

Editorial

Recently while editing a potential AJTCVM article, the Editor-in-Chief (Chrisman) realized the need for a deeper understanding of the components of the *Jing Luo* (Channels and Collaterals) and ways to access them during acupuncture, moxibustion and *Tui-na*. This article is in lieu of a regular Editorial and for those readers that may also need a review or a reference for a future paper.

The *Jing Luo* Network: An Overview of Channels and Collaterals and Their Clinical Applications

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ABSTRACT

The *Jing Luo* theory has evolved over centuries, since before 300 BC, but a commonly cited early reference is the *Huang Di Nei Jing* (Yellow Emperor's Classic of Internal Medical) compiled between 200-100 BC. The *Jing Luo* system circulates *Qi* and Blood that nourishes and hydrates every cell of the body and balances *Yin* and *Yang*. Through a myriad of branches and connections, the *Jing Luo* joins the Exterior and Interior, internal organs and all regions of the body. The *Jing Luo* system can be divided into the *Jing Mai* (Major Channels) and *Luo Mai* (Collaterals and Connecting Channels). The *Jing Mai* consists of: 1) the 12 Regular Channels, 2) the 12 Skin Regions, 3) the 12 Muscle Regions, 4) the 12 Divergent Channels, 5) the 8 Extraordinary Channels and 6) the 4 Seas. The *Luo Mai* consists of 15 Collaterals and many small Connecting Channels that complete the dense *Jing Luo* network. Imbalances of *Qi* and Blood may occur in 1 or more areas of the *Jing Luo* and result in disease that cannot be completely resolved with standard acupuncture, moxibustion and *Tui-na* treatments. Special acupoints on the 12 Regular Channels and the Governing and Conception Vessel Channels can be useful to access and balance different parts of the *Jing Luo* network. With a deeper understanding of the *Jing Luo* system and knowledge of which acupoints access and balance specific *Jing Luo* components, the traditional Chinese veterinary medical practitioner may achieve better treatment results, especially in chronic unresponsive diseases.

Keywords: *Jing Luo*, Channels, Collaterals, *Jing Mai*, Main Channels, *Luo Mai*, Connecting Channels, *Pi Bu*, Skin Regions, *Jing Jin*, Muscle Regions, *Pi Jing Ba Mai*, 8 Extraordinary Channels, *Si Hai*, 4 Seas, acupuncture, traditional Chinese veterinary medicine

The Regular Channels (Meridians, Main Channels) and the 8 Extraordinary Channels (8 Extraordinary Vessels) are the primary focus of most English veterinary textbooks on traditional Chinese veterinary medicine (TCVM).¹⁻⁵ Though less common, descriptions and clinical use of the other components of the *Jing Luo* system can also be found in the veterinary and human literature.³⁻⁶ When reading about the *Jing Luo* in English textbooks, a source of confusion is the use of different terms for the same structures and pathways.³⁻⁶ Although the Chinese names have remained consistent throughout the centuries, the English translations have varied among different authors (e.g. the word "Meridians" by some authors and "Channels" by others). In this paper, since the *Jing Luo* are 3 dimensional structures, "Channels" will be used instead of "Meridians", which may conjure

up images of simple 2-dimensional lines, similar to those that surround the earth. The term "Vessel" meaning "something that holds a substance" has been used to describe parts of the *Jing Luo* system (e.g. the 8 Extraordinary Vessels, network vessels), but again in this paper the term "Channel" will be used instead, so as not to interpret these structures as simply conventional blood vessels.

Vascular, neural, lymphatic, connective tissue and fascial structures are associated with the *Jing Luo* system and theories abound, claiming each is the primary basis of the *Jing Luo*.⁷ Other researchers propose that the *Jing Luo* is a system of gap-junctions, where mechanical signals are transformed into biochemical and bioelectric signals. The actual basis of the *Jing Luo* system is still unknown and may possibly be a primordial energy matrix, yet to be appreciated by conventional scientists. As technology improves, the basis of the *Jing Luo* and its relationship to the nerves, blood vessels, interstitial fluids, electrical and biochemical energy and fascia will be better understood.^{7,8}

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The earliest known texts describing the *Jing Luo* are: 1) *Zu Bi Shi Yi Mai Jiu Jing* (Hand-Foot Eleven Meridians and Moxibustion) and 2) *Yin Yang Shi Yi Mai Jiu Jing* (Yin Yang Eleven Meridians and Moxibustion) that were written prior to 300 BC (BCE).^{4,6} These texts, unearthed in 1973 from a tomb in the Hunan Province, described only 11 Regular Channels, as no mention was made of the Pericardium Channel. As the *Jing Luo* theory evolved, 12 Regular Channels, their projections to the skin and muscle regions and their connections to each other and the 8 Extraordinary Channels were described in both the *Ling Shu* (Miraculous Pivot, Spiritual Axis) and *Su Wen* (Simple Questions) sections of the *Huang Di Nei Jing* (Yellow Emperor's Classic of Internal Medical), compiled between 200-100 BC. In Chapter 33 of the *Ling Shu*, it states: "The 12 Channels link with the internal organs internally and connect with joints and limbs externally".⁶ A deeper understanding and development of the *Jing Luo* theory has continued since that time, as science discovers ways to examine the anatomy and physiology of this unique system in the body.^{7,8} Much of the information about the *Jing Luo* system of animals is also evolving, initially transposed from human texts and modified based on the personal experiences of TCVM practitioners.³⁻⁵

The *Jing Luo* theory purports that a system of Channels and Collaterals form an intricate network of branches and connections that circulate *Qi* and Blood, nourishing and hydrating every cell of the body and balancing *Yin* and *Yang*.¹⁻⁶ The intricate conventional anatomic network of the neural and vascular systems are useful metaphors to envision the same intricacy of the *Jing Luo* system. The *Jing Luo* network connects, links, balances and equalizes all parts of the body and mind connecting: 1) Exterior to Interior, 2) internal organs to one another, 3) internal organs to the Exterior, 4) different body regions, 5) cranial to caudal parts of the animal body and 6) left to right sides of the body. The *Jing Luo* system can be divided into the *Jing Mai* (Major Channels) and *Luo Mai* (Secondary or Connecting Channels). The main pathways of the *Jing Mai* primarily run longitudinally and Internally and the *Luo Mai* primarily run transversely, Externally and Internally.⁴⁻⁶

JING MAI (MAJOR CHANNELS AND THEIR ASSOCIATED SEGMENTS)

The *Jing Mai* consists of: 1) the 12 Regular Channels (Main Channels) including their 3 associated segments (e.g. the 12 Cutaneous Regions, 12 Muscle Regions and 12 Divergent Channels), 2) the 8 Extraordinary Channels and 3) the 4 Seas (Figure 1).³⁻⁶ All the other connecting pathways carrying *Qi* and Blood are oriented around these major Channels.

