[page 18]

**The Culture and Preparation of Ginseng in Korea.**

By Rev. C. T. Collyer. [Charles T. Collyer]

Ginseng is the generic name applied to the several varieties of the plant known to the Chinese as Jen-sêng(人蔘 or 人參), of which indeed it is a rough and ready reproduction. It is interesting to note that as Westerners call the plant by its Chinese name so they know it to be of value only as it is prized by the Celestials.

In Korea it is known as Sam (삼), which is the native pronunciation of the Chinese 蔘. Not to speak of sub-divisions, the following varieties are generally recognized by Korean growers: ―

1. ― 山蔘 (산삼) *Wild Sam*, literally Mountain Sam. It is this wild ginseng of which we hear such fabulous stories and which is valued at such an extraordinary figure. It stands to reason that there is practically none of it or else the whole population would be out on the hunt. If a grower finds an unusually large root among his crop he often dries it privately and palms it off as having been found in some deep mountain ravine.

2. ― 嶺蔘 (렁삼), *Ryeng Sam*, which comes from Kyoung-sang Do (경상도). Its characteristic is that in body it is smaller than that grown in Song-do. It is merely sun-dried and is said to be a very powerful drug. It is but seldom exported, being highly valued by the Koreans, who will pay $22.00, Korean currency, per pound.

3. ― 江直蔘 (강직삼) *Kang Chik Sam* comes from the province of Kang wŭn (강원) and is graded as second to the above. In appearance it so like the Song Sam that it cannot be told apart by the uninitiated. Its difference if that it weighs more and is less powerful than No. 2. [page 19]

4. ― 松蔘 (숑삼) *Song Sam* is that grown in Song-do and only sun-dried. Its distinction is that it is less powerful than either of the above, for which reason it is graded commercially as No. 3.

5. ― 紅蔘 (홍삼) *Hong Sam* (Red Sam) is the last above mentioned variety after it has passed through the Government’s drying establishment in Song-do. It forms the principal export of this country, and is one of the most valuable assets of the Household Department.

Of these five varieties but two are recognized by the Royal Korean Customs, those known respectively as “White” and “Red” Ginseng. The “White Ginseng” is the root that has been sun-dried or cured by some other simple process ― the same as that shipped from America to China. The figures for 1898 published by the Bureau of Statistics of the United States Treasury Department show that the trade in the States if by no means a small one, 174,063 pounds having been exported, valued at $836,446.00 or an average of $4.80 per pound. In the same year 1,866 pounds were shipped from Korea at the average value of Yen 2.21 per pound. The export of this “White Ginseng” is decreasing all the time, for all roots that will pass muster bring a much bigger return if converted into “Red Ginseng.” The figures for Hong Sam (Red Ginseng) for that same year (1898) show that 60,104 lbs. were shipped to China from Chemulpo, valued by the Customs at an average of Yen 15.87 per pound. From these figures it will be seen that when the root has been put through the process that is hereinafter described it is two and one-seventh times more valuable than the American product.

That the trade really is an important one will be best gathered from the following figures which have been kindly furnished by the Customs authorities: ―

[page 20]

STATISTICS OF EXPORT OF GINSENG FROM KOREA.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | White―Whole & Beard | | Red―Whole & Beard | |
| Weight in Piculs | Value in Yen | Weight in Catties | Value in Yen |
| 1892……  1893……  1894……  1895……  1896……  1897……  1898……  1899……  1900……  1901…… | 210  110  112  33  71  41  14  11  10  12 | 22,637  9,465  11,371  5,310  5,694  3,066  842  564  726  1,188 | ―  ―  ―  ―  16,686  33,037  45,087  23,178  60,310  18,431 | ―  ―  ―  ―  268,054  629,375  954,007  379,376  1,547,400  515,955 |
| Total…… | 644 | 60,863 | 196,729 | 4,294,177 |

For the six years (1896-1901) the average value per catty of “Red” was Yen 21.83 and of “White” Yen 0.76.

These figures hardly give one a true idea of the value, for “Beard” is of very much lower price than “Whole.”

It might be mentioned that much difficulty has been experienced in getting reliable information about the cultivation of ginseng. While the growers are too polite not to talk readily to one, yet on subsequent investigation I have often found that I had been misinformed.

