HAYNES'S
TREATISE ON THE IMPROVED CULTURE
OF THE
STRAWBERRY,
Raspberry, and Gooseberry.

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Second Edition.
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A
TREATISE
ON THE
IMPROVED CULTURE
OF THE
Strawberry, Raspberry,
AND
Gooseberry,

Designed to prove the present common Mode of Cultivation erroneous, and the Cause of Miscarriage in Crops of Fruit; also to introduce a cheap and rational Method of cultivating the Varieties of each Genius, by which ample Crops of superior Fruit may be uniformly obtained in all Seasons, and preserved beyond the usual Time of Maturity.

SECOND EDITION.

BY THOMAS HAYNES,

Of Oundle, Northamptonshire ;

Author of

AN IMPROVED SYSTEM OF NURSERY GARDENING, ALSO INTERESTING DISCOVERIES IN THE PROPAGATION OF ALL FRUIT-TREES, SHRUBS, AND PLANTS, BY CUTTINGS, WITHOUT ARTIFICIAL HEAT, &c.

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PREFACE.

THESE Instructions for the Improved Culture of the **STRAWBERRY, RASPBERRY, and GOOSEBERRY,** in which the natures and constitutions of these Plants are accurately considered ; designed for the use and benefit of Families, the amusement of the Amateur, Connoisseur, and other private person wishing to excel in the size and flavour of these fruits ; are most respectfully submitted to their candour and the notice of the scientific Horticul-

turist, in full confidence that where a due regard is paid to the directions offered, their attention will uniformly be rewarded with ample crops of superior fruit.

TREATISE ON FRUITS.

THE STRAWBERRY.

THE leading design is to prove, that the STRAWBERRY is to be considered a *plant of shade*, naturally, or a *native* of moist and shady situations, which clearly appears, by arguments we have adduced, that it is, and that it is consequently unfit to plant on all soils, and in every situation *indiscriminately* : and to point out and recommend a *system* by which their culture may be effected, with the utmost certainty of obtaining *ample crops* of superlatively large and fully ripe fruit in the *driest season*, (in which their fruitage generally fails from drought or heat,) on being protected by *temporary shade*,

at trifling charge, with the further advantage of cool and natural soil.

It is easy to prove, that STRAWBERRIES are, in general, natives of woods, and consequently of cool soils and shady situations; therefore are incapable of extreme heat or drought.

RASPBERRY,

ALTHOUGH not generally understood, is evidently a *bog soil plant*, or *plant of shade* by nature; the original red sort *growing wild in woods where the soil is cool and soft*, as in the north of England; and they also succeed beyond conception *on fenny and boggy soils*, even contiguous to very large bodies of standing water, where the soak is constant, and in the winter season excessive.

In such situations, both wood and fruit will generally prove doubly large, and prolific in the extreme: whereas, those planted on hot and dry soils produce only the most inferior and under-sized fruit.

GOOSEBERRY.

By the cultivation laid down, the fruitage of several varieties may be obtained in far greater perfection of size and flavour than by former practice; together with an easy and certain method of preserving its fruit in full perfection beyond the common season of maturity. Also, a *novel System* of propagating the several sorts, by planting cuttings taken from *bearing trees*, when their fruit is fully ripe, by which much time will be saved, and the particular species with certainty be obtained

It is easy to infer, that the very same sort of Gooseberry, by different soils and management, has produced very different-sized fruit, by the annual exhibitions in many countries.

IMPROVED

Culture of *Fragaria*,

THAT UNIVERSALLY ESTEEMED FRUIT

THE STRAWBERRY.

CALCULATED to prove that the mode of cultivating this plant, in the several varieties generally adopted, is ungenial, and consequently erroneous ; which may be considered the common cause of partial production, and in many instances a total miscarriage of their crops of fruit.

Wherein is pointed out, a cheap and rational mode of cultivation, without liability to sterile plants, decay of bloom by drought, or defalcation of fruit from scorching sun : by which ample crops may be uniformly obtained in almost every situation ; and except in rainy seasons, in the fullest perfec-

Season for forming the Beds.

tion. Together with an easy and effectual method of perserving their fruit beyond the common season of maturity.

The most favourable season in which to form these beds is the autumn ; preferring September, or the early part of October, as may be most showery, in order to the young plants establishing themselves before winter, thereby to avoid the liability of being thrown out of the ground by frost and vermin, as well as rendered competent timely to produce good fruit the ensuing summer.

The more certainly to procure prolific, and guard against sterile plants affording false or insufficient blossoms, we recommend an attention to the following preparatory measures, with full confidence, that where due attention is paid to the directions prescribed, ample success will crown the efforts of the diligent gardener.

Directions for transplanting.

Transplanting Runners and Off-sets.

ABOUT Midsummer, and in as moist weather as possible, with a small and close three-tined fork, from young beds not more than two or three years old, take a sufficient quantity of the strongest and first-formed young plants, by runners or off-sets, growing nearest to each bearing parent plant only, and with all the fibres possible; previously well watering the bed from whence they are intended to be taken, if the ground be hard and dry, in order that they may rise with entire roots; when cut off the strings close on each side, and early as possible plant them in nursery beds, four to six inches apart, evenly throughout, and in any situation shaded from mid-day sun, where the soil is good to promote growth, and strengthen the young plants. Immediately after planting well water them throughout, and repeat the

Situation and Formation of the Beds.

same in evenings, during hot and dry weather, keeping the ground constantly moist, not but muddy wet.

Forming the Beds.

IN forming beds to receive the plants, the first thing which claims attention is their situation, which ought to be as open an exposure as can be obtained, there to form a bed or border three feet wide, pointing duly east and west, and extended as far as may be convenient, in order to receive, on the south side, a temporary shade or skreen, designed to afford friendly protection to the blossom and fruit, from the violent heat of mid-day sun, and that they may receive the benefit of early and late sun, after such skreen is applied.

That moisture and shade are natural, and genial to the growth and perfection of this race of plants, is easy to infer, from the cool

The most favourable Soils.

and shaded situations in which the wild varieties, indigenous to this country, as *Fragaria sylvestris*, or *Strawberry of the Woods*, is usually found growing, where the plants are spontaneously produced, and their fruit arrive at perfection without the means of cultivation; whereas, such are rarely to be found growing on dry soils, and in open and airy exposures.*

A further argument in favour of this idea, is, the liberal disposition of these plants to increase by runners, freely emitting fibres at every joint; to receive and nourish which shade and soft soils are admirably calculated, whilst dry soils and exposed open situations will prove unfavourable in the extreme.

* Miller, and others, observe, that the early scarlet fruited Strawberry is a native of woods, in Virginia; and others assert, the large Carolinian to be an inhabitant of sylvatic situations in that country.

Advantages of Situation.

In creeping HERBACEOUS PLANTS, forming roots at the joints of the runners, in manner of the STRAWBERRY, it will generally be found that the growth and vigour of such are abundantly promoted by moisture and shade; as in *Viola*, *Violet*; *Glechoma*, *Ground Ivy*, &c. And of hardy trees and ligneous plants, whose shoots freely afford fibrous roots, adhering to other trees, or walls, for their support, as in several varieties of *Hedera*, *Ivy*, such, in northern exposures, will far surpass in growth those in more warm and sunny situations.

From the prevailing mode of planting STRAWBERRIES on any common earth, without discrimination, it may be supposed that an attention to soil is of trivial importance; and especially as some eminent horticultural writers appear to have considered this as of little moment; but in this we are not agreed, considering that every

Advantages of Native Soil.

plant worthy of cultivation deserves to be accommodated with the most friendly soil ; and in cases where it can be conveniently obtained, that which is natural.

These plants growing in any common garden and earth, does not prove that every soil is alike calculated to produce abundant crops of well perfected fruit ; therefore, clearly to conceive aright of the native and indigenous soil, may be considered one grand point obtained, and of the utmost importance towards success.

Whoever have directed their attention to the infinity of herbaceous productions, exploring the boundless varieties which the immense fields of nature present to the eye of the diligent observer, will readily discover and be free to acknowledge, that every plant is found most freely to thrive and delight in that peculiar soil of which it is *indigenous*.

Of the Formation of Soils.

Hence appears the importance of a uniform attention in the cultivation of TREES, SHRUBS, and PLANTS of all descriptions, that they be accommodated with soil similar as possible to their native original earth, in order to being planted with success.

