

## Chapter 2 Early Lessons in Traditional Chinese Medicine

At the American College of Traditional Chinese Medicine (ACTCM), there were approximately thirty students with diverse career backgrounds. In medically related fields were a pharmacist and a registered nurse. Among the rest, career experiences ranged from secretarial to computer programming. I was the only physician. Our faculty members numbered six. One of the six, Dr. Yat Ki Lai, eventually became my lifelong teacher and mentor. Classes were held in the evenings and weekends. Our initial makeshift classroom was in a faculty member's house, where folding chairs were set up in the dining room. All the students had day jobs, so we usually came to class tired. Although classes began in winter, we kept the windows open to stay awake.

My early days at ACTCM were filled with disappointment and frustration. The philosopher John Locke wrote that a child's mind is like a blank slate on which you can write anything. For my classmates with less formal medical training, the dogma of TCM was easy to accept. My slate was far from blank. Medical school and residency training had left their indelible imprint. I was not ready to accept ideas contradictory to what had already been deeply etched in my mind.

What I heard in the lectures verged on heresy. As the other students nodded in acceptance, I was thinking, "This is all wrong." I was appalled, for example, when one of our first lecturers said that sinusitis could be treated with herbs and acupuncture. Sinusitis is an infection caused by bacteria. The only known remedies are antibiotics and decongestants for stuffiness. How could herbs and acupuncture replace them? Quite a bit later, I learned that some herbs have antibacterial actions, and acupuncture is very effective in decongesting the nose and sinuses.

Lessons began with TCM organs. They are classified as follows: the five solid (zang 臟) organs are the heart, lung, liver, kidney, and spleen; the six hollow (fu 腑) organs are small

intestine, large intestine, stomach, gallbladder, bladder, and triple burner (三焦), which is not actually an organ but three body zones consisting of the Upper, Middle, and Lower Burners. A Westerner might think of these zones as different areas of the body where calories are burned. The Upper Burner consists of everything above the diaphragm, most importantly the brain, heart, and lungs; the Middle Burner consists of the organs in the upper abdomen, namely the liver, spleen, and stomach; and the Lower Burner consists of the colon, urogenital system, and lower extremities.

The hollow organs are regarded as mere conduits for expelling bodily waste. Most bodily functions are attributed to the solid organs, and teachings about solid organs were what caused me such consternation. The lectures were delivered in Cantonese Chinese followed by English translation. Since I understood both languages, the contradictions could not have been attributed to faulty translation. The descriptions of the heart and lungs were not too different from Western ones; however, for the other three organs—liver, kidney, and spleen—they were unrecognizable.

### Heart 心

The lecturer began by describing the heart as follows:

*“The heart is the essence, the overlord of all internal organs of the six fu and five zang. It is the abode of the spirit, and must be strong against outside evil or disease. If the outside evil influence has penetrated the heart, the heart will suffer such damage that the spirit will leave, and the human organism will die.”*

Although calling the heart the *overlord* sounded strange, I figured that *the abode of the spirit* was not so different from the Western idea that the heart was “the seat of the soul.” In antiquity, both cultures thought the function of the mind resided in the heart.

*“The heart’s Qi [function] must descend, not rise. If the heart Qi rises, there will be heart pathology, as in the feeling of one’s heart in one’s throat. The heart governs the blood vessels and circulation and is manifested on the face and tongue. An insufficiency of heart Qi causes pallor, glassy appearance, anorexia, poor and congested circulation with a black color in the face.”*

The description of heart Qi insufficiency could easily be that of a moribund patient with advanced heart disease.

*“An increase in heart fire results in redness of the tip of the tongue, painful mouth, or sores of the mouth, restlessness, and insomnia.”*

The association of the TCM heart with fire and mouth sores was a bit strange until we were introduced in our curriculum to the Five Phases system of TCM (see chapter 4).

## Lung 肺

Next came the description of the lung.

