸，交出太陰之後，上臑內廉，循股陰，入毛中，過陰器，抵小腹，挾胃屬肝絡膽，上貫膈布脅肋，循喉嚨之後，上入頰頰，連目系，上出額，與督脈會於巔；其支者，從目系下頰裏，環脣內；其支者，復從肝別貫膈上注肺。是動則病腰痛不可以俛仰，丈夫(疒貴)疝，婦人少腹腫，甚則噬乾面塵脫色。是主肝所生病者，胃滿嘔逆，飧泄狐疝，遺溺閉癰。為此諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛，以經取之。盛者寸口大一倍於人迎，虛者反小於人迎也。

Rises up from the big toe by the border of the bushy hairs, goes up and follows the foot along the ridge, goes to the inside of the ankle one cun, goes up past the ankle 8 cun, exchanges and exits at the connection with tai yin, goes up the hollow on the inside of the ridge, follows the yin aspect of

the thigh, joins in the hair, goes through the yin receptacle, opposite the small belly, clasps around the stomach liver enmeshes the gallbladder, goes up through the diaphragm to the cloth of the ribcage and flank, follows behind the oesophagus and throat, goes up and joins the lower forehead, connects directly with the eye, goes out to the top of the forehead, and goes to the summit at the meeting point of the vessels; it has a branch, from the eye it connects down, to the ring inside the lips; it has a branch, goes from the liver up through the diaphragm directly up to the lung. If moved it has diseases pain in the waist and not able to raise and lower the head, husbands have (in private place/indirect) hernia, women have swelling in the belly, the throat is dry and the face is the colour of ashes. The liver controls the creation of disease, the chest feels full and you vomit dinner, leak foxy/indirect hernia, incontinence and retention of urine. There are various diseases, in the case of excess then drain, in the case of deficiency then repair, in the case of heat then take the needle out quickly, in the case of cold then retain, if there is sinking down use moxa, if neither excess nor deficiency, then treat on the meridian. In excess the radial pulse will be one time greater than the carotid pulse, in the case of deficiency the opposite is true and it is less than the carotid pulse.

【馬蒔曰：此言肝經脈氣之行，乃為第十二經也。三毛後橫紋為叢毛，髀內為股，臍下為小腹，目內深處為系。頰頰，咽頰也。足厥陰經之脈，起於足大指叢毛之大敦，循足跗上廉，歷行間、太衝，抵內踝前一寸之中封，自中封上踝，過三陰交，歷蠡溝、中都，復上一寸，交出太陰之後，上臍內廉，至膝關、曲泉，循股內之陰包、五里、陰廉，遂當衝門、府舍之分，入陰毛中左右相交，環繞陰器，抵小腹而上會曲骨、中極、關元，復循章門至期門之所，挾胃屬肝，下日月之分，絡於膽也。

Ma shi said: This speaks about the pathway of the meridian vessels and qi of the liver, it is the 12th meridian in sequence. Behind 3 hairs at the wrinkle where there are bushy hairs, along the inside of the thighbone and thigh, below the navel in the small abdomen, to the connection on the inside of the deepest part of the eye. Fly down from the forehead, to the palate. The vessels of foot jue yin meridian, rise up from the big toe of the foot at LR1 Big Sincere at the bushy hairs, follows the instep of the foot up along the ridge, to LR2 Between the Space, to LR3 Great Thoroughfare, goes to the front of the inside of the ankle 1 cun to LR4 Centre of the Mound, from LR4 the Centre of the Mound it goes above the ankle and joins with SP6 Three Yin Crossing, to LR5 Woodworm Burrow, LR6 Central Metropolis, is above 1 cun, connects and exits behind tai yin, goes up the hollow on the inside of the ridge, goes to LR7 Knee Joint, LR8 Corner Spring, follows the inside of the thigh to LR9 Envelop Yin, LR10 Five Miles, follows and complies with SP12 Surging Gate, LR11 Home of Fu division, joins with the yin hair on either side and mutually connects, encircles and entwines with the yin receptacle, opposite the small belly and goes up to the sea of the pubic bone CV2, CV3 Central Pole, CV4 Origin Pass, goes and returns behind and follows to LR13 Chapter gate and goes to LR14 Cyclic Gate, clasps around the stomach and the liver organ, goes down behind GB24 Sun and Moon division, enmeshes with the gallbladder.

又自期門上貫膈，行食竇之外，大包之裏，散布脅肋，上雲門、淵液之間，人迎之外，循喉嚨之後，上入頰頰，行大迎、地倉、四白、陽白之外，連目系上出額，行臨泣之裏、與督脈相會於巔頂之百會。其支行者，從目系下行任脈之外，本經之裏，下頰裏交環於脣口之內。其又支者，從期門屬肝處，別貫膈行食竇之外，本經之裏，上注肺，下行至中焦，挾中脘之分，以交於手太陰肺經也。及其動穴驗病，則為腰痛不可以俛仰，以肝與腎通，則膂筋之脈通於肝也。

And from LR13 Chapter Gate it goes up through the diaphragm, from the outside of SP17 Food Hole, to SP21 Great Embrace, it scatters in the cloth of the ribs and flank, goes up to LU2 Cloud Gate, to the space at GB22 Fluid Abyss, to the outside of ST9 Mans Welcome, follows the back of the throat, goes up and joins with the nasopharynx, to ST5 Great Welcome, ST4 Earth Granary, ST2 Four Whites, to the outside of GB14 Yang White, joins to the eye and links to the top of the head, to GB14 Overlooking Tears on the inside, and the vessels exchange and meet at the vertex at GV20 One Hundred Meetings. There is a branch, from the eye it joins downwards to the outside of Ren mai, this is the inside of this the meridian, goes directly up to the lungs, goes below the jaws on the inside and exchanges with the ring that is on the inside of the lips. This also has a branch, from LR13 Chapter Gate which belongs to the liver, goes through the diaphragm to the outside of SP17 Food Hole, this is the inside of this meridian, it goes directly up to the lung, goes down to the middle jiao, clasps around in the division of the CV12 Central Stomach, this interconnects with hand tai yin lung meridian. Movement at the points has many diseases, aching in the waist and an inability to raise or lower the head, aching of the liver and kidney, because the vessels of the backbone and sinews pass through the liver.

為丈夫(疝貴)疝，舉丸屬肝也。為婦人少腹腫，脈抵少腹也。甚則噤乾，脈循喉嚨也。面塵脫色，膽病。面有微塵，肝為之裏，故主病同。是主肝經所生之病也。又有諸病之生，或出本經，或由合經。為胃滿，脈上貫膈也。為嘔逆，脈挾胃也。為飧泄，脈抵小腹也。為狐疝遺溺閉癰，以脈過陰器，上舉結於莖也。然邪氣盛則當瀉之，正氣虛則當補之，熱則瀉者疾去其鍼，寒則溫者久留其鍼，脈陷下者，則用艾以灸之。若不盛不虛，則止取之本經，而不必求之足少陽膽經也。所謂盛者，何以驗之？寸口較人迎之脈，大者一倍，則肝經為實，如終始篇所謂瀉足厥陰肝而補足少陽膽者是也。寸口較人迎之脈，小者一倍，則肝經為虛，如終始篇所謂補足厥陰肝而瀉足少陽膽者是也。】

If 1 zhang then (indirect) hernia, testicles are small round objects which are classified with the liver. In women or men swelling in the lower abdomen, vessels are opposed in the lower abdomen. The throat is very dry because the vessels follow the throat. The face colour is like stripped ashes, gallbladder sickness. The face has small ashes, it is inside the liver, because it governs the same diseases. The liver meridian governs the creation of diseases. It creates many diseases, some come from where the meridian travels, some come from where it joins. When the chest is full, (it is because) the vessels pass up through the diaphragm. When vomit rebels, it is because the vessels wrap around the stomach. When food leaks, it is because the vessels in the lower abdomen are swollen. When there is a foxy hernia and you get loss of urine or urinary retention, it is because the vessels pass through the yin receptacle and go into the testicle where they knot. If evil qi is excessive then drain, if upright qi is deficient then repair, if there is heat then take the needle out quickly and the sickness will leave with the needle, if there is cold then warm and retain the needle, if the vessels is sinking down, then use herb and moxa. If there is neither excess nor deficiency, then treat on the meridian, and it is not necessary to use foot shao yang gallbladder meridian. How can we tell if there is excess? If the radial pulse is greater than the carotid pulse by one and a half times, then the liver meridian is true/strong, in this case this chapter says to drain from the foot shao yin liver meridian and repair the foot shao yang gallbladder. If the radial pulse is less than the carotid pulse by one and a half, then the liver meridian is deficient, in this case this passage says to repair foot jue yin liver meridian and drain from foot shao yang gallbladder meridian.

【張志聰曰：頄頄，齧上竅也。是在厥陰之動氣，則病腰痛不可以俛仰，甚則噬乾面塵脫色。蓋厥陰從少陽中氣之化，厥陰之化氣病也。丈夫(疒貴)疝，婦人少腹腫，厥陰之本氣病也。是主肝所生之病者，胃滿嘔逆，蓋食氣入胃，散精於肝，行氣於經，肝所生病，則肝氣厥逆，不能行散穀精，故胸滿嘔逆也。肝主疏泄，肝氣虛則飧泄遺溺，實則閉癰狐疝，隨經脈晝夜出入之疝也。為此是肝所生諸病，盛則瀉之，虛則補之，熱則疾之，寒則留之，陷下則灸之，不盛不虛以經取之。盛者寸口大一倍於人迎，虛者反小於人迎也。】

Zhang zhi cong said: Go down from the forehead to the palate and the upper hole. This is where the angriness/ moving qi of jue yin is located, there is disease when there is aching and an inability to raise or lower the head, with a dry throat and the face the colour of stripped ashes. Because jue yin is transformed from the middle qi of shao yang, this is the diseased qi change of jue yin. If there is (indirect) hernia, the lower belly of a man or woman is swollen, diseased qi of jue yin. Liver governs the creation of disease, if the chest is full and vomit rebels, it is because the stomach joins with the qi of the food, the liver disperses essence, and is the pathway for qi, the liver creates disease, because liver qi rebels, if it is not able to move to disperse grain and essence, this is the reason why the chest is full and vomit rebels. Liver governs careless leakage, if liver qi is deficient then the food will leak and dribble, if this is the case then there will be weakness and loss of urine and hernia, the meridians and vessels follow night and day to go out and come in hernia. If the liver is the cause of many disease, if excess then drain, if deficient then repair, if there is heat withdraw the needle, if there is cold then retain, if the pulse is sinking use moxa, if there is neither excess nor deficiency then treat according to the meridian. If there is excess then the radial pulse will be stronger than the carotid pulse by one and a half, if there is weakness then the opposite is true and it will be less than than the carotid pulse.

肝臟形象之圖

Liver diagram

見圖

【肝重四斤四兩，左三葉，右四葉，共七葉，附著於脊之第九椎下。《素問》刺禁論云：肝生於左。後世以為其臟在右，其脈在左者，非。《素問》靈蘭秘典論云：肝者將軍之官，謀慮出焉。《靈樞》本臟篇云：肝小則臟安，無脅下之病；肝大則逼胃迫咽，迫咽則苦膈中且脅下痛。肝高則上支責切脅，恠為息責；肝下則逼胃脅下空，脅下空則易受邪。肝堅則臟安難傷；肝脆則善病消瘕易傷。肝端正則和利難傷，肝偏傾則脅下痛也。青色小理者肝小，粗理者肝大；廣胸反散者肝高，合脅兔骹者肝下；胃脅好者肝堅，脅骨弱者肝脆；膺腹好相得者肝端正，脅骨偏舉者肝偏傾也。】

Liver weighs 4 catties and 4 liang, on the left it has 3 leaves, on the right it has 4, altogether that is 7 leaves, it is found near the backbone at the level of the 9th vertebra. Su Wen ch.52 forbidden needling chapter: liver is on the left. Later generations this zang is on the right, its not right that it is found on the left. Su Wen ch.8 Secret Treatise of the Spiritual Orchid says: liver is the official which is the general, it is concerned with planning. Ling Shu ch.47 Root of zang says: if the liver is small then the organs will be tranquil, there will not be sickness in the ribcage; if the liver is big then it will force the stomach into the pharynx, if the pharynx is forced then there will be suffering in the diaphragm and pain under the ribcage. If the liver is tall then a branch will go up and cut into the ribcage, to stop it

inhaling and exhaling; if below the liver then it forces the stomach and ribcage down into the hollow, if the ribcage goes down into the hollow then it is easy for it to catch evil (qi). If the liver is firm then the zang will be tranquil and it will be difficult for it to fall ill; if the liver is fragile then it will tend to be dry and easily fall ill. If the liver is upright then there will be harmony and it will be difficult to fall ill, if the liver is slanting and leaking then there will be pain under the ribcage. A small blue green colour is an indication of a small liver, an indication of the essence of a big liver; a broad chest is the reverse and shows a tall liver, it joins with the ribcage at the rabbit joint when the liver is low and flat; if the chest and ribcage are low and flat will this be the sign of a strong liver, if the chest and bones are weak then the liver is fragile; if the chest and belly are well then they reciprocally exchange with the upright liver, if the ribcage and bones are slanting then it shows that the liver is also slanting.

【[肝經諸穴歌]足厥陰，一十三穴終。起大敦於行間，循太衝於中封。蠡溝中都之會，膝關曲泉之宮。襲陰包於五里，陰廉乃發；尋羊矢於章門，期門可攻。】

Ode for liver meridian many points

There are 13 points. It rises up from LR1 Big Rice Container to LR2 Moving Space, it follows LR3 Extreme Thoroughfare to LR4 Envelope Centre. LR5 Woodworm Burrow meets with LR6 Central Metropolis, LR7 Knee Pass LR8 Spring at the Bend is the palace. Inherits LR9 Enveloping Yin to LR10 Five Miles, LR11 Yin Ridge then sends out; to look for LR12 Goat Arrow leads to LR13 Chapter Gate, LR14 Period gate can finish.

肝經諸穴之圖

Liver meridian points diagram

見圖

See diagram

【[分寸歌]足大指端名大敦，行間大指縫中存。太衝本節後二寸，踝前一寸號中封。蠡溝踝上五寸是，中都踝上七寸中。膝關犢鼻下二寸，曲泉曲膝盡橫紋。陰包膝上方四寸，氣衝三寸下五里。陰廉衝下有二寸，羊矢衝下一寸許。氣衝卻是胃經穴，鼠鼯之上一寸主。鼠鼯橫骨端盡處，相去中行四寸止。章門下脘旁九寸，肘尖盡處側臥取。期門又在巨闕旁，四寸五分無差矣。】

Measuring ode

Goes from the big toe of the foot at the point named LR1 Big Rice Container, LR2 Movement Space is found in the web space. LR3 Extreme Thoroughfare is 2 cun behind the root of the joint, in front of the ankle 1 cun marks LR4 Envelope Centre. LR5 Woodworm Burrow is above the ankle 5 cun, LR6 Central Metropolis is above the ankle 7 cun. LR7 Knee Joint is below ST25 Calf's Nose 2 cun, LR8 Spring at the Bend is at the end of the horizontal crease at the bend of the knee. LR9 Wrapping Yin is above the knee 4 cun, LR10 Five Miles is below ST30 Qi Thoroughfare 3 cun. LR11 Yin Ridge is below ST30 Qi Thoroughfare 2 cun, LR12 Sheep Arrow is below ST20 Qi Thoroughfare a little more than 1 cun. ST30 Qi Thoroughfare is a point on the stomach meridian, it governs 1 cun above the mouse. The pubic hair and pubic bone are the limit of this place, they mutually go along for 4 cun. The

bladder is 9 cun below LR13 Chapter Gate, if you bend the elbow in against the body you find this point. LR14 Period Gate is found near to CV14 Great Tower Gate, 4 cun 5 fen not different.

【大敦：足大指端內側為隱白，外側為大敦。中封：足內踝骨前一寸筋裏宛宛中。蠡溝：內踝骨前上五寸。中都：內踝上七寸胫骨中。陰包：股內廉兩筋間，蹠足取之，看膝內側，必有槽中。足五里：氣衝下三寸陰股中，動脈應手。巨闕：任脈穴，臍上六寸半。左右凡二十六穴。】

LR1 Big Rice Container: is on the slant on the inside of the big toe where the hidden white skin is, on the outside slant is LR1 Big Rice Container. LR4 Envelope Centre: is on the inside of the ankle in front of the bone 1 cun in the centre of the tendons where it looks crooked. LR5 Woodworm Burrow: is on the inside of ankle in front of the bone 5 cun above. LR6 Central Metropolis: is 7 cun above the inside of the ankle in the calf bone. LR9 Wrapping Yin: is on the inner thigh ridge in the space between 2 sinews, curl the foot to find the point, see the crease on the inside of the knee, it will have a trough. LR10 Foot five Miles: is 3 cun below ST30 Qi Thoroughfare on the yin side of the thigh, where the blood vessels move a handsbreadth. CV14 Great Tower Gate: is a point over blood vessels, 6.5 cun above the navel. Both sides makes 26 points.

GV Directing Vessel points ode

【[督脈諸穴歌]督脈在背之中行，二十七穴始長強。舞腰俞兮歌陽關，入命門兮懸樞間。脊中筋縮造至陽，靈臺神道身柱詳。陶道大椎至瘕門，風府腦戶強間分。後頂百會兮前頂，顙會上星兮神庭。素髀至水溝於鼻下，兌端交斷交於內脣。】

The pathway for direct vessel is found on the back , 27 points start at GV1 Long Strong. Dance GV2 Waist Shu and sing for GV3 Yang Pass, joins to GV4 Gate of Life to GV5 Suspended Pivot Space. GV6 Central Spine GV8 Muscles Contract GV9 Yang Extreme, GV10 Spirit Platform GV11 Spirit Path GV12 Body Pillar, GV13 Pottery Road GV14 Great Mallet reach GV15 Mute Gate, GV16 Wind Palace GV17 Brain Door GV18 Strong Space division. GV19 Behind the Vertex GV20 One Hundred Meetings to GV21 In Front of the Vertex, GV22 Meeting at the Top of the Skull GV23 Upper Star to GV24 Shen Courtyard. GV25 Silk Foramen reaches GV26 Water Ditch below the nose, at the end it stops exchanges and interconnects with the inside of the lips.