That these plants will grow on any common soil is readily admitted ; but without a return by an adequate production of fruit, the planter would be ill rewarded for his attention and trouble.

Of the various soils which have come under our notice, that of rich light loam is to be considered favorable, from its soft and pliable temperature ; but which will admit of considerable improvement, by the application of soft bog earth, incorporated with the most cool and rich manure, and will be found amply to improve their culture that where the common earth is of the first men

Where Compost is necessary.

tioned description, the moist and cool compost or manure recommended may, in all cases, be used with the greatest promise of success. But where such is not the natural soil, similar compost ought to be procured; except in situations where the soil is found to consist principally of good bog earth; where the addition of neat, cow, or swine's dung, in good proportion, is all which can be further necessary. But where the common soil is the reverse to either we have described as friendly, it is recommended to form the beds entirely of the compost prescribed, which being required not more than one foot deep, the roots of these plants growing near the surface, sufficient quantity of bog earth, rotten tree soil, or decayed leaves, may be obtained in most situations. These beds require to be formed in all respects as the former, with the exception of digging out the common earth one foot deep, laying a part thereof on the sides

Cool Soils most beneficial

and ends of the bed, to form the necessary embankment. On the soil becoming settled, smooth the surface with a rake, and plant them by a line at the same distance as in the other beds.

Those who have attended to the growth of these plants in fenny countries, where the soil is generally light, loose, deep, and of black complexion, without that silvery grit essential to the culture of American plants, heaths, &c. and subject to standing wet in winter, proceeding from what is commonly denominated the sock, or soake, or what may be considered the humidity arising from the very low situation of these countries, which standing water, or soake, is always found in proportion to the depth of water contained in the dykes by which the several parcels of lands are intersected or divided, will have observed the astonishing progress and constant vigour of STRAWBER-

Advantage also of Bog Earth.

RIES universally thriving on these cool soils; whereas, it is to be remarked, that such planted on what is there denominated skirt-land, or what may be properly considered the exterior of the fens, or rising ground, where the soil, in many instances, becoming shallow, and frequently inclining to sand or gravel, from its natural warmth, these fruits, in such situations, cannot, without the greatest difficulty, be obtained even in any tolerable quantity, from the liability of these plants to scorch on the early approach of hot weather.*

As we recollect no instance in which HERBACEOUS PLANTS, delighting in shade, will not freely succeed in bog earth, which, in our idea, appears, in every respect, adapt-

* Viewing the several varieties of Strawberries as natives of soft cool soils, and shady situations, shade and moisture are considered indispensable to their fructification.

Much Warmth required for the Pine-apple Strawberry.

ed to their culture; and from the advantages hitherto derived by its having been applied, we are free to recommend it as the surest preventive of miscarriage from drought, on the hottest soils. With a proper proportion of the manures pointed out as most cool, we consider this calculated to form a very superior and most genial compost for the cultivation of the STRAWBERRY in all its varieties.

That species of FRAGARIA, formerly called the green, or *Pine-apple* STRAWBERRY, with greenish fruit, and when ripe tinged with a faint shade of red, has been by many considered as requiring greater degree of warmth in its cultivation than any other variety; on which Miller has remarked, that, unless it be planted in moist loam soil, it is a bad bearer; adding, however, that in land where it succeeds, it merits cultivation. A proof this, that the soil has not always

The most fattening Manures ; and their Superiority.

been regarded. He also considers it one of the varieties of wood Strawberry.

Admitting these his ideas to be well-founded, it appears we may conclude this variety to be what we consider each other species, a native of cool soil and shady situation.

Cool Manures.

HAVING described the soils most genial to this pleasing and profitable family of the herbaceous tribes, it remains that we point out those manures which will prove most friendly to their culture. As the importance of cool and soft soils has been urged, by the same parity of reason we recommend *only* cool, rich, and fattening manures : of these swine's, neat's and cow's dung are to be considered superior to every other ; and especially on more light and dry soils. The unfriendliness of drought to the fructifica-

The Formation of an excellent Manure.

tion of these plants, being considered the common cause of miscarriage in their corps of fruit, to guard against it, is essential to obtain good production ; for which purpose, no manure can be better calculated than those above-mentioned. As manures are commonly applied to the use of the kitchen-garden, indiscriminately, it will be easy to select and hold in reserve those specified as peculiarly favourable to the present business.

Green or unrotten stable manure, however excellent for other purposes, ought never to be applied to the cultivation of STAWBERRIES ; but in default of those we recommend an equal quantity of entirely rotten buttery, hot-bed manure employed in working frames the former spring, and the sweepings of streets in paved towns, which, well intermixed by repeated and regular turnings, will afford a good substitute ; laying it

A Substitute for Bog Soil.

upon the ground doubly thick. The violent heat of stable manure having been thus exhaled, these ingredients together will form a soft, cool, moist, and excellent compost.

As bog soil suitably soft may not be afforded in every situation, convenient substitutes may be generally found. The best we know is black rotten tree soil, which may be collected in tolerable quantities from the decayed trees of various descriptions, recollecting that this production is from the more hard wooded, as ash, elm, oak, &c. especially such as have been headed or cut down to form pollard; also fruit trees of large growth, as apples and pears; but that of willow, from its extreme lightness, will prove less beneficial, and being frequently less decayed, requires to be more finely sifted; but in default of these a very useful article may generally be obtained at a trifling expence, in the decayed foliage of

How to render light Soils serviceable.

trees of every description, from any contiguous plantation; which, on being collected together by rakes, or other implements, immediately after their fall in the autumn, and laid in large heaps in any obscure situation, by taking beat from the repeated heavy rains and falling wet throughout the winter, and being occasionally turned over during the spring and summer, by the following autumn will afford a very useful and ample supply.

These light soils well intermixed, and thoroughly incorporated with a proportionable quantity of neat's, cow's or swine's dung, will prove extremely serviceable in whatever form they may be applied.

Compost.

THE proportion of the articles we recommend as proper and necessary to form a

Method of preparing Composts.

compost, in which to plant Strawberries, and apply to the beds for an autumnal dressing, is as follows: One half of fresh or maiden earth from a rich pasture ground of cool, soft, and loamy texture, taken one whole spit deep with the turf; one fourth, of soft and black bog earth, or of any other substitute that can most readily be obtained; with one fourth of rotten neat's cow's, or swine's dung; or in default of this, the most rotten hot-bed manure, well incorporated, which will be most readily effected by laying the whole together, and frequently turning it over during six, nine, or twelve months.

The peculiar method of preparing compost will be found more particularly explained in the culture of *Ribes Grossularia*, —the Gooseberry.

Directions for preparing the Beds.

Planting the Beds.

In September, or early in October, when showers most prevail, transplant those which have been placed in nursery beds into situations where they are to remain, and as near to water as may be convenient.

In preparing these beds for the reception of the young plants, mark out the ground three feet wide, evenly chopping down the earth two inches deep, with a spade, on each side, and close to the line within the bed; then dig out the soil regularly one half a common spade deep, and throw out the crumbs, laying the same regularly on the outside, each line placed to form or mark out the bed. This done, level the undug ground within the line designed to receive the plants, affording it a handsome dressing with the rich and cool manure we have prescribed, six inches thick, evenly throughout

Directions for preparing the Beds.

the bed; which being thus prepared, proceed to plant in the following manner:

At either end, begin the work by throwing out a trench with a spade, as in common digging; which must be wheeled to the opposite end, in order to complete regularly the digging of the bed.

The better and more speedily to effect this business of planting, especially where large quantities are required, let one person be employed to take up the young plants, with great care that all roots possible, and a small proportion of earth, be obtained, laying them on each side the bed, at distances where they are likely to be required, say two plants on each side of the bed, about one foot apart, preferring a moist or cloudy day.