*“The lung governs Qi. The lung is the sea of Qi. It gets Qi from the outside atmosphere and from inside the body when food is transported via the spleen to the lung. The lung is subordinate to the heart. The heart mobilizes the blood but it depends on healthy lung Qi. The nature of lung Qi is descending. If lung Qi rises, there is dyspnea, cough, congestion, edema, and difficult urination. It opens channels for water. It assists water to descend into the bladder.”*

Lung Qi (literally, air that is inhaled) made sense to me as a Western practitioner. At this point, I could not grasp how the lung received Qi from food, but I found the rest acceptable. The description of what happens when lung Qi rises fits that of congestive heart failure, often accompanied by dyspnea, congestion, and fluid retention.

*“The lung governs skin and body hair, which depend on lung Qi for moisture and nourishment. If lung Qi is weak, the skin and hair become dry.”*

It is logical that poor lung function would impair oxygenation of blood, and therefore the skin and hair, suffering this loss, would become dry. We know that smoking is associated with premature aging of skin. I later learned that one TCM principle for treatment of skin diseases is to treat the lung.

Although I found some ideas a bit quirky, I still approached TCM teaching with an expectant attitude.

## Liver 肝

When the lecturer began describing the liver, things began to change. The description bore no resemblance whatsoever to the organ that I knew as the liver.

*“The liver is the general of organs; it strategizes, needs to flow, and dislikes obstruction,”* he said.

I could accept calling the liver a *general* and saying it *strategizes*, because the liver is actually an organ of metabolism, clearing the body of a multitude of compounds. What was this about *needs to flow*? Had the general now turned into a river? Where is the river going? This is ridiculous, I thought, but since I had already paid for my tuition and had come with the attitude that this system of medicine worked, I was determined to hear the teachers out before drawing any firm conclusions.

*“If liver Qi [function] is congested, a person will anger easily, have chest and flank swelling and pain, and women will have irregular periods. If liver Yang [force] is rising upward, one will have headache and dizziness. If more severe, the eyes will ache, get red, and if even more severe, a stroke could ensue. Liver is closely linked with emotions. If liver Qi is deficient, the patient is easily frightened or angry. In America, there is a lot of liver Qi illness.”*

*“It stores blood. If it loses this function, the patient will have insomnia, be easily awakened, and have fitful sleep or many dreams.*

*“It governs the ligaments of the body, flourishing in the finger and toenails, and exits through the eyes. If liver Qi is congested, it invades the Spleen. Symptoms are anorexia, diarrhea, and poor digestion.”*

He was certainly not describing the liver as I knew it. But as I listened, it began to dawn on me that what he was describing was the sympathetic nervous system! We have a two-part autonomic nervous system that regulates involuntary responses. The parasympathetic part turns on for our vegetative functions such as digesting food. The sympathetic part is activated for fight or flight. This occurs when we face an urgent, stressful situation such as being chased by a wild animal, or in a modern-day setting, a potential head-on car collision. In these situations, the pupils dilate to enhance vision, the heart beats faster and stronger, blood pressure is elevated, and there is increased circulation to the brain. At the same time, circulation is diverted from the digestive tract to muscles, enhancing the ability to run or fight. In addition, sweating is stimulated to help cool off the body from the heat generated by increased circulation and muscle activity.

Some anatomy texts describe the adrenal gland as one big sympathetic ganglion (nerve cell) secreting epinephrine and norepinephrine (also called adrenaline and noradrenaline) into the blood stream. The resultant effect is similar to sympathetic nerve cells stimulating each organ. The TCM Liver then must include the adrenal gland.

*The patient will have insomnia, be easily awakened, and have fitful sleep or a lot of dreams.* Sleep disturbance occurs when there is heightened sympathetic activity.

*If liver Qi is deficient, the patient is easily frightened or angry.* The emotional link also fits the fight or flight mechanism. *A lot of liver Qi illness occurs in America* certainly fit. Just look at the American phenomenon of road rage.

*Headache, dizziness, and possible stroke* can all result from high blood pressure when there is excessive sympathetic or adrenergic activity.

Even the fact that the Liver *governs the ligaments of the body* made sense, as there is increased blood flow to muscles when the sympathetic or adrenergic system is turned on.