Before a garden, locally known as a Sam-po, is ready for its first planting of Sam, extensive preparations are necessary. In the early winter thousands of loads of a variety of disintegrated granite known as Whang-t’o (黃土 황토) and also of Yakto (藥土) 약토 are carried to the Sam-po and heaped up in separate mounds. This 약토 (medicine earth) is a moderately rich mulch made from the leaves of the chestnut oak (Quercus Sinensis), known to the Koreans as the Sang (橡―도토리상). [page 21] The leaves are gathered in the spring and summer, dried in the sun, pulverized and sprinkled with water to help decomposition. This mulch is the only fertilizer used. The Koreans say that one of the secrets of successful cultivation lies in its use. Experiments have been made with other fertilizers, but none has been found that will take its place.

Before the season opens much time is spent in preparing the frames and mats used for the sheds under which the Sam is grown. As soon as the frost is out of the ground the garden is ploughed up and thoroughly worked over with a spade operated by a gang of five or more men. The spade is made of wood, has an iron shoe or tip, and a handle eight to ten feet long, to the butt of which are fastened two straw ropes. The captain, as we might call him, manipulates the handle while each half of the crew gives its undivided attention to a rope. Then with “a long pull, a strong pull, and a pull altogether” an amazingly small quantity of dirt is thrown a distance of two feet or so. After the beds have been made high enough to prevent the possibility of water, even in the rainy season, getting to the roots of the plants, they are dug out to the depth of about six inches and carefully edged with slabs of slate. In the meantime the artificial soil (mom huk 몸흙) has been prepared. It consists of 15 bushels mulch (약토) and 22½ bushels disintegrated granite (황토) to the *kan* [\*5½ feet] ―during the last few years some of the big growers have been using ⅓ bushel of wood ashes mixed with the above ― these are rubbed together by hand, and with it the dug-out is filled up.

Sam is propagated from seed. As in other branches of the culture, the Koreans pay much attention to the seed. Four-year-old plants, if forward, will flower in the sixth moon (July); should the plants not be sufficiently forward the leaves are nipped off to prevent them flowering. Seed is also borne by five and six-year-old plants; that of the old plants is considered the best. Each year at the chung-pok (中伏 중복) [\*The second day of the midsummer festival, 26 July.] the seed is gathered and placed in grass cloth bags, which are held in running water and violently shaken to remove the red husks. The seed, which is a cream white, is then scattered on a sunk bed of sand dug up from the bottom of a stream; a thick covering of sand is spread over the seed and they are watered [page 22] every day until the yip-tong (立冬 립동). [\*November 8] This seed-bed occupies a conspicuous position in the end of the garden nearest the house: it has a plank frame and is covered with a lath screen. As it is of great importance to shield the seed from the early frosts, straw thatch is piled over the cover of the bed every night. On the 립동 the seed is dug up and sorted. Those seeds which have commenced to germinate are packed with sand in jars and buried in a shady place for the winter.

One of the busiest times of the year is when the seed is sown, crowds of coolies being employed to make up the beds, &c. When the bed has been properly prepared six or eight boys in charge of a man are set to work sowing the seed; they are preceded by a man who marks off the bed with an ingenious tool three feet long with half inch pegs at one inch intervals, the boys then come along and drop a seed in each hole, which is afterwards covered up by the man in charge who presses the soil down with his hands. It should be noted that 62 or 63 rows are sown to each *kan*. If at the time of sowing ― which by the way is regulated by the calendar and not by the weather ― it is at all cold the beds are immediately covered with one or two thicknesses of ricestraw thatch. If the weather is at all suitable the thatch is removed at the time of the Ch’ung-myung (淸明 청명) [\*April 4] and the sheds erected. It is quite a relief to see anything done with exactness and precision in Korea. Great care is taken in measuring the beds―which must face N.N.E. ¾E. ― and in erecting the sheds with exact uniformity. The rows of pillars are three feet apart; those in the front row measure just three feet seven from the ground and those in the back but ten inches. The pillars are set five-and-a-half feet apart and are nearly all spruce pine. Bamboo poles are securely lashed to the pillars and they in their turn support the cross pieces on which the roof of the shed rests. The roof is made of reeds woven together with straw rope.

From this time on the plants require incessant care, several men being kept busy in each garden. If the plants break through the earth by the Kok-u (穀雨 곡우) [\*May 6] they must be watered every three or four days; if the weather at the Ip-ha (立夏 립하) [\*April 21] is getting gradually warmer they are [page 23] watered twice in twenty-four hours and the top mat is rolled up from off the roof during the middle of the day. The calendar being unable to regulate the amount of water necessary it is a rule:— “If there is drought give water plentifully; if there is plenty of rain, give but little water. Let dryness and dampness harmonize!” At the time of the summer solstice the rainy season may be expected, so a thick covering of thatch is spread over the sheds, while the back and front are enclosed by rush blinds.