The 12 and 14 Regular Channels

The 12 Regular Channels are the bilateral major

Channels, to which all other parts of the *Jing Luo* system specifically relate (Figure 1). They have a superficial portion that contains the acupoints used for TCVM treatments and a deeper portion in the chest and abdomen that connects to their associated internal organs. The functions of the 12 Regular Channels are to:

1. Circulate, regulate and balance *Qi* and Blood in all Exterior and Interior regions of the body
2. Balance the *Yin-Yang* functions and organs (*Zang Fu*) of the body
3. Provide access to acupoints useful for the diagnosis and treatment of disease (imbalances of *Yin*, *Yang*, *Qi* and Blood)

There are 6 bilateral Regular Channels that circulate *Yin Qi* and connect to *Zang* organs and they are: the Lung (LU), Spleen (SP), Heart (HT), Kidney (KID), Pericardium (PC) and Liver (LIV) Channels (Table 1).¹⁻⁶ There are also 6 bilateral Regular Channels that circulate *Yang Qi* and connect to *Fu* organs and they are: the Large Intestine (LI), Stomach (ST), Small Intestine (SI), Bladder (BL), Triple Heater (TH) and Gallbladder (GB) Channels. The *Yin* and *Yang* Regular Channels combine to form 6 *Yin-Yang* or *Yang-Yin*, *Zang Fu* pairs as follows: 1) LU and LI Channels, 2) ST and SP Channels, 3) HT and SI Channels 4) BL and KID Channels, 5) PC and TH Channels and 6) GB and LIV Channels. *Qi* and Blood continually circulate between the Channels in the order listed in 1-6 above, but become strongest in each successive Channel every 2 hours, beginning at 3-5 AM for the LU Channels and ending at 1-3 AM for the LIV Channels.³⁻⁶

The 6 bilateral Regular *Yin* Channels are classified based on the potency of their *Qi* as *Tai-Yin*, *Shao-Yin* and *Jue-Yin* (most to least) as follows: 1) LU and SP Channels are *Tai-Yin*, 2) HT and KID Channels are *Shao-Yin* and 3) PC and LIV Channels are *Jue-Yin* (Table 1). The 6 Regular *Yang* Channels are also classified based on the potency of their *Qi* as *Yang-Ming*, *Tai-Yang* and *Shao-Yang* (most to least) as follows: 1) LI and ST Channels are *Yang-Ming*, 2) SI and BL Channels are *Tai-Yang* and 3) TH and GB Channels are *Shao-Yang* (Table 1). The 12 Regular Channels in animals are familiar to TCVM practitioners and their pathways and the actions and indications of their acupoints are well described in detail elsewhere.¹⁻⁵ Two of the 8 Extraordinary Channels, the *Du* Channel (Governing Vessel [GV]) and the *Ren* Channel (Conception Vessel [CV]), have specific acupoints like the 12 Regular Channels and are often included with them to form 14 Regular Channels.¹⁻⁵ The *Du* (GV) Channel is a *Yang* Channel and the *Ren* (CV) Channel is a *Yin* Channel and *Qi* and Blood are continually circulated between them and their connections to the 12 Regular Channels.

Each of the 12 Regular Channels has a Root (*Gen*), Branch (*Jie*), Basis (*Ben*) and Manifestation (*Biao*) where the *Qi* and Blood circulate to different parts of the

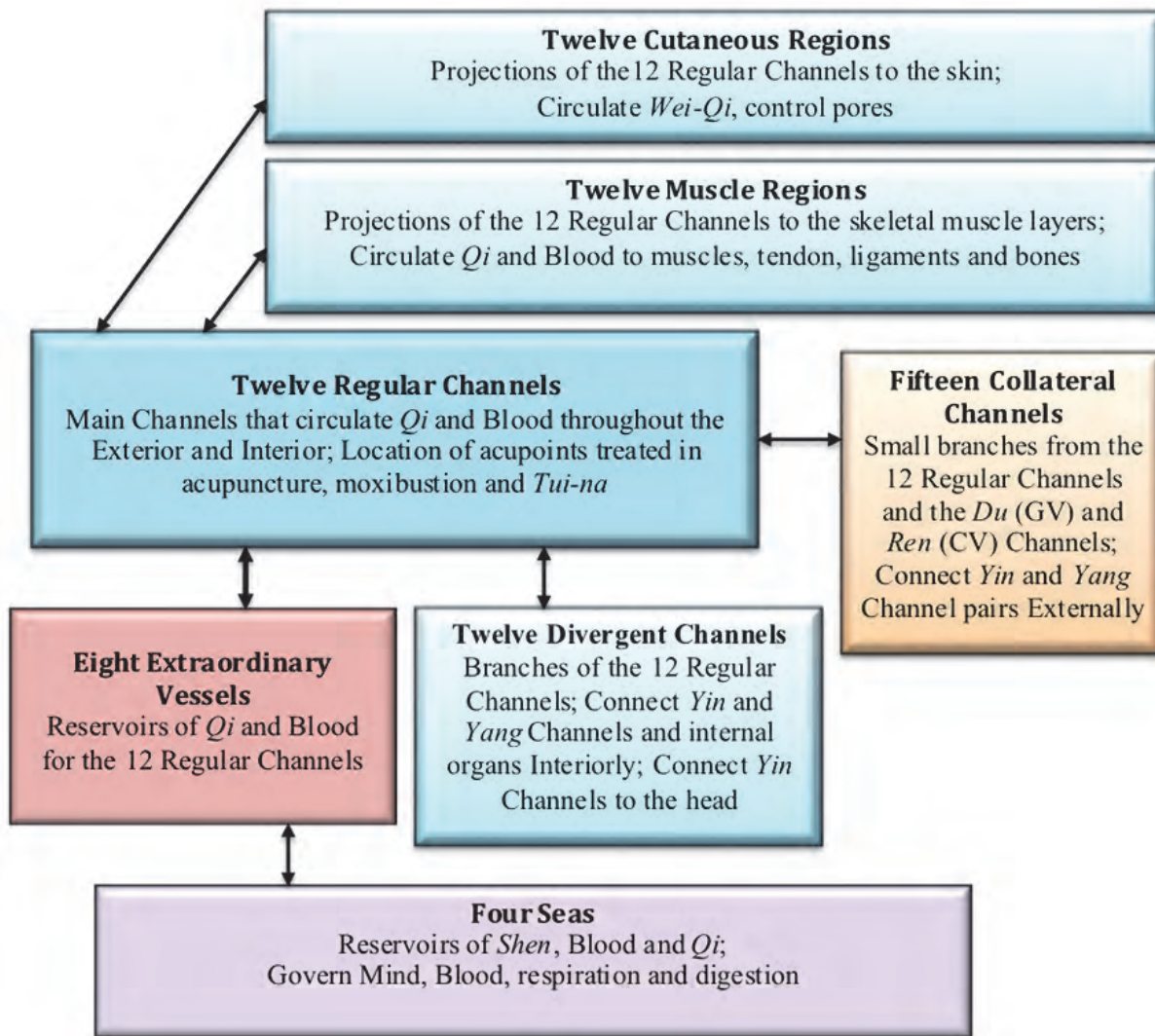


Figure 1: The basic components and relationships of the *Jing Luo* system; not shown are the myriad of small Connecting Channels, that with the basic components form an intricate network carrying *Qi* and Blood to all parts of the body

body.^{4,9,10} The Root is the origination of *Qi* and Blood and the Branch is their distribution area. The Root is the *Jing*-well point, which is the first or last acupoint of each Channel on the digits (e.g. the Root of the Bladder Channels is BL-67, the Root of the Kidney Channels is KID-1, the Root of the Stomach Channels is ST-45 and the Root of the Spleen Channels is SP-1) (Table 1). Clinically the *Jing*-well acupoints are very powerful, because they are the Root or origin of the *Qi* and Blood for each Channel. The Branch is an area on the head, chest and abdomen to which the *Qi* and Blood of the Channel is distributed and accumulates (Table 1).

