

NUTRITION 120A  
NUTRITIONAL ANTHROPOLOGY  
READING 11: FOOD, HISTORY, CHINA (PART 1)

INTRODUCTION

"Nature has four seasons and five elements [earth, fire, metal, water, and wood]; to grant a long life the four seasons and the five elements store up the power of creation within [attributes of] cold, heat, dryness, moisture, and wind. Man has five viscera [liver, heart, stomach, lungs, and kidneys] in which these five climates are transformed to create joy, anger, sympathy, grief, and fear." (Nei Ching. 1966, p. 117)

Who has not heard of China? Who has not marveled at its vast antiquity, its monuments, and contributions to world knowledge? Is not China, in fact, Chung Kuo, the Middle Kingdom, the center of the world? To be drawn to China is to embark upon a journey of discovery. Within China one walks many paths, encounters many crossroads where competing philosophies, science, and world views intersect. In the past barriers of custom and language limited intellectual exchanges between Orient and Occident. Even today, Western knowledge and understanding of China is limited. East and West compete intellectually in several arenas: science vs. non-scientific philosophy, allopathy vs. germ theory and the western medical model for disease. Western physicians, nutritionists, and dietitians counsel Chinese-Americans using scientific theory and the United States Dietary Goals. For some Chinese-Americans this is appropriate; for others it is not. Many Chinese-Americans follow an allopathic medical-nutritional system thousands of years old, one not based upon science, but upon the forces and attributes of nature encompassed in the principles of Yang-Yin.

Chinese and eastern philosophy possesses a wonderful logic and structure. Yet Chinese medicine and dietetics remains a puzzle to most Western practitioners. Many Westerners who have attempted to fathom the complexities of Chinese traditional medicine remain sceptical, they notice inconsistencies, they debate efficacy of different techniques, unknown and for the most part "untested" by the western scientific community. Beyond the Yang and the Yin, however, lies a wonderful history of dietetic and nutritional understanding extending well into the 6th century B.C. when China was young [!] and the great philosopher, K'ung Fu-tzu (Confucius), wrote eloquently on proper diet and said:

"Do not... eat [your] fill of polished rice, nor finely minced meat; eat not rice that has gone sour, or fish and meat that has spoiled...[Do not] eat except at proper times... never drink [wine] to the point of becoming confused... [never] consume wine or dried meat brought from a shop (The Analects. 10:8)."

Chinese medicine, nutrition, and dietetics owes its origin, development, and present status to three great religious faiths: Confucianism, Taoism, and Buddhism. The great K'ung Fu-tzu proposed the Five Virtues of kindness, justice, proper behavior, sound judgement, and personal integrity. He held that health was guaranteed if a moral life was led. Lao-tzu, the founder of Taoism and contemporary of K'ung Fu-tzu, argued that health was guaranteed if natural law was followed. Lao-tzu proposed the Three Jewels of compassion, humility, and moderation and taught that human contentment and health were gained through unassertive action, and by simplicity in human behavior and actions. Buddhism would enter China and influence its medical-dietary system during the 1st century A.D.

The earlier religions-philosophies of Confucianism and Taoism supported a medical-dietary system based upon five elements and four Yang-Yin principles. The religious, philosophical, medical, and dietary puzzle that captivated many early Chinese practitioners was how to align five elements with four principles, a problem all the more complex because in the cosmic beginning, all things began with the number three.

#### CHINESE COSMOLOGY

In Chinese world view, three universal elements were created from chaos or the great void: force, form, and substance. These universal elements initially were united and invisible but upon successive cosmic evolution they separated. After separation two spheres of heaven and earth became visible and revealed at this time were the complementary principles of Yang-I (male, light) and Yin-I (female, dark). From these principles were generated the Four Figures called Hsiang: Great Yang or T'ai-Yang, Lesser Yang or Shao-Yang, Lesser Yin or Shao-Yin, and Great Yin or T'ai-Yin. Further creation produced the five essential elements: earth, fire, metal, water, and wood, each with creative-generative and destructive-subjugative attributes.

#### ALIGNMENT OF ELEMENTS AND YANG-YIN

Yang and Yin principles are the center post of the Chinese allopathic medicine and diet. Through the centuries Yang and Yin have been expressed by Chinese and others using paired opposite terms. Four term sets define the primary attributes of Yang and Yin: gender (Yang: male-Yin: female), presence or absence of light (Yang: light-Yin: dark), moisture (Yang: dry-Yin: wet), and temperature (Yang: hot-Yin: cold). These attribute sets are assigned to diseases and to foods. Such characterization was also typical of earlier ancient Indian and Mediterranean medicine and dietetics. Yang-Yin terms and their association with medicine, dietetics, and therapeutics expanded until the list has approached 50 sets of attributes.

The Chinese list of disease-food attributes is more sophisticated and complicated than either Indian or Mediterranean medical-dietary systems.

Only six terms, however, are common to Chinese, Indian, and Mediterranean allopathy: gender (male-female), presence or absence of light (light-dark), moisture (dry-wet), moral value (good-evil), power (strong-weak), and temperature (hot-cold). Chinese and Indian allopathic medicine have parallel terms in common for size, texture, and weight not expressed in Mediterranean medicine and dietetics, while Chinese and Mediterranean allopathy have common attributes for color, direction, and location missing from the Indian descriptive medical system.

