

of the juice being thrown off, there remained nothing but the citric acid and mucilage, in a highly-concentrated state. This was found to answer the purposes of calico printers and other great consumers so completely, that almost all the lemon juice now shipped from Sicily is boiled down to any given strength; the degree of that strength, ascertained by a hydrometer contrived for the purpose, determines the amount of the duty to be levied on the import.

## VINE.

Unlike some other vegetable productions of the island, the cultivation of the vine is not limited to any particular district or aspect. It flourishes equally well on the mountains and in the plains, on the sea-coast and in the interior, in the north and in the south.

The difficulty of transportation in so mountainous a country as Sicily naturally promotes the most extensive cultivation toward the coast. That in the interior is principally limited to the vicinity of large towns, for the consumption of the inhabitants alone.

Generally speaking, the black grape predominates throughout the island, and from this and the white, too often planted promiscuously, an endless variety is cultivated in every province. In laying down a new vineyard, the land, which should slope southerly, is first well cross-plowed, in the month of November, and allowed to rest till the middle of January. Trenches are then dug, about five feet deep and from four to five feet apart, which are left open to ventilate about fifteen days. The plants, which are vigorous cuttings of the former year's growth, taken from some neighboring healthy vineyard, and generally from eight to ten feet long, are placed upright in the trenches, at a distance of five feet apart, the trench being then filled in to the depth of three feet. The upper end of the cutting or *magli-nolo*, as it is termed, is then turned down with its point stuck into the ground to keep it fresh. As the season advances and the plant begins to vegetate, the remainder of the trench is from time to time filled in. In the succeeding winter the plants are attentively examined and pruned, leaving the most vigorous shoots only with not more than two eyes or buds. The vineyard is then hoed up and kept clean from weeds, till the end of May or June, a cavity being left around each plant to receive the rains. The same cultivation is continued for the second and third years, before which the plants do not show any fruit. The fourth is generally considered the first year of produce. In those districts where canes are to be had, the plants are staked in March and April, to which the shoots are attached as they advance in growth, to protect them from being broken by the strong northeast winds which prevail in June. From six or seven years to twenty a vineyard is considered in its prime bearing, though there are many favored by rich soil and judicious management, which remain in full bearing forty and even fifty years. If the plantation is good, the produce of one thousand vines, in the seventh year, will be two hundred and thirty gallons of wine. Where the proprietor holds the vineyard in his own possession, the average annual expense of cultivation may be estimated

at from two dollars and fifty cents to three dollars and fifty cents per thousand.

When the owner is an absentee, or puts his vineyard into the hands of a *metayer*, this latter is expected to reside on the spot and perform all the labor, for which he divides the vintage with the landlord in equal parts, measured at the press. The expense or cost of the canes is borne equally by the landlord and metayer, and cuttings are also divided in equal portions. These agreements are always in favor of the landlord, as, the metayer being unprovided with casks or stores to deposit his portion, the whole goes into the hands of the landlord, who, about Christmas, holds a meeting with other landlords of the same district, when a price is fixed at which they are to settle with the metayers, deducting one half the expense of the vintage. The price is always much under that at which the wine may be sold when matured, but the landlord considers himself entitled to this advantage for the expense of providing casks and stores, the possibility, in unfavorable seasons, of the wine turning sour, the bursting of casks, and similar accidents.

The vintage toward the coast commences, in favorable seasons, from about the 20th to the 25th of September, but in the mountains and the interior a month later. Every vineyard of any extent is provided with a *palmento* and wine-press, generally constructed in some shed or convenient out-house adjoining the dwelling of the metayer. This consists of a substantial stone cistern built upon the floor of the press room, about three feet deep, and proportioned to the extent of the vineyard, having an opening at the bottom, or one side, into which is introduced a stone gutter, projecting over a well sunk in the ground, and immediately under the wall of the cistern above. Sometimes a wooden cistern is used, which is cheaper, and better adapted to our economy. The grapes being gathered and thrown into this cistern, are trodden by men, when the juice flowing through the gutter is received into the well below. This treading is kept up as long as any juice continues to flow, when the husks are collected and heaped in the middle of the cistern. Being covered with strong planks, they are then submitted to the press. This consists of a beam of timber, from twenty to twenty-four feet long, one end of which is let into a hole, purposely built in the wall, and to the other is affixed a vertical screw, with a huge stone attached, weighing from twenty to twenty-five hundred weight. This beam passing over the husks, which have previously been collected in the middle of the palmento, subjects them to a most powerful pressure, when the stone is suspended by the winding of the screw. When no more juice flows from the pressure, the husks are removed, and the must conveyed to the magazine. The produce of this pressing, which brings out the coloring matter from the musk, is, in a commercial point of view, considered essential in the quality of the red wines. So much is a deep color thought desirable in these wines for a foreign market, that it is a custom, in many parts, to spread the husks again upon the floor of the palmento, and return the must thereon, leaving it two or three days to ferment, thereby more effectually incorporating the coloring matter with the wine; but the practice is injudicious, as it imparts to the wine a harsh, acid taste, acquired

