Traditional Chinese
Medicine and Pharmacology

This series of "Practical Traditional Chinese Medicine and Pharmacology" consists of four separate books: Basic Theories and Principles, Medicinal Herbs, Herbal Formulas, and Clinic Experiences.

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Basic Theories and Principles

Practical TCM and Pharmacology Clinical Experiences

Lung Abscess

Asthma and Dyspnea

Phlegm-Retention Syndromes

Chest Bi-Syndrome

Diabetes

Consumptive Disease

Fever Due to Impairment of Internal Organs

Insomnia

Dizziness

Palpitation

Blood Disorders

Apoplexy

Depressive Syndrome

Stranguria

Dysuria

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Goiter

Bi-Syndrome

Diarrhea

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Basic Preface

This series of "Practical Traditional Chinese Medicine and Pharmacology" consists of four separate books: Basic Theories and Principles, Medicinal Herbs, Herbal Formulas, and Clinic Experiences. These books represent a comprehensive and systematic treatment of the theories and practices of traditional Chinese medicine and pharmacology. This series incorporates a practical approach to the study of Chinese medicine through its use of simple explanations and thorough outlines.

In the first volume, Basic Theories and Principles, the Yin-Yang and Five Elements theories are addressed as the basic philosophical elements of traditional Chinese medicine. The theories of physiology, pathology, etiology, diagnostic methodology, and syndrome differentiation in traditional Chinese medicine are explained in a discussion of the zang-fu organs (the internal organs) and channels-collaterals. These theories stress the importance of the appropriate holistic treatment according to an accurate diagnosis of the particular complaint. Thus the reader can learn the methods of understanding disease using the vantage point of traditional Chinese medicine and also command a knowledge of its basic theories.

The second and third volumes, Medicinal Herbs and Herbal Formulas, provide exhaustive and practicable information on individual traditional Chinese medicinal herbs, and formulas of medicinal herbs. The former presents the theory of the Four Properties and Five Flavors of herbal drugs, the theory of ascending and descending, floating and sinking, and direction of action of medicinal herbs. Also discussed is a description of the origin, property, flavor, and classification of three hundred herbs according to their therapeutic action on diseases of specific channels, general therapeutic action, indications, dispensation of herbal prescription, and contraindications. Readers will learn in the third volume the original source and ingredients of one hundred fifty commonly used herbal formulas, and their therapeutic actions, indications, and contraindications. By bringing theories, methods, prescription, and individual herbs together, they reflect the philosophy of traditional Chinese medicine which applies treatment on the basis of syndrome differentiation. Readers will not only become acquainted with one hundred fifty commonly used herbal formulas, but also with the laws and methods of differentiating syndromes, the principles of constructing herbal prescriptions, and other aspects of traditional Chinese herbal medicine. The fourth volume, Clinical Experiences, in-

troduces therapeutic methods of treating common internal disease, gynecology, and pediatrics. It associates practical application of theories, methods, herbal formulas, and individual herbs with clinical methods.

Moreover, readers can use the fifth volume to learn the basic methods of applying treatment according to syndrome differentiation using the theories of traditional Chinese medicine and pharmacology. This series on traditional Chinese medicine has been compiled by professionals with many years of experience in teaching, scientific research, and clinical treatment. Each volume has been checked and approved by leading authorities in the field of traditional Chinese medicine and pharmacology. These books present the reader with an easy access to state of the art knowledge on Chinese traditional medicine and pharmacology. The information presented in this series is the product of years of combined research and provides a reference for beginners as well as professionals in the field of traditional medicine. At present it is rare to read English editions which completely and systematically introduce traditional Chinese medical philosophies and methodologies with such conciseness. We hope that this series is able to involve interested readers from all over the world in the development and dissemination of this ancient art for the benefit of the human race.

Basic Introduction

The basic theories of traditional Chinese medicine describe the physiology and pathology of the human body, disease etiology, diagnosis, and differentiation of symptom-complexes. This includes the theories of Yin-Yang, Five Elements, zang-fu, channels-collaterals, qi, blood, body fluid, methods of diagnosis, and differentiation of symptom-complexes.

Traditional Chinese medical theories possess two outstanding features, their holistic point of view, and their application of treatment according to the differentiation of symptom-complexes. According to these traditional viewpoints, the zang-fu organs are the core of the human body as an organic entity in which tissues and sense organs are connected through a network of channels and collaterals. This concept is applied extensively to physiology, pathology, diagnosis, and treatment.

The functional physiological activities of the zang-fu organs are dissimilar, but they work in coordination. There exists an organic connection between the organs and their related tissues. Pathologically, a dysfunction of the zang-fu organs may be reflected on the body surface through the channels and their collaterals. At the same time, diseases of body surface tissues may also affect their related zang or fu organs. Affected zang or

fu organs may also influence each other through internal connections. Traditional Chinese medical treatment consists of regulating the functions of the zang-fu organs in order to correct pathological changes. With acupuncture, treatment is accomplished by stimulating certain areas of the external body.

Not only is the human body an organic whole, but it is also a unified entity within nature, so changes in the natural environment may directly or indirectly affect it. For example, changes of the four seasons, and the alternations of day and night may change the functional condition of the human body, while various geographical environments can influence differences in body constitution, and so on. These factors must be considered when diagnosis and treatment are given. The principles of treatment are expected to accord with the different seasons and environments.

Application of treatment according to the differentiation of syndromes is another characteristic of traditional Chinese medicine. "Differentiation of syndromes" means to analyze the disease condition in order to know its essentials, to identify the causative facts, the location and nature, and to obtain conclusions about the confrontation between pathogenic and antipathogenic factors. In traditional Chinese medicine, differentiation per-

formed to outline the specific principles and methods of treatment because similar diseases may have different clinical manifestations, while different diseases may share the same syndromes. Treatment in traditional Chinese medicine stresses the differences of syndromes, but not the differences of diseases. Therefore different treatments for the same disease exist and different diseases can be treated by the same method.

Chapter One

Yin-Yang and Five Elements

The theories of Yin-Yang and Five Elements were the creation and development of the ancient Chinese through their long and faithful tradition of observing nature's cycles and changes. They held that wood, fire, earth, metal, and water were the basic substances constituting the material world. These five basic substances were considered an indispensable part of daily life. They also noted that the material world is in a constant state of flux due to the dynamic movement and mutual antagonism of yin and yang factors.

The ancient Chinese applies these two theories in the medical field to explain the physiological activities and pathological changes of the human body, and to serve as a guide to the clinical treatment on the basis of syndrome differentiation. These theories have become in important component of traditional Chinese medicine.

Section One

The Theory of Yin-Yang

The Yin Yang theory holds that all phenomena consist of two opposite aspects, yin and yang, which are variously defined as: up and down, left and right, light and dark, hot and cold, stillness and movement, substance and function, etc. The movements and changes of yin and yang give impetus to the development of everything or in the words of the Suwen, "Yin and yang are the law of Heaven and Earth, the outline of everything, the parents of change, the origin of birth and destruction...."

Yin and yang represent two opposite aspects of every object and its implicit conflict and interdependence. Generally, anything that is moving, ascending, bright, progressing, hyperactive, including functional disease of the body, pertains to yang. The characteristics of stillness, descending, darkness, degeneration, hypoactivity, including organic disease, pertain to yin.

The nature of yin and yang is relative. According to Yin-Yang theory, everything in the universe can be divided into the two opposite but complementary aspects of yin and yang and so on ad infinitum. For example, day is yang and night is yin, but morning is understood as being yang within yang, afternoon is

yin within yang, evening before midnight is yin within yin and the time after midnight is yang within yin. As the Suwen states, "Yin and yang could amount to ten in number, be extended to one hundred, to one thousand, to ten thousand and ever to the infinite."

1. Basic Content of Yin-Yang Theory

The Opposition of Yin and Yang

The theory of Yin-Yang holds that every object in the universe consists of two opposite aspects which are in continual mutual restriction and interaction. The alternation of the four seasons is an example. The spring is warm and the summer hot. This is due to the rising of yang qi which restricts the autumn cool and the winter cold. Alternately, the coolness of autumn and cold of winter arise because of the ascendancy of yin that restricts the spring warmth and summer heat. According to Yin-Yang theory, the seasonal cycle is the outcome of the mutually restrictive and mutually consuming-increasing activities of yin and yang. Either side of the two opposites always restricts and acts on the other. This process of mutual restriction and interaction is the operation of yin and yang, without which change would not occur. Thus the two opposites of yin and yang do not exist as an

entity in a still and unconcerned state. They constantly interact with each other, hence the alteration and development of an object.

Yin and Yang Interdependence

Yin and yang are at once in opposition and in interdependence. They rely on each other for existence, coexisting in a single entity. Each of the two aspects is the condition for the other's existence and neither can exist in isolation. For example, daytime is yang, night is yin, without day there would be no night; upper is yang, lower is yin; left is yang, right is yin, etc., each pair exists in a state of mutual dependence, and without its opposite it could not exist. The interdependent relationship of yin and yang is described in the Suwen, "Yin is installed in the interior as the material foundation for yang, while yang remains on the exterior as the manifestation of the yin function." This is a traditional explanation of the interdependence of yin and yang.

Mutual Consuming-Increasing Relationship of Yin and Yang

The yin and yang aspects within an object are not quiescent, but in a state of constant motion. They can be described as being in a state where the lessening of yin leads to an increase of yang, or

vise versa. Taking the transformation of the seasons as an example, in terms of the Yin-Yang theory, the process of transition from winter cold through spring warmth into summer heat demonstrates the process of a lessening of yin leading into an increasing of yang. While the transition from the heat of summer to the cold of winter is the lessening of yang leading to an increasing of yin.

Regarding the human body's functional activities, which are considered yang, the consumption of nutrient substances, which are considered yin, results in the lessening of yin to the increase of yang. As the metabolism of nutrient substances (yin) exhausts the functional energy (yang) to a certain extent, this is understood as a lessening of yang to the increase of yin. Under normal conditions the mutual consuming and increasing of yin and yang maintain a relative balance. Under abnormal conditions there is an excess or insufficiency of either yin or yang which leads to the occurrence of disease.

Yin and Yang's Mutual Transforming Relationship

In certain circumstances and at a certain stage of development, each of the two aspects of yin and yang, within an object, will transform from yin into yang and from yang into yin. The mu-

tual consuming-increasing of yin and yang is a process of quantitative change, and the mutual transformation of yin and yang is a process of qualitative change. The Suwen comments, "Extreme cold will bring about heat, and extreme heat will induce cold..."furthermore, "Excessive yin may cause yang syndromes or tend to be transformed into yang and vice versa." These are the features and conditions of the mutual transformation of yin and yang.

