A VIEW

OF THE

CULTIVATION

OF

FRUIT TREES,

AND THE

Management of Orchards and Cider;

WITH

ACCURATE DESCRIPTIONS OF THE MOST ESTIMABLE VARIETIES OF

NATIVE AND FOREIGN

APPLES, PEARS, PEACHES, PLUMS, AND CHERRIES,

CULTIVATED IN THE MIDDLE STATES OF AMERICA:

ILLUSTRATED BY

Cuts of two hundred kinds of Fruits of the natural size;

INTENDED TO EXPLAIN

Some of the errors which exist relative to the origin, popular names, and character of many of our fruits; to identify them by accurate descriptions of their properties, and correct delineations of the full size and natural formation of each variety; and to exhibit a system of practice adapted to our climate, in the

SUCCESSIVE STAGES OF

A NURSERY, ORCHARD, AND CIDER ESTABLISHMENT.

BY WILLIAM COXE, Esq.,
Of Burlington, New Jersey.

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"*A View of the Cultivation of Fruit Trees, and the Management of Orchards and Cider; with accurate descriptions of the most estimable varieties of native and foreign Apples, Pears, Peaches, Plums, and Cherries, cultivated in the middle states of America: illustrated by Cuts of two hundred kinds of Fruits of the natural size; intended to explain some of the errors which exist relative to the origin, popular names, and character of many of our fruits; to identify them by accurate descriptions of their properties, and correct delineations of the full size and natural formation of each variety; and to exhibit a system of practice adapted to our climate, in the successive stages of a Nursery, Orchard, and Cider Establishment. By William Coxe, Esq., of Burlington, New Jersey.*"

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By transfer, *Clerk of the District of Pennsylvania.*

JAN 7 1915

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INTRODUCTORY OBSERVATIONS.

There is probably no part of Rural Economy, which combines in so great a degree the agreeable occupation of the mind with active employment, as the cultivation of fruit-trees, with the other branches of an extensive Orchard establishment: to the man of wealth and leisure, it offers the means of improving and adorning his estate; the scientifick Cultivator will find in it inexhaustible sources of intellectual occupation; while the practical farmer, whose views are limited to objects of certain profit, will be amply remunerated for every expenditure of labour or money, by the immediate comfort, and eventual emolument, which will be derived from such an establishment.

Notwithstanding the acknowledged fitness of our climate for the production of Apples and Cider of the most exquisite flavour, we are yet without any detailed system of practical management by a writer of our own Country:—the want of such a guide among a people characterized by their attachment to the agricultural life, and in many cases, suddenly transferred from the busy scenes of professional avocations to a country residence, has been frequently lamented:—the most successful managers in the art of cider making, are too often averse from imparting to others what they believe to be profitable secrets of their business—many are incapable of clearly explaining what they sufficiently understand to practise with success, while a greater number are restrained by diffidence, and by an apprehension of becoming objects of criticism or censure, should they venture to communicate to the public the result of their own experience, with the laudable intent of benefiting others.

Having been for many years actively engaged in the rearing, planting, and cultivating fruit trees, on a scale more extensive than has been attempted by any other individual of this country, I have too often had occasion to regret the difficulty, and not unfrequently the impossibility of obtaining from my own countrymen, information on which I could rely respecting the objects of my pursuit: in these moments of diffi-

culty, I was compelled to apply for instruction to European writers, whose exertions entitle them to the gratitude of their own country and the confidence of ours—to such men as Marshall, Knight, and Bucknall, I feel pleasure in acknowledging my obligations; the former acquired his knowledge from diligent inquiry and close observation, the two latter, from the practical management of their own estates, in the most celebrated cider district of England: their information is correct, their remarks are practical, and conveyed in clear and intelligible language; they ought to inspire confidence, and excite imitation on the subject of orchards and cider. The writers of France are almost silent on this subject: in comparison with their favourite object, the vineyard, it is by them believed to be of little national importance; they are however full and correct on the management of the garden fruits. These remarks are made with no view but to explain the motives which impelled me to attempt, in this country, something which may aid the active and enterprizing spirit of the American cultivator, on subjects but little understood; and as far as my information extends, but imperfectly discussed in any work professedly American.

On a topick which has so often been discussed by men of science and information of other nations, originality cannot be expected: pretensions to it on the

part of the writer of these sheets, would probably destroy that confidence which it is his wish to inspire; —where writers differ, it will be his aim to select the opinions and practice best supported by facts, and the plain principles of common sense: in stating those opinions and facts, he will sometimes adopt the language of others, in preference to any form of expression he might be able to devise.—As the great object of the writer is, to be useful to those who require information—it will be his aim to be correct, rather than scientifick, *in order* that he may be better understood.

CHAPTER I.

OF THE FITNESS OF THE CLIMATE OF THE UNITED STATES FOR THE CULTIVATION OF THE APPLE.

It has long been the opinion of accurate judges, that the middle States possess a climate eminently favourable to the production of the finer liquor and table apples: it will probably be found, that the Mohawk river in New-York, and the James river in Virginia, are the limits of that district of country which produces apples of the due degree of richness and flavour for both purposes. It will not be denied, that apples grow well in the interior and elevated parts of the southern States, as well as in warm and favourable exposures in the northern and eastern States; but it is not recollected, that any one variety of general reputation has been produced, beyond the limits here assigned for the fine apple country. That exquisite flavour for which the Newton Pippin, and Esopus Spitzenberg, are so

much admired, and which has given such high reputation to the cider from the Hewes's Crab, the white Crab, the Greyhouse, Winesap and Harrison, can only be found within the limits here described: handsome and fair apples are found growing in the District of Maine and Nova-Scotia, but they possess little more of the characteristick flavour of the finer apples of the middle states, than those produced on the hills of St. Domingo or the plains of Georgia: cold and heat are equally necessary to the production of a fine apple; neither must predominate in too great a degree. It is remarked by Knight in his treatise on the fruits of Hereford, that the flavour of the liquor for which particular orchards in that country are celebrated, is ascribed to their warm and favourable exposure in every instance which had come to his knowledge. A writer of high reputation in our own country, the late Chancellor Livingston, remarks, that the growth of trees in America compared with Europe, is as five to three;—this fact will probably account satisfactorily for the revival of the reputation of several English cider fruits, when transplanted to this country under the influence of a more genial climate. In treating of this particular subject, it appears to me most correct, to adopt the rule of the sagacious and practical Miller, that, "although Linnæus has considered the apple, pear and quince, as belonging to one genus, the distinction between them is founded in na-

ture, and they ought to be treated of separately"—I shall therefore adhere to that arrangement as the most simple and intelligible.

Whether the numerous varieties of apples with which our country abounds, have proceeded from the dissemination of the seeds of apples brought here by our European ancestors, or have been produced by apples cultivated by the Aborigines before the discovery of America by the Europeans, is a question about which writers have differed, and will probably continue to differ—my own impressions are favourable to the former opinion as the most correct; as founded on that principle of vegetable nature, which establishes, that varieties have a limit to their duration; and authorises a belief that none of the Indian orchards which have been discovered in America, are more ancient than the first settlement of the Europeans on this continent.

The original species of the apple, from which all the existing varieties have been obtained, is believed to be the Crab, or pyrus malus: *when* and *how* the various kinds distinguished by an almost infinite diversity of size, colour, and flavour, have been obtained, are facts which I have never seen explained satisfactorily; they are generally supposed to be the effect of cultivation:—it is sufficient for us to know, that by

sowing the seeds of cultivated apples, we cannot rely with any degree of certainty on the reproduction of the same kinds, but must depend on artificial modes of continuing the variety we are desirous of cultivating, by means of the operations of ingrafting and inoculation.

CHAPTER II.

ON THE MANAGEMENT OF A FRUIT NURSERY.

The seeds generally used for this purpose, are obtained from the pomace of cider apples—they may be sown in autumn on rich ground, properly prepared by cultivation, and by the destruction of the seeds of weeds, either in broad cast, or in rows, and covered with fine earth; or they may be separated from the pomace, cleaned and dried, and preserved in a tight box or cask to be sown in the spring: the latter mode may be adopted when nurseries are to be established in new or distant situations, the former is more easy and most generally practised.

During the first season, the young trees are to be kept free from weeds, and cultivated with the hoe: they will be fit for transplanting the following Spring; or as may sometimes be more convenient, in the

Autumn, after the fall of the leaf.—If natural fruit be the object of the cultivator, attention should be paid to the selection of seedling plants which have leaves large and thick, for such are most likely to produce a good variety of fruit.—Where a species has been ameliorated by cultivation (says Professor Davy) the seeds it affords, other circumstances being similar, produce more perfect and vigorous plants; and in this way, the great improvements in the production of our fruits seem to have been effected." The same observing writer also remarks "that the seeds of plants exalted by cultivation, always furnish large and improved varieties, but the flávour, and even the colour of fruit, seems to be a matter of accident: thus a hundred seeds of the Golden Pippin, will always produce fine large leaved apple trees, bearing fruit of a considerable size; but the taste and colour of the apples from each will be different, and none will be the same in kind as those of the pippin itself: some will be sweet, some sour, some bitter, some mawkish, some aromatick; some yellow, some green, some red, and some streaked; all the apples however, will be much more perfect than those from the seeds of the crab, which produce trees all of the same kind, and all bearing sour and diminutive fruit."

When removed into the nursery, they should be planted in rows four feet asunder, and about twelve

or eighteen inches apart in the rows—the soil should be rich, for the vigour of a young tree is one of its most valuable properties; no cultivation or soil will effectually overcome the want of it: trees will seldom fail, even when removed to a soil of different character from the nursery wherein they were raised, if they have the benefit of good cultivation and good soil; these will produce a correspondent effect on the growth of the tree wherever raised: when young trees have been planted two years, they will be fit for ingrafting in the ground; if the growth be vigorous and the soil rich, this may often be done in one year, but always in the spring: this mode of ingrafting is preferable to all others for its simplicity, economy and certainty: the earth is removed with a hoe about an inch in depth from the stocks, which are then sawed off, so as to leave the top of the stump rather below the level of the ground around it— the stocks are then split, the cions inserted in the clefts, and the earth drawn up so as to cover the tops of the stocks about one or two inches; leaving one or two buds of each cion exposed—no composition or clay is necessary in this operation, the covering of earth sufficiently protects the cions from the air and sun.

The operation of budding is performed in the second growth, from the middle of June to the middle of August, of the second year after transplanting into the

nursery; the stocks are then young and succulent, and the success pretty certain: when the stocks grow large and tall, the operation of budding is more difficult and uncertain.

In four years from the time of planting in the nursery, in a good soil, with good cultivation, the trees will have attained the height of from seven to eight feet; those of vigorous kinds will be taller, and will be fit for transplanting into the orchard. The cultivation of a nursery is effected by ploughing and harrowing, each operation twice or thrice in the season, with ploughs and harrows of a small size, with a single horse:—the earth is first thrown from the trees, and then towards them, and the ground is also worked with a hoe between the trees to destroy the weeds; the more the earth is stirred, and the cleaner the ground is kept, the faster will trees grow in every stage of their progress, from the seedling to the full grown tree.

In pruning trees in the nursery, care should be used not to run them up too high; this weakens the stems, and throws the growth too much into the branches, which must be thinned before their removal, at the risk of checking their growth—as frequently the consequence of the great size of the head, will be an irremediable curve in the stem, while in the nursery.

Great attention is required to keep the roots free from suckers, as neglect on this point will produce in the tree a disposition to generate suckers, which will continue through the subsequent stages of its growth, when removed into the orchard. In taking up the trees from the nursery, no care should be spared to preserve the roots uninjured and of a large size: in the early years of my practice in the planting of orchards, I frequently lost trees of fine and vigorous growth, from the injury sustained by the want of care in digging them up, or as it sometimes happened, in grubbing them up, with the loss of more than half their roots. To persons desirous of possessing fine trees, I would recommend a mode which I have adopted to a considerable extent with great success, of transplanting them from the nursery to an intermediate plantation in the garden or field; and there cultivating them for two or three years, at about four feet apart, planting a hill of potatoes with manure in the space between every four trees, and paying attention during the whole time to the formation of the stems and branches.—This mode will be found to improve the growth of the roots, extending and strengthening the feeding shoots, and ensuring a rapid and vigorous growth when transplanted a second time into the orchard: the product of the potatoes will repay the expence of manuring and cultivation, four fold.

CHAPTER III.

ON INGRAFTING LARGE TREES.

Few men are fortunate enough to possess only the best fruits, or those best adapted to the character of their land:—It frequently is desirable, both for profit and convenience, to change a portion of an orchard after the trees have attained some considerable size: this can be effected by ingrafting the stocks if not too large; in that case, the cions may be inserted in three or four of the limbs; this multiplies the chances of success, and accelerates the progress of the tree. When trees of six or eight years old are ingrafted with cions from bearing trees, their growth will not be retarded more than two or three years, frequently not one: the cions should be cut in February, and placed in the earth with the upper ends uncovered, and in a cold situation, on the shady side of a fence or building, to check the vegetation until the proper season for ingrafting, which will be at the time when the sap begins to flow vigorously.

The cions should be of the growth of the preceding year, cut from healthy bearing trees; they should be kept from water, which, by saturating the sap vessels, would prevent their imbibing the sap of the stocks into which they may be inserted. The usual cover for protecting the cions, is clay well tempered, and mixed with horse dung; an excellent substitute, which may be kept ready for use when a little softened by heat, is a mixture of equal parts of tallow, bees-wax and rosin, spread on strips of linen or paper six inches long and about two inches wide; one of these strips must be wrapped round each stock, so as completely to cover the fissure at the sides and in the end; this operation is neater than the mode usually adopted in this country, it is more convenient to the amateur of fine fruit, requiring but a few minutes preparation by warming the vessel, in which it should always be preserved in readiness for use; it is much less disagreeable than clay, in the cold weather which sometimes prevails in the season of ingrafting; and if properly performed, is attended with equal success. As the graft enlarges, the bandage will gradually distend, till it decays and falls off; in the mean time, serving to protect the more delicate kinds of fruit against the decomposition or cracking of the clay, by the severity of the frost, or the heat of the sun.

CHAPTER IV.

ON STOCKS.

It is the opinion of the most judicious writers on the subject of Fruit trees,that the character of stocks has no influence on the consistence or flavour of the fruit; the office of the stock is supposed to be subservient to the branches: vigour and hardiness are the properties to be sought for in stocks; most of our fine cider apples possess this quality in an eminent degree; none more so than the Hewes's Virginia crab, and the Harrison and Campfield apples of New-Jersey. Some growths of the apple are spreading both in the branches and roots, others send up straight branches, and have roots striking deep into the earth: consequently, the former are best adapted to shallow, the latter to deep soils.

All stocks should be raised from seeds, and never from suckers; a practice which cannot be too se-

verely condemned: it will inevitably produce trees disposed to generate suckers, which impoverish the parent tree, and are unsightly and troublesome in grounds; and if the theory be correct, as I believe it to be, that varieties have their respective periods of duration, after which they languish and decline; trees raised from suckers will be found to possess the defects of the parent tree, of which they are the offspring.

CHAPTER V.

ON THE PROPAGATION OF NEW VARIETIES.

On this head, we are indebted to the accurate observation of Mr. Knight, for a curious discovery in the natural history of fruit trees: each blossom of the apple, contains about twenty male and five female parts—a few days before the expansion of the blossoms, he opened the petals and destroyed all the males, leaving the females uninjured: when the blossoms were fully expanded, he impregnated them with farina taken from another tree with which he wished to cross the kind—all the impregnated fruits grew rapidly, some of the products partook of the properties of the male, others of the female parent; and in some, both were blended: I have seen an exemplification of this principle of nature exhibited, in the mixture of the properties of a Newton Pippin and a Russeting, from the accidental intermingling of the branches of two trees growing in an orchard at Trenton

in this state: one end of each apple was strongly marked, externally, by the character of the Russet parent, the other equally resembled the Pippin—the flavour and juice of each end corresponded exactly with its external appearance. It is highly probable, that by this operation of nature, our orchards are continually producing new varieties, in form, colour and flavour.

I have somewhere met with an extract from an English publication, in which it is stated, that an apple has been obtained from crossing the Siberian crab, remarkable for hardiness, with the Lulham Green, the product of which exceeds in flavour and strength, all cider apples known in that country.

CHAPTER VI.

ON THE DURATION OF PARTICULAR VARIETIES.

Writers of the highest reputation concur in the opinion, that the existence of every variety is limited to a certain period: no kind of apple now cultivated, is supposed to be more than two hundred years old—this term does not exceed the age of a healthy tree. It is the opinion of Mr. Knight, that all plants of this description, however they may be propagated, partake of the same life in some degree, although not affected by any incidental injuries to the parent after they are separated from it: the duration of varieties may be lengthened considerably by the influence of warmer climates, for all the old kinds succeed best in warm situations.

The Stire apple of Hereford in England, is supposed to have long passed the zenith of its perfection,

and to be rapidly declining there; yet in the growth and vigour of at least one hundred of these trees planted in my orchards, there appears to be no deficiency; on the contrary, they attract the notice of all who see them, for the extraordinary luxuriance, as well as beauty of their growth. The soil is a light but rich sandy loam, such as the English writers describe as best adapted to the cultivation of this apple.

CHAPTER VII.

ON THE SAP.

We are informed by the intelligent Mr. Knight, who has with his usual accuracy investigated, in the economy of the apple tree, all the operations of this vital fluid, that it is absorbed from the earth by the bark of the roots: that it ascends through the alburnum or sapwood of the root and trunk, and through this substance, and not through the bark, it is in the Spring conveyed to those buds which produce the annual shoots of the following summer.

The sap is received by another species of vessel in the buds and annual shoots; and is impelled forward into the leaves by a new agent; when in the leaves, it is exposed to the air and light, and a decomposition takes place of some parts of the water it contains.—It is probable that new combinations here take place, into which the matter of light and heat may enter. The

sap is returned from the leaf through other vessels, into the inner bark; and as it passes downward, deposits the new matter which annually forms the branches, the trunk, and the roots.

CHAPTER VIII.

ON INOCULATION, OR BUDDING.

In the first volume of the transactions of the London Horticultural society, the following improved mode of inoculation is described by Mr. Knight. In the month of June, when the buds are in a proper state, the operation is performed by employing two distinct ligatures to hold the buds in their places—one ligature is first placed above the bud inserted, and upon the transverse section through the bark, the other, the only office of which is to secure the bud, is applied in the usual way: as soon as the buds have attached themselves, the lower ligatures are taken off, but the others are suffered to remain—the passage of the sap upwards, is in consequence much obstructed, and the inserted buds begin to vegetate strongly in July.—When these afford shoots about four inches long, the upper ligatures are taken off, to permit the excess of sap to pass on, the wood ripens well, and affords blossoms sometimes for the succeeding Spring.

It will be perceived, that instead of the usual mode of budding, after the commencement of the Autumnal flow of sap, and keeping the bud without shooting until the following Spring, when the top of the stock is cut off—this improved mode gains a season in point of maturity, if not of growth, and has the effect of ingrafting the preceding spring, in all cases where the bud sprouts in the proper time to form a strong shoot, capable of sustaining, without injury, the frost of the ensuing winter.

CHAPTER IX.

ON THE SITUATION OF ORCHARDS.

A south east aspect, which admits the influence of the early morning Sun, and is protected from the pernicious effects of northerly winds, will be found the best site for an orchard. The situation should be neither too high nor too low. Rich strong loams are the fittest for the apple—a portion of calcareous matter mixed, either naturally or artificially with the soil, will be found useful, probably by its serving to correct the austerity, or to neutralize the acidity of many cider apples. All dry rich lands will produce flourishing apple trees—in very wet, or very sandy land, their duration will be shorter; and the flavour of some apples will be found higher in strong than light soils: the Newton pippin is, unquestionably, a more highly flavoured fruit when produced on a stiff soil; while the Bell flower, the next in estimation as a dessert apple, attains its greatest perfection in both size and flavour, on rich light soils.

It is probable, that the celebrity of many orchards depends more on their exposure, and on the selection of fine varieties of fruit, than on any peculiarity of soil: as a rule for judging of the fitness of a soil for an orchard, it will generally be found safe to take that which will produce fine wheat and clover, with as much of a south, or south east aspect, as can be had: the flavour of apples will be found, probably, to depend on the goodness of the soil and aspect combined: many orchards flourish for a few years, but decline as soon as the roots penetrate the lower strata of the earth: a cold clay, or a quicksand, are frequently the basis of light soils; such land, however improved by manure or cultivation, can never be made fit for an orchard.

Blowing sands, when bottomed on a dry substratum, and aided by marle or meadow mud, will be found capable of producing very fine apple trees:—good cultivation, and a system of high manuring, will always remunerate the proprietor of an orchard, except it be planted on a quicksand, or cold clay; in such soils, no management can prevent an early decay. One of the most thrifty orchards I possess, was planted on a blowing sand, on which I carted three thousand loads of mud on ten acres, at an expense of about twenty-five dollars per acre, exclusive of much other manure: on this land I have raised good wheat and

clover—of five rows of the winesap apple planted on it, upon the summit of a sandy knoll, eight years ago, not one has died out of near a hundred trees; all abundant bearers of large and fair apples.

CHAPTER X.

ON THE PLANTING AND CULTIVATION OF ORCHARDS.

The first thing to be determined upon in the planting of an orchard, is the proper distance of the trees: if a mere fruit plantation be the object, the distance may be small—if the cultivation of grain and grass be in view, the space between the trees must be wider: at thirty feet apart, an acre will contain forty-eight trees; at thirty-five feet, thirty-five trees; at forty feet, twenty-seven trees; and at fifty feet, about eighteen to the acre—these are the usual distances. In my own plantations, I have adopted the various distances according to the depth and character of the soil; about two thirds of the ground, comprizing about one hundred acres, are planted at 50 feet; on the remaining fifty acres, I have tried 30, 35, and 40 feet; and as far as could be conveniently done, I have planted the trees of smallest growth on the lightest soil: taking every

circumstance into consideration, it will probably be found, that forty feet is the most eligible distance for a farm orchard.—It will admit sufficient sun and air, in our dry and warm climate; and until the trees shall be fully grown, will allow of a profitable application of the ground to the cultivation of grain and grass.

Much trouble will be saved, and much accuracy in planting will be ensured, by marking the sites of trees by stakes, previous to digging the holes. In shallow soils, I would recommend making the holes of the depth of two spits of earth, scattering the lower spit at some distance; and supplying its place by an equal quantity of the neighbouring surface earth—the depth of the hole, must depend on that of the sub-soil.

An eligible mode, which I have practiced with success in a large portion of my orchards, on the lighter soils, is to supply the place of the stratum of poor earth, by one or two loads of meadow mud, ditch banks, or good surface soil, laid round each tree after planting; ploughing the ground for a fallow crop the next spring, when the mud has become completely pulverized by the frost: the size of the hole should be sufficiently large to admit a spade handle, when laid horizontally in the bottom; affording ample space for the expansion of the roots in loose rich earth. Well digested

compost is useful round newly planted trees, in stiff or cold soils—both lime, and fresh stable manure, I have found prejudicial in the dry and hot weather of summer; the latter substance is also frequently a cover for moles and field mice, which are extremely injurious in winter, to trees of even six or eight years old in light soils. I have found great benefit from the application of every kind of manure on the surface, and mixing it gradually by cultivation with the soil, as the best security against drought in summer, and vermin in winter.

The proper season for planting, will be found to depend on a variety of circumstances—in light soils, the winter settles the earth round the roots, and best secures them against the drought of the following season—it is a time of leisure to the farmer, and affords an early selection of trees from the nursery. In stiff or wet soils, I should give a preference to spring planting, other circumstances being equal—I have planted at both seasons, and have generally found that care & attention ensured a correspondent success in the growth of my trees. In whatever season an orchard may be planted, too much attention cannot be given to extend the roots in every direction; to cut off all wounded parts, and more especially, not to plant too deep; this I believe is the common error of inexperienced planters: as a general rule, I would recommend that the tree be placed in the orchard with about three

inches of earth over the upper tier of roots, which will make it about two inches deeper than it stood in the nursery: that the tree, after being partially covered, should be well shaken, to admit the finer particles of the earth among the fibrous roots, and that it be well settled, by treading the earth around it—with these precautions, I have never found the necessity of stakes. The tops of young trees should never be shortened, lest it should produce a growth of suckers: I would recommend in preference, that they be thinned, if found too heavy: if the trees have been long out of the ground, and the roots have become shrivelled at the time of planting, the labour of pouring a pail full of water round each tree, will be amply repaid in the success it will ensure in their growth.

The looser the ground is kept for the first, and indeed for several succeeding years, the more certain and more vigorous will be the growth of the orchard—in the luxuriance and colour of the foliage of contiguous plantations, I have found every stage of cultivation strongly marked: those orchards which have been two years under cultivation, exhibit a striking superiority over those which have been but one year under the plough; while these, in their turn, surpass the fields in clover or in grain, both in the quantity and size of the fruit: when clover is sown in young orchards, I have been in the habit of digging the earth for about

three feet, at the root of each tree: A man will dig round one hundred trees in a day; the trifling loss of grass and labour, will be fully remunerated by the improved vigour of the tree. When the ground can be spared from cropping, four or five furrows on each side of a row, will be found a most eligible mode of promoting the growth of a young orchard.