The the four principles of strong and weak Yang and strong and weak Yin were aligned with the five elements early in Chinese history, and brought into accord by inserting "neutrality" or "balance" between weak Yang and weak Yin. This alignment between Yang, Neutrality, and Yin and the five elements is central to Chinese medical and dietary treatment. In the Chinese system all diseases are designated Yang or Yin; all foods are classified Yang, Neutral, or Yin. Respective disease categories shift in according to internal or external forces upon the body; food classifications shift depending upon season, geographical location, and method of cooking. Health is represented by balance; disease by imbalance. Disease states are influenced by a specific element, planet, season, climate, direction, and number; food attributes and properties are defined by a specific color, flavor/taste, and smell; specific animals and plants also are aligned. Parts of the body, whether hollow or solid organs, sense organs, tissues, or body orifices, are identified with strong or weak Yang, neutrality, or strong or weak Yin. In addition, body secretions, human attributes, and emotions are aligned.

## CHINESE MEDICINE AND DIETETICS

The first Chinese medical-dietary text to discuss alignment, disease, food attributes and use in therapeutics is entitled the Nei Ching. The date of this document is controversial. It has been argued, uncritically, that the Nei Ching is the oldest medical book in the world, that the author was the legendary Yellow Emperor of China (c. B.C. 2697-2597). Others claim that the text was compiled after B.C. 1000, while recent evidence suggests that the Nei Ching does not predate B.C. 200, and may stem from the 1st century A.D. In any case, the Nei Ching is considerably younger than the Caraka-Samhita medical document of ancient India reviewed in Part One of this series, and younger, too, than many Mediterranean medical-dietary accounts considered in Part Two (Unschuld, 1985; Vieth, 1966).

Regardless of this age dispute the Nei Ching is among the most important and interesting medical-dietary text to survive from antiquity. It is organized as a dialogue between two persons, Huang-ti and Ch'i Po, who explore diseases topics and appropriate therapy. Their dialogue examines medical and dietary questions of balance and imbalance, they identify and discuss the universal and essential elements; body organs are classified,

nutritional needs discussed, as well as dietetics and use of food in disease prevention.

## ORGAN SYSTEMS

Body organs are classified by function: those that collect and store products and those that excrete fluids. Nine are considered important to the body. Heart is deemed the home of wisdom and insight, it governs human activities during the summer, but can be damaged by excessive heat. Lung is the home for breath, it directs correct human conduct, governs activities during autumn, but can be damaged by excessive cold. Liver initiates human strategic behavior, is the power source that propels human activities, governs spring season, but can be damaged by wind exposure. Gall bladder is the center for human decisions; spleen rules the transition period between summer and fall. Both spleen and stomach protect food storage inside the body. Small intestine and large intestine rule the body's storage chambers, but can be damaged by excessive humidity. Kidneys rule winter, store life essence, and regulate human efficiency, but can be damaged by excessive dryness (Wallnofer and Ruttauscher, 1965, pp. 79-90, 96).

Five of these nine organs have well defined relationships: heart, kidney, liver, lung, and spleen. Each is characterized by nine specific actions or functions that: 1) produce a secretion, 2) craves a flavor, 3) control a mental attribute, 4) nourish a body component, 5) strengthen one of the other organs, 6) dominates one of the other organs, 7) is injured by an environmental component, 8) is dominated by a body component-tissue, and 9) is strengthened by a body component-tissue.

Each action of the five dominant organs may be defined and diagramed:

**HEART:** produces perspiration, craves bitter foods, controls the human spirit, nourishes blood [pulse], strengthens the spleen, dominates the kidney, is injured by hot climate, is dominated by skin and hair, and is strengthened by muscle.

**SPLEEN:** produces saliva, craves sweet foods, controls human ideas, nourishes flesh, strengthens the lung, dominates the liver, is injured by moist/humid climate, is dominated by bone and marrow, and is strengthened by blood [pulse].

**LUNG:** produces mucus, craves pungent foods, controls animal spirit within humans, nourishes skin-hair, strengthens the kidney, dominates the heart, is injured by cold climate, is dominated by muscle, and is strengthened by flesh.

**KIDNEY:** produces spittle, craves salty foods, controls the human will, nourishes bone-marrow, strengthens liver, dominates the spleen, is injured

by dry climate, is dominated by blood [pulse], and is strengthened by skin-hair.

LIVER: produces tears, craves sour foods, controls the human soul, nourishes muscle, strengthens the heart, dominates the lung, is injured by windy climate, is dominated by flesh, and is strengthened by bone-marrow (Nei Ching. 1966, pp. 22-24; 140-141).

## ORGAN FUNCTIONS AND ATTRIBUTES

Each organ has a characteristic odor, taste, color, and emotion. Each produces a product, then shapes and controls another organ. Each presents a conduit or opening to another organ, converts or transforms its fluid into another, supplies a body action or attribute, and nourishes a body component. Each of these functional characteristics and assigned attributes may be defined:

HEART: its proper odor is toast, its taste is bitter, color is brown-red, and emotion is human happiness; the heart produces blood, shapes the spleen, and controls the kidneys; heart opens to the tongue, converts its fluid into perspiration, supplies the pulse, and nourishes human complexion.

SPLEEN: its proper odor is fragrant, its taste is sweet, color is yellow, and emotion is thought; the spleen produces flesh, shapes the lungs, and controls the liver; spleen opens to the mouth, converts its fluid into saliva, supplies flesh, and nourishes the lips.

LUNG: its proper odor is fishy, its taste is hot, color is white, and emotion is sorrow; the lung produces skin and hair, shapes the kidneys, and controls the heart; lung opens to the nose, convert its fluid into nasal secretions, supplies skin, and nourishes fine hairs.