The mutual transformation of yin and yang is often seen during the development of a disease. For example, if a patient has a constant high fever, which is suddenly lowered, accompanied by a pale complexion, cold limbs, extremely feeble pulse (the danger symptoms of yin cold syndromes), we may say that the disease has transformed from a yang syndrome into a yin syndrome. Under these circumstances, proper emergency treatment should warm the limbs to make the pulse normal. The yang qi will recover, and the danger will be removed. Thus yin syndromes can change into yang syndromes. Clinical practice provides other examples of the mutual transformation of yin and yang. It is common in clinical practice to have exterior syndromes transform into interior syndromes or vice versa and shi

(excess) syndromes may change into xu (deficiency) syndromes or vice versa.

The above-mentioned relationships of mutual opposing, depending, consuming-increasing, and transforming of yin and yang are the basic content of Yin-Yang theory. Furthermore, these four relationships between yin and yang are not so isolated from each other but interconnect with and interact upon each other.

2. The application of Yin-Yang Theory to the Field of Traditional Chinese Medicine

The theory of yin and yang is used extensively in traditional Chinese medicine to explain the histological structure, physiological function, and pathological changes of the human body, and to serve as guide for diagnosis of treatment.

Anatomical and Histological Structure of the Human Body

The Yin-Yang theory asserts that the human body is an organic whole, and there exists an organic connection between all tissues and structures. Yet, at the same time, each of them can be divided into the opposite aspects of yin and yang.

Viewing the body as a whole, the portion above the waist pertains to yang and that below belongs to yin; the exterior of the body is associated with yang, while the interior is associated with

yin; the back is considered yang and the front, yin; the lateral aspect is yang and the medial, yin.

The zang-fu organs also have yin and yang aspects, the six fu organs are considered yang while the zang organs are yin. Each of the zang-fu organs itself can again be divided into yin or yang; for example, heart yin and heart yang or kidney yin and kidney yang. However complex, all human body structures and tissues can be generalized and explained by the yin-yang relationship. As the Suwen says, "Man has physical shape which is inseparable from yin and yang."

The Physiological Functions of the Human Body

The Yin-Yang theory considers the normal vital activities of the human body to be the result of the relative balance between yin and yang. In traditional Chinese medicine, the physiological functions of the organs and their substances are inseparably related to yin and yang. For example, the activities (yang) of a particular organ are based on that organ's substance (yin) and when either of these aspects is absent, the other cannot function. Thus the result of physiological activities is to constantly promote the transformation of yang into yin essence. If yin and yang cannot maintain relative balance and interaction, they will

separate from each other ending the life that depends upon them. As the Suwen says, "When yin keeps balance with yang and both maintain a normal condition of qi, then health will be high-spirited. A separation of yin and yang will lead to the exhaustion of essential qi."

The Pathological Changes of the Human Body

The Yin-Yang theory holds that disease is a result of an imbalance between yin and yang which leads to the hyperactivity or hypoactivity of yin and yang. The occurrence and the development of a disease are also related to zheng qi (body resistance or antipathogenic factors) and xie qi (pathogenic factors). The Yin-Yang theory can be used to generalize the interacting relations between body resistance and antipathogenic factors. Pathogenic factors are divided into yang-natured pathogenic factors and yin-natured pathogenic factors, while zheng qi includes yin essence and yang qi. Yang pathogenic factors may bring about hypoactivity of bodily yang which leads to injury of yin; a heat syndrome results. If the disease is caused by yin pathogenic factors, it may give rise to hypoactivity of yin followed by the injury of yang; a cold syndrome will result. When yang is deficient it fails to restrict yin in the balanced relationship between the two

giving rise to xu (deficiency) which is a cold syndrome. The xu heat symptoms complex, however, is caused by a yin deficiency and yang excess. Pathological changes of disease are varied, but can be generally explained in terms of yin-yang imbalance: yin excess causes cold syndromes, yang preponderance leads to heat syndromes, yang deficiency causes cold syndromes, and yin deficiency leads to heat syndromes.

Diagnosis of Diseases

The basic causative factor of disease is an imbalance between yin and yang. Therefore, no matter how intricate and volatile the clinical manifestations are, they can still be summarized into two categories: yin syndromes and yang syndromes. A correct diagnosis depends upon a clear classification of yin and yang syndromes or in the words of the Suwen, "If one is good at diagnosis, they should differentiate the yin from yang after the observation of color (of complexion, tongue, urine, stool, etc.) and feeling the pulse." The four diagnostic methods (inspection, auscultation and olfaction, inquiry, and palpation) also use yin and yang, for example: interior, xu (deficiency), and cold syndromes are considered yin; exterior, shi(excess), and heat syndromes are considered yang; bright color is yang, dim color is yin; a sono-

rous voice indicates yang, a low voice i yin; feeble and weak respiration is yin, coarse breathing is yang; superficial, rapid, and forceful pulses are yang, slow, deep feeble, and weak pulses are yin.

Applications in Clinical Treatment

Since imbalance and fluctuation of yin and yang are considered the basic causative factors of disease occurrence and development, treatment must readjust yin and yang to their basic state of relative balance. For example, if pathogenic heat, a yang disease causative factor, is overabundant, it consumes the yin fluid and affects the superabundant yang of the body. In this case, the cold methods for heat syndromes (for example, the use of herbs with a "cold" nature to cure "heat" illnesses) is the prescribed treatment. If pathogenic cold is in excess, it will damage the yang qi and exert influence on the body's remaining yin. In this case, the heat method for cold syndromes (for example, the use of herbs with a "hot" nature to cure "cold" illnesses) is sued. Conversely, in cases where yang excess if caused by insufficient yin fluid failing to restrict yang or where yin preponderance is due to yang qi deficiency being unable to control yin, then treatment should reinforce the insufficient yin or yang. The general

principle is, "Treat yin for yang diseases, and treat yang for yin disorders."

In medical treatment, the theory of yin and yang is not only used to decide the principles of treatment. This theory is also generally applied to the properties, flavor and action of Chinese herbal medicine as a guide to the clinical administration of herbs. For example, drugs with cold, cool or moist properties are classified as yin and drugs with the opposite properties are classified as yang. Herbs with sour, bitter, or salty flavors are yin, while those with pungent, sweet, or insipid flavors are yang. Drugs with an astringent or descending action are yin and those with an ascending and dispersing action are yang. In clinical treatment, we should determine the principles of treatment based on an analysis of the yin and yang conditions present in terms of their difference yin-yang properties and actions. The goal of clinical treatment is to restore of healthy yin-yang properties and actions. The goal of clinical treatment is to restore a healthy yin-yang balance in the patient.

Section Two

The Five Elements

The Five Elements theory posits wood, fire, earth, metal, and water as the basic elements of the material world. These elements are in constant movement and change. Moreover, the complex connections between material objects are explained through the relationship of interdependence and mutual restraint that governs the five elements. In traditional Chinese medicine Five Elements theory is used to interpret the relationship between the physiology and pathology of the human body and the natural environment.

1. Basic Content of the Five Elements

The Categorization of Things

The ancient physicians used the Five Elements theory to study extensively the connections between the physiology and pathology of the zang-fu organs and tissues and the natural environment. By adopting the methodology of "comparing similarity to expose phenomenon," the ancient Chinese attributed different phenomena to the categories of the five elements. On the basis of the phenomena's different characteristics, functions, and

forms, the complex links between physiology and pathology as well as the correlation between the human body and the natural environment were explained.

Five Elements theory assigns each of the five elements a series of abstract generalizations and then applies them to the classification of all phenomena. Wood, for example, involved the aspects of germination, extension, softness, and harmony. It is then inferred that anything with those characteristics should be included in the category of the wood element. As for the rest of the five elements: fire involves the aspects of heat and flaring; earth involves the aspects of growing, nourishing, and changing; metal is associated with cleaning up, killing, strength, and firmness; and water is associated with cold, moisture, and downward flowing. As in the case of wood, the aspects of the other five elements are used to categorize all material objects in terms of one of the particular five elements. Table 1 shows the five categories of objects and phenomena according to five elements classification.

TABLE 1

The Mutual Generation, Mutual Subjugation, Extreme Subjugation, and Counter Subjugation Relationships of the Five Elements

The Five Elements theory asserts that between each of the elements there exists the close relationships of mutual generation, mutual subjugation, extreme subjugation, and counter subjugation. The theory explains the interrelatedness of all things through the use of those close relationships.

Mutual generation means multiplication and promotion, while mutual subjugation means mutual restriction and restraint. The order of mutual generation among the five elements is that wood generates fire, fire generates earth, earth generates metal, metal generates water, and water generates wood. In this way generation is circular and endless. In the mutual generating relation of the five elements, each of the elements has the property of "being generate" and "generating." The one which generates is the "mother," the one which is generated is the "son." This is known as the "mother-son relationship." Each of the five elements has this type of mutual generating relationship with the other.

According to the order of mutual subjugation, however, wood subjugates earth, metal subjugates wood, etc. Each of the five elements also shares this subjugation relationship with the

other. This relationship has the properties of "being subjugated" and of "subjugating." The former means that my ability is inferior to the object, while the later denotes my superiority to the object. Therefore, the mutual subjugating relationship among the five elements is also known as the relationship of "being superior to" and "being inferior to" another element.

Mutual generation and mutual subjugation are two aspects which cannot be separated. If there is no generation, then there is no birth and growth. If there is no subjugation, then there is no change and development for maintaining normal harmonious relations. As the Leijing tuyi says, "If there is no generation, then there is no growth and development. If there is no restriction, then endless growth and development will become harmful." Thus the movement and change of all things exists through their mutual generating and subjugating relationships. These relationships are the basis of the never ending circulation of natural elements.

Extreme subjugation and counter subjugation are the pathological conditions of the normal mutual generation and subjugation relationships. Extreme subjugation denotes that the subjugation of one of the five elements to another surpasses the normal level. For example, if there is hyperactivity of the wood

element, it will subjugate the earth element. The latter elements is made weak and insufficient.

Counter subjugation means that one of the five elements subjugates the other opposite to the normal mutual subjugation order. For example, when metal is weak and insufficient, it leads to the hyperactivity of wood. The latter will then counter subjugate the former. In the Suwen it says:

> When the qi of one of the five elements is excessive, it will subjugate its subjugated element (such as wood subjugating earth) and counter subjugate the subjugating element (such as wood counter subjugating metal).

Moreover, the Five Elements theory recognizes a correlation between those things which are related to a particular element. As the Suwen points out, "The East generates wind, wind generates wood, wood generates sour, sour generates liver, liver generates tendons...."0 According to Five Elements theory, each element has its own repertory of relationships among the objects that compose the physical world. The theory of Five Elements is therefore the theoretical basis of the unique bond between man and nature. (See Fig.2)

2. Application of the Five Elements Theory to traditional Chinese Medicine

The Five Elements theory is applied to the physiology and pathology of the human body by using the relationships of generation and subjugation to guide clinical diagnosis and treatment.