All fallow crops are most favourable to the growth of orchards, at every early stage of their cultivation—indian corn, potatoes and vines, are preferable to oats or barley; and these again are more favorable than winter grain: Buckwheat is among the most beneficial crops for the promotion of the autumnal growth of trees—Clover is by many farmers believed to be injurious to young trees; its tendency to check the growth of trees will be found, I believe, to be in proportion to the air and moisture which its greater or less vigorous growth may keep from the roots; light and heat, appear as necessary to the roots as to the branches of trees—clover, while it occupies the ground, must prevent cultivation; so far I apprehend it will be found pernicious, but probably not in a greater degree than any other luxuriant and deeply rooted species of grass, absorbing the moisture, and exhausting the strength of the soil which covers the roots of small trees. In the arrangement of an orchard, both convenience and beauty will result from planting each kind in distinct contigu-

ous rows. Some cultivators pay particular attention to continue in the orchard the aspect the tree maintained in the nursery: I have sometimes adopted the practice, without much confidence in its efficacy; nor can I think it probable, that trees growing in close rows, not much exposed, in the nursery, can by any habit so limited in its duration, be affected by any permanent contraction or rigidity of the bark, or sap vessels, which are the only effects I have ever heard ascribed to the influence of aspect, on the stems of young trees.

The prevalent winds of our climate, are from the north-west: in light soils, their violence will sometimes give an inclination to newly planted trees to the south east: this may easily be remedied by setting up the trees while young; and when they have attained a large growth, it may be overcome in a great degree, by cutting off the leaning branches, and by freely pruning the leeward side of the tree.

Moss is a plant produced by poverty and neglect; it is very prejudicial to trees, and should be carefully removed: this can be readily done, by rubbing the trees in damp weather with a bone, or the back of a knife; good cultivation will generally prevent the growth of moss—white-washing the stem, not only cleanses the tree of moss, but destroys many kinds of

lice very injurious to fruit trees; it is followed by a cleanliness in the bark after it has been dissolved by rain, and promotes the health and vigour of the tree whenever applied.

CHAPTER XI.

ON PRUNING OF ORCHARDS.

There is no branch of the management of orchards less understood, or more unskilfully performed, than the operation of pruning: a belief of its necessity is so general, that even the most careless will seldom omit it—such however, is the want of skill in many of the operators, that total neglect would be less prejudicial, than their performance of it. If judiciously done, pruning promotes health and early fruitfulness: and will continue a tree in vigour, long after the common period of its duration. Nothing has contributed more to the imperfect knowledge of this operation, than the wordy and unintelligible systems which have been published respecting it: in a mere practical system, it is unnecessary to lay much stress on *wood branches* and *fruit branches*; which, however well understood by an observing intelligent gardener, can scarcely be comprehended by the labourer, employed in the busi-

ness of pruning an orchard—from the rapidity of vegetation, which is generally ascribed to the nature of our climate, excessive pruning is very apt to generate an infinite number of suckers from the limbs of apple trees; which, if suffered to grow, are more injurious to the production of fruit, than the woody branches which are removed: our great heat, and dry atmosphere, render close pruning less necessary here than in England, whence we derive most of our instruction on this point. A good general rule is, never to shorten the branches, unless to improve the figure of the tree; and then to take them off at the separation, very close, so that the wound may heal well & soon: the branches should shoot as much as possible in increasing distances, as they proceed from the common centre, inclining a little upwards, by which means the sap will be more evenly impelled, and better distributed: the ranges should not approach too near to each other; for the admission of the rays of the sun is necessary to the production and perfect maturity of fine flavoured fruit—in cutting off a branch, it should be done as close as possible, never leaving a stump, for the bark cannot grow over it, and disease in the wood will inevitably follow. If the wound produced by the separation be very large, cover it with tar or thick paint; if small, fresh cow dung will be the best plaister: I have healed very large wounds from the gnawing of calves, horses and sheep, by a liberal applica-

tion of this plaister, secured by a bandage of paper or linen.

When trees are much pruned, they are apt to throw out numerous suckers from the boughs in the following summer; these should be rubbed off when they first appear, or they may easily be broken off while young and brittle—cutting is apt to increase their number. Trees differ much in their form, and require very different treatment in pruning; it may not be necessary in our warm climate to trim quite so close as in England, but great care should be observed to take off every limb which crosses another, or is likely so to do at a future time: those who can conveniently do it, will find a benefit from forming the heads of their trees in the nursery, the year before they remove them —when transplanted, they will thrive more rapidly from not having been pruned at the time of removal, which in some measure exhausts and weakens the tree: I have been latterly in the habit of giving the principal pruning to my orchards, after they have been planted out about five or six years; their growth, with proper cultivation, is then so vigorous, as to permit any natural defects in their forms to be corrected with safety, by free pruning, and forming their branches: the peculiarity of growth which characterizes each kind is then visible, and uniformity of shape may be more easily attained.

Apple trees should be so formed, as to allow a man and horse to pass under them in ploughing; this elevation of the branches, while it protects them from cattle, opens the ground to the salutary influence of the sun, on the crops of grain and grass.

No error is more universal, than an anxiety for early productiveness in an orchard; it is generally obtained at the expense of much eventual profit, and by a great diminution of the size and vigour of the trees; believing early fecundity to be injurious to the vigour and perfection of plants, I am always attentive to pluck from the trees these evidences of early maturity, in the first stages of their existence.

It was a common practice, some years since, to apply Mr. Forsyth's celebrated composition to large wounds produced by pruning: that novelty, like many others, had its day among us; and has finally lost its popularity, from a general belief of its inefficacy—Mr. Forsyth at a later period announced, as a new discovery, what had been long known in this part of our country; that an application of cow dung and urine, was more efficacious in healing the wounds of trees than his plaister, even in the moist climate of England: In America, our winter frosts decompose it, and our summer heats dry it up so completely, as to render it useless for the purposes intended.

CHAPTER XII.

OF THE CATERPILLAR.

This is one of the worst enemies to an orchard, when neglected; but easily destroyed with a little attention. In the spring, when the nests are small, and the insects young and tender; they never venture abroad in the early part of the day, when the dew is on the trees, or in bad weather; they may then be effectually destroyed by crushing them in the nest: this attention continued for a short time every spring, will destroy those in existence, and will prevent their increase in future years—if left till grown strong, they wander from their nests, and cannot be effectually overcome without great trouble and expense.

CHAPTER XIII.

EXPERIMENTS ON ORCHARDS, TO ASCERTAIN THE BEST MODE OF PLANTING AND CULTIVATING.

Experiment no. 1.

In the fall of 1794, I commenced the plantation of an orchard, which I continued for two succeeding Autumns—the soil loamy, and naturally pretty strong; the aspect favourable—the distance fifty feet. Having no experience, and but little correct information, (for at that time a young orchard was a novelty in my neighbourhood,) the holes were dug deep and narrow, under an erroneous belief of this being necessary to support the trees: The ground was for several years kept in clover, and part of it being rather stiff, the natural green grass prevailed so much, as to injure the trees extremely. The trees grew slowly—many of them have been taken up, after remaining in a feeble, stunt-

ed state, eight, nine, and ten years; and replaced by others planted in large and shallower holes; the latter plantations grow much faster than the former. A few years ago, I began to dig around the trees, circles of four to six feet in diameter; and the last summer, after mowing the first crop, I had five furrows ploughed on each side the rows, which appears to have improved them; the whole orchard, of about 340 trees on 19 acres, now looks well, and as I shall cultivate the ground in corn the following season, 1808, I have now the most favourable expectations of their continuing to thrive.

This orchard is now (1816) in high order, and is improving yearly, under the quinquennial rotation of crops which I have adopted on my farms—nevertheless, there is a decided inferiority in a few acres which were the site of an antient orchard—notwithstanding the rows of my young orchard occupied the middle space, and did not approach the roots of the old trees, which have many years been cut down, and are now entirely decayed.

Experiment no. 2.

In November 1802, I began an orchard adjoining to No. 1; which, in the two following autumns, I en-

larged to 293 trees, at 50 feet apart, on 17 acres—These trees were large and vigorous—I had them topped when they were planted out; I believe they were hurt by the operation. From several experiments made with large trees, I would prefer the lopping in the spring, but would recommend at all times thinning the branches, in preference to shortening them: many of these trees were injured, by cutting the annual shoots for the purpose of grafting, being new and rare varieties; this visibly checked the growth, and in several instances proved fatal to the trees—the holes were dug large, and the ground around the trees was manured highly with stable dung, during the following winter. The field, being in clover, remained uncultivated for two years—the drought during those two years killed many of the trees, and the field mice, which found a comfortable winter shelter under the manure, killed many more: the orchard did not flourish, in a manner which the goodness of the ground, and my great care led me to expect; I determined to plough it thoroughly, and to break in upon my course of crops, for the purpose of recovering the trees by cultivation. The event fully answered my wishes; the trees flourish with uncommon vigour, and at present exhibit a promising appearance, being completely established and out of danger: this orchard is now, 1816, becoming very productive.

Experiment no. 3.

In the fall of 1803, I planted 45 trees in a lot adjoining to No. 2, distances 50 feet: the trees were not so large as the others, but the ground being under constant cultivation, they grew rapidly; only one of them died the first season—the drought of the following summer, which proved so injurious to their neighbours in the clover ground, did not injure them. It was my observation on the effect produced by cultivation on the growth of these trees, that first led me to change the mode of treating my young orchards—this orchard (in 1816) continues to exhibit the comparative superiority, which early and constant cultivation gave it over the adjoining ones; it is now uncommonly flourishing and productive.

Experiment no. 4.

In November 1804, I planted 484 trees on 10 acres of light sandy loam, which had been sown with clover after manuring with ashes; and had then been two years without ploughing. The holes were wide, two spits deep, the lowest spit thrown away, and its place supplied by compost manure, made principally of stable dung and river mud, with a portion of lime: about

a wagon load of this mixture was applied to six trees; in some rows it was mixed in the holes with the earth in planting; in others it was thrown around the tree on the surface, after planting: the ground remained in clover, unploughed, and undug the following year—the trees put out well the first spring, but the drought of the succeeding summer prevented their growth; those which did not perish, were nearly stationary: I replaced 130 the next fall, since which I have replanted nearly one third more—for the last two years I have cultivated the ground with corn, by which the surviving trees have been restored, and together with the replanted ones, at present exhibit an uniform and vigorous appearance, promising, in every respect, to be a fine orchard.

In this lot was planted a nursery of young apple trees; the orchard trees were planted among them, intended to remain there: this part was under constant cultivation—it contained 16 of the permanent trees, which were manured as the other part of the orchard. Not one of these 16 died—all of them have grown far beyond the others—which effect I attribute to cultivation alone. The above experiment was recorded in 1807—it is now, in 1816, connected with No. 5, and exhibits a regular and beautiful orchard of 800 trees on 16 and a half acres, at 30 feet apart: the soil is light, I therefore planted the trees near, as they

would not in such a soil attain the size that they would grow to on stronger land.

Experiment no. 5.

In November 1805, I planted 311 trees adjoining to no. 4, at 30 feet apart. The ground had previously been in corn—the holes were prepared in the same manner—many of the trees were large, had been transplanted a second time into a rich strong soil. I mixed no stable dung with the compost, which was made of river mud, ashes, and some lime; this I put round the trees on the surface, a wagon load to ten trees—although corn is generally thought an exhausting crop, I continued it under that culture for three successive years, except a part, which, during the same time, has been occupied as a vine and garden patch. These trees have grown with a vigour which I never saw equalled: in two years but one has died, and that has been recently destroyed by the ground mice: the orchard is at this time allowed to be the handsomest in the neighbourhood—the constant cultivation, and the quality of the manure, have in my opinion, united to produce the flourishing state of these trees—I cannot discover any difference between the trees transplanted once and twice, in this or any other of my plantations, where the sizes were originally the same. In 1815,

this orchard is becoming productive—the vigorous growth of the trees retarded their bearing, until this year.

Experiment no. 6.

In November 1805, at the same time with the preceding experiment, No. 5; I planted 252 trees adjoining to No. 3, on a corn fallow, the holes prepared in the same manner, 50 feet apart. The trees were partly transplanted twice: I applied stable manure, which had been hauled out the preceding Spring, in about the proportion of one load to eight or ten trees; the ground had been highly manured with ashes on the corn, about 250 bushels per acre: it was the next Spring sown with oats; they grew finely, and the trees put out well, and for some time flourished; but as the season was uncommonly dry, the oats by their growth exhausted the moisture from the earth, which had not that season been dug around the trees; they withered, and by the time the oats were ripe, 40 of them had perished. As soon as the oats were cut, I had the ground ploughed; this stopped the further destruction of the trees—those which had not perished began to recover, and in the following Autumn, which was very moist, shot out new and vigorous shoots. The trees replanted, and the survivors of the original plantation, were dug twice last season (1807) the ground having

been sown with wheat in 1806, and clover in 1807; they generally look well, but in no degree comparable to those planted at the same time in No. 5—the difference, I ascribe in part to the dung, and the want of cultivation in the same degree with No. 5, and somewhat to the excessive dressing of ashes in a remarkably dry season—it is now, 1816, very flourishing and productive.

Experiment no. 7.

In the latter end of October 1806, I planted part of an orchard adjoining to No. 6, of 210 trees 50 feet apart, which I completed in December following. The ground had been planted in corn, and was preparing for oats, wheat and clover, the same as the adjoining lot mentioned in No. 6, and pretty much in the same order: the trees were manured also with stable dung, hauled out the preceding spring, and applied in the proportion of a load to eight or ten trees. In March 1807, the ground was sown with oats; the trees were all dug in May; those planted in December all grew well, but not equal to those growing in corn ground, whilst of those planted in October, a large number perished; many never put out, which I ascribe to their being taken up before the fall growth was finished—this was particularly observable in the Hewes's Crabs

and Campfields, which grow later in Autumn than most other apple trees. Some kinds viz. the Holland pippin and American nonpareils, did not suffer at all—the Jersey greenings, were among those which suffered most. The comparative inferiority of stable dung as a manure for apple trees, was very visible in this plantation.

In 1816, this orchard has grown very finely: the trees are large, and have borne abundantly for the first time; which has arisen from the great vigour of their growth, retarding the fruitfulness of the trees, until they had attained to a considerable size.

Experiment no. 8.

In the end of October 1806, the same day with the preceding experiment, I planted at about fifty feet apart, 180 apple trees, on a lot ploughed the preceding spring, but not sowed, adjoining to Nos. 2 and 3. The holes were dug, and the ground manured after planting with stable dung, in the same manner as No. 7—the soil much lighter: in the Spring of 1807, the field was manured with ashes and planted in corn—forty of the trees had been brought from a distant nursery, of which the soil was so stiff, that many of the roots were much injured, and all of them shortened by dig-

ging, or rather grubbing them, to such a degree, that I had much doubt of their succeeding in the light soil in which I planted them. Notwithstanding these obstacles to their success both from situation and season, the trees have generally grown well, except those which have been destroyed by the mice: the cultivation with corn is the circumstance to which I attribute their success—the difference between dung and the compost of mud &c. is also very discoverable in this experiment.

Experiment no. 9.

In November 1807, I planted 483 trees at 35 feet apart, on a light sandy soil—the holes dug as usual, 2 spits deep, four feet wide, the lower spit thrown away. To all the trees when planted, mud was applied in great quantity, either in its simple state, or mixed with dung, ashes, or lime in compost: In the course of the following winter, and at other times since, several loads of mud have been hauled to each tree—the effect has been in proportion to the quantity used, and the orchard now, in 1816, exhibits the most satisfactory evidence of the efficacy of mud on sandy land. The Winesaps and English Stires in this orchard, can hardly be surpassed for vigour of growth, or beauty of form—the former already bear most abundantly, although but nine years old.

Experiment no. 10.

On the 1st, of December, 1808, I planted 475 trees at 30 feet apart, on 10 acres of light sandy loam; in some parts, the land was hilly, and the sand actually blowing; I covered the soil with three hundred loads of mud per acre—the trees were planted in large holes, filled up with surface earth, and covered with mud—I have never had a more thrifty, handsome, or successful plantation. On the summit of the hill, there were five rows of Winesaps, containing 93 trees; not one of which has ever died in eight years—they have borne well for the two last years. On this ground I have put ashes and stable manure, and have raised pretty good crops of wheat and clover: the situation is fine for an orchard, exposed to the South and East; and from the present appearance, it promises to equal my plantations on much stronger soils—it is probable however, that when the roots strike into the lower strata of earth, the difference of vigour and size will be perceptible, in favour of the orchards growing on richer and deeper soils.

Experiment no. 11.

November 1st, 1810, I planted 302 trees on 11 acres

of ground, at 30 feet apart; the site of an old orchard of 120 trees of indifferent summer fruit, planted at 60 feet distance. I wished to make an experiment, to try the fitness of the scite of an old orchard for a new plantation of apple-trees. In some instances, the young trees came near the stumps of the old trees—I dug out the old earth and filled the holes, which were deep and wide, with surface earth and mud—I have since hauled mud round the trees, and over the whole surface, probably two hundred loads per acre; the orchard thrives well, but not equal to the adjoining lots, parts of which were planted the same season. From the result of part of my experiment number one, and from this confirmation of that result, I am satisfied with the soundness of the prevailing opinion, against the sites of old orchards for new plantations. Some parts of this orchard have a soil of considerable richness: the greater part is planted with Hewes's crab, unquestionably the hardiest, and one of the most vigorous of our native apples—nevertheless, the contrast with orchards on both sides of it, is so striking, as to demonstrate the comparative unfitness of the soil for the purposes of a new plantation.

This remark however ought not to be applied to the spots where young trees, or those even of middling age, have grown—in filling up vacancies in growing orchards, the deterioration of soil produced by the

growth of a tree for fifteen or twenty years, cannot be sufficient to injure one replanted in the same spot—on the contrary, the digging deep, and manuring the earth for the first tree, often renders the spot more eligible for a second, or third.

The preceding experiments were undertaken with a view to ascertain the best mode of planting and cultivating orchards. If my judgment does not deceive me, I think they will be found satisfactorily to prove the utility of cultivation to the promotion of the growth of an orchard; that by the aid of good cultivation, and the application of proper manures, orchards will flourish in any soil sufficiently dry; and that what is usually denominated the quinquennial rotation of crops, and is now practised almost universally by good farmers in the middle states affords a degree of cultivation, sufficient to ensure the due degree of vigour and productiveness to apple trees.

CHAPTER XIV.

ON THE PROPERTIES AND MANAGEMENT OF CIDER.

This is unquestionably, the most difficult branch of the business of an Orchardist; and that on which the success of his plans must chiefly depend. It involves some principles of chymical science, not easily comprehended or explained by men of common education, yet necessary to be known to every cultivator of orchards, who aims at any degree of perfection, in the selection of his fruits, or the management of his liquor. In the explanation which I shall attempt of these rules of the art of cider making, with their principles and details, I shall avail myself of the opinions, and sometimes of the language, of men of high reputation and great skill, in preference to any exposition of what might be offered as the result of my own practice and experience. Those respectable writers, have been my instructors in what may be properly denominated the

mysteries of the art; I can therefore confidently recommend to others their rules of practice, as tested and confirmed by my own experience.

The properties of a cider and table apple are very different, although sometimes combined in the same apple: toughness, dryness, a fibrous flesh, and astringency, are all good properties in a cider apple—yellow flesh indicates richness and strength—the heavier the must, the stronger the cider—in the Vandervere apple, the must is eleven penny weight in the pint heavier than rain water—in the Coopers russeting, the heaviest must we know of, it is twenty four penny weight in the pint heavier. All cider apples should ripen as late as the first of November, and not later, to prevent the expense of housing—if it be necessary to house them, it will be of great importance that they possess the property of keeping without rotting. The merit of cider, depends much on the proper separation of the fruits—those whose rinds and pulp are tinged with green, are inferior to those tinged with yellow, and should not be mixed together.

Apples which fall fully ripe, make better cider than those which are shaken—they should all be kept till perfectly mellow: the strength and flavour of cider are increased, by keeping the fruit under cover before it is ground; but unless exposed to a current of air,

and spread thin, it will contract an unpleasant smell which will affect the taste of the cider—much water is absorbed in wet weather—as the fruit becomes mellow, the juice will be higher flavoured, but will lessen in quantity. The flavour is supposed to increase, as long as the fruit continues to acquire a deeper shade of yellow, without decaying—all decayed fruit should be carefully picked out before grinding: apples not ripe at the same time, should never be mix ed: but three kinds, one of which possesses flavour, another richness, and a third astringency, may possibly be found to improve each other: the finest liquor I ever have seen, was made from the crab, with a a small portion of the Harrison apple of Newark, and the Winesap of West-Jersey. The practice of mixing different varieties may often be found eligible, for it will be more easy to find the requisite quantity of richness and flavour in two kinds of fruit, than in one; it is a fact generally understood, that ciders from mixed fruits, are found to succeed with greater certainty, than those made from one kind—although this practice would deprive the dealer of certainty in the quality of his liquor, and ought not therefore to be recommended for general adoption, yet it is worthy the attention, of an admirer of fine liquor, when providing for his own consumption.

The fruit, in grinding, should be reduced as nearly

as possible to an uniform mass—the advantage which cider receives from the perfect grinding of the rind and seed are well known, but not so well understood. By the mechanical operation of the nuts, the various fluids which occupy the vessels of the fruit, are mingled with the juices of the rind and seeds, and with the macerated substance of the cells themselves.

If the juice of an apple be extracted without bruising the fruit, it will be found thin and defective in richness, compared to the juice of the same apple, extracted after it has been some time exposed in a bruised state, to the influence of the air and light; it then becomes deeply tinged, less fluid, and very rich: in the former state, it apparently contained but little sugar; in the latter, a great quantity; much of which has probably been generated since the fruit became bruised; though it may be difficult to explain satisfactorily, the means by which this effect was produced. The component parts of sugar are known to be vital air, inflammable air, and charcoal; the two latter substances are evidently component parts of the apple; and it is probable, that during the process of grinding, they may absorb and combine with a portion of the vital air of the atmosphere: In the operation of grinding slowly, the liquor acquires good qualities that it did not before possess.

In making cider from almost every fine apple, the liquor becomes more saccharine and improved, by the pomace remaining twenty four hours in the vat, previous to being pressed; to this the must of the Hewes's crab is an exception; it always losing part of its delicacy and disposition to become fine, if not immediately separated from the pulp.

It is a generally received opinion, that the middle running of a pressing makes the finest liquor; the first third will be found to contain most saccharine particles and less purity, requiring more fermentation; in the last running, there will be greater purity, but the saccharine part will be considerably diminished; the middle running will be found to combine strength and purity in the highest degree.

The fermentation of liquors has been divided into three stages; the vinous, the acetous, and the putrefactive: the first takes place only in bodies containing a considerable portion of sugar, and is always attended with the decomposition of that substance: the liquor gradually loses its sweetness, and acquires an intoxicating quality; and by distillation yields a greater, or less quantity of ardent spirit, according to the quantity of sugar and the skill of the distiller. When this fermentation proceeds too rapidly, it is sometimes confounded with the acetous; but the product of that

is entirely different—when ever the fermentation, though purely vinous, becomes violent, it tends to injure the strength of the cider, by carrying off a part of the ardent spirit with the disengaged air—the acetous fermentation follows the vinous; sometimes, when the liquor is in small quantity, and exposes a large surface to the air, it will precede it—in this, the vital air is absorbed from the atmosphere, and the vegetable acid, ardent spirit, and sugar, if any remain, are alike converted into vinegar.

In the putrefactive process which succeeds the acetous, the vinegar loses its acidity, becomes foul and viscid, and emits air of an offensive smell; an earthy sediment subsides, and the remaining liquid is little but water.

As sugar is the only component part of the apple which produces ardent spirit, it might thence be inferred, that the strongest cider would be afforded by the sweetest fruits: the juice of these sometimes, when the flesh is not highly tinged with yellow, is deficient, in what is termed "body" in liquors; and is frequently apt to pass from the saccharine to the acetous state. In the opinion of some skilful managers, much of the strength of cider is derived from the skin and seeds, hence arises their attention to grind them thoroughly. The strongest ciders are made from fruits which possess some degree of astringency.

The time which will elapse before the vinous fermentation commences, is very uncertain—in warm weather, and in cider made from weak or immature fruit, it commences in a few hours—but if the fruit is ripe, and the weather cold, it will be delayed for a week, and sometimes for a month: the fermentation of the exquisite crab cider, blended with the Harrison and Winesap, of which I have in another place made mention, was never farther apparent, than in the swelling of the liquor out of the bung-hole, without any sensible effervescence—and even that did not take place till near the Spring, although the cider was in a tight cellar, secured by glazed windows. In general, the fermentation is delayed in proportion to the clearness and strength of the cider.