The Basis (*Ben*) and Manifestation (*Biao*) of the 12 Regular Channels are often explained using a tree metaphor.^{4,9,10} Like a tree, each Channel has a Basis (root system, trunk and lower branches) that is near the

earth and located in the limbs of the body (Table 1). Each Channel also a Manifestation (*Biao*) (upper branches and small twigs that reach toward heaven) that is located along its course through the internal organs, abdomen, chest and head regions. The Basis (*Ben*) is located around 1 or 2 acupoints below the elbow and stifle and may or not be the same as the Root acupoint (e.g. the Basis of the Stomach Channels is around ST-45 [same as the Root], but the Basis of the Spleen Channel is around SP-6 [proximal to the Root]) (Table 1). The final acupoints of the Manifestation (*Biao*) are located on the chest or head and may or may not be on the Channel of origin (e.g. the Manifestation of the LU Channels is located around LU-1, but the Manifestation of the SP Channels is located around CV-23 and BL-20, demonstrating that there are many connecting branches

Table 1: The location, *Yin* or *Yang* Classification, *Qi* Potency and locations of the Root, Branch, Basis, Manifestation and *Qi* Streets of the 12 Regular Channels

Limb <i>Yin</i> or <i>Yang</i> Channels	<i>Qi</i> Potency	Regular Channels	Root (<i>Gen</i>)	Branch (<i>Jie</i>)	Basis (<i>Ben</i>)	Manifestation (<i>Biao</i>)	<i>Qi</i> Streets* (<i>Qi Jie</i>)
Thoracic Limb <i>Yin</i> Channels	<i>Tai-Yin</i>	Lung (LU)	LU-11	Stomach	LU-9	LU-1	Chest <i>Qi</i> Street
	<i>Shao-Yin</i>	Heart (HT)	HT-9	CV-23, tongue	HT-7	BL-15	
	<i>Jue-Yin</i>	Pericardium (PC)	PC-9	CV-17, chest	PC-6	PC-1	
Thoracic Limb <i>Yang</i> Channels	<i>Yang-Ming</i>	Large Intestine (LI)	LI-1	Nose and throat	LI-11	LI-20	Head <i>Qi</i> Street
	<i>Tai-Yang</i>	Small Intestine (SI)	SI-1	Eyes	SI-6	BL-2	
	<i>Shao-Yang</i>	Triple Heater (TH)	TH-1	Ears	TH-3	TH-23	
Pelvic Limb <i>Yin</i> Channels	<i>Tai-Yin</i>	Spleen (SP)	SP-1	Stomach	SP-6	BL-20, CV-23	Abdomen <i>Qi</i> Street
	<i>Shao-Yin</i>	Kidney (KID)	KID-1	CV-23, tongue	KID-7, KID-8	BL-23, CV-23	
	<i>Jue-Yin</i>	Liver (LIV)	LIV-1	CV-17, chest	LIV-4	BL-18	
Pelvic Limb <i>Yang</i> Channels	<i>Yang-Ming</i>	Stomach (ST)	ST-45	Nose and throat	ST-45	ST-9	Head <i>Qi</i> Street
	<i>Tai-Yang</i>	Bladder (BL)	BL-67	Eyes	BL-59	BL-1	
	<i>Shao-Yang</i>	Gallbladder (GB)	GB-44	Ears	GB-44	GB-2	

* The Limb *Qi* Street overlaps with the Basis (*Ben*) of all Channels

between Channels that will be discussed in more detail later in this paper) (Table 1).

The Root (*Gen*), Branch (*Jie*), Basis (*Ben*) and Manifestation (*Biao*) of the Channels are used to describe the pervasiveness of the *Jing Luo* system that ensures that *Qi* and Blood reach all regions of the body. The Root and Basis are similar, but have differences, as do the Branch and Manifestation (Table 1). The connections between the limbs and other parts of the body ensure that treatment of a limb acupoint is useful for a disorder of the internal organs or other regions of the body. Likewise, treatment of an acupoint on the head and/or chest is useful for a disorder affecting the limbs. The Root (*Gen*) and Basis (*Ben*) acupoints (both in the lower limb regions) have special attributes that make them useful to treat mental and internal organ disorders. A few of the indications for Root and Basis acupoints include: 1) HT-9 (Root) and HT-7 (Basis) for mental disorders, 2) SP-1 (Root) and SP-6 (Basis) for sleep disorders, 3) PC-9 (Root) and PC-6 (Basis) for

Shen disturbances and 4) LU-11 (Root) and LU-9 (Basis) for Lung disorders. Acupoints at Branch (*Jie*) and Manifestation (*Biao*) locations on the head, chest and abdomen can be used to treat local areas as well limb disorders (e.g. GB-2 for auditory dysfunction and BL-23 for pelvic limb weakness).

Qi Jie (*Qi* Streets) are locations where *Yin* or *Yang* Regular Channels form a common pathway that circulates *Qi* in 1 of 4 areas: 1) the head, 2) chest, 3) abdomen or 4) limbs (Table 1).⁴ The Head *Qi* Street is where the *Qi* of all *Yang* Channels accumulates and circulates in the head. The Chest *Qi* Street is where the *Qi* of the thoracic limb *Yin* Channels accumulates and circulates in the chest. The Abdomen *Qi* Street is where the *Qi* of the pelvic limb *Yin* Channels accumulates and circulates in the abdomen. The Limb *Qi* Street is where the *Qi* of the Channels of the limbs accumulates and circulates, overlapping with the *Ben* (Basis).

Each of the 12 Regular Channels have 3 additional bilateral segments: 1) a Cutaneous Region 2) a Muscle

Region and 3) a Divergent Channel that will be individually discussed below (Figure 1).³⁻⁶ The Cutaneous and Muscle Regions are broad external layers of the Regular Channels that are located superficially to their respective Channel. The Divergent Channels are large branch Channels of the Regular Channels that pass from External to Internal and back to External sites. Each Regular Channel also has a myriad of small Connecting Channels (*Luo Mai*) and at least 1 Collateral Channel that form the dense network enabling *Qi* and Blood to circulate to every cell of the body.³⁻⁶

Cutaneous Regions (*Pi Bu*) of the 12 Regular Channels

The *Pi Bu* (Cutaneous Regions) were described in Chapter 13 of *Su Wen* (Simple Questions) as the outward projection of each Channel onto the skin surface, forming longitudinal areas that follow the course of the Regular Channels (Figure 1).⁶ Since the Cutaneous Regions cover broader areas than the Regular Channels, the word “region” more accurately describes them, than the word “Channel”. Since the Regular Channels are bilateral so are their Skin Regions. The 12 Cutaneous Regions are named for their associated Regular Channels (e.g. Lung Cutaneous Regions, Large Intestine Cutaneous Regions, Stomach Cutaneous Regions, Spleen Cutaneous Regions etc.). The Cutaneous Regions of the 12 Regular Channels along with the dorsal and ventral midline Cutaneous Regions of the *Du* (GV) and *Ren* (CV) Channels, cover the entire surface of the limbs, body and head. The functions of the Cutaneous Regions are to:⁴⁻⁶

1. Protect the body’s surface against invasion by Pathogens (Wind, Heat, Summer Heat, Cold, Dry, Damp)
2. Be a reflection of the state of balance of *Qi*, Blood, *Yin* and *Yang* in deeper parts of the body
3. Control the pores, sweating and thermoregulation

