

An ancient Chinese treatise on alchemy entitled Ts'an T'ung Ch'i

Written by WEI PO-YANG about 142 A.D.,
Now Translated from the Chinese into English
by
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With an Introduction and Notes
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PREFACE

The present translation of the *Ts'an T'ung Ch'i* (參同契) (11548, 12669, 1053) is believed to be the first translation into a European language of the entire text of a Chinese treatise on alchemy. Apart from its antiquity and its obvious interest, it has the value for Occidental scholars that it supplies source material for study in a largely unexplored field of the history of science. This value will increase in the future. One portion of the *Ts'an T'ung Ch'i* concatenates with others and illuminates them, until

finally the philosophical background of the doctrine of WEI PO-YANG (魏伯陽) (12567, 9340, 12883) can easily be made out. In the same way, other studies on Chinese alchemy and an acquaintance with other treatises will later give us a better understanding of the evolution and movement of alchemical ideas and will enable us to guess their origin with greater probability.

The translation is based upon the version of YÜ YEN (俞琰) (13567, 13073) who compared the various versions of the *Ts'an T'ung Ch'i* which existed in his time, including that of CHU HSI (朱熹) (2544, 4077) or CHU-FU-TZŪ (朱夫子) (2544, 3612, 12317), prepared a critical compilation of variants entitled *Ts'an T'ung Ch'i Shih I* (參同契釋疑) (11548, 12269, 1053, 9983, 5423) (An Explanation of Doubtful Points of the *Ts'an T'ung Ch'i*), and in 1284 A.D. published a preferred version with a commentary entitled *Ts'an T'ung Ch'i Fa Hwei* (參同契發揮) (11548, 12269, 1053, 3376, 5149) (A Dissertation on the *Ts'an T'ung Ch'i*). The commentary of YÜ YEN was found to be of assistance in the preparation of the translation. We have divided the treatise arbitrarily into different chapters from those of YÜ YEN. In the case of certain obscure passages of YÜ YEN's version, where a study of the commentary still left it impossible to make a clear translation, the alternative passage of one or the other of the variants was taken. We have used the text with variants and commentary of YÜ YEN which are printed in Vols. 625-627 of the Collected Taoist Classics, published by The Commercial Press, Ltd., Shanghai, China. Since these writings have for centuries been treasured by the followers of the Taoist religion, it seems reasonable to suppose that they are authentic, or, at least, that they approximate as closely to their originals as do the texts, say, of the Hebrew scriptures.

The translation of the *Ts'an T'ung Ch'i* and of the other material from the Chinese to which reference is made or which is quoted in the Introduction or the Notes is entirely the work of LU-CH'ANG WU (吳魯強) (12748, 7388, 1293). Except for the material from the Chinese, the Introduction and the Notes are the work of TENNEY L. DAVIS. Each of us has read all of the manuscript,

and each has profited by the advice, suggestion, and criticism of the other.

The Introduction is a general survey of our present knowledge of Chinese alchemy. It indicates certain points on which students of the subject are not agreed, and occasionally it offers an interpretation of the evidence. But the present translation of the *Ts'an T'ung Ch'i* is itself also evidence which requires to be interpreted. Some of its indications are pointed out in the Notes, and others will be more apparent when other alchemical texts are available. The Notes are intended particularly for those who may wish to compare Chinese with European alchemy.

We have not been able to make out the processes of WEI PO-YANG or to identify many of the substances which are intended by his fanciful names. His obscurity is no greater than that of the mediaeval alchemists; and it will no doubt be possible in the future to identify the White Tiger and the Gray Dragon as it has been possible to identify the Green Lion and the White Lady of the Latin writers.

When Chinese words are rendered in Roman letters, we have followed the spelling which is used in GILES' Chinese-English Dictionary, 2nd. ed., London, 1912. As this does not fully identify the word, we have printed, at the place of the first occurrence of the word, the Chinese ideograph and the number which corresponds to this ideograph in GILES' Dictionary. Later occurrences of each Chinese word are indicated in the Index. All of the Chinese names, except those of LIANG and WU, are written in the Chinese manner, family name first. The names of LIANG and WU are written in the Occidental manner, family name last.

LU-CHIANG WU,
TENNEY L. DAVIS.

INTRODUCTION

WEI PO-YANG (魏伯陽) (12567, 9340, 12883) has been called the father of Chinese alchemy. His *Ts'an T'ung Ch'i* (參同契) (11548, 12269, 1053) is regarded as the earliest work in the Chinese language which is devoted exclusively to



WEI PO-YANG, his dog, and his disciple, YÜ, all of whom became immortal by taking the medicine. The three-legged incense-burner or furnace in the foreground is evidently the *ting* in which the medicine was prepared.



LIU AN and one of the *hsien* who taught him the art. The barnyard animals, having eaten the material which remained in the vessels after the preparation of the medicine, also ascended into the clouds.



The Yellow Emperor, HUANG-TI, humbly seeks knowledge of the *Tao* in the cave of KUANG-CH'ENG-TZŪ.

委時去害依託丘山循遊寥廓與鬼為鄰化
形為仙淪寂無聲百世一下遨遊人間敷陳
羽翮東西南傾湯遭阨際水旱隔并柯葉萎
黃失其華榮各相乘負安穩長生

The Cryptogram of WEI PO-YANG.

the subject, but it is by no means the earliest Chinese writing which makes mention of alchemy. It shows that a definite and extended alchemical tradition already existed, and mentions several earlier alchemists concerning whom other information is available either from their own writings or from the historical books.

For three or four centuries before WEI PO-YANG, the Chinese had been engaged in an effort to transmute base metals into gold—not because gold was intrinsically valuable, but because the magical efficacy of artificial gold was such that the eating of food out of vessels made from it would produce longevity—and they were attempting to prepare the elixir of immortality from cinnabar. The similarity of the methods and aims of the Chinese alchemists with those of the later Greek, Arab, and Latin Europeans suggests that all alchemy derives from a single origin. While it has been thought that the appearance of alchemy in China in the second or third century B.C. resulted from the influx of alchemistic teaching from Egypt or from Mesopotamia, or possibly from India, we have no early alchemical documents from the latter places—and the *Ts'an T'ung Ch'i* of WEI PO-YANG appears to be the earliest treatise entirely on alchemy with which we are at present acquainted.

WEI PO-YANG

WEI PO-YANG was a Taoist philosopher and alchemist, a native of *Wu* (吳) (12748) in the present province of *Kiangsu* (江蘇) (1208, 10320). In the year 121 A.D. he was summoned to Court but refused the invitation because he had no liking for officialdom. In the Epilogue of the *Ts'an T'ung Ch'i* he describes himself as “a lowly man from the country of *Kuai* (郢) (6333), who has no love for worldly power, glory, fame, or gains, who wastes his days leading a simple, quiet, leisurely, and peaceful life in a retreat in an unfrequented valley.”

The *Ts'an T'ung Ch'i* is one of the Taoist Classics and purports to be a commentary on the Book of Change but is really a treatise on the preparation of the pill of immortality. The *Lieh Hsien Ch'üan chuan* (列仙全傳) (7081, 4449, 3176, 2703) (Complete

Biographies of the Immortals) says that WEI PO-YANG "entered the mountains to make efficacious medicines. With him were three disciples, two of whom he thought were lacking in complete faith. When the medicine was made, he tested them. He said, 'The gold medicine is made but it ought first to be tested on the dog. If no harm comes to the dog, we may then take it ourselves; but if the dog dies of it, we ought not to take it.' (Now PO-YANG had brought a white dog along with him to the mountain. If the number of the treatments of the medicine had not been sufficient or if harmonious compounding had not reached the required standard, it would contain a little poison and would cause temporary death.) PO-YANG fed the medicine to the dog, and the dog died an instantaneous death. Whereupon he said, 'The medicine is not yet done. The dog has died of it. Doesn't this show that the divine light has not been attained? If we take it ourselves, I am afraid we shall go the same way as the dog. What is to be done?' The disciples asked, 'Would you take it yourself, Sir?' To this PO-YANG replied, 'I have abandoned the worldly route and forsaken my home to come here. I should be ashamed to return if I could not attain the *hsien* (仙) (4449) (immortal). So, to live without taking the medicine would be just the same as to die of the medicine. I must take it.' With these final words he put the medicine into his mouth and died instantly. On seeing this, one of the disciples said, 'Our teacher was no common person. He took the medicine and died of it. He must have done that with especial intention.' The disciple also took the medicine and died. Then the other two disciples said to one another, 'The purpose of making medicine is to attempt at attaining longevity. Now the taking of this medicine has caused deaths. It would be better not to take the medicine and so be able to live a few decades longer.' They left the mountain together without taking the medicine, intending to get burial supplies for their teacher and their fellow disciple. After the departure of the two disciples, PO-YANG revived. He placed some of the well-concocted medicine in the mouth of the disciple and in the mouth of the dog. In a few moments they both revived. He took the disciple, whose name was Yü (虞) (13608), and the dog, and went the way of the immortals. By

a wood-cutter whom they met, he sent a letter of thanks to the two disciples. The two disciples were filled with regret when they read the letter." The *Lieh Hsien Ch'üan chuan* further states that WEI PO-YANG wrote two treatises, the *Ts'an T'ung Ch'i* (The Akinness of the Trio) and the *Wu Hsiang Lei* (五相類) (12698, 4249, 6853) (The Akinness of the Five) (See our Note LXIX) and adds that "they appear to be expositions of the Book of Change but in reality the diagrams are only disguises for expositions of the making of the medicine."

WYLIE in his *Notes on Chinese Literature* (1) says that the *Ts'an T'ung Ch'i* of WEI PO-YANG is the earliest work now extant which is devoted especially to the subject of alchemy, and adds that "his book and his doctrine have been by common consent discarded by the literati." The literati to whom he refers are the Confucian scholars who generally disregard the Taoist writings anyway. But WYLIE also mentions several commentaries on the *Ts'an T'ung Ch'i*, among them one by CHU HSI (朱熹) (2544, 4077) or CHU-FU-TZÜ (朱夫子) (2544, 3612, 12317) (1130-1200 A.D.) whom he elsewhere in the same book describes as a distinguished Confucian scholar. According to GILES (2) CHU HSI "placed himself first in the first rank of all commentators on the Confucian Canon." In 1241 his tablet was placed in the Confucian temple.

The *Ts'an T'ung Ch'i* makes use of the occult relationships of the magic figures or *kuas* (卦) (6311) of the Book of Change for describing the preparation of the pill of immortality and for showing the akinness of the three, that is, of the alchemical processes, the Book of Change, and the Taoist doctrines, which the author says in the Epilogue are "variations of the same thing under the guise of different names." The author mentions the obscurity of earlier writers and states that he is making an effort to be clear in spite of his feeling of inferiority and inadequacy for the task.

(1) A. WYLIE, *Notes on Chinese Literature: with Introductory Remarks on the Progressive Advancement of the Art; and a List of Translations from the Chinese into Various European Languages, New Edition*, Shanghai, 1901, p. 219.

(2) HERBERT A. GILES, *A Chinese Biographical Dictionary*, London and Shanghai, 1898. Article *Chu Hsi*.

His descriptions of the processes are about as lucid, or about as obscure, as the descriptions of the mediaeval alchemists. He gives symbolic and imaginative names to many of the substances which are used, and insists upon the necessity for careful and accurate compounding and for a cautious interpretation of the text which, he says, he has intentionally obscured in places. He has a keen sense of humor and a proper appreciation of the value of grotesque illustrations in an argument. He gives really poetic descriptions of the effects of the pill of immortality. One passage illuminates another, and the two throw further light upon a third. The perfection of the imagery and the intricacy of the rhetoric give the treatise an atmosphere similar to that of a piece of old Chinese embroidery.

WU-HSING AND YIN-YANG

Chinese alchemy, like all of Chinese science, is erected upon the fundamental concepts of *Wu-hsing* (五行) (12698, 4624) (the Five Elements) and *Yin-Yang* (陰陽) (13224, 12883) (the Two Contraries). Both are genuine scientific concepts which supply categories for the description of natural things, and both in the writings of the alchemists are involved with magical and fantastic connotations. An examination of their history (3) will throw light on the origins of Chinese alchemy.

The notion of *Wu-hsing*—the quintet : water, fire, wood, gold (or metal), and earth—at first had no magical relationships. One of the earliest cases of its use is in the *Hung Fan* (洪範) (5252, 3429) (Great Plan) chapter (twelfth century B.C.) of the *Shu Ching* (10024, 2122) (Book of Historical Documents). “In the olden days, so I heard, in the time of *Kun* (鯀) (6534), a deluge overran the Kingdom putting *wu-hsing* at nought.” LIANG, commenting on this passage, says that it ought to be interpreted as

(3) CH'I-CH'AO LIANG (梁啟超) (7021, 1110, 506), *On the Origin and Evolution of the Doctrines of Yin-Yang and Wu-hsing* (in Chinese), *Eastern Miscellany*, Shanghai, Vol. 20, No. 10, pp. 70-79, 1923.

meaning that on account of the deluge all the things which can be classified by *wu-hsing* (or the five kinds) became unavailable for man's use. The *Hung Fan* chapter says further :

“ *Wu-hsing* (the quintet) : first, water ; second, fire ; third, wood ; fourth, gold (or metal) ; and fifth, earth. Water is that which soaks and descends ; fire that which blazes and ascends ; wood that which is straight and crooked ; gold (or metal) that which obeys and changes ; and earth that which is of use for seed-sowing and harvest. That which soaks and descends becomes salt ; that which blazes and ascends becomes bitter ; that which is crooked and straight becomes sour ; that which obeys and changes becomes acrid ; and from seed-sowing and harvest come sweetness.”

The *wu-hsing* are here plainly the constituent elements of material things. *Tso Ch'iu Ming* (左丘明) (11753, 2310, 7946), a disciple of Confucius, said that “ nature provides the *wu-hsing* and the people use them.”

GILES (4) reports the genetic relationships which were supposed to exist between the *wu-hsing*, as follows :

Metal	destroys	Wood,
Wood	»	Earth,
Earth	»	Water,
Water	»	Fire,
Fire	»	Metal,
Metal	produces	Water,
Water	»	Wood,
Wood	»	Fire,
Fire	»	Earth,
Earth	»	Metal.

Although the term, *wu-hsing*, at first meant only the five elements, it later took on an occult and magical connotation and was used in connection with the five ways of righteous conduct, the five social relationships, the five virtues, the five tastes, the five colors, the five tones, etc. The earliest and most fantastic and systematic treatment of *wu-hsing* occurs, according to LIANG, in the writings of LÜ PU-WEI (呂不韋) (7520, 9456, 12527) (died 235 B.C.). It was later adopted by TAI SHÊNG (戴聖) (10567, 9892)

(4) HERBERT A. GILES, *A Chinese-English Dictionary*, 2nd. ed., London, 1912. Article *K'o* (剋) (6116).

(second to first century B.C.) and still later by HUAI-NAN-TZŪ (淮南子) (5034, 8128, 12317) (died 122 B.C.). LIANG says :

“ The seasons of the year were thus divided among the *wu-hsing* : spring, *wood* ; summer, *fire* ; autumn, *gold* ; winter, *water* ; and, in order to complete the story, they even went so far as to assign the interim between summer and autumn to *earth*. In a similar manner the magic quintet was correlated with the five locations : east, west, north, south, and center ; with the five colors : blue, red, yellow, white, and black ; with the five tones : *kung, shang, ko, chêng,* and *yü* ; with the five tastes : sour, bitter, salty, astringent, and sweet ; with the five animated species : furred, shelled, scaly, feathered, and nude ; with the five worships : of wells, of furnaces, of doors, of eaves, and of sacred roadways ; with the five grains ; with the five domesticated animals : horse, ox, sheep, dog, and hog ; with the five internal organs of the body : heart, liver, lungs, spleen, and kidneys ; with the five rulers of ancient China : *T'ai-hao*, (太皞) (10573, 3886), *Yen-ti* (炎帝) (13069, 10942), *Huang-ti* (黃帝) (5124, 10942), *Shao-hao* (少昊) (9746, 3887), and *Chuan-hsü* (顓頊) (2714, 4720) ; and with the five gods : *Chü-mang* (句芒) (2947, 7655), *Chu-jung* (祝融) (2597, 5762), *Hou-t'u* (后土) (4027, 12099), *Ju-shou* (蓐收) (5688, 10009), and *Hsüan-ming* (玄冥) (4790, 7951). Thus the thousand and one entities of the universe have been ruthlessly forced into five categories corresponding to the *wu-hsing*. This fantastic mood has been dominating the mind of the nation for at least two thousand years and more, and has often manifested itself in deeds.”

While the notion of *wu-hsing*, in its original meaning of the five elements, remounts to the twelfth century B.C., the scientific notion of *Yin-Yang*, or the two contrary principles, became definite at a later time, probably after CONFUCIUS (551-479 B.C.), and had no noteworthy importance until it appeared in its fantastic and occult connotations.