Being thus prepared, immediately pro-

Directions for planting the Beds.

ceed to the business of planting before the roots become dry, in the following manner : The ground being evenly dug, six inches from the end of the bed where a trench was first formed, with a straight staff or ruler three feet in length, and marked into four equal divisions one foot apart, lay such ruler exactly across at each end, reaching within about three inches of the side of the bed, gently pressing it upon the fresh dug earth to form a line for the reception of the first rows of plants ; when, with the finger opposite each end, and at the two divisions in the middle of the ruler, mark on the side toward you the equal distances to receive four plants in such first line across ; then with either hand form holes by drawing the soil towards you, each sufficiently large to receive a plant with its entire root, and return the soil to make even the surface about the plants. The distances designed for these lines across the bed throughout being one

Directions for planting the Beds.

foot, provide two equal measures of such length, to apply to each side of the bed ; and having dug the ground sufficiently far to receive a second row of plants, mark out the line across with the ruler as before, when plant three in the second, and four in the third, row, according to quincunx order, by which is intended four plants formed in a square, and the fifth placed in the middle, thus * * *, which will afford a greater scope for the growth of the plants than if placed in exact squares, observing the same method throughout the bed. The entire length of ground being thus planted, earth up, with a spade, each end of the bed in manner of the sides, to form an even, regular, and complete embankment four inches above the surface throughout, the better to receive and retain all copious waterings and heavy rains, thereby to facilitate the growth of plants, invigorate their bloom, and promote fructification.

Directiong for securing the Embankments.

On the business of planting being completed, afford each bed a light but somewhat copious supply of water; and should the weather continue warm and dry in the autumn after planting, moderate waterings must be applied until the plants are well rooted.

The embankment, on becoming impaired by severe frosts, or winter rains, will require to be completely repaired with the spade, early in the spring, or before the commencement of dry weather.

As it may frequently occur that runners and off-sets of particular species cannot be obtained to plant on nursery beds in July, a practice we earnestly recommend, Strawberry-beds may be very successfully planted with the strongest off-sets and runners taken from bearing plants growing on young beds in the autumn season; but with these con-

Clearing the Weeds.

sequent disadvantages—the liability of obtaining barren plants, and the certainty of an inferior production both in size and quantity of fruit the season after planting.

We do not recommend forming plantations of this description in the spring; except in cases where plants cannot be obtained at the more favourable seasons; as such will rarely afford fruit the same year, and but little time in the end will be gained.

As the spring advances, on the morning of a fine and dry day, with a hoe of convenient size, cut up all young weeds appearing between the plants and throughout the bed, and rake over the surface as evenly as possible, clearing away all such rubbish as the rake may collect.

In April and May abundance of strings and runners will be found to proceed from

Of Clearing the Runners.

the sides of these plants, spreading over the surface of the ground, of which they require to be early and frequently divested, by pulling them off close to the plants, in the former month, and continuing such practice regularly over the bed every two or three weeks throughout the summer, or at least until the crop of fruit is matured and collected, entirely clearing away the whole ; the growth of which being suffered, will not only enervate the parent plant, but considerably affect the vigour of its bloom and fructification.

In the Alpine, which is a perpetual bearer by runners of the same year's growth, soon after they appear in the spring, thin them regularly by pulling or cutting away the more weak, and leaving only a moderate supply of the largest and strongest, to produce fruit, throughout the summer : but in the autumn, when the beds are about to

Shading the Plants.

be dressed, it is of importance that all and every of the runners thus produced be forked up clean, and taken away.

Early in May, as the plants advance into bloom, to effect the necessary shade for protection from violent sun, apply the wattled hurdles hereafter described ; placing them in one direct line on the south side the bed, eight or nine inches distant from the nearest row of plants ; and as the season becomes warm and dry, it will be necessary to water them in the following manner.

Watering the Plants in Bloom &c.

INVARIABLY perform this business in an evening on the surface of the beds inclining to be dry, when an ample supply will be necessary, which requires to be administered lightly, but copiously, with a pot or pan, having a moderate rose, during the season of bloom and growth of the fruit, even to

Watering the Plants.

deluge the bed, the more fully to establish the blossom and fruit, by which future waterings will become less frequently necessary.

In this shaded situation, the heavy falling rains and water administered being thus confined by the embankment, and the beds completely soaked throughout, few repetitions will be necessary, where the soil is moist, and situation low and cool.

Every cultivator of the STRAWBERRY PLANT, by the usual method, has been led to consider frequent and plentiful waterings in dry seasons essential, not only during the time of bloom and setting their fruit, but until the latter have nearly attained their full size ; an evident proof that moisture is considered by those interested in its culture of real importance to its fructification ; but it requires to be recollected, that the most copious supplies of water in hot

Planting in shady Situations.

and dry seasons, especially in open exposures, can in no cases prove abundantly beneficial, except where the ground is remarkably low and cool. Hence the importance of moderate watering.

How far the practice we recommend, with a view to effect permanent moisture throughout the critical periods we have alluded to, by planting in such shady situations, secure from violent sun, in beds composed of soft, cool, and rich soils and manures, formed not only to receive, but the better to retain all occasional waterings and falling showers, which in such exposure must be considered of far greater permanency, and consequently render future supplies of watering less frequently necessary, is to be considered rational, is submitted to the candour of the scientific horticulturist.

Notwithstanding the advantage afforded

Protection from the Wattle Hurdle.

to the plants by the skreer or shade during the season of bloom, and until the fruit are somewhat advanced in growth, on the weather proving warm and dry, supplies of water are to be considered essential ; but from the friendly protection afforded by the wattled hurdle, only sufficiently often to keep the ground moist, not constantly wet, will be necessary, which will abundantly increase the size of the fruit.

On deluging the earth, within the embankment of each bed, in such shady situation, future supplies cannot be frequently necessary, nor until the soil of the surface inclines to be dry.

This shade, or skreen, we recommend, will, in general, be found both cheap and convenient, the article being to be considered comparatively of small cost. There are few counties in which the use of the

Substitute for the Wattle Hurdle.

hurdle is not generally known for its utility in agriculture ; and for the special purposes of penning or fencing off turnips and cole-seed for the feeding of sheep ; and being required in the present business at a season when they are to be considered useless for almost every other purpose, but little charge can be supposed to be attached to their being thus employed ; and the light wood used in their formation, required for the purpose of wattleing between the bars, being of little other use, may be applied for fuel at the end of the season. Should any objection be made to this shade, under an idea of its unsightly appearance, others equally beneficial may be formed, by nailing thin bars of light wood half inch wide, and at such even distance from each other, on a frame of similar form, but more finished make ; but which, from the present high price of wood of every description will be found far more expensive, without the least advantage in point of utility.

Formation of the Wattle Hurdle.

From the ready admission of air through the wattle-work, to invigorate the plants throughout the time they are applied, they are to be considered far superior to any close shade whatever.

To Form the Wattle Hurdle.

Provide a sufficient number of light-wooden hurdles, five to six feet in length, and about three feet deep from the upper to the lower rail, when with smooth branchy boughs of willow, or other light, straight, and pliable wood, six feet long, wattle each hurdle to the bottom, by fixing these boughs uniformly between the three rails of which the hurdle is composed, spreading the small branches in such manner as to admit between the wattle-work about one half the mid-day sun regularly throughout the bed.

On the south side the bed or border of plants, place these hurdles in a direct line,

Willow preferred in Skreens.

as has been directed, first making holes in the earth with an iron bar to receive their pointed stakes, and with a mallet or beetle drive them into the ground, until the lower rail becomes even with the surface of the earth. To prevent their being blown down, secure them by affixing other stakes on the south side of the hurdles, taking care to keep them erect.

Branches of willow, well furnished with long pliable side shoots, on account of their smoothness and lightness, and being attainable in most situations, are to be preferred to every other.

The advantage resulting from this favourable skreen, in tending to promote growth, and secure good crops of these fruits, will appear obvious in reflecting on the peculiar benefits which the plants must enjoy in such situation, having the early

Advantages resulting from Skreens.

morning and late evening sun, in hottest days until near eleven, and after three o'clock; and being in this northern exposure favourably refreshed by the most friendly shade during the violent heat of mid-day sun, the entire crop may reasonably be supposed to continue in one constant and uniform state of vegetation, without the liability of blossoms falling off, or the young and tender fruit being checked in their growth by scorching sun; calamities which frequently occur in more exposed situations, where if the summer proves hot and warm, the most abundant waterings will prove of little service either in setting blossoms or procuring fruit, especially where the common mode of forming these beds has been adopted, leaving the ground or pathway on each side the lowest, which invariably runs off the greater part of rain, and other waterings falling on the plants; whereas, from beds formed in the manner we have directed,

Watering to be observed previous to removing the Shade.

somewhat lower than the level of the common ground, regularly embanked, to retain all waterings and falling rains, shaded from the violence of scorching sun, and supplied with only occasional waterings, at but little trouble or expence, incalculable advantages may be expected.