【[分寸歌]督脈齟交脣內鄉，兌端正在脣端央。水溝鼻下溝中索，素髀宜向鼻端詳。頭形北高面南下，先以前後髮際量。分為一尺有二寸，髮上五分神庭當。髮上一寸上星位。髮上二寸顙會良。髮上前頂三寸半，髮上百會五寸央。會後寸半即後項，會後三寸強間明。會後腦戶四寸半，後髮入寸風府行。髮上五分瘕門在，神庭至此十穴真。自此項骨下脊骶，分為二十有四椎。大椎上有項骨在，約有三椎莫具之。尾有長強亦不具，中間廿一可排椎。大椎大骨為第一，二椎節內陶道知。第三椎間身柱在，第五神道不須疑。第六靈臺至陽七，第九身內筋縮思。十一脊中之穴在，十二懸樞之穴奇。十四命門腎俞並，十六陽關自此知。二十一椎即腰俞，脊尾骨端長強隨。】

Measuring ode

Directing vessel interchanges in the inside of the gums, it is the end place where it properly stops. GV26 Water Ditch is below the nose in the central ditch like a rope, GV25 Silk Foramen is right at the very end of the nose. The top of the head looks northward and the face looks down southward, you can measure from in front and behind the hairline. The division is one foot and 2 cun, above the hairline 5 fen is GV24 Spirit Courtyard. Above the hairline 1 cun is found GV23 Upper Star located. Above the hairline 2 cun is GV22 Meeting at the Top of the Skull. Above the hairline in GV21 In Front of the Vertex is 3.5 cun, above the hairline GV20 One Hundred Meetings is five cun in the centre. Behind GV20 Meetings 0.5 cun is GV19 Behind the Vertex, behind GV20 3 cun is GV18 Strong Space shining. 4.5 cun behind GV20 Meetings is GV17 Brain Door, behind the hairline on the join 1 cun is GV16 Wind Palace. Above the hairline 5 fen is found GV15 Mute Gate, GV11 Shen Courtyard reaches this 10th point/cave. From this place in the nape of the neck it goes down the backbone to the coccyx, this are 24 four spinal processes. GV14 Great Hammer is above the bone at the nape of the neck, we agree that there are 3 spinous processes that we do not use. At the tail is GV1 Long Strong which one we also do not use, in the 21st space one can place one. GV14 Great Mallet is the 1st big bone, the 2nd Mallet is inside the joint where GV13 Pottery Road is found. The 3rd process is the space for GV12 Body Pillar, the 5th Mallet is where GV11 Spirit Path is without question. The 6th is GV10 Spirit Tower GV9 Reaches Yang is at 7th, sequence 9th is the inner body GV8 Contract Muscles think. 11th is GV6 Spine Centre point location, 12th is GV5 Suspended Pivot point unusual. 14 is GV4 Gate of Life standing in front of the kidneys, 16th is GV3 Yang Gate can be known, 21st Mallet is GV2 Waist Shu, and at the very end of the spine is GV1 Long Strong found.

督脈經諸穴之圖

Directing Vessel meridian points diagram

見圖

See diagram

【百會：在頂中央旋毛中，兩耳尖上，可容豆。分為一尺有二寸，而其數只一尺一寸者，何也？蓋前後髮際穴，而必以前後髮際量起，則有一寸在也。風府：項後髮際入一寸大筋內宛宛中，疾言其肉立起，言休立止，即百會後五寸半。瘡門：後髮際上五分項中央宛宛中，仰頭取之，入繫舌本。凡二十七穴。】

GV20 One hundred meetings: is located at the vertex where the hair makes a whorl, at the midpoint of the tips of both ears, it may look like a bean. The division has 1 foot and 2 cun, and only counts 1 foot and 1 cun, why so? The points are in front of and behind the hairline, and we must measure where they rise up from in front and behind the hairline, they are then located at 1 cun. GV16 Wind Palace: on the nape of the neck behind the hairline join 1 cun at the inside of the big swirling crooked looking sinew, when we talk very quickly then the flesh which stand up and rise from here, when we stop talking then it will stop, it is located behind GV20 100 Meetings 5.5cun. GV15 Mute Gate: is behind and above the hairline 5 fen in the centre of the nape of the neck in the centre where it is swirling crooked, you raise the head from here to the vertex, it joins to the root of the tongue. Makes 27 points.

Ren vessel meridian points ode

【[任脈經諸穴歌]任脈二十四，穴行腹與胷。會陰始兮曲骨從，中極關元石門通。氣海陰交會，神闕水分逢。下脘建里兮中脘上脘，巨闕鳩尾兮中庭臚中。玉堂上紫宮華蓋，璇璣上天突之尊。飲彼廉泉，承漿味融。】

Ren vessel has 24, the points are on the belly and chest. CV1 Convergence of Yin is followed by CV2 Curved Bone (Pubic Bone), CV3 Central Pole CV4 Pass Head CV5 Stone Gate follow. CV6 Sea of Qi CV7 Yin Exchange connects, CV8 Shen Watchtower CV9 Water Division. CV10 Lower Stomach Centre CV11 Erect the Village CV12 Centre of the Stomach CV13 Upper Stomach Centre, CV14 Great Watchtower CV15 Turtle dove Tail goes to CV16 Central Palace CV17 Chest Centre. CV18 Jade Hall Up to CV19 Violet Palace CV20 Imperial Canopy, CV21 Jade Pearl up to CV22 Heavenly Chimney we honour. Drink at CV23 Ridge Spring at CV24 Receive Broth taste and smell combine.

【[分寸歌]任脈會陰兩陰間，曲骨毛際陷中安。中極臍下四寸取，關元臍下三寸連。臍下二寸名石門，臍下寸半氣海全。臍下一寸陰交穴，臍之中央即神闕。臍上一寸為水分，臍上二寸下脘列。臍上三寸名建里，臍上四寸中脘許。臍上五寸上脘在，巨闕臍上六寸五。鳩尾蔽骨下五分，中庭臚下寸六取。臚中卻在兩乳間，臚上寸六玉堂主。臚上紫宮三寸二，臚上華蓋四八舉。臚上璇璣五寸八，璣上一寸天突起。天突喉下約四寸，廉泉頷下骨尖已，承漿頤前脣稜下，任脈中央行腹

Measuring ode

Ren vessel CV1 Convergence of Yin between both yin spaces, CV2 Curved Bone (Pubic bone) is in the hair where you sink into. CV3 Central Pole is found 4 cun below, CV4 Origin Pass joins 3 cun below the navel. CV5 Stone Gate is named 2 cun below the navel, CV6 Sea of Qi is found 1.5 cun below the navel. CV7 Yin Exchange point is 1 cun below the navel, CV8 Shen Watchtower is immediately in the centre of the navel. CV9 Water Division is above the navel 1 cun, 2 cun above the navel is CV10 Lower Central Stomach in series. 3 cun above the navel is named CV11 Stand Mile, 4 cun above the navel is CV12 Central Stomach allowed. 5 cun above the navel is located CV13 Upper Central Stomach, CV14 Great Watchtower is found 6 cun 5 fen above the navel. CV15 Doves Tail is 5 fen below the shading/covering bone, CV16 Central Palace is found below the chest (CV17) 1.6 cun. CV17 Central Chest is located in the space between the 2 nipples, 1.6 cun above the chest (CV17) is CV18 Jade Hall. Above chest (CV17) 3 cun 2 fen is CV19 Purple Palace, above chest 4 cun 8 fen is CV20 Glorious Canopy. Above chest (CV17) 5 cun 8 fen is CV21 Jade Pearl, above CV21 Pearl one cun is CV22 Celestial Chimney rising. CV22 is below the join of the throat 4 cun, CV23 Spring Ridge is below the jaw on the point of the bone, CV24 Receive Broth is on the jaw in front of the lips below the edge, Ren vessel of the abdomen pathway ends here.

【張志聰曰：此論三陰三陽之氣終也。皮脈肉筋骨，臟腑之外應也。臟腑者，雌雄之內合也。陰陽六氣，本於臟腑之五行所生，氣先死於外，而後臟腑絕於內也。手太陰之氣，主於皮毛，是以太陰氣絕則皮毛焦。手太陰主氣，氣主熏膚澤毛。故太陰者，行氣溫於皮毛者也。是以氣不榮則皮毛焦。津液者，隨三焦出氣，以溫肌肉淖澤於骨節，潤澤於皮膚，氣不榮則津液去皮節矣，津液去皮節則爪枯毛折矣。毛先死者，手太陰之氣，先絕於外也。丙篤丁死，肺臟之氣死於內也。

Zhang zhi cong said: This discusses the qi connections between 3 yin and 3 yang. Of vessels flesh sinews and bone, are the external manifestation of zang and fu. The zang and fu combine internally that which is male and that which is female. There are 6 yin and yang qi, the five phases generate the basis of zang and fu, qi is first death on the outside, and after the zang and fu are severed on the inside. Qi of hand tai yin, governs skin and hair, hence tai yin qi separation is the rule to whereby the skin and hair become scorched. Hand tai yin is the lord of qi, this qi governs smoke and moisture on the skin. Hence tai yin is that which, is the pathway to warm qi and so makes skin and hair. If qi does not flourish then the skin and hair will be scorched. Bodily fluids, follow the qi moving through the 3 burners, to warm muscles and flesh and moisten bone and joints, moistness of skin, the qi does not flourish so the bodily fluids leave the skin and joints, bodily fluids leave the skin and joints means that the fingernails will be dry and hair will split. Hair is the first death, hand tai yin qi, first separates on the outside. 3rd true 4th death, death of qi of lung zang is internal.

尚御公曰：按上古天元冊文，丹齡蒼素元之天氣，經於五方分野，合化地之五行，而地之五行，上呈天之六氣。五運行論曰：神在天為風，風生木，木生酸，酸生肝，肝生筋，筋生心，是人之立形定氣，本於五行所生。故曰：其生五，其數三，謂生於五行，而終於三陰三陽之數。是以所生病者，臟腑五行之病生於內也。是動者，六氣之運動於外而為病也。然是動所生之病，皆終於三陰三陽之氣者，臟腑五行之氣，本於天之所化，故天氣先絕而後臟腑之氣終也。朱濟公曰：夫人生於地，懸命於天，天地合氣，命之曰人。蓋人秉天地之氣所生，配合天地陰陽運氣，能明造化死生之道，則一點靈明，與太虛同體，萬劫常存也。】

Shang yu gong said: palpation in the high old celestial origin books, celestial qi has the colours of red,? Green and white first, pass through 5 divisions of a field, union and change of earth through the 5 phases, and 5 phases of the earth, above in the sky are 6 types of qi (weather). Ch.67 Su Wen discourse on 5 phases says: shen is located in heaven and wind, wind generates wood, wood generates sour/acid, sour/acid generates liver, liver generates muscles/tendons, muscles generate heart, indeed qi decides upon the form of man, 5 phases is at the root of creation. Because it says: this creates 5, this number is 3, called creation in 5 phases, and makes the number of 3 yin and 3 yang. This is where disease is generated, zang fu 5 phases creates disease at the interior. If it is affected, 6 qi moves and on the outside there will be disease. Hence if it is affected then disease will be created, in the end all of the qi of 3 yin and 3 yang, the qi of zang fu 5 phases, the root of change and location of heaven, if heavenly qi first separates and behind the end of the qi of zang and fu. Vermilion helps fair says: Man generates earth, destiny is in the sky, qi unites heaven and earth, destiny is the fate of man. Qi is the place where man grasps heaven and earth, the transport of qi matches together the union of heaven and earth yin and yang, it is the path by which light can make the change between life and death, it is the rule of brilliant soul (people), and great emptiness in the same body, to survive innumerable common disasters.

手少陰氣絕則脈不通，脈不通則血不流，血不流則髮色不澤。故其面黑如漆柴者，血先死。壬篤癸死，水勝火也。

If hand shao yin qi separates then there will be blockage in the vessels, if there is vessel blockage then the blood will not flow, if blood does not flow then the hair and colour will not be moist. Hence his face will be the black colour of lacquered burnt wood, blood first death. If the 9th heavenly stem stops then 10th heavenly stem death, water conquers fire.

【馬蒔曰：此言心絕之證候死期也。心主脈，又主血，惟心氣絕則血脈俱枯，髦色不澤，面色如漆柴然，水所刑也。此則血已先死，水日剋火，死可必矣。】

Ma shi said: This talks about the period of time waiting for death as a result of the separation of the qi of the heart . The heart governs blood vessels, and governs blood, but if the qi of the heart separates then the blood in the vessels will dry up and wither, the hair and colour will not be moistened, the face colour will look like varnished blackened wood, because water will punish it. Already the blood will be the first death, water will overcome the fire of the sun, you will surely die.

【張志聰曰：心主血脈，故手少陰氣絕則脈不通，脈隨氣行者也。脈不通則血不流，血隨脈氣流行者也。夫心之合脈也，其榮色也。髦者，血氣之所生也。故血脈不流則髦色不澤，面如漆柴。少陰氣絕則血先死。壬篤癸死，心臟之火氣滅也。】

Zhang zhi cong said: heart governs blood vessels, hence if hand tai yin qi separates then the vessels become blocked, the passage of qi follows the blood vessels. If the vessels are blocked then blood cannot flow, because the flow of qi pathways follows the passage of blood in the vessels. The union of vessels is the heart of a man, the colour will be flourishing. The hair is made, because blood and qi generate it. If blood vessels cannot flow then the hair and colour are not moistened, face is like lacquered firewood. If the qi of shao yin separates then the blood will first die, if 9th heavenly stem is true then 10th heavenly stem death, the heart zang will be extinguished by qi of fire.

足太陰氣絕者，則脈不榮肌肉。脣舌者，肌肉之本也。脈不榮則肌肉軟，肌肉軟則肉萎人中滿，人中滿則脣反，脣反者肉先死。甲篤乙死，木勝土也。

If foot tai yin qi separates, then blood does not flourish in the flesh and muscles. The workings of lips and tongue, are at the root of muscles and flesh. If vessels do not flourish then muscles and flesh are flexible/soft, if muscles and flesh are flexible then flesh will wither and GV26 Man Centre will be full, if GV26 is full then the lips will reverse, if the lips are reversed then first the flesh will die. If the 1st heavenly stem stops running true then the 2nd heavenly stem will die, so wood will conquer earth.

【馬蒔曰：此言脾絕之證候死期也。脾主肌肉脣舌，為肌肉之本，故脾氣不榮則肌肉軟而舌萎，人中滿而脣反，斯則肉已先死。木日剋土，死可必矣。】

Ma shi said: these words say if the spleen separates then after a period of time the proof will be death. The spleen governs muscle and flesh lips and tongue, it is the root of muscle and flesh, if the qi of the spleen does not flourish then muscles and flesh are flexible and tongue declines, GV26 and the lips reverse, thus if the flesh is finished then death. If Wood sun overcome earth, death will surely ensue.

【張志聰曰：足太陰之氣生於脾，脾藏榮而外主肌肉，是以太陰氣絕則脈不榮於肌肉矣。脾開竅於口，主為衛使之迎糧，故脣舌為肌肉之本，脈不榮則肉萎脣反，太陰之生氣絕於外也。甲篤乙死，脾臟之氣死於內也。】

Zhang zhi cong said: foot tai yin is the qi that governs the spleen, if the spleen zang flourishes and outside muscles and flesh is governed, thus if tai yin qi separates then the vessels will not flourish or the muscles and flesh. Spleen enlightens the mouth, governs protecting the cause and receiving food, therefore the lips and tongue are the root of muscles and flesh, if this vessel does not flourish then the flesh declines and the lips invert, the exterior of tai yin is governed by the separation of qi. 1st heavenly stem true 2nd heavenly stem death, if the qi is dead of spleen zang at the interior.

Foot shao yin diseases

足少陰氣絕則骨枯。少陰者，冬脈也，伏行而濡骨髓者也。故骨不濡則肉不能著也。骨肉不相親則肉軟卻，肉軟卻故齒長而垢，髮無澤，髮無澤者骨先死。戊篤己死，土勝水也。

If Foot shao yin qi separates it is the reason for bone decay. Lesser yin, winter vessels, covers moves, and moistens bone marrow. Hence when bone is not moistened the flesh is not able to manifest. If the bone and flesh are not inter-related then the flesh will be weak, if the flesh is weak then the teeth will be long and dirty, hair will not be lustrous, if the hair is not lustrous it is the first sign of bone death. If the 5th heavenly stem does not work then the 6th heavenly stem will die, earth is victorious over water.

【馬蒔曰：此言腎絕之證候死期也。腎主骨，其脈行於冬而濡骨髓，惟腎氣絕則骨枯肉脫，齒槁髮焦，其骨已死。土日剋木，死可必矣。】

Ma shi said: This talks about the separation of the kidney which is the first evidence of impending death. The kidneys govern bone, this vessel contains and moves and moistens bone and marrow, if kidney qi separates then the bone dries out and the flesh becomes stripped, the teeth are rotten and the hair is scorched this is the death of bone. Earth and sun subdue wood, Death will surely result.

【張志聰曰：足少陰之氣主骨，故氣絕則骨枯。冬脈者，謂五臟之脈氣合四時，而外濡於皮肉筋骨者也。夫谿骨屬骨，肉本於骨也，故骨不濡則肉不能著於骨，而骨肉不相親矣。骨肉不相親，則骨氣外脫而齒長矣。夫腎主藏精而化血，髮者血之餘也。髮無澤者，腎臟之精氣絕而骨先死矣。】

Zhang zhi cong said: qi foot lesser yin governs bone, because if qi is cut off then bone will wither. Winter vessels, talk about the union of the blood and qi of the four seasons in the 5 zang, and the moistening of the outside the skin flesh sinew bone. The ravine bone category of bone, flesh is at the root of bone, if bone is not moistened then flesh will not be able to manifest bone, and bone and flesh will not reciprocally intimate. If bone and flesh are not reciprocally intimate, then the qi on the outside of bone will become stripped and the teeth will lengthen. The kidney governs zang essence and converts blood, hair shows a surplus of blood. If hair is not moistened, kidney zang has separated from blood and essence and bone will surely die.