A native writer says:-

“The nature of Sam is different from that of other plants. It does not require much water nor should it be too dry. It likes light. Because it does not want too much dryness, the beds must be made wide and covered with mats to shade off the extreme light. If the soil (몸흙) in which it is planted is dry, give water and draw down the shades: if it is too moist, open the shades and let in the light. Rain and dew must not be allowed to fall upon it, but it must be watered as though it rained. The covering of the beds is not to keep out the wind and the sunshine, but to give the effect of a cloudy day. Following upon cold, if the ground be dry or damp, shade or light must be given, and if watered special care must be taken to avoid chilling the plants. When the atmosphere is warm or cold much shade or sunshine must not be allowed for either extreme is unsuited to the nature of the plant.”

Several references having been made to the watering of the plants, it may not be without its interest to pause and watch the operation. There is a well in or near every garden, from which water is lifted by means of a sweep. As far as we are aware, this is the only appliance in extensive use in Korea for lifting well water, but it is only used locally in the Sam gardens. The bucket itself is a combination of the Occidental and the Oriental. It is made of a strip of kerosene tin nailed on to semi-circular pieces of wood, which in their turn are nailed to a cross piece into which an upright handle is morticed. The rope of the sweep is fastened to this handle by means of a wire loop pulled off an oil can. The water when raised is emptied into an earthenware crock which is securely tied to a frame mounted on four crude wheels; this is drawn round the garden and between the beds and from it the water is dipped out in a gourd fastened to a long handle. This gourd is perforated [page 24] and in each perforation is inserted a small bamboo spout which gives the “rainy effect” that is so much desired.

It is not until the Ip Tong (립동) [\*November 8] has passed that the grower is able to rest easily. Up to that day he has to be continually on the alert, waging war against insects and weeds. Then with a sigh of relief, he pulls down the sheds and having put a layer of soil some seven or eight inches thick on the beds, the garden is left thus for the winter.

His next care is to select another site to which he can move his plants in the spring. The new lot need not be as sandy as the first one, but on the other hand a heavy clay is quite unsuitable. Having selected his site, fresh whang-t’o and yak-t’o in sufficient quantities must be carried thither in readiness for the opening of the next season.

At Ch’un-pun (春分) [\*March 21] of the following year the new beds are made up and the plants removed from last year’s garden. This time they are planted ten or twelve rows of ten roots each to the *kan*. The prepared soil (몸흙) is not of quite the same proportion and is less than last year’s — 8 bushels (말) mulch (약토) and nine of disintegrated granite (황토). To this also a very small quantity of wood ashes is sometimes added. The duties of this year are similar to those of last year, but there is an added care. The roots are now worth stealing, consequently the garden has to be watched day and night. A watch tower is erected and the hands take turn about in occupying it sentry-wise. Another man continually patrols the garden during the hours of darkness. With a view to scaring off the spirits and to prevent himself from feeling lonely he makes the night “hideous” with his cries. On dark nights a lantern is an indispensible accessory; but while any kind of lantern may be used, preference is given to one made for this special purpose as it throws its light a considerable distance. Made of paper and pasted on bamboo ribs, it is ballon-shaped, with the small end open. The handle which is fastened to the big end if pushed inwards will carry with it through the opening a swinging candlestick. It is only when the light is thrown in one’s face that one realizes how brilliant it is.

In the following year, a few days after Ch’un-un-pun the [page 25] plants are again moved. The circumstances are the same as last year, excepting that they are planted further apart, four roots to the row and eight to the *kan*. This is intended to be the final planting, but should the root not thrive it is moved to yet another location as soon as possible.

Here should be noted a special point in Ginseng culture, one which is held as a close secret. Each time the roots are transplanted they are placed in the ground almost horizontally, slanting slightly downwards. The reasons for not planting them vertically are: (1) That water may be applied evenly to the whole root; (2) To prevent the roots from dividing and spreading into fine rootlets, sometimes known as “beard,” and (3) That they may be readily inspected. Where the roots are so subject to blight it is a matter of great importance to be able to inspect them without disturbance.

Like so many other plants Sam has its special blight, the consideration of which must be left for a future paper.