The 12 Cutaneous Regions are connected to the 12 Regular Channels on each side of the body via a dense network of small Connecting Channels (*Luo Mai*). *Wei Qi* (Defensive *Qi*) constantly circulates through the small Connecting Channels and provides protection from Pathogen invasion into the 12 Regular Channels. Examination of the Cutaneous Regions is an important part of the diagnostic evaluation in traditional Chinese medicine (TCM) and TCVM.^{1,3,6} Excess and Deficiency Patterns are usually associated with changes in the color, texture, moisture content, temperature and hair quality and quantity of the Cutaneous Regions. Skin lesions (e.g. urticaria, ulcerations and masses) also provide evidence of Pathogen invasion and External and Internal imbalances of *Qi* and Blood. Moist dermatitis (Skin Damp Heat) of the left inner pelvic limb is associated with disease of the left Liver Cutaneous Region (Cutaneous Region of the left Regular Liver Channel)

due to invasion of the pathogenic factors Wind-Damp-Heat. Loss of sweating (e.g. anhidrosis in horses) is a disorder reflected in the Cutaneous Regions of the Regular Channels. The Cutaneous Regions are important, as they are the areas through which acupuncture, moxibustion and *Tui-na* treatments are administered and they can be accessed through acupoints on the Regular Channels.^{4,6}

Muscle Regions (*Jing Jin*) of the 12 Regular Channels

The 12 Muscle Regions were described in Chapter 11 of *Ling Shu* (Spiritual Axis, Miraculous Pivot) and *Jing Jin* can be translated as “muscles of the Channels”.⁶ Although sometimes referred to as Muscle “Channels” or Tendinomuscular “Channels”, they too may be better described as “Regions”, since they are broad areas relating to the skeletal muscles, ligaments and tendons associated with each Regular Channel (Figure 1). The Muscle Regions primarily lie between the Skin Regions and the 12 Regular Channels on each side of the body.³⁻⁶

The Muscle Regions are named after the Regular Channels from which they arise (Table 2). Since the Muscle Regions are often broad and follow the contour of major muscles, there is some overlap between the locations of Muscle Regions of adjacent Regular Channels and all Muscle Regions are connected to 1 or more other Muscle Regions (Table 2).⁶ This is of clinical significance as disease may affect multiple Muscle Regions (e.g. sciatic nerve pain is manifested as *Qi* and Blood Stagnation in the Bladder, Gallbladder and Stomach Muscle Regions).⁶ The functions of the Muscle Regions are to:

1. Protect the deeper parts of the body from trauma
2. Promote circulation of *Qi* and Blood to skeletal muscles, tendons, ligaments and bone
3. Unite the musculoskeletal system to produce normal movements
4. Strengthen and promote *Qi* flow between the 3 levels of *Yang Qi* (*Yang-Ming*, *Tai-Yang* and *Shao-Yang*) of the 6 Regular *Yang* Channels
5. Strengthen and promote *Qi* flow between the 3 levels of *Yin Qi* (*Tai-Yin*, *Shao-Yin* and *Jue-Yin*) of the 6 Regular *Yin* Channels
6. Regulate the Exterior-Interior flow of *Yang Qi* in the 6 Regular *Yang* Channels

The Muscle Regions protect the bones and internal organs from external injury and prevent disease from penetrating deeper into the body. Although they are called Muscle Regions, they are more than simply the anatomic structure of muscles, tendons and bones, as via their connections to each other, they promote normal *Qi* and Blood flow throughout the entire musculoskeletal system and Regular Channels to ensure normal body movements.⁴⁻⁶ The Muscle Regions begin on the digits of all 4 feet and maintain an External position in muscle, tendon and fascial layers, broadly following the

Table 2: The Muscle Regions, other Muscle Region connections and meeting points of the thoracic and pelvic limb *Yin* and *Yang* Muscle Regions⁶

Muscle Region Type	Muscle Regions	Other Muscle Regions Connected	Meeting Points
Thoracic limb <i>Yin</i> Regions	Lung	Heart, Pericardium	CV-3
	Heart	Lungs	
	Pericardium	Pericardium	
Pelvic limb <i>Yin</i> Regions	Spleen	Kidney, Liver	GB-22
	Kidney	Spleen, Bladder	
	Liver	Spleen	
Thoracic limb <i>Yang</i> Regions	Large Intestine	Bladder, Small Intestine, Kidney	GB-13
	Small Intestine	Bladder, Large Intestine, Triple Heater, Stomach	
	Triple Heater	Small Intestine	
Pelvic limb <i>Yang</i> Regions	Stomach	Large Intestine, Gallbladder	SI-18 or ST-7
	Bladder	Small Intestine, Large Intestine, Gallbladder, Stomach, Kidney	
	Gallbladder	Bladder	

trajectory of the Regular Channel, from which they originate.³⁻⁵

The Muscle Regions are divided into 4 groups: 1) *Yin* Channels of the thoracic limbs 2) *Yin* Channels of the pelvic limbs, 3) *Yang* Channels of the thoracic limbs and 4) *Yang* Channels of the pelvic limbs (Table 2).^{4,6} The *Yin* Muscle Regions consist of smaller areas than the *Yang* Muscle Regions. The 3 *Yin* Muscle Regions of each thoracic limb arise from the Regular LU, HT and PC Channels at the toes, pass along the medial surface of the limb and end at the chest.⁴ The 3 *Yin* Muscle Regions of each pelvic limb arise from the Regular SP, KID and LIV Channels at the digits, pass along the medial surface of the limb and end at the genital region.⁴ The 3 *Yang* Muscle Regions of each thoracic limb arise from the Regular LI, SI and TH Channels at the toes and pass along the lateral aspect of the limb, neck and head.⁴ The 3 *Yang* Muscle Regions of each pelvic limb arise from the Regular ST, BL and GB Channels at the toes, pass along the lateral aspect of the limb and ventral, dorsal and lateral aspects of the body, neck and head.⁴ The 3 *Yin* and 3 *Yang* Channels of each limb have a common meeting point where they connect to each other (Table 1). The trajectories of specific Muscle Regions have been outlined in humans, but no such description for animals is available in the English veterinary literature.⁶

Although the 12 Muscle Regions do not directly connect to internal organs, the internal organs influence them via the 12 Regular Channels (e.g. neck and shoulder muscle tension occurs with Liver *Yang* rising).⁶ The invasion of External Pathogens, especially invasion of Wind, Cold and Damp into the Muscle Regions cause focal and generalized muscle aching, often seen early in the course of Pathogen-related diseases. Repetitive use, overuse and injury of muscles, tendons and ligaments, as seen with performance horses and dogs, cause Muscle Region pathology.^{4,5} Typical Muscle Region disorders in veterinary medicine include *Bi* syndrome, tendon and ligament injury and degeneration and muscle pain, spasms and atrophy.⁴ Distal and local acupoints on the 12 Regular Channels and *Ah-shi* (Trigger, Trigger-like) points located in the Muscle Regions are commonly used to relieve disorders of the Muscle Regions.^{4,6} In chronic musculoskeletal conditions, treatment of the meeting points (acupoints) of affected Muscle Regions will strengthen the effects of distal and local acupoints and facilitate the balance of *Qi* and Blood (Table 2).⁶

Divergent Channels (*Jing Bie*) of the 12 Regular Channels

The *Jing Bie* (Divergent Channels) were described in Chapter 11 of *Ling Shu* (Spiritual Axis, Miraculous Pivot) as large branch Channels (divergences) that

connect *Yin* and *Yang* Regular Channels forming 6 pairs: 1) BL and KID Divergent Channels, 2) GB and LIV Divergent Channels, 3) ST and SP Divergent Channels, 4) SI and HT Divergent Channels, 5) TH and PC Divergent Channels and 6) LI and LU Divergent Channels (Figure 1, Table 3).^{4,6} The functions of the Divergent Channels are to:³⁻⁶