The word, *yin*, according to LIANG, originally had the meaning of covering the sun with clouds. It came to mean shaded, dim,

beclouded, and, since Chinese cities were generally laid out with the principal entrance on the southern side, it meant the northern or shaded side of the city, also the south side of a river, the interior, the reverse, and the north side of a mountain. The word, *yang*, originally signified "the bright aspect of banners fluttering at sunrise," but it soon acquired the meaning of the brilliancy of the sun, hence sunlight, warmth, the face-side, the exterior, the north side of a river, and the south side of a city or of a mountain. The couplet, *yin-yang*, was used to signify opposites, such as north and south, reverse and obverse, and this was without magical connotation and without the belief that the opposites were scientific categories by which the endless diversity of nature might be understood and classified. The words, *yin* and *yang*, moreover, were used separately more often than they were used together.

LIANG states that the Book of Rites and Ceremonies does not contain either of the words. In the Book of Poetry the word, *yin*, is used eight times, the word, *yang*, fourteen times, and the phrase, *yin-yang*, only once and then in its original meaning of light and shade. The Book of Change uses *yin* only once and *yang* not at all. The commentaries on the Book of Change which are ascribed to CONFUCIUS are devoted to an exposition of that philosopher's dualism. He conceived the universe as embracing two kinds of forces which by interaction gave rise to the diverse facts of nature. The forces were not easy to describe; and he referred to them as *kang-jou* (剛柔) (5895, 5653), hard and soft; *tung-ching* (動靜) (12256, 2179), motion and rest; *hsiao-hsi* (消息) (4297, 4034) ebb and flow; *ch'ü-shên* (屈伸) (3078, 9817), bending and unbending; *wang-lai* (往來) (12500, 6679), going and coming; *chin-t'ui* (進退) (2075, 12183), going forward and backward; *hsi-p'i* (翕闢) (4132, 9026), folding and unfolding; as well as *yin-yang* (陰陽) (13224, 12883); but the latter is much less frequently mentioned than some of the other pairs. In short, *yin* and *yang*, as used by CONFUCIUS, had no magical connotations but did have, along with

other pairs of terms, a certain philosophical and scientific usefulness for the discussion of natural phenomena.

The notion of *Yin-yang* gradually became extended until in the writings of the Taoists and alchemists it appears as a fundamental cosmological concept having innumerable fantastic connotations. It was supposed that the primal matter, *t'ai-chi* (太極) (10573, 859), in its gyrations gradually separated into two parts, the *liang-i* (兩儀) (7010, 5455) or regulating powers which together constituted the soul of the universe. The heavy and gross part, *yin*, settled and formed the earth, while the fine and light part, *yang*, remained suspended and formed the heavens. *Yin* was the female principle, negative, heavy, earthy, and dry, typifying in general the more undesirable aspects of nature such as cold, darkness, weakness, and death. *Yang* was the positive, male principle, desirable, active, fiery, possessive of qualities directly opposed to those of *yin*. From the interaction of these two contraries, all things in the universe were created and controlled in their various manifestations.

Yang was identified with the sun and *yin* with the moon. The interaction of these two produced the five elements—each identified with a planet—which make up the material world. Each element by combination with *yang*, that is, the element endowed with positive qualities, differed from the same element combined with *yin* or endowed with negative qualities. Many of the occult relationships of *yin* and *yang* and of the *wu-hsing* have been tabulated by GILES (5) in part as follows.

<i>Element.</i>	<i>Combination with Yang.</i>	<i>Yin.</i>	<i>Corresponding Planet.</i>
Wood	Fir	Bamboo	Jupiter
Fire	Burning wood	Lamp flame	Mars
Earth	Hill	Plain	Saturn
Metal	Weapon	Kettle	Venus
Water	Wave	Brook	Mercury

The similarity of the Chinese *yin-yang* doctrine to the ideas prevalent in the ancient religions of Babylonia and Egypt raises interesting questions of priority and origins. Osiris and Isis were identified in Egypt with the sun and moon, and together they

(5) GILES, *Chinese-English Dictionary*. Part I, pp. 28-29.

produced all things. The Emerald Table of HERMES TRISMEGISTOS, which is probably the oldest document of western alchemy if it isn't of eastern origin after all, says that "the father of it is the Sun, the mother of it is the Moon." The Sun and Moon of HERMES are the same as the positive Sulfur and negative Mercury principles of ZOSIMOS and JABIR. The Latin GEBER said that sulfur is *pinguedo terrae* (fatness of the earth). BECHER thought that the Sulfur principle ought to be called *terra pinguis* (fat earth), and his disciple, STAHL, preferred to name it *phlogiston*. The doctrine of the two contraries, with only superficial modification, dominated the science of chemistry until the time of LAVOISIER.

Prior to the time of the Feudal Kingdoms (722-481 B.C.) the phrases *ying-yang* and *wu-hsing* were of rare occurrence and possessed only their ordinary meanings. They do not occur together in the writings of CONFUCIUS, LAO-TZŪ (老子) (6783, 12317), MO-TZŪ (墨子) (8022, 12317), MENCIOUS (孟子) (7795, 12317), HSŪN-TZŪ (荀子) (4875, 12317), or HAN-FEI-TZŪ (韓非子) (3827, 3459, 12317). LIANG believes that the doctrines of *yin-yang* and *wu-hsing* were first elaborated and spread by the divinationists, astrologers, and magicians of *Yen* (燕) (13048) and *Ch'i* (齊) (1074) (the present provinces of *Shantung* (山東) (9663, 12248), *Honan* (河南) (3936, 8128), and *Hopei* (河北) (3936, 8771), in particular by TSOU YEN (鄒衍) (11811, 13113) (fourth to third century B.C.), TUNG CHUNG-SHU (董仲舒) (12259, 2876, 10045) (second century B.C.), and LIU HSIANG (劉向) (7270, 4283) (80-09 B.C.). Although the writings of TSOU YEN are no longer extant, their purport can be gathered from the references to them in the historical writings of SSŪ-MA CH' IEN (司馬遷) (10250, 7576, 1711) (about 145 to 86 or 74 B.C.). LIANG concludes that TSOU YEN "was the fanatic who started the uncomely and uncouth doctrines." SSŪ-MA T'AN (司馬談) (10250, 7576, 10656) (died 110 B.C.), the father of SSŪ-MA CH' IEN, placed *Yin-Yang*-ism on a par with Confucianism, Taoism, *Mo*-ism, Nominalism, and Legalism, and wrote an essay

on the "Essence of the Six Schools." We infer that by his time the doctrines had been pretty fully elaborated into the form in which they pervade the writings of the alchemists.

MASPERO (6) says that TSOU YEN amalgamated geographical and astronomical ideas from India with the old Chinese tradition, attempted to bring them into accord with the "purely Chinese notions" of *yin-yang* and *wu-hsing*, related the five elements to the five dynasties of ancient China, and taught many other occult associations. But if this is so, it does not necessarily mean that alchemy came to China from India or that the occult relationships between alchemy and *yin-yang* and *wu-hsing* were of Hindu origin. The facts discussed by LIANG, moreover, suggest rather strongly that MASPERO may not be correct in supposing *yin-yang* to be a purely Chinese notion. *Ying-yang* possessed no particular interest until the time of TSOU YEN when it appeared in its occult relationships. At the same time the already scientifically important notion of *wu-hsing* took on fantastic connotations and assumed a greater importance. At the same time alchemy arose in China. The facts suggest that the notion of the two contraries and the occult doctrines associated with that notion came to China from some other civilization, possibly, as suggested above, from Babylonia or Egypt in which places they were flourishing. Possibly alchemy came also at the same time. But the search for the elixir of immortality seems to bear no necessary relation to the occult doctrine of the contraries, and we are unwilling to conclude that the two necessarily derive from the same origin.

THE QUESTION OF THE TAOIST ORIGIN OF CHINESE ALCHEMY

The priority of Chinese alchemy appears to be established. Although the Egyptians and Assyrians had attained great skill in various chemical arts at an early date, in particular in the making of pigments, glass, and enamel, in dyeing, and in metal working, they do not seem to have sought for an elixir of immortality or to have attempted to transmute base metals into noble ones. The Egyptian metal workers were accustomed to alloy base metals

(6) HENRI MASPERO, *La Chine Antique*, Paris, 1927.

in a manner to imitate gold and silver, and probably used the alloys fraudulently, but evidently did not believe that they had accomplished real transmutations. They no more mistook their alloys for the genuine precious metals than we now mistake "Dutch gold" or "German Silver." An echo of this ancient attitude toward artificial metals is heard as late as the thirteenth century, at a time when transmutation was considered a verity, for ALBERTUS MAGNUS says in *de Alchemia* (7) that "the iron of alchemy is not attracted by the magnet and the gold of alchemy does not gladden the heart of man, nor cure leprosy, and a wound festers which is made by means of it, a result which does not occur from natural gold." The Leiden and Stockholm papyri, which date probably from the third century A.D., are sober documents of practical chemistry without suggestion of alchemy. The earliest Alexandrian "alchemists" whose writings are known to us (possibly first century, but certainly no later than third century A.D.) attempted to tincture base metals to the color of gold and silver, and used fantastic and imaginative language closely similar to that of the Chinese alchemists, but did not pursue either of the great objectives by which alchemy is distinguished from ordinary practical chemistry. The notions of the transmutation of the metals and the elixir of immortality probably did not appear in Occidental chemistry until after the Arabs had brought them to Europe.

EDKINS (8) arguing from the similarity of the aims and materials of Chinese with Arabic alchemy, and from the facts of the history of Taoism, has concluded that alchemy arose spontaneously in China as an offshoot from the magical and fantastic side of the Taoist religion and that Chinese alchemy reached the Arabs, and thence Europe, through Persia, with which country the Chinese had intercourse both before and after its conquest by the Mohammedans. MARTIN (9) and more recently JOHNSON (10)

(7) *Theatrum Chemicum*, Ursellis, 1602. Vol. 2, p. 495.

(8) Rev. JOSEPH EDKINS, *Trans. China Branch Roy. Asiatic Soc.*, Hong Kong, 1855, part 5, pp. 83-99.

(9) W. A. P. MARTIN, *The Lore of Cathay or the Intellect of China*, New York, Chicago, and Toronto, 1901. Chapter 3, *Alchemy in China, the Source of Chemistry*, pp. 44-71.

(10) OBED S. JOHNSON, *A Study of Chinese Alchemy*, Shanghai, 1928. (*Isis*, 12, 330-32).

have agreed with the conclusion of EDKINS relative to the Taoist origin of Chinese alchemy but have mistakenly insisted upon a fundamental similarity, which does not exist, between Chinese and Alexandrian alchemy. MARTIN believes that Chinese alchemy came to Europe through Alexandria and Byzantium, and JOHNSON that it came through Alexandria.

The question has several aspects. First, the similarity or not of Chinese alchemy to Alexandrian chemistry or to Arabic alchemy; and on this point the present translation of the *Ts'an Tung Ch'i* supplies valuable evidence. It resembles the writings of the Alexandrian chemists in using fantastic and imaginative language and in using an occult philosophy built up around the idea of the contraries, but differs from them profoundly in its interest in something with which the Alexandrian chemists had nothing to do, namely, the elixir of immortality. Second, the Taoist origins. The facts which EDKINS, MARTIN, and JOHNSON have brought forward make clear the natural affinity which exists between alchemy and Taoism. If they do not prove that Chinese alchemy originated out of Taoism, they at least show abundantly that Taoism supplied a congenial medium for the growth of alchemical ideas. While the points of similarity between the earlier Chinese and the later European alchemy argue for the westward movement of alchemical knowledge, the points of difference are evidence of origins. The central idea of Chinese alchemy, upon which the whole structure of its doctrine depends, did not appear in European alchemy at all. The notion of *hsien* or benevolent supernatural beings, endowed with extraordinary powers, who had attained immortality by chemical means did not perhaps appeal to Occidental minds or harmonize with Occidental religions. European alchemists hoped at most for a long-continued natural existence. The notion probably did not come to China from India, for the writings of SUSRUTA (sixth century, B.C.) and of NAGARJUNA (third century, A.D.) contain no such idea, though they do describe medicines which promote longevity. (11) The notion of *hsien*, moreover, appears to have arisen naturally out of a discussion and elaboration of the philosophy of LAO-TZŪ.

(11) Verbal communication from Y. SUBBAROW, M.D., Research Associate at the Harvard Medical School.

The doctrine of LAO-TZŭ was a lofty and abstract mysticism, vaguely expressed, a general metaphysics with ethical implications, a guide of life but one which contrasted sharply with the concrete and practical teaching of CONFUCIUS. The *Tao* (道) (10780) or Way was to be attained by inaction. In its original purity Taoism was a philosophy for meditative thinkers, devoid of the characters which could give it the popular appeal of a religion. It had no mythology, no hell, no heaven beyond the attainment of the *Tao* which required a rigorous self-discipline beyond the power of the majority of men, no idols, no liturgies, no offerings. The spread of Buddhism in China perhaps supplied the hint. Taoism took on magic, fantastic, and superstitious doctrines and practices, and became a religion.

The seekers of the *Tao*, despairing of accomplishing the perfect control of the self, sought physical means of attaining it, by deep breathing, by abstinence, by the use of the medicine of immortality. Those who had attained the *Tao* became *hsien*; having attained complete inaction, they were capable of all or any action however extraordinary — in accordance with the usual dialectic of mysticism. (12)

The Taoist Canon contains many treatises on alchemy and is a veritable treasure-house ready for future students of the subject.

WIEGER's bibliography of Taoism (13) lists 1,464 titles of which

(12) EDKINS says, *loc. cit.*, pp. 91-92, "The characteristics of early Taoism will help to explain why the religionists of this school rapidly deteriorated in their aims and character, and became the victims of gross superstition and transparent imposture.

"The objects they proposed to themselves as the proper work of their religion, and the means they chose to effect them, assumed more and more a physical aspect. They expected to be self-reformed by the adoption of a physical regimen only. Not comprehending the immateriality and immortality of the soul, they hoped it might be purged from its grossness and saved from decay by physical remedies. It was by stillness, solitude, and repression of muscular and intellectual activity, abstinence, a life free from excitement in some wild mountain retreat, that man could elevate himself to dominion over nature, and exemption from degradation and suffering. They looked to nature to provide a cure for the miseries of the world.

"In conformity with these views, many of them became hermits, and others sought for some plant, or mineral, or compound preparation, by which exemption from the approaches of physical corruption might be secured. Then followed the follies of alchemy."

(13) Dr. LEON WIEGER, S. J., *Taoisme*, 2 vols., Ho-kien-fou, 1911, 1913.

132 indicate that the treatises relate to alchemy. Of these 132, twenty-one titles suggest that the treatises deal with the spiritual, moral, metaphysical, physiological, or mystical side of alchemy. Alchemy of spirit and alchemy of matter had the same liaison among the Chinese that they later had among the Europeans.

EARLIER ALCHEMISTS

The *Shih Chi* (史記) (9893, 923) (Historical Memoirs) which was commenced by SSŪ-MA T'AN and completed by his son, SSŪ-MA CH'IEN, who succeeded him as grand astrologer or grand annalist to the Chinese court, deals with the history of China from the earliest times to 122 B.C. and reports several cases of alchemical thought and experimentation, among them the earliest organized attempt in Chinese history to secure the elixir of immortality.

The *Shih Chi* tells of the three supernatural islands in the midst of the Eastern Sea, *P'êng-lai* (蓬萊) (8902, 6679), *Fang-chang* (方丈) (3435, 424), and *Ying-chou* (瀛洲) (13329, 2445), where the immortals lived and the drug could be found which prevented death. The Emperor CH'IN SHIH HUANG TI (秦始皇帝) (2093, 9982, 5124, 10942) (259-210 B.C.), the same who established a new dynasty, built the Great Wall, and introduced the hair-pencil or brush for writing on silk instead of on bamboo tablets, became interested by the report of these islands and by what he heard concerning the elixir of immortality. The magicians, LU SHĒNG (盧生) (7396, 9865) and HSŪ SHIH (徐市) (4748, 9905), influenced him to organize an elaborate naval expedition for the purpose of searching for them. He gave to HSŪ SHIH seeds of the five grains and sent him on the voyage with three thousand young men and women, and laborers for all kinds of work. HSŪ SHIH sailed away and discovered a locality remarkable for its peace and fertility. There he remained and was made king. The Emperor continued to hope for his return and made several pilgrimages to the eastern coast of China, where he was accustomed to promenade on the seashore, in the hope that he might in some

manner obtain the wonder-working drug of the three sacred islands in the midst of the sea—but he never obtained it. He returned to *Sha Ch'iu* (沙丘) (9624, 2310) — and there he died.