KIDNEY: its proper odor is putrid, its taste is salty, color is black, and emotion is fear; the kidney produces bone and marrow, shapes the liver, and control the spleen; kidney opens to the ear and to the urinary-genital tract, converts its fluid into saliva, supplies bone, and nourishes coarse hairs.

LIVER: its proper odor is rancid, its taste is sour, color is brown, and emotion is anger; the liver produces ligaments, shapes the heart, and controls the lungs; liver opens to the eye, converts its fluid into tears, supplies ligaments, and nourishes nails (Wong and Lien-Teh, 1936, pp. 35-36)

## DIRECTION AND LOCATION

Alignment of elements and Yang-Neutrality-Yin also consider the importance of geographical direction and color. One passage summarized from the Nei

Ching specifies alignments and how these effect health and where disease first appears in the human body:

**EAST:** the color of east is green. East controls the liver and opens the eyes. The taste of east is sour, its smell is offensive and fetid; its [element is wood]; its animal is chicken; its grain is wheat; its planet is Jupiter; its number is eight. Imbalance in east produces diseases of the nervous system.

**SOUTH:** the color of the south is red. South controls the heart and opens the ears. The taste of south is bitter, its smell is scorched; its element is fire; its animal is the sheep; its grain is glutinous millet; its planet is Mars; its number is seven. Imbalance in south produces diseases within the five viscera.

**CENTER:** the color of center is yellow. Center rules the spleen and opens the mouth. The taste of center is sweet, its smell is fragrant; its element is earth; its animal is the ox; its grain is millet; its planet is Saturn; its number is five. Imbalance of the center produces sickness at the root of the tongue.

**WEST:** the color of west is white. West rules the lungs and opens the nose. The taste of west is pungent; its smell is foul and putrid; its element is metal; its animal is the horse; its grain is rice; its planet is Venus; its number is nine. Imbalance of west produces sickness in the back.

**NORTH:** the color of north is black. North controls the kidneys and opens the lower body orifices. The taste of north is salty; its smell is rotten and evil; its element is water; its animal is the pig; its grain is bean [sic.]; its planet is Mercury; its number is six. Imbalance of north produces sickness within body cavities (Nei Ching. 1966. pp. 112-113).

#### DISEASE: ORIGINS AND DIAGNOSIS

In the Chinese medical-dietary system disease occurs when the body becomes imbalanced and energy cannot circulate. Diseases are classified by external or internal source. External diseases are sub-divided into two categories, those induced from outside the body and diseases dependent upon time. Internal diseases are caused by emotion.

#### LOCATION AND SEASONALITY

Chinese doctors identified differences in weather and climate, soil fertility, and terrain and noted that such geographical considerations effected health and disease. Generalized geographical conditions and basic health complaints for each of the five regions of China were recognized perhaps as early as the 2nd century B.C.:

PEOPLE OF THE EAST... live near the ocean and eat much fish and salt; fish and seafood are thought to cause internal burning, salt to injure the blood; these factors cause a propensity towards ulcers;

PEOPLE OF THE SOUTH... live in regions which are fertile through an abundance of sun and dew; they live on sour food and curd and they suffer from contracted muscles and numbness;

PEOPLE OF THE CENTER... live on level, fertile ground, and obtain a varied diet without great exertion; they are attacked by disease, mainly by complete paralysis, chills, and fevers;

PEOPLE OF THE WEST... live in dwellings of stone, their fields are fertile, and their food good and varied; their bodies are robust and healthy and impervious to external diseases;

PEOPLE OF THE NORTH... live in mountainous regions; their food consists mainly of milk products; they are exposed to cold winds and frost and hence suffer from [a wide number of] diseases (Nei Ching. 1966. pp. 56).

#### THE FIVE EVILS

According to the Nan-Ching, a medical text by Pien-ch'ueh that dates perhaps to the 2nd century B.C., but possibly later, external diseases are caused by the "five evils" defined as: 1) wind, 2) heat, 3) cold, 4) humidity, and 5) drinking and eating without restraint. All diseases, in turn, are classed as primary or secondary and diagnosed by characteristic aromas, colors, excretions, sounds, or tastes. Wind diseases, for example, primarily affect the liver and produce color signs manifest in the patient's complexion. Heat diseases, in turn, appear mainly in the heart and produce characteristic body odors. Cold diseases are manifest mainly in the lung and diagnosed by sound, after giving careful listening to the patient's voice. Illness caused by humidity appear in the kidneys and are diagnosed by observing the patient's perspiration, saliva, and tears. Diseases caused by improper diet, or those that result because of exhaustion, appear initially in the spleen and are diagnosed by characteristic dietary cravings for specific flavors (Nan-Ching. 1986, p. 472).

The ancient Chinese diagnostic system that defined the five organs and the five evils allowed a wide range of symptoms to be observed:

"If the patient has been "hit" by wind, the patient's complexion will become red because liver has sent its influence to the heart; this produces a hot body with fullness and pain below ribs. If, however, the heart is "hit" by heat, then the patient will exhibit a burnt aroma or odor; the body will be hot and the patient feel uneasy. Should the heart be "hit" by cold, then the patient will talk incoherently, exhibit a hot body, but will shiver and express a dislike for cold that also will lead to cough.