1. Connect and coordinate *Yin* and *Yang* Regular Channel pairs in the Interior and the head
2. Project *Yin* Channels to the head, through connections with *Yang* Channels
3. Connect *Yin* and *Yang* (*Zang Fu*) organ pairs
4. Connect Regular Channels to internal organs that they do not directly connect

The 12 Divergent Channels connect the 6 Regular *Yin* Channels with the head, as all Divergent Channels end on a *Yang* Regular Channel (Table 3).^{4,6} The Divergent Channels connect the *Yin* and *Yang* Regular Channels at a deep level (Interior), while the 15

Collaterals, smaller branches discussed below in the *Luo Mai* section, connect the *Yin* and *Yang* Regular Channels at a superficial level (Exterior).^{4,6}

The Divergent Channels ensure that treatment of acupoints on the Regular Channels in the limb region will balance the flow of *Qi* and Blood Internally and at distant External areas. Ten of the 12 Divergent Channels have a lower meeting area where a *Yang* or *Yin* Divergent Channel connects to its associated *Yin* or *Yang* Divergent Channel, before ascending to the head and neck (Table 3). The Triple Heater and Pericardium Divergent Channels have no lower meeting areas. All Channels have an upper meeting point, which is an acupoint on the head or neck where the *Yang* or *Yin* Divergent Channel connects to its associated *Yin* or *Yang* Divergent Channel (Table 3).

The general pathway of a *Yang* Divergent Channel is to: 1) exit a Regular *Yang* Channel on a region of the limb, 2) ascend the limb, 3) connect to its associated *Yin* Divergent Channel at a lower meeting site, 4) move interiorly and send branches to the associated *Fu* (*Yang*)

Table 3: The Regular Channel exit sites, organs entered, lower and upper meeting points and Regular Channel entry sites of the 12 Divergent Channels^{4,6}

<i>Yang/Yin</i> Pair	Divergent Channels	Regular Channel Exit Sites	Organs Entered	Lower Meeting Points*	Upper Meeting Points*	Regular Channel Entry sites
1	Bladder (BL)	BL Channel at the popliteal fossa	Bladder, Kidney, Heart	BL-40	BL-10	BL Channel in neck
	Kidney (KID)	KID Channel at the popliteal fossa	Kidney (Crosses the <i>Dai</i> Channels)			
2	Gallbladder (GB)	GB Channel at the thigh	Bladder, Liver, Heart	CV-2	GB-1	GB Channel in neck
	Liver (LIV)	LIV Channel at the foot	None			
3	Stomach (ST)	ST Channel at the thigh	Stomach, Spleen, Heart	Thigh (near ST-31, SP-12)	ST-1	ST Channel in neck
	Spleen (SP)	SP Channel at the thigh	None			
4	Small Intestine (SI)	SI Channel in the axillary region	Heart, Small Intestine	Axilla (near HT-1)	BL-1	None (SI) BL-1 (HT)
	Heart (HT)	HT Channel in the axillary region	Heart			
5	Triple Heater (TH)	TH Channel on the head	Triple Burners (<i>San Jiaos</i>)	None	TH -16	None (TH) TH at the ear (PC)
	Pericardium (PC)	PC Channel just below the axilla	Triple Burners			
6	Large Intestine (LI)	LI Channel on the foot	Lung, Large Intestine	None	LI-18	LI Channel in throat and neck
	Lung (LU)	LU Channel at the axilla	Lung, Large Intestine			

*Where *Yang* or *Yin* Divergent Channels connect to each other; treatments of the lower and upper meeting points can have widespread Divergent Channel effects⁶

organ and in many instances the *Zang* (*Yin*) organ as well, 5) ascend and resurface at the throat or head, 6) connect again with the associated *Yin* Divergent Channel at an upper meeting acupoint and 7) join the associated Regular *Yang* Channel in the neck or head (Table 3).^{4,6}

The general pathway of a *Yin* Divergent Channel is to: 1) exit a Regular *Yin* Channel on the limb, 2) connect to its associated *Yang* Divergent Channel at a lower meeting site, 3) move interiorly to connect with its associated *Yin* organ (LU, HT and KID Divergent Channels only) and 4) join its associated *Yang* Divergent Channel at an upper meeting point that then joins the Regular *Yang* Channel in the neck. The basic exit, connection and re-entry sites of the 12 Divergent Channels are outlined in Table 3 by *Yang/Yin* pairs.^{4,6}

The Divergent Channels, through their *Yin* and *Yang* Channel connections, help to balance *Yin* and *Yang* throughout the body, ensure the normal flow of *Qi* and Blood between the body and head and strengthen the connections between the Regular *Yin* and *Yang* Channel pairs.^{4,6} The Regular *Yang* Channels already begin or end on a head region, but the Divergent Channels are a way that the Regular *Yin* Channels can also connect with the head.

When clinical signs occur indicating disease in both the *Yin* and *Yang* organ pair, then treatment of the Divergent Channels may be indicated.⁶ Treatment of the meeting point(s) can simultaneously balance *Qi* throughout the pathways of a *Yin-Yang* Divergent Channel pair (Table 3).⁶ Because of the *Yin* and *Yang* Divergent Channel connections, treatment of limb *Yin* Channel acupoints can be useful to treat disorders of the head. The Liver influences the eyes through its Divergent Channel connections at GB-1 (upper meeting point) and therefore LIV-2 is useful to treat ocular diseases. Acupoints KID-3 and KID-6 are useful to treat dental and pharyngeal/laryngeal disorders, because the Regular Kidney Channel is connected to the head via the Kidney and Bladder Divergent Channels.⁴

The 8 Extraordinary Channels (*Qi Jing Ba Mai*)

The *Qi Jing Ba Mai* (8 Extraordinary Channels) were described in Chapters 17, 21, 41, 44 and 62 of *Ling Shu* (Spiritual Axis, Miraculous Pivot) and Chapter 44 of *Su Wen* (Simple Questions).⁶ A source of confusion can be the various names for the 8 Extraordinary Channels, based on different Chinese translations (Table 4).^{2,6} In this paper, as previously mentioned, the term “Channels” instead of “Vessels” will be used and the names used for each of the 8 Extraordinary Channels will be simply be: 1) *Du* Channel (GV Channel), 2) *Ren* Channel (CV Channel), 3) *Chong* Channels, 4) *Dai* Channels, 5) *Yang Qiao* Channels, 6) *Yin Qiao* Channels, 7) *Yang Wei* Channels and 8) *Yin Wei* Channels. Unlike the 12 Regular Channels, the 8 Extraordinary Channels are not associated with a particular *Zang-Fu* organ, but they do influence the

internal organs, even though there are no direct Exterior-Interior connections. The 8 Extraordinary Channels have been called “extraordinary”, because they are not merely extensions of the 12 Regular Channels nor are they controlled by the Regular Channels (Figure 1). The *Du* (GV) and *Ren* (CV) Channels are single Channels, but the other 6 Extraordinary Channels are bilateral like the 12 Regular Channels.