足厥陰氣絕則筋絕。厥陰者，肝脈也。肝者，筋之合也。筋者，聚於陰氣而脈絡於舌本也。故脈弗榮則筋急，筋急則引舌與卵，故脣青舌卷卵縮，則筋先死。庚篤辛死，金勝木也。【陰氣之氣，當作器。】

Pathology Foot Jue yin

If Foot hidden yin qi separates then muscles will separate. Jue yin, liver vessel. The liver, joins with the sinews. The sinews, meet in the qi of yin and blood vessels to wrap around the root of the tongue. Hence if the vessels are not flourishing then the muscles become tight, if the muscles are tight then the tongue will extend and testes, when the lips are blue green then the tongue will curl back and the testes will go into the belly, in which case the sinew will surely die. The 7th heavenly stem will have a slow death because metal will conquer wood. (The qi of yin qi, makes a receptacle.)

【馬蒔曰：此言肝絕之證候死期也。肝之合在筋，其筋下聚於陰器，而上絡於舌本，故氣絕則筋急，引舌與卵，其筋已先死。金日剋木，死可必矣。】

Ma shi said: This speaks of the evidence that shows that the liver is breaking which leads to death. Liver is the place of the union of sinews, the sinews meet below in the gonads, and go up to the network at the root of the tongue, this if the qi is severed then the sinews become tight, the tongue extends and testes, the sinews will be first to die, Metal and sun conquer wood, death must surely come.

【張志聰曰：足厥陰之氣主筋，故氣絕則筋絕矣。厥陰者肝脈，肝者筋之合，謂厥陰之氣合於肝脈，肝臟之氣合於筋也。聚於陰氣者，筋氣之會於宗筋也。筋聚於陰器，而絡於舌本，故脈不榮於筋，則筋急而舌卷卵縮矣。厥陰氣絕，則筋先死。庚篤辛死，金勝木而肝臟之木氣絕也。】

Zhang zhi cong said: The qi of foot jue yin governs sinew, hence if qi separates then the sinews will separate. Jue yin is the vessel of the liver, liver is the union of the sinews, it speaks of the union of the qi and liver blood of jue yin, liver zang is the union of qi and muscles. It meets in the gonads, the ancestral muscle meets in the separation of qi. If the muscles meet in the female gonads, and the network at the root of the tongue, then vessels cannot flourish at the sinews, then the sinews become tight and the tongue rolls up in the mouth. If the qi of jue yin separates, if 7th heavenly stem is blocked then the 8th heavenly stem will die, because metal conquers wood and then the wood and qi of liver separated.

五陰氣俱絕則目系轉，轉則目運，目運者為志先死。志先死則一日半死矣。

If 5 yin qi all separate then the eye system spins, if spinning then the eye works, if eye works then the mind will surely die. If the mind dies first dies then he will die within one and a half days.

【馬蒔曰：此言手足陰經之絕者，而有病證死期也。五陰者，心肝脾肺腎皆屬陰經也。不言心包絡經者，以手少陰心經統之。耳目為五臟之精，故五臟絕則目系轉而運，此乃志已先死，所以死在一日半也。曰一日半者，蓋周五臟之表裏，而半日則餘之耳。】

Ma shi said: These words describe what happens when the hand and foot yin networks separate, and various diseases cause death over a period of time. 5 yin, heart liver spleen lung kidney make every yin pathway category. Do not speak of the heart protector network pathway, the hand shao yin heart unites. Ear and eye show the essence of the 5 zang, hence if the 5 zang separate then the eye category is cannot turning and shifting, in this case then the mind is dead and death will follow, hence death will come in one and a half days. Speak of one and a half, because the the whole cycle 5 zang shows the interior, and half a day is the rule of excess just because.

【張志聰曰：此總結五臟五行之氣，本於先天之水火也。心系上繫於目系，目系轉者，心氣將絕也。火之精為神，水之精為志，神生於精，火生於水，故志死而神先絕，所謂生則俱生，急則俱死也。天一生水，地二生火。一日半者，一二日之間，陰陽水火之氣，終於天地始生之數也。】

Zhang zhi cong said: This text is the summary for the qi of the 5 pathways of 5 zang, the root of first heaven is fire and water. Heart category is above and connects with the category of the eye, the eye category conveys, if the qi of the heart is going to separate. The essence of shen can be seen in fire, the essence of will is in water, shen is generated from essence, fire is generated from water, hence if the will dies and shen will first separate, this is called creation is the rule of creation, quickly they accompany death. The number of heaven is one which creates water, the number of earth is two creates fire. One and a half days, the space between one and two days, qi of yin yang water fire, at the end heaven and earth are at the beginning of fate.

六陽氣絕則陰與陽相離，離則腠理發泄，絕汗乃出，故旦占夕死，夕占旦死。

Six yang qi separate then the yin and the yang essence reciprocally leave, if they leave then the space between the skin and flesh will leak, if they separate then sweat will exit, this is the reason why death is predicted to come between morning and dusk, if dusk is predicted then morning death.

【馬蒔曰：此言手足陽經之絕者，而有病證死期也。六陽者，膽胃大小腸膀胱三焦也。六陽經氣絕，則陰經與陽經相離而不相運，致腠理開泄，絕汗如珠，其死在旦夕間也。】

Ma shi said: This passage is about the separation of hand and foot yang pathways, and the various diseases that cause death and the timings. 6 yang, gallbladder stomach great and small intestine bladder triple heater. The qi of six yang pathways separates, then the yin pathways and yang pathways and cannot functionally circulate between each other, because the space between the skin and the flesh opens, if it separates then sweat is like a jewel and death will come between dusk and dawn.

【張志聰曰：此言六腑三陽之氣終也。陰陽離合論曰：未出地者，命曰陰中之陰；已出地者，名曰陰中之陽。蓋三陽之氣，根於陰而出於陽，是以六陽將絕，則陰與陽相離矣。離則陽氣外脫，腠理發泄，絕汗乃出，而陽將終也。三陽者，應天之氣，是以旦占夕死，夕占旦死，不能終天運之一周。尚御公曰：此章與本經終始篇、《素問》診要經終篇大義相同。】

Zhang zhi cong said: This passage on the qi of the 6 fu and 3 yang. Su Wen 6 Yin and yang separation and union debate says: if earth exits, the name of yang will be in yin. It covers the qi of 3 yang, it is based in yin and goes out to yang, this 6 yang will separate, then yin and yang will reciprocally leave each other. If they leave then the yang qi of the exterior escapes, between the skin and the flesh will leak, if separates then sweat will exit, and yang will separate. 3 yang, qi must go to heaven, if this then between dawn and dusk will die, not able to finish one cycle of the sky.

Shang yu gong said: This chapter is the root of the canon which begins the essay. Su wen examination is necessary in the end this chapter has great rightness reciprocally the same.

Nature of channels

經脈十二者，伏行分肉之間，深而不見，其常見者，足太陰過於外踝之上，無所隱故也。諸脈之浮而常見者，皆絡脈也。六經絡手陽明少陽之大絡，起於五指間，上合肘中，飲酒者，衛氣先行皮膚，先充絡脈，絡脈先盛，故衛氣已平，榮起乃滿，而經脈大盛。脈之卒然盛者，皆邪氣居之，留於本末，不動則熱，不堅則陷且空，不與眾同。是以知其何脈之動也。雷公曰：何以知經脈之與絡脈異也？黃帝曰：經脈者，常不可見也。其虛實也，以氣口知之。脈之見者，皆絡脈也。

Twelve vessels, lie hidden in the spaces between the divisions in the flesh, deep and cannot see, this is that which is commonly seen, foot tai yin passes through the outside of the ankle and passes up, because there is no place for it to hide. This speaks of the vessel that floats and is commonly seen, all the network vessels. 6 vessel networks of hand yang ming lesser yang make the big network, goes out from the 5th finger space, rises up and joins into the elbow, to drink wine,

Protective qi

protective (wei) qi is the first pathway through the skin, it first fills up the network vessels, network vessels are first abundant, because wei qi is already flat, if it flourishes then it goes out and is full, and the network vessels are big and abundant. The vessels are certainly abundant, if evil qi resides in them, then they stop at the foundation, if not moving then they heat up, if they are not firm then they sink and are empty, it's different from the others. Indeed, because of this we may know why/how vessels move. The Duke of Thunder says, how will we know if the pathway vessels and the network vessels are strange? Huang di said: pathway vessels, commonly can't be seen. This is how you know the real situation, by means of the radial pulse you will know. If the vessel is seen, then it's a network vessel.

【馬蒔曰：此詳言經脈不可見，而絡脈則可見也。經脈者，如肺經自中府以至少商是也。絡脈者，如肺經之列缺旁行偏歷是也。然十二經者，伏行於各經分肉之間，深而不可見，其常見者，僅有脾經之脈，過於外踝之上，與胃脈相通，無所隱焉故耳。

Network vessels

Ma shi said: This passage talks about the pathway vessels that cannot be seen, and the network vessels that can be seen. The pathway vessels, if the lung pathway goes from the lung organ to LU1 lesser shang. The network vessel, goes from the lung pathway at LU7 Broken Sequence next to the pathway on the slant. Thus 12 pathways, are hidden in the each passage through the spaces in the flesh, deep and cannot be seen, the commonly seen, are the vessels belonging to the spleen pathway, goes from the outside of the ankle up, and the stomach vessel reciprocally pass through, why are they not hidden? just because.

凡諸脈之浮而常見者，皆絡脈也。又有經絡皆盛，其唯飲酒之時。即如手之六經，皆有絡脈，其手陽明大腸經之絡名曰偏歷，手少陽三焦之絡名曰外關，雖在臂腕之間，然皆起於手之五指，手陽明則起於食指，手少陽則起於無名指，上則合於肘中。

Every various vessel that floats (to the surface) can be seen, these are the network vessels. And when the pathway network is all abundant, it is time to drink wine. Immediately if the hand has 6 pathways, all have network vessels, this hand yang ming tai yang pathways named network is LI6 Slanting Place, hand shao yang triple burner the named network is called TH5 Outer Portal, if it is in

the space between the hand and the wrist, surely all rise from the five fingers of the hand, hand yang ming then rises from the forefinger, hand shao yang rises from the unnamed finger (ring), goes up and joins with the elbow.

唯飲酒時則衛氣先行於皮膚，絡脈先盛，至衛氣已平，營氣亦滿，而經脈亦大盛。凡經絡之脈，卒然動者，皆邪氣居之。邪氣者，酒氣也。留於手之本末臂指間，設脈不動，則其熱實不免。若脈不堅，則其人必虛，脈當陷且空也。大抵飲酒之脈，斷宜動而且堅，與不飲酒之眾人，其脈不相同也。是以即飲酒時，便可以知其脈起於何指者，係何脈之動也。

Only at the time of drinking wine does the wei qi flow first through the skin, the network vessels are first abundant, the wei qi is flat, ying qi is also full, and the pathway vessels also are big and flourishing. If the vessels of pathway (and) networks at last then surely will move, all evil qi resides. Evil qi, wine qi. And the spaces in the fingers and arm are the beginning and end in the hand, supposing the vessels do not move, then this will not be able to evade heat. If the vessels are not strong, the man will surely be deficient, the vessels will sink and be hollow. Generally speaking drink wine for vessels, interrupt the proper movement and will be strong, and not drinking wine for others, the vessels are not reciprocally alike. When we have drunk, it is expedient to know how the vessels will rise up at the fingers, the relation of how vessels move.

及雷公又以經絡之異，何法知之為問，蓋欲於不飲酒時而知之也。帝言經脈之虛實，當診氣口脈以知之，然隱而不可見者，其常也。絡脈則其脈常見，不必於氣口知之矣。】

The Thunder Lord and the pathway networks are strange, this is why to understand we have to ask about the rules, to cover the desire we need to not drink wine at the correct time and then we will know. Huangdi said the truth and falsehood of pathway vessels, you can understand qi at the mouth of the vessels, they are surely hidden and not able to see them, this is common. Network vessels this vessels is commonly seen, if not then the qi mouth will comprehend.

【張志聰曰：此申明十二經脈之血氣，與脈外皮膚之氣血，皆生於胃腑水穀之精，而各走其道。經脈十二者，六臟六腑，手足三陰三陽之脈，乃榮血之榮行，伏行於分肉之內，深而不見者也。諸脈之浮而常見者，皆絡脈也。支而橫者為絡，絡之別者為孫。

Zhang zhi cong said: this clarifies the 12 pathway vessels of blood and qi, and the blood and qi in vessels on the outside in skin, all essence is created by the stomach organ from water and grain, and each walks his path. Pathway vessels are 12, 6 zang and 6 fu, hand and foot 3 yin and 3 yang vessels, flourishing blood then the flow will flourish, flow is hidden in the divisions in the flesh on the inside, they are deep and cannot be seen. Various vessels that float and can commonly be seen, and they are the network vessels. The network has branches and goes horizontally, that which separates is the network.

蓋胃腑所生之血氣，精專者獨行於經隧，榮行於十二經脈之中，其出於孫絡皮膚者，別行於經別。經別者。臟腑之大絡也，蓋從大絡而出於絡脈皮膚。下行者，從足太陰之絡，而出於足胛之街，故其常見者，足太陰過於外踝之上，無所隱故也。

The cover of the stomach organ is where blood and qi are created, essence is the only thing that can travel through the underground pathways, flourishing flow in the 12 pathway vessels, this goes out in the grandson network to the skin, branching flow are the pathway branches. Pathway branches.

Are the big network of the zang and fu, if flourishing in the big network and goes out to the network vessels in the skin. Goes down and flows, through the foot tai yin network, and goes out to thoroughfare of the foot and calf, this is commonly seen, foot tai yin passage goes up from the outside of the ankle, because no place to hide.

上行者，從手陽明少陽之絡，注於尺膚以上魚，而散於五指，故曰，手陽明少陽之大絡，起於五指間，上合肘中，謂行於皮膚之氣血，從手陽明少陽之大絡，散於五指間，復從五指之井溜於脈中，而與脈中之血氣，上合於肘中也。夫陰陽六氣主於膚表。

Flows upward, through hand yang ming lesser yang network, directly through LI11 shallowly to the top of the fish LI10, disperses in the spaces between the 5 fingers, returns from the 5 fingers to the well (TH10) and the dwelling (LI7) vessels, and in the vessels is the blood and qi, goes up and joins into the elbow. This yin yang 6 qi controls what manifests superficially.

經云：太陰為之行氣於三陰，陽明者表也，亦為之行氣於三陽。蓋手太陰主氣而外主皮毛，手陽明為太陰之合，故亦為之行氣於膚表也。手少陽主氣，為厥陰包絡之腑，心主包絡，主行血於脈中，少陽主行血於脈外，是以手陽明少陽之大絡，主行胃腑所出之血氣，而注於絡脈皮膚之間。玉版篇曰：胃者，水穀血氣之海也。海之所行雲氣者，天下也。胃之所出血氣者，經隧也。經隧者，五臟六腑之大絡也。

The classics say: tai yin is the flow of qi in the 3 yin, yang ming manifests, the 3 yang is the flow of qi. If flourishing then hand tai yin will govern qi and blood on the exterior and govern skin and hair, hand yang ming joins with hand tai yin, this is the reason and the flow of qi manifests superficially. Hand shao yang governs qi, the network wraps around the organ of jue yin, heart governs the wrapping mesh, governs the flow of blood in the vessels, shao yang governs the flow of blood in the external vessels, this is hand yang ming shao yang great network, control of the flow of blood and qi which comes out from the stomach organ, and pours into the network vessels of the space in the skin. Jade board chapter 60 ling shu says: the stomach, is the sea of water grains qi and blood. The sea is the place of the creation of the flow of qi, heaven below. The stomach is the place from which blood and qi go out, underground pathway. Underground pathway is the big network of 5 zang and 6 fu.

繆刺篇曰：邪客於皮毛，入合於孫絡，留而不去，閉塞不通，不得入於經，流溢於大絡而生奇病也。是血氣之行於脈外者，外內出入，各有其道，故復引飲酒者以證明之。

Bind and prick Su wen chapter 63 says: the evil guest is in skin and hair, it joins and unites with the grandson network, and cannot move, close stop and cannot communicate, not able to pass into the pathways, overflows into the large network and gives birth to strange diseases. If the flow of blood and qi is in the exterior vessels, then the exterior leads to and joins the interior, each can then flow, hence it returns when you drink wine then this becomes very clear.

夫酒者水穀之悍液，衛者水穀之悍氣，故飲酒者，液隨衛氣而先行皮膚，是以面先赤而小便獨先下，蓋先通調四布於外也。津液隨衛氣先行皮膚，先充絡脈，絡脈先盛，衛氣已平，榮氣乃滿，而經脈大盛。此血氣之從皮膚而絡，絡而脈，脈而經，蓋從外而內也。

Wine is the brave fluid that is made from water and grains, protective is the brave qi from water and grains, hence drink wine, fluid follows protective qi and first travels through skin, by this means first

the face becomes red and urination alone first goes down, because the first pathway is that which goes through four layers to the outside. Bodily fluids follow protective qi in the first pathway under the skin, first fills the network vessels, network vessels are first abundant, protective qi is already level, if qi flourishes then it will be full, and network vessels big abundance. Thus blood and qi from skin to network, network to blood vessels, blood vessels to network, because from the outside to the inside.

