

XIE'S VETERINARY ACUPUNCTURE

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Introduction to Meridians

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Upon arriving at an unfamiliar location, visitors orient themselves by obtaining a map of the city. Equipped with a clear illustration of the region's roads, they easily recognize their current position and understand what routes will take them to the places they wish to visit.

Similarly, when starting to learn acupuncture, one must first know the *Jing-Luo* because it provides a map of the body and thus helps the novice to understand how to reach the goal. Like the highways and streets of a city, the *Jing-Luo* functions in a body by connecting one location to another. This system is so important that *Ling-Shu (Spiritual Axis)*, a classical ancient text (published more than 2,200 years ago), states, "it determines life and death, treats all the diseases, and regulates both the Deficiency and Excess Patterns" and recommends that one "has to gain a thorough understanding of it" (chapter 10).

1-1. THE JING-LUO SYSTEM

There are two major components in the *Jing-Luo* system: *Jing-Mai* and *Luo-Mai*. *Jing* can be translated as meridian, channel, or major trunk. *Mai* means vessels. *Luo* is a collateral or branch. Thus, *Jing-Mai* translates as *major trunk vessel*, and it is also known as the *channel*. *Luo-Mai* refers to the *collateral* or *branch vessels*. These channels are the body's equivalent of telephone lines, airways, rivers, highways, and city roads, which provide a means of communication and transport. The *Jing-Mai* is like a main telephone line, a major highway, an international airport, or a large river. The *Luo-Mai* is like a telephone extension, a small street, a minor connection airline, or a small river.

Jing-Mai consists of 12 regular channels, 8 extraordinary channels, and 12 regular channels' associates, including 12 divergent meridians, 12 muscle regions, and 12 cutaneous regions. *Luo-Mai* consists of 15 collaterals, small branches (*Sun-Luo*), and superficial branches (*Fu-Luo*) (fig. 1.1).

The *Jing-Luo* system is the pathway through which *Qi* and blood circulate. It regulates the physiological activities of the *Zang-Fu* organs. It extends over the exterior of the body, but it pertains to the *Zang-Fu* organs located on the

interior. It connects and correlates all the tissues and organs, forming a network that links the tissues and organs into an organic whole. Chapter 33 of *Ling-Shu (Spiritual Axis)* states that "twelve regular Channels are connected with the *Zang-Fu* organs internally and with the joints, limbs, and body surfaces externally."

A. Discovery of the *Jing-Luo* System

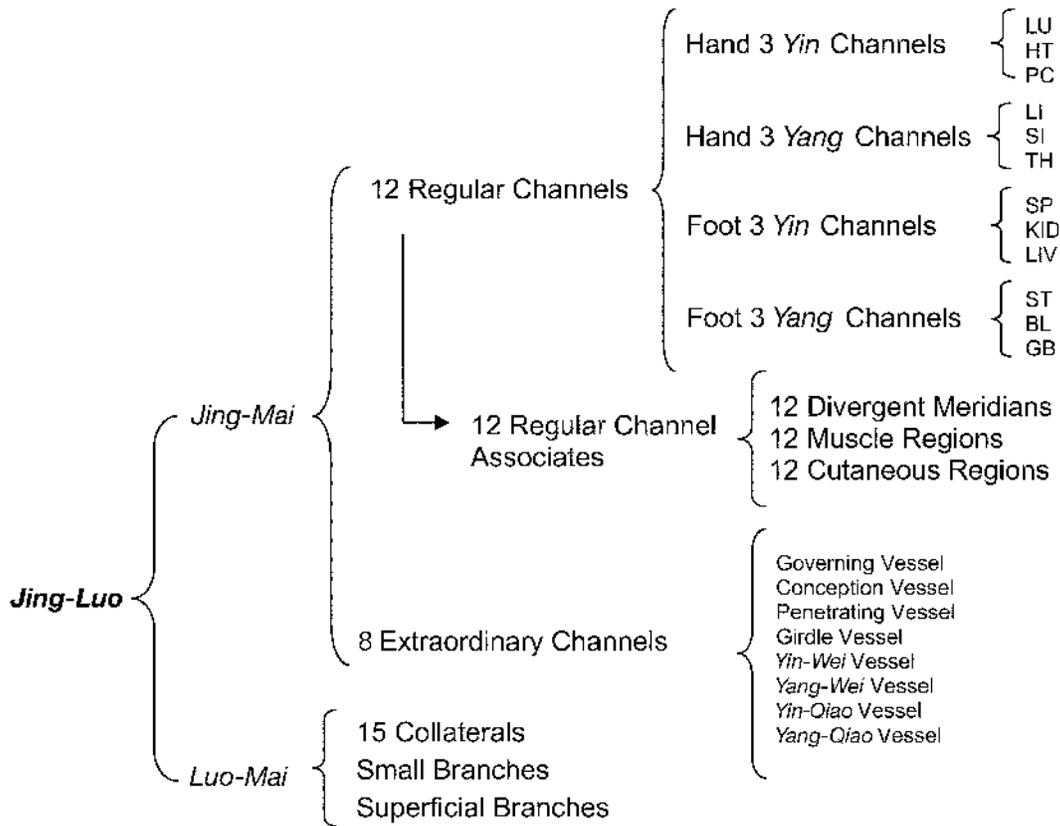
The term *Jing-Luo* was first documented in the book *Huang-di-nei-jing (Yellow Emperor's Classic of Internal Medicine)*. Ancient Chinese medical practitioners discovered and gradually established the *Jing-Luo* system during their extensive clinical experiences. Two popular theories describe the discovery of this system: from a point to a line and from a line to a point.

FROM A POINT TO A LINE

In the beginning, ancient people may have observed that accidentally puncturing their body surfaces with a sharp object (such as a stone or twig) could relieve discomfort and pain. Later, they intentionally began to use the sharp objects to puncture the body at specific loci in order to treat illness and discomfort. These trials successfully relieved pain and encouraged the people to make special tools for this purpose.