In the commencement of fermentaton, the dimensions of the liquor are enlarged, intestine motion is observable in the cask, and bubbles of fixed air rise and break on the surface: if the casks are placed in the open air, or in cool well ventilated cellars, the fermentation will proceed moderately, and will gradually subside, as the proper degree of it has been attained, according to the purity and strength of the liquor. Two modes of conducting the fermentation are practised; the first is with large vessels open at the top, to permit the feculent particles of the pomace to be visible as they rise to the surface, and form a skum—when

the liquor has sufficiently fermented, this skum begins to crack; the fissures are at first small, but soon enlarge, and open to view the fermenting liquor oozing through them— the critical moment is to be seized as this skum begins to crack, and before it begins to subside, which will, if permitted, destroy the purity of the liquor. At the time when the openings are first perceived, the cider may be drawn off in a pure state, free from any mixture with the skum above, or the heavier particles which sink to the bottom: it will be obvious, that this process can be conducted only on a small scale; is attended with expense, and requires a close and minute attention, which few can conveniently devote to it—it is therefore not much used, but in the manufacture of the finer liquors, by very nice managers, on a very limited scale. The other mode is that, which is universally practised.

The cider is placed in casks with the bungs out— either in cellars or in the open air. As the fermentation proceeds, the pomace issues from the bung-hole—once or twice a day, the casks are filled from an ullage of the same liquor, which should be kept bunged to prevent an excess of fermentation: in one, two, or three weeks; according to the purity and strength of the cider, and the coolness of the season and situation, the process of fermentation will be completed, sufficiently to permit the casks to be closed;

which must be done gradually, by first putting in the bung loosely; then, as the fermentation subsides, driving it in tight, leaving loose the vent spill, which, in a day or two may be also driven in tight; the liquor must then settle for a fortnight, previous to its being racked off in clear weather. In the second mode of managing the process of fermentation, less judgment is requisite to conduct it safely—the time of closing the bung and checking the fermentation, can be pretty well ascertained by the state of the froth, or cream, discharged from the bung-hole; when that is perfectly pure, there can be little danger in stopping the cask---the less fermentation takes place, the sweeter will be the liquor; a little experience will soon give the requisite skill to any attentive manager in this operation.

If a cask be placed in a situation where there is little change of temperature, the fermentation will generally proceed, until the whole of the saccharine part is decomposed, and the liquor becomes rough and unpalatable—but as ciders which contain a large portion of sweetness are most valuable, much attention is employed to prevent an excess of fermentation: this is usually done by placing the casks in the open air, which is the most effectual method; or in sheds through which there is a free current of air; and by drawing off the liquor from one cask to another.

By these means the liquor is kept cool, and its decomposition, in consequence, retarded—but the effect of racking off, unless the liquor be bright, does not seem so well ascertained. It is generally done with a view to cool it; but heat is rarely or never disengaged in the fermentation of cider—and the air through which it passes when the operation is performed, is usually warmer than the body it is supposed to cool: some degree of cold will, no doubt, be produced by evaporation, but never sufficient to produce the total cessation of fermentation, which takes place after the liquor has been drawn off from one cask to another. It no doubt gives out something, and may receive something from the atmospherick air, with which it can never have been properly in contact, having always been covered with a stratum of fixed air—this may at any time be proved, by holding a lighted candle close to its surface, where it will be immediately extinguished.

The process of fermentation, if the weather be cool and settled, will generally be completed in a few days; and the liquor will then separate from its impurities. Whatever is specifically lighter, will rise to its surface; whilst the heavier lees will sink to the bottom, leaving the intermediate liquor clear and bright: this must instantly be drawn off, and not be suffered on any account to mingle with its lees; for

these possess much the same properties as yeast, and would inevitably bring on a second fermentation: the best criterion by which to judge of the proper time to rack off, will be the brightness of the liquor—this is always attended with external marks, by which the cider-maker can judge—the discharge of fixed air, which always attends the progress of fermentation, has entirely ceased; and a thick crust, formed of fragments of the reduced pulp, raised by the buoyant air it contains, has collected on the surface. The clear liquor being drawn off into another cask, the lees may be put into small bags (such as are used for jellies) to filtrate, and will become bright—it may then be returned to the cask, in which it will have the effect of preventing a second fermentation—it seems to undergo a considerable change in the progress of filtration; its colour becomes deep, its taste harsh and flat—and it has a strong tendency to become acetous—should it become acetous, it must not on any account be put into the cask. If the cider, after being racked off, remain bright and quiet, nothing more need be done to it till the succeeding Spring; but if a scum collect on the surface, it must be again racked; as this, if suffered to sink, would be injurious: if a disposition to ferment continue, it will be necessary to rack off again, whenever a hissing noise is heard. The strength of cider is much reduced by frequent racking; in part, because a larger portion of sugar remains unchanged,

which adds to the sweetness at the expense of the other qualities; and probably because a portion of ardent spirit escapes, whilst the liquor presents so large a surface to the air. The juice of those fruits which produce very strong cider, often remains muddy through the whole winter, and attention must be paid to prevent an excess of fermentation—the casks into which liquor is put, whenever racked off, should be made perfectly clean by scalding, with about one pailful of boiling water, and about one pint of fresh unslacked lime, in each barrel, or in that proportion for a large cask, taking care to keep the bung in while the lime is slacking, which will effectually destroy any acidity or must in the cask: To prevent danger from bursting, air may be occasionally given by the vent—the cask must be rinced out carefully, after the lime and hot water have been in one hour. The excess or the renewal of fermentation, is very much prevented by the operation of stumming with brimstone, into which, while in a melted state, strips of rag about six inches long are dipped, then fixed to a hook on a long bung, and burnt in the cask with a few gallons of cider tightly bunged up; the cask is then shaken well, to incorporate the fumes with the liquor, before it be opened to receive the cider which is racking off.

About the end of February, or beginning of March, in fair weather, the cider should be again racked off.

If not spontaneously fine—it must be cleared by the aid of Isinglass, about one ounce to half an ounce per barrel, according to the clearness and strength of the cider: all artificial fining somewhat diminishes the strength and richness of cider, as I have fully proved by various experiments—still the cider must be perfectly fine previous to bottling, otherwise it will break the bottles, and, without great care in decanting will be unfit to drink: indeed I do not recollect to have ever seen any very delicate bottled cider, that had not been perfectly fine previous to bottling, either spontaneously or artificially, except in the case of Crab cider, which from the singular organization of the apple, and from the natural tenuity and clearness of the liquor, never can have any considerable portion of feculence to be discharged by fermentation, or separated by fining.

Cider made from good fruit, and properly manufactured may, if put up in casks after careful racking, be kept over the summer in deep dark cellars or vaults. In the practice of England, it is almost universally kept over the first season; in America but seldom; and that only in ciders of great purity and strong body, in vaults or lower cellars; such as are frequently constructed in large cities, but never, that I have seen, out of them.

The bottling of cider is usually done in the month of March and April, before the blossom fermentation takes place; or, in ciders spontaneously clear, it may be delayed till after this period of fermentation, and be performed late in May; but never during the season of blossoming—for the finest ciders are then somewhat affected in clearness, and all will have a tendency more or less, to break the bottles.

Great care should be observed in making the bottles perfectly clean—free from oil, from tartar precipitated by wine, or any kind of matter incrusted on the sides, which frequently resists washing with water, and will remain until decomposed by the acidity of the cider—the bottles should be carefully cleared of remnants of cork, which always injure the taste of the cider.

Cider should remain twenty four hours in the bottle before it is corked; it requires some time to take the bottle when thus treated, but finally is a better liquor, and less dangerous to the bottles; about an inch of vacant space should be left in the neck of the bottle below the cork, when placed on its bottom, which should be always done during the first season—the bottles may then be placed on their sides with safety. Wiring with brass or copper wire, is a correct practice, when cider is to be kept a length of time; in

liquors intended to be preserved for some years, and in those of great vinous flavour, and delicacy of taste: with this management, I have cider of 1810, the mixture of Crab and Harrison and Winesap, before spoken of, which annually improves like the finest wines.

Bottled cider should be kept in the coolest cellar in the house: if the light can be excluded by shutters, it will be a great additional protection against the heat of our summers—the bottles should never touch, for the concussion which usually attends severe strokes of thunder in our climate, frequently will crack them when in contact with each other. The best situation for them, is on a brick or earthen cellar floor, with clean dry sand up to their necks; to exclude the air and prevent their jarring. No pains should be spared to procure good corks, but they should not be immersed in hot water, as is frequently done—this produces a temporary pliability and softness in the cork, which lessens the labour of corking; but it invariably is followed by a contraction and shrinking of the cork, which proves injurious eventually to the cider. With every possible attention to the management of cider, it will require the strongest bottles to withstand its disposition to fly in our warm climate—with strong bottles, and careful attention to the foregoing rules, the breakage will seldom exceed three per cent the first summer; after which there is but little risk.

When cider has become harsh by excess of fermentation, the addition of a small quantity of bruised wheat, toasted bread, or other farinacious substances, will much diminish its disposition to grow sour.

It has been discovered by medical gentlemen of eminence in England, and is stated by Mr. Knight with many other interesting facts and opinions, for which I acknowledge myself indebted to him, that strong astringent ciders have been found to produce nearly the same effect in cases of putrid fever, as Port wine; the tanning principle which abounds in both liquors, and is said not to be found in the Peruvian bark, is probably the agent; and this in cider, might by a proper choice of fruits, be increased to almost any extent. A friend of mine, a son of an eminent physician in this State, informed me, that his father was accustomed to the use of fine bottled cider in this way among his patients; and I perfectly recollect, to have produced an entire cure of the fever and ague, in a delicate young lady of thirteen or fourteen years old, who felt confidence in the remedy from the recommendation of a respectable friend, and applied to me for a bottle of crab cider, which she drank on the approach of the paroxysm about five o'clock in the afternoon, and immediately fell into a sleep, from which she awoke next morning perfectly cured.

CHAPTER XV.

OF THE CONCENTRATION OF CIDER BY FROST.

In the elements of agricultural chymistry written by Sir H. Davy, there is a table of the proportions of alcohol in the various kinds of liquors—among others, it is stated, that rum contains 53. 68 per cent, being the strongest, and brown stout 6. 80 being the weakest of the enumerated kinds—Madeira wine is rated at 19. 34 to 24. 92, cider and perry at 9. 87. If by freezing cider, and separating the concentrated liquor from the aqueous parts, you can double its strength, you will obtain a wholesome, high flavoured, mild liquor of the strength of Madeira wine. This experiment I made satisfactorily the last winter; I racked off two hogsheads of good sound well flavoured cider, into two other hogsheads, containing about eighty gallons each—these I exposed with the bungs out, to the severest cold of January, on the north side of a building; (it is necessary that the

casks should be only part full to prevent their bursting) after a fortnight's exposure to unremitted cold, I found the cider surrounded by a mass of ice of moderate hardness—this I perforated at the end near to the bottom and drew out the concentrated liquor, about a barrel from each hogshead; the residuum, when dissolved on the return of mild weather, was so vapid and weak, that my workmen would not accept it as a present for the use of their families, it was thrown away; one barrel of the liquor thus obtained, I mixed with other ciders to strengthen them for family use in the summer, the other, after fining, I bottled; and can truly say that it is an excellent, vinous, strong, pure liquor; free from any spiritous taste; of twice the ordinary strength of good cider, and promises with age to improve to a high degree of strength and perfection.

CHAPTER XVI.

ON THE NATURE AND MANAGEMENT OF CRAB CIDER.

The apple called the Hewes's Virginia crab, differs so much from all others, that the liquor extracted from it requires a system of management adapted to the peculiar qualities of the fruit. On the nicety of this management, much of its excellence depends; for manufactured as other fine ciders usually are, it will not possess that delicacy of flavour, or that singular brightness and lightness of colour, which are considered as peculiarly characteristick of this liquor.

In dry seasons, and on light or uncultivated soils, the apples are apt to fall too early; they are not however very liable to rot; in more favourable soils, and in good seasons, they hang from the first to the last of October: about the middle of the month we begin to gather them—from the small size of the fruit, this is

a troublesome and expensive operation, which must be performed only in dry weather, or when the dew is off the ground: they are laid dry on the floor of the cider house, or other building, not more than one foot thick, to permit them to ripen and evaporate the watery particles; exposed as much as possible to a current of air, but secured from rain: after lying two weeks, they are picked over carefully, throwing aside every rotten or specked apple—if the green are separated from the ripe fruit, the trouble will be amply repaid by the increased flavour of the cider—they are then ground as closely as possible, for such is the toughness of the flesh, that no degree of grinding will destroy its fibrous and spongy nature. The pomace must not be suffered to lie in the vats; for cider so treated, will acquire a high colour, and an increased disposition to ferment, and will be also more difficult to fine: it is to be placed immediately on the press, in a frame or crib, constructed in the following manner: Three pieces of tough white-oak on each side, are connected together by tenons and mortices, so as to form a hollow square of five by four feet in the clear: on these cross pieces, are nailed white-oak slats, three feet long, one inch and a half wide, and half an inch thick, which stand upright when the crib is fixed on the press; the mortices are riveted, with iron bands, and the tenons secured by iron pins three quarters of an inch thick, to resist the pressure of the beam: In

this crib no straw is necessary, the pomace being sufficiently fibrous and tough to prevent its passage through the slats, with the severest pressure; the juice is white, and clear as spirit from a still, without any mixture of pulp—it passes through the finest flannel without clogging; its extreme purity will admit of its being transported to a great distance, before the commencement of the fermentation. After the juice has been expressed from the pomace, it is usual to throw back the pomace into the vat, to make water cider of a superior quality; for it is more difficult to press this pomace clean than that of other apples—a better mode of managing it, which I practice, is, to grind up other fine cider apples, and with them make a cheese with straw in the usual way, mixed with the spongy pomace of the Crab, making a high flavoured sprightly liquor, requiring but little fermentation, and easily fined. The pure Crab is placed to ferment in a cellar: if well made, it throws out nothing but white froth, requiring less fermentation than any other cider—if it ferments kindly, the cask may be closed in a few days, and in about a fortnight, after the fermentation has subsided, it may be racked off in clear weather, and closed up till about the end of February, when it must be again racked, and if not spontaneously bright, must be made so by the aid of Isinglass, in the proportion of one ounce to a hogshead—in about eight or ten days, according to the clearness of the weather, it must be

again racked, and kept till the proper season for bottling.

When Crab cider fines spontaneously, it is a much more highly flavoured liquor than when fined by any artificial mode; every kind of fining seems to destroy some portion of the richness and exquisite flavour of this liquor: in every instance within my recollection, I have found artificial fining injurious to the richness and flavour of this cider. In its natural state, the spontaneous fermentation of Crab cider well manufactured, is never violent; but when fined by isinglass, or the whites of eggs, I have generally perceived it affected by a degree of fermentation difficult to check without racking, which is often very injurious to the flavour of the cider.

I have now in bottles Crab cider made in 1810, which never underwent a greater degree of fermentation than was sufficient to raise it out of the bung-hole, by the enlarged volume of the liquor, and spontaneously fined itself after only one racking; which exceeds in vinous flavour, and in brightness, any cider I have seen—I have this year tasted Crab cider, manufactured by a respectable dealer in cider in my neighbourhood, never artificially fined, but bottled late in May; with a small portion of cloudiness, caused by what is usually called the blossom fermentation, which per-

fectly subsided in the bottle, exceeding in flavour in the opinion of good judges, any liquor artificially fined, within their recollection.

It may be laid down as a general rule, that the less crab cider is racked, the higher is its flavour. It seems probable, that the liquor is improved by having something to feed on—the cider of the highest character, throws up bubbles of fixed air like the still champagne wine: that life or briskness, so much admired by many people in this cider, is really a defect; when existing in a great degree, it is an invariable evidence that the cider has undergone too great a degree of fermentation. Of all ciders known in our country, the crab is the most economical in regard to bottles—if fine, and suffered to stand twenty-four hours in the bottle before it is corked, it will break but few bottles—when packed in loam, and the corks secured by the top of the box, it may be safely exported to the most distant parts of the world, and is becoming a valuable article of foreign commerce.

CHAPTER XVII.

PERRY.

In the manufacture of Perry, the same rules are adopted as in making cider; except, that it is not usual to permit the pulp to remain long before pressing; it should be done immediately after grinding. Perry does not become so clear and bright as cider—it must be racked off when moderately clear: and must if necessary, be fined by isinglass.

CHAPTER XVIII.

ON FINING CIDER.

When fining is wanted for good cider, Isinglass is the best: it is composed of innumerable fibres, which being dispersed over the liquor, attach themselves to, and carry down its impurities. It should for this purpose, be reduced to small fragments by pounding in a mortar, and afterwards be steeped in a quantity of the cider to be fined, sufficient to produce its greatest degree of expansion—in this state it must be mixed with a few gallons more of the liquor, and be stirred till it is diffused and suspended in it; it is then to be poured into the cask, and incorporated with the whole by continued agitation, for the space of two hours: one and a half, or two ounces, calculated at about five staples to the ounce, are sufficient for a hogshead of 110 gallons. The operation of Isinglass is somewhat chymical as well as mechanical: it combines with, and carries down the tanning principle, hence, in the process of

fining, the liquor loses a large portion of its astringency; Isinglass is more easily diffused through the liquor by being boiled; but by this it is dissolved, and its organization, on which its powers of fining depend, is totally destroyed: the excessive brightness it produces, is agreeable to the eye, but the liquor in my opinion, from repeated experiments, more especially in the cider from the Hewes's Crab, always becomes more thin and acid by the operation.

Where Isinglass cannot be had, the whites of eggs are an excellent substitute: many nice managers among the opulent agriculturists of this and the neighbouring states, use them for the table liquors bottled at home; by some accurate and scientifick men they are preferred to Isinglass, as less apt to produce hardness in the liquor: the quantity required for a hogshead, are the shells and whites of three dozen eggs; the shells pounded in a mortar, and then stirred with the eggs in a few gallons of the liquor, to diffuse them well before they are poured into the cask, when the whole mass must be agitated for an hour or two, as is directed in the use of Isinglass.

Whether Isinglass or whites of eggs are used, I would reccommend as a still better mode than the above, that the fining when diffused through a few gallons of liquor be poured into the empty cask, the

liquor to be then racked off and poured on the fining; this mixes it well with the whole mass without the necessity of stirring.

Mr. Joseph Cooper of Gloucester County N. Jersey, recommends the jelly from Cows feet as a good fining—that from one bullock, warmed and mixed with cider, fined two hogsheads—he strained it before mixing it; racked off the cider in ten days—he thought it improved the flavour of the liquor.

CHAPTER XIX.

OF THE BUILDINGS AND MACHINERY CONNECTED WITH A CIDER ESTABLISHMENT.

The heat of the American climate during a great part of the autumnal months, renders it extremely difficult to prevent an excess of fermentation, destructive of the sweetness and flavour of cider made from our driest and richest fruits—hence the necessity of selecting for fine cider, such apples as ripen late. These generally require to be housed, to protect them from rain and frost, and to give them the requisite degree of maturity: to a limited extent of orcharding, the ordinary out-buildings of a farm will supply the place of more convenient structures—in a large establishment, the increased excellence of the liquor, and economy of labour, will amply repay the cost of a cider house. A building of 45 by 33 feet, will contain the mill and press on the lower floor, and will hold in the upper story, apples sufficient to make twenty

hogsheads of cider, without being laid so thick as to endanger their rotting, in a draft of air, through a door at each end of the loft: an opening in the floor over the hopper will permit the passage of the apples to the mill. The operation of cider making, may thus be conducted without interruption from the weather, and be continued with the aid of a close stove and glazed windows, through the severity of our early winters, when it would be impracticable to conduct it in the open air.

A most valuable addition to the cider house, but rarely adopted, is a cellar under the building to contain the cider casks; communicating by a hose with the press, for the conveyance of the cider without labour or waste—in such a building, the floor of the cider room must be of plank, on strong joists and sleepers, resting on brick pillars in the cellar, to support the weight of the mill, press and horse. With glazed windows, such a cellar may be preserved in a proper temperature in winter, and by the aid of shutters may be kept cool in the hottest summer weather, for the preservation of cider in casks, through the season.

The construction of cider works varies much in the several districts of this state—the common form of the mill is with two nuts standing perpendicularly, with a long sweep for the horse, fixed to the axis of

one of them—it may be so formed as to take the apple from the hopper and break it on the end plank of the frame of the mill, and then convey the broken parts to the other nut, so as to effect a double grinding by the two nuts; this is an improvement on the mills in common use. The nuts are usually made of the toughest White-oak; black Walnut will be found equally solid, and less liable to crack and split.

The nuts are generally fluted; sometimes a plain cylinder; and in others, with the addition of an iron hoop running round the cylinder in a spiral direction, to cut the apples: in the larger establishments connected with distilleries, the nuts are sometimes fixed horizontally, and worked by a large wheel operating on a smaller cog wheel attached to the axis of one of the nuts, performing several revolutions of the nuts with one revolution of the horse; which saves both time and labour.

Within a few years past, nuts of cast iron in the mills, constructed on the simple principle formerly in use, and both nuts and wheels in the modern improvements in the more complicated form, have been introduced into use in this State; and are gaining ground very rapidly in publick estimation. Strong objections exist in the minds of many of our farmers against them, founded on a belief that the liquor made by them

is affected by the acid of the cider operating on the metal, producing a dark shade in the colour: having used them for seven years past, I can confidently assert, that with such attention to washing the nuts, as is indispensible to cleanliness in the making of fine cider with wooden nuts of any quality or construction, this apprehension will be found groundless: the cider made from the Hewes's Crab, is of all fruit liquors the purest, the thinnest, and most proper for the detection of such a property in the iron nuts—if properly made, no such effect will ever be perceptible. An effect arising from the extreme negligence and disgusting filth observable in many instances in the manufacture of cider, is not a fair argument against the economy, the durability, and the capacity of iron nuts for thoroughly grinding the skins and seeds of the apple, without any tinge from the iron when conducted with due attention to cleanliness; which advantages are universally ascribed to the iron nuts. *

Connected with the mill, there is in all large cider works a framed vat, capable of holding sufficient pomace for a large cheese of four or five hogsheads: the pomace of all our fine cider apples, except the Hewes's Crab, acquires sweetness and strength by remaining

* In many parts of the Eastern division of New-Jersey, where cider establishments are on a very large scale, the use of nuts is but little known; large wheels running in a circular trough, are there almost exclusively used for grinding their apples.

in the vat from twelve to twenty-four hours before pressing.

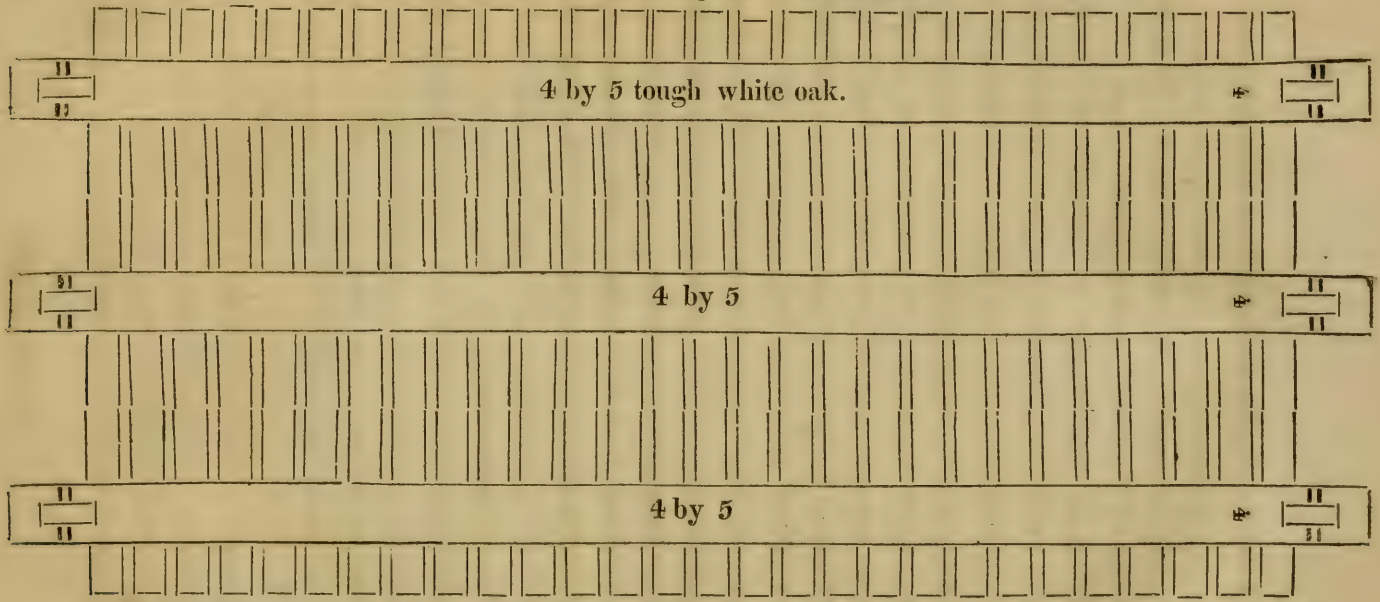
In pressing our best ciders, the pomace is formed into a cheese by the aid of straw, laid between the layers of pomace, and turned over at the edge, so as to form an external security on every side against the passage of the particles of the apple. This is a part of the operation of cider making, on which much of the excellence of the liquor will be found to depend; when skilfully done, it completely separates the juice from the pulp. Hair cloths are used in England for this purpose—in this country I have never seen them used, nor have I ever been able to procure them of a proper fabrick or size. In the manufacture of pure Crab, a crib of the form and construction mentioned under the head of that liquor is used, without straw; and in the management of some of our correct manufacturers of late cider, a crib of larger dimensions, and greater space between the slats is sometimes used, with straw laid in thin strata, and at the sides of the crib; in preference to the use of the cheese, which in cold weather, being a manual operation, is very inconvenient and uncomfortable.