When the plant is five, six or seven years old, according to circumstances and to grade, the root is dug up and handed over to the Government. Work at the Drying Establishment is carried on from the 10th of the Eighth Moon (September 11) to the 20th of the Ninth Moon (October 21) and the roots have to be delivered during that period.

The law requires every Ginseng garden to be registered. The certificate of registration, for which a fee of 40 cents is charged, states how many *kan* are under cultivation, so that the authorities always know how many roots should be available at harvest time. It being obligatory to sell the entire crop to the Government, the grower’s responsibility ceases when he has delivered his crop to the Government’s Drying Establishment (圃所표소). He there receives a receipt for what has been brought in, but has to possess his soul in patience for several months until the Government is ready to pay — when he gets anything from $6.00 to $9.00 per catty of 20 oz.

As to the profitableness of Sam growing. As an investment, of course, something large would naturally be expected when one has to wait from five to seven years for a return, From the best — though it can hardly be considered absolutely reliable — information to hand I gather that a profit of about 60 per cent is generally made on the original outlay and running [page 26] expenses. It is with some hesitancy that this figure is stated and it is given for what it is worth.

Upon visiting the Drying Establishment the first thing that impresses itself upon one’s mind is the inaccessibility of the place, both with regard to the streets leading to it and to the guard placed at its gate. As at the emperor’s palace so here the guard is no respector of persons. Until two or three years ago this establishment and the entire industry of Ginseng culture was under the supervision of the Song-do governor. There is now a specially appointed official, known as the Sam Sŭng Kwa Chang (蔘省課長 삼성과장). That this gentleman is held personally responsible for the stock is proved by the fact that he has recently had to pay a very large sum out of his own pocket for Ginseng that has more or less mysteriously found its way into other hands than those of the government.

Passing the guards, parts of whose uniform are usually conspicuous by their absence but of whom it must be said that whatever else may be forgotten the ominous bayonet is always in evidence, one finds himself in a twelve feet wide road running east and west and, for a considerable distance, with high walls on either side. Opening to the north and south are the gates leading into the twin compounds, each of which is in charge of a Chu Sa (主事 주사) resident on the premises while the curing process is in operation. Each section of the P’o Sa (포사) is about four acres in extent and is so much like the others that it is only necessary to refer to one of them. On three sides of the compound are buildings varying from 100 to 150 feet in length and of a uniform depth of 12 feet. One of these buildings is used as quarters for the workmen, the others are the drying rooms in which the root is stored every night. These drying rooms are divided into sections and called respectively “First Heaven,” “Second Heaven,” “Third Heaven,” “First Earth,” “Second Earth,” and “Third Earth.” Every tray is labelled according to the room from which it is taken. On the fourth side are the steaming shed and the various storerooms. Except for the buildings, almost the entire space of the enclosure is covered with three-feet-high bamboo platforms, on which the trays are exposed to the sun. Near the centre of each compound, under the shade of some very ancient yew trees, is the well, at the mouth of which the roots are washed as [page 27] soon as received. Year after year the same boys and men, to the number of 140, are employed in the drying house. They are well fed and housed; during the forty days that the drying process is in operation not one of them is allowed to go out of the gate without a special permit from the chu sa in charge, and even then he is searched by the guard.

It is a busy time when the freshly dug up roots are carried to the drying house. They are carefully counted and weighed on a scale-beam suspended from a specially erected structure; receipts for the number of roots and their weight are given to the growers.

It is interesting to note that during the process through which the root will have to go it loses just two-thirds of its weight. The process commences with a thorough washing by hand at the well mouth. The root is then handed over to men who carefully brush it with human-hair brushes: it is important that no speck of dirt be left between the rootlets. They are then packed in baskets (둥우리), two feet in diameter and six inches in depth, with a handle at either side for convenience of lifting. These are placed in pairs in an earthen ware steamer. The steamers are four feet in diameter and one and a half deep; they have holes in the bottom to admit the steam from the iron boiler below. When ready to commence the process of steaming three gallons of water are poured into the five-gallon boiler, the steamer placed on top and the joint made tight by a pad of grass-cloth. The steamer in its turn is covered with a lid placed on a paper pad held down by six or eight tiles tied together with straw rope. I am told that the object of the padding is to prevent any steam from escaping, though observation has shown me that a large quantity fortunately does escape. There are two places in which the steaming is done. Each has four fire-places in a row; the boilers are placed in the masonry just as the rice pot in every Korean house, the whole covered in by a straw shed. Pine wood only is burnt. It is a matter of great importance that there should be enough, without too much fire; the same men are employed year after year to do nothing but attend to this part of the business. The duration of steaming is determined by the burning of a torch made of the fibre and bark of the locust tree (R Pseudacacia.) For [page 28] seven-year old roots, 4½ inches are burnt; for six-year old, 3½ inches, and for five-years old, 2¾ inches. While the torch is burning it is placed in an earthenware vessel covered with a cloth. One day I suggested it would be easier to time the steaming by a watch and was told that easier it might be but certainly not as reliable. Just as soon as the torch is burnt out the fire has to be drawn; the baskets are lifted out of the steamer and the roots placed thirty each on wicker trays and exposed to the sun. When the roots stop steaming they are turned over and left in the sun a little while longer, then carried to the drying house.