If, however, the heart has been "hit" by excessive humidity, then the patient exhibits the tendency to sweat without end, reveals a hot body, and suffers pain in the lower abdomen while their feet and shinbones feel cold. If, instead, the heart was "hit" by over-drinking and eating without restraint, then the patient will exhibit cravings for foods with bitter taste; such a patient presents a hot-feverish body, will perceive their body to be heavy, and will exhibit a desire to lie down but will be unable to contract easily their limbs (Nan-Ching. 1986, pp. 458-460)."

Winds from specific directions are said to injure certain body organs or locations. Winds from the east, for example, injure the liver, neck, and throat; winds from the south injure the chest, heart, and ribs; winds from the west injure the back, lungs, and shoulders; while winds from the north injure the hips and kidneys. People are advised to take precautions and avoid being "hit" by cold wind blowing from any direction, since cold wind closes skin pores. As a result, body heat rises and fever results. It is generally held that cold winds produce pain, tumors, and weakness (Wallnofer and Ruttauscher, 1965, pp. 98-99).

#### IMPORTANCE OF DIET

The prominent Chinese physician, Hua Shou, commented on the Nan-Ching text in A.D. 1361 and considered how improper diet led to disease. As a result of his studies he coined three medical-dietary axioms: 1) if the body is cold and one drinks cold beverages, [this] harms the lung, 2) anger, drinking, eating, exertion, grief, movement, rage, and human thought [taken to excess] cause harm, and 3) eating and drinking without restraint... harms the spleen (Cited in the Nan-Ching. 1986, p. 461-465).

#### IMPACT OF BUDDHISM ON MEDICAL DIAGNOSIS

Buddhism entered China in the 1st century A.D. and influenced disease concepts and medical diagnosis. The structure and organization of Buddhism contrasted sharply with Confucianism and Taoism. The Buddha (Gautama Sakyamuni) had been dead for nearly 500 years when the Buddhist missionaries crossed the Himalayas and entered the Middle Kingdom. Buddhism held that humans were measured by their actions and deeds (karma), that the purpose of life was to suffer endless cycles of birth-death-rebirth and ultimately reach salvation (nirvana). The Buddha taught that the endless cycles could be halted if the Eightfold Path was followed: 1) correct attitudes, 2) correct behaviors, 3) correct concentration, 4) correct efforts, 5) correct intentions, 6) correct living, 7) correct speech, and 8) correct views. Buddhist views and philosophies contrasted sharply with existing Chinese medical traditions. The Buddhists proposed a system of four elements (compared to the Chinese five), and argued that each element, if imbalanced, could produce 101 diseases, for a total of 404 specific illnesses not based upon Yang-Yin considerations.

Ten factors that caused human disease are identified in the Chinese Buddhist document known as the San Tsang or Taisho Tripitaka (Three Treasuries): 1) sitting too long without eating, 2) immoderate eating, 3) worry and fright, 4) excessive exertion, 5) immoderate sexual cravings, 6) anger and vexation, 7) suppression of bowel movements, 8) intentional retention of urine, 9) suppression of rising wind within the body, and 10) suppression of descending wind inside the body (Unschuld. 1985, p. 310).

Another passage from the Tripitaka, attributed to the Buddha, identified nine causes for premature, or unexpected death: 1) eating what should not be eaten, 2) immoderate eating, 3) eating contrary to custom, 4) failure to discharge the old before the arrival of the new, 5) intentional retention of digested foods, 6) disregard for the principles of proper conduct, 7) cultivation of bad acquaintances, 8) untimely appearance and unseemly behavior in the streets, and 9) failure to avoid that which should be avoided (Unschuld. 1985, p. 310).

Specific commentary on the nine causes of untimely death provided guidelines for attaining good health and presumed longevity. Specifically, consumers were instructed to reject all foods that were:

"Repugnant to the senses.... not in accord with the four seasons.... starting to eat again immediately after the conclusion of a meal; not eat in excess of one's needs.... [not] eat at unusual hours.... if forced to eat unfamiliar foods sample [only] a small quantity.... not eat [so long as] the previous meal remains undigested (Unschuld. 1985, pp. 310-311)."

Buddhist monks were required to follow strict dietary codes limiting their time of eating to morning hours. Forbidden foods included sour or fermented items, milk, cream, fish, and meat. Monks were required not to speak with rice in their mouth, make noise while eating, and not feel envy or anger if another priest had more or better food (Beal. 1970, pp. 221-225; 233-237).

Buddhism classified three types of people each with characteristic attitudes towards food:

GREED-TYPE... likes foods [that are] fatty and sweet... he eats slowly and pays attention to the taste of the food, and is glad when he finds anything nice in his bowl.

HATE-TYPE... likes foods [that are] rough and sour... he eats hastily, stuffing his mouth full, and pays no attention to the taste of the food... [he is annoyed] if he finds anything unpleasant in his bowl.

DELUSION-TYPE... has no clear preference for any kind of food... his mind is easily distracted (Conze. 1959, p. 118).

By the 6th century A.D. Chinese Buddhist medicine held there were six causes of disease: 1) imbalance of the four elements, 2) imbalance of nutrition, 3) excessive meditation, 4) demons, 5) evil gods, and 6) improper conduct during previous lifetimes. Each category of illness was treated using different therapeutic approaches. Imbalances caused by elements and improper foods were treated using diet and drugs. Other avenues of therapeutics included extensive patient counseling, breathing regulation, exercises, use of amulets, personal introspection, confession, and acts of contrition (Unshuld. 1985, p. 143).