The *bian-shi* was one such tool made during the Neolithic period (about 8,000 years ago). It was a quadrilateral, pyramidal stone about 4.5 cm in length with one end tapered to a very sharp point. The middle part was flat so that it could be held between two fingers (fig. 1.2). Archaeologists concluded that the *bian-shi* functioned in excising boils and stimulating certain points on the body. Thus, the *bian-shi* may have been a first-generation acupuncture needle, and the body loci at which it was used were acupuncture points (*acupoints*). As awareness increased and more people used the *bian-shi*, they discovered additional acupoints.

Further developments in tools occurred over time as technology advanced. A sharp bone needle (approximately 8,000 years ago) and then a metal needle (Shang Dynasty, 1600 to 1100 B.C.) were invented. These finer needles could be inserted to a deeper level into an acupoint. This increased the



1.1. Parts of the Jing-Luo system.

probability of achieving better clinical results and opened possibilities of treating additional diseases with acupuncture. Improvement of the tools led to discovery of more and more acupoints.

The ancient practitioners reviewed their clinical results and linked the acupoints with similar functions to form a *meridian (Jing-Luo) line*. Thus, in this theory, the development from point to meridian is similar to how ancient towns were established first and then roadways were built to link the cities.



1.2. A bian-shi stone needle.

FROM A LINE TO A POINT

The needling sensation, or *de-Qi*, was well documented by ancient practitioners. After a needle is inserted at a certain point in the body, the patient will first feel soreness, numbness, heaviness, and distension around the point. The sensation then travels up or down along a special line in the body called the acupuncture sensational line. These sensational lines are the meridian pathways or channels. Much historic evidence indicates that the meridian lines were discovered before all of the individual acupoints. After identifying the path of a meridian, the ancient practitioners found the acupoints one by one.

In 1973, many ancient medical books were unearthed from the No. 3 Han Tomb at Mawangdui, Chang-sha, Hunan Province, China. These included two silk scrolls containing the books *Zu-bi-shi-yi-mai-jiu-jing (Foot-Hand Eleven Meridians and Moxibustion)* and *Yin-yang-shi-yi-mai-jiu-jing (Yin-yang Eleven Meridians and Moxibustion)*. As these were written earlier than the third century B.C., both books are older than *Huang-di-nei-jing*, which had been previously thought to be the earliest known explanation of the theory of *Jing-Luo*. Although these two books did not document the names of acupoints, they described the pathways of 11 channels (not including Pericardium) on the body surface.

Additional evidence that supports the line-to-point theory is that only 295 acupoints were recorded in *Huang-di-nei-jing*

but 654 points were documented in *Zhen-jiu-jia-yi-jing* (*Systematic Classic of Acupuncture and Moxibustion*) written by Dr. Huang Fu Mi in A.D. 282, which was about 500 years later than *Huang-di-nei-jing*.

B. The 12 Regular Channels

NOMENCLATURE OF THE 12 REGULAR CHANNELS

There are 12 *Zang-Fu* organs; 6 are *Zang* (*Yin*) organs and 6 are *Fu* (*Yang*) organs. Each organ has a channel of its own. The nomenclature of the 12 regular channels is based on three factors:

1. location on either a thoracic or pelvic limb
2. association with either one of the three *Yin* (*Tai-yin*, *Shao-yin*, *Jue-yin*) or the three *Yang* (*Yang-ming*, *Tai-yang*, *Shao-yang*)
3. relationship with a *Zang-Fu* organ

Each thoracic and pelvic limb is supplied by three *Yin* Channels and three *Yang* Channels. Because the 12 regular channels are bilaterally symmetrical, there are 24 channels in the body (table 1.1).

The channels that relate to *Yin* organs are *Yin* Channels, and the channels that relate to *Yang* organs are *Yang* Channels. The *Yin* and *Yang* Channels are each divided into three types. *Yin* consists of *Tai-yin*, *Shao-yin*, and *Jue-yin*. *Yang* consists of *Yang-ming*, *Tai-yang*, and *Shao-yang*. The energy levels dissipate with the flow from one *Yin* or *Yang* level to the next level. *Yang-ming* (brightest *Yang*) and *Tai-yin* (greatest *Yin*) are each in the highest, strongest level. *Tai-yang* (greatest *Yang*) and *Shao-yin* (smallest *Yin*) are in the next

level, which is not as strong as the first. *Shao-yang* (smallest *Yang*) and *Jue-yin* (diminishing *Yin*) are part of the third level, which is the weakest of the three (table 1.2).

THE GENERAL PATHWAYS OF THE 12 REGULAR CHANNELS

The *Zang* organs belong to *Yin*, and the *Fu* organs belong to *Yang*. The medial aspect of the limb is *Yin*, while the lateral aspect is *Yang*. Thus, the six channels for the *Zang* organs are *Yin* Channels, which are distributed on the medial aspect of the limbs. Likewise, the six channels for the *Fu* organs are *Yang* Channels, which are distributed on the lateral aspect of the limbs. The *Yin* Channels, which belong to the *Zang* organs, are also able to communicate with the *Fu* organs. Similarly, the *Yang* Channels, which belong to the *Fu* organs, are able to communicate with the *Zang* organs. In this way, an exterior-interior, or a husband-wife, relationship exists between the *Yin* and *Yang* Channels and their *Zang-Fu* organs.

The three *Yin* Channels of the thoracic limb start from the chest, circulate along the medial aspect of the thoracic limb, and terminate at the end of the front feet (see table 1.3). The three *Yang* Channels of the thoracic limb start from the end of front feet and circulate along the lateral aspect of the thoracic limb to end at the head. The three *Yang* Channels of the pelvic limb start at the head, circulate along the back and the lateral aspect of the pelvic limb, and terminate at the end of the hind feet. The three *Yin* Channels of pelvic limb start from the end of the hind feet, circulate along the medial aspect of the pelvic limb, and travel along the abdomen to end at the chest.