from the stalks. For white wines, the husks and stalks are excluded in the fermentation.

A good vineyard, in favorable seasons, will produce about four hundred gallons of must per thousand plants; but an average of the whole island cannot be calculated at more than two hundred gallons. The places for the exportation of Sicilian wines are Messina, Melazzo, Riposto, or Mascali, Catania, Syracuse, Mazzara, Marsala, and Palermo. Those of Messina and Melazzo are all red, or, according to the term of the country, *black* wines. Very little of the white grape is cultivated, and that chiefly intermixed with the red. In the neighborhood of Savora, about twenty miles south of Messina, and from Riposto to Catania, and thence to Syracuse, including that district, the cultivation of the white grape predominates; hence the shipments from those ports are principally white wines, and the quality full-bodied and strong. A description of muscat is made in Syracuse, and much esteemed for its rich and luscious flavor.

The most esteemed wines of Sicily, and the most important in commercial rank, are the celebrated white wines of Marsala, Mazzara, and the adjoining territories. As far back as 1789, John Woodhouse settled at Marsala and laid the foundation of the first establishment for those wines, which have since obtained the highest reputation. It is said, however, that the success of this speculation was in the outset very equivocal. The first shipments were made to America, where it gradually acquired reputation; and about 1802 it was introduced into the English fleet, then under the command of Lord Nelson, in compliment to that officer acquiring the appellation of Bronte Madeira; under which denomination considerable shipments were subsequently made to England. Five other establishments were afterwards founded, and have proved very profitable. Each of these gives employment to numerous workmen. In those of Woodhouse and Ingham, about one hundred, and in those of others, from fifty to seventy, are in constant attendance, whose wages and allowance are liberal. A visit to one of these establishments is always interesting. The great extent of the premises, the neat arrangement of the work-shops, the close attention of the principals, and the incessant activity of the cooper and smiths, make an impression on the visitor; the strength of which is heightened by the appearance of the wine stores, where from ten to twelve thousand pipes are ranged, tier above tier, extending to a distance of several hundred yards. The daily earnings of a family, consisting of a father and four sons of various ages, might be estimated as follows:

Father.....	28 to 32 cents.
Son, seventeen years.....	20 to 24 "
Son, twelve.....	12 to 14 "
Son, eight.....	8 to 10 "
Son, five.....	2 to 4 "

Each adult is allowed fire-wood for cooking his food, besides two and a half quarts of wine, and a small quantity of oil, per day. Each boy has the same allowance, excepting wine; his ration of which is about one quart per diem.

The annual produce in Marsala and that territory is estimated at about twenty-four thousand pipes, of which one half is supposed to be consumed in the country. As the grape is a mixture of both white and black, the wine, in its primitive state, would be approaching to pale-red or cherry color. Artificial means are therefore employed to reduce the color; and though much mystery is affected in the subsequent management, and each establishment pretends to a process peculiarly its own, the main secret may be said to consist in frequent rackings from the lees, taking care never to disturb it in the spring, or during the prevalence of the sirocco or southeast winds. There is also a gradual reinforcement of clean spirit; for the preparation of which, each establishment is provided with the most modern and approved retort. Three or four years are required to make it marketable. The neighborhood of Palermo and the surrounding territory produces abundance of most excellent wines in great variety, both red and white, which are brought into Palermo and prepared for foreign markets. No less considerable quantities, destined for exportation, are likewise brought along the coast to this port, whence extensive shipments of white wines are annually made to South America, England, and the United States.