## DIAGNOSIS: FROM ANTIQUITY TO THE 20TH CENTURY

Chinese medicine has been influenced for more than two thousand years by the Nei Ching and Nan-Ching documents, and by the subsequent blending of Buddhist medical-dietary texts such as the Tripitaka. From antiquity to today, Chinese physicians have diagnosed illness by observation, listening to the patient speak, questioning the patient, and by palpating the wrist pulse. Modern Chinese physician continue this system and observe the patient's skin color and texture, various conditions exhibited by the the patient's eyes, nose, mouth, teeth, and tongue. The patient's hands and nails are felt, breathing monitored, manner of speaking and type of cough (if present) are evaluated. The patient is questioned as to daily activities, type and quantity of exercise, and diet. After evaluation a diagnosis is made, Yang-Yin and organ associations determined, then treatment prescribed based upon allopathic principles. Each disease, whether Yang or Yin in origin, is classified hot or cold, sometimes also wet or dry; the patient is prescribed foods and drugs with opposite attributes or characteristic (Lock, 1980, p. 37-39).

## DISEASE AND DIETETIC MANAGEMENT

Ancient and modern Chinese dietary management and medical treatment links specific flavors with one of the five major body organs. Once the specific body organ and disease are identified, correct food choices are recommended. Many food-organ-disease associations are ancient and were recorded in the Nei Ching. Liver-related diseases, for example, commonly are treated using sweet foods specifically identified as beef, dates, mallows, and non-glutinous rice. Heart-related illnesses are countered using sour foods such as dog meat, leeks, small peas, and plums. Lung-related problems are cured by eating bitter foods among them almonds, apricots, mutton, scallions, and wheat. Spleen-related diseases are eased by consuming salty foods such as large beans, chestnuts, coarse greens, and pork. Kidney-related disorders are cured using pungent foods, among them chicken, glutinous yellow millet, onions, and peaches (Nei Ching. 1966, p. 205).

## NOURISHING FOODS

Ancient physicians identified four broad food categories, each with five foods, that they deemed especially nourishing to the body and useful when treating disease:

**GRAINS:** beans (large varieties), millet (yellow glutinous), peas (small varieties), rice (non-glutinous), and wheat;

**FRUITS:** almonds/apricots, chestnuts, dates, peaches, and plums;

**VEGETABLES:** greens (coarse varieties), leeks, mallows, onions, and scallions; and

**DOMESTICATED ANIMALS:** chicken, dog, lamb, pig, and ox.

When these 20 foods are prepared in different combinations, their numerous blends of flavor, smell, and taste provide the physician with as wide range of options used to reinforce ch'i or life essence (Nei Ching. 1966, p. 206).

By the Chou Dynasty (at least 255 B.C.) dietitians were identified as a medical specialty. They developed therapeutic meals using combinations of the so-called six nourishing foods (not defined) and six nourishing beverages (not defined), and used them to prepare six standard meals, one hundred sauces, and eight delicacies, to achieve correct balance of taste for healing purposes. There is the suggestion at this time that sour foods dominated therapeutic diets during spring; bitter foods in summer; pungent items in autumn, while salty foods were characteristic of winter (Wong and Lien-Teh, 1936, p. 39).

## YANG-YIN

Physicians, nutritionists, dietitians, and anthropologists have examined the Yang-Yin, hot-cold medical-dietary system of China for decades. Several attempted to create a master list of foods with their respective Yang (hot), Neutral, or Yin (cold) attributes. It was thought that such master lists would facilitate medical and nutritional counseling. Food lists published during the past 20 years, however, exhibit considerable category inconsistency. Physicians, nutritionists, and dietitians trained in Western medicine and scientific thought sometimes became frustrated by the category inconsistency, abandoned attempts to understand the Yang-Yin system, and tended to conduct dietary counseling sessions using Western, scientific information on calories, and nutritional content of various foods. Physicians and dietitians, not infrequently, recommended their Chinese clients (especially those who were pregnant) take advantage of vitamin and mineral supplementation. Not infrequently, dietetic exchange lists provided to Chinese clients had little in common with the clients' actual food intake patterns.

The reluctance of many Western, scientific physicians, nutritionists, and dietitians to consider the cultural needs of their Chinese clients, their reluctance to consider the order and structure to the Yang-Yin system, and their continued insistence that nutrition information be couched in Western dietetic terms, produced little Chinese-American confidence in American health personnel. This curious cross-cultural medical-dietary problem attracted several prominent American anthropologists during the 1970s who investigated the foundation and structure of Yang-Yin food classifications.

Eugene Anderson, Professor of Anthropology at the University of California, Riverside, was attracted to the Chinese concept of food patterns and diet and the process of food code assignments. He noted that foods recent to China still received Yang-Neutral-Yin assignments, and that the process had remained vital throughout the centuries. He argued that health professionals should not be concerned with the assignment or mis-assignment of any specific food, but that dietitians should seek general patterns of food alignment. His work, frequently overlooked by health professionals working with Chinese and other Asiatic populations, revealed broad, logic for food category assignments. Anderson found that most "hot" or "heating" foods were alcoholic beverages, fats and oils, meats, and strong spices, while most "cold" or "cooling" foods were green plants and vegetables, and fruits, especially those eaten raw or grown in moist, ecological zones. He concluded that most "heating" and "hot" foods had common characteristics: 1) they produced mouth irritation or specific digestive tract irritation (examples: chiles, ginger, pepper, and many spices) or caused indigestion (examples: alcohol and fats), 2) they produced a scratchy sensation inside the mouth or caused mouth or throat soreness (examples: coffee and curry powder), and 3) they exhibited brilliant colors, usually red or orange (examples: cherry, orange, persimmon, tangerine). Anderson suggested that "cold" or "cooling" foods usually were the opposite, that they: 1) produced no mouth or digestive tract irritation, 2) exhibited high moisture content, low caloric value, were smooth textured inside the mouth, and 3) usually were "cool" colors (green, grey, or white). In addition he noted that many "cold" or "cooling" foods were sour. Neutral foods, those not designated "hot" or "cold," included many starchy staples that were neither spicy or sour, red or green (Anderson, 1980, 1984).