All three *Yang* Channels of the thoracic limb end on the head, and all three *Yang* Channels of the pelvic limb begin there. Thus, the head is known as the “gathering house of all the *Yang*.” In a similar fashion, all three *Yin* Channels of the thoracic limb start from the chest and all three *Yin* Channels of the pelvic limb end there. Thus, the chest is called the “gathering house of all the *Yin*.”

On the thoracic limb, three *Yin* Channels run along the medial side and three *Yang* Channels run along the lateral side. The Lung Channel of *Tai-yin* supplies the cranial and medial border of the limb. The middle of the medial forelimb is home to the Pericardium Channel of *Jue-yin*. The Heart Channel of *Shao-yin* resides along the caudomedial border of the limb. On the lateral forelimb, the Large Intestine Channel of *Yang-ming* supplies the cranial edge. The Triple Heater (*Sanjiao*) Channel of *Shao-yang* runs along the middle of the lateral side. The Small Intestine Channel of *Tai-yang* lies along the caudolateral part of the limb.

Table 1.1. The 12 Regular Channels

Channel location	<i>Zang-Fu</i> organ	Abbreviation
<i>Tai-yin</i> of the thoracic limb	Lung	LU
<i>Tai-yin</i> of the pelvic limb	Spleen	SP
<i>Shao-yin</i> of the thoracic limb	Heart	HT
<i>Shao-yin</i> of the pelvic limb	Kidney	KID
<i>Jue-yin</i> of the thoracic limb	Pericardium	PC
<i>Jue-yin</i> of the pelvic limb	Liver	LIV
<i>Yang-ming</i> of the thoracic limb	Large intestine	LI
<i>Yang-ming</i> of the pelvic limb	Stomach	ST
<i>Tai-yang</i> of the thoracic limb	Small intestine	SI
<i>Tai-yang</i> of the pelvic limb	Urinary bladder	UB/BL
<i>Shao-yang</i> of the thoracic limb	<i>Sanjiao</i>	SJ/TH/TB/TW*
<i>Shao-yang</i> of the pelvic limb	Gallbladder	GB

*TH = Triple Heater, TB = Triple Burner, TW = Triple Warmer.

Table 1.2. The Levels of the 12 Regular Channels

Level	Limbs	Three <i>Yang</i>	<i>Fu</i> organs	<i>Zang</i> organs	Three <i>Yin</i>	Limbs
1	Thoracic Pelvic	<i>Yang-ming</i>	LI ST	LU SP	<i>Tai-yin</i>	Thoracic Pelvic
2	Thoracic Pelvic	<i>Tai-yang</i>	SI BL	HT KID	<i>Shao-yin</i>	Thoracic Pelvic
3	Thoracic Pelvic	<i>Shao-yang</i>	TH GB	PC LIV	<i>Jue-yin</i>	Thoracic Pelvic

Table 1.3. General Pathways of the 12 Regular Channels on the Body

Channel	Origin	Pathway	Terminus
Three <i>Yin</i> Channels of the thoracic limb	Chest	Medial aspect of the thoracic limb	End of front feet
Three <i>Yang</i> Channels of the thoracic limb	End of front feet	Lateral aspect of the thoracic limb	Head
Three <i>Yin</i> Channels of the pelvic limb	End of hind feet	Medial aspect of the pelvic limb and the ventral abdomen	Chest
Three <i>Yang</i> Channels of the pelvic limb	Head	Lateral aspect of the pelvic limb and the back	End of hind feet

On the pelvic limb, three *Yin* Channels run along the medial side and three *Yang* Channels travel along the lateral side. The Stomach Channel of *Yang-ming* supplies the cranial border of the lateral aspect of the pelvic limb. The Gallbladder Channel of *Shao-yang* resides in the center of the lateral hind leg. The caudolateral part of the hind limb is home to the Bladder Channel of *Tai-yang*. Moving to the medial side of the leg, one finds the Spleen Channel of *Tai-yin* along the cranial border of the pelvic limb. The Liver Channel resides along the middle of the medial side. The Kidney Channel of *Shao-yin* is located along the caudomedial part of the pelvic limb (table 1.4)

The 12 regular channels join with one another in a fixed order (figs. 1.3 and 1.4 and table 1.5). Along this course there is an endless, cyclical flow of *Qi* and blood within the channels. The flow always passes from one channel to the next in a specific order throughout the day; however, the *Qi* dominates within certain meridians at designated times. This is the traditional Chinese veterinary medicine (TCVM) circadian rhythm, which provides the body with its own internal clock. Disorders of this rhythm can be used to assist with pattern identification and TCVM diagnosis.

The cycle begins at 3:00 A.M. with the Lung Channel at the chest. The energy dominates in each meridian for two hours before passing on to the next channel. Thus, the flow passes to the Large Intestine Channel at 5:00 A.M. and remains there until 7:00 A.M.. Next, the *Qi* moves to the Stomach Channel from 7:00 to 9:00 A.M. The Spleen Channel follows from 9:00 A.M. to 11:00 A.M. In such a manner, the *Qi* moves from thoracic *Yin* to thoracic *Yang* to pelvic *Yang* to pelvic

Yin. It makes a complete circuit around the body while passing from wife to husband and husband to wife. Once back at the chest, it is the Heart Channel's turn from 11:00 A.M. to 1:00 P.M. The husband of the heart, the Small Intestine Channel, then carries the energy from 1:00 P.M. to 3:00 P.M. On the head, the *Qi* passes to the *Yang* Channel of the same energy level, the Urinary Bladder Channel. From 3:00 P.M. to 5:00 P.M., the bladder holds the *Qi* flow until it passes through kidney, the wife of the bladder, from 5:00 P.M. to 7:00 P.M. Now back at the chest, the *Qi* flows down the Pericardium Channel of the thoracic limbs from 7:00 P.M. to 9:00 P.M. Her husband, the Triple Heater Channel, next carries the *Qi* from 9:00 P.M. to 11:00 P.M. At the head, the Gallbladder Channel takes the flow to the hind limb from 11:00 P.M. to 1:00 A.M. From 1:00 A.M. to 3:00 A.M., the Liver Channel brings the flow back to the chest for the cycle to begin again with the Lung Channel at 3:00 A.M.