如十二經脈之卒然盛者，皆邪氣居於脈中也。本末者，謂十二經脈之有本標也。如留於脈而不動則熱，不留於脈則脈不堅而外陷於膚空矣。此十二經脈之流行出入，不與絡脈大絡之眾同也。是以知何脈之動也，以氣口知之。氣口者，手太陰之兩脈口也。此言榮血之行於十二經脈中者，乃伏行之經脈，以手太陰之氣口知之。血氣之行於皮膚，而見於絡脈者，候見於人迎氣口也。

If the 12 network vessels are surely abundant, then evil qi lives in the blood vessels. The whole course of events, speaks about 12 network vessels are the root and branch. If stagnation in the vessels and not moving then there will be heat, if not stagnation in the vessels then the vessels are not sturdy and they sink and are shallow and empty. Hence it circulates and flows out and into the 12 network vessels, if not and network vessels are the big network are not the same. Indeed by this means we shall know the movement of the vessels, by feeling the radial pulse. Radial pulse, is on hand tai yin both vessels mouth. This speaks of flourishing blood in the pathways of the 12 meridian vessels, the meridian vessels are hidden, hand tai yin qi mouth will let us know. Blood and qi in the pathway of the skin, and you can see the network vessels, phenomena you expect to see at carotid pulse and radial pulse

此節凡四轉，蓋以申明十二經脈之血氣，與皮膚之氣血，各有出入之道路也。再按十二經脈之始於手太陰肺，終於足厥陰肝，周而復始者，乃榮血之行於脈中也。十二經脈之皆出於井，溜於榮，行於經，入於合者，乃皮膚之氣血，溜於脈中，而與經脈之血氣，合於肘膝之間，本篇之所謂六經脈，手陽明少陽之大絡，起於五指間上合肘中者是也。

These nodes all have 4 movements, because by the clarity of the 9th terrestrial vessel the qi and blood of the twelve meridian vessels, have different pathway for each exits and joins. Again palpate 12 meridian vessels to understand hand great yin lung, and foot hidden yin liver, around the circuit and back to the beginning, with abundant blood travelling in the vessels. 12 meridian vessels move out from the well points, slippery if flourishing, circulate in the meridians, join in the union (LI4?), blood and qi in the skin, sinking in the vessels, and with qi and blood in the meridian vessels, union in the spaces in the elbow and knee, this chapter is the basis of the creation of the meridian vessels, the big network of hand clear yang lesser yang, rises in the 5th toe space and goes up to join in the elbow.

本經癰疽篇曰：余聞腸胃受穀，上焦出氣，以溫分肉而養骨節，通腠理，中焦出氣如露，上注谿谷而滲孫脈，津液和調，變化而赤為血，血和則孫脈先滿溢，乃注於絡脈，皆盈乃注於經脈，陰陽已張，因息乃行，行有經紀，周有道理，與天合同，不得休止。

Ling shu 81 this book on ulcers says: I hear intestines and stomach receive grains, goes up to the burner and exits qi, this warms the divisions in the flesh and nourishes bones and sinews, this is the logic that passes through the skin and the flesh, in the burner qi exits like dew, rises straight up through the ravines and valleys and soaks into the grandchild vessels, yin and yang stop and expand,

because when it stops then it moves, the pathways are the place of the meridian rule, the circuit is the pathway, and heavenly union is the circuit, which is not able to ever stop.

此水穀所生之津液，隨三焦出氣以溫肌肉，滲於孫絡，化赤為血，而溢於經脈。本篇之所謂飲酒者，衛氣先行皮膚，先充絡脈，絡脈先盛，衛氣已平，榮血乃滿，而經脈大盛是也。是脈外之氣血，一從經隧而出於孫絡皮膚，一隨三焦出氣以溫肌肉，化而為赤，是所出之路有兩歧也。其入於經也，一從指井而溜於經榮，一從皮膚而入於絡脈，是所入之路亦有兩歧也。

Types of Qi

Then water and grain creates bodily fluids, through the triple heaters the qi exits to warm the flesh and the muscles, soaks into the grandchild network, changes the blood to red, and overflows into the meridian vessels. The root of this passage talks of the place for food and drink, protective qi flows first into the skin, first fills the network vessels, network vessels are first abundant, protective qi is already level, if blood is flourishing then full, and the meridian vessels big (in the?) basin. The external vessels have blood and qi, one from where meridians travel underground and exit in the grandchild network in the skin, one which follows the triple heater and the qi exits and warms the muscles and flesh, changes and makes red, indeed leaves this place to have two pathways. This joins into the meridians, one from the digit well points and sinks into the flourishing meridians, one from the skin and joins into the network meridians, indeed leaves and joins to become red and to have 2 pathways.

其經脈之血氣，行於脈外，從本標而出於氣街，本篇之所謂留於本末，不動則熱，不堅則陷且空，不與眾同是也。此血氣出入之路，而合於天地陰陽五運六氣，乃本經之大關目，故不厭煩贅而詳言之，學者亦不可不用心參究者也。

This is the qi and blood of the meridian vessels, the flow in the external vessels, from which the root and branch go out in to the qi pathways, the root of this passage is talking about stopping and the root of the end, if no movement then heat, if no strength then sinking into holes, is different from others. The blood and qi exit and join in the road, and unite in heaven earth yin yang five phases six qi, in the root of the meridian is the big portal of the eye, because do not bother with superfluous and detailed words, the learner much use the intelligence to examine and investigate.

夫血氣之從經隧而出於孫絡皮膚者，海之所以行雲氣於天下也。隨三焦出氣以溫肌肉者，應司天在泉水隨氣而運行於膚表也。膚表之氣血入於脈中，應天運於地之外，而復通貫於地中，經脈之血氣，行於皮膚之外，猶地之百川流注於泉下，而復運行於天表也。此天地上下升降內外出入之相通也。人合天地陰陽之道，運行不息，可以與天地相參，如升降息則氣立孤危，出入廢則神機化滅矣。】

Channel Communication

Qi and blood go through underground passage and exit to the connecting network of the skin, the sea creates and moves qi clouds above and below. Path of the triple burner qi exits to warm the muscles and flesh, take charge of heaven at the spring points water follows qi and fortune circulates shallowly under the skin. The qi and blood of the surface of the skin join in the vessels, take charge of heaven and earth fortune of the outside, and return through the earth, blood and qi of meridian vessels, flow in the outside of the skin, like the earth one hundreds streams are focussed and

controlled by the underground springs, and fortune circulates and shows above. Hence heaven and earth above and below rising and falling inside outside exits and joins to mutually communicate.

雷公曰：細子無以明其然也。黃帝曰：諸絡脈皆不能經大節之間，必行絕道，而出入復合於皮中，其會皆見於外，故諸刺絡脈者，必刺其結上甚血者。雖無結，急取之，以瀉其邪而出其血，留之發為痺也。

Thunder Duke says: tiny offspring/ normal people are not made clear/ do not understand by this. Huangdi said: various network vessels all are not able to pass through in the spaces of the big joints, must move cut path, and exit and join to be united in the skin, this joining is able to be seen on the outside, because various pricking network vessels, even if not connected, quickly take, therefore drain this evil and exits the blood, retain in the case of numbness.

凡診絡脈，脈色青則寒且痛，赤則有熱。胃中寒，手魚之絡多青矣。胃中有熱，魚際絡赤，其暴黑者，留久痺也。其有赤有黑有青者，寒熱氣也。其青短者，少氣也。凡刺寒熱者，皆多血絡，必間日而一取之，血盡乃止，乃調其虛實。其青而短者少氣，甚者瀉之則悶，悶甚則仆不得言，悶則急坐之也。

To diagnose network vessels, vessel colour is green then there is cold and aching, to treat use heat. If the stomach is cold, hand fish (LU10/thenar eminence) has many green veins. Inside the stomach is heat, the fish border (LU10) network will be red, this is black and sinister, drain for a long time or numbness. If there is redness and blackness and green, cold hot of qi. This green deficient, inefficient qi. All prick cold heat, normally many small blood networks, must space apart by one day, blood will use up and stop, and transfer deficiency to solidity. If this is green and deficient then inefficient qi, drain a lot for melancholy, if very melancholy then will lie down and not able to speak, in case of melancholy then sit up quickly.

【馬蒔曰：此言刺絡脈者，必出其血，診絡脈者，必別其色也。凡諸絡脈，皆不能經歷於大節之間，一如經脈之行也，必行於阻絕之道，而出入之，復合於皮中，如肺經列缺為絡，別行於大腸經之偏歷，直行似阻而旁行之也。其所會處皆見於外，故諸經刺絡脈者，必即其絡脈之上結而甚有血者以刺之，其間雖然有結，亦當急取之，以瀉其邪而出其血。若將此血留之，必發之而為痺疾，所以不可留也。

Ma shi said: This passage talks about pricking network vessels, surely the blood will exit, to diagnose network vessels, surely by their colour. All various network vessels, not able to move through the spaces in the big joints, is the pathway of the meridians and vessels, surely the flow of the pathway is blocked, and exits and joins, unites in the skin, the lung meridian classifies the state of the network, branch flows to the large intestine meridian along a slant, flows straight and flows beside. This place where it meets can be seen on the outside, there are various meridian pricking network vessels, surely quickly network vessels rise because and there is blood to prick, this space surely has nodes, also undertake quickly, this drains the evil and exits the blood. If you do this then blood will detain, surely go out and cure numbness disease, this is the place where it cannot twist the needle.

然欲診絡脈，有色可據，某經絡脈之色青者，則寒且痛；某經絡脈之色赤者，內必有熱。若胃中有寒，則魚際之絡多青；若胃中有熱，則魚際之絡多赤；若手魚之絡暴黑，則留之必為久痺。

故上文曰，當瀉其邪而出其血也。若魚際之脈，赤黑青之兼見者，必為寒熱氣；若魚際之脈青而且短者，必正氣之衰少。但此寒熱氣者，理當刺之，刺之者，以其血絡之多故也，必間日而一取之，候其血盡而止鍼，隨即調其虛實，虛則補而實則瀉也。至於色青而短，為元氣衰少者，病勢若甚，切不可瀉，瀉之則必悶，悶甚則必仆，須於初悶時不得言語，急靜坐之，即可以不至於仆矣。】

Yes if you wish to diagnose the network vessels, the colour is able to occupy, if a certain meridians network vessels is a green colour, this means cold moreover aching; if meridian or network vessel is a red colour, inside is surely hot. If the stomach is cold, then the fish border (LU10) veins very green; if the stomach is hot, then LU10 veins will be very red; if the hand fish network is a sinister black, then detain surely there is long time paralysis. Because the old writings say, drain off the evil qi and exit from the blood. If the fish border blood vessels, red black or green then unite to see, surely hot or cold qi; if the fish border vessels are green and moreover deficient, surely the qi stops and is decreased and inadequate. Only in the case of cold hot qi, the logic is to prick, prick here, where the blood network is deficient, surely the space is one day and receive, wait until the blood is exhausted and stop the needle, follow quickly and transfer from empty to solid, if deficient then repair and if solid then drain. When the colour is green and deficient, then original qi is inadequate, disease has great power, not able to drain, drain will cause melancholy, in the case of melancholy it is surely prone, in the initial melancholy period not able to speak, sitting still, immediately may not be able to lie prone.

【張志聰曰：此復申明上文之義，蓋假病刺以證血氣之生始出入。《下經》曰：先度其骨節大小廣狹而脈度定矣。蓋十二經脈，皆循於骨節間而為長短之度，其絡脈皆不能經大節之間，必行絕道而出入。

Zhang zhi cong said: This returns with clarity to the righteousness of the 9th terrestrial stem, because deception of disease is pricked then the evidence of blood and qi will be created by going out and joining in. Lower text says: first the system of bone and points big and small broad and narrow and vessel system is settled. Warm the 12 meridian vessels, everyone follow bone points spaces and then changes between the long and short system, this network vessel cannot move through the big joints so has to use an unusual way to go in and out in spaces, surely flow separate pathways and go out and join.

絕道者，別道也，蓋胃腑所出之血氣，行於經別者，從經別而出於絡脈，復合於皮中，其血氣色脈之會合，皆見於外，故刺諸絡脈者，必刺其結上甚血者，雖無結，急取之以瀉其邪而出其血，留之發為痺也。經云：病在陰者名為痺。蓋皮膚絡脈之邪，留而不瀉，則入於分肉筋骨之間而為痺，與邪居經脈之中，留於本末，不動則熱之不同也。

Severed path, is a branched path, because the stomach organ is the place where exits blood and qi, flow into the branched meridians, from here the meridians branch and exit into the network vessels, reunites with the skin, the colour of the blood and qi vessels united, everyone can be seen on the outside, this pricks in various network vessels, surely prick this node go up with a lot of blood, even if there is no node, quickly receive and drain off the evil and it will exit the blood, retain to treat paralysis. The classic text says: disease is the place of yin called paralysis. Because the evil of the skin network vessels, retain and do not drain, if joined into the divisions in the flesh sinews bones spaces

and paralysis, and this evil passes through the meridian vessels, detain for the whole thing, not move then heat do not do the same.

凡診絡脈，脈色青則有寒，赤則有熱，蓋浮絡之血氣，皆見於皮之部也。胃中寒，手魚之絡多青；胃中熱，手魚之絡多赤。蓋皮絡之氣血，本於胃腑所生，從手陽明少陽，注於尺膚而上魚也。氣者，三陰三陽之氣，胃腑之所生也。少氣甚者瀉之則悶，氣益虛而不能行於外也。悶甚則仆不能言者，謂陰陽六氣，生於胃腑水穀之精，而本於先天之水火也。少陰之氣厥於下，則仆而不得言，故悶則急坐之，以啟少陰之氣，即如上文之緩帶被髮，大杖重履而步之一法也。】

To diagnose network vessels, if the vessel colour is green then it is cold, if red then there is heat, because the floating network of blood and qi, all can be seen in the skin section. Stomach cold, hand fish network will be very green; stomach heat, hand fish network will be very red. Because the skin network is qi and blood, the root of it is created in the stomach organ, from here the hand yang ming lesser yang, direct to the top of the foot and to the hand fish. Qi 3 yin and 3 yang qi, stomach organ creates it. If qi is inadequate and you drain excessively then it leads to melancholy, if qi is deficient and not moving flow to the outside. If excessive melancholy then will lie prone and not be able to move or speak, various 6 yin and yang qi, created in the stomach water grain become essence, and the root is the first heaven of water and fire. Lesser yin hidden qi goes down, then prone and not able to speak, when melancholy then sit still, open by means of lesser yin qi, quickly go up literature to loosen the belt and the hair, take a big stick, wear heavy shoes and walk alone.

【高士宗曰：上節以十二經脈，分別衛氣血氣之行於皮膚絡脈；此節單論皮膚絡脈，以復申明上文之義。】

Gao shi cong said: higher nodes of the 12 meridian vessels, divisions and branches of protective qi blood and qi which flow in the skin and the network vessels; these text passages are about the network vessels of the skin and hair, it talks again of the righteousness of the clear book.

【黃載華曰：衝脈任脈，皆起於胞中，上循背裏為經絡之海。其浮而外者，循腹右上行，會於咽喉，別而絡脣口，血氣盛則充膚熱肉，血獨盛則澹滲皮膚，生毫毛，是脈外之血氣，又從衝脈而散於皮毛，故曰復合於皮中，其會皆見於外。謂經別所出之血氣，與衝脈所出之血氣，會合於皮中，當知皮膚血氣所出之道路有三徑也。】

Huang zai hua said: chong and ren mai, all rise from the uterus, go up and follow the inside of the back to form the sea of the meridian network. This floats and goes to the outside, follows the right side of the stomach goes up and flows, joins in the throat, branches and forms a circle around the mouth, blood and qi are excessive then the skin and flesh will be full and hot, if blood alone is excessive then it will be calm and soak through to the skin, create fine hairs, the external vessels of blood and qi, will have from here chong vessel and scatter into the blood and hair, this says reunites in the skin, this confluence of all can be seen on the outside. Various meridian branches exit this place with qi and blood, and qi and blood of chong mai goes out from here, joins together in the skin, just perceive the skin blood and qi go out from here the pathway has 3 narrow paths.

手太陰之別，名曰列缺，起於腕上分間，並太陰之經，直入掌中，散入於魚際。其病實則手銳掌熱；虛則欠(去欠)，小便遺數。取之去腕半寸，別走陽明也。【(去欠)，音去。數，音朔。半寸當作寸半。】

Luo Connecting Points

lung

Hand tai yin branch, named the broken sequence (LU7), rises from the wrist up the space in the division, beside tai yin meridian, goes straight to join the centre of the palm, scatters at the fish border (LU10). If this is solid diseased then the hand will have acute heat in the palm; if empty then there will be breathing with mouth open, frequent urination. From the wrist 1.5 cun, branch goes to yang ming. (Breathe with mouth open). Half a cun should be one and a half a cun.

【馬蒔曰：此下十二節，詳言十二絡穴，而此先以肺經言之也。夫不曰絡而曰別者，以此穴由本經而別走鄰經也。手太陰肺經之別穴，名曰列缺，起於腕上分肉之間，並本經太陰之經，入手陽明大腸經，以直入掌中，而散入於魚際。其病如邪氣盛而實，則手之銳掌當熱；如正氣衰而虛，則小便必遺而且數。凡取此穴者，必覓之去手腕寸半間，鍼二分，留三呼，瀉五吸，灸三壯。以列缺乃別走陽明之穴，正以肺與大腸為表裏也。】

Ma shi said: This 12 nodes/blocks of text following, speaks about 12 network acupoints, and this speaks first by means of lung meridian. This does not speak of network but speaks of network branches, because by means of acupuncture points from the well is the root of the meridian and branch goes to the neighbouring meridian. Hand tai yin lung meridian branch holes, name is LU7 Break in Sequence, rises from the wrist up in the gap in the flesh, by the side of the root of meridian tai yin, joins to hand yang ming large intestine, this goes straight to join into the palm, and scatters to join into the fish border (LU10). In disease if evil qi is abundant and excessive, the rule is sharpness and heat in the palm of the hand; if righteous qi is falters and is deficient, the rule is of frequent urination and often. To treat via acupuncture points, surely seek from the hand and wrist the gap 1.5 cun, prick 2 fen, retain for 3 breaths, drain for 5 inhalations, moxa for 3 cones. By means of LU7 Break in Sequence the branch goes to the yang ming points, correct by means of the lung and large intestine inner and outer.