Interpreting the Liver in this way, I could understand the TCM syndrome called Liver Fire Uprising 肝火上升. The syndrome describes a patient who has low energy but is irritable. He may have a rapid pulse, sweat easily, and be light-headed. The description fit how I felt after having been up all night on emergency duty. The next day, my body was in sympathetic overdrive to compensate for the lack of rest.

Liver Fire Uprising (also called Deficiency Fire 虛火) is a very common condition. Women, during their reproductive years, lose blood with the menstrual cycle. Blood or fluid loss, when not replenished, tends to stimulate a sympathetic response. Symptoms of palpitation, insomnia, and irritability can further be augmented by the other stresses of modern life. Young women with such symptoms are often labeled neurotic or anxious. Chinese calming Liver Fire 疏肝 herbs such as Cortex Lycii Radicis 地骨皮 and Radix Stellariae Dichotomae 銀柴胡, which reduce the sympathetic response, in combination with other herbs such as Angelica Sinensis 當歸, which restore blood, can be good alternatives to psychotropic drugs used for these conditions. These same calming Liver Fire herbs are also useful for menopausal women with hot flashes, palpitations, and sleep disturbance.

I was stymied by the description of the Liver's *exiting through the eyes*, until I connected the Liver with the sympathetic nervous system. When the sympathetic nervous system is stimulated, the pupils dilate. Pupillary dilation aggravates conditions like glaucoma. Western doctors often treat glaucoma with beta-blockers, drugs that block the beta-receptors of the sympathetic nervous system. In TCM, herbs classified as having the action of calming Liver Fire

are used for eye diseases. Although they are not beta-blockers, these calming Liver Fire herbs work on the eye by decreasing sympathetic activity. Chrysanthemum 菊花, a calming Liver Fire herb, is often prescribed by TCM practitioners for painful, dry eyes as well as for hypertension.

When a TCM practitioner tells a patient that his illness is caused by a Liver problem, the patient assumes the practitioner is referring to the actual organ. My insight into the connection between the sympathetic and adrenergic systems and the TCM Liver enabled me to dispel this misconception. Greta, an attorney who had just moved from the East Coast to San Francisco, had a glaucomatous eye condition. She told me that an acupuncturist in the past had needed Liver points to treat the condition. She thought that there was a connection between the liver and the eye, and that perhaps there was something wrong with her liver. I explained to her that treating the TCM Liver was actually directing treatment to the sympathetic nervous system, not the actual organ. If we understand the TCM Liver to be the sympathetic nervous system, the treatment principle makes sense. In fact, Greta was taking beta-blocking eye drops prescribed by her ophthalmologist. I encouraged her to continue her existing treatment and reassured her that liver disease did not cause her glaucoma.

Ralph, a stockbroker, sought acupuncture for migraine headaches. His primary doctor incidentally found that Ralph had abnormal liver functions. Further testing did not reveal the cause. Somewhere, Ralph had read that Eastern medicine attributed migraine headaches to a Liver problem. He reasoned that perhaps his abnormal liver studies were related to his migraine headaches, and that acupuncturing points designated to treat Liver would straighten out both conditions. In actuality, migraine headaches involve instability in blood vessel size. The Eastern medical connection with Liver is a connection with the adrenergic and sympathetic nervous

systems, which regulate blood vessels. I explained to Ralph that I could use TCM Liver points to treat his migraine headaches, but the treatment would have no effect on his liver function tests because the TCM Liver is not the same as the organ we know as the liver.

When I heard that the Liver *stores blood*, my reaction was, Wrong! Although the liver, with its massive double circulation, contains a huge reservoir of blood, it is the spleen, not the liver, that has the main function of storing blood. I then began thinking about the history of Chinese medicine. The descriptions I heard were over three thousand years old, from a culture where dissection of the human body was taboo. Whatever anatomy physicians learned was likely the result of butchering livestock and poultry. They had probably observed that the liver was a blood-filled organ. It was understandable that they attributed the function of storing blood to the liver.