Figure 1.4 is a concise illustration of the relationships between *Yin-Yang*, *Zang-Fu*, thoracic-pelvic, the levels, and the individual organs. Each concentric circle represents one level with the outermost demonstrating the first level. After traveling around the circle in a clockwise direction, it flows into the next level. Along the way, it passes through each quadrant with its own associated organ. When reaching the end of the center circle, it skips back to the first level where it starts again.

The meridians exist internally and externally as they connect all parts of the body together. The images in chapters 3 through 6 will trace these pathways on the horse and dog. The meridians, especially including the internal branches, are well described in humans. Omissions in the animal meridian descriptions may be extrapolated from the human model. However, differences in anatomy may require some modifications of the pathway in various species.

Table 1.4. The General Pathways of the Twelve Regular Channels on the Limbs

Location on limb	Cranial	Middle	Caudal
Medial aspect of the thoracic limb	LU	PC	HT
Lateral aspect of the thoracic limb	LI	TH	SI
Lateral aspect of the pelvic limb	ST	GB	BL
Medial aspect of the pelvic limb	SP	LIV	KID

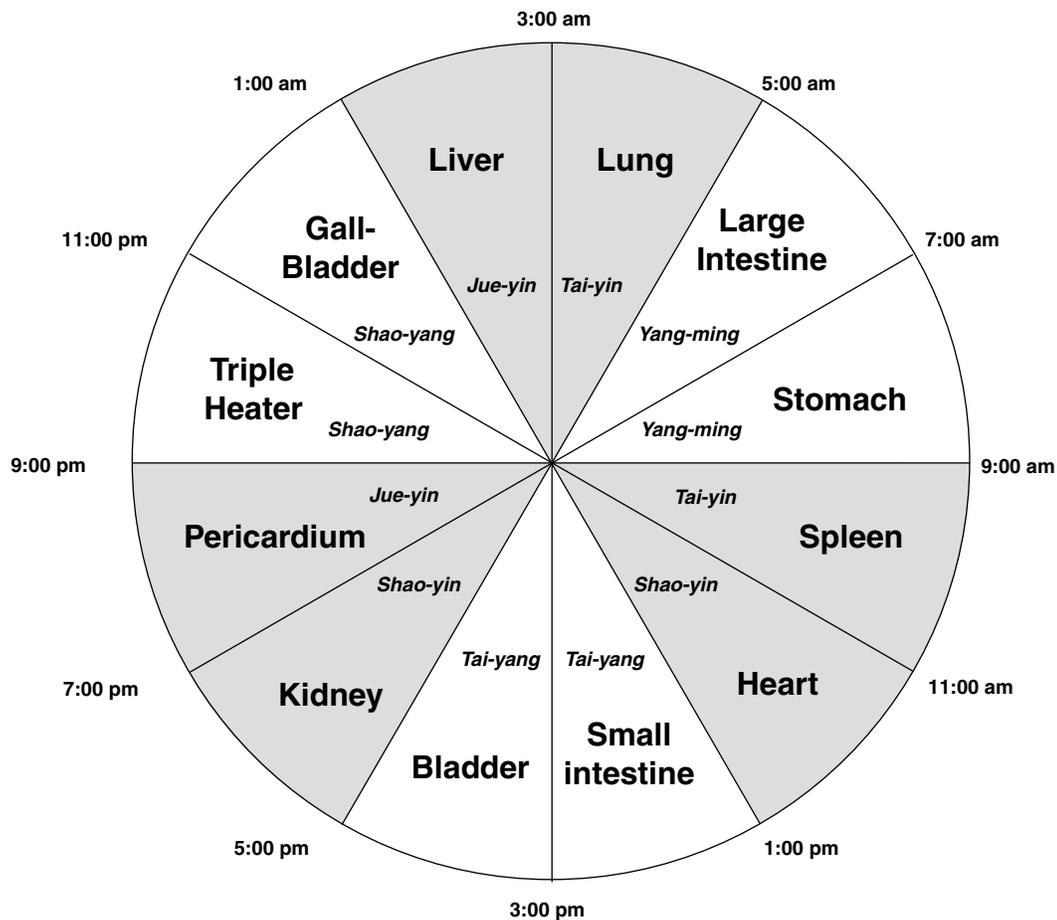
C. The 8 Extraordinary Channels (*Qi-Jing-Ba-Mai*)

The translation of *qi-jing-ba-mai* is as follows: *Qi* means special or extraordinary; *jing* means meridian, *mai* means

Table 1.5. Circadian Flow of the Twelve Regular Channels

	Circadian clock	<i>Yin</i> Channels	<i>Yang</i> Channels	Circadian clock	
<i>Tai-yin</i>	3 A.M. to 5 A.M.	LU	LI	5 A.M. to 7 A.M.	<i>Yang-ming</i>
	9 A.M. to 11 A.M.	SP	ST	7 A.M. to 9 A.M.	
<i>Shao-yin</i>	11 A.M. to 1 P.M.	HT	SI	1 P.M. to 3 P.M.	<i>Tai-yang</i>
	5 P.M. to 7 P.M.	KID	BL	3 P.M. to 5 P.M.	
<i>Jue-yin</i>	7 P.M. to 9 P.M.	PC	TH	9 P.M. to 11 P.M.	<i>Shao-yang</i>
	1 A.M. to 3 A.M.	LIV	GB	11 P.M. to 1 A.M.	