【張志聰曰：經別者，五臟六腑之大絡也。別者，謂十二經脈之外，別有經絡。陽絡之走於陰，陰絡之走於陽，與經脈繆處而各走其道，即繆刺篇之所謂大絡者左注右，右注左，與經相干而布於四末，不入於經俞與經脈繆處者是也。玉版論之所謂：胃者，水穀血氣之海也。海之所行雲氣者，天下也。胃之所出血氣者，經隧也。經隧者，五臟六腑之大絡也。蓋胃腑所生之血氣，其精專者獨行於經隧，從手太陰肺脈，而終於足厥陰肝經，此榮血之循行於十二經脈之中，一脈流通環轉不息者也。

Zhang zhi cong said: meridian branch, large network of 5 zang 6 fu. The branch, various 12 meridian vessels on the outside, the branch is in the meridian network. Yang network goes to yin, yin network goes to yang, and meridian vessels wind around and each goes along its path, the 'quickly wind prick' chapter 63 is the place where the large network connects between left and right, right to left, and the meridian mutually invade and scatter to four limbs, it is wrong to say it is not joined by means of the meridian transporters and meridian vessels wind around. Jade edition text says: stomach, is the sea of water grain qi and blood. The sea creates the flow of cloud qi, heaven below. Stomach creates the exiting of qi and blood, meridian is underground. Meridian is underground, is the big network of 5 zang 6 fu. Grain in the stomach fu creates blood and qi, this essence is the one which flows in the underground meridians, from the hand tai yin lung vessel, and finishing in the foot jue yin liver

meridian, when blood flourishes then it follows the flow through 12 meridian vessels, one vessel flows through the next in a circuit without stopping.

其血氣之四布於皮膚者，從臟腑之別絡而出，雖與經相干，與經並行，而各走其道，出於孫絡，散於皮膚。故手太陰之經別曰列缺，手少陰之經別曰通里，足太陽曰飛揚，足少陽曰光明，與手足之井榮俞經合穴不相干也。曰太陰少陰，曰太陽少陽，與臟腑之經脈各繆處也。此胃腑之血氣，四布於膚表之陽分者，從大絡而出於孫絡皮膚，從絡脈而陰走於陽，陽走於陰，如江河之外別有江河，江可通於河，河可通於江，與經脈之榮血，一以貫通者不相同也。故手太陰之別名曰列缺，起於腕上分間。

HT5, BL58, GB37

The blood and qi of the scattering is in the skin and hair, from the zang fu there is a network branch and it exits, although the meridians reciprocally invade, and meridians proceed in parallel, and each follows its own pathway, exits and enmeshes, scatters in the skin and hair. The meridian branch associated with hand tai yin meridian is called LU7 broken sequence, hand shao yin meridian branch is called HT5 Connecting Inside, foot tai yang is called BL58 Flying Yang, foot shao yang is called GB37 Bright Clear, and hand and foot well and brook meridian transportation points join points and do not reciprocally invade. Speak of tai yin shao yin, speak of tai yang shao yang, and zang fu the meridian vessels each wind in place. This blood and qi of stomach fu, scattering show in the superficial male division, from big network and exit to bind the network of the skin and hair, from the network vessels and yin go to yang, yang goes to yin, as a large river the outside branch has a large river, large Yangtze river may pass through Yangtze river, large river Yangtze may pass through Yellow river, and meridian vessel flourishes with blood, alone by means of going through to communicate not reciprocally the same. From hand tai yin the branch is called LU7 Broken Sequence, rises up from the wrist in the gap in the division.

分間者，謂手太陰之經脈，與經別之於此間而相分也。並太陰之經者，並太陰之經脈而行也。散入於魚際，謂入魚際而散於皮膚，即上文之所謂諸絡脈必行絕道，而出入復合於皮中，其會見於外也。實則手銳掌熱，氣盛於外也；虛則欠(去欠)小便遺數，氣虛於內也。蓋膚表之血氣，由臟腑經隧之所生也。當取之去腕寸半，即列缺穴間。別走陽明者，陰絡之從此而別走於陽也。】

Gap in the division, speak of hand tai yin meridian vessel, and meridian branch apart from this space and mutual division. By the side of tai yin is the meridian vessel and it flows. Scatters to join into the LU10 fish border, we say it joins to LU10 fish border and scatters into the skin and hair, promptly goes up to the place we say is the network vessel is surely flow in the division pathway, and exits and joins returns unites in the skin, this confluence can be seen on the outside. The rule of excess is that the palm of the hand feels sharp and hot, if qi is excessive at the exterior; the rule for deficiency is breathing with the mouth open frequent urination, if qi is deficient in the interior. Because the skin shows blood and qi, because it creates the zang and the fu underground meridians. You will find it away from the wrist 1.5 cun, immediately in the gap is LU7 Broken Sequence. A branch goes to yang ming, yin network goes from here and branch goes to yang.

【尚御公曰：此篇病證與繆刺篇之不同。繆刺篇論邪客於皮膚孫絡，溜於大絡而生奇病，病從外而內也。此篇論本氣之虛實，病從內而外也。故曰諸絡脈必行絕道而出入。】

Shang yu gong said: This passage on proof of disease and the passage on pricking are not the same. Pricking passage (ch.63) speaks of evil guests in the binding network of the skin and hair, drain in the big network and govern the guest disease, disease from here goes out and in. This passage debates the root of deficiency and excess of qi, disease from here goes in and out. Hence it says that various network vessels surely flow divide pathways and exit and join.

【朱濟公曰：如手太陰之列缺，手陽明之偏歷，雖非井榮俞經，然以係經脈之穴，蓋經別之各走其道，布於四末，與經相干於列缺、通里諸經之間，復別而上行，並經而入掌，散於絡脈而合於皮中者也。】

LI6

Zhu ji gong said: If hand tai yin LU7 Broken Sequence, hand yang ming LI6 Diverging pathway, although not well or brook transporter meridians, certainly by means of binding meridian vessel points, cover meridian branches and each goes out its pathway, finishing and scattering, and meridian reciprocally invades LU7 Broken Sequence, LI6 Diverging Pathway various of the space in the meridian, returns again apart and flows upwards, by the side of the meridian and joins into the palm, scatters in the network vessels and joins into the skin.

【張玉師曰：皮部論云，欲知皮部，以經脈為紀。陽明之陽，名曰害蜚，視其上下有浮絡者，皆陽明之絡也。少陽之陽名曰樞持，少陰之陰名曰樞儒。凡十二經絡脈者，皮之部也。是皮部之絡脈雖以經脈為紀，並循於十二經脈之部，然從大絡而出，別走其道，與經脈繆處，故有害蜚樞持之別名，當於《靈》、《素》二經合參，其義始得。】

Zhang yu shi said: skin division debate ch.56 Su Wen says, if you desire to know about the skin division, this meridian vessel is a record. Yang of yang ming is called Injure Cockroach/Fly, look at it up and down it has a floating meshwork, yang ming moves in the network. Yang of Shao yang is called Pivot Support, yin of shao yin called Pivot Scholar. These 12 meridian network vessels, are the skin division. The skin division the network vessels even if through the meridian vessels make a record, beside behind the 12 meridian vessel division, surely from here the big network and exits, branches go out to the pathways, and the meridian vessels bind the place, hence the place of Injure Cockroach Pivot Support are called branches, Ling Shu and Su Wen will make it clear. bear in means efficient, white means 2 meridians join and invade, this obtains right conduct.

手少陰之別，名曰通里，去腕一寸半，別而上行，循經入於心中，繫舌本，屬目系。其實則支膈，虛則不能言。取之掌後一寸，別走太陽也。

Hand shao yin branches, are called HT5 Connect to the Interior, goes from the wrist 1.5 cun, it branches goes up and flows, it scatters and joins the meridian of the heart, connects to the root of the tongue, binds into the category of the eye. The rule for excess is to support the diaphragm, in deficiency the patient will not be able to speak. Take behind the palm of the hand 1 cun, there is a branch which goes to tai yang.

【馬蒔曰：此言心經之絡穴也。通里去腕一寸半，半字衍文，觀掌後一寸，可見別而上行，循本經入於心中，繫舌本，屬目系。其邪氣實則隔間若有所支而不暢，正氣虛則不能言，蓋心

主言而經別絡舌本也。取之當覓掌後一寸，乃別走太陽小腸經之通里穴，以心與小腸為表裏也。鍼三分，灸三壯。】

Ma shi said: This speaks of the network points of the heart meridian. HT5 Communicating to the Interior is 1.5 cun from the wrist, the word for half overflows in the literature, see one cun behind the palm, can see branch and flow upward, follows the root of the meridian joins into the heart, fastens to the root of the tongue, connects into the eye. If evil qi is excessive then the rule is the space separates as if it has a branching place and not smooth, if the upright qi is deficient then the rule is do not able to speak, because the heart governor speak and meridian branching network to the root of the tongue. Find the point behind the palm one cun, the branch goes to greater yang lesser yang meridians HT5 Connecting to the Interior point, if heart and lesser yang then exterior interior (relationship). Needle 3 fen, moxa 3 grains.

【張志聰曰：按心脈上俠咽，繫目系，經別繫舌本屬目系，蓋經別並經而行也。】

Zhang zhi cong said: palpate the heart vessel goes up and wraps around the throat, connects into the category of the eye, meridian branch to the category of the root of the tongue connects into the eye, because the meridian branch is beside the meridian and flows.

手心主之別，名曰內關，去腕二寸，出於兩筋之間，循經以上繫於心包，絡心系。實則心痛，虛則為頭強。取之兩筋間也。

PC6

Hand heart governor branch, is called PC6 Inner Portal, goes behind the wrist 2 cun, exits in the space between 2 sinews, follows the meridian up to connect with the heart envelope, connects with the network of the heart. If excessive then the rule is aching in the heart, if deficient then the rule is strong head. To find the space between the 2 sinews.

【馬蒔曰：此言心包絡經之絡穴也。夫手厥陰心包絡經而謂之手心主者，以其代心經以行事。本經邪客篇云：必者五臟六腑之大主，諸邪之在心者，皆在心之包絡。包絡者，心主之脈也，皆如手少陰心主之脈行也。其別者名曰內關，去手腕上廉二寸之兩筋間，循本經以上繫於心包絡。如心系間邪氣盛而實，則心必痛；正氣衰而虛，則頭必強。取此穴者，覓之兩筋間耳。】

Ma Shi said: This speaks of the heart envelope network meridian network points. The hand rebellious yin heart envelope network meridian and various (points?) of the hand heart governor, hence it replaces the heart meridian hence the matter flows. The root of meridian evil guest chapter ling Shu 71 says: surely in the 5 zang and 6 fu are the great governors, various evil in the heart, all in the network envelope of the heart. Network envelope, is the vessel of the heart governor, all if heart lesser yin heart governor flow in the vessel. This branch is called PC6 Inner Portal, from the wrist go straight up 2 cun in the space between 2 sinews, follow the root of the meridian hence go up to connect with the envelope network of the heart. If the heart connection space has evil qi and excessive, the rule is the heart will surely ache; if righteous qi declines and becomes empty, then the rule is the head will surely be strong. To find this point, seek only between the 2 tendons.

【張志聰曰：手心主之別絡，與經相干於內關之間，去腕二寸，別經脈而出於兩筋之內，循經並行，上繫於心包絡心系。實則心痛，心系與包絡之相通也。虛則為頭強，蓋包絡主行血脈，脈氣虛故頭強也。按十二經別，皆陽走陰而陰走陽。此不曰別走少陽，或簡脫也。】

Zhang zhi cong said: hand heart governor branching network, and meridian reciprocally invade via PC6 Inner Portal space, to from the wrist 2 cun, branch of the meridian vessel and exits in 2 sinews inside, follow the meridian beside and flows, goes up and connects in the heart envelope network connects to the heart. If excessive the rule is the heart will ache, the heart connects and the envelope network will reciprocally ache. If deficient the rule is of a strong head, because the network envelope governor flow of blood in the vessels, vessels and qi are deficient because the head is strong. Palpate 12 meridian branches, all yang go to yin and yin go to yang. We don't speak branch goes to lesser yang, perhaps terse speech.

手太陽之別，名曰支正，上腕五寸，內注少陰。其別者，上走肘絡肩髃。實則節弛肘廢，虛則生肱，小者如指痂疥。取之所別也。【肱。音尤。痂，音加。】

SI7

Hand greater yang branch, is called SI7 Righteous Branch, go up from the wrist 5 cun, inner focus is lesser yin. This branch, go up and goes to the elbow and wraps around the scapula. If solid the rule is of relaxed joints at the elbow finish, if deficient the rule is creates wart/tumour, lesser if the finger has scabs and itches. To find the place of the branch. [Wart should read pitch. Scab should read increasing sound]

【馬蒔曰：此言小腸經之絡穴也。支正上手腕外廉五寸，內注於手少陰心經，以心與小腸為表裏也。其別行者，上走於肘，絡手陽明大腸經之肩髃穴。如邪氣有餘而實，則節弛而肘廢；正氣不足而虛，則大者為肱，蓋贅瘤之類，小者為指間痂疥之類。凡此疾者，取此別穴而已。鍼三分，灸三壯。】

Ma shi said: This speaks of lesser yang meridian network points. SI7 Righteous Branch on the outside of the wrist on the straight 5 cun, inner focus is hand lesser yin heart meridian, hence the heart and the lesser yang are internal external. This branch flows, up to the elbow, network of hand yang ming large intestine LI15 scapula point. If evil qi is excessive and true, branch joints relax and elbow will be unable to work; if righteous qi will not move and be deficient, the rule is of great warts/tumours, because useless category, if lesser then the finger space itching scabs. All these illnesses, choose this branch point and finish. Needle 3 fen, moxa 3 cones.

【張志聰曰：上腕五寸，乃手太陽經之支正。太陽之經別布於四末，與經相干於支正之間，內注於手少陰之別絡。其別行者，上走肘絡肩髃。手太陽小腸主液，實則津液留滯，不能淖澤於骨，是以節弛肘廢。《三因》曰氣虛不行則生肱，小者如指上之痂疥，即皸瘃之類，氣鬱之所生也。】

Zhang zhi cong said: go up from the wrist 5 cun, the hand greater yang meridian SI7 Righteous Branch. Greater yang meridian branch fabric of the four extremities, and meridian interchanges and invades with SI7 righteous branch space, the inner focus is the heart lesser yin branching network. This branch flows, goes up to the elbow and wraps around the scapula LI15. Hand greater yang lesser yang control fluid, if abundant then the rule is that the saliva will become blocked, not moving to moisten in the bone, this joint is unable to use the elbow. {3 causes} says deficient qi cannot flow

the rule is will create a wart, lesser if finger goes up itching and scabs, quickly swelling of the lymph nodes, luxuriant qi is created.

手陽明之別，名曰偏歷，去腕三寸，別入太陰。其別者，上循臂乘肩髃，上曲頰遍齒。其別者，入耳合於宗脈。實則齲聾，虛則齒寒痺隔。取之所別也。【齲，丘禹切。】

LI6

Hand yang ming branch, is called LI6 Inclined Past, go from the wrist 3 cun, the branch joins to greater yin. The rule is, go up and follow the arm ascend to the scapula, go up to the bend in the jaw and into the teeth. This branch joins into the ear joins into the ancestral vessels. If excessive the rule is tooth decay and deafness, if deficient the rule is the teeth will be cold numb and separate. To find the branch. [tooth decay, hill hsia cut]

【馬蒔曰：此言大腸經之絡穴也。偏歷去手腕後三寸，別走入於手太陰肺經。其支別者，上循臂之溫溜、下廉、上廉、三里、曲池以乘肩髃，上曲頰，入上齒縫中。又其支別者，入耳合於宗脈也。諸節皆腑合於臟，臟合於腑，此則宗脈是肺經之大脈，猶言大氣為宗氣也。如邪氣有餘而實，則為齲而齒痛，為耳聾；正氣不足而虛，則止為齒寒，為內痺，為隔塞不便，皆當取此穴以治之耳。】

Ma shi said: This speaks of greater yang meridian network point. LI6 Slanting Place goes behind the wrist 3 cun, the branch goes and joins into the hand greater yin lung meridian. This branch, goes up and follows the arm to LI7 Warm Dwelling, goes down straight, to LI10 3 Li, LI11 Bend Pool this mounts to LI15 scapula, goes up to the crooked jaw, joins up into the teeth. Has its branch, joins into the ear in the ancestral vessel. Various nodes all join the fu and the zang, the zang join with the fu, this rule of the ancestral vessel of the lung meridian great vessel, sounds like big intestine is the ancestral qi. If there is evil qi then excessive and honest, the rule is of tooth pain and tooth ache, with deafness in the ear; righteous qi is insufficient and deficient, the rule of righteous is that the teeth will be cold, if numbness inside, then the partition will block up and not ease, all undertake to treat using these points.

【張志聰曰：去腕三寸，乃手陽明經之偏歷。手陽明之別絡，布於四末，與經相干於偏歷之間，而別入於太陰之經別。其別行者，上循臂乘肩髃，上曲頰，遍絡於齒。又其別者，入耳中，合於宗脈。實則氣滯，上為齒痛耳聾；虛則齒寒，內為痺隔。蓋手陽明主行血氣於皮膚，以溫肌肉，虛則不行於外，故為齒寒而痺閉阻隔也。】

Zhang zhi cong said: go from the wrist 3 cun, the hand yang ming meridian LI6 Slanting Place. Hand yang ming branching network, scatters to the four limbs, and meridian exchanges and invades at LI6 Slanting Place gap, and the branch joins to greater yin meridian branch. This branch flows, up follows the arm into the scapula, goes up to the bend in the jaw, connects with the network in the teeth. Has this branch, joins into the ear, joins with the ancestral vessel. If excessive the rule is that qi is stagnant, go up there is tooth ache and deafness in the ear, if deficient the rule is the teeth will be cold, inner numbness and paralysis. Because the hand yang ming creates flow of blood and qi in the skin this warms the muscles and flesh, if deficient the rule is that there will be no flow to the outside, because the teeth are cold and numb if not patent then paralysis.

【尚御公曰：取之別者，謂遍齒入耳之別絡，非偏歷也。十二絡皆同。】

Shang yu gong said: To find the branch, we say the branching network goes through the teeth and joins the ear, not LI6 Slanting Passageway. 12 networks all together.

手少陽之別，名曰外關，去腕二寸，外繞臂，注胷中。合心主病，實則肘攣，虛則不收。取之所別也。

TH5

Hand lesser yang branch, is called TH5 Outer Portal, go from the wrist 2 cun, wind round the arm, direct into the thorax. Joins the heart controls disease, the rule of excess the elbow is crooked, the rule of deficiency not to receive.