#### SUMAC, OR RHUS CORIARIA.

Is a small shrub, growing from two to three feet in a season, and used for its stringent qualities by tanners and dyers. The cultivation is confined chiefly to the vicinity of Palermo and Alcamo, the last being esteemed the best. It is sometimes adulterated with the leaves of the leutish and myrtle trees. A soil of moderate depth is required, and not too rich; for if the growth is too luxuriant, the tannin in the plant becomes diluted. Manure, therefore, is never used. Stony ground will do very well, although the sumac near Palermo was on good rich loam. It will not bear much water, and is therefore better on a hill-side, with a southern exposure, as the more sun it receives the stronger will be the tannin. It could doubtless be grown with profit on the dry lands in our southern States. The proper adaptation of the land can be ascertained by testing the leaves with sulphuric ether. In the best sumac, one hundred grains of the powdered leaf should give thirty to thirty-five grains of pure tannin. Use as much sulphuric ether as will dissolve the sumac, or pass it through the sumac till it runs clear, then draw off the ether by heat, and the deposit will be pure tannin.

The soil is prepared as for potatoes, with furrows from two to two and a half feet apart, in which in January or February are placed the young suckers two and a half feet apart. In August, of the first year, the leaves on the lower part of the branches are drawn off with thumb and finger, leaving a tuft on the top. In October the whole head is taken off, or sometimes broken, and left hanging by the bark till dry. The second year, in June, the branches are stripped of ripe leaves; and in August, as soon as the whole plant is mature, it is cut with a sickle down to six inches; it is then spread out, dried thoroughly on each side till entirely cured. The June gathering is omitted in many

cases when the plants are not strong. After being dried, the branches are put upon a floor and threshed, when the leaves will separate from the wood, which is of no value except for fuel. The leaves are then ground between two mill-stones, one of which is on edge and revolving around a center. We visited a mill driven by steam power, which threw out the powdered sumac in large quantities. The air was filled with fine particles of dust, which covered our clothing and entered the lungs. It is not injurious, however; for, although it seemed suffocating, the workmen will sleep three or four hours successively in it and are always remarkably healthy. They were particularly exempt from cholera.

The leaves are readily reduced to powder, while the stems are not. These last are then separated by sifting, and the pure sumac is placed in bags of one hundred and sixty-three pounds each for shipment. A sumac plantation will produce a good article for ten years, and a poorer for ten years longer. The same soil will not bear sumac a second time, unless cropped by something else for twenty years, nor is it then so good as land on which sumac has never been grown. It requires the usual cleaning, and is hoed in December, March, and May. Two thousand pounds of ground sumac to an acre is considered an average crop.

#### BARILLA, OR SODA.

The cultivation of this alkaline plant, which is attended with considerable expense and requires great labor and care, has lately been much neglected, as its present value will hardly remunerate the grower. Since the introduction of chemical bleaching, the demand for Great Britain, Ireland, and America, has become very limited; while in France the extended use of *soude factice* has almost exploded the consumption of the vegetable production. The favorite soil of this plant is a fat and putrid earth, and it requires an exposure to marine exhalations, on which the quality much depends. The best is that of Trapani and the Island of Ustica. After these Terranova, on the south coast. The produce of the latter district, however, is supposed to be affected in its quality by the sirocco winds, it having been observed that in seasons when these winds prevail it is much inferior.

The superiority of the Ustica barilla is said to be owing to the burning of the plant before it is thoroughly dry; but, if this were the sole reason, the peculiar process would naturally be adopted elsewhere.

Owing to the state of the roads, I was unable to reach a barilla plantation even on horseback, but was promised a detailed account, which has not yet reached me.

#### OLIVES.

The cultivation of the olive may be traced among the earliest objects of Sicilian industry, and its fruit has ever been considered one of the principal sources of national wealth. Only two varieties appear to be generally known or cultivated in Europe. The *Olea longifolia*, the spear, or long-leaved European olive, which is chiefly cultivated in

the south of France and many parts of Tuscany and Piedmont. From the fruit of this species, which is of a bright, lively green, oval and of a roughish skin, we are furnished with that delicate oil so much esteemed for our tables.