Should it be objected, that perpetual shade will tend to injure the flavour of the fruit; we reply, that the skreen we recommend is so constructed as to admit of being wholly taken away at leisure, and which is considered indispensable on the earliest indication of the fruit to ripen, by inclining to their natural colour, in order to their receiving all possible sun for their full perfection, and which they will endure, affording the beds an ample watering on the evening before the shade is removed, and afterwards repeating such watering, in proportion as the weather proves hot and dry.

Goød flavoured Crops produced by having the Sun.

It may also be remarked, that in moist seasons, such shade will be found of little use, crops of strawberries being general, with little attention, in most situations in wet and cloudy summers : but it deserves to be understood, that crops thus produced, having the advantage of all the sun which the usual time of ripening affords, will be found equal to any other ; and in common, but more especially in warm and hot seasons, ample crops of full-grown fruit may be uniformly looked for ; while those indiscriminately planted, without regard to soil or exposure, notwithstanding repeated liberal and expensive supplies of water in dry seasons, will in general, produce, at best, partial crops or diminutive fruit.

From what has been stated on the advantage of shady situation, some persons may, with apparent reason, incline to consider any common north border eligible. Such

Fruit ill-flavoured if obstructed from the Sun.

we admit to be favourable to the growth of the plants; but where it is not duly formed, pointing directly east to west, or is subject to the least obstruction from trees or buildings at either end, to prevent access of early and late sun, the fruit must prove, in a degree, ill-flavoured; and, admitting that they receive this advantage, the substantial and permanent shade of wall or other close fence, totally excluding mid-day sun during the time of ripening, must render the fruit far inferior in point of flavour than in situations where the temporary shade is applied, which can, at this peculiar season, be readily removed, in order to the fruit having the benefit of the sun to its full maturity.

In cases where it is required to retain these crops of fruit beyond their common season; by continuing the shade, they will be well preserved; except in moist and

Jerusalem Artichokes afford a most refreshing Shade.

rainy seasons, when they will become liable to injury from snails, and subject to mould and decay; but when designed to preserve STRAWBERRIES in considerable quantities, and as long as possible after the time of ripening, it may be best effected by planting as early as October preceding, in one direct line, nine inches distant from that in which the skreen by hurdle is intended to be placed, and on the south side of the same :

And to afford a more widely extended shade, roots of *Helianthus Tuberosus*, commonly called *Jerusalem Artichoke*, in manner recommended hereafter, from their broad foliage, will, in the hotter months of July and August, be found to afford a more cool and refreshing shade; when the wattled hurdles, as far as they extend, may be entirely removed.

In many families it is considered of great importance, and no expence is spared to pro-

Rain or Dew Droppings from the Artichoke injurious.

long the crops of these fruits to the utmost extent of time possible; to effect which, the peculiar excellence of the shade afforded by these lofty and erect growing plants is most admirably calculated, and will be found far superior to any close fence, as by a wall or paling, admitting the free circulation of warm air and drying winds, essential to maturing the fruit; from the want of which, in confined situations, and especially in moist and cloudy seasons, these soft, tender, and delicate fruits will be found extremely subject to decay by mould and rot.

As the plants of the artichoke advance in growth, they will not unfrequently incline forward, and become pendant over the STRAWBERRIES bearing fruit; which requires to be guarded against as much as possible, as the drops of rain or dew, collected on their broad foliage, falling on the fruit, will prove injurious; but this inconvenience may, in a

Description of the Jerusalem Artichoke.

great measure, be guarded against, by cutting close away, with a sharp knife, the lateral young shoots proceeding from the upper part of the stems, in July and August; which will otherwise incline the stems to lean or fall sideways.

Culture of Helianthus Tuberosus.

THE root of this plant bearing some resemblance to that of potatoe, may be considered by some persons in its nature as analogous; but such idea is erroneous, the former being perennial, and the latter annual in duration; that like most other perennial herbaceous plants, the Jerusalem artichoke being planted early in autumn, its root being impervious to frost, will more early and freely vegetate the following spring, and effect a far more speedy and effectual shade than these planted in the spring; observing to plant them soon after they are out of the ground as possible,

Autumnal Dressing the Beds.

as on the roots becoming dry, their vegetation will be retarded.

To promote the vigorous growth of these plants, in order to obtain a more effectual shade, it will be necessary, on their having attained about one foot in height, to earth or mould them up on each side with a broad hoe, drawing the soil towards the plants, as is common in the culture of potatoes, thereby cutting up all weeds growing on the surface; which will abundantly strengthen and enable them to afford a more early and effectual shade.

Autumnal Dressing the Beds.

PRIOR to this business, let the beds be carefully looked over by boys, pulling off all runners which may have escaped notice during their growth in the summer season. About Michaelmas, when the ground is tolerably

Autumnal Dressing of the Jerusalem Artichoke.

dry, and before autumnal rains fall, it will be necessary to cleanse the beds from all weeds throughout, by hoeing over the surface on a dry day, with a strong four or six-inch wide hoe, chopping over and breaking up entirely the ground two inches or more deep, between the plants, carefully pulling out and casting away all weeds which may be found; this done, with a round-headed rake of convenient size, immediately smooth over the entire surface of the bed; after which, afford a good dressing with the same cool and rich manure applied at the time of planting, by laying it two inches thick between the plants throughout the bed; which will most easily be performed by taking it out of scuttles or wheelbarrows on each side the bed, on the point of a narrow spade, laying the same at such equal and convenient distances, as to admit of its being afterward spread evenly by the hand, or with hoes of convenient width, two inches thick all over the bed. The beds being com-

Autumnal Dressings to be attended to.

pletely dressed thus early in the autumn, the manure administered will be in good proportion washed into the ground by winter rains, and, together with the soil, become well settled to the roots of the plants, that on the earliest approach of spring, without the smallest impediment to their progress, they will have every possible advantage contributing to their full growth. The second season after planting, ample crops of Strawberries, in every variety, may with confidence be looked for.— We refer to the former year for their spring and summer treatment.

The Strawberry being a very hardy plant, and of great durability, the beds, on being managed as we have directed, will continue in a full bearing state about four years; but it will be peculiarly necessary that the autumnal dressings be punctually regarded.

IMPROVED

Culture of *Rubus Idaeus*,

THAT MUCH-ADMIREDFRUIT,

THE RASPBERRY.

IMPROVED

Culture of *Rubus Idaeus*,

THAT MUCH-ADMIRERD FRUIT,

THE RASPBERRY ;

CLEARLY demonstrating its usual cultivation to be unfriendly to the nature and constitution of the several varieties, and the immediate cause of inferior production, as well as frequent total failure in its crops of fruit.

Directing a rational and easy method of cultivating the various species, without liability to decay of bloom by drought or sterility of soil, or defalcation of fruit from scorching sun, to afford strong fruit wood the second season, which are succeeded by an abundant

Soils mostly to be preferred.

supply from the bottom, in summer, for the next year's bearing.—They may be literally said to merit culture in every good garden, for their pleasant and useful fruit.

From the general practice of planting the *Rubus Idæus*, on any common garden ground, indiscriminately, the soil may be considered of trivial moment; but if these varieties are worthy of cultivation, they will, no doubt, be though, by every amateur of fruits, to merit the accommodation of a soil perfectly genial; especially when it can be obtained at a trifling expence.

Of the various soils and situations in which we have noticed the growth of these plants, none have been more productive of strong, clear, vigorous, and healthy young wood, than those growing in fenny countries: and more especially on deep black and soft, but cool soil, even in the lowest situations, and conti-

Soils mostly to be preferred.

guous to large bodies of standing waters, as lakes, meres, &c. subject to a heavy and constant soak throughout the autumn, winter, and spring seasons ; and this where the natural soil is considered of inferior quality, with the further disadvantage of but little cultivation ; yet under such circumstances, generally affording the most abundant crops of fullest-sized fruit, not in peculiar, but common seasons, without any perceptible difference of success in the varieties, except the red early Premier and yellow large Antwerp, which we have not noticed in these situations. In many other places, in such countries where the earth is naturally of richer quality, but cool, and with the further advantage of liberal cultivation, these plants grow in boggy soils, somewhat similar to the former, their productions have been far superior to any we have elsewhere witnessed, annually affording an abundant crop of very superior fruit. It has been not unfrequently noticed, that in fenny

Soils mostly to be preferred.

countries, the same garden, consisting of low and cool bog soil, and of more dry or skirt land, bordering on the high country, has afforded the most opposite productions of these fruits and plants; the former of very luxuriant growth in wood, and an abundant produce of superior fruit; whilst the latter, from the unfriendliness of a dry and warm soil, with the want of that moisture, most essential to their cultivation, have, in a few years, totally decayed away and dried off, after the trifling product of small and inferior fruit, unworthy the trouble of collecting.