At this point, I made the first of several discoveries vital to my entire understanding and use of TCM. I needed to pay attention not so much to the names but to the description of an entity to figure out what it represented. If we reflect on the history of medicine, attributing functions erroneously to the liver and other viscera is not uncommon. Middle Eastern cultures believed that emotions originated in the liver. In Iraq, it is common for lovers to say, “I love you with all my liver.” In her book *The Spirit Catches You and You Fall Down*, about the cultural clash between Hmong refugees and the American health-care system, Anne Fadiman points out that the Hmongs consider a weak liver to be the cause of mental illness (1997, 205–206). Even in the West, don’t we say, “My gut tells me . . .” when referring to our intuition?

## Kidney 腎

When the next TCM organ was introduced, I rather enjoyed the challenge of trying to figure out what the ancient Chinese were saying. Each description became a riddle for me: “Here’s my description. What am I?” When we came to the Kidney, I found hidden in the flowery language a multitude of meanings, ultimately comprehensible to the Western mind.

*“The kidney is the secretary of state. It has light, strength, power, and finesse, because it stores the essence of life, governs bone, which produces marrow, which goes to the brain and flourishes in the hair, and externalizes in the ear. When the essence in kidney is abundant, the limbs feel strong, agile, energetic, and one hears and sees well. The hair is the flower of the kidney.*

*“If kidney Qi is deficient, there is lower back ache, soft bones, weakness, fatigue, dizziness, and forgetfulness.”*

If good Kidney function makes an individual feel *strong, agile, and energetic*, the description of Kidney Qi deficiency, with *lower backache, soft bones, weakness, fatigue, dizziness, and forgetfulness*, fits the aging process just about perfectly. I used to wonder about the *flourishes in the hair and externalizes in the ear*, until it occurred to me that with aging, or a decrease in Kidney *essence*, the hair thins and hearing is impaired. The term *essence* 精 is sometimes used to mean semen. Since aging is the result of a progressive decline in reproductive hormones, it is evident that the TCM Kidney must include the reproductive system.

In the context of Kidney function representing reproductive hormones, how can *produces marrow, which goes to the brain* be explained? It made sense when I analyzed *marrow* and *brain* individually. *Marrow*, here, represents both components of bone: cortex as well as marrow. Keep

in mind that Deficient Kidney Qi (function) means the aging process. Sometimes with aging, the bone marrow's ability to produce blood cells can decline. Anemia in a geriatric patient is investigated by first looking for a source of blood loss; if no source is found, then a bone marrow biopsy is performed to determine if the anemia is from decline in production of red blood cells. The other common bone condition of aging is osteoporosis, which is thinning of the bony cortex. Osteoporosis occurs when there is a deficiency in either male or female reproductive hormones. The Kidney tonifying (enhancing) herb *Drynaria Fortunei* 骨碎補 (literally, marrow tonifying) is a component of many herb prescriptions for a multitude of geriatric conditions such as anemia and back pain.

Regarding *brain*, we know that with aging, there is a decline in brain function typified by forgetfulness and, in extreme cases, dementia. Incidentally, there is a known link between dementia and lack of the hormone estrogen. To understand the description *marrow which goes to the brain*, I again remembered that many TCM descriptions came from observation. The brain is totally encased in a bony protective covering, the skull. Using only observation, the ancients probably thought that the two, bone and brain, were somehow interrelated. When they saw relationships between entities, the Chinese commonly used verbal metaphors like “going” and “flowing” to connect them, metaphors that sound foreign to Western ears. In ancient writings, the brain was considered an extraordinary organ, not fitting into the five zang and six fu. Much of actual brain function was attributed to the heart. Only later did TCM relate emotions, thought, and memory to the brain. Similarly, the uterus was considered an extraordinary organ for childbearing and menstruation, but the complex reproductive system was attributed to the Kidney (Wiseman 1996, 73).

Further discussion of Kidney went this way:

*“The bladder is the Provincial Governor. It takes orders from the kidney. Liquid is stored in the bladder, which waits for orders from Kidney Qi before it can come out. In an older person Kidney Qi is poor, and there is difficult or frequent urination.”*

Perfect, I thought, the metaphor makes sense! The lecturer described quite accurately what happens when an aging male has an enlarged prostate gland, which impedes his urination. TCM just attributes this condition to poor Kidney Qi. Whenever patients in midlife complain to TCM practitioners about thinning hair, decreased sexual ability, and difficulty with urination, the patients tell me: “He told me I have weak Kidney Qi.” I smile to myself and think, that probably sounds a bit more acceptable than just saying, “You’re getting old.”