SSŪ-MA CH'ÏEN also tells of an alchemist, LI SHAO-CHŪN (李少君) (6884, 9746, 3269), who flourished at the court of the *Han* Emperor, WU-TI (漢武帝) (3836, 12744, 10942) (156-87 B.C.). "He constantly affirmed that he was seventy years of age, that he was able to rule over spiritual matters and that he could escape old age. He traveled about in order that reports of his prowess might reach the ears of nobility.... He excelled in showing himself shrewd, and in saying things at the same time astounding and accurate." Through his influence the Emperor became interested in alchemy. LI SHAO-CHŪN said, "I know how cinnabar transforms its nature and passes into yellow gold. I can rein the flying dragon and visit the extremities of the earth. I can bestride the hoary crane and soar above the nine degrees of heaven." He gave specific instruction to the Emperor. "If you will make the sacrifice of the furnace, you will be able to transmute cinnabar into gold. When the gold shall have been produced, you may make of it utensils for eating and drinking. Through using them your life will be prolonged, so that you may see the blessed immortals of the islands of *P'eng-lai*, which lie in the midst of the ocean. When you shall have seen them, and shall have made proper sacrifices to high heaven and broad earth—then you will never die." It is further recorded that "it was after this discourse that the Son of Heaven (the Emperor) for the first time performed in person the sacrifices of the furnace.... He occupied himself in experimenting with powdered cinnabar, and all sorts of drugs, in order that he might obtain gold." (14)

LIU AN (劉安) (7270, 44) or HUAI-NAN-TZŪ (淮南子) (5934, 8128, 12317) (died 122 B.C.) was a grandson of the first *Han* Emperor, KAO-TI (漢高帝) (3836, 5927, 10942), and was created Prince of *Huai Nan*. He was an ardent Taoist and alchemist, a searcher after the elixir of immortality and the secret of the transmutation of the metals. He praised the art of proper

(14) JOHNSON, *op. cit.*, p. 70, footnote, pp. 76-77.

breathing, saying that "he who consumes the atmosphere becomes spiritual and attains extreme old age." He also spoke of the regions of the extreme West "where there are rock cities and gold dwellings, and where human beings and wild animals 'drink the atmosphere' and do not die." He taught that "gold grows in the earth by a slow process, and is evolved from the immaterial principle underlying the universe, passing from one form to another up to silver and then from silver to gold." (15)

Under the pseudonym of HUAI-NAN-TZŭ he wrote the *Hung Lieh Chieh* (鴻烈解) (5269, 7086, 1515) (Story of the Great Light) which deals with cosmogony and contains considerable alchemy. No other work of LIU AN has survived.

The *Lieh Hsien Ch'üan chuan* (Complete Biographies of the Immortals) tells the following story about LIU AN (pl. 4).

"Once there came eight *hsien* to call on him. The door-keeper jested with them, saying 'The Prince desires the *Tao* for the prevention of illness and the attainment of longevity; he wants profound scholars, and desires strong and brave men who can lift the *ting* (鼎) (11268), who are ready to die torturing deaths, and who can have their own way in the world. Now, Sirs, you are aged. You probably possess neither the art of writing nor the bravery of MENG PÊN (孟賁) (7795, 8843) and HSIA Yŭ (夏育) (4227, 13659). None of the three qualities do you possess. We do not dare to report your presence to the Prince.'

"The *hsien* laughed and answered, 'We have heard that the Prince reveres the wise and loves the scholar. He is never tired of their discussion and their company. All those who possess talents come to him. The ancients valued the learning of the 'Nine-Nine' (九九) (2263, 2263). They patronized those who could imitate the crow of a cock or the bark of a dog. They sold the bones of horses to get the famous horse, *Ch'i-chi* (騏驎) (1041, 939). Although our parts are too meager to answer the Prince's requirements, yet we cannot see how our meeting with the Prince will bring about any harm. Why, then, are we

(15) JOHNSON, *op. cit.*, pp. 47, 75, footnote.

held back? If the Prince thinks that only the youthful-looking ones have attained the *Tao* and that the hoary are incapable, we are afraid that that is not the way of getting jade by unravelling rocks or of searching the deep for pearls.'

"Having spoken these words, they were all transformed into fifteen year old youths with black hair and peach-blossom cheeks. At this, the door-keeper was frightened and hastened to report to the Prince.

"When the Prince learned the news, without wasting time to put on his shoes, he hurried forth barefooted to greet the visitors. He conducted them to the 'Platform of Longing for the Immortal' where they were provided with silk draperies and ivory beds, and with tables of gold and jade, while there was burning of the incense of a hundred ingredients harmoniously compounded. The Prince, wearing the shoes of a disciple and facing north toward the visitors, raised his hands in salutation and said, 'AN is of common parts. From youth I have loved the *Tao Té* (道徳) (10780, 10845).' At this juncture, the eight visitors all changed back into old men and said, 'We have heard that your Highness loves the *Tao*. So we have come to join your court. But we do not know what your Highness desires.

"'One of us can cause wind and rain by sitting down, can raise clouds and fog by standing up, can make rivers and lakes by drawing on the ground, and can create mountains by piling of sand.

"'One of us can crumble heights and fill up the deep, can husband the tiger and the leopard, can catch the dragon and the snake, and can master gods and ghosts.

"'One of us can separate his form and change his appearance, can cause life by sitting down and death by standing up, can cover a complete army from sight, and can turn broad daylight into darkness.

"'One of us can ride in space and walk on emptiness, can go into the sea and the deep, can go in and out through any partitions, and can breathe a breath of a thousand miles.

"'One of us can go into the fire without being scorched, and into water without being wetted, can be stabbed without

being hurt, can be aimed at but never hit by an arrow, and is not cold in freezing water, and does not sweat in summer.

“ ‘ One of us can perform thousands of changes at will. He can bring forth birds and animals, weeds and woods in a moment. He can move mountains, heights, and rivers.

“ ‘ One of us can prevent havocs, reclaim from dangers, dispel evils, and do away with harmful things. He can cause longevity.

“ ‘ One of us can boil mud to get gold, assay lead to get silver, and can treat the eight stones to give pearls. He can ride the dragon and harness the clouds to travel afloat on the Great Clearness.

“ ‘ What does your Highness desire? ’

“ LIU AN made obeisance to the eight *hsien*. He offered wines and fruits to them with his own hands. The *hsien* were tested one after the other, and were confirmed in their ability. He was then given the Book of the Medicine (丹經) (10618, 2122), the “Thirty-Six,” and the mercury recipes. The medicine was made but was not taken.

“ Now LIU AN had a son, of the name of CH' IEN (諶) (1711), who loved fencing. One day CH' IEN fenced with an official and was hurt. The latter, fearing punishment, wrote to the Emperor alleging that LIU AN was plotting revolt. The Emperor sent TSUNG CHÊNG (宗正) (11976, 687) to bring LIU AN to justice.

“ The eight *hsien* said to LIU AN, ‘ You must go now. This is a heaven-sent messenger for you to depart. So harbor no doubt.’ LIU AN went with them up into the mountain. There they made a great ceremonial offering and buried the gold in the earth. They rose to the sky in broad daylight.

“ The stones on which the eight *hsien* and LIU AN had stepped became marked. Even now they are found to have the footprints of men and of horses. Chickens which peck at the *tings* used in preparing the medicine, and dogs which lick them, attain lightness. The chickens will cackle and the dogs will bark in the sky.”

參同契

TS'AN T'UNG CH'I

TRANSLATION

Chapter I.

Ch'ien (乾) (1742) and *K'un* (坤) (6540) are the gateways to *I* (易) (5497) (change). They are the parents of the *kuas*. The *K'an* (坎) (5870) and *Li* (離) (6905) *kuas* may be likened in configuration to the four walls of a city, and their working is like that of the hub of a wheel which spins the wheel and holds the axle in place. These four male and female *kuas* function like bellows and reeds [in that their usefulness consists in emptiness].

Chapter II.

The control of the *Tao* (Way) of *Yin* (female, negative) and *Yang* (male, positive) is like the work of a skilled driver, holding the reins and exactly following the track. Staying in the interior [of his vehicle] he controls the exterior. The ordinations bespeak the course of the workings. In a moon (month) there are six fives (of days), and the *ching* (經) 2122) and *wei* (緯) (12535) (weft and warp, longitude and latitude) are employed according to (the time of) the day. Altogether there are sixty (divisions, i.e., thirty days and thirty nights). They have the qualities of *kang* and *jou* (hardness and softness) and they also have interiors and exteriors.

Chapter III.

At dawn *Tun* (屯) (12232) *kua* is at work : at eventide *Meng* (蒙) (7763) *kua* takes up the task. The day and the night each has a *kua* of its own. So use them accordingly. [The complete course runs] from the time of the moonless night to that of the new moon. The course goes on repeating. Activity

or inactivity occurs according to the hour of the day. Spring and summer are inside from the hour of *Tzū* (子) (12317) (11 p.m. to 1 a.m.) until the hours of *Ch'ên* (辰) (652) (7 to 9 a.m.) and *Ssü* (巳) (10284) (9 to 11 a.m.). Autumn and winter should be applied externally from the hour of *Wu* (午) (12769) (11 a.m. to 1 p.m.) until the hours of *Hsü* (酉) (4735) (7 to 9 p.m.) and *Hai* (亥) (3757) (9 to 11 p.m.). Reward or punishment will come according as it is spring or autumn: darkness will come according as it is cold or hot. There are morals in the *Hsiao-tz'ü* (爻辭) (4331, 12402) commentaries on the *kuas*. With the appropriate hour will come delight or anger. When the four seasons are thus answered, the *wu-hsing* (quintet) will work out properly.

Chapter IV.

After the heavens and the earth have provided the proper positions, *I* (Change) operates among them. To have provided the positions is to have placed *yin* and *yang* (female and male, negative and positive) in matching positions. *I* (Change) refers to the *K'an* and *Li kuas*. They embody the qualities of *Ch'ien* and *K'un*. The latter two do not have any fixed positions. They flow about in the *Six Vacua* (六虛) (7276, 4711). They come and go without any regularity: and even so do they fluctuate up and down. Rising and falling all the while, they sometimes hide themselves away or vanish for a short time. They embrace all creation and are the fundamentals of the *Tao* (Way). In order to secure emptiness, many tangible things are made. Vessels are useful for their emptiness. Happenings are inferred from the states of the *K'an* and *Li kuas*.

Chapter V.

Statements are not carelessly made, nor are discussions given without sound reasons. They can be verified by experience and thus prove the power of the Gods. By generalization and by inferences [from the Book of Change] conclusions are reached [the truth of which is] evident from fundamental principles. The

K'an kua and *Wu* (戊) (12792) go with the essence of the moon, the *Li kua* and *Chi* (乙) (921) go with the light of the sun. The sun and the moon make up the *I* (Change), matching one another with their respective hardness and softness. [The element of] earth, ruling the four seasons, connects the beginning with the end like a thread. Each of the (four) colors, green (dark green), red, white, and black, occupies a region. They are all directed from the Central Palace, thanks to the work of *Wu* and *Chi*.

Chapter VI.

I (Change) is manifestation. Of all heavenly manifestations none are more evident and striking than the sun and the moon. To know the Gods thoroughly is to know creation-evolution. When *yang* is gone, *yin* will come on to take its place. A wheel turns by virtue of the proper ordering of its spokes. The manner in which it turns depends on whether it is going into or out of a place.

Chapter VII.

In (the Book of) Change there are three hundred and eighty-four (elementary) strokes, on the basis of which the sixty-four *kua*s are constructed. Between the last day of one moon (month) and the first day of the next, the *Chên* (辰) (642) *kua* comes forth to assume authority. At this time the spirit of the heavens matches that of the earth. The sun and the moon reach out for and hold one another. Masculine *yang* scatters the black spread abroad and feminine *yin* is in charge of the yellow transformation. Contact of the nebulosities establishes the foundation for all things. Efforts are made to keep the roots (innate essences) alive, and the spirit is consolidated so as to form the body. People come out of it, and even worms are born of it.

Chapter VIII.

And then Confucius wrote commentaries on the Great Beginning of Things to the end that the *Tê* (德) (10845) (magnanimity-virtue) of *Ch'ien* and *K'un* should be thoroughly understood. When speaking of the ancient times, we give high mention to the

First Emperor just as we trace the beginning of rhymes to the Book of Poetry. As the coming of age is intrinsically in close relation with marriage, even so does the first year call forth the sprouting of growths.

Chapter IX.

The sages do not lead uneventful lives. They look up above for heavenly signs. They follow the wax and wane of these signs and direct their efforts accordingly.

Chapter X.

The *I* (Change) controls the core of the sky and the *Fu* (復) (3721) *kua* establishes the beginning. The first born son inherits his body from his father and has his beginnings in the mother. Growth and decline occur according to the musical scale. Rise and fall take place according to [the movements of the stars of] the Dipper. It will be bright on the third day [of the moon] when the *Chên kua* receives *Kêng* (庚) (6001) in the west. On the eighth day [of the moon] when the *Tui* (兌) (12170) *kua* receives *Ting* (丁) (11253), the upper bow of the moon is like a stretched string. On the fifteenth day [of the moon] the *Ch'ien* (male, positive) body is formed, when it (the moon) is full and *Chia* (甲) (1167) is in the east. *Ch'an-ch'u* (蟾蜍) (342, 2637) is the sun and *t'u-p'o* (兔魄) (12122, 9420) (the heavier component of the spirit of the rabbit) is the moon. The two do not shine together. The *ch'an-ch'u* looks after the course of the *kuas* and the rabbit breathes out live light. When the end of the course of seven [plus] eight is reached, turning and descent will occur. When sixteen takes its turn at the reins, dawning light will appear at the *Sun* (巽) (10441) *kua* and at *Hsin* (辛) (4564). When the *Kan* (艮) (5972) *kua* is at *Ping* (丙) (9295) and in the south, the lower bow [of the moon lights up and it will be the] twenty-third [day of the moon]. At the *K'un kua* and *I* (乙) (5341) is the thirtieth day [of the moon] when the east will have lost its brightness. The divisions succeed each other and

each successor in its turn gives birth to the dragon (gives rise to greatness).

Chapter XI.

[The ordinals] *Jên* (☯) (5610) and *K'uei* (☵) (6453) match [the ordinals] *Chia* and *I*. The *Ch'ien* and *K'un kuas* include the beginning and ending [of all things]. Seven and eight make fifteen; even so do nine and six. The four numbers together make thirty, at which the manifestations of *I* (Change) are destroyed all of a sudden. This is like the middle of a winter when all vegetation is injured and reduced, when traffic is stopped and the ruler goes into deep retirement. [If work is done] according to the season [there will be] no necessity for verbal communications. The heavenly *Tao* (Way) (the *Tao* of nature) is enormously vast. The *T'ai-hsüan* (太玄) (10573, 4790) (the Extremely Intangible), being formless, silent, and empty, is invisible : it disappears within its walls. Failure will be upon him who divulges the secrets. The four *hsiang* (象) (4287) (manifestations) are dealt with for the enlightenment of the younger generation.

Chapter XII.

The eight *kuas* are distributed among the planets. They never fail to operate properly. The mystical essence is exquisite but difficult to observe. It can be guessed at on the basis of (the heavenly) signs. The (heavenly) signs should be observed carefully so as to ascertain their proper expressions. An indicating device should be set up for the indication of the times and omens. Orders are to be issued according to the proper seasons, and opportunities which are offered according to the operation of the (elementary) strokes of the *kuas* should never be neglected. Look above to observe the signs in the Milky Way, look down to note the lay of the land, and look in between to learn the human heart (mind). The knowledge of these three excellencies should be brought together for a comparative study. Acts should be done according to the changes of the *kuas*, and rest should be taken according to the *Chuan-tz'ü* (爻辭) (2724, 12402) commentaries on the *kuas*. Thus *Ch'ien* and *K'un* will hold their

sway, bringing in their trail the reign of order below the skies (in the world).

Chapter XIII.

It is necessary for the chief to be careful, to be circumspect, and to be mindful of details. The distribution of precious things comes within the power of men in controlling positions. The Dipper, being of importance in connection with the *Tao*, has the control of things. As *Hsiao-hsiang* (昴, 昴) (4331, 4287) (the states of things as described in the commentaries on the *kuas*) stir within, good and evil arise without. The five *wei* (planets) describe their courses according to the seasons. When the ordinations are not properly followed, untoward happenings occur.

Chapter XIV.

In the general records kept at the *Wên-ch'ang* (文昌) (12633, 427) god's court the ministers are held responsible. Every official has his own duty and is held responsible for its proper conduct.

Chapter XV.

The sun contains the essence of the *wu-hsing*. The moon is regulated by the six laws. Five by six makes thirty degrees. When they have been duly traversed, a new beginning is made. To be successful care must be exercised not only at the beginning but also through the course until the end. Should the monarch or his people misbehave, evil will come as portended by the unusual wax and wane of the moon. They will be properly punished and he will be deposed. And then there will probably follow peace and order in accord with the *Tao*.

Chapter XVI.

Attention should be turned to the well-being of the inner self so as to attain the state of perfect calmness and freedom from matter. The primordial substance, shining forth unseen, will illuminate the insides of the body. All the openings must be blocked up so as firmly to protect the *ling-chu* (靈株) (7222, 2547) (divine plant). The three lights vanish. The *tsü-chu* (子珠) (12317, 2549) (small pearl) is carefully looked after.

Although it cannot be seen, yet it is close enough to be easily accessible. The yellow center gradually develops. Moistness and fluidity reach the skin (or surface). A right finish follows a proper start, as shapely twigs spring from an upright tree. It is covered by the One and nobody in the world knows it.

Chapter XVII.

The above *Té* (ㄊㄜˊ 德) (9729, 10845) does nothing and does not look to seek. The below *Té* works and its use is incessant. When the above is shut, it is said that there is; and when the below is shut, it is said that there is not. The there-is-not-ness is given over to the above, where the godly *Té* dwells. This two-cavity method is needed by both the there-is-ness and the there-is-not-ness.

Chapter XVIII.