The functions of the 8 Extraordinary Channels are to:³⁻⁶

1. Serve as reservoirs of *Qi* and Blood for the 12 Regular Channels
2. Facilitate communications between the 12 Regular Channels (connect *Yin* and *Yang* Channels)
3. Coordinate communication between the Regular Channels and the 6 Extraordinary *Yang* organs
4. Circulate Essence (prenatal *Jing*)
5. Circulate *Wei Qi* (Defensive *Qi*)
6. Integrate the 4 Seas

The term “vessel” (receptacle or container) has been applied to the 8 Extraordinary Channels, because they are storage areas for *Qi* and Blood. When there is Excess *Qi* and Blood in the 12 Regular Channels, they overflow into the 8 Extraordinary Channels to return balance to the 12 Regular Channels.³⁻⁶ Li Shi Zhen in his book *Qi Jing Ba Mai Kao* (Study of the 8 Extraordinary Channels) written in 1577-1578 stated: “When the *Qi* of the channels overflows, it flows into the Extraordinary Channels where it is turned into irrigation, warming the organs internally and irrigating the space between skin and muscles externally”.⁶ The 8 Extraordinary Channels are also a source of *Qi* and Blood for the 12 Regular Channels, when they are Deficient. Each Extraordinary Channel connects with 1 or more Regular Channels and other Extraordinary Channels along its course (Table 4). Through their connections with the Regular Channels and each other, the 8 Extraordinary Channels facilitate communications between the Regular *Yin* and *Yang* Channels.

The *Du* (GV), *Ren* (CV) and *Chong* Channels originate between the kidneys and store and circulate Essence (prenatal *Jing*). The 8 Extraordinary Channels coordinate communications between the Regular Channels and the 6 Extraordinary *Yang* organs: 1) Brain, 2) Uterus, 3) Blood vessels, 4) Gallbladder, 5) Marrow and 6) Bones). The *Du* (GV) and *Yin Qiao* Channels connect the Brain and Spinal Cord to the Regular Channels. The *Ren* (CV) and *Chong* Channels connect the Uterus and the *Chong* Channels also connect the Blood vessels to the Regular Channels. The *Dai* Channel connects the Gallbladder to the Regular Channels. The *Du* (GV) and *Chong* Channels connect the Marrow to the Regular Channels.

The *Du* (GV) and *Ren* (CV) Channels have specific acupoints along their course, but the other 6 Extraordinary Channels share acupoints with 2 or more

Table 4: Names, functions and basic pathways of the 8 Extraordinary Channels and their other Extraordinary and Regular Channel connections³⁻⁶

Pin Yin and Combination Names	Alternative English Names¹⁻⁵	Functions	Basic Pathway	12 Regular Channel Connections	Extraordinary Channel Connections
<i>Du Mai</i>	<i>Du</i> Channel GV Channel Governing Vessel	Controls all <i>Yang</i> Channels; Sea of <i>Yang</i> ; Connects spinal cord and brain	Single Channel from perineum to head along dorsal midline	All <i>Yang</i> Channels	<i>Ren</i> (CV), <i>Yang Qiao</i>
<i>Ren Mai</i>	<i>Ren</i> Channel CV Channel Conception Vessel Directing Vessel Controlling Vessel	Controls all <i>Yin</i> Channels; “Sea of <i>Yin</i> ”; Connects to the uterus	Single Channel from perineum to head along ventral midline	All <i>Yin</i> Channels, Stomach	<i>Du</i> (GV), <i>Yin Qiao</i>
<i>Chong Mai</i> <i>Chong</i> Channels	Penetrating Channel Penetrating Vessel Thoroughfare Vessel	Sea of Blood; Reservoir of <i>Qi</i> and Blood for the Regular Channels	Bilateral Channels from perineum to head, parallel to KID Channels on abdomen and chest	All 12 Regular Channels	<i>Du</i> (GV), <i>Ren</i> (CV), <i>Yin Wei</i>
<i>Dai Mai</i> <i>Dai</i> Channels	Girdle Channel Girdle Vessel Girdling Vessel	Protects the lumbar region	Bilateral Channels from flank region through GB-26, GB-27 and GB-28, meet at <i>Bai-hui</i>	Gallbladder	<i>Yang Wei</i>
<i>Yang Qiao Mai</i> <i>Yang Qiao</i> Channels	<i>Yang</i> Motility Channel <i>Yang</i> Stepping Vessel <i>Yang</i> Heel Vessel <i>Yang</i> Springing Vessel	Absorbs Excess <i>Yang Qi</i> from the head; Coordinates and regulates limb movements	Bilateral Channels from BL-62, ascend lateral aspect of the thigh, hip, shoulder and neck to BL-1, then descend to GB-20	Small Intestine Large Intestine Stomach Bladder Gallbladder	<i>Du</i> (GV), <i>Yin Qiao</i>
<i>Yin Qiao Mai</i> <i>Yin Qiao</i> Channels	<i>Yin</i> Motility Channel <i>Yin</i> Stepping Vessel <i>Yin</i> Heel Vessel <i>Yin</i> Springing Vessel	Coordinates and regulates limb movements and emotional balance	Bilateral Channels from KID-6, ascend along the medial aspect of the thighs, ventral abdomen and chest to the head (BL-1)	Small Intestine Kidney	<i>Ren</i> (CV), <i>Yang Qiao</i>
<i>Yang Wei Mai</i> <i>Yang Wei</i> Channels	<i>Yang</i> Linking Channel <i>Yang</i> Linking Vessel	Connects all <i>Yang</i> Channels and Controls the Exterior	Bilateral Channels from BL-63, join Gallbladder Channels, ascend to the forehead, then descend to end on GV-15 or GV-16	Large Intestine Small Intestine Triple Heater Stomach Bladder Gallbladder	<i>Du</i> (GV), <i>Dai</i>
<i>Yin Wei Mai</i> <i>Yin Wei</i> Channels	<i>Yin</i> Linking Channel <i>Yin</i> Linking Vessel	Connects all <i>Yin</i> Channels	Bilateral Channels from KID-9, ascend medial thigh, connect to SP Channel, ascend ventral midline of neck, join at CV-22 and end on CV-23	Gallbladder Spleen Liver	<i>Ren</i> (CV), <i>Chong</i>

Regular Channels (Table 5). Each Extraordinary Channel has 2 special acupoints, a Connecting Point (Opening or Activating Point) and a Coupling Point (Closing Point) (Table 5).^{4,6} The Connecting Point is where the particular Extraordinary Channel opens to a Regular Channel. The Coupling Point is where an Extraordinary Channel connects to another Extraordinary Channel. Four pairs of Extraordinary Channels have the same 2 points, although the Connecting and Coupling point functions are reversed: 1) *Yin-Wei* and *Chong* Channels have PC-6 and SP-4, 2)

Ren (CV) and *Yin Qiao* Channels have LU-7 and KID-6, 3) *Du* (GV) and *Yang-Qiao* Channels have SI-3 and BL-62 and 4) *Yang Wei* and *Dai* Channels have TH-5 and GB-41 (Table 5).^{4,6} These 8 Connecting and Coupling points are known as the 8 Confluent Points.⁴ By treating the Confluent points or in some authors' experience, treating only 1 Connecting Point and its contralateral Coupling Point, the associated Extraordinary Channels can be fully accessed and provide the widest range of treatment effects.^{4,6} Treatment of individual acupoints of the Extraordinary Channels, without using a Connecting

Table 5: Connecting and Coupling Points and Channel acupoints of the 8 Extraordinary Channels and indications for treatment^{4,6}