Circadian Cycle of *Qi*



1.3. TCVM circadian clock of the 12 regular channels. (From H. Xie & V. Preast, *Traditional Chinese Veterinary Medicine, Vol. 1, Fundamental Principles*, Jing Tang, Beijing, 2002.)

channels, *ba* is the number eight. Thus the phrase *qi-jing-ba-mai* refers to the 8 extraordinary channels (8-EC). These eight channels are named *du*, *ren*, *chong*, *dai*, *Yang-qiao*, *Yin-qiao*, *Yang-wei*, and *Yin-wei* (table 1.6).

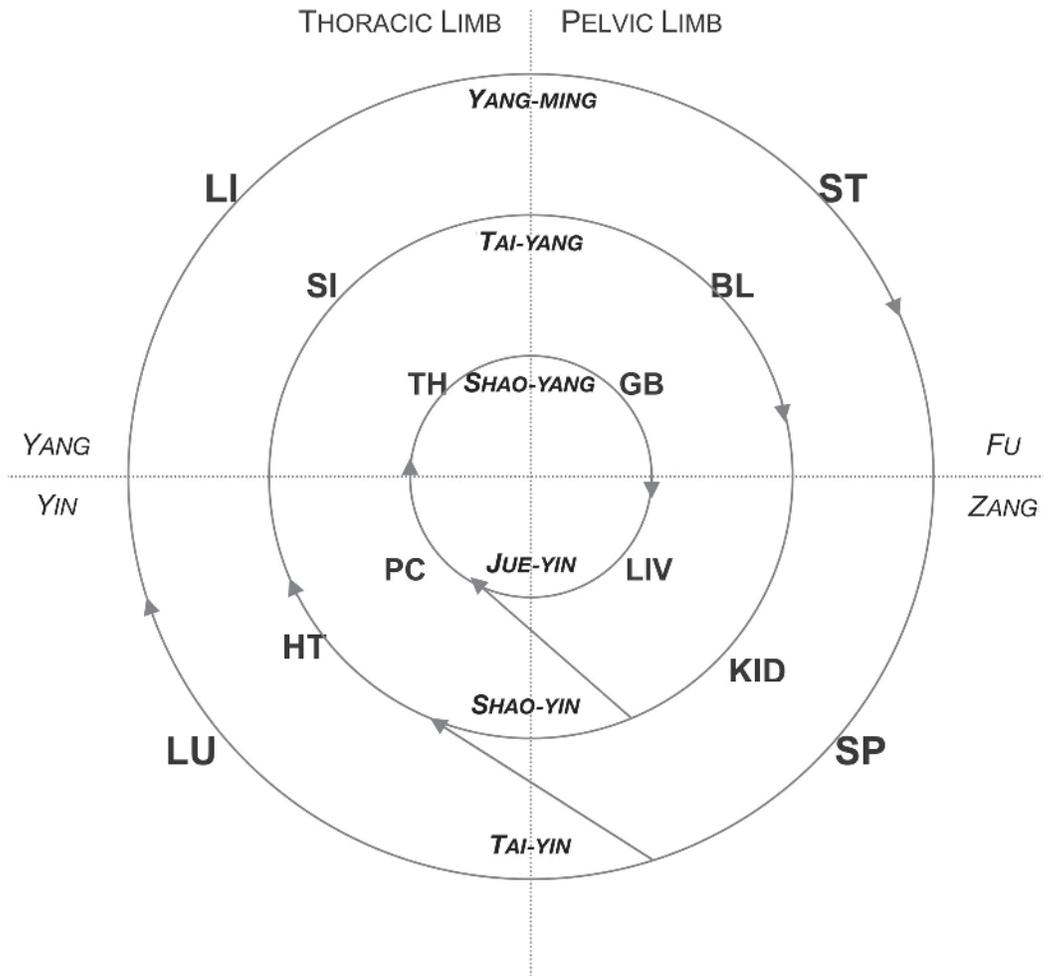
The extraordinary channels have several differences from the 12 regular channels. First, these channels do not pertain to either *Zang* or *Fu* organs. Second, they are not exteriorly or interiorly related to each other as are the regular channels. Third, most of these channels do not have their own acupoints. *Du* (governing vessel) and *ren* (conception vessel) do have their own acupoints, but the rest share their points with a few of the regular meridians.

As assistants to the regular channels, the extraordinary channels acquire similar functions to those of nearby regular channels. This occurs because the extraordinary channels coordinate and balance the *Qi* and blood within the regular channels they link. These extraordinary channels form a conduit that connects, coordinates, and facilitates communication among the 12 regular meridians. In addition, the extraordinary channels control, store, and regulate the *Qi* and blood of the 12 regular meridians (tables 1.6 and 1.7).

D. The 14 Regular Channels

The 12 regular channels together with the Governing Vessel (GV) Channel and the Conception Vessel (CV) Channel constitute the 14 channels. The 12 regular channels are distributed symmetrically on the left and right sides of the body. The CV and GV Channels, however, are unpaired. The CV Channel runs along the ventral midline, and the GV Channel courses along the dorsal midline.

Within the 12 regular channels, *Qi* and blood circulate along each meridian in a specific order over the course of a 24-hour period. There is also cyclical *Qi* flow within the 14 regular channels, which takes the GV and CV Channels into account. The Lung Channel, which is the beginning of the 12-channel cycle, sends a branch to the CV Channel. Thus, the *Qi* flows from the Lung Channel to the CV Channel, and then it runs cranially along the CV Channel. At the mouth, the *Qi* flows into the GV Channel and runs caudally along the back. Upon reaching the perineum, the *Qi* enters the CV Channel again and flows back to the Lung Channel. Thus, the cyclical flow of *Qi* and blood in the 14 Channels includes the circulation through the GV and CV Channels along with the flow within the 12-channel cycle.



1.4. Summary of the levels and organ associations. (H. Xie & V. Preast, Traditional Chinese Veterinary Medicine, Vol. 1, Fundamental Principles, Jing Tang, Beijing, 2002.)