One, knowing the white, should hold firm to the black. For then divine light will come in due course. The white is the essence of gold, and the black is the basis of water. The water is the control of *Tao* and is one in number. At the beginning *yin-yang* is black [earth], and with yellow sprouts (*huang-ya*) (黄芽) (5124, 12804), the master of the five metals and the *Ho-ch'é* (河車) (3936, 574) (river chariot) of the north. Hence lead is black on the outside but holds gold flower (金華) (2032, 5005) in its bosom, like a man who carries jades but is dressed in rags and puts on an appearance of insanity. Gold is the mother of water and the mother hides herself in her offspring. Water is the offspring of gold and the offspring is hidden in the womb of the mother.

Chapter XIX.

True Man (*Chên-jen*) (真人) (589, 5624) (the spirit, the Accomplished) is the extreme of excellence. He is and he is not. He resembles a vast pool of water, suddenly sinking and suddenly floating. Advancing, retreating, and dispersing, each guards its own boundaries and regions. When first gathered, it may be classified as white. Treat it, and it turns red. Refine

it to externals and internals, and the white lives inside like a virgin. The squareness, the roundness, the diameter, and the dimensions mix and restrain one another. Having been in existence before the beginning of the heavens and the earth : lordly, lordly, high and revered.

Chapter XX.

On the sides there is the walled inclosure, shaped like a *P'êng-hu* pot (壺) (8902, 4954). Closed on all sides, its interior is made up of intercommunicating labyrinths. The protection is so complete as to turn back all that is devilish and undesirable, and the meandering passages take good care of emergencies. Cessation of thought is desirable and worries are preposterous. The divine *ch'i* (氣) (1064) (air, spirit, ethereal essence) fills the quarters and it cannot be held back. Whoever retains it will prosper, and he who loses it will perish. Its movements and rests are always with men.

Chapter XXI.

[What I am advocating] is not the *Li-Tsang* (歷藏) (6924, 11601) method by which thought occurs as a result of an introspection. [According to the evil method,] steps are taken in accordance with the movements of the stars and planets, and the ordinations follow the course of the sun. But the *Tao* of *Yin* disapproves of [this method of] nine one. As a result disaster will come to the black mass. Gases from food consumed will make noises inside the intestines and stomach. The right essence will be exhaled and the evil inhaled. Days and nights will be passed without sleep, moon after moon. The body will then be tired out, giving rise to an appearance of insanity. The hundred pulses will stir and boil so violently as to drive away peace of mind and body. A temple is erected, and diligent vigil and pious offerings are made mornings and nights at the altar. Ghostly things will make their appearance [to the operator], at which he will marvel even in his sleep. He is then led to rejoice, thinking that he is assured of longevity. But all of a sudden he is seized by an untimely death and his remains are exposed to decay. A slight error has thus led to a grave disaster.

Chapter XXII.

Descriptions of processes are many and varied, numbering upward of ten thousand. [Most of them] violate [the doctrines laid down by] *Huang-Lao* (黃老) (5124, 6783), and being awkward are also out of accord with *Chiu-tu* (九都) (2263, 12050).

Chapter XXIII.

Wise men, understanding this principle, know clearly what course to follow. They practise with diligence day and night. Having eaten [the medicine] for three years, a man attains buoyancy of movement and is able to travel great distances. Stepping over a fire, he is not scorched; dipped into water, he does not get wet. He is able to appear and to disappear [at will]. He will be happy forever. Having achieved the *Tao Tê*, he hides himself to await his time. In time, *T'ai-i* (太乙) (10573, 5341) (the Supreme One) will give the order for him to remove his residence to *Chung-chou* (中州) (2875, 2445) (Central Isle). Thence, upon fulfilment of the required deeds, he will be raised on high and duly ordained.

Chapter XXIV.

In order that the Treatise on Fire shall not have been in vain, I shall explain here in simple language. Like the moon lying on its back is the shape of the furnace and the pot. In it is heated the White Tiger. *Hung-jih* (紅日) (5266, 5642) (mercury sun) is the flowing pearl and with it is *ch'ing-lung* (青龍) (2184, 7479) (Blue Dragon). The east and the west merge together and so the *hun* and *p'o* (魂魄) (5244, 9420) control one another. The upper bow corresponds to the number eight, and so does the lower bow. The *ching* (精) (2133) (essence) of the two bows combine to form the body of *Ch'ien* and *K'un*. Twice eight *liangs* (兩) (7010) (ounces) make a *chin* (斤) (2019) (pound). [Even so do the two eights of the upper and lower bows of the moon put] the *Tao* of *I* (Way of Change) aright and unailing.

Chapter XXV.

When gold is placed in a hot fire it is not deprived of the brilliancy of its color. Since the days of the unfolding of the universe (creation), the sun and the moon have not diminished in brightness nor has gold lost any weight. The shapes of the sun and of the moon have always been the same. Gold is born under the influence of the moon. At daybreak, receiving magic force from the sun, it returns to its mother. Being enveloped by the sun at the wane of the moon, it hides within the walls and abandons itself to inanity. Thus does the gold regain its original nature. Only when intense brightness is obtained is the *ting* (鼎) (furnace-pot) well heated.

Chapter XXVI.

[The ordinals] *Tzŭ* and *Wu* (午) amount to three, and [the ordinals] *Wu* (戊) and *Chi* are called five. The three and five having been harmonized, the eight stones bring about proper order. They desire one another's presence in their inhalation and exhalation, and they long to be man and wife. Yellow earth (黄土) (5124, 12099) is the father of gold and flowing pearl (流珠) (7248, 2549) (mercury?) the mother of water. Earth is the *kuei* (鬼) (6430) (ghost) of water, and it is not able to arise because of the over-bearing of the earth. The *chu-ch'iao* (朱雀) (2544, 1387) (Red Bird) is the spirit of fire and dispenses victory or defeat with justice. With the ascendance of water comes the vanquishing of fire. Dying together they return to Mother Earth. The three natures merge together and thus show their common origin.

Chapter XXVII.

Longevity is of primary importance in the great triumph. *Huan-tan* (還丹) (5047, 10618) (Returned Medicine) is edible. Gold is non-corruptible in its nature and is therefore the most valuable of things. The *shu-shih* (術士) (10053, 9992) (men of the art) feeding on it attain longevity. Earth, travelling in all seasons, delineates boundaries and formulates rules to be

observed. The *chin-sha* (金石) (2032, 9620) (gold dust), having entered the five internal organs, spreads foggily like wind-driven rain. Vaporizing and permeating it reaches the four limbs. Thereupon the complexion becomes rejuvenated, hoary hair regains its blackness, and new teeth grow where fallen ones used to be. If an old man, he will once more become a youth; if an old woman, she will regain her maidenhood. Such transformations make one immune from worldly miseries, and one who is so transformed is called by the name of *chên-jên* (true man).

Chapter XXVIII.

Hu-fên powder (胡粉) (4930, 3519), on being placed in the fire, becomes discolored and changes back into lead. On treatment with hot liquids ice and snow dissolve into *t'ai-hsüan* (the extremely intangible). Gold is chiefly made up of sand and derives other properties from mercury. The transformations occur because of the essential nature of the materials. Causes and effects are traceable in the course of the changes. The way to make oneself a *fu-shih-hsien* (服食仙) (3727, 9971, 4449) (a drug-using supernatural being) lies in the use of drugs of a nature similar to oneself. For rice seeds are used in the raising of rice, and chickens are hatched from hen's eggs. Things found in nature, when given proper help according to their kind, will result in things easy to improve. Fish eyes cannot replace pearls, and tall weeds cannot be used for timber. Things of similar nature go together: queer things cannot be realized. This explains why the swallow does not give birth to peacocks, and the fox and the rabbit do not mother horses. This also explains why flowing water does not heat up what is above it, and why moving fire does not wet what is under it.

Chapter XXIX.

Many are the learned scholars, but they are too profound to be understood and are therefore lost to the world. They never meet with good fortune: their belongings are devoured by devastating fire. They follow the printed word and sometimes they follow their blind inclinations. The start they make is improper and subsequent regulation is wanting. *Chiang-shih-tan*

(羗石膽) (1233, 9964, 10629) (a kind of stone), *yün-mu* (雲母) (13812, 8067) ("cloud-mother," mica), and alum (礬石) (13527, 12407) are crushed together and cured. Sulfur is burned with elm wood. Mud and mercury are treated in a mixture. These form the support and pivot of the five stone coppers under the drum. Things of different nature and kind are unwilling to unite and live together. Ten thousand failures will come from a thousand attempts. Doubts will fill the heart in middle age. The right course has been abandoned to follow the mistaken path, and the view is too narrow for proper judgement of the future.

Chapter XXX.

Emperor *Fu-hsi* (伏羲) (3691, 4092) (a legendary ruler of ancient China) was most sagacious. He drew the *Eight Kuas* (eight diagrams) after the designs of the sky and the earth. *Wên-wang* (文王) (12633, 12493), the leader of rulers, elaborated the *kuas* by writing the *Hsiao-tz'ü*. Confucius, the greatest of all sages of common blood, supplemented the works with the *Shih-i* (十翼) (9959, 5507). These three sages received support from heaven. As they rose and fell, the reigns changed accordingly. Good and evil have their proper place: merits are accorded in proper measure. Work should be executed according to precedence. Inferences should be made with care and measure. It is easy to infer on the basis of the obvious, but it is difficult to infer without any tangible clue. One should expect his son to be looked up to as a model by the world and to edit this book for it. One should be able to be inspired by one's teacher so as to know what has not been known before. For then the light will come to him just as it comes, on unveiling, to a person previously shrouded under a curtain. He will then have gotten onto a high platform with eyes wide open, so to speak.

Chapter XXXI.

The *Huo Chi* (火記) (5326, 923) (Treatise on Fire) comprises six hundred chapters which treat of the same subject. They are so cautiously worded that they are not easily understood by

people of the world. When things are traced back to their origin it will be found that the bright and the dark (the obvious and the obscure) are in close union. A profound subject like this is fit to be treated only by the wise. It is presumptuous therefore for me to write on it. But I cannot hold my peace either; for it would be a great sin on my part not to transmit the *Tao* (Way) which would otherwise be lost to the world forever. I shall not write on silk lest the divine secret be unwittingly spread abroad. In hesitation I sigh. Without cessation I ponder. There are directions for the processes, the more important principles of which shall be set forth but the details shall not be divulged.

Chapter XXXII.

Gold should be used for the embankments so that the water can enter to have its proper play. The number of gold is fifteen : so is that of water. Measurements should be made when the process is about to begin. The water used should be more than one half [of the mixture]. The two things will be made into an essence. The gold will be as heavy as ever. The [element of] earth will not enter, but the other two [elements] will be with it. The three things will enter into each other, undergoing marvellous changes. The *t'ai-yang ch'i* (太陽氣) (10573, 12883, 1064) (the most positive ether) which is underneath gives rise to distillation instantly. Liquefaction takes place first, followed by solidification. This is known as *huang-yü* (黃輿) (5124, 13533) (yellow carriage). As the month and the year draw to a close, the good natures of things are destroyed, resulting in the shortening of life. A bodily transformation takes place into a fine dust which resembles that deposited on a well-lighted window-sill.

Chapter XXXIII.

Treatment and mixing will bring about combination and rapid entrance to the scarlet portal. The escape must be firmly blocked. Below plays the dazzling flame, while the Dragon and Tiger keep up a sustained vociferation. The flame at the start should be weak, so as to be controllable, and should be made strong at the end. Close attention and careful watch should be given

so as to regulate properly the heat and cold. There are twelve divisions to the cycle. On the completion of the cycle a closer watch should be accorded. As the breath expires, life is ended. Death expels the spirit. The color changes into a purple. Behold! the *huan-tan* (Returned Medicine) is obtained. This is then made into pills. These are extremely efficacious, although their individual size is so small that they occupy only the point of a knife or the edge of a spatula.

Chapter XXXIV.

The application of the *wu-hsing* is comparatively simple. Confront fire with water and the brilliance will be extinguished. The interaction of the sun and the moon constantly changes the shape of the moon. When water flourishes, *K'an kua* will attack *Yang*; and when fire is weak at *Li kua*, the day will be dark. *Yin* and *yang* drink and devour one another. This is natural interaction.

Chapter XXXV.

The *ming* (名) (7940) (formal name) is given to signify one's temperament and the *tzü* (字) (12324) (informal name) to denote one's nature. *Huan-tan* (Returned Medicine) is obtained only when gold has returned to its original own. I do not dare say things without ground. My words are modelled after the sayings of the sages. The Ancient Treatise [on Fire] (古火論) (6188, 923) takes note of the Dragon and the Tiger; Emperor *Huang-ti* praises the gold flower (金華); *Huai-nan-tzü* assays the *ch'iu-shih* (秋石) (2302, 9964) (autumn stone); and *Wang-yang* (王陽) (12493, 12883) eulogizes the *huang-ya* (yellow sprout). The wise ones will follow the discipline strictly [and will therefore achieve success]. The unworthy ones cannot aspire to this. The *Tao* (Way) has always been one since ancient times. One's projects are to be divulged only on personal interview. The student should be industrious and thoughtful. Important things have been plainly set forth in the foregoing. They are unmistakably clear.

Chapter XXXVI.

Hard *Ch'ien* and soft *K'un* match and contain one another. *Yang* donates and *yin* receives. The male and the female need one another. It is this need that brings about creation-procreation, so that the essential *ch'i* (ethereal essence) may have its proper play. The *kuas* of *K'an* and *Li* lead the *Tao* (Way) with their lasting lights shining afar. Its mysteriousness renders it difficult to surmise and impossible to picture. The sage uses his own judgement to arrive at the essentials. The four [*kuas*?], being mingled, enter a state of nothingness. All the other sixty *kuas* spread out to form a carriage. When the dragon and horse are under harness, the process will proceed like the rule of an enlightened monarch. If in harmony, things will fall out in the proper order. The way will be smooth with no undesirable bypaths. But, beware of bypaths! They are dangerous. They often cause disasters to a country.

Chapter XXXVII.

The good words of a *chiün-tzū* (𤎩 子) (3269, 12317) (Ideal Man) living in seclusion have their effect even at places thousands of miles away. A monarch of ten thousand chariots living in a palace surrounded by nine layers of walls issues orders according to the season with respect to *yin* and *yang*. The apparatus should not be used except at the proper time according to the *kuas*. The ordinals corresponding to the *Tun kua* are *Tzū* and *Shên*, and those corresponding to the *Meng kua* are *Yin* and *Hsü*. Each of the sixty *kuas* has its own corresponding days. The two just dealt with will serve as illustrations. The others will not be treated here at length.

Chapter XXXVIII.

Punishment is meted out for the sake of righteousness. *Tê* (magnanimity-virtue) is accorded to the kindly. The laws and instructions should be followed with a most pious heart, with single-mindedness, and with a silent tongue. Wait carefully for the advent of the proper days and hours, and also observe the wax and wane of nature. A slight departure from the right path will cause an irremediable regret. The occurrence of the solstices

will be untimely, bringing about untoward events. Winter will be hot and snow will fall in the summer. The two equinoctial days will be out of their proper places and will not answer to the call of time. Wind and rainfall will come in excess. Flood and famine will occur one after the other. Grasshoppers will thrive in the fields like a boiling liquid. Mountains will crumble and the earth will cleave asunder. The heavens will bring forth their hosts of ugliness, and other strange things will also come to pass. The deeds of the pious son will move the heart of the *Huang-chi* (皇極) (5106, 859) (Ruler-Supreme). A word from him will make its effect felt even in places far away. It may bring about calamity, or it may bring about blessings. It may foster peace or it may precipitate war. All these four things may be brought about by the heart and the head.

Chapter XXXIX.

Movement and rest should take place at the proper time as prescribed. Act according to the four seasons so as to suit the *ch'i* (ethereal essence) properly. According to *kang* or *jou* (hard or soft) so do one thing or another, but do not interchange. Each of the *wu-hsing* (Five Elements) has its proper domain and does not change its boundaries without good cause. *I* (Change) goes on in cycles like bending and stretching or obversing and reversing.

Chapter XL.

Act moderately at the transition between two successive moons. Even when it is yet in a confused state, the male and the female pair together. The moist nourishing fluid flows about and acts. The sky and the earth are miraculous beyond imagination. Advantage is taken of this state of affairs to effect concealment.

Chapter XLI.

The start is made in the northeast, the native land of the constellations *Chi* and *To* (箕斗) (855, 11427). Thence a turning toward the right is effected to show forth the disc and its shafts of light. Out of the obscure abyss comes this manifestation of scattering of the exquisite rays. The ascent of the constellations *Mao* and *Pi* (昴畢) (7694, 8994) is evidenced by the *Chên*

kua, when the *yang ch'i* (陽氣) (12883, 1064) (positive ether) begins to be active to bring about the quickening of nature. Nine-one, during this time the Dragon is in hiding.

Yang (Positiveness) is founded on Three and *yin* (Negativeness) prospers on Eight. Hence the *Chên kua* stirs on the third day [of the moon] and the *Tui kua* holds sway on the eighth. Nine-two, the Dragon makes its appearance, when it becomes magnificently calm and peaceful.

On the fifteenth day *Tê* (magnanimity-virtue) is achieved, whereupon the *Ch'ien* (positive) substance is formed. Nine-three, watchfulness is in order, for the working of the divine powers is on the wane.

Growth and decay gradually come and go; and finally a return to the beginning is made. Now the *Sun kua* succeeds to the rule, to consolidate and to control. Nine-four, the Dragon may stir and dangers are on all sides of the way.