Extraordinary Channel	Connecting Point*	Coupling Point *	Channel Acupoints**	Indications for Treatment
<i>Du</i> (GV) Channel	SI-3	BL-62	GV-1 through GV-28	Intervertebral disk disease, spinal cord disorders, <i>Shen</i> disturbances, <i>Yang</i> Deficiency, Heat patterns
<i>Yang Qiao</i> Channels	BL-62	SI-3	BL-62, BL-61, BL-59, GB-29, SI-10, LI-15, LI-16, ST-9, ST-4, ST-3, ST-1, BL-1, GB-20	Seizures, behavioral problems, ataxia, hip and back pain, paraparesis
<i>Ren</i> (CV) Channel	LU-7	KID-6	CV-1 through CV-24	<i>Yin</i> Deficiency, reproductive diseases
<i>Yin Qiao</i> Channels	KID-6	LU-7	KID-2, KID-6, KID-8, ST-12, ST-9, BL-1	Spinal cord problems causing ataxia, urinary tract disorders, abdominal pain, hypersomnia
<i>Chong</i> Channels	SP-4	PC-6	CV-1, ST-30, KID-11 to KID 21	Infertility, post partum and estrus disorders, urinary incontinence, dysuria and constipation
<i>Yin Wei</i> Channels	PC-6	SP-4	KID-9, SP-13, SP-15, SP-16, LIV-14, CV-22, CV-23	Heart Blood Deficiency, anxiety, seizures, insomnia, <i>Bi</i> syndrome and renal, heart and liver failure
<i>Dai</i> Channels	GB-41	TH-5	GB-26, GB-27, GB-28, LIV-13	Pelvic limb weakness, <i>Yang</i> Deficiency, poor performance
<i>Yang Wei</i> Channels	TH-5	GB-41	BL-63, GB-35, GB-29, LI-14, TH-13, TH-15, GB-21, SI-10, GB-20, GB-19, GB-18, GB-17, GB-16, GB-15, GB-14, GB-13	External Wind, Internal Wind (seizures), ear problems, <i>Bi</i> syndrome, intervertebral disk disease, Exterior Cold patterns

* The Connecting and coupling Point pairs (located around the carpi and hocks) are also known as the 8 Confluent Points.⁴ Combining a Connecting Point with the contralateral Coupling Point, during acupuncture, may provide the maximum effect on both Extraordinary Channel pairs.^{5,6} **Listed in order from beginning to end of the Channel.⁶ Treatment of individual acupoints will primarily provide local Extraordinary Channel effects.^{5,6}

and Coupling Point combination (Confluent Points), may result in local and lesser effects (Table 5).^{4,6} Treatments utilizing the 8 Extraordinary Channels are indicated when a disease is:⁶

1. Chronic and does not respond to previous treatments
2. Complicated involving multiple patterns, different organs and Channels
3. Due to behavioral and neurological disorders
4. Due to simultaneous Deficiencies of both *Yin* and *Yang*

The *Du* (GV) Channel is a single Channel that originates in the uterus and ovaries in females and the testes and prostate in males.^{3,4,6} It emerges at GV-1, between the anus and the ventral tail base, and a branch goes to the tip of the tail as GV-1b (*Wei-jian*) and another branch ascends along the dorsal midline to the head to end on the inside of the upper lip (GV-28).¹⁻⁶ Along its course the *Du* Channel connects to all *Yang* Channels, the *Ren* (CV) Channel, the *Yang Qiao* Channel and the Spinal Cord and Brain (Table 4). The *Du* Channel is called the “Sea of *Yang*” because it governs all the *Yang* Channels and controls the flow of *Yang Qi*. There are 28 acupoints on the *Du* Channel that may be especially useful to treat brain and spinal cord disorders, behavioral problems, Heat patterns and *Yang* Deficiency (Table 5).²⁻⁵

The *Ren* (CV) Channel is a single Channel that arises from the uterus and ovaries or testes and prostate, emerges between the anus and external genitalia (CV-1) and passes along the ventral midline to the lower lip (CV-24).¹⁻⁵ Along its course, the *Ren* Channel connects to all the Regular *Yin* Channels, the ST Channels, the *Du* (GV) Channel and the *Yin Qiao* Channels (Table 4). An internal branch arises from the uterus or prostate, traverses caudally to cross the *Du* Channel and terminates in the lower back.⁴ The *Ren* Channel is called the “Sea of *Yin*”, because it coordinates all the *Yin* Channels and nourishes the Uterus. There are 24 acupoints on the CV Channel, which are especially useful to treat reproductive disorders and *Yin* Deficiency (Table 5).²⁻⁶

The *Chong* Channels of animals originate from the uterus and ovaries or testes and prostate, emerge from the perineum, run parallel to the left and right KID Channels along the ventral abdomen and continue from the chest up to the head into the infraorbital regions.³ Along their course the *Chong* Channels connect to all 12 Regular Channels, the *Du* (GV) Channel, the *Ren* (CV) Channel and the *Yin Wei* Channels (Table 4). The *Chong* Channels are a source of *Qi* and Blood for the 12 Regular Channels and are called the “Sea of the 12 Channels” and the “Sea of Blood”.³ There are 12 acupoints along each *Chong* Channel and these can be useful to treat many types of urogenital disorders and constipation (Table 5).^{3,4,6}

The *Dai* Channels of animals originate from the left and right flank regions, pass bilaterally in a caudal and dorsal oblique line through GB-26, GB-27 and GB-28 and meet at *Bai-hui*, encircling the caudal abdomen and lumbar region in the form of a belt or girdle.³⁻⁶ Along their course, the *Dai* Channels connect to the GB Channels, as well as the *Yang Wei* Channels (Table 4). The *Dai* Channels are closely related to the Liver and Gallbladder and connect to the Kidney Divergent Channels.⁶ They harmonize the Liver and promote free flow of Liver *Qi*, regulate ascending and descending Kidney *Qi*, nourish the Essence (pre-natal *Jing*) and harmonize ascending Spleen *Qi*. There are 4 acupoints on each *Dai* Channel (Table 5).⁶ The *Dai* Channels protect the lumbar region, restrain the other Channels and are useful to treat pelvic limb weakness, disorders of the lumbar region and *Yang* Deficiencies (Table 5).⁴

The *Yang Qiao* Channels originate from BL-62 (left and right lateral hock regions) and ascend along the caudal aspect of the fibulae and lateral side of the thighs and then cranially along the body to the shoulders, neck and medial canthus of the eyes.³ They then move caudally again to end in left and right GB-20 on the top of the neck. Along their course, the *Yang Qiao* Channels connects to SI, LI, ST, BL and GB Channels, as well as the *Du* (GV) and *Yin Qiao* Channels (Table 4).^{4,6} There are 13 acupoints on each *Yang Qiao* Channel (Table 5).⁶ The *Yang Qiao* Channels absorb *Yang* Excesses in the head, so treatment of these Channels may be helpful to control seizures and behavioral problems.⁶ Treatment of the *Yang Qiao* Channels is also indicated in “wobbler syndrome” and other neurological disorders causing ataxia and paresis in animals (Table 5).⁴

The *Yin Qiao* Channels originate from KID-6 (left and right medial hock regions), ascend along the caudomedial aspect of the thighs and pass along the ventral abdomen, chest and neck, connecting to SI and KID Channels, as well as the *Ren* (CV) and *Yang Qiao* Channels (Table 4).³ They continue to the head and end at the medial canthus of the eyes at left and right BL-1 (Table 3). At BL-1 the *Yin Qiao* Channels connect with the *Yang Qiao* and Bladder Channels. There are 6 acupoints on each *Yin Qiao* Channel (Table 4).⁶ Together with the *Yang Qiao* Channels, the *Yin Qiao* Channels maintains the balance of *Qi* and Blood flow in the *Yin* and *Yang* Regular Channels and coordinate limb and eye movements.³⁻⁶ Other indications for treatment of *Yin Qiao* Channels include dysuria especially from *Qi* Stagnation, Blood Stasis and Damp, abdominal pain and hypersomnia (Table 4).^{4,6}