### Spleen 脾

*“The Spleen governs digestion, absorption, and transportation of nutrients and water. Every part of the body depends on Spleen. After birth the Spleen nurtures body Yin [fluid] and Earth [see chapter 4, Five Phases]; it is by nature damp. However, it hates to be wet.”*

*“Spleen Qi [function] must be rising to be normal. Only if Qi is rising does nutrition derived from food go all over. If the Spleen Qi is deficient, it results in anorexia, edema, diarrhea, which means there is dampness congested in the body.”*

*“The spleen governs blood. It makes blood and regulates the circulation and direction of blood flow. If there is malfunction, the symptom is deficient-type bleeding. The Spleen governs muscle. This governance goes all the way to the mouth and flourishes in the lips. If the Spleen is*

*in good condition, the person is muscular and lips are red. If the Spleen is in poor condition, there is decreased muscle tone, and lips are withered and colorless.”*

At present, we know that energy needed for cell life requires both glucose and oxygen. We also know that they come from two different sources. Glucose comes from the food we eat, and oxygen comes from the air we breathe.

In ancient times, without the knowledge of oxygen or of heart and lung function, the Chinese attributed both glucose metabolism and oxygen transport to the Spleen. They knew food was needed for energy, and somehow energy was connected with breathing and the lungs. Therefore, they postulated a two-step process: the Spleen transformed the ingested food to *Qi* (energy) *and blood* and then the Spleen percolated both up to the heart and lungs. They called this the up-bearing function of the Spleen. It is noteworthy that in both TCM and Chinese martial arts, the Middle Burner Qi (function) is of prime importance because of this notion that everything vital happens in the Middle Burner where the Spleen resides. Interestingly, when studying Russian, I learned that the word for abdomen is the same as the word for life. My Russian instructor explained that in antiquity, Russians also believed that everything vital resided in the abdomen where food goes.

The TCM Stomach is closely related to the Spleen. It has the function of propelling food downward toward the colon for elimination. This is called the down-bearing function of the Stomach. Actually, this mechanism is peristalsis. The parasympathetic portion of the autonomic system controls peristalsis. In TCM, then, the Stomach represents the parasympathetic nervous system.

Our lecturer said that if the Spleen's up-bearing function were lost, the symptoms would be *anorexia, edema, and diarrhea*. Up to this point, the TCM Spleen seemed to represent the upper digestive tract and the portion of the pancreas that secretes digestive enzymes.

The next area discussed was the Spleen's tendency to be damp but that *it hates to be wet*. In further studies, I discovered that many Spleen tonifying (enhancing) herbs have a diuretic action, so in a sense, they reduce *wetness*.

When our lecturer proceeded to talk about how the Spleen *governs blood*, he lost me. He said that the Spleen generated and regulated blood, and if the Spleen lost its function, bleeding ensued. I was taught that it is the bone marrow's function to make blood. Platelets and clotting factors are what control bleeding. The spleen is a filter and reservoir for blood. Perhaps, as in the case of the liver, the ancients observed the spleen to be a blood-filled organ and therefore assumed that blood must have been made in that organ.

Although I could translate some of what TCM taught about the Spleen, I was unable to find a unifying parallel for this organ in Western medicine as I had done with the Liver and Kidney, but I was willing to be patient and wait to be shown. Up to this point, my impression was that the Spleen represented the digestive system. It was also involved in water metabolism and the clotting mechanism.

The epiphanies I received regarding the TCM Liver and Kidney fueled my determination to learn more. Books about the history of Chinese medicine further helped explain the strange-sounding metaphors and personification of TCM organs. In ancient writings, the human body was depicted as a microcosm, more specifically, a small country. The organs named, while sounding like ones we know, actually represent physiological systems rather than organs. The

functions assigned to them are analogous to those of governmental officials, bringing order to the body as to a geopolitical state. The reference to the heart as the overlord, the liver as general, and the kidney as secretary of state then becomes understandable