Yang (hot), Neutral, and Yin (cold) category assignments for 186 foods obtained from eight readily available research articles published since 1975. Of the 186 foods, 146 or 78% exhibited category consistency: 74 foods always were classified Yang/hot, 12 always neutral, and 60 always Yin/cold. Only 39 foods (22%) were classified inconsistently by Chinese respondents into more than one category. Foods classified as Yang and Neutral, or Yin and Neutral in reality, however, do not present problems to dietitians and nutrition counselors. Most interesting, however, are the 19 "problem" foods classified by respondents as both Yang and Yin, and three classified as Yang, Neutral, and Yin: duck, pork, bean sprouts, wheat,

cabbage (American), cauliflower, onion (green), banana, mango, orange (American), persimmon, pineapple, honey, parsley, sugar (white: refined), and tea. While perceived as a "problem" by some Western scientists, nutritionists, and dietitians, many of these foods reflect questioning during different seasons, geographical areas, and methods of preparation; most would not view 10% of items on a food list to be a problem, especially given the opportunity to question clients as to their specific beliefs so to avoid misinterpretation.

Despite some category inconsistency the generalizations identified by Anderson hold. Most Yang foods are meats, while seafood and fish because of their aqueous environment tend to be classified Yin. Legumes with high caloric density and vegetal protein, are spread between Yang and Yin; legumes from trees tend to be classified Yang, whereas green legumes are classified Yin. Soybean is an example of how a food changes in classification depending on manner of preparation: the basic soybean is Yin, fresh soybean curd is Neutral, while dried soybean curd generally is classified Yang. Cereals also are variable; rice is either Neutral or Yin depending upon the manner of cooking, while wheat and wheat noodles change from Neutral to Yang also in accord with the type of preparation. Most tubers and vegetables are Yin as are most fruits. There is, however, a wide range of Yang fruits: cherry, dates, mango, and tangerine (all red or yellow), and vegetables such as chives, leeks, and onions, while green, are classified Yang. Spices and flavorings are mainly Yang; salt and soy sauce are notable exceptions. Beverages are variable; alcoholic drinks (except beer) generally are classified Yang, while fruit juices, milk, tea, and unboiled water are Yin. Perhaps the most interesting miscellaneous items identified on Table 3 are ice (Yang), candy (Neutral), and Jello (Yin).

## PREGNANCY AND LACTATION

A wide range of ancient Chinese medical and dietary texts offer nutritional advice during pregnancy and lactation. Chinese physicians who wrote on proper diet and identified foods that should be encouraged or prohibited during pregnancy and lactation include: Chang Chi (A.D. 142-220), a physician of the Han Dynasty who wrote the *Chin Kuei Yao Lueh* (Important Principles From the Golden Treasure Chest); Sun Ssu-mo (A.D. 581-682) of the Tang dynasty who wrote *Chien Chin Fang* (Formulas Worth a Thousand Thals of Gold); and; Yeh T'ien-Sih (A.D. c. 1700) of the Ching Dynasty who wrote *Yeh Tien Shih Nu Ko Chuan Shu* (The Complete Gynecological Text).

In addition to accounts by ancient Chinese physicians are the important contributions to medicine, nutrition, and diet made by Chinese herbalists. The herbal component of Chinese medicine and diet is ancient and dates to c. B.C. 400. The earliest surviving medical-herbal texts are the *Shan Ching* (c. B.C. 250) and *Hai Ching* (c. B.C. 120); their authorship is disputed. The accepted founder of Chinese herbal medicine, Shen Nung, wrote on the properties of 365 herbs in a work entitled *Shen nung pen tsao ching*. This

text was copied and annotated by Tao Hung-Ching, c. A.D. 500. The Shen nung pen tsao ching was expanded in A.D. 659 by the herbalist Su Ching who wrote the Hsin hsiu pen tsao that may be the earliest official pharmacological text known. A Tang dynasty physician, Chen Chang-Chi, compiled a text on herbal medicine in A.D. 739 that he called the Pen tsao shih i. During the Sung dynasty the herbalist Liu Han revised earlier texts and republished them in A.D. 973 under the title Kai pao pen tsao. A subsequent Sung herbal physician, Chang Yu-shi revised Liu Han's text in A.D. 1057. His work, called the Chia yu pu chu pen tsao, discusses the origins and therapeutic attributes of more than 1,000 herbs. Another Sung dynasty physician, Tang Shen-wei, wrote the Ching shih cheng lei pei chi pen tsao that included references to more than 1700 herbs. The Ming dynasty physician, Li Shih-chen, wrote the Pen tsao kang mu in A.D. 1590 that expanded the official Chinese herbal list further. Considering the modern era herbalists in the Peoples Republic of China had identified more than 5700 medicinal products by 1978; of these, approximately 500 remain commonly prescribed today, many during pregnancy and lactation (Hsu et al., 1986).