The *Kên kua* dictates advance and retreat. Action should be taken promptly according to the order. A careful watch should be made on the twenty-third day of the moon. Nine-five, the Dragon is flying: more felicities attend the heavenly position.

On the thirtieth day of the moon the *K'un kua* gets into power to end the whole affair. As the mother of the kind, it brings up the offspring under shelter. Up-nine, the Dragon at the height of its power is fighting abroad with *Tê* (magnanimity-virtue).

The exquisite nine workings are the regulating forces of the *Tao* (Way). When the *yang* (positive) numbers are finished, a new beginning is made. The temperaments and natures [of the substances] should be properly adjusted to suit [the numbers]. Following the crescents of the moon, round and round, crisscross, and up and down, the six *hsiao* (爻) (4331) flow about in a manner difficult to observe. This constant shifting is the foundation of *I* (Change).

Chapter XLII.

At the first double-hour of the day, which corresponds to the *Fu kua*, the *yang ch'i* (positive ether) begins to operate and at once appears to be slightly strong. At this time when the

Huang-chung (黃鐘) (5124, 2893) coincides with the ordinal *Tzū*, a promising beginning flourishes forth. Let there be lukewarmness and all will be well.

When the furnace is worked with sticks, room is made for the propagation of light. With the increase in brilliance the day becomes longer. This corresponds to the ordinal *Ch'ou* (丑) (2518) and to the *Ta-lü* (大呂) (10470, 7520). Appropriateness is now realized.

Face upward to attain the *T'ai* (泰) (10594) (greatness). *Kang* and *jou* (hardness and softness) both come to have sway. *Yin* and *yang* (negativeness and positiveness) are in contact with one another. Undesirable things give place to desirable ones. Activity centers at this, the ordinal of *Yin*, when fortune is at its high tide.

Gradually the rule of the *kua* of *Ta-chuang* (大壯) (10470, 2757) (great brave) is passed. This corresponds to the *Chia-chung* (夾鐘) (1132, 2893) and the ordinal *Mao* (卯) (7693). The elm seeds fall, returning to their origin. Just as punishment and forgiveness are opposite to one another, even so is the day distinguished from the night.

At the *Kuai* (夬) (6327) *kua* when the *yin* (negativeness) beats its retreat, the *yang* (positiveness) rises forth, washing its feathers to rid them of accumulated dust.

The strong light of the powerful *Ch'ien* (male, positiveness) covers the neighborhood on all sides. The rule of *yang* (positiveness) comes to an end at the ordinal *Ssü*, which occupies a central position with good connections.

A new period begins with the *Kou* (夬) (6164) *kua*. As this is the transition to coldness, it should be faced with perfect calmness. It is now the ordinal *Wu*, corresponding to the *Sui-pin* (姤賓) (10401, 9233). *Yin* (negativeness) has come to be the mistress.

When the *Tun* (遁) (12225) *kua* is here, retirement is in order. With the retirement the unusual powers go into hiding, waiting to reappear at the propitious time.

The *P'i* (𤣥) (9073) *kua* brings with it an unpropitious time, when *yin* (negativeness) gathers power at the expense of *yang* (positiveness) and vegetation grows no more.

At the *Kuan* (𤣦) (6363) *kuan* the powers and capacities of things are observed. In mid-autumn different things happen to the plants. Some plants ripen their flowers into fruits and seeds so as to enable the aged and decaying to flourish anew. Wheat and the shepherd's purse bud forth to thrive.

And then comes the *Po* (𤣧) (9353) *kua*. The body is torn to pieces so that the form is no more. For, as the *ch'i* (ethereal essence) of transformation is exhausted, the divinest is lost.

When the limit of the *Tao* (Way) is reached, a return to the primordial *K'un* (negativeness) is made. The lay of the land should always be given due consideration and the sky should be obeyed. The mystically obscure and distantly indistinct are separate yet related. To propagate according to the proper measures is the foundation of *yin* and *yang* (negativeness and positiveness). Everything is obscure and unknowable. Although at a loss at first, it finally becomes the ruler.

Without the valley there would be no hill. That is in the nature of the *Tao* (Way). Similarly there exists a contrast between rise and fall, and between growth and degeneration. The *K'un kua* marks the end and the *Fu kua* marks the beginning: like a cycle they go. Throughout and forever the monarch lives to rule.

Chapter XLIII.

[Much thought is necessary for] the cultivation of one's nature and the attainment of longevity. A knowledge of precursory things is necessary for a knowledge of final things. One's body is originally formless. The prime essence spreads throughout, and with the proper *ch'i* (ethereal essence) makes a beginning. In the beginning [the body] resembles a hen's egg and is colored white and black. It measures one inch in width and one in length. Limbs and bowels and bones are then added. After ten moons time it comes out of the womb. Its bones are weak and flexible, and its flesh is as slippery as *I* (𤣨) (5411) (soft candy).

Chapter XLIV.

Yin and *yang* are the regulating forces of the dwelling of *hun* and *p'o* (靈 魄) (5244, 9420) (the lighter and heavier components of man's spirit). The *hun* of the sun is *yang* and the *p'o* of the moon is *Yin*. The *hun* and the *p'o* live in one another.

Chapter XLV.

Hsing (性) (4600) (Innate Nature), which takes care of inside affairs, establishes the roots and looks after the growth. *Ch'ing* (情) (2187) (Temperament), which takes care of outside affairs, builds fences and walls. Only when the city walls are well made, will the people who live within be in safety. When such a time comes, *Ch'ien* (positiveness, male) and *K'un* (negativeness, female) unite in the temperament. *Ch'ien* moves and is erect. The *ch'i* (ethereal essence) surges in him and the *ching* (essence) spreads flowingly. *K'un* (negativeness, female) is quiet and closed to form the home for the *Tao* (Way).

Having given, *kang* (the hard principle) retires. *Jou* (the soft principle) procreates to multiply. There are nine restorations and seven returns, eight home-goings and six stayings-on. White is male and red female. Gold and fire control one another. The estimation and adjustment of water and fire are the foundation of *wu-hsing*. The best attainable substance is like water, clear and flawless. The form of the *Tao* (Way) is the *True Unity* (真 一) (589, 5342), which is difficult to represent. It changes and scatters into separate units, each of which dwells by itself.

Chapter XLVI.

Were it not for the sun, no success would attend the use of the sun-mirror to obtain fire. Were it not for the moon and the stars, the shelled creature, *fang-chu* (方 諸) (3435, 2571), would not have gotten its fluid. The two *ch'i* (ethereal essences) are far away and yet their influences work through great distances. Hence, what more may not be expected of things as close to oneself as the heart and the bosom? The sun is *yang* (positive) and the moon is *yin* (negative), which fact is evidenced by their respective production of fire and water.

Chapter XLVII.

The ear, the eye, and the mouth constitute the three precious things. They should be closed to stop communication. The True Man (the Spirit, the Accomplished) living in a deep abyss, floats about the center of the round vessel. It is being observed in a roundabout way, and its opening and closing are properly coördinated. These are one's controls, the working of which is inexhaustibly versatile.

The *ch'i* (ethereal essence) of *Li* gives nourishment from the inside. When one is empty, there is no need for a keen sense of hearing. When understanding minds meet, there is no necessity for oral exchange of thought—and the fewer the spoken words, the surer and greater the success. When the three of them (the eye, the ear, and the mouth) are properly blocked, the body is relaxed to live in the empty confines.

The mind is relegated to the realm of Nonexistence so as to acquire an enduring state of thoughtlessness. When the mind is integral, it will not go astray. In its sleep, it will be in God's embrace, but during its waking hours it is anxious about the continuation or termination of its existence.

Gradually the complexion gains in mellowness and the bones gain in strength. After the various *yin* (negative, undesirable) spirits are dispelled, the righteous *yang* (positive, desirable) will then be installed in its proper place.

Persistent application and practice will bring about the flow of the various *ch'i* (ethereal essences). These are like spring showers in abundance and like ice in fluidity. From head to foot they will flow, and thence they will rise once again.

The contraries prove the *Tao* (Way). The weak are what morals are primarily concerned with. It is only when the accumulated dirt is cleaned off that the delicate points can be brought out in their proper setting. Disorder makes the way for orderliness. Light will come after a long period of darkness.

Chapter XLVIII.

People like trivial doings. They do not understand the long and short of the *Tao* (Way). Abandoning the right road and following vicious bypaths in the hope of pursuing a short cut, they finally find themselves at the closed end of a blind alley.

This is like the blind man who goes about without the help of a staff and the deaf man who goes to listen to music. One might as well look for rabbits and birds under water, or try to get fish and dragons in a mountain. One might as well plant wheat to reap barley, or use a pair of compasses to draw a square. Energy is thus wasted and the spirit worn away for long years without success. However, it is a simple matter to learn the method of using internal medicine.

Chapter XLIX.

The *t'ai-yang* (太 陽) (10573, 12883) (extreme positiveness, the sun) oftentimes causes the flowing of pearls (珠) (2549). People succeed in getting them despite their tendency to escape. The Gold Flower turns in action and changes into a white liquid. Presently it congeals to a hard body. Gold Flower takes priority in the act. In a few moments the solid body melts into a fluid. *Yang* (positiveness) will come to join it when it has assumed the appearance of a disorderly arrangement of horse-teeth, and the nature of things is working in harmony. Any undesirable interference will bring about the quality of *yin* (negativeness).

Chapter L.

The loving mother desiring support receives affectionate attention from her pious sons. The strict father looks after the education of his offspring. The *Wu-hsing* (Five Elements) assume the reign in turn. Interdependently they exist. Fire works gold (metal). Wood thrives at the destruction of gold (metal). These three of the *wu-hsing* unite to form the essence of the heaven and the earth. Ideas about them can be transmitted orally, but it is difficult to put them down in writing.

Chapter LI.

At the double-hour of *Tzū* (11 p.m. to 1 a.m.) a left turn take place. At the double-hour of *Wu* (11 a.m. to 1 p.m.) an easterly turn occurs. The double-hours of *Mao* and *Yu* (卯) (13398) (5 to 7 a.m. and 5 to 7 p.m.) distinguish the two terms, host and guest.

The Dragon breathes into the Tiger and the Tiger receives

the spirit from the Dragon. They mutually inspire and benefit. They eat and devour one another.

Mars guards the west, Venus crosses the sky. Wherever the devastating forces strike, nothing will stand unscathed. The cat catches the mouse, and birds are afraid of the hawk. As each thing has its own unique power over some other thing, there is no occasion for any boasting.

Chapter LII.

It is difficult to pretend to a knowledge of things which one does not understand. One may spend so much of what he has as to bring want and hunger home to his wife and children, and yet he will be unable to arrive at the truth. Many have there been who have thus devoted themselves to the cause, but very few of them have met with the good fortune of success. By searching far and wide for reputed medicines, they fell into bypaths which are incompatible with the *Tao* (Way). One should make inferences from clues and signs just as he would from the appearance of strangers he meets. The thing to do is to compare things by classes and to trace their beginnings and ends.

Chapter LIII.

The interaction of the *Wu-hsing* (Five Elements) makes them in turn fathers and mothers. The mother possesses the nourishing fluids and the father functions as the fertilizer. Having condensed essences and flowing forms, stones and minerals never decay. Only he who concentrates his efforts with a single-mindedness will be able to attain the *Tao* (Way).

Chapter LIV.

Stand a pole in the sun and a shadow will appear. Call out in a valley and an echo will come. What sure results!

Stuff the throat with a one inch length of wild *ko* (葛) (6669) (a tuber) and an ounce of *pa-tou* (巴豆) (8510, 11412) beans. Lie flat and stir not. Under these conditions, not even the magical manipulations done according to the *Chou* (周) (2450) writings or the writings of Confucius, not the surgical art of

Pien Ch'iao (扁鵲) (9172, 1388), nor yet the loud drum beats of *Wu Hsien* (巫咸) (12735, 4498) will be able to revive you and make you run at high speed.

Chapter LV.

The virgin on the river (河上姽女) (3936, 9729, 220, 8419) is most divine and godly. With the help of fire she flies up, without even showing the trail of her path. At this the ghosts and the dragon fly to their hiding places and can not be found. *Huang-ya* (yellow sprout) is the root of her control (or making).

Chapter LVI.

Be a thing *yin* (negative, female) or *yang* (positive, male), it will get into trouble whenever it goes contrary to the heaven. Why is it that sometimes a fat fowl hatches out only an imperfect chick? Because the match has not been well made, the three out of the five elements have not functioned properly, and the hard and soft principles have shifted from their proper course.

The working of the *Tao* (Way) is natural to the heaven and the earth. It is natural for moving heat to warm up what is above it and for flowing water to wet what is under it. They do these things without being taught. It has been so from the very beginning of things and it can not be changed. Note that when the male and the female cross, the hard and the soft principles are inextricably intertwined. The thing is simply harmonious. No skill is involved in the act.

Man is born to lie flat on his belly and woman on her back. These modes of behavior are derived from the very beginning of their existence in the womb. They behave so not only during their lifetime, but also after their death. They have not been taught by their parents to do so. The origin of it all is traceable to the sexual act.

Chapter LVII.

Of the *K'an kua* and masculine is the moon. Of the *Li kua* and feminine is the sun. The sun shows *Tê* (magnanimity-virtue) and the moon gives forth light. The sun and the moon

undergo changes without incurring any injury. As the *yang* (positive, male) loses its *ch'i* (ethereal essence), the *yin* (negative, female) is deprived of its brightness. In the eclipses the *yin* and the *yang* cover and contain one another. They mutually give and take in order to thrive. The male and the female mix. Each feels the necessity for the other.

Chapter LVIII.

Gold (metal) changes into water. The nature of water is quick. Fire changes into earth, and water is thereby stopped on its course. The active male acts outwards, and the inert female takes things in for keeping. Whenever the male goes into excesses, the female is there to restrain him. The *p'o* (the heavier component of the spirit) is there to control the *hun* (the lighter component of the spirit), checking it from excesses. Not too cold nor too warm, they go forward at the right time. They both have their needs properly met, and they produce evidence that this has happened.

Chapter LIX.

Tan-sha (丹砂) (10618, 9620) (Red Sand, cinnabar, mercury sulfide) is of wood and will combine with gold (metal). Gold (metal) and water live together: wood and fire keep one another company. [In the beginning] these four were in a confused state. They came to be classified as Tigers and Dragons. The numbers for the Dragons, which are *yang* (positive, male), are odd, and those for the Tigers, which are *yin* (negative, female), are even.

The blue liver is the father and the white lungs is the mother. The red heart is the daughter, the yellow spleen is the grandfather, and the black kidneys are the son. The son is the beginning of the *wu-hsing* (the Five Elements). The *three* things are of the same family and they all are of the ordinal numbers *Wu* and *Chi*.

Chapter LX.

Kang and *jou* (the Hard and Soft Principles) rise to power by turns. As their periods of watch succeed one another, so

their regions of control change also. The Dragon occupies the east and the Tiger the west. They are of the ordinals of *Mao* and *Yu*. Penalty (misfortune) and magnanimity-virtue (benevolence) meet one another with cheer. Penalty (misfortune) destroys and subordinates; magnanimity-virtue (benevolence) gives life and development.

In the second moon (month), when the *K'uei* (魁) (6499) stars are at the ordinal *Mao*, the elm dies. In the eighth moon, when the *T'ien-kang* (天罡) (11208, 5906) stars are at the ordinal *Yu*, wheat grows. The ordinal *Tzũ* in the south and the ordinal *Wu* in the north — they interregulate.

When the numbers from one to nine have been exhausted, a new start is made from the very beginning. The *yuan* (元) (13744) (primordial element) is being contained and the *chên* (眞) (589) (reality, essence, truth) embraced, as the *ching* (essence) is transmitted to the offspring.

Chapter LXI.

“Kwan-kwan go the ospreys,
On the islet in the river.

The modest, retiring, virtuous, young lady :
For our prince a good mate she.” (*trans. Legge*)

[So goes the classic ode.] The male does not live alone, nor does the female pass her days unconsorted. Mutually supporting, the tortoise and the snake entwine to form the *Hsüan-wu* (玄武) (4790, 12744) god. All these go to show that the male and the female do need one another.

But let there be two very beautiful maidens living in the same house. Also, let there be a *Su Ch'in* (蘇秦) (10320, 2093) to start the matchmaking and a *Chang I* (張儀) (416, 5455) to go between. Their persuasion and their praising of the one party to the other may succeed in bringing about the match. But the parties would never understand one another even if they should live together to old age.

When medicines of the improper kind and nature are used, or when the compounding is not properly done, law and order

will be upset. Under such conditions, even with *Huang-ti* to operate the furnace, with the Supreme One to confer blessing on the process by his presence, with the Eight Dieties (八帝) (8504, 6568) to help compounding, with *Huai-nan* to control the fire, with sacrifice of dried meats of the *lin* and the *feng* (麟鳳) (7186, 3560) (female unicorn and male phoenix) and protracted, imploring prayers to the spirits offered, in the vain hope of success, on bended knees by the purified and dieting seeker at a dignified altar in a magnificent jade-stepped temple, even then failure will still be inevitable. For this is just as absurd as attempting to repair a caldron with glue, or to heal a boil with *nao* (礬) (8163) (sal ammoniac), or to get rid of cold with ice, or to get rid of heat with a hot fluid, or as reports of flying tortoises and dancing snakes.

Chapter LXII.