The *Olea latifolia*, or broad-leaved European olive, is the species cultivated in Sicily, Italy, and the Kingdom of Naples, where the trees grow to a much larger size than those of the other variety. The fruit or berry is also much larger, rounder, smoother skinned, and more fleshy, than the olive of France, more productive in oil, and though much stronger and less grateful to an American palate, arising from an improper mode of treatment, is, nevertheless, from its rich and unctuous quality, better suited to manufacturing purposes.

The usual mode of propagating the olive in Sicily is by grafting upon the wild olive, or from strong, healthy shoots, which are thrown up about the roots of the old plants. These latter, being detached with a portion of the parent root in the months of January and February, are planted twenty-five feet apart, in holes four or five feet deep, previously opened and prepared for their reception, and in ten years will become bearing trees. The mountain shores, on the northern coast of the island, seem peculiarly favorable to the growth of the olive. Along the whole extent of this coast, we saw the sides of the mountains and intermediate valleys entirely clothed with it; while in the interior of the island and on the southwestern coasts, it is rare to find a few small and straggling plantations. Hence, almost the entire produce of oil in Sicily is collected along the northern coast, extending from Cape Gallo to the Paro of Messina, and thence to Taormina, about two hundred miles, including Palermo and its dependencies. From the quantity of oil made on the estates of small proprietors, and consumed for domestic use, it would be difficult to give any accurate statement of the entire annual product, though it has been estimated that the above-mentioned districts collect, in favorable seasons, from seventeen hundred thousand to twenty-two hundred thousand gallons, of which four fifths is required for home consumption.

Many incredible tales are related of the extraordinary duration of the olive; but there is no doubt that, when carefully cultivated, it will continue to produce fruit and remain in healthy vegetation for centuries. Trees are now living, which are said to be seven or eight hundred years old, and several are designated in a title deed drawn up in 1610. The flower, which is a small cluster, not unlike that of the grape, is put forth from shoots of the former year's growth, in the month of June. In July the fruit begins to set, and from that to the end of August is considered the most critical time for the crop, to which nothing is at that time more injurious than the rains. From this cause, and a prevalence of east winds, the fruit during that season is very subject to blight, and to be infested with a small insect which, penetrating the skin, produces a worm or grub; this consumes the pulp within, leaving little more than the nut or stone covered with the outer rind. As no means have been discovered to check its progress, in a few days the most promising crops have been rendered of little value. Of all the vegetable productions of the island, none is considered more precarious than the olive, even under the most favorable

circumstances and seasons. An uninterrupted succession of crops is never to be calculated upon, it being an admitted fact that every third year will be one of scarcity or sterility. In some districts, many extensive plantations have often been altogether out of bearing for many years, without any apparent cause, and to the utter ruin of the proprietors.

Toward the coast, the season of gathering commences in the month of October. This work is continued from this time until the month of December and even January in some of the districts situated higher up the mountains. The fruit is at first shaken from the trees, and finally, toward the latter end of the season, beaten from the bunches by long poles or canes. At each respective gathering, women and children are employed to collect the fruit from the ground, whence it is conveyed to appropriate stores, and cast into large bins or receptacles, prepared for the purpose. Here it is left to sweat and ferment for many days, until it becomes black, and has all the appearance of approaching decay. This practice, so destructive to the quality of the oil, is nevertheless general, as it is erroneously supposed to increase the quantity. In this state it is conveyed to a mill, where it is first ground to a paste under heavy stones, and chaff or small straw occasionally thrown on, to retain the oil. The pulp is then rammed into round, flat baskets, made of a strong kind of rush, and submitted to a press. When the oil ceases to run from this first pressing the baskets are removed, their contents again passed under the mill, thence a second time returned into the baskets, submitted to the press as before, and in like manner, a third and last time. In these final pressings, hot water is thrown upon the baskets as they are piled under the press, the more readily to disengage the oil, which, flowing out with the water, as the press is let down, is conveyed to the tub or cask sunk in front, where the oil, swimming on the surface, is carefully skimmed off. Whatever now remains in the baskets is thrown aside, as the perquisite of the workmen, by whom it is collected and left some days to ferment, and then submitted to another pressure, which yields a small quantity of very bad oil, used by curriers and leather dressers.