【馬蒔曰：此言三焦經之絡穴也。外關去手腕外廉二寸，外繞於臂，注於胷中，以合手厥陰心主之脈，以三焦與心包絡為表裏也。邪氣有餘而實，則為肘攣；正氣不足而虛，則手不能收，皆取此穴以治之耳。】

Ma shi said: This talks of the triple burner connecting points. TH5 Outer Portal goes from the wrist straight up the outside 2 cun, winds around the outside of the arm, directs into the thorax, this joins the hand rebellious yin heart governor vessel, this triple burner and heart envelope network is the internal external relationship. Evil qi is excessive and full, the rule is the elbow will be crooked; righteous qi is insufficient and deficient, the rule is the hand is not able to flex, take all these points to treat.

【張志聰曰：去腕二寸，乃手少陽經之外關。少陽之別絡，布於四末，與經相干於外關之間，外行遶臂，注胷中，合心主之大絡病。實則肘攣，虛則不收，少陽厥陰之主筋也。】

Zhang zhi cong said: go from the wrist 2 cun, the hand lesser yang meridian TH5 Outer Portal. Lesser yang branching network, goes to all four limbs, and the meridian exchanges and invades from the TH5 Outer Portal space, flows up the outside and winds around the arm, directs into the thorax, joins with the heart governor of the big disease network. The rule of excess is the elbow is crooked, the rule of weakness is not able to flex, lesser yang and rebellious yin govern the sinews.

足太陽之別名曰飛揚，去踝七寸，別走少陰。實則鼽窒頭背痛，虛則鼽衄。取之所別也。

BL58

Foot greater yang branch is called BL58 Flying Away, go from the ankle 7 cun, the branch goes to lesser yin. In excess the rule is a blocked nose and pain at the back of the head, in deficiency the rule is clogged nose and bleeding. Take this branching point.

【馬蒔曰：此言膀胱經之絡穴也。飛揚去足外踝上七寸，別走少陰腎經，以膀胱與腎為表裏也。邪氣有餘而實，則為鼽而窒，為頭與背痛；正氣不足而虛，則為鼽為衄，皆當取此穴以治之耳。】

Ma shi said: This speaks of bladder meridian network point. BL58 Flying Away goes from the outside of the foot above the ankle 7 cun, the branch goes to the lesser yin kidney meridian, this bladder and kidney are internally externally related. Evil qi is excessive and full, the rule is the nose is blocked and obstructed, the back of the head is aching; if righteous qi is insufficient and deficient, the rule is the nose is clogged and bleeding, all undertake to take this point to treat.

【張志聰曰：踝上七寸，乃足太陽經之飛揚穴。足太陽之別絡，與經相干於飛揚之間，不入於經俞，別走於足少陰之絡。實則鼽室背痛，虛則鼽衄，蓋別絡並經而循於頭背也。】

Zhang zhi cong said: Go up from the ankle 7 cun, there is the foot tai yang meridian BL58 Flying Away point. It's the point of the foot tai yang branching network, and the meridian exchanges and invades into the space from the BL58 Flying Away, does not join with the meridian transporters, branch goes from foot lesser yin network. In excess the rule is the nose will be blocked and pain in the back of the head, in deficiency the rule is the nose will be blocked and bleeding, because the branching network runs beside the meridian and follows to the back of the head.

GB37

足少陽之別，名曰光明，去踝五寸，別走厥陰，下絡足跗。實則厥，虛則痿躄，坐不能起。取之所別也。

Foot lesser yang branch, is called GB37 Illumination, go from the ankle 5 cun, the branch goes to the rebellious yin, network follows the ankle. In excess the rule is rebellion, in deficiency the rule is paralysed and lame, sit and not able to rise. This happens through the branching.

【馬蒔曰：此言膽經之絡穴也。光明穴去外踝上五寸，別走足厥陰肝經，以膽與肝為表裏也。下絡足之跗面，即俠谿、地五會、臨泣等處也。邪氣有餘而實，則氣逆而為厥，以肝脈在下也。正氣不足而虛，則為痿為躄，雖坐亦不能起，以肝主於筋也。皆取此穴以治之耳。】

Ma shi said: This speaks of gallbladder meridian. GB37 Illumination point go on the outside of the ankle up 5 cun, the branch goes to foot rebellious yin liver meridian, if gallbladder and liver internal external relationship. Network follows down the foot and ankle, immediately GB43 Pinched Ravine, GB42 Earth 5 Confluences, GB41 Approaching Tears, etc. If evil qi is present then it is surplus and excessive, rule is of rebellious qi and rebelling, surely it is below the liver vessel. Righteous qi is insufficient then there is deficiency, the rule it if paralysis then lame, although if sit beside not able to rise, surely the liver governs the sinews. All through these points can be treated.

【張志聰曰：踝上五寸，乃足少陽經之光明，少陽之大絡，與經相會於光明之間，別走於厥陰之別絡，下絡足跗。少陽主初陽之氣，實則膽氣不升而逆於下則為厥，氣虛則為痿躄，坐不能起。】

Zhang zhi cong said: go up from the ankle 5 cun, there is foot lesser yang meridian GB37 Illumination, the point of the lesser yang great network, and the meridian exchanges and conflues in the space of GB37 Illumination, the branch goes to rebellious yin branching network, follows down the connection the ankle. Lesser yang governs qi of the rising sun/dawn, if excessive the rule is the liver qi does not rise and is contrary through down the rule is of rebellious qi, if the qi is deficient then paralysis and lame, sit and not able to rise.

ST40

足陽明之別，名曰豐隆，去踝八寸，別走太陰；其別者，循脛骨外廉，上絡頭項，合諸經之氣，下絡喉嚨。其病氣逆則喉痺卒瘕，實則狂顛，虛則足不收脛枯。取之所別也。

Foot shining yang branch, is called ST40 Bountiful Bulge, is above the ankle 8 cun, branch goes to greater yin; this branch, follows straight up the outside of the tibia, go up and connect with the head

and nape of the neck, join qi of various meridians, follow the connecting choking in the throat. If the qi of disease is reverting the rule is that the throat is numb and mute, in excess then there is insanity at the top, in deficiency there is insufficient unable to flex and the shinbone is withered. Because of this branch.

【馬蒔曰：此言胃經之絡穴也。豐隆去外踝上八寸，別走足太陰脾經，以胃與脾為表裏也。循脛骨外廉之上下巨虛等穴，上至頭項而絡之，以合於諸經之氣，蓋胃為五臟六腑之大海也。其頭項之下，則絡於喉嚨，故胃氣一逆，則為喉痺，為卒瘕也。邪氣有餘而實，則為狂顛；正氣不足而虛，則足不能收，而脛亦枯槁，皆當取此穴以治之也。】

Ma shi said: This speaks of stomach meridian connecting point. ST40 Bountiful Bulge is from the outside of the ankle 8 cun up, the branch goes to the foot greater yin spleen meridian, surely stomach and spleen internal external relationship. Follow the outside of the shin bone straight up and down greatness and deficiency etc, go up to head and nape of neck and connects, surely joins with the qi of various meridians, because the stomach is the great sea of five zang and six fu. If below the head and nape, the rule is connecting through the neck and choking, if the stomach qi is reverting, the rule is paralysis of the throat, and will be mute. Evil qi is surplus and excessive, the rule is insanity at the top of the head; righteous qi is insufficient and deficient, the rule is of insufficient and not able to collect (flex), and the shin likewise is rotten and decayed, many from this point can be treated.

【張志聰曰：去足踝八寸，乃足陽明經之豐隆。陽明之別絡，與經相會於豐隆之間，而別走於足太陰之別絡。其別行者，並經脈而循於脛骨外廉，上絡頭項十五大絡之氣血，皆本於胃腑水穀之所生，是以足陽明之絡，與諸經之氣相合，其病氣逆則喉痺卒瘕，經別之絡於喉嚨也。實則氣厥於下而為顛狂，血氣虛則足不收脛枯，取之所別也。】

Zhang zhi cong said: go up from the ankle 8 cun, to the foot shining yang ST40 Bountiful Bulge point. It is the connecting branch of shining yang, and the shin exchanges confluences in the space of ST40 Bountiful Bulge, and the branch goes to the foot greater yin connecting branch. This branch flows, beside the shin vessels and follows the straight outside of the shinbone, the network goes up to the head and nape of the neck 15 big networks of qi and blood, many roots from the stomach fu water and grain are created, it surely is the foot shining yang network, and various meridians qi exchanges and joins, if the qi of disease it will revert the rule is of choking in the throat and mute, shin branch connects through the throat and choking. If excessive the rule is the qi will rebel go down and there will be dementia, if blood and qi are deficient then the rule is that the foot will not flex shinbone will wither, this is the branch.

SP4

足太陰之別，名曰公孫，去本節之後一寸，別走陽明；其別者，入絡腸胃。厥氣上逆則霍亂，實則腸中切痛，虛則鼓脹。取之所別也。

Foot tai yin branch, is called SP4 grandfather grandson, goes from the root of the joint back 1 cun, the branch goes to shining yang; this branch, joins with the network of intestine and stomach. Rebellious qi goes up and reverts the rule is of cholera, if excessive the rule is the intestines will be cutting pain aching, if deficient then the top of the intestines/belly will swell. This is the branch.

【馬蒔曰：此言脾經之絡穴也。公孫去足大指本節後一寸，別走足陽明胃經，以脾與胃為表裏也。其別者，入絡於腸胃之中。脾氣上逆而厥則為揮霍擾亂，邪氣有餘而實則為腸中切痛，正氣不足而虛則為鼓脹，皆取此穴以治之耳。】

Ma shi said: This speaks of the spleen meridian network point. SP4 Grandfather Grandson from the big toe of the foot to the root of the joint back 1 cun, the branch goes to the foot shining yang stomach meridian, the spleen and stomach have an internal external relationship. It has a branch, which joins the network of intestines an stomach. Spleen qi rises and reverts and rebels then cholera, in the case of evil qi is excessive and surplus then intestines will have sharp pain, if righteous qi is insufficient and deficient then the abdomen will swell, all can be treated using these points.

【張志聰曰：去足大指本節之後一寸，乃足太陰之公孫穴。太陰之別絡，分布於足，與經相干於公孫之間，而別走於陽明之絡，其別行者，入絡腸胃。厥氣上逆，則為霍亂，氣有餘而實，則為腸中切痛，不足而虛，則為鼓脹，當取之所別也。】

Zhang zhi cong said: Go to the big toe of the foot at the root of the joint back one cun, foot greater yin grandfather grandson point. Branching network of greater yin, scatters in the foot, and meridian exchanges and invades in the space at grandfather grandson point, and a branch goes to the shining yang network, this branch flows, and joins with the network of the intestines and stomach. Rebellious qi goes up and reverts, if this is the case then cholera, if the qi is excessive n dabundant, then the intestines will have sharp pain, if insufficient and weak, then there will be swelling of the abdomen, you should pick this branch.

KI4

足少陰之別，名曰大鍾，當踝後繞跟別走太陽；其別者，並經上走於心包下，外貫腰脊。其病氣逆則煩悶，實則閉癰，虛則腰痛。取之所別也。

Foot lesser yin branch, its name is KI4 Big Goblet, go behind the ankle circle the heel a branch goes to greater yang; this branch, runs up beside/together the meridian and goes below to the heart envelope, penetrates from the outside of the loin to the spine. Diseased qi reverts then melancholy, if excessive then retention of urine, if weak then aching loins. This is this branch.

【馬蒔曰：此言腎經之絡穴也。大鍾穴當內踝後繞跟處，別走足太陽膀胱經，以腎與膀胱為表裏也。又其別者，並本經脈氣，以上走於手厥陰心包絡經之下，而外則貫於腰脊間，其病氣逆則為煩心，邪氣有餘而實，則為閉癰，以腎通竅於二便也。正氣不足而虛，則為腰痛，皆取此穴以治之耳。】

Ma shi said: This speaks of kidney meridian network point. KI4 Large Goblet point is beneath the inside of the ankle at the back wraps around the heel, the branch goes to greater yang bladder meridian, the kidney and bladder have an internal external relationship. Again it's branch, together the root of the vessel qi of the meridian, this goes up to beneath the hand rebellious yin heart envelope network meridian, and on the outside of loins into the spine space, if this qi is diseased then it reverts and you get anxiety, if evil qi is excessive and abundant, then retention of urine, because the kidney moves 2 ureters. If righteous qi is insufficient and weak, then aching in the loins, and use these points to treat.

【張志聰曰：當踝後遶跟處，乃足少陰經之大鍾。少陰之別絡，與經相會於大鍾之間，而別走於太陽；其別行者，並經而行，上走於心包絡之下，外貫腰脊。其病氣逆則煩悶，水氣上乘於心也。實則閉癰，別走太陽，而膀胱之氣不化也。虛則腰痛，腰者腎之腑也，按手少陽三焦手厥陰包絡之氣，皆本於腎臟之所生，故並經上走於心包下。蓋包絡之氣，生於腎臟，注於絡中，並經而上也。】

Zhang zhi cong said: go behind the ankle and wrap around the heel, is foot lesser yin meridian Big Goblet point. The lesser yin branching network, and meridian unites from the Big Goblet space, and the branch goes to greater yang; this branch flows, alongside the meridian and flows, up and goes from the heart envelope network underneath, goes on the outside of the loin to the spine. If this qi is diseased then it reverts and there will be melancholy, because the qi of water goes up to the heart. If excessive then there will be retention of urine, a branch goes to greater yang, and bladder qi does not transform. If deficient then there will be aching in the loin, because the loin is the fu of the kidney, and again hand lesser yang and the triple heater hand reverting yin envelope network qi, and all created from the kidney organ, follows alongside the meridian goes up and goes from below the heart envelope. Because the qi of the envelope network, is created from the kidney organ, inject from the network, it runs up beside the meridian.

LR5

足厥陰之別，名曰蠡溝，去內踝五寸，別走少陽；其別者，經脛上舉結於莖。其病氣逆則舉腫卒疝，實則挺長，虛則暴癢。取之所別也。

Foot rebellious yin branch, is called LR5 Woodworm Canal, from the inside of the ankle 5 cun, the branch goes to lesser yang; It's branch, meridian goes up the shinbone to the joint of the testicles and penis. If this qi is diseased and reverts then the testicles will be swollen until they herniate, in case of excess then the penis is strong, in the case of weakness then extremely itchy. This is the place of the branch.

【馬蒔曰：此言肝經之絡穴也。蠡溝去內踝上五寸陷中，別走足少陽膽經，以肝與膽為表裏也。經於足脛以上於舉丸結於莖垂，其病氣逆則舉丸腫脹而卒成疝氣，邪氣有餘而實，則舉為挺長，正氣不足而虛，則為暴癢，皆當取此穴以治之也。】

Ma shi said: This speaks about liver meridian connecting point. To find LR5 Woodworm Canal go up the inside from the ankle 5 cun into the dip, the branch of the foot lesser yang gallbladder vessel, because the liver and gallbladder are internally externally related. The meridian goes up from the foot and shin to the testicle which dangles from a stalk, when this qi is diseased it reverts the branch to the testicle means the testicle becomes swollen and expands and there is hernia, if evil qi is excessive and surplus then the testicle is rigid, if righteous qi is insufficient and weak, then violently itchy, these symptoms can all be treated with this point.

【張志聰曰：去內踝五寸，乃厥陰經之蠡溝。厥陰之別絡，分布於足，與經相干於蠡溝之間，而別走於少陽之絡，脛足胛舉。舉丸，即陰子也。莖，陰莖，乃前之宗筋。挺，即陰莖也。取之所別者，取別走少陽之絡，所謂陽取陰而陰取陽，左取右而右取左也。】

Zhang zhi cong said: go up the inside from the ankle 5 cun, the rebellious yin channel LR Woodworm Canal point. Is the branching network of rebellious yin, the scattered division of the foot, and the meridian exchanges and invades at the LR5 Woodworm Canal space, and the branch goes to lesser

yang network, of the shin foot calf testicle. The testicle, makes semen. The stalk, yin stalk, is in front and connects with the ancestors. Penis, immediately the yin stalk. Because this branch creates, this branch goes to the lesser yang network, is the place of various yang receive yin and yin receive yang, right receives left and left receives right.

CV15

任脈之別，名曰尾翳，下鳩尾散於腹。實則腹皮痛，虛則癢搔。取之所別也。

Ren vessel branch, is called CV15 Tail Screen (name of the branch), below CV15 Dovetail and scatter into the abdomen, In excess then there will be aching in the abdominal wall, if deficient then there will be itching and scratching. This is how to distinguish (between excess and deficiency).

【馬蒔曰：此言任脈經之絡穴也。從尾翳下於鳩尾，散於腹中。邪氣有餘而實，則腹皮必痛；正氣不足而虛，則癢而搔之，皆當取此穴以治之耳。】

Ma shi said: This speaks of ren vessel meridian connecting point. From CV15 Tail Screen downward to CV16 Dovetail. If evil qi is excessive and surplus, then there will be aching in the skin of the abdomen; if righteous qi is insufficient and weak then there will be itching and scratching, these symptoms can be treated with this point.

【張志聰曰：按任脈起於中極之下，以上毛際，循腹裏，上關元，至咽喉，上頤循面入目。所謂尾翳者，即鳩尾之上，蓋任脈之別絡，出於下極，並經而上，復下於鳩尾，以散於腹絡。氣實則腹皮急，虛則癢搔，當取之所別絡也。】

Zhang zhi cong said: to palpate the ren vessel rises from the centre and go below, go up from the border of the pubic hair, follow the inside of the abdomen, go up to CV4 First Pass, to the throat, go up the cheeks follow the face and join with the eye. This place is called CV15 Tail screen, found above CV15 dove tail, because it is the branching network of ren vessel, goes out and down to the bottom, and goes up alongside the meridian, follow down to the pubic hair, by this means it scatters in the abdomen network. If the qi is excessive then the abdomen and hair will be pressing, if deficient then there will be itching and scratching, accept this place of the branching network.

GV1

督脈之別，名曰長強，挾脊上項散頭上，下當肩胛左右，別走太陽，入貫膂。實則脊強，虛則頭重，高搖之，挾脊之有過者。取之所別也。

Governor vessel branch, is called GV1 Long Strong, wraps the spine and goes up the nape to scatter at the top of the head, below accepts the shoulder blade on both sides, the branch goes to greater yang, joins through the backbone. In excess the spine is strong, in deficiency the head is heavy, tall shaking, wraps around the spine and passes through. Receive the place of the branch.