O, the sages of old! They held in their bosoms the elements of profundity and truth. Having compounded and partaken of the medicines prepared in the nine *tings* (furnaces), they were endowed with the power to disappear at will. They held the essence firmly and cultivated their spirit, and they thereby attained communion with the three primes. The essential fluids worked properly to give them fine, strong bones and muscles. With the various evils banished, the righteous [good] *ch'i* (ethereal essence) came to stay with them forever. In course of time they became immortals.

Their sympathy for those of posterity, who might have a liking for the attainment of the *Tao* (Way), led them to explain the writings of old with words and illustrations. They couched their ideas in the names of stones and in vague language so that only some branches, as it were, were in view and the roots were securely hidden. Those who had access to the discourses wasted their own lives over them. The same path of misery was followed by one generation after another with the same failure. If an official, his career was cut short; if a farmer, his farm was cluttered with weeds; if a merchant, his trade was abandoned; if an ambitious scholar, his family became destitute—in the vain attempt. These grieve me and have prompted the present writing. Although

concise and simple, yet it embraces the essential points. The appropriate quantities [and processes] are put down for instruction together with confusing statements. However, the wise man will be able to profit by it by using his own judgement.

Chapter LXIII.

Of all manifestations none are greater than the sky and the earth. Their span covers tens of thousands of miles. When the *Ho-ku* (河鼓) (3936, 6241) stars appear in the *Hsing-chi* (星紀) (4602, 922) galaxy, the people become frightened. If the times of the day and the night are shifted, nine years of misfortune will follow. The sub-ruler will beat a respectful retreat under the supreme-ruler's supervision. The *ch'i* (ethereal essences) go around by virtue of the highness and lowness of the controls. The rivers empty themselves into the sea without going dry.

The male and female principles of the sky and the earth ply between the ordinals *Tzū* and *Wu*. The ordinals *Yin* and *Shên* are the origin of *yin* (negative, female) and *yang* (positive, male); alternately in and out in a cycle they go. First the *Tou* (斗) (11427) constellation and then the stars *Chao-yao* (招搖) (466, 12916) are traced in the effort to adjudge the time.

Chapter LXIV.

Above, cooking and distillation take place in the caldron; below, blazes the roaring flame. Afore goes the White Tiger leading the way; following comes the Grey Dragon. The fluttering *Chu-niao* (朱雀) (2544, 8246) (Scarlet Bird) flies the five colors. Encountering ensnaring nets, it is helplessly and immovably pressed down and cries with pathos like a child after its mother. Willy-nilly it is put into the caldron of hot fluid to the detriment of its feathers. Before half of the time has passed, Dragons appear with rapidity and in great number. The five dazzling colors change incessantly. Turbulently boils the fluid in the *ting* (furnace). One after another they appear to form an array as irregular as a dog's teeth. Stalagmites, which are like midwinter icicles, are spit out horizontally and vertically. Rocky heights of no apparent regularity make their appearance, supporting one

another. When *yin* (negativeness) and *yang* (positiveness) are properly matched, tranquility prevails.

Chapter LXV.

The Blue Dragon is with the *Fang* (房) (3440) constellation, six; it is of spring, of the *Chên kua*, of the east, and of the ordinal *Mao*. The White Tiger is with the *Mao* (卯) (7694) constellation, seven; it is of autumn, of the *Tui kua*, of the west, and of the ordinal *Yu*. The Scarlet Bird is with the *Chang* (張) (416) constellation, two; it is of winter, of the *Li kua*, of the south, and of the ordinal *Wu*. The three of them gather to form a family gathering. The two things in the beginning finally become three-five. The three-five combine into one and gather in one place. Treatment should be made according to the foregoing prescription in the appropriate number of days.

Chapter LXVI.

White at first and then yellow, it finally becomes red both on the outside and on the inside. This is called the first *ting* (furnace) and is as large as a grain of millet.

All this is the work of nature and has nothing to do with untoward doings. It is like the fact that the *ch'i* (ethereal essence) of the mountains and the waters rise to give clouds which then become rain. Again, it is like the reduction of mud to give dust and the destruction of fire to give earth.

The bark of the *nieh* (柘) (8283) tree dyes yellow and the *lan* (藍) (6732) (indigo) dyes blue; the boiling of hides yields glue; and the *ch'ü nieh* (麴蘖) (3066, 8283) yeast ferments to give liquor. It is easy to get results when the starting materials and the desired products are of the same kind. Otherwise, it is very difficult.

Chapter LXVII.

This is indeed a marvelous art that I am writing about. I am speaking with deliberation. [This writing] is meant to be transmitted to posterity through thousands of years for their reference. This to them should be as clear as the stars threading

the Milky Way and as sure as the rivers running into the sea.

The aspirant should study this thoughtfully and thoroughly, viewing it from all angles. A thousand readings will bring out some points, and ten thousand perusals will enable him to see. At last revelation will come to bring him enlightenment. Careful study will open the doors to the secrets. Nature's *Tao* (Way) shows no partiality, but reveals to all who are worthy.

LXVIII. Ting Ch'i Ko (鼎 器 考) (11268, 1123, 6046)

SONG OF THE TING

Circumference three-five, diameter one tenth of an inch, mouth four-eight, lip two inches, length one and two-tenths feet, and thickness equal throughout. With its belly properly set, it is to be warmed up gradually. *Yin* (negativeness) is above and *yang* (positiveness) runs below. The ends are strongly heated and the middle mildly warmed. Start with seventy, end with thirty, and two hundred and sixty. There should be thorough mixing.

The *yin* (negative, female, weak, etc.) fire is white and produces the *huang-ya* (Yellow Sprout) from the lead. Two-seven gathers to bring forth the man. When the brain [head] is properly tended for the required length of time, one will certainly attain the miracle. The offspring, living securely in the center, plies back and forth without coming out of doors. By degrees he grows up and is endowed with a pure nature. He goes back to the one to return to his origin.

Respectful care should be accorded, as by a subject to his ruler. To keep up the work for a year is indeed a strenuous task. There should be strict protection so as not to get lost. The way is long and obscurely mystical, at the end of which the *Ch'ien* (positiveness, male) and the *K'un* (negativeness, female) come together. The taking of so small a quantity of it as would cover the edge of a knife or spatula will be enough to confer tranquility on the *hun p'o* (man's animal spirit), give him immortality, and enable him to live in the village of the immortals.

Those who love the *Tao* (Way) trace things to their roots. They decide on the proper quantities [to use] in connection with the preparation of their medicine on the basis of the *Wu-hsing*

(the Five Elements). Careful reflection is in order, but no discussion with others should take place. The secret should be carefully guarded and no writing should be done for its conveyance.

When the aspirant is accomplished, he will ride on the white crane and the scaled dragon to pay respects to the Immortal Ruler in the Supreme Void. There he will be given the decorated diploma which entitles him to the name of a *Chên-jên* (True man).

LXIX. EPILOGUE

The *Ts'an Tung Ch'i* is only an outline of principles written in a rather involved style and interspersed with extraneous material. The subject matter is treated in a general way but no details are divulged. In order to fill in omissions and further to elaborate the mystic profundity so that the nature of the great *I* (Change) shall be thoroughly treated, the present writing is undertaken and is entitled the Akinness of the Trio. It will be noted that the various writings are like the step-ladders used in the wars for surmounting city walls. For they help one another in the common purpose of clarifying the same subject.

The various manifestations of the *I* (Change) are brought about by their respective measure; the study of the *Huang-Lao* (alchemists) results in the foundation of their well regulated art; and the working of the furnace rests on a true basis. These three are all come of the same source.

When the roots are in good condition, the trunk, the branches, the leaves, the flowers, and the seeds will flourish. Words uttered from the depth of a true heart must be right.

A lowly man from the country of *Kuai*, who has no love for wordly power, glory, fame, or gains, who wastes his days leading a simple, quiet, leisurely, and peaceful life in a retreat in an un-frequented valley—such a one is the author of the present writing.

The writings on the *I* (Change) by the three sages have a common goal, which is to propound according to the *Li* (理) (6879) (Reason) and to cause the spirit to shine forth. When the activity-spirit moves about freely, peace will reign throughout the four seas. A chart is drawn up for men of the future to follow so as to enable them to carry out their processes in the proper order

and in a simple manner. He who properly cultivates his innate nature will see the yellow light shine forth as it should. He who augments his *Tê* (magnanimity-virtue) will be able to return to his true root and origin. The material for working is as close to one as his heart and is not apart from his body. Longevity will come to him who, besides giving whole-hearted devotion to the principle, will also partake of the drugs in the proper male and female proportions. There is no use for the eight stones or the magic earth of Mount *Wu-tu* (五都) (12698, 12050) in the process.

Proper processing is done according to the nature of the materials for the preparation of the drug which is held precious by the world. The trio [the Book of Change, the Taoists, and the Processing] are variations of the same thing under the guise of different names.

This writing is not mere rhetorical verbiage. It is an exposition of an unmistakable truth. Woe to me if I am spreading an untruth! The treatise is entitled *Ts'an T'ung Ch'i* so as to suggest its contents. The language used is abbreviated but meaningful. It is expected that posterity will follow the teaching.

The writer, abandoning (𠄎) (12557) the world and its evils for the mountains, roamed in space with the spirits (𠄎) (6430). He was then transformed into a *hsien* and thereby relegated into the realm of silence. Once in every hundred (百) (8560) generations he descends to visit the world to exhibit his feathers in the East, West, and South. Should misfortune (厄) (8474) befall the hot fluid (𠄎) (10751), the water will dry up to bring a drought. Thereupon the leaves and branches of trees will wither and the flowers fade away. The various parts bear proper relations to each other to insure a safe and long life.

End of the Translation.

NOTES

Roman numerals refer to chapters

I. The *kuas* are the simple ideographs, composed of long and

short horizontal lines, which are discussed in the Book of Change. Their magical significance is apparent throughout the *Ts'an T'ung Ch'i* where they supply to WEI PO-YANG a means for the correlation of the three, the alchemical processes, the Book of Change, and the Taoist doctrines. They help to justify the title of the treatise and make the Trio appear to be, as he says in the Epilogue that they are, "variations of the same thing under the guise of different names." A full understanding of the occult relationships of the *kuas* would no doubt add greatly to the meaning which lies between the lines.

II. The process is evidently to be carried out for thirty days (which however is not exactly one moon), or, rather, it is to be repeated as many times during thirty days and thirty nights, heating by day (hard) and cooling by night (soft), sixty operations altogether.

III. This is an account, as clear as many a characteristic account in European treatises on alchemy, of certain details of the process. The treatment is to be repeated once every twenty-four hours from the time of the moonless night until the time of the new moon. But, since only two days intervene between the moonless night and the next new moon, and since the author has already said that the process requires thirty days—and he repeatedly makes reference to thirty throughout the treatise—it seems that the process is to be repeated every day from the time of the moonless night until the time of the new moon next after the one first following the moonless night. During the period between 11 p.m. and 11 a.m. the materials are to be heated (spring) and kept hot (summer), and during the period between 11 a.m. and 11 p.m. they are to be chilled (autumn) and kept cool (winter) by external applications. When the four seasons are thus followed, the five elements will work out properly.

V. 1. The first two sentences of this chapter are quite in the manner of the European alchemists. ZOSIMOS commences his treatise on calx by saying, "I am going to deliver to you things which are clear." (16) The author of the *Speculum Alchemiae* which is ascribed to ROGER BACON says that earlier writers have been obscure but that he will really explain the art.

(16) BERTHELOT, *Collection des Alchimistes Grecs*, Paris, 1887-1888. *Traduction*, p. 121.

“In times past philosophers have been accustomed to speak diversely and in many modes in their writings, for they have left us this science, which is really nobler than all others, inwardly obscured with enigmas and vague expressions. I reject such negative procedure in desperation, altogether, and not without reason.

“I admonish you therefore that you set your mind firmly on these seven chapters, more than on all the writings of others, and on the transformations of the metals which are contained in them, and that you revolve wisely the beginning, the middle, and the end in your heart. You will find such subtlety in them that your soul will be filled.” (17)

The real or pseudo ALBERTUS MAGNUS, in the tract *de Alchemia*, asserts that earlier writers have been false and contradictory but that he will set forth the art clearly and infallibly and will describe nothing which he has not seen.

“Although I have traversed with the greatest labor many regions, and very many provinces, and even cities and castles, in the cause of the science which is called Alchemy, and have inquired diligently from men of letters and from wise men concerning this art in order that I might investigate it more fully, although I have written out in full all their notes and have very often sweated over their processes, I have nevertheless found nothing true among the things which their books affirmed. I have examined books of contradictions and affirmations and have found them to be empty of all profit and foreign to all good. I have found many wealthy men of letters, Abbots, Commanders, Canons, Physicians, and illiterate men who have made great expense and labor on account of this same art, and they also failed for they were not capable of investigating the art. But truly I have not despaired of making infinite labor and expense, being vigilant, going from place to place at all times, and meditating, as AVICENNA says, ‘If this is the thing, in what manner is it? and if it is not, in what manner is it not?’ I have likewise persevered in study, in meditation, and in labor on the processes themselves, until I have found out what I sought, not by my own science but by the grace of the holy Spirit. Then, when I might know and might understand

(17) *Theatrum Chemicum*, Ursellis, 1602. Vol. 2, p. 433.

what might conquer nature, I began more diligently to keep vigil with the decoctions, sublimations, solutions, distillations, cerations, calcinations, and coagulations of Alchemy, and in many other labors, until at length I found the transmutation to be possible into sun and moon which are much better than any natural material in every test and hammering.

“I who am truly the least of the Philosophers intend to write about the true art for my associates and friends, clearly and infallibly, but however in such manner that seeing, they may not see, and hearing, they may not understand. Wherefore I beg and adjure you, by the Creator of the world, that you hide this book from all stupid persons. To you indeed I will reveal the secret, but from others I conceal the Secret of secrets because of the envy of this noble science. For the stupid despise it because they are not able to grasp it, and thence hold it hateful and believe it not to be possible, and so envy those who work at it and call them forgers. Therefore beware lest you reveal any of our secrets in this operation. Again I advise you that you be cautious, persevere in the operations, and avoid fastidiousness for you know that great utility follows after your work.

“Now then in this *Opusculum* of mine I will inform you briefly and simply how you ought to devote yourselves to the labor of so great a work. But I will show you first all deviations and errors and stumbling-blocks of this art by which many and nearly all go astray. For I have seen certain men who made their sublimations with great diligence but were not able to go farther because they did not have the fundamentals. And I have seen others who had a good beginning but because of too much potation and other vanities were not able to accomplish the work. I have seen others who had made a good decoction, distillation, and sublimation, but who left the work unperfected because of too great prolongation of the operation. And I have seen others who had the true art and superintended the operations diligently, but lost the spirit during the sublimations because they used a porous vessel, and consequently doubted and later ceased to cultivate the art. And I have seen others who, desiring to investigate the art and not being able to await the required time, made their sublimations, distillations, and solutions too rapidly and obtained infected and rubiginated spirits and turbulent

dissolved and distilled waters—and they also doubted. And I have seen very many who prosecuted the work with diligence and nevertheless failed because they did not have the wherewithal for sustaining it. Whence the verse,

Labor without profit's ill,
And wisdom without money's nil.

Whence this art is of no value to the poor, because it requires expenditures for at least two years, especially if it should happen to go wrong in the operation or to be prolonged, even if it should not come to failure, as I have experienced in many cases. I have seen others who made pure and good sublimations five times, and when they were not able to make more, they falsified and whitened Venus by adding five or six parts of Luna, and deceived themselves and others. I have seen others who sublimed and fixed spirits, wishing with them to tincture Venus and Mars, and when they made no impression and had no entrance, they doubted. I have seen those also who had fixed spirits and cerated them by mixing with oil, whereby they had an entrance into bodies, adding to them however a certain portion of Luna, and thus they fixed Venus in white, which was similar to Luna by the test and by hammering and in whiteness, and which underwent a second and a third test and however was not perfect because Venus had not been calcined or purged of its corruption. Whence ARISTOTLE says, 'I do not believe that metals can be transformed unless they are reduced to their *prima materia*,' that is, to calx by the adustion of fire, and then it is possible. Moreover I have seen other wise men who sublimed and fixed spirits and powders in plenty, prepared solutions and distillations from the powders, afterwards coagulated them, and afterwards calcined metals, dealbated substances to white, rubified them to red, afterwards reduced the calx to a solid mass, and tinctured them into Sol and Luna which were better than any natural material in every test and hammering. Therefore, seeing so many go astray, I have now decided to write out the true, tested, and approved operations of all Philosophers in which I have labored and am experienced. May I write nothing unless I have seen it with my eyes." (18) Many of the points which are mentioned

(18) *Theatrum Chemicum*. Vol. 2, pp. 486-488.

in this passage are also mentioned at various places in the *Ts'an Tung Ch'i*.

V. 2. The author builds up the idea of heating and cooling, relating *yang* and *yin* to the sun and moon which make up the Change by matching one another with their respective hardness and softness. In Chapter IV he has said that Change results from *yin* and *yang* being in matching positions, in Chapter VI he speaks of the sun and moon and adds that when *yang* is gone *yin* will come on to take its place, and in Chapter VII he tells that the sun and moon reach out for and hold one another.