During *Qi-Gong* meditation, one places the tip of the tongue against the palate behind the upper incisors. This connects the GV and CV Channels. The *Qi* flow between these two channels becomes the focus of meditation. It is possible to imagine this pathway as a shortcut that allows the *Qi* to circle the body while bypassing the 12 regular channels. Unlike the 12 regular channels, the flow between GV and CV

does not dominate at a certain time of day. Rather, the *Qi* constantly cycles between the two channels throughout the day.

The *Qi* is always flowing through the 14 regular channels. Within the 12 regular channels, it has a predictable direction of flow from one channel to the next. However, even when one channel dominates during its 2-hour period, the *Qi*

Table 1.6. Distribution of the 8 Extraordinary Channels

Channel name		Location	Meridian connections
<i>Du</i>	Governing Vessel (GV)	Dorsal midline	CV, ST
<i>Ren</i>	Conception Vessel (CV)	Ventral midline	GV, ST
<i>Chong</i>	Penetrating	Parallel to kidney meridian	KID
<i>Dai</i>	Girdle	Encircling lumbar region	GB
<i>Yang-qiao</i>	<i>Yang</i> motility	Lateral hind limb extremities	SI, BL, LI, ST, GB
<i>Yin-qiao</i>	<i>Yin</i> motility	Medial hind limb extremities	KID, SI
<i>Yang-wei</i>	<i>Yang</i> linking	Eye Lateral stifle, Shoulder	GV, SI, BL, TH, GB, ST
<i>Yin-wei</i>	<i>Yin</i> linking	Medial hind limb Neck	CV, GB, SP, LIV

Table 1.7. Functions and Indications of the Eight Extraordinary Channels

Channel name	Function	Indications
<i>Du</i>	Connects with the spinal cord, brain and all the <i>Yang</i> channels Reigns over all of the <i>Yang</i> channels Controls <i>Yang Qi</i> of the entire body	Spinal cord and disc problems, heat pattern, mental disorders, <i>Yang</i> deficiency, high fever
<i>Ren</i>	Connects with all the <i>Yin</i> Channels Reigns over all of the <i>Yin</i> Channels Nourishes the uterus	Reproductive disorders, <i>Yin</i> deficiency, sore throat
<i>Chong</i>	The sea of 12 meridians The sea of blood Serves as a reservoir of <i>Qi</i> and blood for the 12 regular meridians	Infertility, estrous disorders, postpartum disorders, difficult urination/defecation, urinary incontinence
<i>Dai</i>	Restrains the other channels Protects the lumbar regions	Weakness of back or hind limbs, <i>Yang</i> deficiency, poor performance
<i>Yang-qiao</i> , <i>Yin-qiao</i>	Regulates the movement of all limbs Controls movement of eyelids	Ataxia or imbalanced movement Wobbler's, EPM, insomnia, eye problems
<i>Yang-wei</i>	Connects with all the <i>Yang</i> meridians Dominates the exterior of the body	Exterior pattern, cold, influenza, <i>Bi</i> syndrome, back pain (IVDD)
<i>Yin-wei</i>	Connects with all the <i>Yin</i> meridians	Depression, chest pain, failure of <i>Yin</i> organ function, renal failure, heart failure, liver failure

continues to flow along the remaining meridians as well. The *Qi* flow of the 12 channels is like cargo boats on a river with multiple ports along its length. As a boat travels down the river, it may spend a short while in each of the ports in sequence. When numerous boats come to a specific port at a specific time, that port is very important during that time. Although this location may be a center of commerce for the moment, it does not prevent other ships from continuing along the river.

On the other hand, the flow within the GV and CV Channels is like a freeway encircling a city. The *Qi* flows smoothly around in a large loop around the body. The traffic may travel in either direction (i.e., from GV to CV or CV to GV) at all times of the day and night.

E. The 15 Collaterals

Collaterals are relatively smaller meridians that divide from the 14 regular channels. Except for the spleen, which also has a major collateral, each of the 14 regular channels is associated

with one collateral branch. The 15 collaterals connect the externally and internally related meridians and promote the free flow of *Qi* and blood (table 1.8).

The collaterals that branch off from the 12 regular channels arise at the *Luo*-connecting points and then run to their associated channels, which have exterior-interior, or husband-wife, relationships. For example, the Lung (LU) Collateral starts from LU-7 and runs to the Large Intestine (LI) Channel. The Small Intestine (SI) Collateral originates from SI-7 and runs to the Heart (HT) Channel. The Stomach (ST) Collateral arises from ST-40 and runs to connect with Spleen (SP) Channel. The SP Collateral starts from SP-4 and runs to join ST Channel.

Three collaterals extend to a body region. The GV Collateral originates at GV-1, runs upward along the spine, and spreads across the head. The CV Collateral starts from CV-15 and spreads over the abdomen. The major collateral of the spleen starts at SP-21 and spreads through the chest and hypochondriac region, thus wrapping the whole body.

Table 1.8. The Indications of the 15 Collaterals

Collateral	<i>Luo</i> -connecting point	Indications
LU	LU-7	Hot palms, frequent yawning, urinary incontinence or urgency
LI	LI-6	Dental problems, deafness, cycling disorders
ST	ST-40	Sudden loss of voice, mania, muscle atrophy
SP	SP-4	Cholera, colic, bloat
HT	HT-5	Chest pain
SI	SI-7	Bone loss, front limb weakness, mass on the skin
BL	BL-58	Nasal congestion, back pain, headache, nose bleeding
KID	KID-4	Chest pain, urinary and fecal incontinence, chronic back pain
PC	PC-6	Chest pain, anxiety, restlessness
TH	TH-5	Muscle spasms of front limb, weakness of front limb
GB	GB-37	Coldness of rear feet, <i>Wei</i> syndrome, eye problems
LIV	LIV-5	Testicular swelling, hernia, pubic itching
CV	CV-15	Pruritus or abdominal pain
GV	GV-1	Ataxia, spine stiffness
Major collateral of SP	SP-21	Whole-body soreness, whole-body muscle atrophy or weakness, blood stagnation

F. The 12 Divergent Meridians (*Shi-Er-Jing-Bie*)

The 12 divergent meridians branch out from the elbow or stifle areas of the 12 regular channels. They enter the thorax and abdomen to connect the internal organs and merge with their externally and internally related channels to spread through the neck and head. Six such pairs of external-internal mergers occur.