In the construction of the press within a building, the use of a lever has been universally abandoned, as requiring more space for its operation, more strength to

move it, and being less secure from accidents than the screw. Of the kinds of screws, that denominated the drop-screw, descending from a fixed beam, and usually worked by the strength of two or three men; is much preferable to the fixed screw and falling beam, usually worked in the last stages of the operation by a horse; being less liable to danger to the workmen, and injury to the press.

In many of the large establishments in the cider counties of New-Jersey, it is common to see a mill constructed on the improved principles here described, supply three or four presses. In the year 1810, a citizen of this State with one mill and three presses, made eleven hundred barrels of cider, chiefly for distillation.

Cider crib for Crab pomace, 5 feet long, 4 feet wide from corner to corner inside; Slats 1 inch and a half wide, half inch thick, half inch apart, three feet long; all of White Oak.



The pins through the tenons are of square iron, three quarters of an inch thick; the tenons are riveted, and an iron band round each mortised piece.

CHAPTER XX.

OF DISTILLERIES OF SPIRIT FROM CIDER.

As these establishments have lately assumed considerable importance to the nation as a great and increasing source of revenue, and are not liable to many of the objections which exist against the distillation of spirit from grain—it may not be amiss to state some facts, founded on incontrovertible authority, to prove, that the farmers of our country may calculate on a certain demand from these distilleries for the products of their orchards, however abundant they may be, without apprehension from the jealousy of rival commercial interests, or the narrow principles of colonial policy, which, in fruitful years, reduce the price of fruit liquor in the cider counties of England so low, as to be insufficient to pay the costs of manufacturing the inferior quality.

Of the quantity of cider spirit distilled in the Uni-

ted States, we have no positive evidence, it is nevertheless certain that the quantity is great, and rapidly increasing in all the older States north of James River.

In 1810, from the Marshalls returns it appears, that 1103272 gallons were distilled from domestick materials in the small state of New-Jersey; while in Connecticut, in the same year, there were distilled 1374404 gallons—of both these quantities we may safely calculate, that three fourth parts were the product of cider. In Essex county, N. J. in the year 1810, there were made 198000 barrels of cider, and 307310 gallons of cider spirits were distilled—one citizen of the same county in 1812, made 200 barrels of cider daily through great part of the season, from six mills and twenty three presses. In the present season, 1816, 25000 barrels of cider were made within the limits of a single religious society, as it is called, in Orange township, Essex county New-Jersey; comprising about three fourths of the township. Such has been the abundance of apples in many of our eastern counties, that hogs and horses have been kept fat on them till late in December: in the great scarcity of provender produced by the severe drought of the last summer, cattle have been fed on the pomace taken into the fields, and spread on grass grounds, and have been kept in good condition until the end

of December. It is the opinion of some judicious men. that as food for animals, the extraordinary abundance of apples, has nearly compensated for the short crop of corn in our great cider districts. These facts might be supported by many others equally strong, to prove the importance of this department of agriculture; although strictly considered, they do not come within the limits I had originally prescribed for this volume, they appeared to me too important in their nature, and too closely connected with the subjects I have discussed, to suffer me to pass them over without notice.

A neighbour of mine, of great experience as a distiller of cider spirit, once in the month of August distilled at the rate of 16 quarts & 7 eights from a barrel of 30 gallons; i. e. about one 7th of proof spirit. The usual quantity of spirit distilled from early cider on an average, is 8 quarts from a barrel—it has been satisfactorily ascertained, that 14 quarts per barrel is the usual quantity obtained, from the four most celebrated Newark ciders, viz. the Harrison, Granniwinkle, Campfield, and Poveshon.

Proportion of alcohol of 825 at 60, in different fermented liquors, obtained by Mr. Brandes experiments, extracted from Davys elements of agricultural chymistry.

	Liquors.	Proportion of alcohol per cent.	
1	Rum		53. 68
2	Brandy		53. 39
3	Holland		51. 60
4	Port wine	21. 40 to	25. 83
5	Raisin wine		25. 77
6	Madeira	19. 34 to	24. 42
7	Sherry	18. 25	19. 83
8	Currant wine		20. 55
9	Constantia		19. 75
10	Lisbon		18. 94
11	Red madeira		18. 40
12	Cape madeira		18. 11
13	Grape wine		18. 11
14	Calcavella		18. 10
15	Malaga		17. 26
16	Malmsey		16. 40
17	Claret		16. 32
18	Burgundy	11. 95	14. 53
19	Tent		13. 30
20	Vindegrave		12. 80
21	White champagne		12. 80
22	Frontignac		12. 79
23	Hermitage	17. 43	12. 32
24	Goose berry		11. 34
25	Red champagne		11. 30
26	Tokay		9. 88
27	Elder wine		9. 87
28	Cider		9. 87
29	Perry		9. 87
30	Hock	14. 37	8. 88
31	Ale		8. 88
32	Brown stout		6. 80

The value of fruits for the manufacture of fermented liquors, may be estimated, from the specifick gravity of their expressed juices: the best cider and perry, are made from those apples and pears that afford the densest juices, and a comparison between different fruits may be made with tolerable accuracy, by plunging them together into a natural solution of salt, or a strong solution of sugar; those that sink deepest will afford the richest juice.

CHAPTER XXI.

STUMMING AND CLEANSING CASKS.

Take a strip of linnen or cotton cloth, twelve inches long, and two broad—dip it in melting brimstone: when it is dry, let it be lighted and suspended from the bung of a cask, in which there are a few gallons of cider, by an iron wire passing through the bung, until it is burnt out: the cask must remain stopped for an hour or two, and then be rolled to and fro, to incorporate the fumes from the match with the cider, after which it may be filled. If flavour is desired, some powdered ginger, cloves, or cinnamon, may be strewed on the match—the burning must be before the vinous fermentation.

To cleanse a cask, take for a barrel, one pint of unslacked lime, pour thereon one or two gallons of hot water—bung the barrel and shake it—while the lime is shaking, you must occasionally give it vent, lest the barrel should burst: let it remain in till cooled, and then rinse the cask with cold water—it will be perfectly sweet for use.

CHAPTER XXII.

VINEGAR.

The superiority of vinegar made from strong well flavoured cider, over the ordinary wine vinegar imported from Europe, is generally acknowledged. The manufacture of vinegar, has become an important branch of rural economy among many of our respectable farmers, who are from principle opposed to the practice of distillation of ardent spirits: individual dealers in our large Sea-port towns, are engaged in large establishments of this nature—in one instance, 1200 hogsheads of cider have been converted into vinegar in a single season. The demand for cider for this purpose must be great and permanent: the habits of our people create a great family consumption—our sea-faring citizens—our foreign commerce—and our white-lead manufactories, all require large and steady supplies of vinegar.

The greatest expense attending the management of vinegar, arises from the article of casks: the protection by sheds from rain, admitting the influence of the sun, is of great importance in accelerating and perfecting the process; but it is often omitted, and the open bung-holes are secured from rain by bricks, or pieces of board.

The casks are as much as possible exposed to the sun, but any covered dry building will answer for a vinegar room, though somewhat less adapted to the purpose—the bungs are left open for the discharge by fermentation of the pomace, and for the admission of air at all times. If new cider be put on vinegar—or upon the lees or mother after racking off the vinegar, it will hasten the operation. In one season, cider at five dollars per hogshead will be converted into vinegar, at 14 or 15 dollars, an advance which will well repay the trouble and expense of the manufacture.

CHAPTER XXIII.

APPLES.

The following descriptions of a selection of one hundred kinds of the most estimable apples cultivated in our country, are intended to establish with some degree of certainty, the name, character, and origin of each variety; they refer to a corresponding engraving of each kind in its numerical order, with a view to identify each apple by an accurate delineation of its form and size.

NO. 1. JUNETING, OR JENNETING.

This is the earliest table apple of our country: the size is small, the form flat, the stalk long and thin; the colour a pale green, turning to a light yellow when fully ripe, with sometimes a faint blush towards the Sun; the skin has an oily feel, the taste is pleasant,

though neither very juicy or highly flavoured. It is a great and constant bearer in good ground: it ripens from the twentieth of June to the middle of July, according to the soil, aspect, and age of the tree. The growth of the tree is straight, the form handsome, what Orchardists call beesom-headed; the size small.

NO. 2. PRINCES HARVEST, OR EARLY FRENCH REINETTE.

This is a very fine apple for stewing when green, and when ripe is a very pleasant eating apple—the form is flat, the size rather above the middling; the skin when fully ripe, of a beautiful bright straw colour; the flesh white, tender, sprightly, and juicy. The character of this apple stands very high; it is a great bearer, and is in season during the whole month of July: the tree is of a middling size, the growth not very vigorous; the head round, the limbs spreading, without much symmetry or regularity—the stalk is long and planted in a deep hollow, as is also the crown.

NO. 3. BOUGH APPLE.

The size of this apple when on young trees, in rich ground, is sometimes large—the form is rather

oblong; full, even, and fair—the skin is a very pale yellow, the flesh white, sweet, tender, juicy and well flavoured; it is the finest early table apple we have; and as an eating apple, is preferred to any other at the season in which it ripens, which is in July and August. The tree grows vigorously; the form is round, the foliage luxuriant, and of a deep green colour.

NO. 4. SUMMER QUEEN.

The Summer queen is an apple of the finest quality, and its appearance is uncommonly beautiful. The size is large; the skin has a fine rich yellow ground, mixed with red, handsomely striped and clouded, sometimes in a proportion greater than the yellow; the blossom end is much pointed, and full of little furrows and protuberances; the stalk is long, and planted in a deep cavity, with projections of the flesh around the stalk, like the Roman stem; the flesh is rich, yellow, and highly scented, equally suited for eating and stewing. It is not fully ripe until the beginning of August, but can be used for stewing long before that time: the tree is of a very luxuriant growth, with large leaves and hanging boughs: it is a great and constant bearer; it is known by the name of Swetts Harvest in many parts of New-Jersey.

NO. 5. PARADISE APPLE.

This is a dwarf, or rather a shrub; it is much used for stocks to ingraft for Espaliers, when it produces very large fruit—the usual mode of propagating it, is by suckers, which frequently bear the second year after transplantation—the fruit is rather small, of a yellow colour, and a sweet and pleasant taste; it ripens the latter part of July: if not kept trimmed, like a currant bush, it shoots out large suckers, which will exhaust the principal stock, and produce fruit of a diminutive size.

NO. 6. SUMMER ROSE.

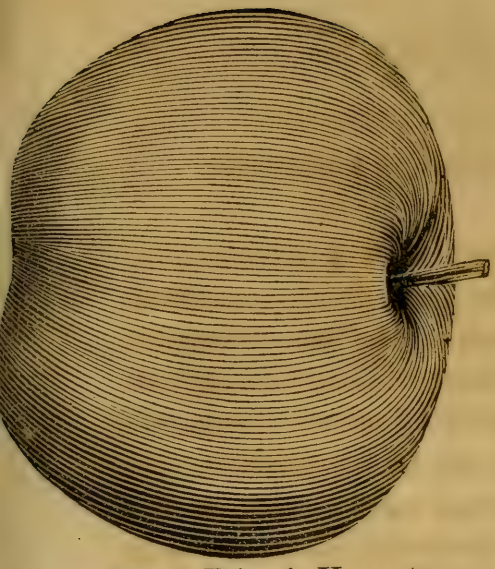
This is an apple of singular beauty and excellence, both for eating and stewing: the size is moderate, the form flat, the skin smooth, of a beautiful yellow resembling wax, blended with red in streaks and blotches; the flesh is sweet, sprightly and juicy; it does not become fully ripe till August, but is an excellent stewing apple in July, and is brought to market for that purpose, under the name of the Harvest apple: the tree is of a spreading form, giving a good exposure to the sun, and is very fruitful.

NO. 7. EARLY SUMMER PEARMAIN.

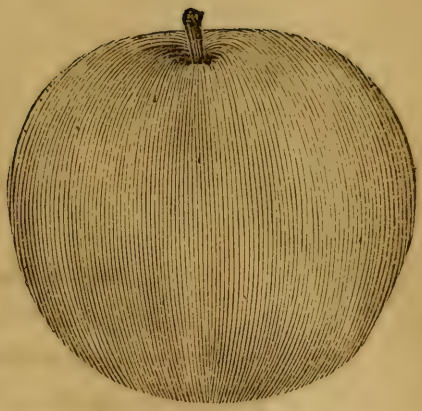
This is one of the finest fruits of the season; frequently preferred to a fine pear: the size is middling, the form oblong, uniformly regular, the ends both deeply indented—the colour in the shade is a dull red, somewhat streaked and faintly spotted; in the sun it is frequently of a lively red, blended with a rich yellow: the juice is abundant until too ripe; the flesh singularly tender—It frequently cracks open on the tree, and bursts from its own weight in falling—it is equally adapted to the table and stewing, and is probably the most popular apple of the season, which commences with the first of August, and (it being very free from rotting) continues through that and the following month: the tree is of a moderate size, the head very round and close; it grows remarkably well on light and sandy soils.

NO. 8. RAMBOUR D'ETE,' OR SUMMER RAMBOUR.

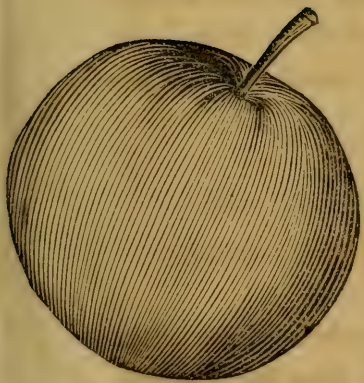
This fruit is also called the Rambour franc: it was imported into the United States from the garden of St. Cloud. The apple is large, of a flat form, a stalk of medium length, placed in a cavity of some depth; the eye is large, the skin smooth, with streaks of red



No. 2 Prince's Harvest.

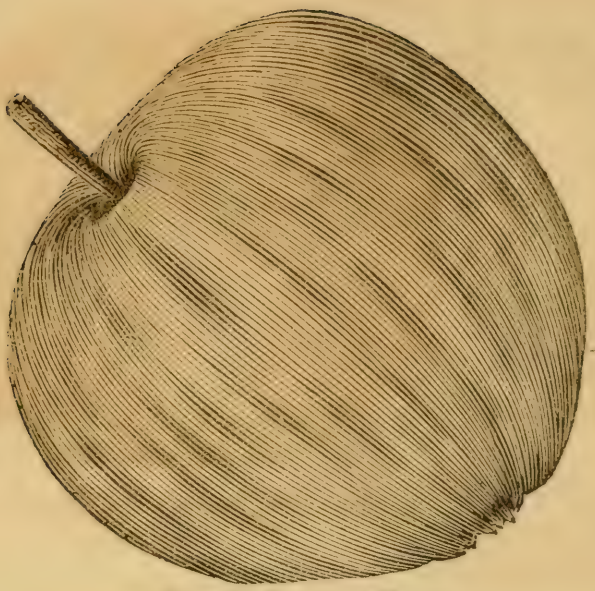


No. 5. Paradise Apple.



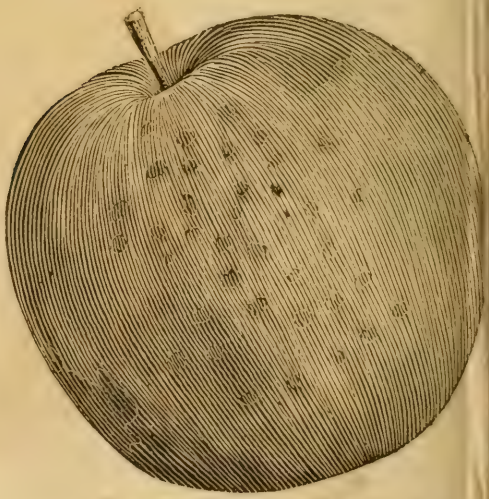
No. 1. Juneting.

No. 3. Bough Apple.



No. 4. Summer Queen.

No. 6. Summer Rose.



No. 7. Summer Pearmain.

No. 8. Rambour D'Eté.

No. 9. Codling.

No. 10. Maidens Blush.

No. 12. Roseau D'Automne.

on a yellow ground; the flesh is rich, sprightly and juicy, very proper for cooking: it ripens in August and September. The tree is of a large luxuriant growth, with a spreading form.

NO. 9. CODLING.

The Codling, called also the English Codling, is a very fine fruit for pies and stewing, and is also a pleasant table apple: it grows very large and fair; the form is oblong, rather irregular; the skin is a bright, though pale yellow, with a fine blush frequently towards the sun—it is somewhat pointed towards the blossom end; the stalk short, the flesh white, tender, and sprightly. The tree is uncommonly handsome, vigorous, and fruitful; bearing very young, and constantly—the leaves are large—it makes a fine appearance in an orchard: the fruit is fit for stewing from the first of August, but does not become fully ripe till the end of that month, and continues in season till late in October: it is one of the most profitable apples for market, ripening gradually, and being very free from rot.

NO. 10. MAIDENS BLUSH.

This is an apple of large size, and great beauty; exhibiting a lively contrast: a yellow ground, with a bright red cheek, whence it derives its name, given to it by Samuel Allinson Esq. late of Burlington, who first brought it into notice: the form is flat, the skin smooth, the flesh white, tender and sprightly, remarkably light and fitted for drying, for which it is preferred to any apple of the season: the stalk is short, and grows in a deep hollow, as does the eye—the fruit ripens in August, and continues in perfection till the end of September, and is fit both for pies and the table: the tree is uncommonly handsome, as well as vigorous in its growth, forming a fine open and spreading head; it bears abundantly and constantly, and is a very popular apple in the Philadelphia market.

NO. 11. SIBERIAN CRAB.

The Siberian crab is a very beautiful apple; of the size of a very large cherry, which it resembles in colour, skin and stalk. They are principally used for preserving, and are much admired for their great beauty and fine flavour: they grow in clusters, with long thin stems; the flesh is rich and yellow, the tree

is of a small and delicate growth; very hardy, and of a handsome appearance—it is a great bearer, and is seldom injured by Spring frosts.

NO. 12. ROSEAU D' AUTOMNE.

This is an apple of middling size, and of great beauty. The skin is red, intermingled with bright rich yellow, and russet about the stem, which is short and deeply planted in a hollow, as is the crown: the flesh is rich, yellow, juicy, tender, highly flavoured, and very firm; containing much of that transparency vulgarly called, fever and ague, which renders it heavy and solid: it ripens in September—the tree is of a large and vigorous growth, and spreads much. I imported it from England.

NO. 13. HAGLOE CRAB.

The character of this apple as a cider fruit, stands very high in Herefordshire, England, where the parent tree was standing in 1783, in the orchard of Mr. Bellamy of that county: the cider, as stated by Mr. Marshal, has been supposed to exceed, for richness, flavour, and price, any fruit liquor which nature and art have produced. Sixty guineas have been offered

for a hogshead of a hundred and ten gallons; also bottle for bottle of wine and spirituous liquors, have been offered for it. The fruit, when fully ripe, has a yellow ground streaked with bright red—the size about middling, the form round, flat at the ends; the stalk large—the flesh remarkably soft and woolly, but not dry—the taste acid, but highly flavoured, the quantity of juice smaller, in proportion to the fibrous matter, than in most other apples, requiring near one third more of the Hagloes for a barrel of cider, than of common fruit: the juice, though uncommonly sheer, is singularly rich, and though the smell of the apple is faint, the flavour of the cider is high; and when properly manufactured, is very rich. The colour of the flesh is pale, but that of the cider dark—it ripens in August and September; keeps a long time without rotting—it bears abundantly and early: the growth of the tree is very uncommon; thick strong shoots; buds, particularly at the extremity of the branches, very large; the colour of the wood dark—the size of the tree small: the Hagloe is an uncommonly fine cooking apple; and from its great beauty and large size, added to its abundant bearing, is a valuable market fruit.

NO. 14. AMERICAN NONPAREIL.

This is a beautiful apple, brought from New-York; streaked with a lively red on a yellow ground—the skin is very smooth, the flesh white, crisp, and juicy—the shape oblong, and pointed at the blossom end; the stem of middling length, inserted in a deep cavity; it ripens in August, and is a fine market apple—the tree is of a full, round, and regular form, and of a vigorous growth.

NO. 15. FALL, OR HOLLAND PIPPIN.

This is one of the finest, and most beautiful apples of the season—the size is very large, it generally weighs a pound; the form is rather long than flat, the skin smooth and fair—of a clear, pale greenish yellow; the flesh pale yellow, juicy, tender, sprightly, and finely flavoured: it is a very popular apple for market, and is used both for eating and cooking: the stalk is short, it is very deeply indented at both ends; it ripens in October, and keeps well as a fall apple—the tree grows very vigorously, handsome and spreading, with uncommonly large shoots and leaves.—it appears to be the same with Princes large Piplin of New-York; is called Vanduyns Pippin in some parts of

Pennsylvania and New-Jersey; in Morris county, the summer Pippin; and by many who attend the Philadelphia market, is erroneously called the Golden Pippin, (which is a very small apple imported from England. see No. 64.)

NO. 16. CORLIES' SWEET.

This is a large fair apple, rather long in shape; of a bright yellow colour, smooth skin, a faint blush, and a few small grey specks; the stalk is short and of a middling thickness; the flesh is coarsely grained, white and sweet—it ripens in September and October, but will keep later for cider, for which it is highly esteemed: the tree grows vigorously, with a singularly deep green foliage and round head; it is a great bearer; it was brought from East-Jersey.

NO. 17. POVESHON.

This is a fine cider fruit in September and October, when it ripens and falls from the tree. The size is small, the form flat, the skin smooth and of a deep red with rich yellow flesh, which is sweet, and uncommonly dry. The skin of this apple is full of dark red blotches running longitudinally, with small white spots:

the tree grows very straight, with upright branches, and is a great bearer. It is celebrated for making fine early cider in Essex county New-Jersey, where it was first cultivated, and derives its name from the family who brought it into notice.

NO. 18. STYRE.

This is the most celebrated and extensively cultivated cider apple in England; and is also a good eating apple: the size is above middling, the colour of a pale yellowish white; the flesh is firm, and when fully ripe, of a fine flavour: the cider when produced from a light rich soil, is rich, highly flavoured and of a good body; its price in England is frequently four fold that of common sale cider—the fruit is pale rinded, but produces a high coloured liquor. The tree is of a singularly beautiful growth, remarkably beesom-headed, throwing out numerous straight luxuriant shoots, growing upwards from the crown, in the form of a willow pollard, running much to wood, and in deep soils, growing to a great size before it becomes fruitful: it suits sandy ground: by the end of September it is ripe in England, generally the middle of October is in common years the time of gathering—by Mr. Knights experiments, the must outweighed all others except that of a new variety, pro-

duced by mixing the Lulham Green, and Siberian Crab: Marshall states, that nearly one third more of Styre apples are required to produce a barrel of cider, compared with common apples.

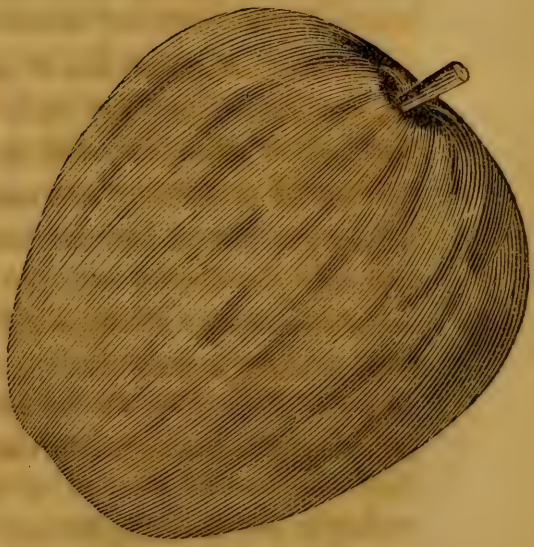
The Styres growing in my orchards, are as large as Newton Pippins, and remarkably fair; I have kept several of them free from rot to the latter end of January—from this experiment, I should venture to pronounce them highly estimable for late cider.