This drying house has no floor and is so carefully built as to be air-tight; its doors are made of extra thick boards and all cracks are pasted up with stout paper. Shelves, or racks, of bamboo are placed all round the house and on these are the trays containing the roots. Three shallow holes are dug in the ground and huge charcoal fires lighted in them; the doors are then closed and hermetically sealed. During his absence of about half a day from the room a change takes place in the root that the Korean is quite unable to explain: the carbonic oxide liberated from the charcoal acts upon some property of the root producing a chemical change in colour and touch. We thus see that those books on chemistry which state that “Carbonic oxide is not put to any use in the arts and manufactures” are mistaken. When the Sam is taken out of the drying house its “body” is red, and just so hard that it will not yield to the touch: the rootlets are then cut off diagonally with a pair of scissors. For about ten days the roots are exposed to the sun until they become “as hard as stone,” when with a small knife the root-stock is scraped and if on the primary root there are any “pimples” as the natives call them, they are carefully cut off.

We have now reached the last item in the process and it certainly shows that the Koreans are ingenious about some things. The roots are now so hard and brittle that they will break if let drop on the floor, so it would be almost impossible to pack them without injury. A foreigner would get a lot of excelsior or cotton to protect that which had cost him so much labour, but not so the Korean. He simply puts the roots [page 29] in a hamper, which he places on the earthen floor of a damp store-room. In a short while the roots soften; they are then removed to a room with a heated stone floor and spread out covered with sheets of oil paper, being thus left until they are so soft that they yield to the touch. They can now be easily packed in paper bags and pressed into pine-wood boxes without fear of injury. After being packed they again harden, becoming adjusted to the shape of the box.

Each box is supposed to contain five catties. It is fastened with bamboo nails and wrapped first in common stout paper and then in oil-paper. Eight boxes go to the hamper, which is made of locust-tree withes papered within and without. They are then enclosed in a grass-cloth bag tightly bound with hemp-rope and labelled, and are then ready for the market.

The virtue of Sam as a drug lies in its aphrodisiacal property. I believe that it does not find a place in Western pharmacy because all legitimate medical ends can be better attained by the use of other drugs. We may look askance at it but it plays a very important part in the life of both the Korean and the Chinese gentleman. To speak in every day terms of its use in Korea, and quoting a native doctor, the drug made from white Ginseng is used only by men, for it is too intense for women and children. Hong Sam is given in moderate quantities to women and children because it is supposed, being red, to promote the circulation and therefore the health.

Were it not for China there would be no more trade in Ginseng than in several other native drugs of repute; hence we may well ask, “What gives it such value in that country?” The answer is short and simple, but whether it is a scientific fact or not I must leave to those who have both the opportunity to make investigation and the necessary technical knowledge. The Chinese say that the effect of smoking opium is to diminish the blood while Red Ginseng gives energy, strength, health and increases the flow of blood, hence it is in very high favour as a counteractive of opium. White Ginseng which does not act on the blood, if taken by an opium smoker, will cause speedy death. [page 30]

A discussion having arisen concerning the medicinal qualities of Ginseng, Mr. Gale read the following, taken from an old Chinese history:-

AN ANCIENT RECEIPT.

Take ten ounces of ginseng, cut it into small slices, put it to infuse in twenty small porcelain vessels of spring or river water till it is thoroughly soaked and then pour the whole into a stone or silver vessel, boiling it over a gentle fire made of mulberry wood till half the water is wasted then having strained off the juice pour ten middling porcelain vessels of water upon the gross substance and let them boil till they are reduced to five; take this juice and add five cups of water to the ten vessels which you had before strained off; boil it over a gentle fire till it comes to the consistance of an electuary (medicinal syrup) which you may close up in a proper vessel and when you make use of it dilute it with a liquor suitable to the disease you take it for.