The Physiological Functions and Interrelationships of the Five Zang Organs

Physiologically the Five Elements theory explains the unity of the mutual relationships between the zang-fu organs and body tissues as well as between the human body and nature. The physiological activities of the five zang organs can be classified according to the different characteristics of the five elements. For example, the liver is said to preside over the vigorous flow of qi and also has the function of ensuring free qi circulation. Since these characteristics are similar to the properties of wood, the liver is categorized as wood in the scheme of the five elements. Heart yang has a warming action so it belongs to the category of the fire element. The spleen is the source of transformation of essential substances and is associated with the earth element's characteristics of growth and transformation. The lung has clearing and descending properties and is associated with the metal

element's characteristics of clearing and astringency. The kidney has the function of controlling water metabolism and storing essence and is associated with the water element's characteristics of moistening and flowing downward.

The Five Elements theory is also used to describe the correlations of physiological functions between zang-fu organs and body tissues. There are both generating and subjugating relationships among the five zang organs. The generating relationships are: the essence of kidney (represented by the water element) nourishes the liver; the liver (represented by the wood element) stores the blood in order to support the heart; the heat of the heart (represented by the fore element) warms the spleen; the spleen (represented by the earth element) transforms and transports the essential nutrients to replenish the lung; and the clearing and descending functions of the lung (represented by the metal element) assist the flowing of kidney water.

The subjugating relationships among the same organs are as follows: the clearing and descending functions of the lung (metal element) can restrict the hyperactivity of liver yang; the unobstructed flowing of liver (wood element) qi is capable of removing the stagnation of the spleen (earth element); the transportation and transformation of spleen is able to subdue the over-

flowing of kidney water; and the nourishing and moistening function of kidney (water element) can prevent the strong flaring up of heart fire. The yang heat of the heart (fire element) can control the hyperactivity of the lung's clearing and descending functions.

Furthermore, the Five Elements theory is employed to express the mutual relationships between the human body with the seasons, climates, and flavors. For example, while the wood element is associated with East, spring, wind, sour, etc., it is also connected with the liver, tendons, and eyes of the human body. In this way the Five Elements theory gives expression to a holistic view of the relationship between the human body and its natural environment.

Five Elements Theory and Pathological Influences on the Zang-Fu Organs

Five Elements theory is not only used to correlate the functions of the sang-fu organs, but also to demonstrate their mutual pathological influence. To denote the mutual influence of the sang-fu organs in pathological changes the concepts of extreme subjugation and counter subjugation are used. For example, liver disease may affect the spleen because wood over-subjugates

earth, while spleen illness may affect the liver as earth counter subjugates wood. Diseases of the liver and spleen interact with each other. Liver disease may also influence the heart, this is a "mother affecting son" illness. If the liver disease is transmitted to the lung, this is categorized as wood counter subjugating metal. If it is transmitted to the kidney, then it is considered a "son affecting mother" illness. The other zang organs follow suit. Thus the application of the Five Elements theory in explaining the complicated interaction between the zang organs can be summed up by these four relationships: extreme subjugation, counter subjugation, mother affecting son illness, and son affecting mother illness.

Use of the Five Elements Theory in the Diagnosis and Treatment of Disease

Abnormal changes of the internal organ's functions and interrelationships can be detected by external appearances. Thus changes in a a patient's complexion, voice, sense of taste, pulse, etc. can be used to diagnose disease. According to the Five Elements theory the five zang organs have certain connections with the "five colors," "five tones," and "five tastes" as well as changes in the pulse.1 Therefore, in the clinical diagnosis of a disease,

the data collected by the four diagnostic methods (inspection, auscultation and olfaction, inquiring, and palpation) should be analyzed according to the properties and changing laws of mutual generation and subjugation, extreme subjugation, and counter subjugation of the Five Elements theory. For example, a blue complexion accompanied with a preference for food of a sour taste and a wiry pulse, suggests liver disease. A flushed face accompanied by a bitter taste in the mouth and a forceful pulse suggests heart disease with the symptom-complex of hear-fire flaring up. A patient with insufficient spleen qi may have a blue complexion implying wood's (i.e., liver) extreme subjugation of earth (i.e., spleen). If a patient is suffering from heart trouble and has a dark complexion, it may be explained as water (i.e., kidney) subjugating fire.

The occurrence and development of a disease is sometimes related to the abnormality of the mutual generation and subjugation relationships. Therefore, clinical treatment should not only concentrate on the diseased zang organ, but also be concerned with readjusting the relationships between the particular zang or fu organs in accordance with Five Elements theory. For example, the Nanjing says, "When the liver is diseased, the liver will transmit to the spleen, and so one should replenish the qi of

the spleen."2 This reflects the clinical application of five element's extreme subjugation theory. The laws of mutual generation and subjugation and extreme subjugation and counter subjugation have been applied by subsequent generations of traditional Chinese medicine practitioners to create more methods of treatment such as "cultivating the earth in order to generate metal," "nourishing the water to conserve wood," "supporting the earth to restrict wood," etc.

The yin-yang and Five Elements theories represent the world outlook and methodology of the ancient Chinese for their understanding and explanation of nature. The application of these two theories to Chinese medicine consists of viewing the phenomena and laws of nature and applying them to the study of the physiological activities and pathological changes of the human body and its interrelationships. The theory of Yin-Yang explains the dynamics of physical objects through a consideration of their contrary, mutual depending, consuming-increasing and transforming relationships. Normal human physiological activities are understood as the relative balance and harmonization between yin and yang. When yin and yang lose their relative balance and coordination, disease occurs. The theories of Yin-Yang and the Five Elements are used together as a guide to clinical diagnosis and treatment.

Chapter Two

The Zang-Fu Organs

The zang-fu theory explains the physiological function, pathological changes, and mutual relationships of every zang and fu organ. In traditional Chinese medicine the zang and fu organs are not simply anatomical substances, but more importantly represent the generalization of the physiology and pathology of certain systems of the human body.

Zang and fu consist of the five zang and six fu organs. The five zang organs are the heart (including the pericardium), lung, spleen, liver, and kidney. The six fu organs are the gall bladder, stomach, large intestine, small intestine, urinary bladder and the sanjiao (three areas of the body cavity). Zang and fu are classified by the different features of their functions. The five zang organs mainly manufacture and store essence: qi, blood, and body fluid. The six fu organs mainly receive and digest food, absorb nutrient substances, transmit and excrete wastes. As the Suwen says: The five zang organs store up essential qi and regu-

late its outflow. The six fu organs transform and transport substances without storing them and for this reason they may be over-filled but cannot be filled to capacity.

There is another category of organs called the extraordinary fu organs which include the brain, marrow, bone, vessels, gall bladder, and uterus. They are named fu but their functions are similar to that of the five zang organs. Since their physiological functions and pathological changes are closely connected with the zang-fu organs they will be discussed below under the specific zang or fu organ.

Section One

The Five Zang Organs

1.1. Heart

The main physiological functions and indicators of the heart are: 1)domination of blood and vessels, and facial complexion; 2)control of the mind; and 3)opening into the tongue. The heart has an "exterior" (biao) and "interior" (li) relationship with the small intestine.

Dominating Blood and Vessels, and Facial Complexion

The heart dominates the blood and vessels indicating its function of promoting blood circulation. In the Suwen, it says, "...The heart is in charge of the blood vessels...."4 The vessels are the pathways of blood circulation while the heart is the motive power of blood circulation. Only if there is ample heart qi can the blood circulate incessantly in the vessels to nourish the whole body. The heart, blood, and vessels are interrelated. Because of the rich distribution of blood vessels in the facial region, the color and luster of the complexion usually reflects the sufficiency or insufficiency of the blood supply and heart qi. If the heart blood supply is sufficient, then the pulse beats normally and forcefully and the facial complexion is rosy with luster. If the heart qi is

insufficient, the vessels will be empty, the pulse feeble and weak or irregular and the facial complexion pale. Insufficient heart qi may lead to blood stagnation manifested by a blue complexion. So in the Suwen is says, "The heart is the root of live, ...its luster is manifested in the face, it fills up the blood vessels...."5

Controlling the Mind

Mind here indicates spirit, consciousness, and thinking. Traditional Chinese medicine considers that mind refers to the five zang organs, especially the heart. So in the Lingshu it says, "The organ that is responsible for the performance of activities is the heart."6 This means the process of thinking is accomplished by the heart. Blood is the main foundation for mental activities, thus the function of heart controlling the mind is closely related to the function of heart dominating the blood and the vessels. If there is plenty of heart blood, the mind is clear, thinking is nimble, and one if full of vim and vigor. If heart blood is insufficient, it will lead to the pathological changes of heart-mind manifested by palpitation, insomnia, dream disturbed sleep, poor memory, restlessness, etc. If heat in the blood disturbs the heart-mind, there will be delirium, coma, etc.

Opening into the Tongue

One of the branches of the heart channel directly connects with the tongue. So physiologically the tongue has a close relationship with the heart. The qi and the heart blood all flow up to the tongue in order to assist its normal physiological functions. If there is a pathological change in the heart, it will be reflected in the changes of the tongue. For example, an insufficient supply of heart blood may be manifested by pale tongue proper; heart fire flaring up is reflected by red tongue proper, or even by ulcers of the tongue; blood stagnation in the vessels in presented by a purple tongue or purpura; pathogenic heat invading the pericardium or pathogenic phlegm obstructing the heart orifice, will produce coma, delirium, and stiffness of the tongue. Thus it is said, "The heart opens to the tongue," or "The tongue is the sprout of the heart."

1.2. Pericardium

The pericardium is called xinbaoluo in Chinese. Structurally it is a membrane surrounding the heart, and physiologically it protects the heart. When exogenous pathogenic factors attack the heart, the pericardium is affected first. The Lingshu notes, "Therefore the pathogenic factors that intend to attack the heart must first attack the pericardium."7 Clinically the symptoms of

pathogenic invasion of the pericardium are the same as if the heart was ill. If pathogenic heat attacks the heart, the symptoms are unconsciousness, delirium, etc. If pathogenic phlegm causes mental confusion, unconsciousness or mental disorder, it is known as "pathogenic phlegm obstructing the heart orifice."

2. Lung

The lung is situated in the chest, connects with the throat and opens into the nose. Its main physiological functions and indicators are: 1) dominating qi and controlling respiration; 2) dominating the dispersion and descent of qi; 3) regulating water passage; and 4) connecting externally with skin and hair. It also has an exterior and interior relationship with the large intestine.