Although the mode here described is that in general practice for extracting the great mass of oil produced for commerce, there are many intelligent men who, for private consumption, are more refined in their process. By pressing their fruit fresh, as gathered from the trees, without leaving it to ferment, they obtain an oil nothing inferior in quality to that of Lucca. From the many samples of fine oil found at the tables of the most respectable Sicilian families, it may be safely inferred that the bad repute of Sicilian oil arises from the unscientific mode employed in its preparation. By proper attention to this point alone, the olives of Sicily are as capable of yielding as good oil as the boasted produce of France and Tuscany.

#### THE INDIAN FIG

Is the *Cactus opuntia*, which makes so conspicuous a feature and gives so tropical a character to a Sicilian landscape. Although somewhat ugly, it is strikingly picturesque. The leaves are nearly half

an inch thick, large as a mullen leaf, of a dull green color, and free from prickles. Without stalk or stem, these leaves grow one out of another, agglomerating into an irregular mass, like a rock with cavernous vacancies in its sides. This vegetable mass bears a yellow flower, which becomes a fig-like fruit, with a red, sweetish pulp, much eaten by the natives.

It is generally planted in belts, from two and a half to three feet wide, and from ten to fifteen apart. Across these belts the cactus leaves are placed, touching each other; they very quickly take root, and produce new foliage. It will grow in poor and dry soil, and, with asphodel, is the first plant upon the lava, for which it is the most valuable, breaking it up with its strong acrid roots.

It bears the third year, and has a full crop in ten years. Its net profit is estimated at from thirty dollars to fifty dollars per acre, as it will produce two crops a year, one hundred and fifty to three hundred bushels per acre, and sells readily at wholesale at from twenty-four to thirty cents per bushel. It is one of the most useful plants on the island; the tree serves for fences, the leaf for receiving the liquid manna, and the fruit for the consumption of all classes.

#### ALMONDS.

Almonds are grown in greatest abundance at Avola and Girgenti, and are of both kinds, sweet and bitter. The trees are propagated from nuts and cuttings. The nut is planted in the spring or autumn, and the young trees transplanted at the end of a year to the nursery grounds, to be grafted in the second or third year. The cuttings are planted about fifty feet apart, and are grafted at six years old, four years after which they come into bearing. Attaining its full growth at fifteen years, the tree continues in its prime until thirty, when it begins to fall off, and perishes at sixty years. The flower appears in January, the fruit ripens in May. Of the sweet almond, the best sorts are those of Mascali and Avola, which are equally remarkable for whiteness and flavor. The shell is used for fuel.

#### SAFFRON.

Saffron grows wild in various parts of Sicily. The soil most congenial is a loose, calcareous earth, free from clay. Planted in furrows, about a foot apart, the bulbs produce a violet colored flower, which is gathered in October. The three pistils are collected and dried. The stamens are thrown away as useless. The bulbs require to be transplanted every third year.

#### MULBERRY.

The red mulberry is the species chiefly cultivated in Sicily, the white being much neglected. The fruit is of little value, and grown only for the silk-worm. The *Celso filippino*, a species recently introduced, comes into leaf about three weeks before the white, and six before the

red. The growth is very rapid, but is never allowed to exceed twelve feet in height, at which elevation the tender leaf can be gathered by children.

## SILK.

The production of silk in Sicily is almost entirely confined to the northern and northeastern coasts. From Catania, its southern limit, this branch of industry goes northward, as far as Taormina and Messina, proceeds eastward to Melazzo, follows the line of coast to St. Stefano, turns a little southward, and terminates at Mistretta. The whole produce of these places, and all the intermediate villages, finds its way to the Messina market, except what is retained in Catania, for the use of the Catanese looms. None is produced in the interior, and but a very small quantity in Palermo and its neighborhood. The annual produce is estimated at thirteen hundred bales, or three hundred thousand pounds. This is exclusive of floss or waste, which is estimated at one hundred thousand pounds more.