【馬蒔曰：此言督脈經之有絡穴也。長強挾脊上項，散於頭上，下則當於肩胛之左右。其別者則走於足太陽膀胱經，以入貫於膂筋之間。邪氣有餘而實，則脊必強；正氣不足而虛，則頭必重，且頭重難支，必從高而搖之。此皆挾脊之有病所致也，皆當取此穴以治之耳。長強在脊骶骨端。】

Ma shi said: This speaks of governor vessel meridian connecting point. GV1 Long Strong wraps around the spine and goes up to the head, goes up from the nape to the head, goes down accepts

the shoulder blades on both sides. Its branch goes to the greater yang bladder meridian, by this means it joins through the space of the backbone and tendons. If evil qi is surplus and excessive, then the backbone must be strong; if righteous qi is insufficient and weak, then the head must be heavy, moreover if the head is heavy it will be difficult to support, must therefore be tall and wavering. Because all wraps around the backbone then disease is in this place, all attracts from this point to treat. GV1 Long Strong at the backbone at the bone at the tip (coccyx).

【張志聰曰：按督脈起於少腹，以下骨中央，女子入繫庭孔。其孔，溺孔之端也。其絡循陰器合篡間，遶篡後，別繞臀至少陰，與巨陽中絡者合，少陰上股內後廉，貫脊屬腎，與太陽起於目內眥上額交巔，上入絡腦，還出別下項，循肩膊內，俠脊抵腰中，下循脊絡腎，其男子循莖下至篡，與女子等；其少腹直上者，貫齊中央，上貫心入喉，上頤環脣，上繫兩目之下中央。

Zhang zhi cong said: to palpate governor vessel go up from the lower abdomen, below the bone in the centre, where in the woman a child joins into the orifice. This orifice, dip into the hole below. The network follows the yin receptacle and unites to usurp the space, entwine behind the perineum, the branch winds around the buttocks and goes to lesser yin, and great yang goes up through the network and joins, lesser yin goes up the inside of the thigh and follows straight, through the spine belongs to the kidney, and greater yang rises from the eye inner orbit goes up to the forehead and exchanges with the top of the head, goes up and join the network of the brain, also branch goes out below the head, follows the inside of the shoulder blade, wraps around the spine opposite the kidney, follows down to backbone network of the waist, this man follows penis down to reach where it usurps (perineum), and woman to the child grade; this goes up the lower abdomen, through the midline, goes up through the heart to join the throat goes up to the face to circle the lips, goes up into the teeth and eye along the centre.

蓋督脈總督一身之陽，應天道之遶地環轉，是以下行而上者，循莖至篡，從少腹貫齊中央，入喉上頤，環脣繫目；其上行而下者，起於目內眥，上額交巔，下項俠脊，抵腰中，而環轉於周身之前後也。

Because directs the vessels altogether governs the yang of the body, should travel upwards wind around the earth jade ring, this surely goes down and flows up, follow the stem to reach the perineum, by this means lower abdomen through the centre line, joins the throat goes up to the head, wraps around the lips and joins into the eye; it flows up and then flows down again, follows through the eye to the inner orbit, goes up to the forehead and joins to the top of the head, goes down the head and wraps around the spine, opposite the kidneys, and turns at the ring to the trunk in front and behind.

其督脈之別絡，出於長強之分，俠脊上行散於頭上，是督脈之行於脊膂者，從頭項而下行，別絡之從下而上行於頭項也。虛實者，本氣之虛實。有過者，有過之脈，邪氣之所客也。

尚御公曰：以有過之脈，總結於督脈之後，蓋申明虛實者，乃本氣之虛實，非邪氣也。

朱永年曰：按任督之大絡，與經脈交相逆順而行，當知十二別絡，雖循經並行，亦往來逆順者也。】

This is the network branch of governor vessel, goes out from GV1 Long Strong division, wraps around the spine goes up and flows to the throat and the top of the head, this governor vessel flows in the

backbone and spine, therefore the head neck and goes down and flows, the branching network by means of this it goes down and up and flows through the head and neck. In weakness and excess, it is the root of qi of weakness and excess. It travels, in the blood vessels, evil qi is located in the guest.

Shang yu gong said: this travels in the vessels, altogether joins in governor vessel at the back, because it reports clearly weakness and excess, it is the root qi of weakness and excess, not evil qi of the back.

Zhu Yong Nian said: palpate ren and du great network, and meridian vessels exchange and connect revert follow and flow, altogether through 12 branching network, even though it follows also the meridians and flows, also goes along exchanges reverts follows.

SP21

脾之大絡，名曰大包，出淵液下三寸，布胛脅。實則身盡痛，虛則百節盡皆縱。此脈若羅絡之血者，皆取之脾之大絡脈也。

Spleen great network, is called SP21 Great Envelope, goes out from GB22 Fluid Abyss down 3 cun, is located on the thorax on the flank. In excess the body will be exhausted and ache, in deficiency the hundred joints will be exhausted and all indulge. This vessel is similar to a gauzy network of blood, all receive the spleen great network vessel.

【馬蒔曰：此言脾經又有大絡穴也。脾固有公孫穴為絡，又有大絡名曰大包，出足少陽膽經淵液下之三寸，布於胛脅之中。邪氣有餘而實，則一身盡痛；正氣不足而虛，則百節盡皆縱弛。此脈若羅紋之絡，其絡中必有血，皆當取此穴以治之耳。淵液：腋下三寸宛宛中，舉臂取之。】

Ma shi said: This speaks of spleen meridian and the great connecting point. The spleen has strength in SP4 Grandfather grandson point network, has great network named SP21 Great Envelope, goes out from foot lesser yang gallbladder meridian GB22 Fluid Abyss goes down 3 cun, located on the flank of the thorax. Evil qi is excessive and surplus, then the body will be exhausted and aching; if righteous qi is insufficient and weak, then the hundred joints will be exhausted and all will be indulgent and loose. This vessel is similar to a gauzy network, this network must be blood, all accept treatment at this point. GB22 Fluid Abyss: go down from the armpit 3 cun to the crooked part, find it by lifting the arm.

【張志聰曰：大包乃脾經之穴名，在足少陽膽經淵液之下三寸。脾之大絡，循脾經之大包，而四布於胛脅。實則身盡痛，虛則百節盡皆縱。羅絡之血者，謂大絡之血氣，散於周身之孫絡皮膚，若羅紋之縱橫而絡於身也。夫脾之有大絡者，脾主為胃行其津液，灌溉於五臟四旁，從大絡而布於周身，是以病則一身盡痛，百節皆縱。而血絡之若羅紋，以絡於周身足太陰之大絡者，止並經而行，散血氣於本經之部分，是以足太陰脾臟之有二絡也。如曰脾足太陰之脈，兼是動所生而言也。曰足太陰之大絡，曰脾之大絡，分脾臟經氣而言也。】

Zhang zhi cong said: SP21 Great Embrace is the name of the point on the spleen meridian, it is located 3 cun below the foot lesser yang gallbladder meridian GB22 Fluid Abyss. The spleen great network, follow the spleen meridian at SP21 Great Embrace, and it scatters in the flank of the thorax. If excessive then the body will be exhausted and ache, if deficient then the hundred joints

will be exhausted and loosen. Gauzy network of blood, speaks of great network of blood and qi, disperses in the trunk to the grandchild network of skin and hair, like a gauzy line that reaches across and wraps around the body. This spleen has a great network, spleen governs the flow of the stomach its grains and fluids, irrigates water 5 zang 4 nearby, by means of great network and the place in the body, this through disease of exhausted and aching in the body, hundred joints and laxness. And blood network is similar to a gauzy net, hence network in the body the foot greater yin great network, if upright also travels through and flows, disperses blood and qi in the root of the meridians of the divisions, this is because the foot greater yin spleen zang has 2 networks. And speaks of spleen foot greater yin vessel, these words say they unite and move to create. Speak of foot greater yin great network, speak of spleen great network, speaks of the division of spleen zang meridian qi and blood.

凡此十五絡者，實則必見，虛則必下。視之不見，求之上下。人經不同，絡脈異所別也。

This is fifteen networks, fullness must be seen, deficiency must go down. See and not be seen, ask if up or down. Man meridian is not the same, network vessel has an unusual branching place.

【馬蒔曰：此結言取絡穴之有法也。凡此十五絡者，邪氣實則其脈必見，正氣虛則其脈陷下。若陷下而視之不見，則求之上下諸穴，即其不陷下者，而知此穴之為陷也。蓋人之經脈不見有十二經之分，故絡脈之異而別行者，亦有十五絡耳。夫以十二經而謂之十五絡者，以督任有二，脾有大包，故謂之十五也。按此篇以督之長強，任之尾翳為十五絡，

Ma shi said: This passage talks of the rules about the network point. All these 15 networks, if evil qi is excessive then this vessel must be seen, if righteous qi is weak then this vessel will sink down. Similarly sinking down and seeing if not seen, then ask if various points are up or down, then this not sinking down, and know these holes will sink. Because man has meridian vessel which are not seen there are 12 meridian divisions, hence these network vessels are unusual and circulate differently, also there are 15 networks. This 12 meridians and various 15 networks, this governor ren are 2, spleen great envelope, because various 15. Palpate this surely governor GV1 Long Strong, ren at CV15 Tail Screen 15 networks,

《難經》以陽蹻陰蹻之絡為十五絡，殊不知督脈所以統諸陽，任脈所以統諸陰，還以《靈樞》為的也。】

Nan Jing this yang cross the legs yin cross the legs network makes 15 networks, unusual does not know the place of the governor vessel this governs all yang, ren vessel place is governs all yin, still by this means Ling Shu

【張志聰曰：凡此十五大絡之血氣，充實則外溢於孫絡皮膚，故實則必見，虛則下陷於內之大絡，故視之不見也。求之上下者，謂絡脈之相交於上下陰陽之間，病在上者求之下，病在下者求之上，病在陰者取之陽，病在陽者取之陰也。夫十五大絡，雖與經相干而布於四末，其氣無常處，不入於經俞，與經脈繆處，故與人之經脈不同而絡脈異所別也。】

Zhang zhi cong said: All this 15 great network of blood and qi, in excess then the outside warms the connecting network to skin and hair, because excess then must be seen, in deficiency then sinks down to the interior of the great network, hence if not seen then can see. Then ask if up or down, all the network vessels exchange and interact through up and down yin and yang spaces, disease is located up then ask if down, if disease is located down then ask if up, if disease is located in the yin then accept yang, if disease is located in the yang then accept in yin. The 15 great networks, although and meridians exchange and invade and go to the ends of the 4 limbs, this qi is not in the normal place, not joined to the meridian transporters, and the places where meridian vessels wrap around, hence in man the meridian vessels are not the same and network vessels are unusual branching places.

【尚御公曰：經脈有經脈之絡脈，經別有經別之絡脈，故曰絡脈異所別也。】

Shang yu gong said: meridian vessel is the meridian vessel of the network vessel, the meridian branch is the meridian branch of the network vessel, hence it the network vessels are the unusual branching places.

Appendix C Ling Shu ch. 38

Ling shu ch. 38

Discussion of chong

【張志聰曰：此言手足陰陽之脈，上下外內，逆順而行，應地之經水也。】

黃帝曰：少陰之脈獨下行，何也？岐伯曰：不然。夫衝脈者，五臟六腑之海也，五臟六腑皆稟焉。其上者出於頄顙，滲諸陽，灌諸精；其下者，注少陰之大絡，出於氣街，循陰股內廉，入臍中，伏行胛骨內，下至內踝之後屬而別；其下者，並於少陰之經，滲三陰；其前者伏行出跗屬下，循跗，入大指間，滲諸絡而溫肌肉。故別絡結則跗上不動，不動則厥，厥則寒矣。黃帝曰：何以明之？岐伯曰：以言導之，切而驗之，其非必動，然後乃可明逆順之行也。黃帝曰：窘乎哉，聖人之為道也！明於日月，微於毫釐，其非夫子孰能道之也。

Huangdi said: Where does the shao yin vessel pass down? Qi Bo said: it is not like this. Chong mai, is the sea of 5 zang and 6 fu, it is the basis for 5 zang and 6 fu. It goes out from the 頄顙 hang sang [part that connects between the pharynx along the palate to the nose]

<http://yibian.hopto.org/shu/?sid=1096>

Leaks to the yang, irrigates essence; the lower part of it, pours to the big network of shao yang, exits at qi jie (St 30)qi thoroughfare, follows the inner aspect of the thigh, to the centre of the popliteal fossa, travels hidden along the inside of the tibia, and arrives behind the inside of the ankle; it comes down side by side with shao yin meridian, it permeates the 3 yin; it diverges and is hidden, travelling to exit below the instep, it follows the foot, to the gateway of the big toe, it permeates through and wraps around and keeps the muscles and flesh warm. When the divergent network vessel joins together then the bones at the top of the instep do not move, if there is no movement then there will be reversal of flow in the divergent vessel, when there is reverse movement in the divergent vessel then there is cold. Huangdi said:

【馬蒔曰：此言腎脈之下行者，以衝脈入腎之絡，而與之並行也。夫足之三陰，從足走腹，而獨有足少陰腎經之脈，繞而下行，與肝脾直行者別，何也？正以衝脈與之並行故耳。蓋衝脈者，起於足陽明胃經之氣衝穴，為五臟六腑之海，而臟腑之氣皆稟焉。其上則出於頄顙，滲諸陽經，以灌諸經之精，下注於少陰腎經之大絡曰大鍾者，以出於氣衝。又循陰踝之內廉，以入於臍中，伏行胛骨之內，下至內踝之後，凡所屬之別於下者，並由少陰之經，滲其脾腎肝之三經，此則在後廉者然也。其在前者，伏行出於足面之跗上，屬於下之涌泉，入循跗以入大指間，滲諸絡而溫肌肉。故別絡有邪相結，則跗上之脈不動，不動則氣厥逆而足冷矣。然何以知之？導病者以言，切病者以脈，其跗上踝非必動，乃可以明不動之為逆，動之為順，而其有邪與否明矣。】

Ma shi said: This is talking about the downward movement of the kidney meridian, the chong mai enters the network of the kidney vessel, and travels together with it. Talk about the 3 yin of the foot,

passing from the foot to the belly, and why only the vessel of foot shao yin has an artery, which circulates downward, liver and spleen vessel go forward. This is the reason why it is travelling with the chong mai. The chong mai is covered, it starts at the stomach foot yang ming qi chong point, and is the sea of 5 zang and 6 fu, and it governs the qi of all the zang and fu. It starts at the top and goes down from the forehead, it permeates through the yang meridians (on the face), and can irrigate essence through various meridians, it comes directly down the kidney shao yin meridian and wraps around kidney 4 large goblet, it goes out at ST 30 (qi thoroughfare). It follows along the yin aspect of the inner ankle, and enters into the popliteal fossa (腘中), it hides and travels along the inside of the tibia, and arrives at the inside of the medial ankle, all affiliation is separate below, from being side by side with shao yin vessel, it soaks into the three yin, spleen and liver, it is correct that these are behind here. The front part, hides and travels to exit at the dorsum of the foot, on top of the tarsals, it connects down to kidney 1 (bubbling spring), it goes into the instep via the space between the big toe, the divergent meridians warm the muscles and flesh. If the meridian network has badly joined the knot, then the blood vessels on the top of the foot will not move, if the vessel does not move then the qi will reverse and the foot will be cold. How to know if this is the case? When I talk to the people who have this disease, if you palpate the blood vessel in this disease, on the top of the instep (dorsalis pedis pulse) it should move, if there is no movement then this may indicate rebellious qi, it should move, and when it is not moving it is clear that it is rebellious.

【張志聰曰：此言血氣行於脈外，以應天之道也。夫司天在上，在泉在下，水天之氣，上下相通，應人之血氣，充膚熱肉，澹滲皮毛，而肌肉充滿，若怯然少氣者，則水道不行而形氣消索矣。夫衝脈者，五臟六腑之海也，五臟六腑之氣，皆稟於衝脈而行，其上者，出於頰頰，滲諸陽，灌諸陰，其下者，注少陰之大絡，下出於氣街，此五臟六腑之血氣，皆從衝脈而滲灌於脈外皮膚之間，應水隨氣而運行於天表也。夫少陰主先天之水火，水火者，精氣也。衝脈並少陰之經，滲三陰，循跗入大指間，滲諸絡而溫肌肉，是少陰之精氣，又從衝脈而運行出入於經脈皮膚之外內者也。故別絡結則少陰之氣不能行於跗上，而跗上不動矣。不動者，乃少陰之氣厥於內，故厥則寒矣。此氣血結於脈內，而不能通於脈外也，故當導之以言，導氣之外出也。驗之以脈，知精血之行也。其非跗上不動，然後乃可明逆順之行。逆順之行者，少陰之精氣滲灌於膚表，而復運行於脈中，應司天在泉之氣，遠地環轉，而復通貫於地中。明於日月，微於毫釐者，言聖人之道，如日月麗天，循度環轉，無有毫釐差失。故曰，聖人之為道者，上合於天，下合於地，中合於人事，必有明法以起度數，法式檢押，而後可傳焉。】

Zhang zhi cong said: This passage talks about blood and qi travelling outside of the blood vessels, by the pathway of heaven. They go up towards heaven, from the fountain that is underneath (yong quan kidney 1), qi is the water of heaven, it interlinks above and below, qi and blood make mankind, they supply the superficial (layers of the body) and the flesh with heat, it quietly soaks through skin and hair, and fills up the flesh and muscle, he who lacks courage is lacking in qi, if the laws of water transport do not flow then the network which gives form to qi will not work. The chong mai, is the sea of 5 zang and 6 fu, they are all reliant upon the passage of chong mai, it goes up, and exits at the forehead, it soaks through the various yang (channels), and irrigates the various yin, it goes down, and focusses the large network of shao yin, it exits at chong jie (St 30), this is the qi and blood of the 5 zang and 6 fu, it is through the external vessels of chong mai (capillaries?) that the superficial spaces of skin and body hair are soaked through and irrigated, when fluid accompanies qi and there is transport and flow then heaven will be displayed (the person will be healthy?). Thus shao yin governs the fire and water of the first heaven (upper body?), water and fire, are essence and qi.