Dominating Qi and Controlling Respiration

This function is composed of two aspects, dominating the qi (air) of respiration and controlling respiration. It is the organ where the respiratory air is internally and externally exchanged; clean qi from the environment is drawn in and exchanged for waste qi. The other aspect of the lung's function has a close relationship with the formation of collective (zong) qi which is the com-

bination of essential qi transformed from water and food with the inhaled qi of the lung. Collective qi accumulates in the chest, then flows up to the throat to control respiration. Since all the blood vessels lead to the lung, collective qi is distributed throughout the body to nourish the tissues and organs in maintaining the body's normal functional activities. If the lung function is normal, there is an unobstructed circulation of qi, with even and harmonious breathing. If there is a deficiency of lung qi, there will be feeble respiration, uneven breathing, weak speech, lassitude, etc.

Dominating the Function of Dispersion and Descent

The function of dispersion and descent involved the distribution of qi, blood, and body fluid to the zang-fu organs, the channel-collaterals, muscles, skin, and hair. Descending function means that lung qi is clear and descends. The lung is situated in the upper jiao (thoracic cavity) and its qi normally flow downward. If lung qi fails to descend and instead ascends, then the qi will pool together in the lung and be manifested by stuffy chest, cough, asthma, etc.

The two functions of dispersion and descent, although opposite to each other, act in unison. If the dispersing function is not

normal, the lung qi will not flow downward and vice versa. Harmonious, downward flowing of lung qi allows for an unobstructed respiratory tract, uniform breathing, and provides a normal exchange of air in the lung. In this was the lung can distribute qi, blood, and body fluid to the entire body, transport waste water down to the urinary bladder, transform it into urine and excrete it.

In pathology, the two functions of dispersion and descent affect each other. If external pathogenic factors attack the exterior of the body, then the lung qi fails to spread. This leads to pathological changes like cough and asthma due to the failure of descending lung qi. If pathogenic phlegm obstructs the lung, it will bring about an abnormal flowing of lung qi leading to pathological changes such as cough, fullness of chest, and gurgling with sputum.

Dominating the Skin and Hair and Regulating Water Passages

Here the skin and hair represent the entire body surface including skin, sweat gland pores, and hire which act as a barrier against the invasion of exogenous pathogenic factors. In this way the lung is understood to have a close connection with the skin and hair. Through the dispersing function of the lung the

essentials of food and water are transported to the body surface in order to nourish the skin, hair, and muscles. The lung also spreads defensive (wei) qi to the body's surface, "warms the tissues between the skin and muscles, replenishes the skin, nourishes the muscles, and regulates the opening and closing of the pores." Therefore the lung has the ability to protect the organic body by defending against the invasion of exogenous pathogenic factors.

Pathologically there is an mutual influencing relationship between the lung, and skin and hair. For example, the invasion of exogenous pathogenic factors proceeds from the skin and hair to the lung. The manifestations are aversion to cold, fever, nasal obstruction, nasal discharge, cough, or even asthma. These are signs of the lung's failure to spread defensive qi to the body surface. If lung qi is weak and deficient, defensive qi is not dispersed and the essential nutrients to the skin and hair are not distributed. This not only causes rough skin and dry hair, but also hypoactivity of the defensive qi.

The organic body is easily attacked by external pathogenic factors. Defensive qi controls the opening and closing of the pores. When there is lung qi deficiency the body surface will be weak and manifests the symptom of spontaneous sweating. If exter-

nal pathogenic cold attacks the body's exterior the lung will lose its function of dispersing and descending and the pores will close not allowing the formation of sweat.

Regulating the water passages means that the lung regulates water circulation and excretion, and keeps the water passages clear. The lung's dispersing function circulates throughout the body the nutrients which have been removed from food and water. Part of the fluid is discharged as sweat and by the descending function of the lung. Another part of the fluid is continually sent down to the kidney and then, by the qi function of the kidney, sent to the urinary bladder to be discharged. Thus the lung is also known as the "upper source of water."

Opening into the Nose

The nose is the gateway of respiration. Clear, unobstructed nasal breathing and smelling rely upon the good functioning of the lung qi. Since the nose is the opening of the lung, it will also be a passage for the invasion of external pathogenic heat which may attack the lung. Pathologically the lung also has a close relation with the nose. For example, if external pathogenic wind and cold block the lung, it will cause a dysfunction of lung dispersion manifested by stuffy nose, nasal discharge, dull olfac-

tion, etc. If pathogenic heat accumulates in the lung there will be nasal discomfort caused by coarse breathing or dyspnea. In treating this condition, the dispersing method with pungent medicinal herbs is used to act on the lung and nose. Acupuncture stimulation is applied on ear acupoint "lung" to treat nasal polypus, chronic rhinitis, etc. The above-mentioned facts demonstrate the close relationship between the lung and the nose. The throat is also a gateway of respiration, and a vocal organ. The lung channel passes through the throat, so smooth qi flow and a clear voice are directly affected by the functions of lung qi. Hence when there is a pathological change of the lung, it will cause hoarseness of voice, sore throat, or other pathological changes.

3. Spleen

The spleen is located in the middle jiao (abdominal cavity). Its main physiological functions and indicators are: 1) governing transportation and transformation; 2)controlling blood; 3) dominating the muscles and four limbs; 4) opening into the mouth, and lip complexion. The spleen has an exterior and interior relationship with the stomach.

Governing Transportation and Transformation

This function includes the transportation and transformation of water, and of essential nutrients.

If the spleen's transportation and transformation functions are sound then the functions of digestion, absorption and transportation will work normally. Otherwise, abdominal distention, diarrhea, lassitude, emaciation, malnutrition, and other symptoms may occur.

The spleen is also involved in water metabolism. When the spleen transports nutrient substances, it simultaneously distributes water to every tissue of the body carrying out its functions of nourishment and moistening. From the spleen, water is also sent down to the kidney and excreted from the urinary bladder. The whole process of distribution and metabolism of water is jointly accomplished by the lung's dispersing and descending functions and the spleen's transportation and transformation functions. If the spleen fails to transport and transform the water it will lead to various pathological changes. If water accumulates inside the body, it will turn into an inflammatory mucus (phlegm-humor); if it is retained in the skin and muscle, it becomes a swelling (edema); if the water retention is in the intestines, it will cause diarrhea; if it is in the abdominal cavity, it will result in serious fluid accumulation (ascites). In the Suwen

it says, "...various kinds of diseases caused by dampness with swelling and fullness belong to the spleen."

Since the functions of transportation and transformation of essential nutrients as well as water are interrelated, their pathological manifestations often accompany each other.

Controlling Blood

The spleen regulates blood circulation inside the blood vessels. If there is a qi deficiency in the spleen, then its function of controlling the blood is lost and the blood flows outside of the vessels. This is evidenced by various hemorrhagic symptoms and diseases, such as chronic uterine bleeding.

In order to control the blood, the spleen uses ying (nutrient) qi, a form of blood qi, which it produces. Qi behaves as the "commander" of the blood and, at the same time, conserves the blood. Therefore the hemorrhagic symptoms and diseases caused by the failure of spleen controlling blood are actually the results of qi failing to conserve blood.

Dominating the Muscles and Four Limbs

The spleen transports and transforms nutrient substances to nourish the muscles. If this function is normal, there will be sufficient nutrition. Any abnormality of transportation and transformation will certainly affect muscle tissue quality. The Suwen records, "The spleen is in charge of the muscles."

The normal movements and functions of the four limbs are also closely related to spleen qi. When there is sufficient spleen qi, the yang qi distributes ample nutrient substances all over the body so that the muscles are well nourished and the four limbs are strong and able to move freely, Otherwise if the spleen fails to transport and transform the yang qi and nutrient substances, there will be malnutrition of the muscles characterized by muscular atrophy, weakness of the four limbs, etc. Therefore, building up the spleen is the usual clinical treatment for wei syndromes of the four limbs.

Opening into the Mouth and Lip Complexion

The appetite and sense of taste are closely related to the transportation and transformation functions of the spleen. If these functions are healthy, then there will be good appetite and normal sense of taste. If those functions are abnormal, there will be a lack of appetite. A greasy and sweet taste in the mouth is caused by damp obstruction in the spleen. In the Suwen it says, "Spleen

qi is in communication with the mouth, and when the spleen functions harmoniously, the mouth will be able to taste the flavors of the five cereals."

Since the spleen dominates the muscles and opens into the mouth, the strength or weakness of the transporting and transforming functions are reflected in the lips. If the spleen qi is not healthy, those functions will be abnormal, a condition which is characterized by yellowish and lusterless lips.

4. Liver

The liver's main physiological functions and indicators are: 1) storing blood; 2) creating unrestrained conditions for qi; 3) controlling the tendons and the luster reflected in the nails; and 4) opening into the eye.

Storing Blood

The liver stores blood and regulates the volume of blood circulation according to the needs of various tissues and organs. During rest the amount of blood required by the body decreases and the surplus is stored in the liver. During vigorous activity blood is released from the liver to increase the volume of circulating blood. As Wang Bin's Annotations on the Suwen notes, "The liver stores blood, the heart circulates blood. When the body

moves blood circulates in the channels, when at rest it flows back to the liver."1 If the liver's blood storage function is abnormal, there will be an affect on normal body activities causing hemorrhagic diseases. For example, if liver blood is deficient the following problems may appear: the symptoms of vertigo, contracture of spasm of muscles and tendons, impairment of flexion and extension of limbs or scanty menstruation and amenorrhea.

Promotion of Unrestrained Conditions for Qi

Liver qi possesses the function of regulation. It is responsible for the ascending, descending, and harmony of bodily qi. If the body's qi activity is harmonious and its ascending and descending are normal then the internal organs will continue their normal physiological activities. This function of the liver involves the following aspects:

1) The liver harmonizes the emotions.

Traditional Chinese medicine considers that the normal or abnormal function of an unrestrained and free flowing qi is directly related to emotional activities, and that the mental state is not only dominated by the heart but also the liver. When qi activities are normal, the body has a harmonious circulation of qi

and blood, an easy mind and happy emotions. If there is a dysfunction of qi's free flow, it will directly affect the individual's emotional state. For example, liver qi stagnation will give rise to stuffiness and fullness of the chest, unhappy feelings, hypochondriasis, or even mental depression, crying, irregular menstruation, etc. If there is hyperactivity of the liver qi, there may be irritability, anger, insomnia, dream disturbed sleep, dizziness, vertigo, a ringing in the ear (tinnitus), or deafness. Any sudden change in the normal pattern of the emotions, especially great anger or mental depression, can affect and free flowing and spreading function of liver qi resulting in the pathological changes of liver qi stagnation.