## ENCOURAGED FOODS AND MEDICAL PRODUCTS

Cultural rules determine dietary intakes during pregnancy and lactation in all societies. Ancient, medieval, and contemporary Chinese texts identify many foods and products especially prescribed during pregnancy and post partum periods. Prescribed foods must be in accord with Yang-Yin principles. Non-pregnant women are Yin in the Chinese physiological system. When women become pregnant, they then are considered strongest Yang. This shift in classification is mirrored in a dramatic change in diet. During the hottest Yang of pregnancy the mother is cautioned to eat Yin foods. Yin foods generally are low in calories and protein, and have high water content. Strict adherence to Yin diet can produce a low birth-weight baby. It is apparent, too, that cultural encouragement of Yin foods at this time can produce fewer delivery complications due to small body frame and pelvic disconformity, easier delivery, and less pain during labor. It is easy to see, too, the potential for miscommunication during the pre-natal period between traditional Chinese women and Western-trained physicians, dietitians, and nutrition education specialists who would encourage substantial weight gain during pregnancy, and regularly prescribe high caloric, high protein foods, possibly vitamin and mineral supplements for the mother to consume at this time.

There is a central misconception by many, however, that women during pregnancy are limited to Yin foods low in energy or protein. Many foods high in calories and protein are prescribed during pregnancy: fish are recommended during the 4th month of pregnancy; beef and lamb are encouraged during the 5th month of pregnancy; wild game is encouraged during the 6th month of pregnancy; chicken and chicken-tea infusions are regularly prescribed to reduce "spotting" or vaginal bleeding, while oysters are

recommended for "fetal stability." Recommended pregnancy foods high in calories include: lotus seeds, pine nuts, sesame oil, rice, and wheat dishes. While fruits are not specifically recommended during pregnancy, it should not be difficult to prescribe a range of vegetable items that meet vitamin and mineral requirements at this time. Dietary spices such as cardamom and dried ginger are recommended to reduce "fetal restlessness." Even moderate use of sweet wine is encouraged to relax the mother during the latter stages of her 9th month of pregnancy. A wide range of herbs and other medicinal products can be prescribed during pregnancy to counter conditions such as edema, kidney pain, toxemia, and uterine hemorrhage.

During long, protracted delivery the mother may be served a wide range of foods and medicinal products to ease labor, facilitate placenta and uterine blood expulsion, reduce hemorrhage, provide strength, or to lessen pain. A dried sea-horse sometimes is placed in the mother's hand as a charm to protect against difficult, painful labor. During labor the mother may be fed small quantities of chicken brain, pork heart and kidney, perhaps venison, or may be offered easily digested preparations from sweet basil, honey or saffron.

The month immediately after delivery is considered a time of great danger of illness and potential death to both mother and neonate. Traditional Chinese women follow a program that consists of fifteen well-defined cultural practices designed to reduce this danger. The anthropologist Barbara Pillsbury described these practices in a research paper that now has become a classic. Women who follow the traditions are said to be "Doing the Month" (tso Yüeh-tzu) and the fifteen requirements are: 1) the mother should not wash her body or hair, 2) not go outside the home, 3) not eat raw or cold foods, 4) eat chicken daily, 5) not sit in a draft or otherwise in the wind, 6) not move about the house needlessly, 7) not visit another's home, 8) practice positive behaviors to avoid becoming ill, 9) not read or cry, 10) abstain from sexual intercourse, 11) not eat with other family members, 12) not burn incense, 13) avoid any potentially disease-causing object, 14) avoid offending the gods or contaminating family members with any fetal blood residues, and 15) consume hot foods (Pillsbury, 1978).

During the post partum period the mother's physiological classification changes, as does her diet. This is a period of strongest Yin, accordingly, her diet should be based upon Yang foods. Since Yang foods typically are those high in energy and protein, this shift in dietary pattern is a cultural way to provide biologically for increased milk production requirements. Several foods are encouraged during lactation in the belief that their consumption will increase the mother's breast milk production. Such foods, called galactagogues, include: chicken plus squid, clams (small varieties), dog (especially meat from the dog's feet), fish (especially carp), millet, mutton, pork, rice wine, sea slug, shrimp in red wine, soybean milk mixed with powdered walnuts, squid, wheat cakes, wheat noodles

with egg, wild boar lard, and various insects (cicada and June beetle grubs).

Other foods encouraged during the post partum, lactation period are said to provide strength to the mother so she recovers quickly from the exertion of labor. Strength-providing foods and medicinal products identified include: ashed deer bone, chicken, frog, ginseng (*Panax ginseng*), ginger, licorice extract, razor clam. Other foods, specifically pheasant, are prescribed if the mother exhibits dysentery, while sheep's blood is prescribed to improve the mother's general well-being and blood circulation.

Newly delivered mothers are encouraged to eat a range of foods that have perceived positive effects upon their lactating infants. Sow's milk, for example, is drunk as a preventative for neonatal epilepsy. Ashed buffalo horn applied to the mother's nipples is said to improve infant sucking, while ashed horse bone applied to the nipples reportedly keeps infants from crying during nighttime feeding. Other foods and medicinal products given directly to the neonate are prescribed to ease nausea and reduce vomiting. These include boiled extract of mulberry tree grubs (13 different genera identified) or rush grubs (members of the Pyralidae family, possibly Scirpophaga family).