The *Yang Wei* Channels originate from BL-63 (left and right lateral side of the hocks, distal to the calcaneus), ascend along the lateral pelvic limb, merge with the GB Channels, then ascend along the body, shoulder and neck to the forehead.^{3,6} The *Yang Wei* Channels connect (link) all of the 6 Regular *Yang* Channels, as well as the *Du* (GV) and *Dai* Channels so dominate the Exterior (Table 4).³⁻⁶ They have 16

acupoints each and may be useful to treat External Wind, Internal Wind (seizures), ear problems, *Bi* syndrome and lumbar pain (Table 5).^{4,6}

The *Yin Wei* Channels originate from left and right KID-9 (distal aspects of the gastrocnemius muscles), ascend along the medial limbs and connect to the SP Channels. They continue along the ventral aspect of the neck and left and right *Yin Wei* Channels join at CV-22 and end together on CV-23 at the larynx.^{3,4,6} The *Yin Wei* Channels connect (link) all the 6 Regular *Yin* Channels, as well as the *Ren* (CV) and *Chong* Channels, so dominate the Interior (Table 4). The *Yin Wei* Channels nourish the Heart and Blood and *Yin* globally. They have 7 acupoints each that may be useful to treat Heart Blood Deficiency, anxiety, seizures, insomnia and *Bi* syndrome (Table 5).^{4,6}

The 4 Seas (*Si Hai*)

Chapter 33 of the *Ling Shu* (Miraculous Pivot, Spiritual Axis) describes 4 Seas (*Si Hai*): 1) the Sea of Marrow, 2) the Sea of Blood, 3) the Sea of *Qi* and 4) the Sea of Food.^{4,6} The 4 Seas are related to 1 or more Extraordinary Channels and serve as reservoirs of *Qi* and Blood in specific body locations.

The Sea of Marrow is located in the head and is the origin and location of *Shen* (Mind). This Sea controls the Mind and all activities of the body. It is related to the *Du* (GV) Channel, *Yin Qiao* Channels and *Yang Qiao* Channels and accessed at GV-20 and GV-16.⁶

The Sea of Blood is located in the *Chong* Channel, which originates in the uterus and prostate and is the Sea of the 12 Regular Channels (see *Chong* Channel above).⁴ The Sea of Blood is accessed at acupoints BL-11, ST-37 and ST-39.⁶

The Sea of *Qi* is located in the chest where *Zong Qi* (Pectoral *Qi*, Gathering *Qi*, Ancestral *Qi* and Chest *Qi*) is created and stored.^{3,4,6} It nourishes the Heart and Lungs and governs all respiratory functions. The Sea of *Qi* is related to the CV (*Ren*) Channel and accessed at ST-9 and CV-17.⁶

The Sea of Food is located in the Stomach and Spleen, where *Ying Qi* (Nutrient *Qi*) and *Wei Qi* (Defensive *Qi*) are created.⁴ It is also related to the *Chong* Channel and accessed at acupoints ST-30 and ST-36.⁶

Treatment of acupoints of the Sea of Marrow (GV-20 and GV-16) may be indicated for behavioral disorders. Treatment of acupoints of the Sea of Blood (BL-11, ST-37 and ST-39), like the *Chong* Channel where it resides, may be indicated for urogenital disorders. Treatment of acupoints of the Sea of *Qi* (ST-9, CV-17) may be indicated for cardiac and pulmonary diseases. Treatment of acupoints of the Sea of Food (ST-30 and ST-36) may be indicated in gastrointestinal disorders.

LUO MAI (SECONDARY CHANNELS)

Luo means “network” and the *Luo Mai* consist of 15 bilateral Collateral Channels (Network Vessels) and many other small Connecting Channels that form the complex pathways that bring *Qi* and Blood to every cell of the body.^{4,6} The first 14 Collateral Channels are small branches that originate from the *Luo* Connecting points of each of the 12 Regular Channels and the *Du* (GV) and *Ren* (CV) Channels. The *Luo* Connecting points of each Channel are: LU-7, LI-6, ST-40, SP-4, HT-5, SI-7, BL-58, KID-4, PC-6, TH-5, GB-37, LIV-5, GV-1 and CV-15.^{4,6} The Collateral Channels connect a *Yin* Channel with its respective *Yang* Channel pair (e.g. LU and LI, SP and ST, HT and SI, KID and BL, PC and TH, LIV and GB and CV and GV Channels). A 2nd Collateral from the Regular SP Channels, called the Major Spleen Collateral, branches from the SP Channel at SP-21 and spreads throughout the chest under the ribs.^{4,6} Although both the Collateral and Divergent Channels connect the *Yin* and *Yang* Regular Channels, the Collateral Channels are smaller (*Luo Mai*) and connect the Regular Channels Exteriorly and as discussed previously the Divergent Channels are larger (*Jing Mai*) and connect the Regular Channels Interiorly.

Collaterals from the GV, CV and SP Regular Channels also go to a body region.⁴ The GV Collateral branch arises from the Regular GV Channel at GV-1 and extends along the dorsum of the body and head. The CV Collateral branch arises from the Regular CV Channel at CV-15 and spreads caudally around the abdomen. The Major Spleen Collateral, branches from the SP Channels at SP-21 and spreads throughout the chest under the ribs.^{4,6} These 3 bilateral Collaterals form a superficial network around the entire body.⁴

A variety of small Connecting Channels are located superficially and deep to the Regular Channels and run in all directions.⁶ Through a myriad of connections they complete the *Jing Luo* system to ensure the circulation of *Qi* and Blood throughout every region and cell of the body.^{4,6} Superficial Connecting Channels are Exterior to the Regular Channels and relate to *Wei Qi* as previously discussed in the section on the 12 Skin Regions. Deep Connecting Channels are Interior to the Regular Channels and relate to Blood and blood vessels.⁶ The root of most *Qi* and Blood Stagnation and chronic disease may actually be located in the Connecting Channels.⁶

As can be seen from the discussion above the components of the *Jing Luo* form a complex network with many interconnections. Imbalances may occur in 1 or more components of the *Jing Luo* and result in disease that cannot be completely resolved with standard acupuncture, moxibustion and *Tui-na* treatments. Special acupoints on the 12 Regular Channels and the *Du* (GV) and *Ren* (CV) Channels can be useful to access and

balance different parts of the *Jing Luo* network. With a deeper understanding of the *Jing Luo* system and knowledge of which acupoints access and balance specific *Jing Luo* components, the TCVM practitioner may achieve better results, especially in chronic previously unresponsive diseases.⁴⁻⁷

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Welcome to our new Associate Editor Dr. Aituan Ma



The AJTCVM has a strong commitment to promote evidence-based traditional Chinese veterinary medicine (TCVM). We are most fortunate to have a new Associate Editor, who will strengthen the science of our journal. Dr. Ma is a highly respected and well-published research scientist specializing in TCVM and a professor at the College of Traditional Chinese Veterinary Medicine, Agricultural University of Hebei, China. Much TCVM research is currently performed in China, but is published in Chinese and not accessible to most AJTCVM readers. Dr. Ma will contribute TCVM research papers written in English and be a bridge connecting the AJTCVM to research in China. We warmly welcome Dr. Ma and feel very grateful to have her as part of the AJTCVM team.