NO. 19. FAMA GUSTA.

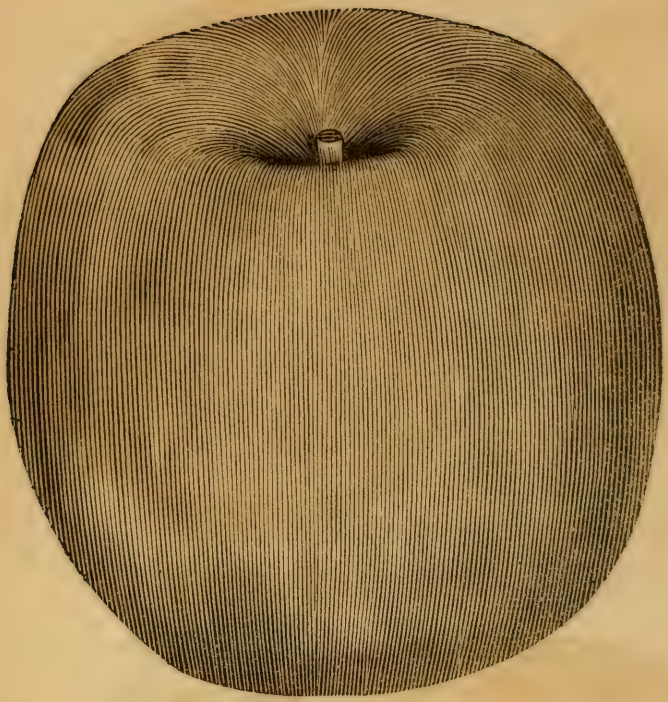
Is an apple imported from England, of a large size, somewhat resembling the yellow Bellflower in shape and size. The skin is smooth, of a pale green colour; the flesh white and hard, with some acidity—the stalk is long, and strongly attached both to the twig and fruit; it is inserted in a deep and singularly guttered cavity: the tree grows vigorously, but in an unsightly form, shooting its branches irregularly in a horizontal direction: the time of ripening is October; this tree is said to have been brought from the Island of Cyprus.

No. 13. Hagloe Crab.

No. 11 Siberian Crab.



No. 14 American Nonpareil.



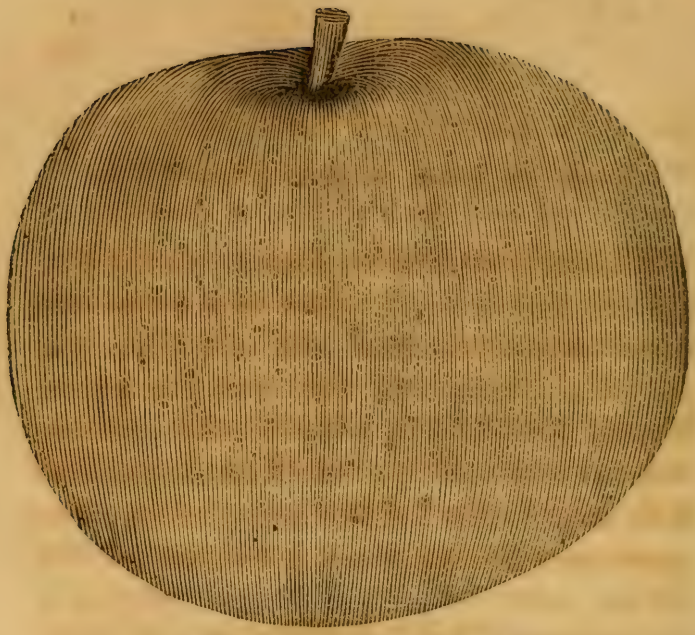
No. 15. Holland Pippin.

No. 16. Corlies' Sweet.

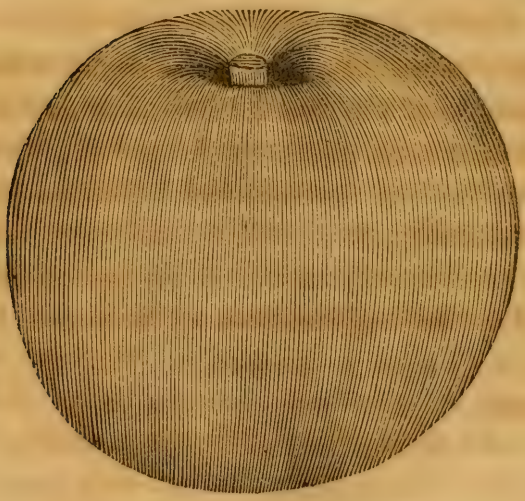
No. 17. Poveshon.

No. 18. Styre.

No. 19. Fama Gusta.



No. 20. Drap D'Or of France.



No. 21. White Sweeting.

NO. 20. DRAP D'OR OF FRANCE.

This apple I imported fron London; it is very large and fair, of a round, and rather flat shape; the skin is of a bright yellow colour, with small black spots, and delicate blotches: the flesh is white, large grained, crisp and pleasant—it ripens in September, and keeps well for some time: the tree is large, vigorous and finely shaped—round, regular and spreading: it is a great bearer, and highly worthy of cultivation.

NO. 21. WHITE SWEETING.

This is a large, fair, pale yellow apple, rather of an oblong shape; the flesh is white, sweet, and tough, of a pleasant taste; and makes excellent food for hogs, and very fine cider in September. The tree grows very handsomely and vigorously, and thrives uncommonly well on sandy ground: it has been much cultivated in the neighbourhood of Burlington N. J. where it is known by the name of Wetherills white Sweeting.

NO. 22. CATLINE, OR GREGSON APPLE.

The Catline is an apple rather below the middling size: and is sometimes, in a fruitful year, and on a full bearing tree, quite small: it is a great bearer—the form is flat, the stalk short and thick, the skin smooth, and of a beautiful yellow, with a clear and brilliant red towards the sun, with numerous streaks and many dark spots scattered on the surface. The flesh is a pale yellow, tender, rich, juicy and sweet: as an eating apple in October, November, and December, it is particularly fine; and is considered as a good early cider apple, although not sufficiently strong for bottling; the tree is small, the form regular, and round in the head; the shoots straight and delicate; the foliage of a lively green—it is very productive, and in six or seven years after transplanting, it bears abundantly, when well cultivated.

NO. 23. GLOUCESTER WHITE.

This apple is of a middling size; of a shape not very uniform, varying from an oblong to a flat form: the colour when ripe, is a bright yellow, with clouds of black spots: the flesh is yellow, rich, breaking, and juicy; of a fine flavour as a table apple, and producing

cider of an exquisite taste. The stalk is of the ordinary length, inserted in a cavity of medium depth, the crown is moderately deep : the time of ripening is about the first of October, after which the fruit soon falls and is fit for cider. It does not keep long, but while in season, is a delicious table apple, the tree is very thrifty, hardy and vigorous ; of a regular and beautiful form, and very productive. It is much cultivated in the lower counties of Virginia, from whence I procured it, as an apple of high reputation.

NO 24. DOMINE.'

The Domine' was imported from England: the tree is remarkably handsome, tall, upright, and spreading, and of luxuriant growth; the fruit is large and fair: the colour a greenish yellow, with a blush towards the blossom end ; the stalk is thick and short, planted in a large hollow, as is also the crown—the flesh is firm, juicy, rich, and of a fine flavour. It ripens in October, and bears abundantly.

NO. 25. LOANS ENGLISH PEARMAIN.

This apple is below the middling size ; the form is flatter than the Hertfordshire, or winter Pearmain ; the

skin is red, with russet spots resembling the Royal Pearmain; the flesh is firm, rich, juicy, and sprightly: it ripens in September and October.

NO. 26. RAMBO, OR ROMANITE.

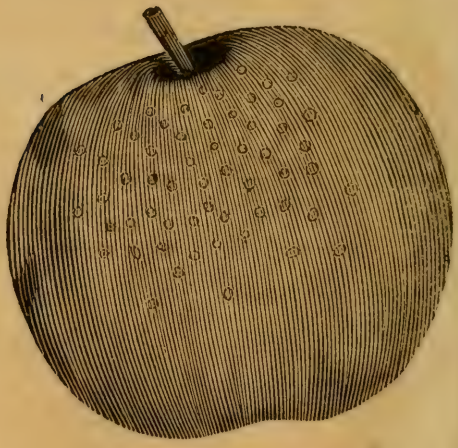
This apple is much cultivated in Delaware, Pennsylvania, and New-Jersey; taking its name from the families by whom it was introduced into notice. It resembles the Vandervere in its appearance, but is a sweeter and more juicy fruit; the form is flat, the size middling, the skin a pale yellow, with faint red streaks towards the sun; the flesh tender and sprightly: it is much admired as a cooking apple—it makes tolerably good cider, but not of the first quality; and is a fine table apple. The tree grows large, the leaves are of a pale yellowish green; it ripens in the fall, and keeps for several months—it is known by the name of Seek no farther in the Philadelphia market, where it is a highly popular fruit, in the fall months; it is in some parts of the country, called the Bread and Cheese apple.

No. 22. Catline.

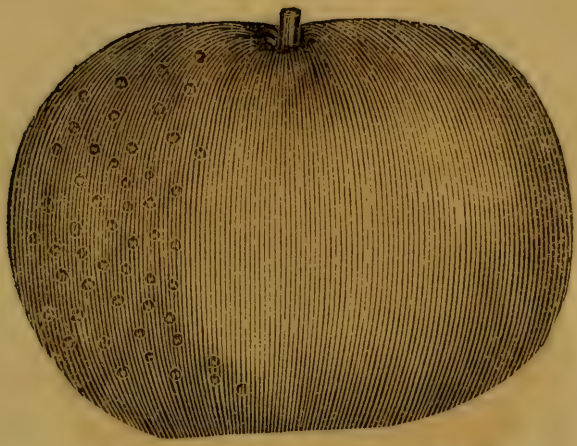
No. 24. Domine'.

No. 23. Gloucester White.

No. 28. Pomme D'Apis.

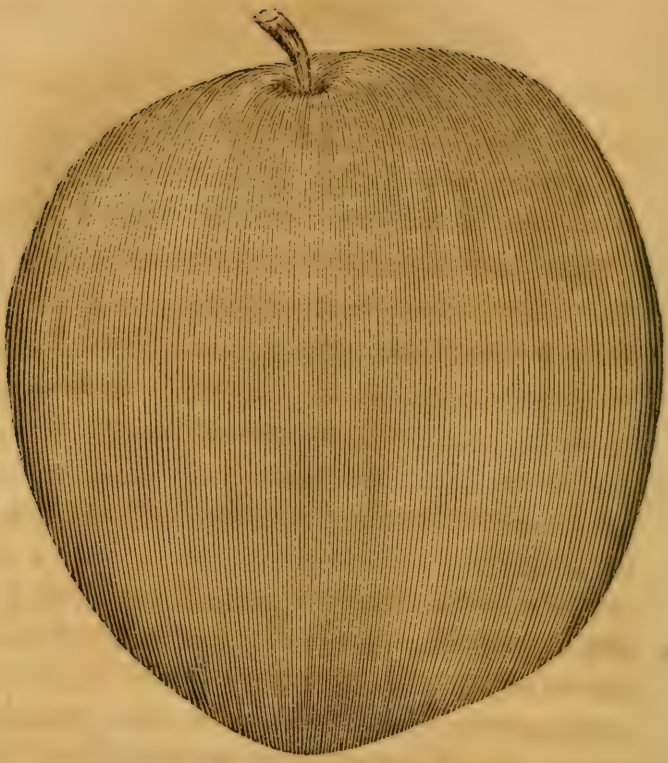


No. 25. Loans English Pearmain.

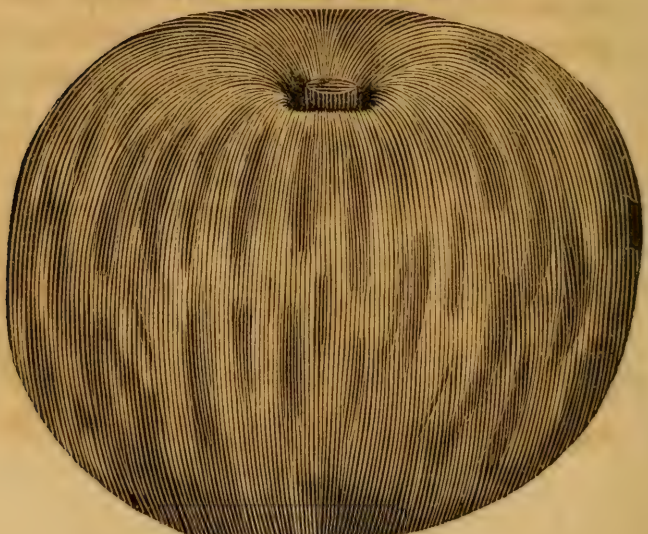


No. 26. Rambo, or Romanite.

No. 27. Monstrous Pippin.



No. 29. Monstrous Bellflower.



No. 31. Doctor, or Dewit Apple.

NO. 27. MONSTROUS PIPPIN, OR NEW-YORK GLORIA MUNDI.

This apple originated on Long Island, state of New-York; it is of an uncommonly large size, weighing from twenty to twenty-seven ounces: when ripe, the skin is yellow, smooth, and full of white spots; the stalk is short, and grows in a deep cavity, the eye is also very deep; the flesh is juicy, white, tender, and sprightly, and is very excellent for cooking, but has not sufficient flavour for a fine table fruit, and is not rich enough for cider: its uncommon size subjects it to be blown down, and to be stolen: it is not therefore a desirable apple beyond a few trees in a collection.

NO. 28. POMME D'APIS.

This apple is called in New-York the Lady apple from the beauty of its appearance; it is of a very small size, and flat form—the colour when ripe, a brilliant yellow, with a dark red cheek; the skin smooth, the flesh white, crisp, breaking, and of a very delicate taste, with very little core; the juice mild and agreeable, the seeds small, short and wide; the tree grows remarkably straight, with upright branches, and is of

middling size. In France, from whence it was imported, it is sometimes called Long-bois, or Longwood—the fruit grows in clusters; it is a late but abundant bearer; it keeps well during the winter, and hangs late on the tree: it is a much admired dessert apple; no trees make a more handsome appearance in an orchard; the leaves are small, and the wood dark, approaching to a black.

NO. 29. MONSTROUS BELLFLOWER.

A very large, fair, and beautiful apple; of an oblong shape resembling the yellow Bellflower, but more regular in its form, and of a paler yellow colour. The flesh is rich, juicy and tender; it ripens in October, and is a pleasant fruit, although inferior to many excellent apples of the season—the foliage of this tree is singularly large and luxuriant; the growth very regular and strong; the form upright.

NO. 30. POUND APPLE.

This is a large fair apple, very showy; the form is flat, the stalk short and planted in a deeply indented cavity—the skin is smooth, a pale yellow inclining to a green, streaked with a lively red—the flesh of a

yellowish cast, mixed with a small portion of green; juicy and sprightly, well fitted for cooking—it ripens in October, and keeps for several months—the tree is large, vigorous and spreading. The size of this apple has attracted more attention than it merits from its other properties; as a table, cooking, or cider fruit, it is inferior to many others which ripen at the same season.

NO. 31. DOCTOR, OR DEWIT APPLE.

This is a very large, fair, and beautiful apple—the form is rather flat; the skin is smooth, with a yellow ground, clouded and streaked with shades of red, with a few small dark spots or clouds—the stem is very short, and both ends deeply indented—the flesh is tender, juicy, and highly flavoured, remarkably breaking—it ripens in October, and keeps for several months: it is among the most admired apples of the season as a table fruit. It derives its name from a physician in Germantown, near Philadelphia, by whom it was first brought into notice.

NO. 32. NEWARK KING, OR HINCHMAN APPLE.

This is a large, fair, and handsome apple; called the Newark King in East-Jersey, and the Hinchman apple in Gloucester county, West-Jersey, where it was first brought into notice by a person of that name: it is shaped like a Priestly, and very much resembles a large late Pearmain, of very regular growth—the skin is smooth, red, streaked, with yellow dots—it is a fall and early winter apple—the tree is of vigorous growth—very spreading, and bears abundantly.

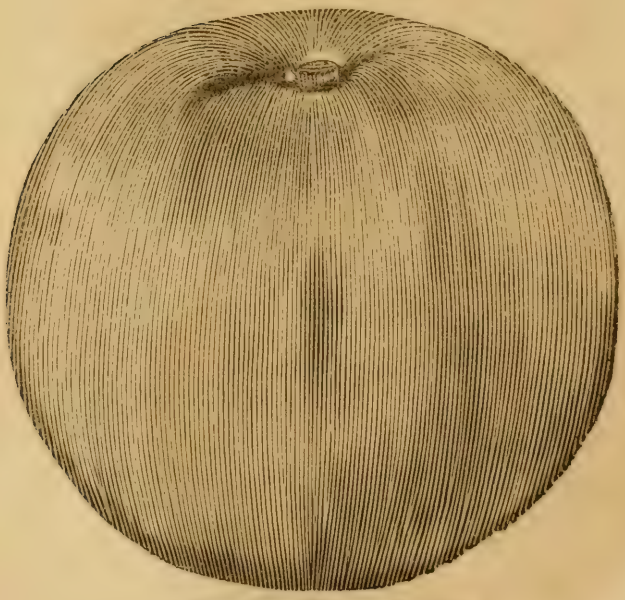
NO. 33. BELL-FLOWER.

A remarkably large, beautiful and excellent apple, both for the dessert and for cooking—it is of a pale, but bright and fair yellow colour; the cheek next the sun has sometimes a blush, but more frequently is without any red: the form is oblong, somewhat pointed at the blossom end—both ends are deeply indented—the flesh is rich, juicy, tender and sprightly; it has uncommonly large full seeds, which are lodged in a pericarpium of unusual size, and if shaken can be distinctly heard; it ripens late in October, when its great weight causes it to fall in windy weather—if carefully picked before they are too ripe, they will

No. 30. Pound Apple.

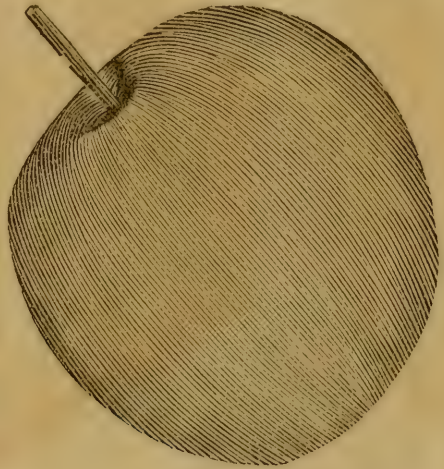
No. 32. Newark King.

No. 33. Bellflower.



No. 34. Wine Apple.

No. 35. Royal Pearmain.

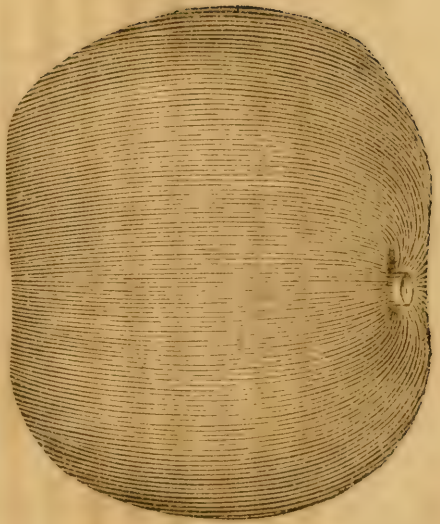


No. 36. Long Island Russet.

No. 38. Morgan Apple.

No. 40. Sheep Nose.

No. 39. Shippens Russeting.



No. 37. Golden Pearmain.

keep in high perfection through the winter, till late in the spring, especially when they are shrivelled or wilted—from their beauty and excellence, they are the most popular apple in the Philadelphia market: the tree grows very large and spreading; it should be trained high, or the limbs will touch the ground when in full bearing—it succeeds best on light rich soils. The original tree is said to be now standing on a farm near Crosswicks, Burlington county, N. Jersey, very large and old.

NO. 34. WINE APPLE.

An uncommonly large, fair, handsome red apple—the form is round, flat at the ends: the skin is a lively red, streaked and spotted with a small portion of yellow: the stalk end frequently of a russet colour, both ends deeply indented; the stalk very short, the taste is rich and pleasant, an admired table fruit, and excellent for cooking as well as for cider; it ripens in October, and keeps well through the fall and winter. The tree is uncommonly large and handsome, the leaves small, it bears abundantly; from its spreading form, it does not require much trimming—it is probably as saleable an apple as any sold in the Philadelphia market: in the state and county of Delaware it is called the Hays Winter; and in some

places in New-Jersey, the fine Winter, and large Winter Red: I have been informed, that the original cultivator of this apple, made admirable cider by throwing about one shovel full of sandy loam into a pressing, which had an effect in lessening the acidity, and made a clear, sweet liquor, by this novel mode of fining.

NO. 35. ROYAL PEARMAIN.

Is a fine, large apple, rather flat in its form, of a rich russet colour, blended with red, faintly streaked and dotted with spots of russet. The skin is rough, the flesh a rich yellow, of a very sprightly taste, and firm in its texture; when first gathered, rather tart, but becomes both sweet and tender by keeping: it is a good table apple, and makes excellent cider; the size that of a Vandervere; it ripens in October, and will keep till February and March—it is highly esteemed by the planters in Virginia, whence I procured it from the neighbourhood of Richmond: the tree grows tall and straight, with a luxuriant foliage and regular form, and is a most abundant and uniform bearer. This apple is known in Pennsylvania, and much cultivated, under the name of the Merrits Pearmain.

NO. 36. LONG ISLAND RUSSET.

This is a small apple, very much in appearance like the Coopers Russeting; the form is rather oblong, diminishing towards the crown, which is very hollow; the stalk is a full inch in length, planted very deep—the flesh is dry and sweet; makes a very sweet sirupy cider, which when fined is much admired—the skin is of a yellow russet, clouded with black spots—this apple keeps well.

NO. 37. GOLDEN PEARMAIN.

Called in New-York and East-Jersey, the Ruckmans, or Dutch Pearmain; and in other places the Red Russet; is a most valuable apple for cider, and for family use: the size is middling, the form rather flat, the skin rough, with a large portion of bright russet, mingled with red towards the sun when fully ripe—the flesh is rich, tender, and rather dry—it is a great and uniform bearer; the tree grows luxuriantly, with strong shoots, and a close compact head—the fruit ripens in November, and keeps well through the winter.

NO. 38. MORGAN APPLE.

This is a fall and early winter apple, of a size above the middling, and a form rather oblong, a little diminished towards the crown—it is nearly round at each end, there being but little hollow at the crown or stem; the skin is rough, the colour a pale yellow, with numerous small points; the flesh a pale yellow, very tender, with an agreeable taste, but rather dry—the stalk is long and thin: the tree grows thriftily, and produces abundantly; the fruit ripens in October, and keeps well for several months. It takes its name from Mr. Benjamin Morgan, late of Gloucester county New-Jersey.

NO. 39 SHIPPENS RUSSETING.

This is a large flat apple, of an irregular form, with a yellowish green skin, mixed with a coarse thick russet, and a portion of red: it is much esteemed for stewing, and may be used for this purpose before it is ripe, or even full grown, and is continually improving through the autumn, till late in the season. Like all the Russeting tribe, it is a dry fruit; it is a great and constant bearer; the tree grows vigorously, and attains to a large size; the name was taken from the late

chief Justice Shippen, in whose garden in Philadelphia the original tree stood.

NO. 40. BULLOCKS PIPPIN, OR SHEEP NOSE.

This is one of the finest apples in New-Jersey, in the autumn and early winter months. In size it is below middling—the skin is yellow, inclining to a russet; the flesh is yellow, rich, juicy, tender and sprightly; it is an excellent cider apple, and when baked, is the best apple I am acquainted with—the form is that of a heart, pointed towards the crown; the stalk short; the tree handsome, the top round and regular, the foliage dark and luxuriant—a great and constant bearer—it is a native of Burlington county New-Jersey—it is sometimes called the Long Tom; it derives one of its names from the family of Bullock, but is more generally distinguished by the vulgar name of Sheep-nose, from a supposed resemblance between the form of the apple and that part of a sheep.

NO. 41. RIBSTONE PIPPIN.

This is an admired English apple, which I obtained from Mr. Priestly late of Northumberland, Pennsylvania—the size is large, the form rather flat, the

skin streaked with red and yellow, with a small portion of russet: it is an excellent table and baking apple; in season, from October till April.

NO. 42. REINETTE FRANCHE.

This is the most admired winter apple in France; the size is large, the shape long, flat at the ends, and lessening towards the crown: the skin is yellow, and when fully ripe, is apt to shrivel—it has usually a number of cloudy, black, and russet spots on the skin—the stalk is short and thick, planted deep—the flesh firm, rich and sprightly—it is often kept sound till the second year—the tree is of a handsome form, tall, large, of vigorous growth, and an abundant bearer.