To self-propagating trees, shrubs, and plants, by suckers, as the several varieties of the Raspberry, cool and soft soils will not only be found the most favourable, but they appear more natural than any other, which affords presumptive argument in favour of the utility of rich, loose, cool, and deep

Opinion of eminent horticultural Writers.

soils in their cultivation, and especially as such plants cannot freely increase in very heavy and adhesive, or dry and shallow soils; from which it is reasonable to infer that they are indigeous to no other than soft and cool soils; as without such, it is evident that all plants thus increasing by suckers, could not make their way into the earth, to receive sufficient nourishment for their support from the soil; and being thus exposed to drought, must form, at best, weak and insufficient plants; both which circumstances appear clearly to prove, that soft and cool soils are to be considered important and essential in the cultivation of these fruits.

The most eminent horticultural writers have agreed, that the common raspberry is a native of cool soils, and shady situations, and that it will not thrive on hot and dry ground; but we do not recollect to have

Superiority of cool Manures to Loam.

noticed the mention of bog earth as peculiarly favourable to this tribe of British fruits; or that the plants would even thrive therein; which, if well selected, and intermixed with the most cool manures, as neat's, cow's, or swine's dung, will prove infinitely superior to the richest loam; and especially in situations where proper shade can be obtained, it will far surpass every other.

In default of the above manures, which, from their peculiar coolness, are to be considered preferable to all others, rich, well decayed, rotten, and buttery hot-bed manure may be applied; but in no case ought green or long stable manure to be used in compost, as its natural heat would tend to subvert the purpose of promoting a cool soil.

Of the several descriptions of bog soil, none will prove so genial as that which is

Rotten Tree Mould good Soil.

as black and soft as can be obtained, with or without silvery grit, with which such soil sometimes abounds; but such as is obtained from low situations will generally be found the most cool and friendly; taking care that it be soft, and as much as possible free from large lumps, which are frequently too hard to pulverize; and where the ground intended to be planted is not thus boggy, the soil recommended may frequently be found in adjacent meadows, or other low situations; but in default of this, and where proper bog soil cannot be obtained, rotten tree mould of willow, or any other wood, will form an admirable soil for the plants; sifting out only the more coarse and larger pieces of decayed wood.

Where an opportunity does not offer to procure tree mould in sufficient quantity, rotten and decayed leaf soil may be applied with at least equal promise of success; the

Soft Bog Earth the most preferable.

one or other are to be obtained in most situations; and especially the latter, where there are plantations of large trees affording abundant foliage; which, on being laid in heaps twelve months to rot, will afford an admirably cool and soft compost. As such will always prove more or less useful in the various branches of horticulture, it will generally be found advantageous to preserve them every autumn, which can be effected without further trouble or expence than barely collecting them together by rakes, &c. on their falling from the trees.

Plants of shade, as the Raspberry and Strawberry, will always be found to succeed freely in soft bog earth, and all fruits the production of such plants must find great advantage from temporary shade connected with a cool soil, as tending to promote growth, and increase the size of their fruits; especially in situations where soft sun and air can

Method of preparing Bog Earth.

be received in good proportion; as on the weather proving warm or hot, this will be abundantly effected, being protected from violence of sun at noon-day. The necessary culture of these plants appears to be as little understood, or at least regarded, as the Strawberry. Miller, Maw, &c. agree that both are natives of woods in the north of this kingdom, especially where the soil is light and cool; but the perpetual shade of such situations can by no means be considered favourable to ripen and perfect their fruits.

Where proper bog earth can be obtained, it deserves to be preferred to every other in this business, and in situations affording such in tolerable quantities, it will be easily and cheaply procured; little other trouble or expence being necessary than that of digging out only the softest and best soil, together with the turf, laying the whole in

The mixing of cool Manures with Bog Earth recommended.

one entire heap, six, nine, or twelve months to rot, in manner as is hereafter directed for Gooseberries.

As bog soil is the common production of moist and frequently watery situations, it will be always most easily obtained in the spring or summer; and that procured in the former season will generally be found sufficiently ameliorated for this purpose in the autumn, having laid six months to pulverize, by frequent turnings over and breaking the turf with a spade. Bog earth being frequently somewhat sterile, it will always be advantageous, where it is applied in the cultivation of fruits, to enrich such soil as much as possible, which will be best effected by intermixing therewith strong but cooling manures, in order to improve the size and quantity of such fruits. Towards the autumn, and some weeks before it is required, the better to incorporate the whole, apply

Good Substitutes for Bog Earth.

to three-fourths of the above one-fourth of rotten neat's, cow's, or swine's dung, reserved for the purpose; at first intermixing the same well together that it may readily be well incorporated by future and frequent turnings over, until it is required in September or October, when it will be fit for use: this we consider the best soil in which the Raspberry can possibly be planted.

But as proper bog earth is not to be met with in every situation, it remains to direct to such substitutes as are best adapted to the present design; next to which, brown or black, but rotten-tree soil, which is invariably soft, as that obtained from the bodies or trunks of decayed ash, elm, oak, apple; pear, or willow, will be found to answer every good purpose, on sifting out the more large and coarse pieces of undecayed wood. This may be readily performed by exposing the whole to the sun and air a day or two, turning it over to become dry. .

Directions for collecting decayed Tree Leaves.

In places where the willow, usually growing near to brooks and rivers, in meadows and other low and moist situations, is common, the greater supply may be obtained from these tree: but where a large quantity is required, the supply will probably prove short, which deficiency may be annually remedied, by seasonably collecting in the autumn fallen decayed tree-leaves, laying them in any obscure situation to rot, until they are required.

It will be most easy to collect decayed tree-leaves in considerable quantities in or contiguous to plantations, coppices, or woods, formed of any deciduous trees, at the autumn season, immediately after their fall, and before they are blown away by high winds, common in October, by raking them together with large rakes of any description; first in small heaps, then with barrows, skips, or other convenient articles, lay the whole together in any close situation, defended

Treatment in the Spring.

from the wind, in one or more large heaps, somewhat round or flat at the top, the better to receive the falling rains of autumn and winter; by which they will soon become warm, and subject to a constant moderate heat, completely rotting the whole during the winter season; but which will not be effected, on their laying dry, without being exposed to much wet.

On the advance of spring, and the weather becoming dry, turn over each heap, breaking with the spade, or a three-tined fork employed, all lumps or parcels of consolidated or dry leaves, in order to the entire bulk becoming pulverized as soon as possible; after which, reduce the number of heaps, by putting them together either in one or more larger lots than before, that the whole quantity be the more easily and effectually prepared for use.

Further Treatment to be observed.

If in removing the first formed heaps, it is discovered that any considerable quantity of the leaves remain sound, which can only happen from the want of wet, it will be beneficial to moisten them by a pot or pan of water, having a rose, from which they will more speedily become rotten. By afterwards turning over the whole once in two or three weeks, and affording a moderate supply of water as before to the undecayed leaves, by Midsummer, the whole will have become one general heap of soft and light soil, admirably calculated for the culture of plants requiring cool soils; and to render this competent to the production of their fruits in the fullest perfection, it will be only necessary to apply rotten neat's, cow's, or swine's dung, as directed, to be intermixed and incorporated with bog soil.

Importance of Soils.

To form the Compost.

APPLY one half proper bog soil, or other substitute described, as can be most readily obtained; one fourth fresh light loamy earth from a rich old pasture ground, and one fourth completely rotten swine's, cow's, or neat's dung; which, on being well incorporated, by preparing it in the manner directed hereafter for Gooseberry Compost, will prove most favourable to the growth and fructification of these plants in every variety, and considerably increase the size and number of their fruits.

From the prevailing mode of planting Raspberries on any common earth without discrimination, it may be supposed that an attention to soil is of trivial importance, and especially as some horticultural writers appear to have considered this as of little

Importance of Soils.

moment; but in this we are not agreed, considering that every plant worthy of cultivation deserves to be accommodated with the most friendly soil; and in cases where it can be conveniently obtained, that which is natural.