## SILK-WORMS.

The appearance of the worm, in its natural course, takes place about the middle of April; but, in seasons when the vegetation of the mulberry tree is unusually backward, it is artificially retarded until the leaves are ready. When this cannot be accomplished, the leaves of the blackberry and the lettuce, which merely keep it alive, are given to the worm, until its natural food, the mulberry leaf, is ready and plentiful. This, in Messina and its dependencies, which chiefly form the silk district, is almost wholly the leaf of the red species. In Calabria, the white mulberry, which leaves out three weeks earlier than the red, is used, until the first and second change, when the white becomes hard, and the red is substituted for it. Those fed on the red, yield a greater quantity of a stronger silk than those fed on the white, but the silk of the latter is finer and of a brighter description. The quantity consumed by the worms, from the time of their coming into being, to the fourth and last change, bears a great disproportion to the amount of silk produced. One hundred and seventy-five pounds of leaf yield only thirteen ounces of silk. In Lombardy, one hundred and twenty-six pounds of leaf yield one pound of silk; in Sicily, two hundred and fifteen pounds of leaf, one pound of silk.

The fourth and last sickening, or change of skin, is considered the most critical; nor are the worms deemed out of danger until they have climbed the arbor and spun the cocoon. The intestines of such as die in the changes are made into thick thread and sold under the name of "silk-worm gut" to American seamen and others, for making fishing tackle. A small portion of the cocoons, according to the extent and demand of the establishment, is put aside for eggs, the grubs of which, when transformed into moths, are allowed to eat their way out. Those intended to be wound off must be destroyed, in order to obtain the silk unbroken. The usual mode of effecting this purpose is by placing the cocoons in a slow oven. This practice greatly hardens

the gummy matter which covers the silk on the cocoon, and renders it more troublesome to detach, in winding. To obviate this objection, some establishments in Messina have adopted successfully the following ingenious contrivance, which, from its simplicity and efficacy, is worthy of notice: In a small closet, erected in some corner of the establishment, a copper boiler is fixed over a furnace. From the ceiling of this closet, shallow baskets, attached to each other, and filled with cocoons, are hung up in succession, until the lowermost nearly touches the boiler, previously filled with water. A sliding door in front, which is made to fit closely, is now let down to touch the edge of the boiler, and so secured that the steam shall not escape. The water is now made to boil, and so kept up for about half an hour, at the end of which time the fire is withdrawn and the whole left quiet another half hour. During this period, the condensed steam from the cocoons, with a great portion of the gummy substance from the silk, which has been dissolved by the steam, is drained off into the boiler below. The cocoons are then removed to the floor of a chamber and left to cool, after which they are placed on a terrace, where they are exposed to the full heat of the sun, until thoroughly dried and prepared for winding. Meanwhile, the steam-closet receives a fresh charge, and the operation is repeated, until all the grubs are killed. From the cocoons eaten through, a silk, called *calamo di semenza*, is obtained, by carding, and which, in quantity, is equal to one fourth, and in value to three fourths, of the ordinary or net silks. Another and inferior description, called *calamo di fuori*, is taken from the outer part of the cocoon, before the silk is wound off, the value of which is about half that of the common.

The calamo of both sorts is exported to England, where it is made into hosiery and shawls. In Sicily it is spun by hand and woven into ticking, for mattresses, and into coarse stockings and gowns, for the use of the female peasantry.

## MANNA.

The manna-ash grows chiefly near Palermo, and is propagated from seed, or cuttings. The former is preferable, the tree being of rapid growth and soon coming to perfection. Manna is the coagulated juice, or sap, which oozes out of the *Fraxinus ornus*, a species of ash, indigenous to the northern coast. The tree, at its full growth, is from twenty to twenty-five feet high, borne on an upright stem, with smooth bark, about eight feet in height, and about two and a half in circumference. It is well-known, with us, as a hardy, ornamental tree, with clusters of flowers. The manna is obtained in the months of August and September, from horizontal incisions made in the bark about three inches long and half an inch deep. Under these incisions, and quite close, another slight cut is made in the bark, in which is inserted a leaf of the same tree, serving as a gutter to conduct the sap into a receiver placed on the ground at the foot of the tree. This receiver is nothing more than the dried leaf of the *cactus opuntia*, which is ten or twelve inches long and about eight inches broad. When dried, it assumes the shape of a hollow dish, sufficiently capacious for the purpose required. These incisions are begun at the bottom of the tree, and each

day a fresh one is made, two inches above the first, and so continued during the "raccolta," or gathering, which, in favorable seasons, lasts about six weeks.

When the incision is first made, the manna flows in a watery, limpid state, but gradually thickens as it is exposed to the air and the heat of the sun, which at this season is intense.