NO. 43. NEWTON SPITZEMBERG.

This apple is in some parts of this State called the English, or Burlington Spitzemberg: it was brought from Newton on Long-Island—it is a large round and fair fruit; the skin a lively but deep red, streaked with darker shades of red towards the stalk, and full of small yellow dots towards the crown; the stalk is short, and grows in a deep hollow, the crown is deeply indented—the flesh yellow, rich and highly fla-

voured—it is admired both for its taste and beauty—it ripens in October, and falls from the tree, but properly treated will last for several months. The form of the tree is regular, handsome and spreading; the growth vigorous, exhibiting an appearance equal to any tree in our orchards for beauty.

NO. 44. ESOPUS SPITZEMBERG.

This apple possesses great beauty, and exquisite flavour—it is said to have originated in the vicinity of Albany—it is supposed to deteriorate when trasplanted to the south of the Highlands on the Hudson River. In size, it is a large apple; in form oblong—a fair and smooth skin, the colour a lively and brilliant red approaching to a scarlet, with numerous small yellow spots—the flesh is yellow, and singularly rich, juicy and sprightly; the stem is of moderate length, planted in a deep hollow, the end projecting a little beyond the level of the fruit: its maturity is about Christmas: the tree has a peculiar growth, with long and hanging shoots. This appears to be the same with the Flushing Spitzemberg of Long-Island; the difference between them is of the slightest shade, and may be probably produced by soil or aspect, or by cultivation in a mountainous or flat country.

NO. 45. KAIGHNS SPITZEMBERG.

This apple has a faint resemblance to the Esopus Spitzemberg, but is more pointed towards the crown: the colour is a lively but pale red, faintly streaked, and full of white spots: the skin is smooth, the stem long and deeply planted, the crown very hollow—the flesh finely flavoured, yellow, juicy, and tender; a beautiful early winter fruit, highly deserving of propagation. The tree is of spreading growth, and a very unsightly form; its name is derived from a family residing in Gloucester county New-Jersey, where it was first cultivated.

NO. 46. IRISH APPLE.

This is a fruit of large size, bearing a strong resemblance to the yellow Newton Pippin both in form and colour: the skin is full of small red spots---the form is flat---the stem short and deeply planted: the flesh is pleasant, rich juicy, and sweet---it ripens in November, and will keep for some months---the tree grows upright with delicate limbs. I have discovered this tree to be deficient in hardiness in light soils; in a row of twenty, planted twelve years ago, a large portion died at an early age; those which sur-

No. 41. Ribstone Pippin.

No. 42. Reinette Franche.

No. 43. Newton Spitzemberg.

No. 44. Esopus Spitzemberg.

No. 45. Kaighns Spitzemberg.

No. 46, Irish Apple.

No. 47. Winter Pearmain.

No. 48. Jersey, or R. I. Greening.

vived the first season, attained a considerable size, and bore tolerably well: last year (1815) the remaining six or seven perished, from the bursting and decay of the bark near the surface of the earth.

NO. 47. WINTER PEARMAIN.

Is called in England, the Hertfordshire Pearmain, and is sometimes known by the name of the French Pearmain in this country---it is one of the most estima- apples of the season: as a table fruit, it is rich, breaking and sprightly, though not very full of juice---few apples surpass it for cooking, and it produces excellent cider—it ripens in October, and will keep through the winter. The fruit is of moderate size, of an oblong form, very free from blemishes; the skin is smooth, of a dull red, faintly streaked with green, which when exposed to the sun, turns to a yellow, with indistinct russet spots: the tree grows handsomely, with a large and regular form, and is supposed to be the most hardy and uniformly productive apple in our orchards, well adapted to light soils.

NO. 48. JERSEY, OR RHODE-ISLAND GREENING.

Sometimes called the Burlington Greening; is a ve-

ry large fair apple, of a round shape with a yellowish green skin, spotted with red like a Newton pippin; the ends are somewhat flattened, and the stem and crown sunk below the level of the fruit: the flesh is rich, juicy, tender, and very yellow—as a table fruit, in October, November and December, it is highly esteemed—the tree is very large, the limbs strong and spreading, the growth very luxuriant.

NO. 49. FRENCH VIOLET.

This is a much admired apple in France; in this country, its merit does not appear equal to many others ripening at the same time. It is a beautiful fruit, of a regular oblong form, rather above the middling size—the skin a dark brilliant red, very smooth and faintly streaked, with large blotches of fawn colour—the flesh is white, juicy, tender, and delicate, but not highly flavoured; it ripens in the autumn, and will keep well through the early part of winter. The tree is handsome and vigorous, bears at an early age very abundantly; the fruit grows at the extremities of the branches, with very small footstalks.

NO. 50. SEEK NO FURTHER.

This apple is a native of one of the Eastern states; it is a large fruit, of a round but oblong form, the skin smooth, of a yellowish green colour; the flesh yellow, juicy, rich and tender; an agreeable early winter apple: the tree bears well, the trunk straight and tall, shooting its branches upwards in a handsome and regular form.

NO. 51. SCRIVENERS RED.

Is a handsome and fair apple—the colour a bright red, with faint red streaks, and small white spots—in appearance, resembling the wine-sap: the stalk is long, and grows in a deep cavity; the shape oblong, diminishing towards the crown—the flesh is juicy, breaking, and highly flavoured; it ripens in October, and keeps well. It is an admired cider fruit in some parts of the states of Maryland and Delaware.

NO. 52. CIDER APPLE.

The apple propagated under this name, is highly esteemed as a most productive and excellent cider

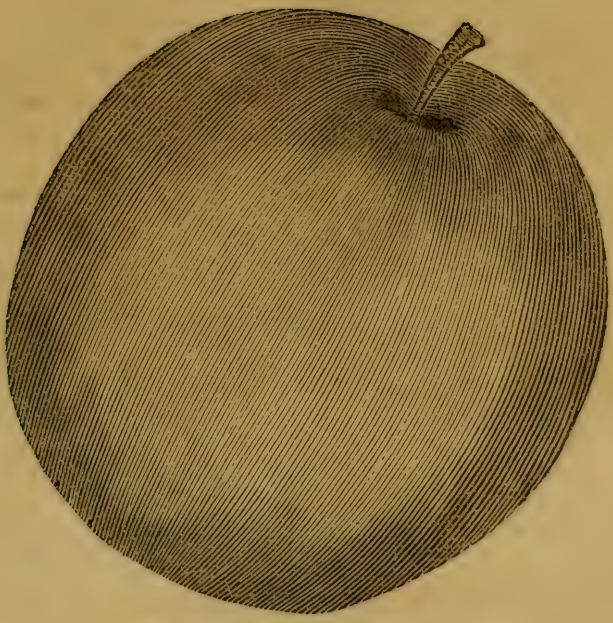
fruit, in the county of Bucks, and the contiguous parts of Pennsylvania: the size is middling, its appearance resembles the Vandervere—the skin is smooth, a lively streaked red—it is a pleasant table fruit, but is chiefly used for cider. The tree is tall, the limbs shoot upwards; it is sometimes loaded with fruit beyond any other tree in our orchards, requiring great care to prevent the branches being destroyed by the weight of fruit. It ripens in October and November.

NO. 53. CANN APPLE.

This apple is cultivated in West-Jersey as a fine cider fruit; it takes its name from the peculiarity of the shape, which resembles a cann---in form, it approaches to a cone---the size is moderate, the colour an olive green, with a portion of red in the cheek next the Sun: the skin is dotted with faint spots, and towards the blossom end inclines to a brownish red; the stem is of ordinary size—the flesh white and sweet—the tree is of thrifty growth, with a spreading form.

NO. 54. ROMAN STEM.

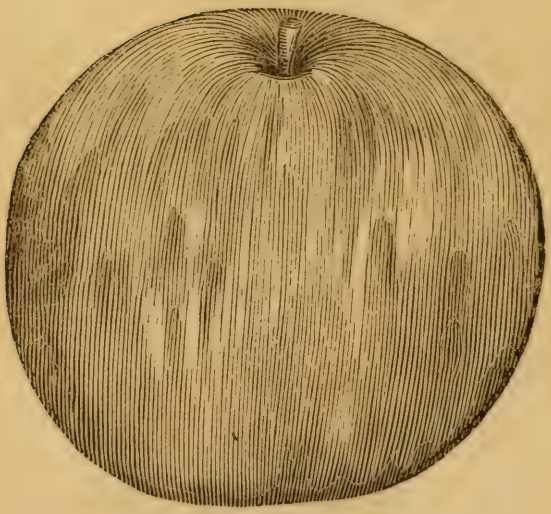
This apple was first propagated in the neighbourhood of Burlington New-Jersey, where the original



No. 49. French Violet.

No. 50. Seek no further.

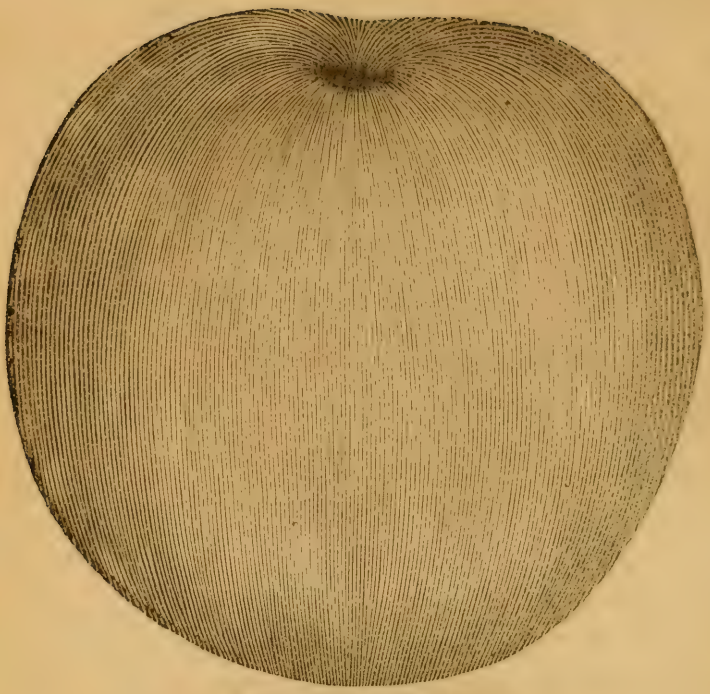
No. 51. Scriveners Red.



No. 52. Cider Apple.

No. 53. Cann Apple.

No. 54. Roman Stem.



No. 55. Cathead.

No. 56. Newark Pippin.

tree is now standing. It is an excellent early winter fruit, much admired for its tender, mild, juicy, and agreeable properties; the size is small, the form round, the stalk of singular appearance, from a fleshy protuberance of the neighbouring part, resembling an aquiline nose, whence the apple derives its name—the skin is rough, the colour yellow, with black clouds and spots—the tree is of handsome and vigorous growth, with long shoots, and great fruitfulness: it is in every respect deserving of extensive cultivation.

NO. 55. CATHEAD.

This is a very large round apple; flattened at the ends, and deeply hollowed: the stalk is short and thick, so deeply sunk as to be almost imperceptible—the colour a greenish yellow, the flesh white: a good apple for cooking and drying, but apt to drop from the tree from its great weight, and deficient in point of richness and flavour.

NO. 56. NEWARK PIPPIN.

Called the French Pippin in East-Jersey; and in other places denominated the yellow Pippin: this apple, on young trees, is sometimes large; it is usu-

ally above the middling size: the form is oblong—full, even, and fair, hollowed at both ends—the skin has a greenish cast, turning yellow when fully ripe, with clouds of small black dots—the flesh is firm, very rich, juicy, and highly flavoured; in taste and colour like the yellow flesh of a pear: it is the finest early winter apple of the middle States, and continues in full perfection until the maturity of the Newton Pippin; it is also a much admired cider apple, and an abundant bearer, but apt to drop early in the autumn: the tree is of an irregular growth, the branches crooked and drooping, requiring great attention to pruning, which, when properly done, may be made conducive to the improvement of the natural growth—its excellence will remunerate any expense in rearing the tree, in the best form to promote its growth.

NO. 57. CUMBERLAND SPICE.

This apple was brought from Cumberland county New-Jersey: It is a fine fall and early winter fruit for the table—the size is large, the form rather long, lessening towards the point; the colour a pale yellow; the stalk short and thick, with a small cavity around it; the flesh is remarkably white, tender, and easy of digestion; the pericarpium large and hollow; the skin full of clouds of black dots near the stem, apt to

shrivel after keeping some time; the trees are thrifty and fruitful.

NO. 58. BROWNITE.

A fine table apple in the beginning of winter, and much esteemed for cooking from September till February, when it becomes mealy: it is rather a small apple, the form inclining to an oblong, a little pointed towards the crown—the stalk long and slender, the flesh tender, delicate and sprightly, resembling the Pearmain in flavour and crispness. This fruit was brought from the neighbourhood of Wilmington in the state of Delaware, where it is propagated under the name also of Browns winter; the tree is of regular growth, with a handsome form, and spreading branches.

NO. 59. AUNTS APPLE.

This is a beautiful and large apple, of an oblong make, resembling the Priestly in shape—the skin smooth, streaked with a lively red, on a yellow ground: the flesh is yellow, breaking, and juicy; of an agreeable flavour, but not rich—it ripens in November, and from its handsome appearance, is a val-

nable market fruit: the tree is small, the growth delicate, and its fruitfulness great. It is extensively cultivated in several of the Eastern counties of Pennsylvania.

NO. 60. FENOUILLET JAUNE, OR YELLOW FENOUILLET.

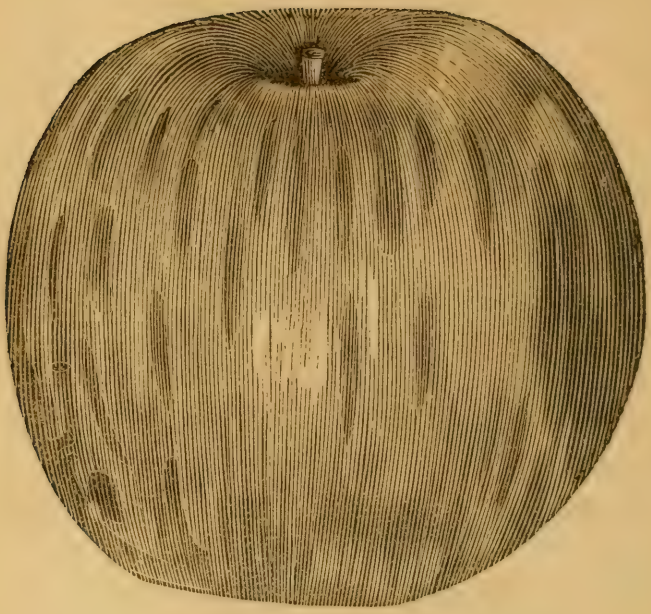
This is a small apple, the form is round, the stem short, the ends not much sunk—the skin is rough, a yellowish fawn coloured russet; the flesh of a yellow cast, tender, sprightly, and pleasant—it ripens in November and keeps well.

NO. 61. WHITE CALVILLE.

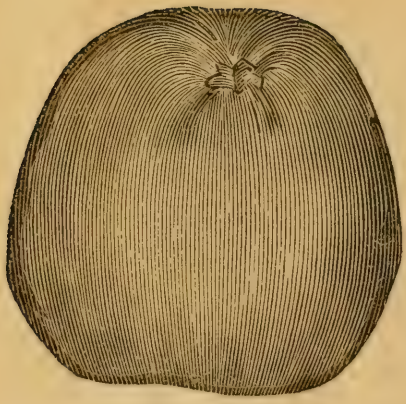
This is one of the most admired French table apples, and is highly esteemed for cooking: the size is large, the form flat, the skin smooth; the colour a pale yellow, with a faint blush—the flesh is white, tender, light and large grained; the juice lively without acidity: the axis of the fruit is hollow, surrounded by five large seminal lodges, resembling, when cut transversely, the figure of a star—when ripe, the seeds may be heard to rattle: the stalk is small and of middling length, the ends not very deeply indented—the growth of the tree large, vigorous and spreading; it

No. 60. Fenouillet Jaune.

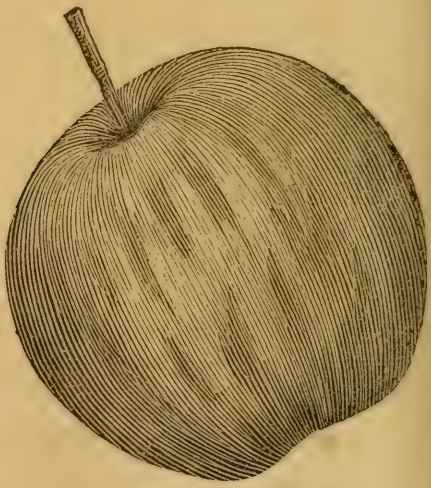
No. 57. Cumberland Spice.



No. 59. Aunts Apple.



No. 64. Golden Pippin.

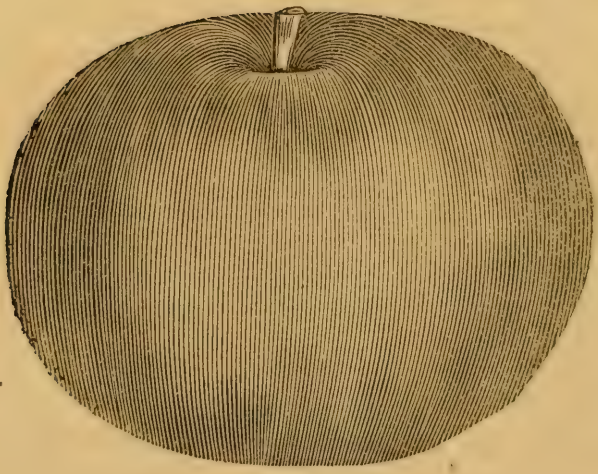


No. 58. Brownite.

No. 61. White Calville.

No. 62. Red Calville.

No. 63. Redling.



No. 65. Quince Apple.

bears abundantly—the fruit ripens in October, and keeps through the Winter.

NO. 62. RED CALVILLE.

The size of this apple is about middling; the form rather round, flattened at the stalk—the stem short and thick; the skin smooth; the colour dark, covered with a white down, which, when rubbed off, leaves a clear and almost black red: the flesh white, sprightly, and juicy, but not rich—it ripens in November, and keeps well through the Winter.

This apple is much celebrated for its excellence by the French writers, but does not appear in this country to merit so high a reputation as it has acquired in France; its greatest merits are those of bearing abundantly, and keeping well.

NO. 63. REDLING.

The Redling is a fine winter apple, remarkable for keeping late in the spring in high perfection; the size is about middling, the form is oblong, the colour a lively red with small distinct white spots; the skin fair and smooth, with the appearance of a Priestly.

The growth of the tree is very peculiar, with hanging limbs resembling suckers.

NO. 64. GOLDEN PIPPIN.

This apple possesses the highest reputation in England, as a fine winter, table, and cider fruit: the size is very small, the form rather flat, the skin rough, the colour a deep rich yellow, mixed with russet—the flesh yellow, rich, and sprightly: the tree is small, the branches short, the growth delicate; and by Mr. Knight in his treatise on orchards, is said to succeed best on sandy soils. There appears to be some justness in a remark of English writers, that the climate of England is peculiarly favourable to this apple—in this country it does not rank very high in the scale of good apples; this may proceed from climate in some degree, but it is, I apprehend, more to be ascribed to the long duration of the variety, which, in its native soil, is supposed to have diminished the excellence of its flavour and the vigour of its growth.

NO. 65. QUINCE APPLE.

The tree is of large and vigorous growth—the size of the apple is large; the shape flat; the skin, when

fully ripe, is yellow; the flesh rich, yellow and juicy—in appearance, it somewhat resembles a large yellow Newton Pippin. It came originally from the state of New-York—ripens in November.

NO. 66. ORANGE APPLE.

This is a fine table fruit in the fall and early winter months; and is thought to be a good cider fruit: the size is small, the form oblong—the colour a greenish yellow—the flesh yellow, rich, juicy, and sprightly; the tree is of moderate size, the growth upright, and its fruitfulness great. It is much cultivated in several of the middle counties of New-Jersey as a highly estimable apple.

NO. 67. BLACK APPLE.

The size is below middling; the form round, but flat at the ends, the stem half an inch long, planted deep, the crown not much hollowed; the skin smooth, of a deep red—approaching to blackness, with a down which obscures its brightness till rubbed off: the flesh is yellow, rich, juicy, crisp, and well tasted—it ripens in November, and is much admired as a fine table fruit, which keeps well—the tree is of moderate size, the

growth spreading, with drooping limbs—it is a great and constant bearer.

NO. 68. ROYAL RUSSET, OR LEATHER-COAT.

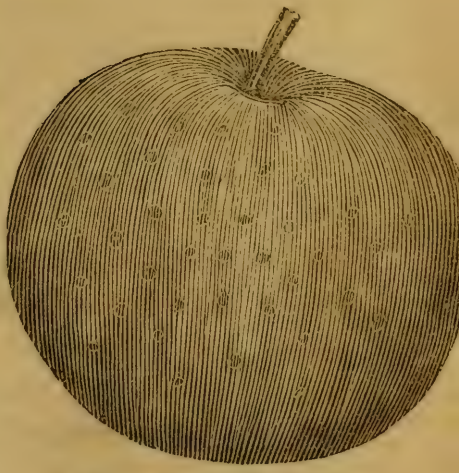
This is an apple of moderate size, and of a flat form—when ripe, the side next the Sun is a rich red, intermixed with russet, with spots of white: the flesh is well flavoured, sprightly, and tender; the stem short and thick, with small swellings in the surrounding parts—it is a fine cooking apple, keeps well and bears abundantly. It was imported from England, where it is highly esteemed as a valuable winter apple.

NO. 69. ROSE APPLE OF CHINA.

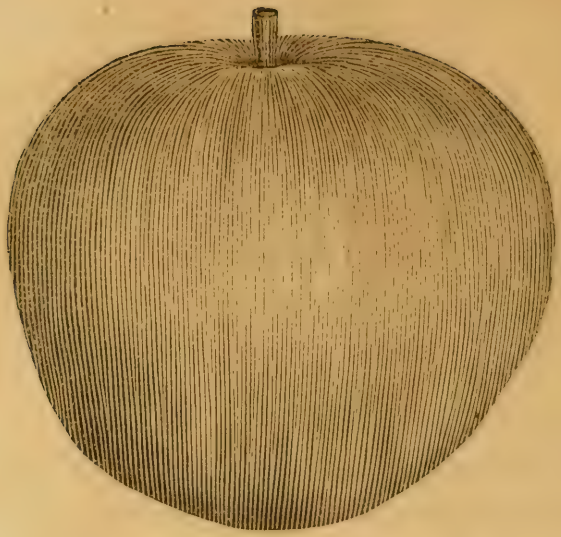
Is a handsome large apple, of a form rather oblong, somewhat diminished towards the crown—the ends but little hollowed—the stalk is short and thick: the skin is smooth, streaked with red and green—it is a pleasant and juicy table fruit, without much flavour: the time of ripening is october; the tree grows vigorously, in a handsome and upright form, and bears abundantly. I imported this apple from England.

No. 68. Royal Russet.

No. 66. Orange Apple.



No. 67. Black Apple.

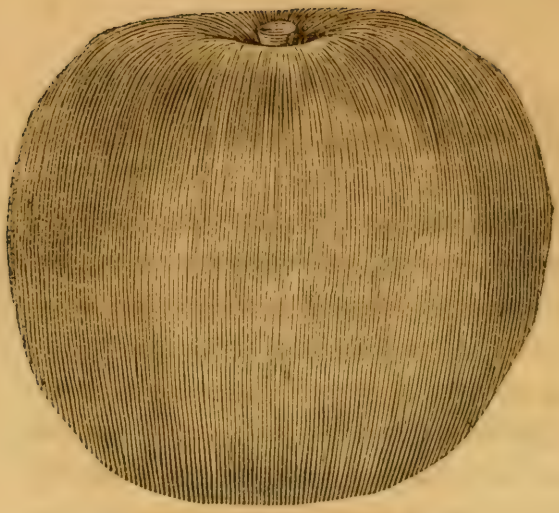


No. 69. Rose Apple of China.

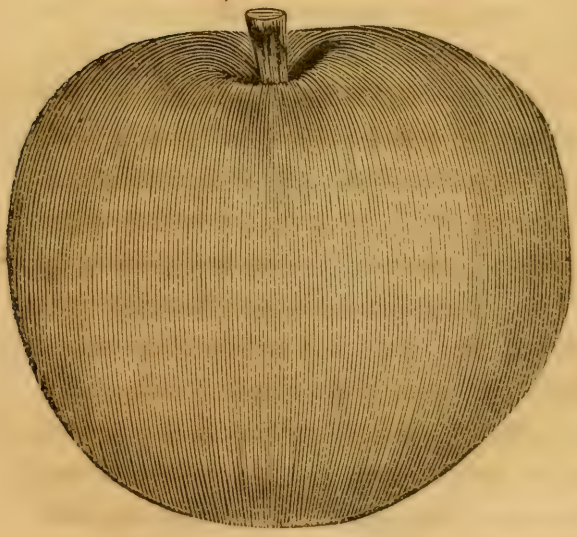
No. 70. Sweet Pippin.