2) Liver qi regulation can assist the ascending function of the spleen and the descending function of the stomach. This also involves bile secretion. Bile is necessary for the digestion of food and drink. If liver qi loses its harmonious flowing activities, it will affect the digestive function of the spleen and stomach and the excretion of bile, leading to the pathological symptoms of jaundice and bitter taste. It is very common that patients with stagnation of liver qi may not only have symptoms such as distension, pain in the chest and hypochondriac regions, anxiety,

and anger, but also belching due to the failure of the stomach qi to descend and diarrhea caused by the dysfunctional ascending of spleen qi. The former is known as "liver qi affecting the stomach," and the latter as "disharmonious conditions between the liver and the spleen."

Controlling the Tendons and the Luster Reflected in the Nails

The tendons, fascia, and ligaments of the body all rely on the nourishment of liver blood. The movements of limbs and joints are not only the result of tendon flexing but are also related to the strength or weakness of liver blood. Only if liver blood is ample, can it nourish and supplement the tendons to continue the normal movements of the limbs. If the liver blood is insufficient and fails to nourish the tendons, the patient might experience symptoms such as tremors of the hands or feet, numbness of the limbs, or even difficulty in flexing and extending the limbs. If pathogenic heat exhausts the body fluid leading to the consumption of blood, then this will cause convulsion,, opisthotonos and lockjaw (trismus). As the Suwen notes, "various kinds of wind diseases causing the eyes to state upwards, twitching, dizziness, and vertigo, belong to the liver."

It is said that, "Nails are the remains of the tendons," The dryness or moisture of the nails can reflect the sufficiency or insufficiency of liver blood. When liver blood is plentiful the tendons

are supple and the nails appear hard and moist. If liver blood is insufficient and incapable of nourishing the tendons, then the nails may be thin, soft, brittle, and pale. The Suwen records, "The liver communicates with the tendons. The health of the liver is reflected in the luster of the nails."

Opening into the Eye

The essential qi of the five zang and six fu organs flows upwards to nourish the eye. Thus those organs, especially the liver, have a close relationship with the eye. The liver's function of storing blood nourished the eye as its channel travels upwards connecting to the eye system. In the Suwen it says, "Liver qi is in communication with the eyes, so the eyes will be able to distinguish the five colors."5 Thus an abnormality of liver function can affect the eyes. If the liver blood is insufficient, there will be a dryness of the eyes, blurred vision, or night blindness. If pathogenic wind-heat attacks the liver channel, redness, swelling and pain in the eyes will be the symptoms. If the liver fire flares up, conjunctivitis may occur. If liver yang is in preponderance, dizziness and vertigo occur. Liver wind stirring up produces convulsions with the eyes staring upwards.

5.1 Kidneys

The main physiological functions and indicators of the kidneys are: 1) storing essence, controlling human reproduction, growth and development; 2) controlling water metabolism; 3) receiving qi; 4) producing marrow, filling up the brain, controlling the bones, manufacturing blood and influencing hair luster; 5) opening into the ear, perineal ante-tract and perineal post-tract; 6) connects with the urinary bladder to which it is connected from the exterior and the interior.

Storing Essence, Controlling Human Reproduction Growth and Development

Essence is defined as the basic substance both constituting the human body and maintaining its functional activities. As described in the Suwen, "Essence is the foundation of the human body."6 Essence consists of two parts: congenital essence inherited from the parents and acquired essence transformed from food.

Essence is stored in the kidney and is known as kidney qi. It greatly influences the ability of reproduction, growth, and development. According to the Suwen:

> At the age of fourteen, a woman will begin to menstruate. Her ren channel becomes unobstructed, and the qi of her chong channel is replete. This is why her menstruation becomes regular and she is able to conceive.... At the age of forty- nine, a woman's ren channel becomes deficient, the qi of the chong channel becomes weakened and scanty, sexual energy becomes exhausted, and menstruation stops with the result that her body becomes old and she is no longer able to conceive.7

In reference to men, it continues:

> As to a man.... At the age of sixteen, his kidney qi becomes even more abundant, he begins to have sexual energy and is full of semen that he can ejaculate. When he has sexual intercourse with a woman, he can cause conception.... At the age of fifty-six the liver qi begins to weaken, the tendons become inactive, sexual energy begins to run out, the semen becomes inadequate, the kidney becomes debilitated with the result that all parts of the body begin to grow old. At the age of sixty-four his hair and teeth are gone.8

Thus, according to traditional Chinese medicine, kidney qi plays an essential role in the function of reproduction, growth, and development. If this function is abnormal, infertility, infantile

underdevelopment, maldevelopment, weakness of bone development, etc. will manifest.

Kidney essence is classified as yin, while qi is yang. Known as kidney yin and yang, they both restrict and depend on each other in order to maintain a dynamic physiological balance. If this balance is disrupted, pathological changes of hyperactivity or hypoactivity of kidney yin and yang will occur.

Clinically, a kidney yin deficiency may be manifested soreness, aching and weakness of the lumbar region and knees, blurred vision, poor memory, etc. A yin deficiency leading to blurred vision, poor memory, etc. A yin deficiency leading to yang preponderance will produce tidal fever, night sweating, dizziness, ringing in the ear(tinnitus), spermatorrhea, and sexual dreams. Kidney yang deficiency decreases the warming function of the kidney bringing on the symptoms of lassitude, coldness and pain in the lumbar region and the knees, cold extremities and frequent urination, leading to pathological conditions such as inadequate reproductive ability, impotence, premature ejaculation and coldness of the uterus. If a certain degree of kidney yin or yang deficiency is reached then either may injure the other resulting in a loss of the body's dynamic physiological balance.

In addition, clinical manifestations such as frequent and clear urination, enuresis, incontinence of urine, spermatorrhea, premature ejaculation, etc. which show no heat or cold syndromes are considered to be a kidney qi deficiency. The clinical symptoms of dizziness, ringing in the ears, soreness and aching of the lumbar or knee region, infantile maldevelopment, etc, which demonstrate no clear cold or heat symptoms, are classified as kidney-essence deficiency.

Controlling Water Metabolism

The kidney plays an essential role in the distribution, regulation, and metabolism of water. As the Suwen says, "The kidney is the organ of water in charge of fluid."9 Water is received by the stomach, transformed and transported by the spleen. Par of the fluid is sent down by the descending function of the lung until it finally reaches the kidney and is divided by the qi activity of the kidney yang into two parts: clear and turbid. The useful clear fluid is sent back up to the lung a jin, and the turbid waste fluid flows down into the urinary bladder to form urine, which is excreted. The distribution of water is related to the functions of the stomach, spleen, small intestine, large intestine, lung, urinary bladder, and sanjiao, but they all rely on the warming and push-

ing function of kidney yang. If kidney yang is insufficient, this may lead to retention of water resulting in scanty urination, retention of urine or frequent urination, enuresis, etc.

Receiving Qi

The reception of qi is controlled by the kidney, which leads it downward from the lung. If kidney qi is adequate, and its functioning normal, then breathing is even and smooth. In a deficient state, uneven breathing, dyspnea, and asthma exacerbated by exercise will occur.

Controlling Bone, Producing Marrow, and Influencing Hair Luster

Nourishment of the bone structure requires marrow, a product of kidney essence. The term "marrow" includes the bone marrow and the spinal cord. The brain is known as the "sea of marrow." Sufficiency of this essence produces a well developed and functioning skeletal system. Inadequate essence, however, may lead to a variety of syndromes: a sore, aching, and weak lumbar region and knees, weakness or atrophy of the lower limbs, infantile maldevelopment, delayed closing of the fontanelle, etc. Furthermore, according to traditional Chinese medicine, "teeth

are the remainder of bone." Poor nourishment by kidney essence also caused looseness and loss of teeth.

Essence and blood generate each other. Ample essence makes sufficient blood. Hair is nourished by the blood and rooted on the basis of kidney qi. Therefore luster, moisture, dryness, roughness growth and falling out of hair is related to the sufficiency of kidney essence. As the Suwen says, "The kidney is in tune with the bones, its prosperity is reflected in the luster and moisture of the head hair."0

Opening into the Ear, Perineal Ante-tract and Perineal Post-Tract

Auditory function is dependent on nourishment from the essential qi of the kidney. If that essence is sufficient, then keen hearing will result. Otherwise, there will be deafness and a ringing in the ears. The perineal ante-tract (including urethra and vagina) and post-tract (anus) have the action of reproduction and excretion through the function of kidney qi. Insufficiency will manifest as frequent urination, enuresis or scanty urine; for the reproductive organs there will be spermatorrhea, impotence, premature ejaculation, or infertility.

Section Two

The Six Fu Organs

1. Gall Bladder

The gall bladder is attached to the liver and stores bile. There is an ancient saying regarding the close relationship between the liver and bile, "The remaining qi of the liver flows to the gall bladder and turns into the juice of essence (bile)." Bile is continuously excreted into the intestinal lumen to assist in digestion. The bitter taste and yellow color of bile are significant in disease manifestations of bitter taste in the mouth, vomiting of bile, jaundice, etc. As the liver and the gall bladder are externally and internally related, the gall bladder is also involved in the free flow of qi concerning emotional activities.

Clinically, when some mental disorders or emotional symptoms such as fear and palpitation, insomnia, dream disturbed sleep, etc. occur, treatment can be applied by considering the gall bladder.

2. Stomach

Situated below the diaphragm, the stomach's upper outlet connects with the esophagus, and its lower outlet with the small intestine. Its main physiological function is to receive and digest food. The stomach is also known as the "sea of water and cereal." Food is digested here, then sent downward to the small

intestine, where the essential substances are transformed and transported by the spleen to the whole body. The spleen and the stomach collectively are known as the "acquired foundation," that is, their proper nourishment establishes the foundation for a healthy life. Clinical diagnosis and treatment place great stress on the strength and weakness of the stomach and spleen qi. Generally, it is considered that whatever kind of disease occurs, if stomach qi is still strong, the prognosis will be good. It is said, "Stomach qi is the foundation of the human body. When there is stomach qi, there is life. When there is no stomach qi death will follow." Preserving stomach qi is therefore considered an important principle of treatment.

Normal stomach qi descends. If it fails to descend, symptoms such as anorexia, fullness, pain and distension of the upper abdomen, nausea, vomiting, hiccough, etc. will appear.

3. Small Intestine

The upper end of the small intestine connects with the stomach, its main function being to receive partially digested food from the stomach and further divide it into clear and turbid. The small intestine transfers the turbid residues to the large intestine. The spleen transports the clean essential substances to all parts of

the body, and part of the water contained in food to the urinary bladder. Therefore, if diseased, the small intestine will not only affect the function of digestion and absorption, but also lead to urinary problems.

4. Large Intestine

The upper end of the large intestine is connected to the small intestine by the ileocecum, and its lower end connects to the anus. Its main physiological function is to receive the waste material send down from the small intestine and, in the process of transporting it to the anus, absorb a part of its fluid, and convert it into feces to be excreted from the body. Dysfunction of the large intestine produces the symptoms of borborygmus and diarrhea; if the fluid is further exhausted, the symptoms will be constipation and so on.