1. The BL and KID Divergent Meridians arise, respectively, from the BL and KID Channels at the popliteal fossa. These enter the lower abdomen to connect with the bladder and kidney. They emerge at the neck and merge with the BL Channel.
2. The GB and LIV Divergent Meridians branch from the GB and LIV Channels in the thigh. They run up to the pubic region, connect with the liver and gallbladder, disperse across the face, and connect with the eyes. In the end, they merge with the GB Channel.
3. The ST and SP Divergent Meridians divide off the ST and SP Channels on the thigh. They enter the abdomen to connect the stomach and spleen, run upward beside the nose, and finally merge with the ST Channel.
4. The SI and HT Divergent Meridians arise from the SI and HT Channels in the axillary fossa. From here they connect with the heart and small intestine, run upward to emerge at the inner canthus, and eventually merge with the SI Channel.
5. The TH and PC Divergent Meridians branch from the TH and PC Channels in the front limb from where they enter the chest, connect with the TH, emerge behind the ear, and converge with the TH Channel.
6. The LI and LU Divergent Meridians arise from the LI and LU Channels, connect with the lung and large intestine, run upward to emerge at ST-12, and converge with LI.

Unlike the 15 collaterals, which are distributed in the body surface, the 12 divergent meridians run deeper in the body. They connect the internally-externally related channels and strengthen their relation with internal *Zang-Fu* organs. The 12 divergent meridians connect the 6 *Yin* channels with the head and neck. Therefore, one may select points along these *Yin* channels to treat problems in the head and neck. For example, LU-9 and LU-7 can be used for headache. KID-3 and KID-6 can be used for toothache and throat problems.

G. The 12 Muscle Regions (*Shi-Er-Jing-Jin*)

The 12 muscle regions are the peripheral connection areas of the 12 regular channels. They unite all the bones and joints and thereby maintain normal motion of the whole body by ensuring the normal range of contraction and extension of all the muscles and joints.

These extend through the body surface and muscles, and they meet in joints and the skeleton. The muscle regions all begin on the extremities of limbs and ascend to the head or

trunk, but do not reach the internal organs. Their paths are as follows:

- The 3 pelvic *Yang* muscle regions originate from the hind feet, run upward through the trunk and connect with the face.
- The 3 pelvic *Yin* muscle regions originate from the rear feet and run upward to connect with the genital regions.
- The 3 thoracic *Yang* muscle regions originate from the front feet and run laterally upward to connect to the head.
- The 3 *Yin* muscle regions originate from the front feet and run upward to connect the chest.

Disorders of the 12 muscle regions would include muscular spasms, *Bi* syndrome, bowed tendons, contracted tendons and muscles, stiffness, and muscle atrophy. Chapter 13 of *Spiritual Axis* states, “Where there is pain, there is an acupoint.” Therefore, the major treatment principle for problems of the 12 muscle regions is to focus on local points and *A-shi* points.

H. The 12 Cutaneous Regions

The 12 cutaneous regions are the superficial layers of the 12 regular channels, and the area of each depends on the domain of its regular channel. These are the sites where *Qi* and blood are transferred between the 12 regular channels and collaterals. The 12 cutaneous regions can protect the body surface and prevent the invasion of pathogens.

1-2. ROOT, BASIS, MANIFESTATION, AND BRANCH OF MERIDIANS

The manifestation (*biao*), basis (*ben*), root (*gen*), and branch (*jie*) of the 12 regular channels are first documented in *Spiritual Axis*. They emphasize the status of *Qi*-blood circulation in different areas of the body. According to this theory, the root and basis are located in the limbs, and the manifestation and branch of the meridians lie in the head and trunk (tables 1.9 and 1.10).

A. The Basis (*Ben*) and Manifestation (*Biao*)

The *basis* is like the root system of a tree and refers to the lower portions of the limbs. The *manifestation* is like the tips of a tree and refers to the upper portions of the body including the head, thorax, and back. The *ben* and *biao* points are listed in table 1.9.

B. The Root (*Gen*) and Branch (*Jie*)

The root and branch refers to the origination and distribution of *Qi* and blood in the 12 regular channels. The *root* (*gen*) is the *Jing*-well point, where *Qi*-blood of each channel originates in the four limbs. The *branch* (*jie*) refers to places located in the head, chest, and abdomen where *Qi*-blood of each channel gathers and is distributed (see table 1.10).

Table 1.9. Basis (*ben*) and Manifestation (*biao*) of the 12 Regular Channels

12 regular channels		Basis (<i>ben</i>) point	Manifestation (<i>biao</i>) point
Three <i>Yang</i> channels in the pelvic limbs	BL	BL-59	BL-1
	GB	GB-44	GB-2
	ST	ST-45	ST-9
Three <i>Yin</i> channels in the pelvic limbs	KID	KID-7, KID-8	BL-23, CV-23
	LIV	LIV-4	BL-18
	SP	SP-6	BL-20, CV-23
Three <i>Yang</i> channels in the thoracic limbs	SI	SI-6	BL-2
	TH	TH-3	TH-23
	LI	LI-11	LI-20
Three <i>Yin</i> channels in the thoracic limbs	LU	LU-9	LU-1
	HT	HT-7	BL-15
	PC	PC-6	PC-1

Table 1.10. The Root and Branch of the Six Channels on the Rear Limb

Channels	Root (<i>Gen</i>) point	Branch (<i>Jie</i>)	
BL	BL-67	Eyes	Head
ST	ST-45	Ears	Head
GB	GB-44	Inner ears	Head
KID	KID-1	CV-23	Head
SP	SP-1	Stomach	Abdomen
LIV	LIV-1	CV-17	Chest

1-3. QI STREETS AND FOUR SEAS OF THE MERIDIANS

A. The Qi Streets (*Qi-Jie*)

Qi streets are the common pathways where the meridian *Qi* gathers and circulates. According to *Spiritual Axis*, there are four locations of *Qi* streets: (1) in the thorax, (2) in the abdomen, (3) in the head, and (4) in the limb. *Qi* in the head stops at the brain. *Qi* in the thorax stops in the chest and back-*shu* points. *Qi* in the abdomen stops in the back-*shu* points and the *chong-mai* around the umbilicus. *Qi* in the lower limb stops around BL-57. The *Qi* streets closely connect the meridians from top to bottom and anterior to posterior.