These plants, growing in any common garden earth, does not prove that every soil is alike calculated to produce abundant crops of well perfected fruit: therefore, clearly to conceive aright of the native and indigenous soil, may be considered one grand point obtained, and of real importance towards success.

The Raspberry being of very forward growth, the young wood will be early matured; and from their forming fresh roots in the autumn, by planting in September or early in October, the plants will become established before winter, and tolerable

Objection to planting in September.

quantities of good fruit may be obtained the first summer; but if later planted, the production of the first season will be proportionably less.

The chief objection to planting these trees early in September, and before the leaves are wholly fallen, may be that the ground in a dry autumn is often insufficiently moist; but this inconvenience will be easily remedied, by earthing up the sides of the trenches in which they are planted, and affording the bed an ample supply of water, with a pot having a rose, immediately after planting, making the soil muddy wet; which is all that can possibly be required, and by which, during the continuance of mild weather, young fibrous roots will be freely produced, that they will be securely established against the drought of the following spring.

Directions for forming the Beds.

If the business of planting be deferred so late as Christmas, the plants will have formed young suckers half an inch long, by which the fruitage of the first summer will be materially affected; that it will always be best to plant them out, as soon as they incline to shed their leaves.

Forming the Beds.

IN forming the beds, it will be found advantageous to fix on a convenient situation, low, cool, and moist, which will invariably prove favourable to the free growth of these plants in each variety.

Being provided with a sufficient quantity of bog soil, or similar compost, as is prescribed, proceed to form the beds or trenches designed to be planted, by digging out the common earth in one direct line, pointing east to west, one foot and a half wide, of

Directions for forming the Beds.

the same depth, and of such length as may be convenient, marking it out by a line on each side. With a barrow, wheel away the first spit to any part of the garden where it may be required, laying the next spit regularly on each side, and on the ends of the beds, to form an embankment, the better to retain all falling showers, &c. in order to keep the ground more moist during the summer, clearing away all crumbs or loose mould from the bottom: then fill the trench somewhat more than even with the level of the ground with the soil or compost recommended, leaving the same about fourteen days to settle, previous to planting. It will be advantageous, especially in a dry season, to procure the plants from the nearest situation possible, to prevent the fibres becoming dried; and as their roots will require to be reduced to a convenient size to plant, care is requisite that no buds are cut off next to the stem, such forming the next

Directions for planting the Beds.

year's wood. On the soil being properly settled, level the surface with a spade, and proceed to plant in the following manner:

Planting the Beds.

PLACE a line exactly in the middle of the bed, throughout; and on selecting the strongest and best rooted plants of each sort, plant them by digging out the soil or earth on either side the line, and at either end, when throwing away the first spit, let a boy hold the first plant near to the line without touching, when dig out the second hole to fill up the first, covering the root a little deeper than before, and very lightly trampling the soil to the plant if it be dry, but not otherwise; and so throughout the bed at the following distances, according to the size and growth of the different sorts, as the dwarf red early Premier, two feet; those of moderate height and strength, as the

Directions for planting the Beds.

common red and white, also twice bearing, two feet and a half; and the red and yellow Antwerp, with others of larger growth, three feet apart.

On the ground being planted throughout, with a spade, earth up each end of the bed in manner of the sides, completely to form a regular embankment, about four inches above the surface, as in Strawberries, to receive and retain all copious waterings and heavy rains; thereby to facilitate the growth of the plants, invigorate their bloom, and promote fructification. This being done smooth the surface of the bed with a small headed iron rake, on each side the plants; and on the weather being dry at the time of planting, afford one plentiful but light watering throughout, nearly to deluge the bed. Should the embankment become impaired during the winter, it will require complete repair by earthing up in the

Directions for planting the Beds.

spring, or before the commencement of dry weather.

Those who are anxious to obtain a good supply of Raspberries the first summer, will find great advantage from laying a coat or covering of long green or wet straw, not stable or horse-litter, on the surface throughout the bed, pressing it on the ground by beating with a heavy three-tined fork, that it remain not more than two inches thick; when cover the same with good common earth about an inch, that the whole covering be then not more than three inches thick; by which, the piercing sharp and cutting winds of spring, and the greatest heat of the summer months will be most effectually excluded from the roots. On this covering being applied in autumn, it will be properly settled before the spring, without proving the smallest impediment to the growth of suckers affording a future supply.

Of cutting the Plants.

As the quantity of suckers thrown out is commonly superfluous, it will in such case, be beneficial to reduce their number, by pulling away, with the hand, those of smaller size, when about a foot high, leaving not more than two {or three young shoots to each plant; by which they will become more strong, and produce larger quantities of superior fruit.

Cutting down the Plants.

REDUCING or shortening the stems of these plants will be best performed in the spring, when it is probable some may require to be placed more upright, being blown aside by boisterous winds, or otherwise removed from that erect state in which they have been planted; and at which time all may conveniently be cut to any certain length, which will be most readily performed by holding upright the plant with either hand, and, at the same time, treading

Of cutting the Plants.

close the soil of the beds with the outer side of the same foot.

The reduction of the stems must be proportioned to their growth, leaving those shortest of the most inferior size, and others of largest growth most long, as the Dwarf early Premier, one foot and a half; common red and white also twice bearing, three feet; and the Antwerp and other large growing sorts, not less than four feet in length.

Protection by temporary Shade.

IN May, when the blossoms are perfected, apply the wattled hurdle to afford a shade for their protection, and promote the setting of fruit, by placing as many wattled hurdles in manner directed for the culture of Strawberries, as may be found convenient and necessary, in a direct line, on the

Protection by Shade.

south side the plants, and about ten or twelve inches distant; that the points of the hurdles be driven into the common earth, which will be most firm for their support.

Thus protected from the heat of sun, and preserved from drying winds, but little water can be necessary, except in hot seasons; when once deluging the surface of the beds may be very advantageously performed, as it will render other light waterings totally unnecessary; especially as all heavy rains and waterings thus confined within the embankment will most effectually contribute to the retention of moisture, that few repetitions can be requisite, especially where the soil is cool, and the situation of the ground low.

As in Strawberries, the same advantages will be found from the friendly shade af-

Protection by Shade.

forded by the wattled hurdle; as well to protect the bloom from decay by the heat of the sun and drought, as to promote an abundant increase in the growth and size of these fruits, and which may be taken away at pleasure to admit all possible sun, in order to effect their maturity. No article can be better calculated to protect the blossom from the violent heat of the sun, or promote an increase in the size of their fruits, especially where the plants are of humble growth. Its formation has been described under the article Strawberry; and the same advantages will be found to result from its application in the present instance, tending to secure good crops of fruits in all seasons; recollecting, that the height of the skreen must be proportioned to the altitude of the plants; and such shade or skreen will admit of being removed and taken away on the earliest indication of the fruit to maturation, by inclining to their natural complexion,

Protection by Shade.

for the admission of all possible sun fully to perfect them. The shade here recommended is to be considered totally unnecessary in moist and cloudy seasons; and it requires to be recollected, that where these borders are formed in situations not pointing duly east and west, and in other than open exposures where the early morning and late evening sun is prevented, it will be less advantageous to the perfection of the fruit, especially in close and confined situations; as from a want of the early and late soft sun, and a free circulation of air, the fruit will prove of very inferior flavour, and be subject to decay by mould or rot. By a continuance of this shade beyond their common season of maturity, the fruit may be preserved a greater length of time, which in many instances will prove desirable; and for those which are of the largest growth, and the greatest altitude, it will be necessary that the hurdle be wattled with branches of

Of renewing the Plantations.

sufficient length entirely to defend the ripe fruit from the mid-day sun. But it will be in great danger of being devoured by thrushes and blackbirds, particularly in large gardens affording shade; to which at that season they commonly resort, and frequently in considerable quantities, especially on the weather proving warm or hot, if unprotected by netting or other open covering freely admitting air, being securely placed over the plants.

The Raspberry being a plant remarkably prolific in its growth, more numerous suckers will be produced as the roots increase in size and strength; which will have a certain tendency to render the shoots weak, and reduce the size of the fruit; that it will be advantageous to renew these plantations at farthest every fourth year.

Directions for the Autumnal Dressings.

Autumnal Dressings.