No. 71. Vandervere.

No. 72. Yellow Newton Pippin.



No. 73. Green Newton Pippin.



No. 74. Michael Henry Pippin.

NO. 70. SWEET PIPPIN.

Is a large fair flat apple; its shape horizontally is rather elliptick than circular: the colour is a brownish red, with a mixture of a small portion of greenish yellow, somewhat resembling in appearance the grey-house—the stalk is short and deeply planted in a large cavity—the crown is much sunk; the flesh firm and solid—it is a sweet apple, rather dry, and deficient in flavour—the tree bears abundantly.

NO. 71. VANDERVERE

This apple is sometimes called the Staalcubs, from a family in Delaware State, by whom it was cultivated; it is of moderate size, and when growing on a highly cultivated light rich soil, is a much admired fruit for culinary purposes: it is a tolerable eating apple, and when free from the bitter rot, makes good cider—it is a winter fruit, but can be used for cooking very early, when quite green, and not half grown. The form is flat; when ripe, the skin is a pale red, with rough yellowish spots, and some clear yellow; the flesh is rich, yellow, sprightly, and tender---lime is said to be useful in destroying the bitter rot to which this apple is very liable---the trees in good ground

attain to a large size, and are great bearers—a pint of the juice of this apple, weighs eleven penny-weights more than water.

NO. 72. LARGE YELLOW NEWTON PIPPIN.

This is in most of its varieties the finest apple of our country, and probably of the world. It varies much in quality, with soil, aspect, cultivation, climate and age: although peculiarly adapted to strong high ground, it may be raised in great perfection on all good wheat and clover land—the better the soil, the finer will be the fruit; for the growth is not vigorous, and in every soil the bark has a rough appearance—the form is rather flat, the size large, the skin a greenish yellow, with black clouds, and frequently with red spots or blotches—the ends are hollowed, the stem short, the flesh rich, yellow, juicy, breaking and highly flavoured; it ripens in November, and is often kept till May and June—it is a superior table fruit, and an excellent kitchen and cider apple—it will produce fine apples on even a light sandy soil, aided by the application of river or meadow mud as a manure, two or three cart loads to a tree. The tree does not arrive to maturity until twenty or twenty-five years, the cider produced from it is highly flavoured, but not so strong as many other kinds.

NO. 73. GREEN NEWTON PIPPIN.

This is a variety of the preceding kind—although I could never perceive a difference in the trees, there is certainly a perceptible one in the fruit. The Green Pippin is rather more oblong in form, the skin is green, and smoother, the flesh whiter, crisper, and more juicy—I have eaten them in high perfection, raised in some of the Patowmack counties of Virginia, and from trees growing in New-York, New-Jersey and Pennsylvania—when produced from trees advantageously situated, and well cultivated, they are every where the finest apple in our orchards, very far superior to all other kinds for exportation: in productiveness, they are surpassed by no apple of any season—they are the fairest and freest from rot of any highly flavoured apple we have.

NO. 74. MICHAEL HENRY PIPPIN.

This is a large fair apple, of a handsome oblong shape, flat at the stalk end, diminishing towards the crown: the colour when ripe is a lively yellow; the flesh is very tender, and when in perfection, it is juicy, highly flavoured, rich, and melting; of a yellow colour: the time of ripening is in November—it keeps well

through the winter. The tree has a handsome regular form, and strong growth, the limbs running straight, with an inclination upwards, what is usually called beesom-headed—it derives its name from a resident of Monmouth county, New-Jersey, by whom it was brought into notice.

NO. 75. LONG-ISLAND PEARMAIN.

A handsome large apple, of an oblong form, about the size of a Priestly—the stem is short, not deeply planted; the crown large and hollow; the skin streaked with large blotches of red on a rich yellow ground, with faint russet spots—the flesh is tender, coarse and pleasant, partaking of that dryness characteristick of all the varieties of the pearmain—it ripens in October, and keeps till March.

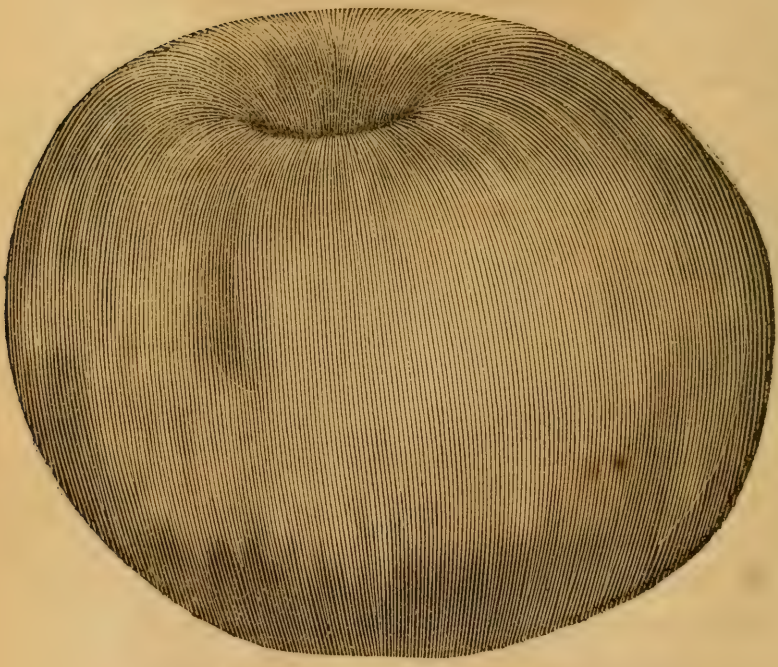
NO. 76. WOODS GREENING.

This apple is of medium size—the colour a pale green—the form resembling a Newton Pippin, but more pointed at the blossom end—the skin smooth, the flesh white, juicy, and sprightly—an excellent winter fruit—the stem is thick and short, and deeply planted—the crown hollow; a very abundant bearer.

No. 75. Long-Island Pearmain.

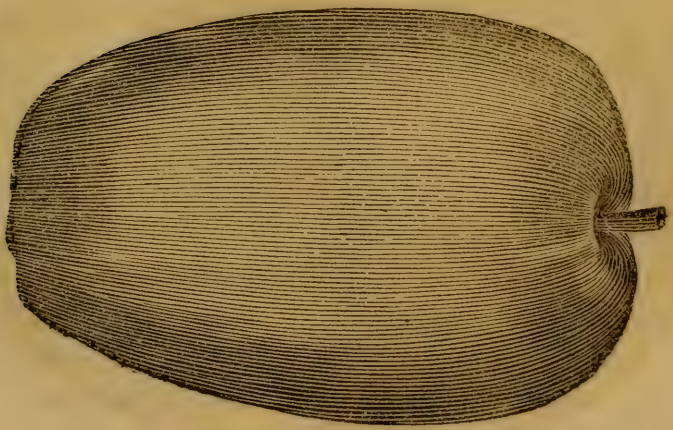
No. 76. Woods Greening.

No. 77. Reinette Grise.



No. 78. Pennock.

No. 79. Priestly.



No. 80. Lady Finger.

No. 81. Winter Queen.

No. 82. American Pippin.

It was first cultivated by a family in the county of Burlington New-Jersey, from whom it derived its name—it is sometimes called Coate's Greening, from another family in the same county.

NO. 77. REINETTE GRISE.

This is described as an apple of superior excellence by the French writers, but does not in this country appear to merit so high a character—the size is below middling—the form flat, with a small hollow at each end—the skin thick and rough, with some russet: sometimes it is a bright yellow, with some red in spots: the flesh is firm, and of a yellowish white—the juice abundant, sweet and sprightly. It ripens in the beginning of winter, and keeps late in the spring.

NO. 78. PENNOCK.

A very large, fair, red apple, much admired as an early winter fruit; the form is singular; when standing on its end, the axis of the fruit inclines twelve to fifteen degrees from a perpendicular line—the shape varies, but is generally flat—the skin a deep red, with small indistinct streaks of dull yellow, and small black clouds and light spots on the side next the sun;

the flesh is rich, yellow, tender, juicy, and sweet: the tree grows very large—the form regular, spreading finely, with great beauty, equal to any trees in our orchards: it is a great and constant bearer, and keeps well, and is a popular apple in the Philadelphia market. It obtained its name from a family in Pennsylvania who first cultivated it.

NO. 79. PRIESTLY.

This apple is said to be a native of the county of Bucks in Pennsylvania, where it was first cultivated by a person from whom it has obtained its name. The tree has a handsome, upright form, vigorous growth, and large leaves; it is well suited to light soils—the fruit is large, of an oblong form— the skin smooth, the colour usually a dull red, streaked faintly with green, with spots of the same colour: the flesh is white, has a pleasant spicy taste—it is an excellent table and kitchen apple; hangs late on the tree; is an abundant bearer, and makes good cider late in the season, but not of the first quality.

NO. 80. LADY FINGER, OR LONG PIPPIN.

The form is oblong and pointed towards the blos-

som end, more remarkably long than any apple I have seen—the skin is a greenish yellow; the flesh pleasant, but much inferior in flavour to the Newton pippin; it is an early winter fruit: does not keep well, but is an abundant bearer: the tree is of very delicate growth, with small limbs.

NO. 81. WINTER QUEEN.

This is a very showy fruit; above the middling size; of an oblong form, diminishing towards the blossom end: the skin is smooth, of a lively bright red streaked with yellow—the taste is pleasant, but without any of the fine flavour of a very good table or cider apple: the form of the tree is upright and tall, shooting out straight limbs—it is an abundant bearer; the time of ripening is November.

NO. 82. AMERICAN PIPPIN.

This apple is in very high reputation, both for cider and for keeping till very late in the spring, often till Harvest. The shape is flat, without any hollow at the ends; the stem singularly thick and fleshy; the crown very large, the skin a dull red, with faint yellow spots, and a portion of dull green; the flesh hard

and white; the tree is of a growth remarkably spreading, with hanging, crooked shoots, and very open. It makes cider nearly equal to the Grey-House: I am informed by an intelligent and experienced farmer, that fourteen bushels of this apple are required for a barrel of cider. In the season of bearing, it produces abundance of sound and fair fruit.

NO. 83. HARRISON.

This is the most celebrated of the cider apples of Newark in New-Jersey: it is cultivated in high perfection, and to a great extent in that neighbourhood, particularly on the Orange mountain; the shape is rather long, and pointed towards the crown—the stalk long; hence it is often called the long stem—the ends are deeply hollowed; the skin is yellow, with many small but distinct black spots, which give a roughness to the touch: the flesh is rich, yellow, firm and tough; the taste pleasant and sprightly, but rather dry—it produces a high coloured, rich, and sweet cider of great strength, commanding a high price in New-York, frequently ten dollars and upwards per barrel when fined for bottling. The trees are certain bearers; the apples fall about the first of November; they are below the middling size, remarkably free from rot; ripen at that time, but will keep well when

housed. The tree is of strong and vigorous growth, throwing out numerous suckers from the limbs—the wood is hard—ten bushels are required for a barrel of cider—one barrel will produce fourteen quarts of distilled spirits: it obtained its name from a family in Essex county New-Jersey, where it originated, and is very extensively cultivated. One tree of this kind this year, in an orchard in Essex county, produced upwards of 100 bushels, 87 of which were gathered when fully ripe, the others were fallen fruit, carefully measured to ascertain the quantity.

NO. 84. CAMPFIELD, OR NEWARK SWEETING.

This apple is next in reputation as a cider fruit to the Harrison; and is usually mixed with that apple in equal portions when ground: the size is middling, the skin is smooth and red, with small indistinct yellow spots, the side from the sun a greenish yellow: the flesh is white, firm, sweet and rich; the form is round, flattened, and somewhat sunk at the ends—the cider is very strong and highly flavoured, yielding fourteen quarts of spirit from a barrel—the price of the cider, about a dollar per barrel less than the Harrison. The form of the tree is tall, with straight limbs, inclining upwards; the size large, the growth very vigorous, the wood hard, and of uncommon fruitfulness;

it is esteemed the most profitable apple produced in the Eastern counties of this State, where it was originally cultivated, and derived its name from a family resident in that part of the country.

NO. 85. GRANIWINKLE.

This apple is of moderate size, in form rather oblong—the skin a dark red, somewhat rough—the flesh a dead sweet, very rich, of a yellow colour. The cider produced from this apple, resembles a sirup in its taste and consistence—it originated in one of the Eastern counties of New-Jersey, and obtained its name from a farmer who first cultivated it: it is usually mixed with the Harrison for making cider of a superior quality—it ripens in the month of November.

NO. 86. HEWES'S VIRGINIA CRAB.

This apple is of very small size; the form nearly round, the stem long and thin, the skin a dull red, mixed with faint streaks of greenish yellow, and numerous small white spots. The juice, although acid and austere to the taste when mixed with the flesh, becomes sweet and highly flavoured when expressed from the pulp in the perfect maturity of the fruit: the flesh is

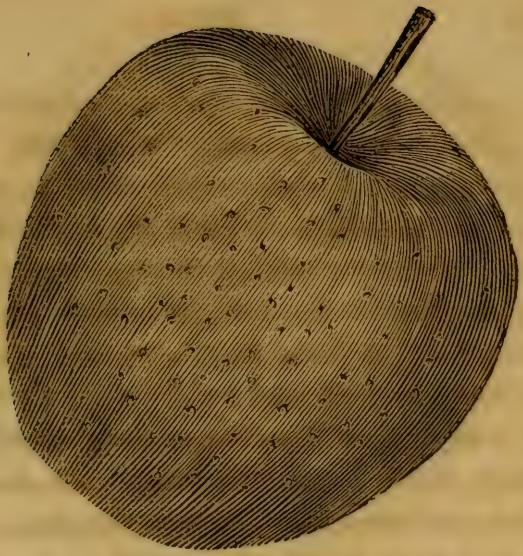
singularly fibrous and astringent; in pressing, it separates from the liquor, which runs through the finest flannel like spring water; in this state it may be transported a great distance to the cellar of the dealer, before the commencement of the fermentation—it is not practicable to express the juice sufficiently from the pomace, in one operation of the press; it is therefore usually returned to the vat, and serves to make water cider of a very superiour quality---my own practice is, to mix the crab pomace in the vat with that of strong rich cider apples, which makes an improved liquor, by being strained through and absorbing much of the fine liquor of the crab. The tree is of small size, the leaves, though small, are of luxuriant growth—the wood hard and tough, never breaking with the load of fruit usually produced every second year—such is the hardiness of this fruit, that in its bearing year it resists the frosts which frequently cut off our other apples: the origin of this apple is satisfactorily traced to Virginia, where trees nearly one hundred years old, are now standing in the orchard of a respectable inhabitant of that State, from whom I obtained the information. The size of the fruit may be increased by liberal manuring and good cultivation—I have hauled from one to three and four loads of meadow or river mud round many hundreds of my trees, with the best effect, in the increase both of the size and quantity of the fruit.

NO. 87. ROANES WHITE CRAB.

This apple I procured from Colonel John Roane of Virginia—the original tree was discovered a wilding on his Estate, in the year 1790. In growth it resembles the Hewes's crab; the leaves being very delicate, the wood hard, and the size of the tree small; it is an early and great bearer every second year: the apple is very small, not larger than the Hewes's crab; the form is round, the stalk thin, the skin yellow, with a small portion of russet about the stem, and spots of red scattered over it: the flesh is rich, dry, and of a musky sweetness; rough to the taste, from its astringent and fibrous properties, and leaving the pomace undissolved after pressing: the liquor is remarkably strong, of a sirupy consistence when first made, but becoming singularly bright by proper fermentation and racking. It will keep perfectly sweet in casks well bunged, and placed in a cool cellar, through our summer months: the fruit ripens in September and October, and may be kept without rotting for late cider.

NO. 88. GOLDEN RENNET.

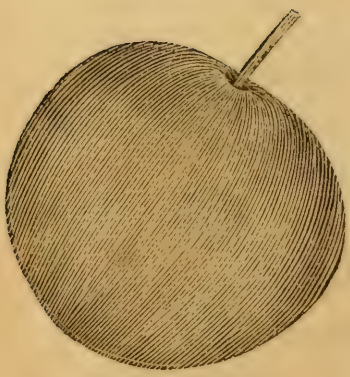
This apple was originally imported from England.



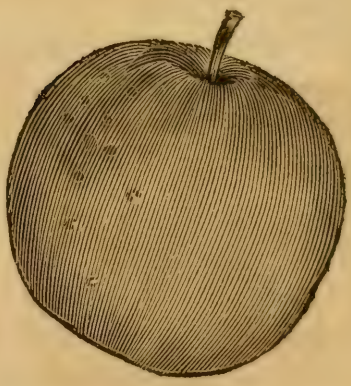
No. 83. Harrison.

No. 84. Campfield.

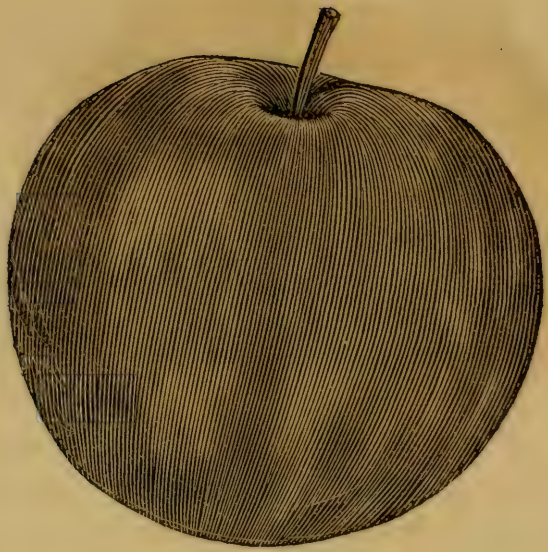
No. 85. Graniwinkle.



No. 86. Hewes's Crab.



No. 87. Roanes white Crab.



No. 89. Winesap.

No. 93. Yellow Everlasting.

No. 88. Golden Rennet.

No. 90. Greyhouse.

No. 91. French Crab.

It is an excellent fruit for late cider: the size is small, the colour yellow, the skin covered with bright russet, rough to the touch; the flesh is rich, yellow, and highly flavoured; it ripens about the first of November: the tree is large, handsome, and spreading, and an abundant bearer.

NO. 89. WINESAP.

This is one of our best cider fruits, and is much esteemed as a good eating apple: the size is middling, the form round, lessening a little towards the crown: the skin is smooth, the colour a dark red, with a small portion of yellow, and sometimes a few streaks—the flesh is rich, yellow, and tolerably juicy, pleasant, and sweet; the cider produced from it is vinous, clear, and strong; equal to any fruit liquor of our country for bottling. The apples hang late, and make good cider without housing; they will however repay all the expense of complete maturation in an airy loft, by the increased flavour of the liquor—the tree is well adapted to light soils: of 100 trees I planted on a sandy blowing knoll eight years ago, and well cultivated, not one has died—every tree bears fine fair apples; it is becoming the most favorite cider fruit in West Jersey. The form of the tree is irregular, the branches often grow downwards, and render it difficult to train

in a handsome shape; it bears more uniformly than any fruitful kind with which I am acquainted.

NO. 90. GREYHOUSE.

The Greyhouse, is thought to be the finest cider brought to the Philadelphia market, by the generality of the admirers of that liquor, with the exception of the Crab: in my own opinion, it does not surpass the Winesap, when well made—the form of the fruit is round, the size middling, a plump smooth skin of a dull red, mixed with faint streaks or blotches still more dull—the flesh is firm and dry, without much indication of its excellence in taste or smell: the cider when first made, is of sirupy richness; of great strength; and when well fined, of peculiar delicacy and purity. The tree is by no means hardy—nor is it a regular bearer, although it sometimes produces abundantly—one of the finest orchards of this fruit, stands on a sub-soil of river mud; meadow and river mud have been found highly efficacious in promoting its growth. The fruit hangs late, and makes excellent cider without housing—the must is very heavy, next in weight to that of the Coopers Russeting, which weighs twentyfour dwt. per pint more than water.

NO. 91. METOISEE,' OR FRENCH CRAB.

Is a fair red apple of middling size; the skin is smooth, streaked with a dark shade of red, mingled with yellow—the form is oblong, the blossom end is full of yellow spots, the flesh is rich, juicy and well flavoured; a fine baking apple, and keeps remarkably well. The tree is of moderate growth and regular form, the foliage dark and luxuriant—the fruit hangs on the tree very late in the fall.

NO. 92. CARTHOUSE, OR GILPIN.

This apple is said to have been brought from Virginia—it obtained its name from a family in the Delaware State. It is highly esteemed for its excellence as a table apple late in the spring, and as a good cider fruit: it is a most abundant bearer, and hangs on the tree very late in the season; the tree is hardy, of a handsome, open, spreading, and vigorous growth—the fruit is small, the colour a deep red, sometimes a little streaked with yellow—the skin of a polished smoothness; the form inclining to an oblong: the flesh is very firm, yellow, and rich, not fit for eating until mid-winter, when it becomes juicy, tender, and finely flavoured.

NO 93. YELLOW EVERLASTING.

This apple was obtained from Long island: it is a small round fruit, with a pale yellow skin, clouded with black spots—the flesh close grained, with a yellow cast, hard and deficient in flavour—it hangs on the tree very late, and may be preserved till the following autumn: this is its greatest excellence, for it is deficient in all the other requisites of a fine apple, although much sought for as a rare and curious fruit.

NO. 94. TEWKSBURY WINTER BLUSH.

This apple was brought from the township of Tewksbury in Hunterdon county, New-Jersey—it is a very handsome fair fruit, with more flavour and juiciness than is to be usually found in keeping apples; I have eaten them in good condition in August of the second year, preserved without particular care, perfectly plump and sound. The size is small; the form round; the skin smooth: the colour yellow, with a bright red cheek—the flesh yellow, tolerably juicy, and well flavoured, with a considerable degree of sprightliness: the tree is of vigorous growth, straight, and well formed—the fruit hangs late in the autumn.

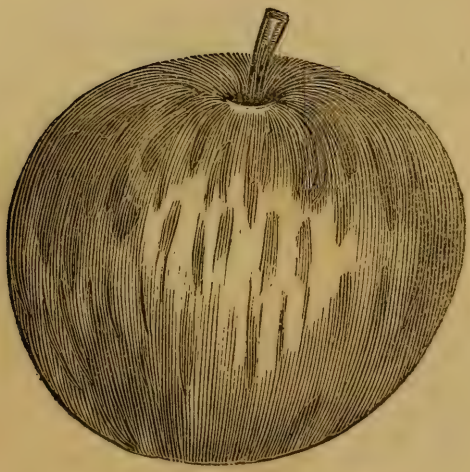
No. 92. Carthouse, or Gilpin.

No. 94. Tewksbury Winter Blush.

No. 95. Redstreak.

No. 96. Coopers Russeting.

No. 97. English Nonpareil.



No. 98. Father Abraham.

No. 99. Courpendu.

No. 100. Fearns Pippin.

NO- 95. REDSTREAK.

This tree was originally brought from England, where it possessed a high reputation as a cider fruit; it has been cultivated extensively in this country, by the descendants of the English settlers in New-York, New-Jersey, and Pennsylvania. The climate of America is supposed to have revived the character of this apple, which had deteriorated in its native soil, from the long duration of the variety—the fruit is rather small; the form is oblong, flattened at both ends, the stem and crown both sunk—the skin is red, faintly streaked and spotted with yellow—the flesh is yellow, rich, firm, and dry; it hangs late, and requires to be matured by housing to make the finest cider. The character of the cider, when properly made and fined, is very high, both for strength and flavour—the apple keeps well through the winter, and is much esteemed as an excellent kitchen fruit in the latter part of winter. The tree is of handsome, regular growth, and a great bearer: the opinion of dealers is, that this cider is difficult to fine fit for bottling: when perfectly cleared, it ranks among our first fruit liquors.

NO. 96. COOPERS RUSSETING.

This apple was first propagated from an antient tree in the possession of Mr. Joseph Cooper of Gloucester county, New-Jersey, who supposed it to be of Indian origin—of this fact, strong doubts are entertained. The apple is small, of a pale yellow colour, mixed with russet; the form is oblong, diminishing towards the crown; the stem is singularly long and thin; the flesh is dry, rich, and sweet: the fruit hangs till about the first of November, it keeps well through the winter, and is an economical kitchen apple, requiring but little sugar. The cider is thought to be the strongest in our country: it is, when first made, of a sirupy consistence, continues so through the winter, and is sometimes difficult to fine—it is when properly managed, a most exquisitely flavoured and vinous liquor—the must is uncommonly heavy, weighing twenty-four penny-weight in the pint heavier than water: the tree is of small and irregular growth, the branches shoot in every direction, and the wood being brittle, is apt to be broken from the weight of fruit: this fault may be remedied in a great degree, by pruning the lateral, and promoting the growth of the perpendicular shoots. The tree suits light rich soils, in which it grows vigorously, and bears abundantly.