IX. This may possibly mean that the sages carry out their processes after the pattern of the wax and wane of nature, or it may mean that they are guided by astrological omens, or it may mean simply that they are guided by circumstances and conditions—for their laboratories were not, as ours are, independent of the weather. ALBERTUS MAGNUS, whose laboratory in north Germany was lighted by openings through the stone walls of the building, very properly says that sublimations do not succeed in the winter time while solutions and distillations may be made at all times. A short treatise of ZOSIMOS deals with the question whether the work may be undertaken at any time whatsoever.

“It is necessary that we determine what are the opportune times.... The opportune time is the spring, for then the sun is of a nature for the operation.... Purple also needs a special time for the solutions and coolings. Likewise tear-drops of gum need the spring's own nature in order to flow spontaneously. I have, however, heard it said by certain ones that our operation can be carried out under any circumstances, and I hesitate to believe it.” (19)

X. Since the process is started on the moonless night, the various parts of it correspond to the phases of the moon. After fifteen treatments have been performed, the full moon begins to wane and the crisis of the process is past; on the sixteenth day a notable difference appears. Others appear on the twenty-third day and on the thirtieth when the east will have lost its brightness for, as the next chapter states, at thirty the manifestations of Change are destroyed all of a sudden.

(19) BERTHELOT, *Alchimistes Grecs, Traduction*, pp. 156, 157, 158.

XI. Admonitions to be secret are common in the writings of the alchemists. ROGER BACON in the *Speculum Alchemiae* says, "Keep this secret more secret" (20) and in the tract *De mirabili potestate artis et naturae*, "I recall that secrets of Nature are not committed to the skins of goats and of sheep that anyone may understand them, as SOCRATES and ARISTOTLE have pointed out, and as the latter says in his *liber Secretorum*, 'He is a breaker of the heavenly seal who communicates the secrets of Nature and of Art,' adding that 'Many evils follow the man who reveals secrets.'" (21) The last agrees with WEI PO-YANG's statement that failure will be upon him who divulges the secrets. Compare also ALBERTUS MAGNUS, note V. 1., who urges that his book be hid from all stupid persons and that none of the secrets of the operation be revealed. In his *De Alchemia* he lays down eight precepts, the first of which refers to the matter of secrecy while several of the others have the same intent as advice which is given in the *Ts'an T'ung Ch'i*.

"The first precept then is that the worker in this art should be silent and secret, and should reveal his secret to no one, that he should offer nothing further in the way of explanation, knowing for certain that if many know he will accomplish nothing which is not divulged, and when it shall have been divulged, it will be reputed a forgery—and so will be in perdition, and the work will remain imperfect.

"The second precept is that the worker should have a place and a special house away from the sight of men, in which there are two or three arches in which the operations of subliming and of making solutions and distillations are carried on, as I will teach later.

"The third is that he should observe the time in which the operation is to be performed and the proper hours for sublimations, solutions, and distillations, for sublimations do not succeed in the winter-time while solutions and distillations may be made at all times. I will however teach clearly all these points about the operations.

(20) *Theatrum Chemicum*. Vol. 2, p. 436.

(21) TENNEY L. DAVIS, *Roger Bacon's Letter concerning the Marvelous Power of Art and of Nature and concerning the Nullity of Magic*, Easton, Pennsylvania, 1923, p. 38.

“ The fourth is that the worker in this art should be sedulous and frequent in his operations, and should not tire but should persevere to the end. Because, if he should begin and should not persevere, both time and substance would be lost.

“ Fifth, that he should work according to the institutions of the art; first in contritions, second in sublimations, third in fixations, fourth in calcinations, fifth in solutions, sixth in distillations, seventh in coagulations, and so in order. If however he should wish to tincture before sublimation and to coagulate and dissolve by means of distillation, he will lose his powders, because, when they shall have been projected, they will very quickly fly away and he will not retain anything from them. Or, if he should wish to tincture with fixed powders which have not been dissolved or distilled, such powders do not incorporate or mix with substances.

“ The sixth is that all vessels in which medicines ought to be put, whether water or oil, whether over the fire or not, the vessels ought to be of glass or glazed. For if acute waters are put in a copper vessel, they produce green substances from it; if in one of iron or lead, they are blackened and contaminated; if in one of earthenware, they will penetrate it and all will be destroyed.

“ The seventh is that you ought to beware before all else of involving yourself with princes and potentates in any operation; because of two evils, for if you have involved yourself, they inquire after you from time to time and say, ‘ Master, how do you succeed? When shall we see something good?’ and, not being able to wait for the end of the work, they say that it is nothing, that it is *truffa*, etc., and then you will have the greatest of annoyance. And if you have not obtained a good result, you acquire everlasting indignation from it. If however you have obtained a good result, they think to detain you forever and will not allow you to go away, and so you will be ensnared by the words of your own mouth and entangled by your own speeches.

“ The eighth precept is that no one ought to involve himself in these operations who has not abundant funds, at least enough to be able to provide all things which are necessary for the art and in fact all which are useful. And if he has involved himself

and funds lack, then the wherewithal and all else is lost."

XII. Heavenly signs again and proper seasons, but these are not all; look at the lay of the land and look into the human heart, compare these excellences and proceed accordingly but, as the next chapter says, be careful, circumspect, and mindful of details. Our author says in Chapter XXX that inferences should be made with care and measure, that it is easy to infer from the obvious but difficult to infer without any tangible clue, and in Chapter XXXVI that the sage uses his own judgement to arrive at the essentials. In Chapter XLII the admonition to watch the sky and the lay of the land is repeated.

XIII. The ordinations must be properly interpreted into action, otherwise untoward happenings occur. It is plain from several passages in the *Ts'an Tung Ch'i* that WEI PO-YANG wishes the operator to follow his intuition and to use his own best judgement. The mediaeval Latin alchemists allowed less scope to individual judgement and insisted in the post-Aristotelian manner upon the authoritative procedure, compare note XI, the fifth precept.

XV. 1. Again thirty; compare notes II and III.

XV. 2. To be successful care must be exercised not only at the beginning, etc.; compare note XI, the fourth precept, and the statement in the next chapter that a right finish follows a proper start as shapely twigs spring from an upright tree.

XVI. Evidently a description of some part of the process.

XVIII. 1. The statements that white is the essence of gold and that gold is the mother of water, that yellow earth is the father of gold and flowing pearl the mother of water (Chapter XXVI), that gold is chiefly made up of sand and derives other properties from mercury (Chapter XXVIII), that the best attainable substance is like water, clear and flawless (Chapter XLV), that gold changes into water and the nature of water is quick (Chapter LVIII), that gold and water live together (Chapter LIX), and that gold is born under the influence of the moon (Chapter XXV) for the moon is *yin* as is evidenced by its production of water (Chapter XLVI), all these statements cohere fairly well and suggest a definite alchemical doctrine in which gold—or the metals in general, for the Chinese word can equally be translated metal—are derived from a negative principle or water which corresponds to the negative principle, mercury, of the

doctrines of ZOSIMOS, JABIR, and the mediaeval Latins. The statement that gold (or metal) is the mother of water may perhaps be a reference to the fusibility of the metals, a phenomenon in which later alchemists saw evidence of the presence of mercury.

XVIII. 2. The statement that lead is black on the outside but holds gold flower in its bosom may perhaps refer to the formation of yellow litharge when lead is burned in the air. But it seems more likely that it means that lead is an appropriate raw material for the transmutatory process, or as the Alexandrian chemists believed for the preparation of artificial gold. ALBERTUS quotes ARISTOTLE for the opinion that lead is leprous gold. OLYMPIODOROS says :

“ In his turn PETASIOS the philosopher, speaking of the principle of the work, agrees with what has already been set forth on the subject of our lead and says, ‘ The sphere of fire is retained and enclosed by that of lead.’ And the same author, acting as his own commentator, adds, ‘ This means starting from the product which comes from male water.’ Moreover it is male water which he has called the sphere of fire. He has also said that lead is so possessed of the demon and so given to impudence that those who wish to learn the science fall into folly because of their ignorance of its properties.

“ Two contrary qualities have been attributed to lead, for it gives at once the sensation of a liquid body and the sensation of a dry one. It possesses three properties in itself, it is white, yellow, and black; and it is also liquid. Take note that there are also four different kinds of yellow produced with lead. Lead undergoes two treatments more. It is right that the art has been based upon it, but wrong that it has been assigned a bright and shining character—as has been rightly done to the starry stone. For a similar reason most of the ancients have based the art on lead. ZOSIMOS says so, ‘ The All culminates in lead.’ And further, ‘ Lead is our magnesia, it is liquid by nature.’ Moreover, the slag of lead resembles the slag which is produced by the smelting of auriferous minerals. And it is especially for this reason that the art is made to reside in lead.” (23)

XIX. Suggestions relative to the process. Refine the material

(23) BERTHELOT, *Alchimistes Grecs, Traduction*, pp. 104, 106, 107.

to externals and internals, to its ultimate *white* element which existed before the beginnings of the heavens and earth.

XX. Suggestions relative to the furnace; meandering passages for the condensation of sublimed material.

XXI. The unfortunate consequences of misjudging the procedure.

XXII. WEI-PO-YANG says, as the authors of European treatises do, that the directions given by earlier writers are to be mistrusted. Compare *Speculum Alchemiae*, note V. 1. The text reads that the descriptions "violate *Huang-Lao*," that is, they violate the art, the procedure of its followers, and the precepts of its legendary founders, namely, HUANG-TI, the Yellow Emperor (pl.5), and LAO-CHÜN (老君) (6783, 3269), the Master, the founder of Taoism. The name, *Huang-Lao*, in the Taoist writings means also alchemists or the followers of the art; compare the Epilogue, second paragraph. We have not been able to identify *Chiu-tu*, and are not sure that the words are a proper name.

The *Lieh Hsien Ch'üan chuan* (Complete Biographies of the Immortals) gives an account of HUANG-TI and tells that he secured copper and made a *ting* and ascended upon the Dragon, but mentions no details of his experiments in the preparation of the pill of immortality.

"In the nineteenth year after his ascension to the throne, HUANG-TI heard that KUANG-CH'ENG-TZŪ (廣成子) (6397, 762, 12317) was in the *K'ung Tung* (崆峒) (6597, 12271) Mountain. He went there to see him and said, 'May I inquire about the essence of the accomplished *Tao*?' KUANG-CH'ENG-TZŪ answered, 'Ever since your ascension it has rained without the gathering of clouds and vegetation has faded before it has turned yellow. The light of the sun and moon have diminished more and more. How can you be qualified to aspire to the accomplished *Tao*?' Thereupon HUANG-TI withdrew.

"Three months later he again went to see KUANG-CH'ENG-TZŪ. He found him lying with his head toward the south. He approached him on his knees, made two bows to him, and said, 'May I ask how to take care of my person so as to attain long life?' KUANG-CH'ENG-TZŪ arose suddenly and answered, 'What an apt question! I shall tell you the essence of the accomplished

Tao. If one embraces the spirit in tranquility, his condition will be good of itself. So, if your heart is tranquil and your spirit pure, and if you do not strain your body nor dissipate your essence, you will then attain immortality.' The Emperor again made obeisance and said, 'You are indeed marvelous!' And he returned to cultivate his heart and take care of his condition.

" In the day-time his spirit visited the country of the *Hua-hsü-shih* (華胥氏) (5005, 4704, 9978). It was situated west of *Yen-chou* (彥州) (13066, 2444) and north of *T'ai-chou* (太州) (10583, 2444). It was tens of thousands of miles away from the Middle Empire. The actual distance was not known for it could not be reached by wheel or by boat or even on foot. One could get there only in spirit. The country was without rulers. Its people had no indulgences. They did not love to live, nor did they loathe to die. And so they did not die untimely deaths. They did not hold themselves dear and they showed indifference to things. And so they did not have love and hatred. They did not turn against those who opposed them or favor those who agreed with them. And so they were not concerned with losses and gains. They were without love and favor. They were free from fear and hatred. They were not wet by water nor heated by fire. They were wont to stay in space as if it were solid and to lie in emptiness as if it were a bed. Clouds and fogs did not interfere with their power. Thunder and lightning did not trouble their hearing. Good and evil did not bother their hearts. Mountains and peaks did not hinder their steps. For it was the spirit that was moving about.

" When HUANG-TI awoke, he was well pleased with his accomplishment. He summoned LI MU (力牧) (6980, 8073) and others before him and said, ' His majesty has lived in retirement for three months. He has been able to cultivate his person. But the art of ordering things and affairs he has not acquired. His dream was such as to bring the knowledge to him that the *Tao* cannot be achieved through favor. He cannot tell you about the *Tao*.' Afterwards the world was in such good order as to be almost comparable to the country of the *Hua-hsü-shih*.

" HUANG-TI obtained copper from *Shou-shan* Mountain (蓐山)

(10014, 9663) and fashioned it into a *ting* at the foot of the *Ching-shan* Mountain (荆山) (2157, 9663). When the *ting* was made, there appeared from above a dragon, with gray whiskers, who offered his services to HUANG-TI. HUANG-TI mounted the dragon, and with him were some seventy members of his court and household. The rest of his retainers held on to the whiskers of the dragon. The whiskers gave way and caused HUANG-TI's bow to fall to the ground. The people gazed up at the Emperor until he was up and gone. When he was gone, they embraced the bow and the whiskers, and cried. Hence the place came to be known the *Ting-hu* (荆湖) (11268, 4931) (Lake of the Ting) and the bow as *Wu-hao* (烏號) (12721, 3884) (the Crow's Cry)."

XXIII. Effect of the medicine; compare Chapter XXVII, also the last paragraphs of the Song of the Ting and the Epilogue.

XXIV. The process described in simple language—and the theory of it in Chapters XXV and XXVI.

XXVI. 1. The statement that they desire one another's presence in their inhalation and exhalation and that they long to be man and wife seems a clear reference to the *Yin-Yang* doctrine of the composition of the metals. Compare note XVIII. 1. ZOSIMOS says, "Above celestial things, below terrestrial things; by the male and the female the work is accomplished." (24)

XXVI. 2. The merging together of the three natures, fire, water, and earth, by which they show their common origin, is not so easy to interpret.

XXVIII. Drugs of a nature similar to oneself must be used; things of similar nature go together. In the next chapter the author says that things of a different nature and kind are unwilling to unite and live together, and, in the Epilogue, that longevity will come to him who, besides giving whole-hearted devotion to the principle, will also partake of the drugs in the proper male and female proportion. ROGER BACON in the *Speculum Alchemiae* insists upon the fact that the philosopher's stone can transmute only a substance which has a nature allied to its own. "On this point I now reveal to you a great and hidden secret. One

(24) BERTHELOT, *Alchimistes Grecs, Traduction*, p. 147.

part ought to be mixed with a thousand parts of an allied substance, and the whole shut up tightly in a suitable vessel, etc.... always one part of this for another thousand of an allied substance.” (25)

XXIX. A further description of the process. The start they make is improper; compare note XV. 2. On the profundity of the learned scholars, compare Chapter LXI, also a passage of the garrulous sixteenth century gentleman-chemist of Guyenne, DENIS ZACHAIRE.

“ Such are PYTHAGORAS, PLATO, SOCRATES, ZENO, HALY, SENIOR, RASIS, GEBER, MORIENUS, BONUS, ARNALDUS DE VILLANOVA, RAYMUNDUS LULLIUS, and many others who would be long to recount. From the most important of these we have compiled and assembled our present little work, but it is with difficulty that their books give testimony of it. For they have written in such sort (having the fear of God always before their eyes) that it is almost impossible to arrive at an understanding of this divine science by the reading of their books. As GEBER says in his *Sum*, ‘ It is necessary that the son of the science should not despair and should not turn himself aside from the knowledge of this divine work, for, while seeking and thinking frequently on the causes of natural compositions, he will arrive at it.’ But he who expects to find it by means of our books will be very late when he arrives at it, because (he says in another place) ‘ they have written the true practice for their own selves, confusing with the manner of inquiring the means of coming at the perfect understanding of it,’ a circumstance which has made him set down in the above-mentioned *Sum* the principal operations and the things which are requisite to our divine work in divers and variable chapters. Because, says he, if he ‘ set it down in rank and file, it would be understood in a day by anyone, or in an hour, so noble it is and admirable.’

“ ALPHIDIUS has said the same thing, writing that ‘ the philosophers who have preceded us have hidden their principal intention under divers enigmas and innumerable equivocations to the end that the world may not be ruined by the publication of their doctrine,’ as indeed it would be if the doctrine were published. For all practice of husbandry and cultivation of the soil, all trade,

(25) *Theatrum Chemicum*. Vol. 2, p. 442.

in short all that is necessary for the conservation of human life, would be lost because no one would wish to undertake it who had in his control so great a good as this.

“Wherefore HERMES, excusing himself at the beginning of his book, says ‘My children, do not think that the philosophers have hidden this great secret out of the envy that they have for wise men and for those that are well instructed, but rather to hide it from the ignorant and malicious.’ ‘For’ (as ROSINUS says) ‘by this means the ignorant would be made similar to the wise, and malicious and evil persons would use it to the damage and ruin of everyone.’