THIS work requires to be done as early as the fall of the leaf, when fresh fibres are about to proceed from the roots; which will be best performed by a broad three-pronged fork, with which lightly dig or fork over the surface of the trench or bed, by which the litter strewed over the surface will contribute to the nutriment of the plants.

In the spring, smooth the surface with a fine rake, which will effectually destroy all young and tender weeds; when break off the decayed stems close at the bottom, reducing the number of such as are green, to two or three at most, and shorten them to proper lengths, as has been directed.

IMPROVED CULTURE

OF

Ribes Grossularia,

That pleasant and useful Fruit,

THE GOOSEBERRY.

IMPROVED CULTURE

OF

Ribes Grossularia,

THAT PLEASANT AND USEFUL FRUIT

THE GOOSEBERRY.

DESIGNED to point out a rational and efficacious process of cultivation, by which the fruitage of the several varieties may be obtained in far greater perfection of size and flavour than by former practice; together with an easy and certain method of preserving its fruit in full perfection beyond the common season of maturity.

To which is added, a novel system of propagating the several varieties, by planting cuttings taken from bearing trees, when their fruit is fully ripe; by which, with the utmost certainty, any particular variety

Preparations for planting.

may be obtained, and much time gained in the growth of the young plants.

Those who are anxious to obtain superior Gooseberries, will not regard the little extra trouble attendant on the necessary preparations; which, at most, will be of but trivial expence, and that principally in the preparation of soil peculiarly favourable; which will, in most situations, be found essential, except in newly-formed gardens, and on a soil directly similar to that we recommend: to obtain which, the following directions are given. Such must be procured in quantities, in proportion to the size of the plantation intended to be made, as the entire bed formed will require to be completely furnished therewith; but as such soil will be abundantly found, and readily obtained in most situations, it deserves to be recollected, that beds thus well prepared, will, with slight annual winter dressings, with

The most preferable Soils.

rotten hot-bed manure, as has been recommended, remain many years in good state, and be capable of affording large quantities of excellent fruit a considerable length of time.

Favourable Soil and Compost.

The best soil which can possibly be procured for this purpose, is fresh or maiden earth from a rich pasture ground, of light but fat mouldy temperature; and, if possible, of a soft loamy texture. Of such earth, take one whole spit deep with all the turf; to which add one fourth of completely rotten horse or stable litter, preferring that from an old hot-bed made in the former spring; which, from its softness and greater readiness to intermix with new soil, will be found preferable to every other; and also one fourth of the finest soft and black bog earth that can possibly be procured, or in de-

Directions for forming the Compost.

fault of which the same quantity of the darkest coloured tree-soil, preferring that from the more hard-wooded trees; as oak, ash, elm, or fruit-trees, such being most black and soft; or the same quantity of fully rotten and decayed tree-leaves, recommended in the culture of Raspberries: all which may be obtained at a trifling expence; when mix the whole regularly together, laying it in one narrow heap or ridge, about a yard high, in any situation fully exposed to the sun and air, there to remain six, nine, or twelve months, as circumstances may admit; turning over the whole every two or three weeks on the weather being favourable, that the entire heap become thoroughly incorporated; and the longer time the compost remains in this state, the more advantageous it will prove to the young plants and fruits.

This compost being formed early in the spring, and duly prepared by repeatedly

Advantages of Bog Earth.

turning over, will be in fit condition to apply in the business of planting, either in September or October, as may be required; when proceed to mark out the ground and form the beds in the following manner:

Persons unacquainted with the use of bog earth in the culture of fruits, will probably express their surprise at its application to these common and hardy trees, growing on almost all soils, and in every situation and exposure; but of the Gooseberry, as well as most other trees, it may be said to have its peculiarly favourable or genial soil: such, by practice, we have discovered to be bog earth, applied in a proper proportion, having an evident tendency to ameliorate the earth in which these trees are planted, by rendering it soft and open to receive the smallest fibres of these finely-rooted plants, and cool to promote increasing growth of their fruit during the warm summer months

Summer in North America unfavourably hot.

of June and July. Whoever have attentively noticed the growth of the trees in various soils and situations, will have observed those growing on dry soils, however well cultivated, to have produced fruit of very inferior size, and this in common seasons, when our summers have not been unusually warm or hot. And as a farther proof that warmth of sun, in conjunction with a hot soil, is unfavourable to the perfection of Gooseberries, it is a well-known fact, that in the State of New York, in North America, where the summers are more hot than in England, that those of larger size taken from this country, there produce fruit of such insignificant growth as not to merit culture: and it may invariably be observed of the practice of cultivators of this fruit, in the habit of exhibiting their superior productions at annual meetings, as in the several counties of Warwick, Northampton, Leicester, Nottingham, Lancaster, &c. that

Directions for forming the Beds.

a preference is generally given by such connoisseur to cool and rich soils.

Forming the Beds.

IN this business, particular attention must be paid to the situation; observing, that the trees require to be planted in a fully open exposure, unannoyed by large trees or buildings, both in east and west aspects, the more fully to admit all oblique or early morning and late evening sun in the warm summer months, the more freely to promote fructification, and full growth of their fruit.

The ground on which this plantation requires to be made, must be marked out four feet wide, evenly by a line, and in one uniform direction, of convenient length, as circumstances may require, or the extent of the garden may admit, pointing duly east

Directions for forming the Beds.

and west. Having securely placed the line on either side, evenly chop the ground two inches deep on the surface within, on both sides the bed; when dig or throw out the common or natural soil one spit deep throughout, wheeling away the earth by putting the same into barrows, to be taken away to the most convenient situation; then with a broad shovel, clear away by throwing out all crumbs or loose mould at the bottom of the bed, after which, dig out a further half spit of the lower soil evenly throughout clearing away the crumbs as before, thus making the newly-formed bed about half a yard deep. On the common earth being thus removed with barrows, wheel therein a sufficiency of the same soil or compost prepared to fill the bed, leaving it two or three inches higher than the surface of the ground, that it remain even therewith, when the compost has fallen by sinking to a level with the common earth. In two or three

Proper season for transplanting.

weeks it will be fully settled to admit of planting: for which business a dry day only is to be considered favourable.

These plants maturing their wood more early than the generality of fruit-trees, will admit of being planted in autumn as soon as their leaves have changed colour, or began to fall off, which will happen to those growing in sunny and hot situations; as soon as September, or early in October, when they may be safely transplanted to the situation in which they are intended to remain; by which, as they will be less liable to injury from drought in case of an ensuing dry spring, a tolerable proportion of fair fruit may, by such early planting, be obtained the following summer, and, at least, sufficient to determine their varieties. Should the weather prove dry at that season, it will be easy to furnish these newly-planted trees with one or two soaking waterings, to pre-

Directions for planting the Beds.

vent the young wood becoming shrivelled or dry, to the injury of fruit buds formed for the following season, and which will render watering in the spring less necessary.

Planting the Beds.

IN preparing to plant, with a shovel or broad spade make even the surface; when place a line throughout the bed eight inches distant from the south side, and measure off the distances for the plants in the rows exactly three feet apart; and on the south side the line placing small sticks or other marks regularly close to the line throughout the bed, whereby to plant the young trees without the ground being trampled by the persons digging, or holding the young trees. Begin to plant at either end, by throwing the soil away from out of the first hole; when apply the plant, and earth it up with soil from the second mark, thus completing

Directions for planting the Beds.

each row, taking care to plant all close to the line; after which remove the line to the opposite side of the bed, marking it out by the sticks in the same manner, and at an equal distance on the north side as on the south, placing the plants not oppositely, but in the intermediate spaces, that they appear in triangular order.

The general method of planting Gooseberries adopted by common gardeners, from six to eight feet apart, has been considered a proper distance for these plants; which being but little pruned, and suffered to remain many years, become very large, and assuming a tree-like growth, but unproductive of other than under-sized and inferior fruit; but as small or young trees, with little bearing wood at most will be required to our present purpose, the distance of planting recommended is fully sufficient; as observation and experience clearly prove

Directions for Pruning.

that fruit of superior size and flavour can only be obtained from young trees in well thinned wood.

Pruning Trees.