Women "Doing the Month" are encouraged to eat chicken cooked with sesame oil each day. This practice, however, seldom begins before the 3rd day post partum. Meat from black-boned chickens is most esteemed. Other encouraged foods at this time include brown sugar, chicken soup, eggs, fish (especially bream), liver, kidney, noodles cooked in brown sugar broth, pig liver cooked with black dates in ginseng broth or sesame oil, pig's feet, rice wine, and infusions of rice wine with ginger (Pillsbury, 1978).

## PROHIBITED FOODS AND MEDICAL PRODUCTS

Most societies also have culturally incorrect or proscribed foods to be avoided during pregnancy and lactation. These dietary prohibitions are numerous in the Chinese tradition. Foods forbidden at this time generally fit two categories: those thought to produce adverse effects on the mother, especially life-threatening problems and others that might inhibit a full-term pregnancy, and foods thought harmful to the developing fetus.

Prohibitions of the first category are numerous and include foods thought to produce spontaneous abortion or miscarriage: almond, amaranth leaf, banana, beans (in general), barley, beer, eggs seasoned with salt, pineapple, seaweed, soybean, and watermelon. Foods rejected in the belief that they lead to overterm pregnancy, painful delivery, and thereby threaten the life of the mother include: meats from donkey, horse, and mule, and shellfish in general. Other foods said to produce breech, reverse, or transverse presentation and threaten the mother's life include:

crab, domestic and wild duck, duck combined with mulberry, mulberry mixed with duck egg, and pheasant.

Prohibited foods and products thought to produce adverse effects on the neonate represent the second category of dietary restrictions during pregnancy. Beef and sparrow meat mixed with soybean paste are avoided lest the child have blemished, dark, or pockmarked skin; bullfrog, chicken, dog, eel, goat, rabbit, and turtle are rejected in the belief that the child might be born mute; dried carp mixed with egg, or carp roe are said to produce infants with skin lesions; dog meat and rabbit are avoided at this time to prevent hare lip or cleft palate. Elk meat and any dish that contains deer fat and plum are rejected in the belief that the child will be born blind or exhibit serious eye disease. Traditional mothers also reject eating eggs and carp at the same meal in the belief that their neonates will be covered with boils or sores. Pregnant women who consume fresh ginger are said to risk bearing children with extra digits on the hands and feet. Eating mutton during pregnancy is proscribed in the belief this food causes neonatal epilepsy.

Some Chinese dietary prohibitions are unique in their linkage of food intake during pregnancy and negative effects much later in time. Some foods are forbidden during pregnancy in the belief that consumption will produce a deleterious effect during childhood, even many years later as an adult. Should a pregnant woman eat frog it is said that her baby will suffer needless death during later childhood. Should a mother eat sparrow cooked in alcohol or wine, it is said that her child upon maturity will exhibit lewd, licentious behavior directly traced to the mother's dietary "mismanagement" during pregnancy. Chicken mixed with glutinous or sweet rice is rejected during pregnancy in the belief that the combination causes parasitic infections later in life, while goat meat consumed by the mother at this time is said to produce needless illness during childhood.

Dietary prohibitions also are extended to lactating women, although these are less numerous than the taboos during pregnancy. It is widely held that lactating women should avoid cold and raw foods, especially, bamboo shoots, Chinese cabbage, duck, fish, most varieties of fruits, turnips, and green-leafy vegetables. Lactating women are cautioned to avoid drinking ice cold water and left-over foods. Alcoholic beverages are proscribed at this time because they may cause the new mother to bleed or faint. Salt as a condiment and salty foods in general are to be rejected, too, in the belief that use reduces breast milk production (Pillsbury, 1978).

#### EFFECTIVE DIETARY COUNSELING

Members of all ethnic groups in America today fit one of three categories: 1) they follow exclusively their traditional diet and medical practices, 2) they follow exclusively an "Americanized" diet and Western medical practices, or 3) they follow an eclectic blend of traditional and

"Americanized/Western" practices. Most Registered Dietitians are trained in science, and are not exposed to non-scientific, traditional allopathic medical-nutritional systems. Those professionals who take time to work carefully with their clients, to determine awareness and practice of Yang-Yin food associations, will be rewarded; other professionals who dismiss the ancient Chinese system as inconsistent, who stress only scientific nutrition, will continue to be frustrated in their work. Eugene Anderson and Barbara Pillsbury, two of the best social scientists who worked on Chinese Yang-Yin traditions, saw beyond food category inconsistencies and sought broad meaning in the rich Asian heritage that the Chinese shared with the world.

A historical-cultural review of Chinese dietary practices reveals "three indisputables."

First -- the Chinese medical-dietary system is ancient and has been maintained and sustained for more than 2500 years. With such a heritage there is merit; and with merit there is quality.

Second -- the Chinese medical-dietary system is inconsistent. This property of inconsistency underlies the rejection of Chinese medicine-nutrition by many Western-trained, scientific physicians, nutritionists, and dietitians. *>From the perspective of science, inconsistency is anathema; prediction and precision are the only worthy icons.*

Third -- inconsistency should pose a challenge, not frustration

Consider the foods encouraged and forbidden during pregnancy. A careful reading reveals that eight foods appear on both lists: beef, carp, chicken, duck, eel, barley, ginger, and wine, each with well defined reasons for their recommendation, conversely for their prohibition! Western scientists might observe and say: how can this be? Inconsistency is illogical. Chinese and other Eastern doctors not see duality as inconsistent and would argue correctly -- has not Western science, too, changed through the years? Have not Western views of correct dietary-nutritional management changed -- even during the past several decades?