This is deemed the best and finest quality, and called "manna in tears." After it is collected, and the leaf removed to a fresh incision above, the sap continuing to flow down the bark of the tree is concentrated thereon, and forms a second quality, which is afterwards carefully detached with a knife. This is distinguished in commerce as "manna in flakes," the quantity of which is by far the most considerable part of the collection.

A third and inferior quality is collected, called "manna in sorts," composed of the refuse, or broken collections from the two preceding, that which has accidentally run upon the ground, or been damaged by rain, and that which flows at the end of the season, when the heat of the sun is insufficient to concentrate it. The quantity and quality of this article depend upon a hot and dry season. As the operation is necessarily exposed to the weather, a rainy or damp season will greatly diminish the quantity of the crop, and often entirely ruin its quality, since, once wet, it cannot be dried by any artificial means. The first two qualities are usually shipped to England and the United States; the latter, and inferior, to the Adriatic markets, and those of the Mediterranean. Other countries are provided with this drug from Naples, which draws its supplies from the southern coast of Calabria. In the plantation which I saw the trees were ten feet apart, but appeared too close for healthy growth.

#### CAROB TREE, OR CERATONIA SILIQUA.

The carob was noticed in my report on Cephalonia, as being one of the finest ornamental trees. Its fruit is somewhat like that of the honey locust, or *Gleditschia*, and its pod full of a sweet, rich pulp, covering a nutritious bean. It is eaten here, as at Cephalonia, both by men and cattle. A preserve is made of the juice, boiled with sugar, and spirits are also distilled from it. Most of the produce goes to Naples. It is rarely cultivated in large quantities, and the fruit is mostly collected from natural trees. A few specimens on a place will often be found grafted with a superior variety. Its native habitat seems about Syracuse, where it is found in considerable quantities.

#### PISTACHIO NUTS, OR TEREBINTHUS INDICA.

The pistachio tree springs up in rich soils, in the central districts, and also in the volcanic humus, in the region of Mount Etna. Grafted at six years old, it comes into bearing at twelve, and produces a fair crop about once in three years, until a very advanced age. A male scion, grafted upon one female in an orchard, is sufficient to fecundate the whole. The nut, gathered in September, is exposed to the sun until perfectly dry, as the least degree of moisture causes it to rot.

#### ALOE.

This conspicuous plant, equally useful and ornamental, abounds in all parts of Sicily, but is found in the greatest perfection in the southern and central districts. Planted in favorable soils, it attains the height of eighteen to twenty feet, and flowers in seven or eight years, after which it immediately dies away, leaving suckers behind to continue the succession.

It serves for impenetrable fences, the stems for rafters of huts, and the leaf for domestic manufactures. The leaf, steeped in water until perfectly tender, crushed between cylinders, soaked for some days in a stream, then beaten and combed out, yields a thread which is used for various purposes.

#### CORK WOOD.

Cork oaks of stunted growth are found in the woods of Sciana. The outer bark, unfit for bungs and stoppers, is used chiefly for fishing tackle; the inner, equally valuable with common oak bark, is used in tanneries, to protect which branch of industry, the exportation of cork wood, except as dunnage, is strictly prohibited.

#### GUADO.

This dye plant is sown in autumn, and gathered in May. The leaves, ground at the mills and kneaded with the juice, are worked into balls, which, when dried in the sun, are used in giving linen a light-blue color.

#### FIGS.

These are of poor quality, not so well suited for exportation as those of the Levant. No alkaline solution is used in their preparation; they are slit, and dried on strings, mostly about Messina and Calabria.

#### TOBACCO.

This plant is produced in gardens around most of the principal towns. The best soil for its cultivation is a good, rich loam, and the best situation a slope with a southerly exposure. Sown in the winter, it soon comes up, and gradually advances until the crop requires to be thinned. The sprouts transplanted are set about twenty inches apart, in ground well watered and manured. The blossoms are nipped off, and the shoots cut away as soon as they appear, to enable the young leaf to expand and ripen. The maturity of the leaf, which is in summer, is denoted by a change in its color, and the appearance of pustules on its surface. The plant is then plucked up, and the leaf stripped and dried, preparatory to its sale to the dealer for manufacture. The quantity of seed sown is about a gallon per acre; the quantity of leaf gathered about thirteen thousand pounds. Tobacco