5. Urinary Bladder

The main function of the urinary bladder is to store and discharge urine. It has an exterior and interior relationship with the kidney. Pathologically, if the urinary bladder has a dysfunction of qi, dysuria or retention of urine will appear. If its restric-

tive function is lost, there may be excessive urination or incontinence of urine.

6. Sanjiao

Sanjiao (three areas of the body cavity) is a general term for the three sections of the body trunk. The upper jiao contains the heart and lung, the middle jiao contains the spleen and stomach, and the lower jiao contains the kidney and urinary bladder. The following are the categories of function as described by the Lingshu:

> The function of the upper jiao is to act like a fog; the function of the middle jiao is maceration; the function of the lower jiao is to be an aqueduct.1

Thus the heart and lung function is to distribute qi and body fluid by a spreading and moistening action. The spleen and stomach must digest, absorb, and transfer the qi, blood, and body fluid transformed from the essential substances; a similar process to that of soaking in water to cause decomposition and dissolution. The kidney and urinary bladder function to transport fluids and water.

Pathological problems in any of the three jiao will effect the organs located there.

Chapter Three

Qi, Blood and Body Fluid

Qi, blood, and body fluid are fundamental substances of the human body which sustain the normal physiological functions of the zang-fu organs and tissues.

Section One

Qi

The character qi denotes a dynamic essence characterized by both substance and function. For example, clean qi, turbid qi, and the qi transformed from the essence of food are substantial qi, while the qi of the heart, liver, spleen, kidney, stomach, and the qi of the channels and collaterals are functional qi.

The classification of qi in the human body varies with its distribution, origin, and function.

1. Primary Qi (yuan qi)

Primary qi is the most important and fundamental qi originating from the congenital essence. It is nourished and replenished by the fundamental substance of food after birth. Primary qi is also known as the qi of the kidney, and is distributed to the whole body via the sanjiao functions. It arouses and promotes the activities of the zang-fu organs and tissues. If primary qi is congenitally deficient or exhausted due to chronic disease, then various pathological changes will occur.

2. Aggregative Qi (zong qi)

This is the combination of inhaled clean qi through the lung with the fundamental substance qi of food digested and absorbed by the stomach and spleen. Aggregative qi is accumulated in the chest and has the function of nourishing the lung and the heart, thus promoting respiration and blood circulation.

3. Nutrient Qi (ying qi)

Nutrient qi originates from the essential substance of food transformed by the spleen and stomach. It is the component part of blood flowing throughout the body. The Suwen states, "Nutrient qi is actually the essential qi transformed from food and water."2 While in the Lingshu it is recorded:

The nutrient qi is secreted by the body fluid, circulates in the blood vessels, and is transformed into blood to nourish the four extremities, the five zang and six fu organs.3

4. Defensive Qi (wei qi)

Defensive qi is mainly derived from the essential substances of food and water which form a part of the human body's yang qi. It circulates outside the vessels mainly spreading through the muscles and skin. Its physiological functions are 1) defending the body surface against the invasion of exogenous pathogenic factors, 2) warming and nourishing the tissues and organs, and 3) adjusting the opening and closing of the pores.

Section Two

Blood

Blood is transformed from the essence of food via the digestion and absorption of the spleen and stomach. According to the Lingshu, "When the middle jiao receives food and water, it transforms it into red fluid which is called blood."4 After its formation, blood circulates incessantly throughout the body to nourish the zang and fu organs, the skin, the muscles, tendons, and bones in order to maintain their normal physiological activities.

Blood is the substantial basis for mental activities. Only when there the qi and blood are abundant can there be high spirits and clear minds. So in the Suwen it states, "Blood and qi are the spirits of man."5 Pathological changes of blood cause symptoms of palpitation, insomnia, unconsciousness, delirium, etc.

Section Three

Body Fluid

Body fluid in traditional Chinese medicine is a general term for all normal liquid in the body including saliva, gastric fluid, intestinal fluid, joint cavity fluid, tears, nasal discharge, sweat, urine, etc. Body fluid is derived from food and drink which is

digested and absorbed by the spleen and stomach. It exists in the blood, tissues, and interstices of joints. A lucid and thin fluid termed jin fluid permeates the muscles and skin. Its main physiological function is to warm and nourish the muscles, and to moisten the skin. A turbid and viscous fluid called ye fluid supplies the joint cavities, brain, and body orifices. Its main physiological function is to lubricate the joints, tone the brain, and moisten the orifices. Although corresponding in general origin, formation, and function, jin and ye differ by their distribution, location, and individual functions. Since no definitive line can be drawn between the two, they are not clinically differentiated but are generally termed jinye (body fluid).

Chapter Four

Channels and Collaterals

The theory of channels and collaterals is an important component of the theoretical system in traditional Chinese medicine. It covers the physiological functions and pathological changes of the channels and collaterals, their interrelations with the zang-fu organs, and is essential in guiding clinical practice, especially acupuncture treatment.

Section One

Formation and Functions of Channels and Collaterals

1. Channels and Collaterals System

The system of channels and collaterals constitutes the twelve regular channels, the eight extra channels, the fifteen collaterals, the twelve divergent channels, the musculo-tendinous and cutaneous regions of the twelve regular channels.

2. Channels and Collaterals Functions

1) Physiologically the channels and collaterals are considered to be a series of connecting passages through which qi and blood circulate to regulate the functions of the zang-fu organs, tissues, and sense organs. These passages also conduct the sensations and reactions (deqi) of acupuncture treatment.

The five zang and six fu organs, four limbs, nine orifices, skin muscles, vessels, and tendons, although having their respective physiological functions, also maintain the harmonization and uniqueness of interior, exterior, upper, and lower parts of the body as a united and organic entity. This interconnection and organic combination relies upon the function of the channels and collaterals system.

All the tissues and organs of the human body need the nourishment of qi and blood in order to keep their normal physiological activities. The distribution and circulation of qi and blood throughout the body to nourish the zang-fu, tissues, and organs and to resist exogenous pathological factors depends on the transportation and conduction of the channels and collaterals. As the Lingshu records:

> The channels and collaterals are the passages through which blood and qi flow to nourish yin and yang, to moisten tendons and bones, and to lubricate the joints.6

2) Pathologically, channels and collaterals are the pathways through which the exogenous pathological factors are transmitted and their channels reflected. In the Suwen it is noted:

> When pathogenic factors invade the skin and the pores are open they enter the collaterals. When the collaterals become full, the pathogenic factors will move into the channels. When the channels are full, the pathogenic factors transmit to and reside in the zang and fu organs.7

The interior and exterior, upper and lower parts of the body form an integrated entity through the connecting network of channels and collaterals. So under pathological conditions every part of the body will affect the rest via the channels and collaterals. The channels and collaterals are not only the passages of disease transmission, but can also reflect pathological changes. Namely, the diseases of the zang-fu organs can be reflected on the body surface, especially in certain areas or at certain points, through the transmission of channels and collaterals.

3) In diagnosis, channels and collaterals have certain running courses that connect with the zang-fu organs. They also reflect pathological changes on the body surface. Therefore clinical diagnosis can be made according to symptoms that are related to those courses and their respective zang-fu organs.

4) In treatment, the theory of channels and collaterals is extensively used in clinical treatment for different branches of traditional Chinese medicine. Treatments using traditional medicinal herbs are based on their main actions vis-a-vis related zang-fu organs and channels. In the practice of acupuncture, the theory of channels and collaterals is the basis of all treatment and clinical practice. Point selection and prescription combinations are all made on this basis. By stimulating a certain point or area on the body surface the physiological functions of the channels and collaterals are aroused. This action is achieved by propagating sensation through the channels. Without this sensation it is hard to achieve a therapeutic effect.

Section Two

The Twelve Regular Channels

The twelve regular channels are a general term for the three yin and three yang channels of the hand and the three yin and three yang channels of the foot.

1. Lung Channel of the Hand Taiyin

The lung channel of the Hand Taiyin originates from the middle jiao and descends to connect with the large intestine (1). It turns around the upper orifice of the stomach (2), passing through the diaphragm (3) and enters the lung, forming part of the lung channels system (4) From the lung it flows upward to connect with the throat (5) and exits transversely from the arm pit (6). It then travels along the anterior-medial aspect of the upper arm (7), passing the cubital region and arrives at the Cunkou (8), the radial side of the wrist containing the radial artery for pulse palpation. Passing the thenar eminence (9), it travels along the radial border of the palm ending at the medial side of the tip of the thumb (Shaoshang, Lu.ll) (10). The branch separates from the Lieque (Lu.7) (11) near to the wrist and goes directly to the

radial side of the tip of the index finger (Shan-gyang, L.I. 1) (12) where it joins with the large intestine channels of the Hand-Yangming. (See Fig. 3)

Main pathological changes: Cough, asthma, hemoptysis, sore throat, pain and fullness of the chest, pain in the clavicular region, pain along the anterior-medial aspect of the arm, and shoulder pain.

2. Large Intestine Channel of the Hang-Yangming

The large intestine channel of the Hang-Yangming starts from the tip of the index finger (Shangyang, L.I. 1) (1). Running upward along the radical aspect of the index finger, it passes through the inter-space of the first and second metacarpal bones, and ascends along the lateral anterior aspect of the upper arm to the highest point of the shoulder (2). It then travels along the anterior border of the acromion up to the seventh cervical vertebrae (3), then descends to the supraclavicular fossa (4) and enters the thoracic cavity to connect with the lung (5). It passes through the diaphram (6) and enters the large intestine (7), forming part of the large intestine channel system.

The branch from the supraclavicular fossa travels upward to the neck (8) and to the cheek (9), and enters the lower teeth (10), then it curves around the upper lip and exits at the corner of the mouth (11), where it crosses the opposite large intestine channel of the Hand-Yangming at the philtrum (12). it ends at the side of the nose (Yingxiang, L.I. 20) (13) where is connects with the stomach channel of the Foot-Yangming. (See Fig 4)

Main pathological changes: lower toothache, sore throat, epistaxis, runny nose, dryness of the mouth, swelling and pain of the neck, pain or motor impairment of the anterior-lateral aspect of the arm, etc.

3. Stomach Channel of the Foot-Yangming

The stomach channel of the Foot-Yangming starts from the lateral side of the nose (Yingxiang, L.I. 20) (1). It flows upward to the bridge of the nose where it meets the urinary bladder channel of the Foot-Taiyang (Jingming, U.B. 1) (2). Turning downward along the lateral side of the nose, it enters the upper gum (3). Curving around the lips (4), it meets Chengjiang (Ren 24) at the mentolabial groove (5). Then it travels to the posterior

aspect of the mandible passing through the Daying (ST.5) (6) ascending in front of the ear and following the anterior hairline (7), it reaches the forehead (8).