IN the culture of these trees, it is requisite that the business of pruning be well understood; and as both the old and young wood annually bear fruit, there can be less occasion for a redundancy of young shoots remaining on the trees; and being naturally of very branchy growth, it will be necessary to reduce the number of shoots materially; recollecting, that every spur or knot of the old wood will afford fruit or bloom; and that those of moderate and free growth require to be left in preference to the more luxuriant. Such healthy young wood remaining on the trees at equal distances as possible, not less than six inches apart, will much contribute to the increased

Application of the Wattled Hurdle.

growth and size of the fruit; and as a farther auxiliary, it will be equally necessary to guard against shortening any young branches in the winter or spring pruning, which remain for fruit, as it would tend to promote numerous lateral shoots, and invariably prove productive of much superfluous wood.

The size of this fruit in its several varieties, will be abundantly promoted in growth, by the application of an open and airy shade, as the wattled hurdle, when the fruit first inclines to maturity by changing colour: but little hot sun being thus admitted, and the ground thereby kept moderately cool, a greater length of time will be thus afforded to perfect the growth of the fruit.

Advantages of the Jerusalem Artichoke for Shade.

Preserving Fruit.

No article can possible be found better calculated to effect the purpose of preserving these fruits beyond the common season of maturity by shade, than the Jerusalem Artichoke, planted at convenient distances on the south side, to form a permanent and due north border, where the situation is open.

Thus admitting the early morning and late evening sun, together with the drying air common in the warm summer months, between the leaves of the *Helianthus Tuberosus*, the fruit in dry seasons will be long and well preserved from mould or damp.

As it will always be advantageous to obtain this shade or protection from the sun as early as possible after first planting these roots, prefer those which are first dug out of

To form Shade by Jerusalem Artichoke.

the ground in October, or they probably may not attain sufficient altitude of growth to protect the trees bearing fruit so early as July, especially if planted late in the spring.

Thus, it will probably happen, that the fruit on the outer row on the north side of the bed, may not receive the shade intended sooner than they are about to become ripe, when, in July, they will be open to all except the mid-day sun.

To form Shade by Jerusalem Artichoke.

See described under the article STRAWBERRY.

Having described the necessary culture, we proceed to offer a novel and

Improved Mode of Propagation.

THE propagation of this tree is universally understood to be effected by planting

Improved Mode of Propagation.

cuttings; but an improvement of no inconsiderable importance in their propagation, as well as culture, has been discovered in the practicability of obtaining not only young trees more speedily, but, with the utmost certainty, any desirable variety of this fruit, by—“*planting cuttings*,” during the summer months, when we have ocular demonstration of fully ripe and perfected fruit, even of the superior sorts growing on the trees; and by which they will have formed considerable protuberances, or some roots, before winter; that much time will be saved in the growth of the young plants, and by which we obtain with certainty, any particular variety we are desirous of cultivating.

The fittest cuttings to be selected for this purpose, are those from the bearing branches, six to eight inches in length, taking each cutting with its entire base or foot, together with the heel, as they are denominated by

The most favourable Months for Planting.

slipping them out. Such cuttings of moderate growth and strength, will form better plants than more luxuriant shoots from the stem or any other part of the tree.

July and August are to be considered the most favourable months for planting, which may be always best determined, by the situation in which the trees from whence the cuttings intended to be taken, are found growing, whether in the sun or shade, and where the wood will be more or less hard.

By taking cuttings from bearing trees, in July, or after Midsummer, they will not only be in excellent condition to plant, but those remaining on the trees will become more strong, and better able to produce superior fruit the following season.

Method of preparing the Cuttings.

Preparing Ground for Cuttings.

THE situation in which to form beds to receive these cuttings, must be similar to that in which we direct bearing trees to be planted; that is, in an exposure fully open to the early morning and late evening sun, and unobstructed by trees or buildings; without which there will be great danger of decay in cuttings by damp, or rotting off.

In cases where cuttings are of greater lengths than are recommended, it will be easy to form those which are over long, to one uniform size, by reducing the tops of the longest with a knife; and prior to planting, prepare the foot of the cuttings slipped out, by cutting away the heel or lower extremity to little more than the extent of the foot, smoothing the edges of the outer bark throughout; when cut away any small pieces

Method of Planting.

of old wood, which, in slipping out from the trees, may be found to adhere within the bottom of the cutting, forming the base somewhat round; when they will be ready to plant.

Method of Planting.

CUTTINGS being prepared, mark out the bed for their reception three feet wide, by a line on each side, evenly chopping down the earth with a clean spade within the lines, two inches deep; when dig out the soil regularly half a spit deep close to each, laying the same regularly on the outside of the lines placed to mark out the bed; wherewith, and at the same time, forming one regular embankment four to six inches in height throughout, the better to retain all waterings and falling showers through the summer season. This done, make even the bed designed to receive the

Method of Planting.

cuttings, affording it a moderate dressing of rich and very rotten manure about two inches thick, preferring that from an early formed hot-bed; spread the same regularly over the surface, and proceed to plant in the following manner:—

At either end, begin the work by throwing out a small trench as in common digging, marking out the ends of the bed as before on the sides; having dug even the ground about eight inches from the end of the bed, and being provided with two sticks six inches long, measure out that distance on each side from the end; then mark out a line by laying a straight staff three feet in length, directly across the bed, lightly pressing it on the new dug ground, to form a direct line by which to plant the first row of cuttings; when, with a clean spade, chop away the earth evenly aslope, three to four inches deep, against which to place the cut-

Method of Planting.

tings, in such manner, that their tops appear regularly above the surface about two inches ; then return the loose soil which has been cast back from the line to the cuttings, lightly earthing them up about half their length, and proceed to dig the ground little more than six inches, to receive other cuttings, by marking across, and chopping aslope the ground, and planting others as before, clearing away all weeds and stones, until the bed is completed. Observe, on no account to press the earth to the cuttings in the smallest degree, that all waterings may be freely discharged ; as a retention of moisture, from trampling the earth to the cutting, will infallibly rot and decay them.

On the business of planting being completed, make the surface of the embankment as smooth as possible, by striking the earth of which it is formed on each side

Planting the Cuttings.

with the back of the spade, to render it more firm, and prevent the water, in the smallest proportion, running off.

Soon as the cuttings are planted, or on the evening of the same day, it will be necessary to deluge the ground by lightly watering with a pot or pan, having a fine rose, until the ground become muddy wet, to settle the soil about them, and prevent the admission of drying air, and winds. Future waterings will require to be administered, according as the season proves warm or hot, which are only to be considered necessary when the surface of the ground appears dry, and must be afforded in moderate proportions, not to endanger the cuttings by over moisture, always performing this business towards night; and on the same or following day apply the temporary skreen or wattled hurdle, to protect these newly planted cuttings from the hottest sun.

Clearing the Weeds from the Cuttings.

This article, as recommended for the culture of Strawberry and the Raspberry, may be very advantageously applied in the propagation of these trees, by cuttings planted in the warm summer months, to protect them from the more violent or mid-day sun; but on their being planted not earlier than the latter end of July, or beginning of August, a superior protection or shade will be afforded by the *Helianthus Tuberosus*, or *Jerusalem Artichoke*, planted and cultivated as has been directed for preserving the fruit of Strawberries beyond their common season.

About Michaelmas, when the soil is dry, and before autumn, or winter rains fall, with a sharp hoe, four inches wide, cut up and clear away all weeds growing in and between the rows of cuttings; on making even the surface throughout the bed, lay rotten and finely broken hot-bed manure,

To keep the Beds sufficiently watered.

about an inch thick, regularly between the rows; then reduce the embankment formed at the time of planting on the sides and ends of the bed, by throwing away the earth, the more readily to shoot off all wet, to prevent inundation from heavy rains and dissolving snows.

Early in the spring, on the weather becoming dry, make clean the surface of the ground, with a sharp hoe, between the rows throughout, renewing the embankment on each side, and at the ends of the bed, the better to retain all copious rains or waterings during the spring and summer seasons; and on the first symptom of the ground becoming dry, which sometimes happens in March and April, it will be advantageous to deluge the bed by one copious supply of water, gently administered by a pot or pan having a rose, as at first planting, the more effectually to secure them against extreme drought of the

Necessity of keeping the Cuttings clear from weeds.

spring, which may occasionally be repeated until Midsummer, on the season proving warm and dry.

Such waterings can be only necessary on the ground becoming dry, and will require to be seldom but freely afforded.

The only culture requisite during the summer will be that of keeping them clear from weeds.

In the autumn, and within sixteen months from the time of planting, sufficient well-rooted trees will be afforded finally to transplant into most situations, which may be reduced by the knife to any particular form, according to the purpose for which they are designed.

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