Chong mai merges with the channel of shao yin, it soaks into the 3 yin, follows the tarsal bones and enters into/joins the space by the big toe, soaks through the various networks and warms the muscles and flesh, it is the essence and qi of foot shao yin, and from here the chong mai goes out and moves through the jing mai to the skin and the surface both internal and external. If the network that joins with shao yin is separated then the qi will not flow to the top of the tarsal bones, and the top of the tarsal bones will not have movement. When there is no movement, then the qi of shao yin is internal, because it is complying with cold. This knot joining qi and blood on the inside, and not able to connect with the external blood vessels, (we know about) because we are guided by speech (what we have been told), about the pathway that qi takes to the exterior. You can use the blood vessels to test this, afterwards you will be able to elucidate the flow of rebellious qi. The flow of contrary movement, of shao yin will be shown in the soaking of qi and essence into the superficial skin, and reverse circulation in the centre of the arteries, you can manage heaven by using the qi of the spring (kid1), it wraps around the earth like a circuit, and pass repeatedly through to the earth. There is clarity in the sun and the moon, like the finest small measurement, this path is discussed by the sages of men, if sun and moon are the glory of heaven, then they comply with the turning of the circuit, if you do not have fine control you make a mistake. Because it is said, by the holy道家 sages, above is union with heaven, below is union with earth, in the centre is union with consciousness of the world/what is humanly possible/human affairs, there must be clarity about the laws to begin to consider things, the laws examine and pledge, and descendants may propagate them.

【楊元如曰：五臟六腑，應五運之在中，五運者，神機之出入也。皮膚經脈，應六氣之在外。六氣者，左右上下環轉升降者也。五臟六腑之氣，稟衝脈而運行於膚表，應地氣之出於外也。】

Yang yuan ru said: Five zang and 6 fu, must be located in the centre of 5 transports, (by) five transports, the supernatural machine leaves and enters. Skin and jing mai, should take the 6 qi to the outside skin. The 6 qi, left right, up down, is that which makes the circuit rise up or sink down. 5 zang and 6 fu, report to chong mai and their state can be seen in the skin, the qi of the earth must go to the exterior.

【莫仲超曰：所謂衝脈者，順行逆衝於經脈皮膚之外內，充於形身，無往不到，故曰，逆順之行。蓋經脈之血氣順行，則皮膚之氣血逆轉，所以應天地運行之道也。稟於五臟六腑者，即水穀所生之血氣流溢於中，由衝脈而布散於皮膚之外。少陰之氣血，先天之精氣也，並衝脈滲於三陰，而行於脈中，循足跗滲足指之諸絡，而出於脈外，是以陽氣起於足五指之表，陰氣起於足五指之裏，蓋秉足少陰先天之水火也。人之形體肥厚，由水穀所生之血氣，充膚熱肉，澹滲皮毛，其真骨堅肉緩節監監者，秉先天之精氣也。皮肉筋骨，營衛血氣，皆本於先天後天生始之血氣，以資益而後能筋骨強堅，肌肉豐厚，是以始論人之肥瘦長短，而末結衝脈少陰之出入焉。】

Mo Zhong Chao said: This chapter talks about chong mai, to obey flow disobeys chong in the jing mai to the interior and exterior of superficial skin, you are full in body and shape, it does not arrive or leave, the ancients said, flow is to obey and disobey. Qi and blood obey the flow of the jing mai, if qi and blood flow contrary they are in the superficial skin, if they are circulating correctly they are the pathway between heaven and earth. The five zang and 6 fu report to them, quickly in the birthplace of food and water qi and blood will overflow, because chong mai will disperse to the superficial skin

of the outside. Qi and blood of shao yin, first born is essence and qi, alongside chong mai will soak into the 3 yin,

Appendix D Ling Shu ch. 65

Ling Shu ch. 65

Regarding Chong Mai, with commentary Ma Shi, Zhang zhi cong

黃帝曰：婦人無鬚者，無血氣乎？岐伯曰：衝脈任脈，皆起於胞中，上循背裏，為經絡之海；其浮而外者，循腹右上行，會於咽喉，別而絡脣口。血氣盛則充膚熱肉，血獨盛則澹滲皮膚，生毫毛。今婦人之生，有餘於氣，不足於血，以其數脫血也。衝任之脈，不榮口脣，故鬚不生焉。

Huang di said: A married woman does not have a beard, does she not have qi or blood? Qi bo said: Chong mai and ren mai, both come out from the centre of the uterus, they travel up on the inside, and are the sea of the meridian system; they float and go to the exterior, they circulate and travel up the right side of the abdomen, and meet in the throat, where they diverge and wrap around the mouth. When blood and qi are abundant then the skin and flesh will be hot and full, when blood only is abundant then it will gently permeate through the superficial skin, to make the hair. Now a married woman creates, an excess of qi, and insufficient blood, because she loses blood (in her menses). The chong and ren meridians, do not prosper in the mouth and lips, because whiskers do not grow.

【馬蒔曰：此言婦人之所以無鬚也。前篇言氣血盛則鬚美長，今婦人無鬚，豈無氣血乎？伯言婦人之所以無鬚者，以其數脫血也。蓋婦人衝任二脈，皆起於受胎之胞絡宮中，上循背之裏而行，為經絡之海；其浮而外行者，循腹右上行，會於咽喉；其別而行者，絡於脣口。惟血氣盛則膚充而肉熱，血獨盛則皮膚滲而毫毛生，今婦人之生氣有餘而血不足，以其月事以時下而數脫血也。故衝任之脈，不榮口脣，鬚之所以不生也。】

Ma shi said: This is talking about married women who therefore have no beard. The beginning of the chapter talks about how abundance of qi and blood leads to luxurious facial growth, nowadays married women do not have facial hair, why do they not have qi and blood? Qi bo says married women do not have facial hair as a result, of them losing blood. Ren and chong are 2 meridians which both start out from the place of the embryo, the centre of the uterus, it circulates up the back of the inside, and makes the sea of the meridian network; it floats and circulates outside, it circulates on the surface of the right hand side of the abdomen, and meets in the throat; it separates and circulates, to wrap around the lips and mouth. When blood and qi are abundant then the superficial will be full and the flesh will be hot, if only the blood is abundant then the surface skin will be full and permeate to make the hair grow, the married woman has a lot of qi but not enough blood, because she has her moon cycle (menstruation) and so will lose amounts of blood. For this reason the chong and ren meridians, do not prosper around the mouth and lips, and the hair therefore does not grow.

【張志聰曰：此復論充膚熱肉澹滲皮毛之血氣，又起於胞中，從衝脈任脈而散於脈外者也。上篇論胃腑所生之血氣，出於胃之大絡，注臟腑之經隧，而外滲於皮膚，此後天水穀之精，從中焦而出也。此言胞中之血氣，從衝任而行於經脈之外內，乃先天所藏之精氣，從下焦而上也。蓋言形中之血氣，所以榮養皮脈肉筋骨者，本於先後天之資生而資始也。胞中為血海，下焦少陰之所主也。衝脈任脈，皆起於胞中，上循背裏，為經絡之海者，胞中之血氣，從衝任而半營於脈中也。其浮而外者，循腹右，上行至胷中而散此，半隨衝脈，而散於皮膚分肉者也。故血氣盛則充膚熱肉，血獨盛則澹滲皮膚，生毫毛。婦人之生，因月事以時下，數脫於血而血不足，不得上營於脣口，故鬚不生焉。上篇論生鬚眉毫毛之氣血，手足三陽之所主也。此篇論絡脣口生髭鬚之血氣，衝脈之所濡也。血氣生始出入之道路多岐，非潛心體會，反興亡羊之嘆。】

Zhang zhi cong said: This discussion returns to the subject of qi and blood in fullness in the skin and heat in the flesh and how that quietly permeates through to make hair grow, it starts from the centre of the uterus, from whence chong meridian and ren meridian go out and disperse to the exterior. In this chapter the stomach is the parent of blood and qi, it exits from the stomach to the big network (also Liv-3), it focusses on the meridian tunnels to the organs and bowels, and permeates to the exterior surface skin, therefore water and grain make postnatal essence, cooked in the centre from whence it exits. This speaks of qi and blood in the centre of the uterus, chong and ren circulate from thence in the jing mai to the exterior and interior, it is the starting place for qi and essence of the organs, whence it is cooked above and below. It says it (the uterus) covers the central form of qi and blood, therefore it supports and makes flourish skin, blood vessels, flesh, sinew and bone, it is the root of the first postnatal qi which gives wealth of life and wealth of beginnings. The uterus is the sea of blood, it is the governing place which takes the cooked things down along shao yin. Chong mai and ren mai, both start in the centre of the uterus, they rise up at the back of the inside, and are the sea of the jing luo, the blood and qi of the uterus, via the chong and ren with the ying qi through the vessels. This floats to the exterior, it follows the right hand side of the inside of abdomen, rises up and circulates to disperse in the thorax (pulmonary vessels?), half accompanies chong mai, and disperses in the surface skin and the divisions between the flesh, when blood alone is abundant it quietly permeates to the surface skin, and creates fine hair. In the life of a married woman, because she has a moon cycle time below, she will lose some blood and blood will not be sufficient, it will not bring the ying qi up to the lips and mouth, and the facial hair will not grow. This chapter is discussing how qi and blood give birth to beards, eyebrows and fine hair, Hand and foot 3 yang are the birthplace. This chapter discusses qi and blood in the network which surrounds the mouth and lips giving birth to beard and moustache, chong mai is the place of moistening. Qi and blood begin and then go out to join with the road that has many forks, it does not single mindedly concentrate on experience, the contrary thrives and decays the sigh (life breath?) of a sheep (living organism?).

【仇汝霖曰：妊娠之血，皮膚之血也。此血臥則歸肝，故臥出而風吹之，則為血痺。如熱入血室，刺肝之期門。】

黃帝曰：士人有傷於陰，陰氣絕而不起，陰不用，然其鬚不去，其故何也？宦者獨去，何也？願聞其故。岐伯曰：宦者去其宗筋，傷其衝脈，血瀉不復，皮膚內結，脣口不榮，故鬚不生。

【馬蒔曰：此言宦者之所以無鬚也。士人有傷於陰器，而陰器絕而不起，亦不能復有所用，其鬚之生者自若，惟宦者陰器既傷，而鬚獨不生，帝之所以疑也。伯言士人雖有傷於陰器，其宗筋未嘗去，而衝脈未嘗傷也。彼宦者不然。所以血一瀉而不復，其所傷之處，皮膚內結，衝任之脈，不榮於上之口脣，故鬚焉得而生也。】

【張志聰曰：宗筋者，前陰也。宦者去其宗筋，傷其衝脈，血瀉而不復上榮於脣口，故鬚不生。此因割去前陰，而傷其先天之精氣也。】

黃帝曰：其有天宦者，未嘗被傷，不脫於血，然其鬚不生，其故何也？岐伯曰：此天之所不足也。其任衝不盛，宗筋不成，有氣無血，脣口不榮，故鬚不生。

【馬蒔曰：此言天宦之所以無鬚也。天宦，其貌天生如宦者也。天宦未嘗如宦者之被傷，亦未嘗如婦人之脫血，其鬚不生，帝之所以疑也。伯言此天之所以不足之也，其任衝不盛，宗筋不成，止有氣而無血，脣口不榮，故鬚亦不生也。】

【張志聰曰：此言胞中之血氣，本於先天之所生也。天宦者，謂之天閹不生。前陰即有，而小縮不挺不長，不能與陰交而生子，此先天所生之不足也。其衝任不盛，宗筋不成，有氣無血，脣口不榮，故鬚不生。】

【仇汝霖曰：髭鬚生於有生之後，然又本於先天之精氣。以上二篇，論陰陽血氣有互相資生之妙。】

黃帝曰：善乎哉，聖人之通萬物也！若日月之光影，音聲鼓響，聞其聲而知其形，其非夫子孰能明萬物之精？是故聖人視其顏色，黃赤者多熱氣，青白者少熱氣，黑色者多血少氣。美眉者太陽多血，通髭極鬚者少陽多血，美鬚者陽明多血。此其時然也。

【馬蒔曰：此帝贊伯能通萬物之精，故能驗顏色而明經絡也。】

【張志聰曰：此復論人道之歸於天道也。青黃赤白黑，五音五行之色也。赤主夏而黃主長夏，故黃赤者多熱氣，熱氣者陽氣也。青主春而白主秋，故青白者少熱氣也。黑主冬令之水，而陽氣深藏，故多血而少氣也。三陰三陽者，乃天之六氣，亦合於四時。初之氣，厥陰風木；二之氣，少陰相火；三之氣，少陽君火；四之氣，太陰濕土；五之氣，陽明燥金；終之氣，太陽寒水。在天有此六氣，而人有此六氣者也。合人之臟腑經脈，有手足十二之分，在天之陰陽，止

有太少之六氣也。故美眉者，太陽多血；通髯極鬚者，少陽多血；美鬚者，陽明多血。此論人歸於天道，而合於天之四時，又無分手與足也。】

夫人之常數，太陽常多血少氣，少陽常多氣少血，陽明常多血多氣，厥陰常多氣少血，少陰常多氣少血，太陰常多血少氣，此天之常數也。【馬蒔曰：此結言手足六經之氣血，各有多少，而調之者，當視其氣血以為主也。太陽者，手太陽小腸、足太陽膀胱也。少陽者，手少陽三焦、足少陽膽也。陽明者，手陽明大腸、足陽明胃也。太陽太陰俱多血少氣，少陽厥陰俱多氣少血，陽明氣血皆多，少陰多氣少血。知其氣血多少，則可以辨二十五人之形而調之也。】

【張志聰曰：此以人之常數，而合於天之常數也。常數者，地之五行，天之六氣，五六相合，而成三十年之一紀，六十歲之一周，而人亦有此五運六氣者也。是以首論地之五行，以合人之五形，末論人之六氣，而合於天之六氣也。在天成氣，在地成形。人秉地之五行，而成此形，然本於天之六氣，故復歸論於天之六氣焉。】

Appendix E Su Wen ch. 59

Su Wen ch.59 with commentary

Discussion of points and meridians

氣府論篇第五十九

【馬蒔曰：氣府者，各經脈氣交會之府也。故有言本經而他經之穴入其中者，止論脈氣所發所會，不以本經別經為拘也。其穴有多少，亦不拘於本經故耳。前篇論穴，故名氣穴，而此論脈氣所發，故名曰氣府也。】

Ma shi said:qi of the fu, the meridian vessel qi joins together in the bowels. Hence people say that root of this meridian and other meridian acupuncture points enter, only talks about the appearance and the union of the qi of the vessels, not constrained in this meridian or that meridian. How many acupuncture points, should not constrain the root of the meridians. In the previous chapter on acupuncture points, hence its name is qi points, and this chapter is discussing vessel qi, hence it is called qi fu.

【張志聰曰：此篇無問答之辭，而曰論者，伯承上章復論三陽經脈氣所發者，亦三百六十五穴，以應周天之數，然止論手足之三陽而不及於陰也。】

Zhang zhi cong: there is no question and reply in this chapter of the text, Qi bo following the previous chapter again discusses three yang qi of three meridian vessel phenomena, also 365 acupuncture points, in order to compare with the number of days, but only talks about the 3 yang of hand and foot and not the yin.

足太陽脈氣所發者七十八穴：兩眉頭各一，入髮至項三寸半，旁五，相去三寸，其浮氣在皮中者凡五行，行五，五五二十五。項中大筋兩旁各一，風府兩旁各一，俠背以下至尻尾二十一節十五間各一，五臟之俞各五，六腑之俞各六，委中以下至足小指旁各六俞。【行，並音杭。】

Foot tai yang qi vessel what phenomena of 78 points:

Unschuld text translation p.61 vol 2

【王冰曰：七十八穴，兼氣浮薄相通者言之，當言九十三穴，非七十八穴也。正經脈會發者七十八穴，浮薄相通者一十五穴，則其數也。兩眉頭各一，謂攢竹穴也。入髮至項三寸半，旁五，相去三寸，謂大杼、風門各二穴也。以上所在，刺灸分壯，與氣穴同法。浮氣，謂氣浮而通之可以去熱者也。五行，謂頭上自髮際中同身寸之二寸，後至項之後者也。二十五者，其中行則顙會、前項、百會、後項、強間，計五，督脈氣也。

Wang bing said: 78 points, if we count those acupuncture points which are floating or weakly connected to each other then we should count it as 93 acupoints, it's not 78 points. Where meridian vessels effuse there are 78 points, frivolous reciprocally move 15 points, then that's the right number. Both eyebrows have one points, called bamboo hole point. Join into the hair and the nape of the neck 3.5 cun, beside 5, reciprocally depart 3 cun, called BL10 big shuttle, GB20 wind gate is the name for 2 points. The place, needle and moxa division big, and the qi hole (chapter 58) is the same.

Appendix F

Author contributions

Journal Article	Meridians Under the Skin- Shaw, V (VS)., Aland C (CA).
Conceptualization	VS
Methodology	VS
Formal analysis	VS
Investigation (dissections)	VS
Writing – original draft preparation	VS
Writing – review and editing	CA
Visualization	VS
Supervision	CA
Journal Article	Chong meridian an ancient Chinese description of the vascular system? Shaw, V (VS).

Conceptualization	VS
Methodology	VS
Formal analysis	VS
Investigation (dissections)	VS
Writing – original draft preparation	VS
Writing – review and editing	VS
Visualization	VS

Journal Article	Was acupuncture developed by Han Dynasty Chinese anatomists? Shaw, V (VS)., McLellan, A (AM).
Conceptualization	VS
Methodology	VS
Formal analysis	VS
Investigation (dissections)	VS

Writing – original draft preparation	VS, AM
Writing – review and editing	VS, AM
Visualization	VS

Journal Article	Hiding in Plain Sight-Ancient Chinese Anatomy Shaw, V (VS),. Diogo, R (RD),. Winder, I (IW).
Conceptualization	VS
Methodology	VS
Formal analysis	VS
Investigation (dissections)	VS, IW
Writing – original draft preparation	VS, IW
Writing – review and editing	VS, IW, RD
Visualization	VS, IW