The facial branch deviates from the anterior aspect of the Daying (St.5) and runs downward to the Renying (St.9) (9). It runs along the throat and enters the supraclavicular fossa (10). Going downward it passes through the diaphragm, enters the stomach (11), forming part of the stomach system, and connects with the spleen (12).

The straight line of the channels separates the supraclavicular fossa and runs downward along the middle mammillary line (13). It travels to the side of the umbilicus (2 cun lateral) (14) and descends to the inguinal groove, where it enters Pt. Qichong (St. 30)(15). 8

The branch bifurcating from the lower orifice of the stomach (16) descends to the deep layer of the abdomen and joins the previous straight line of the channel at Pt. Qichong (St.30) (15). Running downward it travels along the anterior aspect of the thigh and reaches the knee (17). From there is continues further down along the anterior border of the lateral aspect of the tibia to the dorsum of the foot and reaches the lateral side of the tip of the second toe (lidui, St.45) (18).

Another branch splits from Pt. Zusanli (St. 36) (19), and descends downward to enter the lateral side of the middle toe (20). The branch from the dorsum of the foot parts from Chongyang (St. 42) (21) and flows anteriorly to the medial side of the tip of the great toe (Yinbai, Sp. 1) (22), where it communicates with the spleen channel of the Foot-Taiyin. (See Fig. 5)

Main pathological changes: borborygmus, abdominal distention, edema, stomach ache, vomiting, diabetes, deviated mouth and eyes, sore throat, epistaxis, high fever, perspiration, headache, mania, and pain along the course of the stomach channel.

4. Spleen Channel of the Foot-Taiyin

The spleen of the Foot-Taiyin starts from the medial aspect of the tip of the big toe (Yinbai, Sp.1) (1). It travels along the medial aspect of the foot at the junction between the red and white skin, ascends anteriorly to the medial malleolus (2) up to the medial aspect of the leg (3). It crosses and goes in front of the liver channel of the foot-Jueyin 8 cun above the medial malleolus. passing through the anterior medial aspect of the thigh (4), it enters the abdomen (5) and the spleen (6), forming part of the

spleen system, and connects with the stomach. From there it traverses the diaphragm (7), and runs alongside the esophagus. It arrives at the root of the tongue (8) and spreads over the lower surface of the tongue.

The branch goes from the stomach up through the diaphragm and flows into the heart (9) to join the heart channel of the Hand-Shaoyin. (See Fig. 6)

Main pathological changes: epigastric pain, abdominal distension, vomiting after eating food, belching, loose stools, jaundice, lassitude, heaviness of limbs, stiffness of the tongue, coldness, swelling and pain of the lateral side of the lower limb, motor impairment of the big toe, etc.

5. Heart Channel of the Hand-Shaoyin

The heart channel of the Hand-Shaoyin commences at the heart (1) and pertains to the "heart system." It descends to pass through the diaphragm (2) and connects with the small intestine (3).

The ascending branch splits from the "heart system" up to the lung (4). Then it turns downward to the axilla (Jiquan, H.1)

(5). From there is goes along the posterior border of the medial aspect of the upper arm (6). Passing through the cubital region (9), it descends to the pisiform region proximal to the palm and enters the palm (8). Then it ends at the medial aspect of the tip of the little finger and links with the small intestine channel of the Hand-Taiyang. (See Fig. 7)

The branch splits from the "heart system" alongside the esophagus (9) to connect with the "eye system" (10).

Main pathological changes: Pain in the heart region, chest pains, sweating, heart palpitation, insomnia, dry throat, thirst, inner side arm pain, cold extremities, hot palms.

6. Small Intestine Channel of the Hand-Taiyang

The small intestine channel of the Hand-Taiyang starts from the ulnar aspect of the tip of the little finger (Shaoze, S.I. 1) (1) and travels along the ulnar border of the hand dorsum upward to the posterior border of the lateral aspect of the upper arm (2). It passes through the cubital region curving around the scapular region (3) where it meets the du channel at Pt. Dazhui (Du. 14) (4). Then turning downward to the supraclavicular fossa (5), it

connects with the heart (6). Alongside the esophagus, it passes through the diaphragm (7), reaches the stomach (8) and enters the small intestine (9) forming part of its channel system.

The branch separates from the supraclavicular fossa and ascends to the neck (10) and further up to the cheek (11). Going through the outer canthus, it turns into the ear (Tinggong, S.I. 19) 912).

Another branch deviates from the cheek. Running upward to the lower border of the infraorbital region, it reaches the inner canthus Pt. Jingming (U.B. 1) (13) to communicate with the urinary bladder channel of the Foot-Taiyang. (See Fig. 8)

Main pathological changes: Ringing in the ears, yellowish eye coloring, sore throat, swelling and pain under the jaw and in the neck, shoulder and upper external arm pain, abdominal pain and distension, frequent urination, etc.

7. Urinary Bladder Channel of the Foot-Taiyang

The urinary bladder channel of the Foot-Taiyang originates from the inner canthus (Jingming, U.B. 1) (1). Passing through the forehead, it flows up to the vertex and meets the du channel at Pt. Baihui (Du. 20) (2).

A branch splits from the vertex and goes bilaterally down to the upper corner of the ear (3).

The straight line enters and connects with the brain from the vertex. It exits the brain at the neck region (4) and bifurcates into two lines. One line runs straight downward (1.5 cun lateral to the mid-line of the back) to the lumbar region (5), entering the body cavity to connect with the kidney and join with the urinary bladder (6), forming a part of its channel system. From there it descends along the posterior aspect of the thigh and ends in the popliteal fossa (7). Another line from the posterior aspect of the neck runs downward along the medial border of the scapula (3 cun lateral to the back mid-line) (8). Passing through the gluteal region (9), it meets the proceeding branch descending from the next region to the lumbar region in the popliteal fossa (10). From there it descends to the posterior aspect of the gastrocnemius muscle (11) and further to the lateral posterior side of the tip of the little toe (Zhiyin, U.B. 67) (12),

where it communicates with the kidney channel of the Foot-Shaoyin. (See Fig. 9)

Main pathological changes: dysuria, enuresis, mania or depression, malaria, eye pains, lacrymation on exposure to the wind, nasal obstruction, runny nose, epistaxis, headache, stiffness of the neck, pain of the lower back and hip region and along the course of this channel on the posterior side of the leg.

8. Kidney Channel of the Foot-Shaoyin

The kidney channel of the Foot-Shaoyin starts from the interior aspect of the little toe (1), and runs obliquely towards the sole (Yongquan, K. 1) (2). Emerging from the lower aspect of the tuberosity of the navicular bone (3), it travels behind the medial malleolus and enters the heel (4). Ascending along the medial side of the leg (5), it passes the medial side of the popliteal fossa and goes further upward along the posterior-medial aspect of the thigh (6). Penetrating through the vertebral column of the lumbar region, it enters the kidney (7), forming part of its channel system, and links with the urinary bladder (8).

The straight line of the channel comes out from the kidney. It ascends passing through the liver (9) and diaphragm (10), enters the lung (11), and runs alongside the throat (12), ending at the root of the tongue.

A branch springs from the lung, links with the heart (13), and flows into the chest to communicate with the pericardium channel of the Hand-Jueyin. (See Fig. 10)

Main pathological changes: shortness of breath, dyspnea, cough, hemoptysis, dizziness, vertigo, dryness of the tongue, sore throat, low back pain, frequent urination, enuresis, spermatorrhea, impotence, dysuria, constipation or diarrhea, irregular menstruation, pain of the lumbar spine or along the posterior-medial side of the thigh, weakness of the lower limbs, feverish sensation of palms and soles, etc.

9. Pericardium Channel of the Hand-Jueyin

The pericardium channel of the Hand-Jueyin originates in the chest (1). It enters the pericardium, then descends to pass through the diaphragm (2). Running through the abdomen, it connects successively with the upper, middle, and lower jiao.

A branch springs from the chest (1) and emerges from the costal region to a point 3 cun below the anterior axillary fold (Tianchi, P. 1) (3). It then ascends to the axillary fossa and along the medial aspect of the upper arm (4), it runs downward between the lung channel of the Hand-Taiyin and the heart channel of the Hand-Shaoyin (5). After emerging in the cubital fossa, it goes further downward to the forearm between the tendons of the m. palmaris longus and m. flexor carpi radialis (6). It enters the palm (7) and passes along the middle finger to its tip (Zhongchong, P. 9) (8).

Another branch splits from the palm at Pt. Laogong (P. 8) (9), runs along the ring finger to its tip (10) (Quanchong, S.J. 1) and communicates with the sanjiao channel of the Hand-Shaoyang. (See Fig. 11)

Main pathological changes: palpitation, irritability, pain in the precardiac region, stuffy chest, mental disorder, swelling and pain of the axillary region, spasm or contracture of the elbow, feverish sensation in the palm, etc.

10. Sanjiao Channel of the Hand-Shaoyang

The sanjiao channel of the Hand-Shaoyang originates from the tip of the ring finger (Guanchong, S.J. 1) (1). It travels upward between the fourth and fifth metacarpal bones and along the dorsal side of the wrist and the lateral side of the forearm between the radius and ulna, it passes through the olecranon (2). Then it runs along the lateral aspect of the upper arm and reaches the shoulder region (3) where it travels across and behind the gall bladder channel of the Foot-Shaoyang. Crossing over the shoulder, it enters the supraclavicular fossa (4) and spreads in the chest to connect with the pericardium (5). It then proceeds through the diaphragm (6) down the abdomen, and communicates with the upper, middle, and lower jiao forming a part of the sanjiao channel system.

A branch springs from the chest (7) and runs upward exiting from the supraclavicular fossa, and ascends to the neck (8). Running along the posterior border of the ear (9), it crosses from the superior aspect of the ear to the corner of the forehead (10). Then it turns downward to the cheek and terminates in the infraorbital region (11).

Another branch arises from the anterior aspect of the ear 912). It crosses the former branch at the cheek and reaches the outer canthus (13 to link with the gall bladder channel of the Foot-Shaoyang. (See Fig. 12)

Main pathological changes: deafness, ringing in the ears, sore throat, pain of the outer canthus, swelling of the cheek, pain of the retroauricular region, shoulder and lateral aspects to the upper arm and elbow, dysuria, edema, enuresis, abdominal distension, etc.

11. Gall Bladder Channel of the Foot-Shaoyang

The gall bladder channel of the Foot-Shaoyang starts from the outer canthus (Tongziliao, G.B. 1) (1) and ascends to the corner of the forehead (Hanyan, G.B. 4) (2) and then winds downward to the retroauricular region (Fengchi, G.B. 20) (3). It then runs along the lateral side of the neck emerging in front of the sanjiao channel of the Hand-Shaoyang (4). It traverses behind the sanjiao channel of the Hand-Shaoyang at the shoulder region and travels further down to the supraclavicular fossa (5).