“GEBER makes similar excuses in his *Sum* in the chapter on the *Administration of the solar medicine*, saying that ‘the children of doctrine must not marvel if they have spoken covertly in their books, for this is not for them but is for the purpose of hiding their secret from the ignorant under such variety and confusion of operations, and this while leading and directing the children of science by that very means to an understanding of it,’ because (as he has written in another place) ‘they have not written out the discovered science, unless for themselves, but have furnished the means for the understanding of it.’” (26)

XXX. Make cautious inferences until the intuition comes; compare notes XII and XIII.

XXXI. The obscurity of the descriptions of the process; compare ALBERTUS MAGNUS, note V. I., and DENIS ZACHAIRE, note XXIX.

XXXII. A part of the process described. The last sentence of the chapter contains a clear reference to sublimation.

XXXIII. 1. Description of the process continued. The Dragon and Tiger are *yang* and *yin* (compare Chapter LIX, also Chapters XXIV, XXXV, and LI), or, as the European alchemists would say, Sulfur and Mercury. These are to be heated in a tightly closed vessel with a fire which is weak at the start and strong at the end. The same process, with the same characteristic features, is described in the *Speculum Alchemiae*.

“Another says, ‘This work is similar in many respects to the creation of man, for, as the child is nourished at first with

(26) DENIS ZACHAIRE, *Opuscule Tres-Excellent de la vraye Philosophie naturelle des Metaux*, Lyon, 1612, pp. 58-62. (*Isis*, 8, 287-99, (1926)).

lighter foods until the bones are formed, then with stronger ones, so this magistry requires a slow fire by which it is acted upon in the manner of a decoction.' And always when we speak of a slow fire, we mean that the fire is to be augmented and made stronger gradually and in successive stages during the course of the work.

"If then we intend to imitate nature, we must necessarily have a furnace of the same sort, after the fashion of the mountain, not in size, but of such sort as to provide a continuous heat so that the fire imposed upon it shall not find an exit when it ascends and so that the heat shall reverberate the tightly closed vessel which contains within itself the material of the stone. Which vessel ought to be round with a short neck, of glass or of earthenware corresponding to the nature or compactness of glass, and its mouth ought to be closed with a suitable stopper and coated and sealed with bitumen. And as in the mines the heat does not touch directly the substance of the Sulfur and of the Quick-silver, because the earth of the mountain is everywhere between, so the fire ought not to touch directly the vessel which contains the above-mentioned materials. But this vessel must be placed within another vessel similarly closed, so that a temperate heat may better and more aptly reach the material above and below and from whatever side it may be. Whence ARISTOTLE says in the *Lumen Luminum* that Mercury is to be cooked in a triple vessel, which vessel may be of the hardest glass, or, what is better, of earthenware having the nature of glass." (27)

XXXIII. 2. The color changes into a purple. The Alexandrian alchemists regarded purple as the noblest of the colors, and supposed that it was the last of the several colors which were produced during the process of converting a base metal into artificial gold. From the time of ZOSIMOS, it was understood that the color sequence was black, white, yellow, and violet. (28)

XXXIII. 3. The great efficacy of the pills

XXXIV Evidently WEI PO-YANG was aware that the relative position of the sun and moon (and the earth) determines the

(27) *Theatrum Chemicum*. Vol. 2, pp. 438, 439-440.

(28) Vide ARTHUR JOHN HOPKINS, *Isis*, 7, 58 (1925); also *Studien zur Geschichte der Chemie: Festgabe für Edmund O. v. Lippmann*, Berlin, 1927, pp. 9 et seq.

appearance of the moon, whether crescent or full, etc. Compare the reference to the cause of eclipses in Chapter LVII.

XXXV. Reference to earlier masters of the art, HUANG-TI (see Note XXII), HUAI-NAN-TZŭ (see the Introduction), and to WANG-YANG whom we have not identified. For the admonitions at the end of the chapter, compare notes V. 1. and XI. The unworthy ones cannot aspire to this : compare GEBER in the *Sum of Perfection*.

“ If they say *Philosophers* and *Princes* of this *World*, have desired this *Science* and could not find it, We answer, *They lie*. For some *Princes* (though few) and especially the *Ancient* and *Wise Men* found in Our *Time*, have (as is manifest) by their *Industry*, found out this *Science*; but would never by *Word* or *Writing* discover the same to such *Men*, because they are unworthy of it. Therefore *They* not seeing any to possess this *Science*, conceive an *Error* in their *Minds*, and thence judge that none have found it.” (29)

XXXVI. 1. Hard and soft; *Yang* (male) donates and *Yin* (female) receives. Compare notes V. 2., XVIII. 1., and XXVI. 1., also Chapters XLIV, XLV, LVI, and LVII.

XXXVI. 2. In this chapter and the following, again the reference to sixty, thirty repetitions of the change, sixty operations, compare notes II and III. This does not agree with the statement in Chapter XXXIII that there are twelve divisions to the cycle.

XXXVI. 3. Beware of by-paths; compare note V. 1., also the following passage from *Le Texte d'Alchymie*.

“ I have set you in a good road; follow it always and do not take it into your head to take lanes and by-ways believing to shorten your work and to arrive sooner at the end of your desires. You would make a great mistake to do so, for it is only the great road which leads to the great work. The beginning is a little rude, rugged, and difficult to take, but the farther one goes, the more it smoothes out and the more beautiful discoveries he makes. As you follow this road cast your eye to the right and to the left—you will see only beauties and marvels; and, if you look back, you will see that the country where you are

(29) *The Works of Geber Englished* by RICHARD RUSSELL, 1678 : *A New Edition with Introduction* by E. J. HOLMYARD, London, Toronto, and New York, 1928, p. 38.

is a thousand times more agreeable than that through which you have passed. But if you cast your eye far ahead into a country very distant from that where you are, take care not to lose your way by forcing yourself to see things to which you cannot pay adequate attention. Continue always to advance along your road, and in due time your curiosity will be satisfied.

“ But, if you take some other route, thinking by its means to arrive at the place where you propose to go, I assure you that you will be misled, and that, the farther you advance in these by-ways, the farther you will be from the great and veritable road, in such sort that you will be altogether bewildered and will not be able any more to find the true road that you had taken at first.” (30)

XXXVII. The apparatus should not be used except at the proper time; compare note IX. The admonition is repeated in the following chapter.

XXXVIII. More admonitions. The unfortunate consequences of a slight departure from the right path.

XXXIX. Repetition of the instructions given earlier, four seasons, cycles, etc.; compare notes II and III also Chapters XLI, XLII and LXIII.

XLI. The four parts of the cycle described, growth and decay, and finally a return to the beginning. Dangers on all sides and the necessity for a careful watch. Emphasis on the fifteenth day, the twenty-third, and the thirtieth; compare note X.

XLII. The four cycles described again and further admonitions given—to watch the lay of the land and observe the sky.

XLIV. The lighter component of the Sun is *yang* and the heavier component of the Moon is *yin*.

XLV. 1. Nine restorations and seven returns, eight home-goings and six stayings-on: total thirty.

XLV. 2. White is male and red female. The idea of the intimate combination of the positive and negative principles, there also represented as white and red, is found in *Le Texte d'Alchymie*.

“ This is our double Mercury, this substance white on the outside and red on the inside. It is of this that the philosophers have intended to speak when they have said that it is necessary

(30) *Le Texte d'Alchymie et le Songe-Verd*, Paris (D'HOURY), 1695, pp. 96-98.

to whiten the red and to redden the white, for the beginning and end of the work consists only in that. It is in this Mercury that the true Sulfur of the philosophers is contained, which aids the artist to perfection it and without which a man would lose his time, his pains, and his work. Our Sulfur is not vulgar (say the philosophers), but is fixed and does not volatilize. It is of a mercurial nature and of no other.

“ Therefore, my child, you see very well that I have declared all to you when I have made you understand in what manner our Sulfur is contained in the belly of the Mercury, and that it is correct to call it internal Sulfur or hidden Spirit, which is no other thing than heat and dryness acting on the cold and moisture, acting on the patient, the pure mercurial substance of which the Sulfur is the soul, since it is it which vivifies and sustains the Mercury, which would be, without our Sulfur, only a dead, unfruitful, and sterile earth. There is then good reason to say that Sulfur and Mercury are the proper and true substances of the metals. But we do not say that Sulfur and Mercury are the true substances of the metals, because it is very certain that this Sulfur cannot be without Mercury and that our Mercury cannot be without this Sulfur which is intimately united and incorporated with it, as the soul is with the body.” (31)

XLVI. The Sun is *Yang* and the Moon is *Yin*. Compare Chapter VII, contact of the nebulosities establishes the foundation of all things.

XLVIII. The futility of deviating from the right course.

XLIX. This appears to be a fairly clear description of a part of the process and of the behavior of the material which is called Gold Flower.

L. The statement that ideas about the five elements can be transmitted orally but that it is difficult to put them down in writing seems to be another way of advising the worker to use his own best judgement; compare notes XII and XIII.

LI. 1. Heating and cooling; compare notes III and V. 2.

LI. 2. The easterly turn between 11 a.m. and 1 p.m. is evidently a turn toward the rising sun, toward *Yang*, toward greater warmth. The directions of this chapter then are contrary to those of

(31) *Le Texte d'Alchimie*, pp. 86-88.

Chapter III in which cooling is prescribed for the hour of *Wu*.

LI. 3. Chapter LIX states that Dragons are *Yang* and Tigers are *Yin*; hence *Yang* breathes into *Yin* and *Yin* receives the spirit from *Yang*, etc.

LII. The consequences of pretense and error.

LIV. The certainty of natural law.

LV. Without even showing the trail of her path, apparently a reference to invisible vapors during sublimation.

LVI. 1. The process must take place naturally.

LVI. 2. The statement that a man lies on his belly and a woman on her back, after death as well as in life, is probably a reference to the postures which the bodies assume after drowning. It is curious that a similar opinion, reversed with respect to the sexes, was prevalent in Europe from the time of PLINY. "That women drowned swim prone but men supine, or upon their backs, are popular affirmations, whereto we cannot assent.... The reason yet currant was first expressed by PLINY, *veluti pudori defunctorum parcente natura*, nature modestly ordaining this position to conceale the shame of the dead, which hath been taken up by SOLINUS, RHODIGINUS, and many more : This indeed (as SCALIGER tearmeth it) is *ratio civilis non philosophica*, strong enough for morality or Rhetoricks, not for Philosophy or Physicks : for first, in nature the concealment of secret parts is the same in both sexes and the shame of their reveale equall : so Adam upon the taste of the fruit was ashamed of his nakednesse as well as Eve : and so likewise in America and countries unacquainted with habits, where modesty conceales these parts in one sex, it doth also in the other ; and therefore had this been the intention of nature, not only women, but men also had swimm'd downwards, the posture in reason being common unto both where the intent is also common." (32)

LVII. The statement that the moon is masculine and the sun feminine is plainly due to an error in the text, but the error is not maintained for it is stated that as the *Yang* (sun) loses its *ch'i* the *Yin* (moon) is deprived of its brightness—an explanation of the waxing and waning of the moon. In eclipses the sun and the moon cover and contain one another.

(32) Sir THOMAS BROWNE, *Pseudodoxia Epidemica: or, Enquiries into Very many received Tenents, And commonly presumed Truths*, London, 1646, pp. 193, 195.

LIX. There was chaos which was presently classified into positive and negative.

LX. The Dragon, *Yang* or *Kang*, the male or hard principle, occupies the place of the rising sun while the Tiger, *Yin* or *Jou*, the female or soft principle, occupies the west.

LXI. The proper materials must be used and the compounding must be properly done, otherwise even the old masters, HUANG-TI (see note XXII) and HUAI-NAN-TZŭ (see the Introduction) could not make the process succeed. The last sentence of the chapter indicates an appreciation of the certainty of natural law. As *Le Texte d'Alchymie* says, "A gardener for example can very well make a pear-tree produce apples and plums, but he will never be able with all his industry to bring about that a walnut-tree should produce pumpkins, that a vine should bear cherries, or that a fig-tree should produce mulberries." (33)

LXII. The *hsien* in consequence of the medicines which they used were able to appear and disappear at will, etc. But the vague language in which they explained their processes led their followers into grievous misfortune. The present author however is writing concisely and simply, and takes up all the essential points; compare note V. 1., *Speculum Alchemiae*. The worker is advised to use his own best judgement; compare notes XII, XIII, and L.

LXIV. Another description of the process. Evidently the White Tiger volatilizes first, the Gray Dragon afterward. A violent reaction takes place.

LXV. An obscure symbolic account of the procedure. Treatment should be made according to this description.

LXVI. All this is the work of nature. It is easy to get results when the starting materials and the desired products are of the same sort. Otherwise, it is very difficult. Compare the statements in Chapter XXIX that things of different nature and kind are unwilling to unite and live together, that ten thousand failures will come from a thousand attempts; also note XXVIII.

LXVII. A thousand readings will bring out some points. "Read," says the author of *Le Texte d'Alchymie*, "and reflect upon your studies. If you find no sense in them, read the same

(33) *Le Texte d'Alchymie*, p. 78.

books again, then read others, in such manner that those which you shall have read the first will be able to make you understand the last....

“ My child, I am not the only one who has declared the true substance to you. All of the philosophers have written of it as well as I, but in obscure and more shadowy terms. The reason you do not understand their writing is that they have not wished to observe in their books an order which would serve as a means of making them understood. Certain ones have begun their treatises with the end of the subject, others with the middle, others with the projection, others with the multiplication, and one other has treated of the middle and end of the work and has expressly omitted its beginning. They have all affected a confusion—from which, however, it is not impossible to extract the whole truth, but, before developing this chaos, it behooves you to read only a few books (provided they are good ones). It is necessary to read them and re-read them without being disheartened, for if you do not understand them the first time you will understand them the tenth.

“ I swear to you on the faith of a philosopher that you will find by this means what you desire. Although this way may appear tiresome to you, it is by so much the shorter, the surer, and the more comfortable—for all the experiments and all the practice, without a true knowledge and without a perfect theory, will not make you wise in our art. All possible sophistications will not instruct you in the least. Work according to the intentions of nature, follow the road that she has traced for you, and imitate her in all things. Nature makes clever.” (34)

LXVIII. SONG OF THE TING. The statement that the *yin* fire (soft or gentle fire) produces *huang-ya* (yellow sprout) from lead seems to identify *huang-ya* as litharge. Lead which is heated in the air at a moderately elevated temperature, preferably slightly above its melting point, becomes coated with the yellow oxide, litharge, which may easily be conceived to sprout from the shiny molten metal.

The third paragraph agrees with Chapter XXXIII as to the size of the pill which ought to be taken, and makes it clear

(34) *Le Texte d'Alchymie*, pp. 39, 68-70.

that the pill produces not mere longevity but real immortality.

LXIX. EPILOGUE. This section, in the text of *Yü Yen* which we have used, carries a heading which means *Preface*, but it actually follows the rest of the *Ts'an T'ung Ch'i*. The Epilogue virtually constitutes the treatise on "The Akinness of the Five" to which reference is made in the Introduction. Thus, if that portion of Chapter XI which begins with the words, "This is like the middle of winter," and runs to the end of the chapter be inserted after the third paragraph of the Epilogue, and if the expression, "Akinness of the Trio" in the first paragraph be changed to read "Akinness of the Five," then the Epilogue is a translation of "The Akinness of the Five" in the form in which that treatise is printed in Vol. 623 of the Collected Taoist Classics (Commercial Press, Ltd., Shanghai) where it appears to have been edited by CHU HSI or CHU-FU-TZŪ. The expression, "These three are all come of the same source," in the second paragraph of the Epilogue, also occurs in "The Akinness of the Five" and makes it more difficult to understand what the Five are which are mentioned in the title of the latter treatise. The text of the Epilogue, or of "The Akinness of the Five," is embodied entirely within the text of the *Ts'an T'ung Ch'i* in the version of P'ENG HSIAO (彭曉) (8887, 4313) which is also printed in Vol. 623 of the Collected Taoist Classics.

The Epilogue appears to be the author's *apologia* for writing on the art of the *Huang-Lao*, together with certain admonitions relative to the practice of the art and certain information relative to the author himself. The author claims that he has already attained the state of a *hsien*. And in the concluding paragraph, the text of which is reproduced herewith (pl. 6), he conceals his name in a cryptogram. YŪ YEN comments on this passage as follows.

"This is a cryptogram of the three words, *Wei Po-yang* (魏伯陽). The mutual support of the characters, *Wei* (委) and *Kuei* (鬼), makes up the word, *Wei* (魏). Below I (一) (5342) in the word, *Pai* (百), is *Pai* (白) (8556), which in mutual support with *Yên* (人 or 亻) (5624) makes up the word, *Po* (伯) (9340). *T'ang* (湯) meeting with drought and lacking

Sui (水 or 氵) (water) gives *Yang* (陽) (12874); that which pairs with *o* (瓦) (8470) in the word, *o* (瓦) (8474), is *Fou* (𠃉) (3606), which latter in mutual support with *Yang* (陽) makes the word, *Yang* (陽). The implication of the venerable *Wei*'s writing is intricate indeed."

The European alchemists frequently concealed their names in a somewhat similar manner. In the *Ordinall of Alchimy*, (35) for example, the author's name and place of residence may be found by writing consecutively the first syllable of the Proem and the first syllable of each of the first six chapters. This gives—*Thomais Norton of Briseto*.

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(35) *The Ordinall of Alchimy* by Thomas Norton of Bristoll with Introduction by E. J. HOLMYARD, London, 1928. The treatise was written in the fifteenth century.

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