B. Four Seas (*Si-Ha*)

Four seas are the sites where the essential substances of the body gather and converge. These include the seas of marrow, blood, *Qi*, and food:

- Sea of marrow: Located in the head, this is the house and origin of *shen* (mind) and rules the whole body's activities.
- Sea of blood: Located in the *Chong mai* (Penetrating Channel), which originates from the uterus or prostate. The *Chong mai* is also the root of the 12 regular channels and is considered to be the sea of the 12 regular channels.
- Sea of *Qi*: Located in the chest where the *Zong Qi* is produced and gathered, it nourishes the heart and blood vessels and governs the respiratory functions.

- Sea of food: Located in the stomach and spleen where *Ying-qi* and *Wei-qi* are generated, it is the origin of *Qi* and blood for the whole body.

1-4. FUNCTIONS OF THE JING-LUO

The *Jing-Luo* system is closely connected with all the tissues and organs of the body. It plays an important role in animal physiology, in pathology, and in treatment with acupuncture or herbal medicine.

A. Physiological Aspects

There are three physiological aspects.

1. *Transporting Qi and blood and nourishing the body.* All the body's tissues require nourishment by *Qi* and blood in order to maintain their normal physiological activities. The meridians are passages that transport the *Qi* and blood. Therefore, failure of the meridians to transport *Qi* and blood prevents *Qi* and blood from reaching the *Zang-Fu* organs and results in organ malfunction.
2. *Coordinating Zang-Fu organs and connecting the whole body.* The meridians connect with all the tissues and organs of the body. The connection through the meridians keeps the interior and exterior, the front and hind, and the left and right parts of the body in close association. This communication allows the *Zang-Fu* organs to coordinate their activities and to maintain equilibrium between the organ systems.
3. *Preventing invasion of the body surface and resisting pathogens.* The meridians, with the help of the defensive *Qi*, shield the body surface and resist the attack of pathogens (*Xie qi*). The meridian system has many small branches that distribute *Qi* and blood to strengthen the muscles, tendons, and skin. This fortifies the body's natural barriers to infection or pathogen invasion. In addition, the defensive *Qi* flows outside of the meridian pathways to make sure this remains an impermeable defense.

B. Pathological Aspects

The meridians also play a role in disease conditions. They may transmit pathogenic factors or may reflect the disease states of internal systems.

1. *Transmitting the pathogenic factors.* If pathogenic factors invade the body, the meridian system initially participates in combating these pathogens on the surface before they reach deeper tissues. However, when the *zheng Qi* is weak and *Yin* and *Yang* become unbalanced, the pathogenic factors overcome the resistance of the meridians. The pathogens may then use the meridian pathways to migrate into the interior from the exterior. For instance, an unresolved exterior wind-cold pattern will allow the pathogenic wind-cold to follow the Lung Channel to the lung, resulting in cough and asthma.
2. *Reflecting symptoms of diseases.* In pathological conditions, the meridian system may reflect signs of internal problems onto the surface of the body. Because there are small branches of the meridians that connect the *Zang-Fu* organs with their external organs or body areas, disease in the *Zang-Fu* organs will result in changes of these external organs. A clinician may then examine these external structures for evidence of internal disease. For instance, extreme heat or fire of the heart may lead to ulceration on the tongue because the meridians connect the heart with the tongue. Similarly, extreme heat of the liver may cause congestion and swelling of the eyes. Deficient kidney *Yang* may result in lumbar weakness.

C. Therapeutic Aspects

Two main therapeutic aspects include:

1. *Transmitting the effect of herbal medications.* Chinese herbs may have specific actions on certain *Zang-Fu* organs

or channels. This quality is known as the channel tropism of the drugs. For example, coptis root (*Huang lian*) functions to eliminate heart fire, and scutellaria root (*Huang qin*) can eliminate lung fire.

2. *Transmitting the acupuncture stimulation.* The meridian system is important in the treatment of diseases. This system transmits the signal from acupoint stimulation by acupuncture or moxibustion. The stimulus from an acupoint travels along the meridian to the relevant *Zang-Fu* organs along that meridian. As a consequence, the *Zang-Fu* organs regain their balance, and the normal flow of *Qi* and blood is restored. When treating a stomach heat pattern, hemoacupuncture at the point *Yu-tang* sends the stimulation along the Stomach Channel to the stomach. The point *Dai-mai* may be stimulated for treatment of diarrhea because this point is located on the Spleen Channel.

The *de-Qi* (arrival of *Qi*) response is a phenomenon in acupuncture that is the feeling or effect experienced as a result of the meridian's transmission of the acupuncture stimulation. The *de-Qi* response manifests in different ways for each individual. It may feel like heaviness, tingling, soreness, or pressure. A human patient can tell the acupuncturist when he or she feels the sensation. In veterinary acupuncture, observation of muscle twitching, flinching, or attempts to bite may indicate *de-Qi* with stimulation of the needles.

The therapeutic results are closely related to *de-Qi* response. Without a *de-Qi* response, there will be less benefit from the acupuncture treatment. Inducing the *de-Qi* response regulates the *Qi* flow, which is vital to effective acupuncture treatments. No acupuncture treatment can be successful without this ability of the meridians to transmit the acupuncture stimuli.