The retroauricular branch passes through the ear (6) and emerges in front of the ear at the posterior side of the out canthus (7). A branch comes out from the outer canthus (8), runs downward to the Daying (St. 5) (9) and meets the sanjiao channel of the Hand-Shaoyang at the infraorbital region 910). Descending and passing through the Jiach (St. 6) (11), it reaches to the neck and enters the supraorbital fossa to meet with the main line of the channel (12). From there it further descends and enters the chest (13), passes through the diaphragm to connect with the liver (14) and enters the gall bladder (15), forming part of its channel system. It then travels interiorly in the hypochondriac region, emerging at the lateral side of the lower abdomen near the femoral artery in the inguinal region (16). Then it curves along the margin of the public hair and runs transversely into the hip region (Huantiao, G.B. 30) (17).

The straight line of the channel travels downward from the supraclavicular fossa 918), and further down to the axillary region (19). Along the lateral side of the chest (20) and through the free ends of the floating ribs (21), it meets the former branch at the hip region (22). It then travels downward along the lateral side of thigh to the lateral side of the knee (23). Further descending along the anterior aspect of the fibula (24), it reaches

the lower end of the fibula, and the anterior aspect of the lateral malleolus (25). Following the dorsum of the foot, it terminates at the lateral side of the fourth toe's tip (Foot-Qiaoyin, G.B. 44) (26).

The branch splitting from Foot-Linqi (G.B. 41) (27) runs between the 1st and 2nd metatarsal bones to the hairy area of the big toe (Dadun, Liv. 1) (28) where it communicates with the Liver channel of the Foot-Jueyin. (See Fig. 13)

Main pathological changes: alternate chills and fever, bitter taste in the mouth, blurred vision, vertigo, hypochondriac pain, migraine, pain in the supraclavicular fossa, pain of the outer canthus and axillary fossa, malaria, pain along the lateral side of the thigh, knee and leg, pain and motor impairment of the fourth toe, etc.

12. Liver Channel of the Foot-Jueyin

The liver channel of the Foot-Jueyin originates from the dorsal hairy region of the big toe (Dadun, Liv. 1) (1). Ascending along the dorsum of the foot, it flows further upward to the anterior aspect of the medial malleolus 92) where is crosses behind the

spleen channel of the Foot-Taiyin to the area 8 cun above the medial malleolus (3). Then it runs upward to the medial side of the knee (4) and along the medial aspect of the thigh (5) into the public hair region (6). From there it curves around the external genitalia and travels up to the lower abdomen (7). Alongside the stomach, it enters the liver (6), forming part of its channel system, and connects with the gall bladder (9). Then it proceeds upward to pass through the diaphram (10) and disperses in the costal and hypochondriac region 911). Ascending along the posterior aspect of the throat (12), it emerges in the nasopharynx region (12) to connect with the "eye system" (13). Extending further upward, it exits from the forehead (14) and meets the Du channel at the vertex (15).

A branch arising from the "eye system" descends to the cheek (16) and curves around the internal surface of the lips (17). another branch separating from the liver (18), passes through the diaphragm and enters the lung (19) to link with the lung channel of the Hand-Taiyin. (See Fig. 14)

Main pathological changes: pain and distension of the hypochondrium, stuffiness of the chest, vomiting, diarrhea, vertex headache, hernia, dysuria enuresis, pain and distension of the lateral lower abdomen, lumbago, irregular menstruation, mental disorders, etc.

Section Three

Pathways, Conjunctures, Exterior-Interior Relationships and the Order of Qi Flow in the Channels

1. Pathways and Conjunctures

The running direction and the interconjunction of the twelve regular channels compose the following network: the three yin channels of the hand run from the chest to the hand, connecting with the three yang channels of the hand; the three yang channels of the hand run from the hand to the head, joining with the three yang channels of the foot; the three yang channels of the foot travel from the head to the foot, uniting the three yin channels of the foot; the three yin channels of the foot proceed from the foot up to the abdomen, linking with the three yin channels of the hand.

2. Exterior-Interior relationships and the Order of the Qi Flow in the Channels

The twelve regular channels of the hand yin-yang and foot yin-yang respectively have a connecting relationship with their pertaining zang or fu organ. Specifically, yin channels pertain to zang organs and connect with fu organs, while yang channels

pertain to fu organs and connect with zang organs. The exterior-interior relationship of the twelve regular channels is the same as the exterior-interior relationship of the yang and fu organs.

Table 2
Schematic Diagram of Qi Flow Order in The Twelve Regular Channels

The Lung The Large Intestine
Channel of the at tip of index finger Channel of the
Hand Taiyin Yang-Yangming

The Stomach Channel
at tip of big toe of the Foot-Yangming at side of nose

The Spleen Channel The Heart Channel of
of the Foot-Taiyin the Hand-Shaoyin at tip of little finger

The Urinary Bladder The Small Intestine
Channel of the at inner canthus Channel of the Hand-

Foot-Taiyang Taiyang

The Kidney Channel The Pericardium
at tip of small toe of the Foot-Shaoyin Channel of the Hand-
Jueyin

The Sanjiao Channel
at outer canthus of the Hand-Shaoyang at tip of ring finger

The Ball Bladder The Liver Channel
Channel of the Foot- on big toe of the Foot-Jueyin
Shaoyang

Channels which have an exterior-interior relationship run opposite each other on the lateral and medial aspects of the four limbs (except the liver channel of the Foot-Jueyin and the spleen channel of the Foot-Taiyin which change their position 8 cun above the medial malleolus of the lower limbs). These channels then connect with each other on the hand or foot, forming the six pairs of exteriorly-interiorly related channels of the zang-fu organs. Qi flows continually, circulating throughout the channels in the following manner as shown in Table 2.

Section Three

Eight Extra Channels

The eight extra channels are the following group of eight channels: Ren, Du, Chong, Dai, Yinwie, Yangwei, Yinqiao, and Yangqiao. They differ from the twelve regular channels in that they neither pertain to any zang or fu organ, nor do they share an exterior-interior relationship between each other. Their main function is to regulate the circulation of qi and blood in the twelve regular channels. When these regular channels are overfull, excess qi and blood flow into the eight extra channels to be stored for later use.

1. The Ren Channel

The Ren channel connects with all the yin channels of the body and is therefore known as the "sea of yin channels." In women, it is responsible for pregnancy and foetal nourishment.

The Ren channel commences within the lower abdomen and exits at the perineum (1). It ascends anteriorly to the public region (2). Along the internal abdomen, it flows upward to pass through Pt. Guanyuan (Ren 4) and other points, and reaches

the throat (3). Flowing further upward, it curves around the lips (4), passes through the cheek (5), and emerges in the infraorbital region (6). (See Fig. 15)

Main pathological changes: hernia, leukorrhea, lumps in the lateral lower abdomen, irregular menstruation, abortion, infertility, etc.

2. The Du Channel

The Du channel governs all the yang channels of the body, so it is known as the "sea of yang channels."

The Du channel commences within the lower abdomen. Traveling downward, it appears in the perineum (1). It then flows upward inside the spinal column (2) to the nape of the neck (Fengfu, Du 16) 93), entering the brain and ascends to the vertex (4). Along the forehead, it descends to the nose bridge, then to the lips (5), entering the labial frenulum inside the upper lip (6). (See Fig. 16)

Main pathological changes: stiffness of the spine, opisthotonos, pain of the back, mental disorders, infantile convulsion, etc.

3. The Chong Channel

The Chong channel regulates the circulation of qi and blood of the twelve regular channels, so it is known as the "sea of the twelve regular channels" and the "sea of blood."

It originates in the uterus (1) where three branches immediately arise. The first branch travels along the posterior wall of the abdominal cavity, then ascends and runs inside the spinal column (2). The second branch travels up to the umbilicus along the anterior wall of the abdominal cavity (3) and spreads in the chest, then flows upward to the throat (40 and circles around the lips (5). The third branch descends and emerges in the perineum (6), and runs downward along the medial aspect of the thigh (7), terminating at the big toe (8). (See Fig. 17)

Main pathological changes: irregular menstruation, amenorrhea, uterine bleeding, deficient lactation, hematemesis, etc.

4. The Dai Channel

The Dai channel possesses the function of binding and restricting other channels. It starts below the hypochondriac region

91), runs obliquely downward, then transversely around the waist like a belt (2). (See Fig. 18)

Main pathological changes: abdominal distension and coldness of the lumbar region, like "sitting in water."

5. The Yinwei Channel

The Yinwei channel binds the six yin channels together and joins with the Ren channel.

Commencing from the medial aspect of the lower leg (1), it runs along the medial aspect of the thigh (2) up to the abdomen (3) to meet with the Foot-Taiyin channel. It then passes through the chest (4) and communicates with the Ren channel at the neck region (5).

Main pathological changes: heart pain, mental depression, etc.

6. The Yangwei Channel

The Yangwei channel connects with the six yang channels and communicates with the Du channel.

It originates at the lateral side of the heel (1). Running upward to the external malleolus (2), it ascends along the gall bladder channel of the Foot-Shaoyang up to the hip region (3). Passing through the posterior aspect of the hypochondriac (4), axillary, shoulder and neck regions (5), it further travels upward to the cheeks (6) and forehead (7), then turns backward to the back of the neck, where it meets with the Du channel (8).

Main pathological changes: alternate chills and fever, low back pain, etc.

7. The Yinqiao Channel

The Yinqiao channel has the function nof controlling the movements of the lower limbs and eyelids.

It starts from the posterior aspect of the navicular bone 91), and ascends to the anterior aspect of the thigh (30, to the external genitalia (4), it ascends further along the medial aspect of the chest (5) to the supraclavicular fossa (6). It then passes through the anterior aspect of Pt. Renying (St. 9) (7) up to the zygoma (8), and reaches the inner canthus to communicate with the yangqiao channel (9) and Foot-Taiyang channel.

Main pathological changes: inward splay-foot, sore throat, hypersomnia, retention or urine, etc.

8. The Yangqiao Channel

The Yangqiao channel regulates the movements of the lower limbs and eyelids.

It starts from the lateral side of the heel (1). Ascending along the lateral malleolus, it passes the posterior border of the fibula. Then it runs upward along the lateral aspect of the thigh to the abdomen and the lateral aspect of the hypochondriac region, where it winds over the shoulder (2), passes through the neck to the corner of the mouth (3) and enters into the inner canthus to meet with the Yinqiao channel. It runs further upward along the urinary bladder channel of the Foot-Taiyang to the forehead and communicates with the gall bladder channel of the Foot-Shaoyang at the nape of the neck (4). (See Fig. 22)

Main pathological changes: outward splay-foot, insomnia, pain in the inner canthus, etc.