NO. 97. ENGLISH NONPAREIL.

This apple is about the middling size; the form is flat; the skin rough, of a dull green, partaking of a small portion of russet, mixed with black clouds and spots: the flesh is rather dry, has a sprightly taste, but does not appear to be so highly flavoured in our climate as in England, where it is thought to be their finest table fruit—the tree is of a straight and upright form; regular growth, and great fruitfulness—it ripens in November, and keeps through the winter.

NO. 98. FATHER ABRAHAM.

This is a small apple of a flat form; the skin is red, with spots and blotches of red, with a little yellow; the texture very thin and tender—the flesh is tinged with red next to the skin—is white, breaking, and juicy; of an agreeable taste though not rich: it is an early winter table apple, and will keep till April. In Virginia, whence I procured it, it is much esteemed, and extensively propagated.

NO. 99. COURPENDU.

This is a small apple imported from France—the form is rather oblong, with deep furrows about the crown, which is a little diminished—the stem is long and deeply planted: the skin is a dull red, dark towards the sun, with fawn coloured spots sunk in the skin; the flesh is inclined to yellow, of a sprightly and agreeable taste—it somewhat resembles the Pearmain in appearance, and keeps well through the winter: the tree is vigorous, spreading, handsome, and fruitful.

NO. 100. FEARNS PIPPIN.

This apple was imported from England: its colour is a beautiful scarlet next to the sun, paler on the other side, clouded with dark red streaks, and mixed with small white spots—the size is small; the form flat; it ripens in October, and will keep till February: in England, it is an admired table fruit, but is inferior to many of our fine winter apples. The tree has a handsome form, and grows tall and straight.

NO. 101. SWAAR APPLE.

In the Low-Dutch language this name signifies a heavy apple—it is a highly celebrated winter table fruit in some parts of New-York, and New-Jersey; it is a large green apple, of great and uncommon flavour and richness; highly deserving of cultivation, in every collection of fine fruits.

In addition to the preceding selection, I have (growing in my orchards) a considerable number of apples which have been highly recommended by the taste, or partiality, of those who have cultivated them; and some which are spoken of by European writers in such favourable terms, that I was induced to incur the expense of importing them from England and France. Some of them are estimable fruits; others do not appear to justify the praises which have been bestowed upon them. The following kinds are among them.

NO. 102. HARVEST APPLE.

This is a small fruit of an oblong form; the skin a bright yellow, rather rough: the flesh white, without much flavour or juice, but pleasant and sprightly: ripens in July.

NO. 103. PRINCES LARGE RED AND GREEN SWEETING.

When full grown, it weighs a pound; the form is oblong and pointed towards the crown; the stalk short, and deeply planted; the skin red, streaked on a yellow ground; the flesh sweet and tender: it ripens in September.

NO. 104. GRUBS SUMMER.

A pleasant apple ripening in July: the skin green, streaked with red—the form rather oblong—the flesh not very highly flavoured, and rather dry.

NO. 105. YELLOW DOCTOR APPLE.

Is a very fair fruit, above the middling size; the

form long—the flesh white, firm and juicy—of a pleasant taste: it bears abundantly, ripens in September. I have found the tree to be deficient in hardiness, subject to a cracking of the bark on the south-west side, which has uniformly destroyed it, after a few years of great fruitfulness.

NO. 106. CHILI APPLE.

The size is very small; the form oblong—the skin is red, streaked with yellow; a red cheek towards the sun—the stem long; the flesh firm, rich, sweet and juicy—a pleasant eating apple: it ripens in October; is cultivated near Philadelphia.

NO. 107. BELLFLOWER OF BRENT.

The size rather small; the form flat; the skin red, somewhat streaked towards the crown; the stem short and deeply planted; the flesh firm, yellow, rich, and juicy: it ripens in October: the tree is remarkable for putting forth its leaves late in the spring.

NO. 108. THE POMPION.

Is a large greenish yellow apple; ripens in the fall, and by most cultivators prized more for its size, than any remarkable excellence of its qualities.

NO. 109. PIGEON.

Imported from France: it is a species of the Reinette—a very fair apple, of middling size; the form round—the skin yellow; rough, with small dots: the flesh rich, firm, and sprightly—it ripens in November, hangs well, and keeps late: the growth of the tree tall and upright.

NO. 110. NEW ENGLAND SWEETING, OR MOLASSES APPLE.

The form oblong, much resembling the Red-streak; the colour a yellowish green, with light faint spots—the flesh firm, rich, and sweet; ripens late—the tree handsome and upright.

NO. 111. EVESHAM RUSSETING.

This is a very valuable apple for house use and cider; the size is large—it ripens in October.

NO. 112. DUMPLING APPLE.

Is a large red and green streaked apple—the form oblong; the skin smooth; the flesh a greenish white; juicy, tender, and pleasant, but not highly flavoured—the tree large, and of luxuriant growth: time of ripening is in September.

NO. 113. BAR APPLE.

A large, fine, fair apple; slightly tinged with red next the sun: it is of white and juicy substance, of sweet and agreeable flavour—an early fall fruit, and keeps well through the winter—cultivated near Mendham in Morris county, New-Jersey.

NO. 114. CATSBURY.

A much admired English cider apple—the size is

small; the form flat; the colour green; the stem short; the flesh firm and dry—it hangs late on the tree.

NO. 115. EVERLASTING HANGER.

A celebrated English cider apple—the skin and shape much resembles the Newton pippin—the flesh rich, juicy, sprightly and well flavoured—the tree straight and upright in growth.

NO. 116. OLIVE.

An admired English table apple; a yellowish green, rough skin, with dark clouds, and a russet cast—the eye large; the stem short; the flesh rich and yellow; with a sprightly taste: ripens in October. It does not appear to bear a comparison with many of our table apples of that season, in beauty or flavour.

NO. 117. PEARSONS PIPPIN.

This is the celebrated Devonshire baking apple, described by Forsyth: the fruit is much like the English Golden Pippin; a rich russet skin; yellow flesh; very dry and rich—the size very small—the tree ap-

pears to be an old variety, deficient in vigour, and much inclined to canker.

NO. 118. HAUTE BONTE.'

An apple of singular form, growing in ridges like a Melon—the size is middling; the skin and flesh yellow, firm, rich, and sprightly; but without any uncommon excellence to recommend it—it ripens in October.

NO. 119. ROUND TOP.

The form is rather oblong; the ends singularly round, resembling a long Bergamot Pear; the stem rather long; the skin smooth; the colour a yellowish green, with a faint blush next the sun; the flesh yellow, firm, and rich; the flavour agreeable—it is a fine table and cider apple, bears abundantly, and keeps well—cultivated in Monmouth county New-Jersey.

NO. 120. EVERGREEN STRIPED CRAB.

Imported from England: it is a small apple, of conical form; the skin green with black clouds; the tex-

ture tough; a faint red next the Sun, and indistinctly streaked; the flesh is tough, dry and acid—it is only used for preserves—it ripens in the autumn.

NO. 121. LOBB.

Is an apple below the middling size—the form is flat; the skin is rough; the colour red streaked with yellow; the flesh rich, yellow, and firm; the taste resembles the Vandervere: ripens in October and keeps well.

NO. 122. EARLY SWEET.

The size is middling: the form oblong; the flesh white, sweet, and tender; it ripens in August. The tree luxuriant and handsome.

NO. 123 WARREN APPLE, OR VARMINS PIPPIN.

Is a large, long, and fair apple; the colour a handsome bright yellow, with red spots; the flesh yellow, tender, juicy, and sprightly—it ripens in November; cultivated in Burlington county New-Jersey.

NO. 124. WOOLMANS LONG PIPPIN.

Is a handsome, fair, yellow, oblong apple, resembling a large Newton pippin—the skin smooth and dotted with red; hollowed at the stem; the flesh white, firm, juicy, and tender; a great and constant bearer, and keeps well in the winter.

NO. 125. RED SWEET.

A very valuable cider apple, cultivated in East Jersey—the fruit is small; the form round: the skin a dull red; the flesh white, firm, and sweet—the tree grows singularly tall and handsome; it ripens in October.

NO. 126. THE SKUNK APPLE.

Is a large flat apple; the skin yellow, with dark red spots, resembling a Newton pippin; the stem short and deeply planted; the flesh rich, yellow, firm, and juicy; a fine early winter table fruit. The name is derived from a nest of that animal found at the root of the original tree, in Middlesex county New-Jersey.

NO. 127. DAVIS APPLE.

This is a very fair apple; the colour a bright russet; the flesh rich and finely flavoured, fit for the table or early cider in September— it bears abundantly, but is very liable to rot.

NO. 128. HERTFORDSHIRE UNDERLEAF.

This apple was imported from England: it is a large fair green fruit; somewhat lessened towards the blossom end—the flesh is white, dry, and large grained, but deficient in flavour; the tree is of a handsome growth, and very fruitful; it ripens in September, and falls from the tree immediately.

NO. 129. GENNET MOYLE.

Is a large fair apple, of a round form—the colour is yellow, with specks of red; the flesh firm, rich, juicy, and sprightly; the character of this apple ranks high in England; Philips, in his poem on cider, calls it "the moyle of sweetest honeyed taste"—it ripens and falls in September and early in October. The tree is remarkably thrifty and handsome.

NO. 130. JOHN APPLE.

Called also Deux Annee's from its property of long keeping—it is a cider apple of celebrity in England, and is characterized by Philips in his poem on cider very correctly. "Nor John apple, whose withered rind, entrencht with many a furrow, aptly represents decrepid age." It is a small conical fruit; the skin tough and yellow, with a small portion of red towards the sun; the flesh yellow, rich, hard and dry; fit only for cider—it hangs late on the tree, which grows in an upright form, the bark of a yellowish cast.

NO. 131. WAXEN APPLE.

Is a large, flat, yellow apple; its transverse shape rather eliptical, like the Pennock: the skin has much the appearance of a large Newton Pippin—the stem short; the eye deep; the flesh rich, sprightly, juicy, firm, and yet breaking—ripens in December; much esteemed in Virginia.

NO. 132. LARGE GREENING.

This apple I received as the Rhode-Island Gree-

ning, which is a superior apple: it is cultivated in Bucks county, Pennsylvania; is a large and uncommonly flat apple; the skin a smooth, lively green; the flesh is white, juicy, and tender, but not highly flavoured—it is an early winter fruit; the tree handsomely formed, and very tall.

NO- 133. SWEET AND SOUR.

This apple derives its name from the peculiar property of possessing these different qualities in the same fruit: the surface is often uneven, the prominences having one taste, and the hollows another; it is not otherwise deserving of much notice. It was originally cultivated in the county of Middlesex, N. Jersey, whence I obtained it; it is an Autumn fruit.

A selection of apples, ripening in succession, for the orchard of an admirer of fine fruit.

TABLE APPLES.

1. Junating, ripens in June and July.
2. Princes Harvest, July.
3. Bough, do.
4. Summer Queen, July and August.
5. Early Pearmain, do.
6. Summer Rose, do.
7. Codling, August and September.
8. Maidens Blush, Sep.
9. Hagloe Crab, table and cider, do.
10. Catline, do.
11. Romanite, or Rambo, Sep. and Oct.
12. Fall Pippin, Oct.
13. Doctor Apple, do.
14. Wine, Oct. and Nov.
15. Late Pearmain, do.
16. Burlington Greening, do.
17. Bellflower, do.
18. Newark Pippin, Nov.
19. Pennock, do.
20. Michael Henry, do.
21. Spitzemberg. do.
22. Newton Pippin, do.
23. Priestly, do.
24. Pomme d'Apis, or Lady apple, Dec.
25. Carthouse, do.
26. Tewksbury Winter Blush, do.

CIDER APPLES.

1. Hewes's Crab.
2. House, or Greyhouse.
3. Winesap.
4. Harrison.
5. Styre.
6. Roanes white Crab.
7. Gloucester White.
8. Redstreak.
9. Campfield.
10. American Pippin.
11. Golden Rennet.
12. Hagloe Crab.
13. Coopers Russeting.
14. Ruckmans Pearmain.

CHAPTER XXIV.

PEARS.

The pear is arranged by Linnæus with the apple and quince, under the fourth section of his twelfth class: Icosandria Pentagynia. It will take on the quince either by inoculation or ingrafting: the former mode, being performed above ground, will produce dwarf trees; the latter mode, under ground, in the root, will, in some varieties, improve the pear; in all, it will form a strong vigorous tree. All the pear trees I have imported from France have been treated in this manner—on the apple, it produces a deteriorated fruit, except in a few kinds, which succeed tolerably when grafted in the root, and planted so deep in the earth, as to permit shoots from that part of the stock growing under the surface of the ground.

Whether the climate of the United States is so well adapted to the cultivation of the pear as the ap-

ple, is doubtful, in the opinion of some experienced cultivators—that species of blight, which is sometimes called the fire blight, frequently destroys trees in the fullest apparent vigour and health, in a few hours, turning the leaves suddenly brown, as if they had passed through a hot flame, and causing a morbid matter to exude from the pores of the bark, of a black ferruginous appearance; this happens through the whole course of the warm season—more frequently in weather both hot and moist, affording reason to believe that it arises from the rays of the sun operating on the vapour, or clouds, floating in the atmosphere, either by concentration or reflection. It generally, though not always, is perceived most in confined places: certain kinds, and particularly that most exquisite of our winter pears, the St. Germain, seems peculiarly liable to this species of blight. I have in twenty years lost upwards of fifty trees in the fullness of vigor—sometimes in the most open airy situations, and in every kind of soil. From repeated observation of the kinds most liable to this malady, I have been led to believe, that it is somewhat connected with a principle which appears to be considered as a sound one, by the most judicious European writers, when treating of apple trees, that is the long duration of the variety. It is certain, that natural trees, continually springing up from seed, are seldom attacked by this disease; and the Seckle pear, generally supposed to

be a new variety, is but little affected by it—of fifty bearing trees of this kind, of various ages, I have not lost one entire tree from this cause—this year, for the first time, I have perceived the limbs of some of them partially affected, and in some instances, several large branches have been destroyed. From the great vigour and rapidity of the vegetation in America, pear trees, if much pruned, are apt to grow too fast: this appears to render them more liable to the effect of the fire blight than otherwise they would be—I have therefore changed my mode of trimming them under this impression, confining it very much to suckering, and merely forming the tree—our heat and dryness, do not require the growth to be so open as in Europe.

The soil most favourable for pear trees, is clay, or stiff loam—they are, in many regions of our country, hardier than the apple. In a journey, many years since, through the New England States, I found the common Hedge pear, from which most exquisite perry is made, flourishing where the apple would not grow, on the sea coast, between Newbury Port and Portsmouth: in Great Britain they are considered as much better adapted than the apple to their climate; perry, on an average, is a cheaper liquor than cider in that country. An erroneous practice prevails too much among our nursery men in America, of using suckers from old trees for pear stocks; trees produced

from suckers, are always disposed to generate suckers, which are injurious and inconvenient in fruit grounds: it is probable that the disposition to blight, may be promoted by using the suckers of old worn out varieties, instead of raising new ones from the seed, as is practised in apples.

The following kinds have been selected from a large collection, as affording a succession of the finest pears, of native and foreign origin; they are delineated of the natural size and form, and are accurately described.

1. PETIT MUSCAT, LITTLE MUSK, OR PRIMITIVE PEAR.

This pear grows in clusters; the form is round rather than long; the stalk short, and when fully ripe the skin is yellow, with a portion of reddish brown on the cheek next the sun. If not too ripe, it is a pleasant pear; the juice somewhat musky—the form of the tree resembles the Catharine; it does not produce fruit early, but when it has attained the proper age, is an abundant bearer—it ripens from the first to the tenth of July.

2. HATIVEAU.

Is a very small pear; pointed towards the stem, the blossom end flat; the skin is a clear yellow; the flesh is of a yellowish cast, somewhat spicy, but without much juice or flavour. It is a very great bearer; the time of ripening, from the middle to the end of July.

3. MADELEINE, CITRON DE CARMES, OR GREEN CHISSEL.

This is a very fine early fruit—the size is small, not much larger than the Hativeau—the skin green, the flesh juicy, buttery, and highly flavoured—the taste, when not too ripe, sugary. This pear Mr. Prince calls the early Chaumontel; it is one of the finest fruits of the season.

4. EARLY CATHARINE OR ROUSSELET HATIF.

This is more generally admired than any summer pear—it is remarkably fine, rich, waxy and luscious: its form is somewhat like a calabash, with a long curved neck, and a long fleshy stem, the skin is on one side yellow, the other a rich russet, or brownish

red—the tree grows to a large size before it bears, it is then very fruitful. The limbs are long, and when full of fruit, hang like a willow—this pear should be always suffered to hang on the tree till ripe; the growth of the tree is very vigorous; the size large; the time of the fruit ripening is about the middle of July.

5. EARLY SUMMER BERGAMOT.

This is one of the finest pears of the season, when eaten before it is too ripe. The skin is green, full of small russet spots, but when fully ripe it becomes yellow—it is a highly flavoured juicy fruit if gathered from the tree, but when too ripe it becomes dry, and loses its flavour—the size is small, of a round form, the flesh rich and sprightly—it is the least vigorous pear tree in our country—of moderate size and great hardiness; free from blight—the fruit in perfection from the middle to the end of July.

6. BELLISSIME D'ETE,' OR THE BEAUTY OF SUMMER.

The fruit is small, and singularly beautiful—the skin is smooth, of a bright yellow, the cheek towards the sun of a brilliant red, with small dots—the form

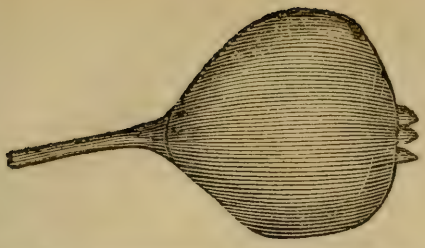
is regular, diminishing towards the stem, which is long; if picked before it is too ripe, it is a pretty good early pear; it sometimes grows in clusters, produces abundantly, and ripens about the middle of July.

7. THE SKINLESS, OR POIRE SANS PEAU.

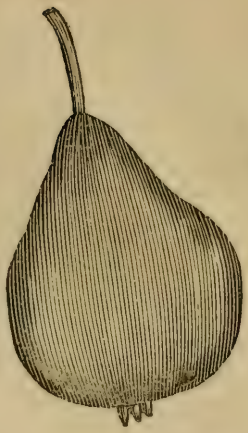
The size of this pear is about that of the early Catharine---the skin is smooth and very thin---the colour a greenish yellow, with a little blush, scarcely perceptible; the stem is long and small---the flesh juicy, and breaking rather than melting, of a pleasant sweet taste, very attractive to wasps and bees---the tree and foliage are of delicate growth---the time of ripening about the end of July.

8. FIN OR D'ETE,' OR FINE GOLD OF SUMMER.

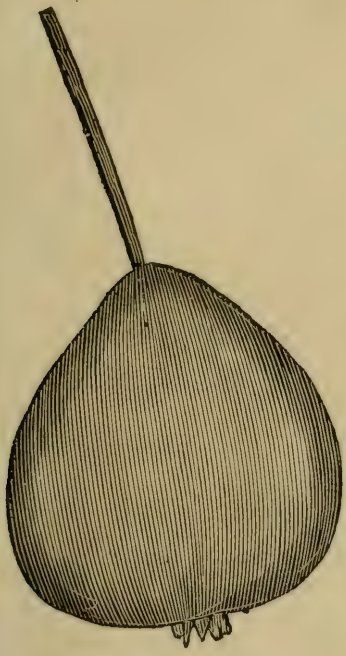
This is a very fine and beautiful pear—the size is small, the form nearly round—the blossom end flat, the stem almost an inch long, growing a little on one side—the skin has a small degree of roughness; of a rich yellow on one side, and on the other a brilliant red, dotted with yellow; the flesh rich and juicy, breaking, and highly flavoured; the growth of the tree vigorous, with long hanging limbs—in perfection about the twentieth of July.



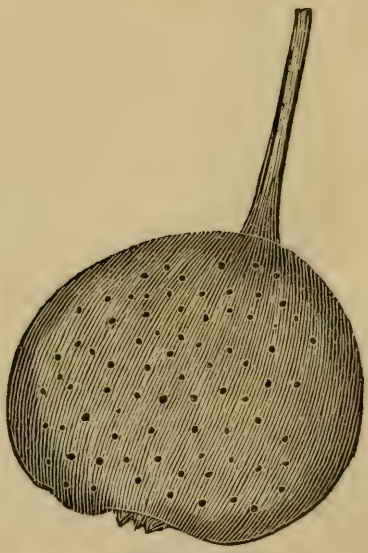
No. 1. Primitive, or Petit Muscat.



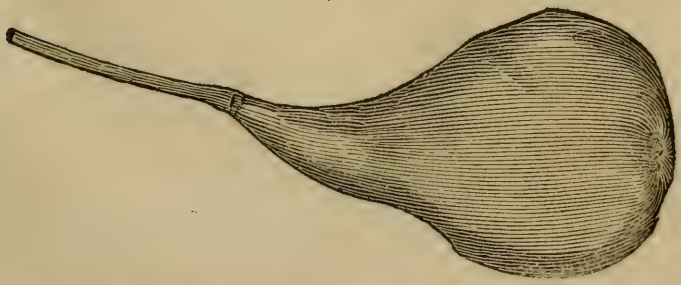
No. 2. Hativeau.



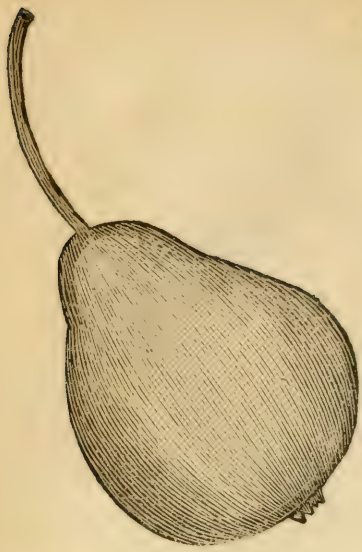
No. 3. Madeleine, or Green Chissel.



No. 5. Summer Bergamot.

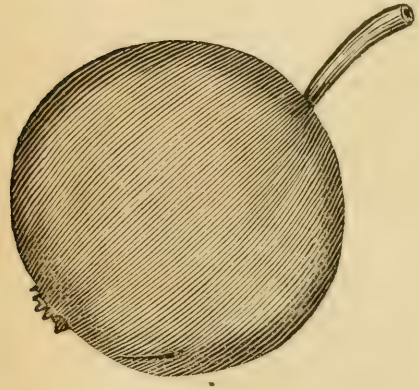


No. 4. Early Catharine, or Roussellet hatif.

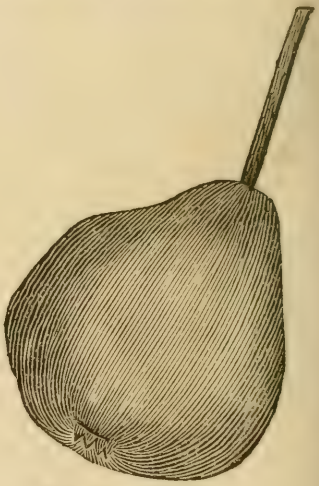


No. 6. Bellissime d'Eté, or Supreme.

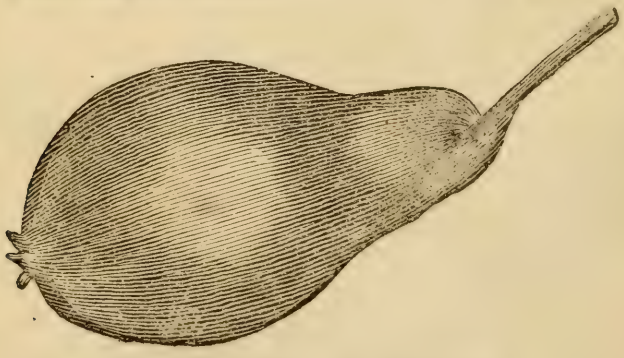
No. 7. Poire sans Peau, or Skinless.



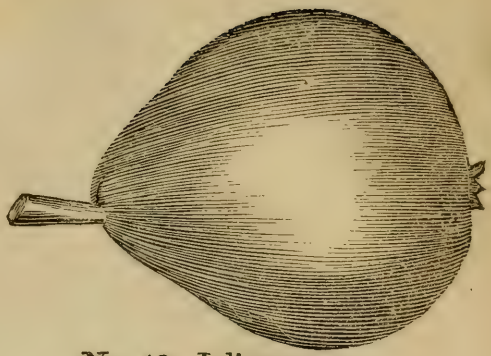
No. 8. Fine Gold of Summer.



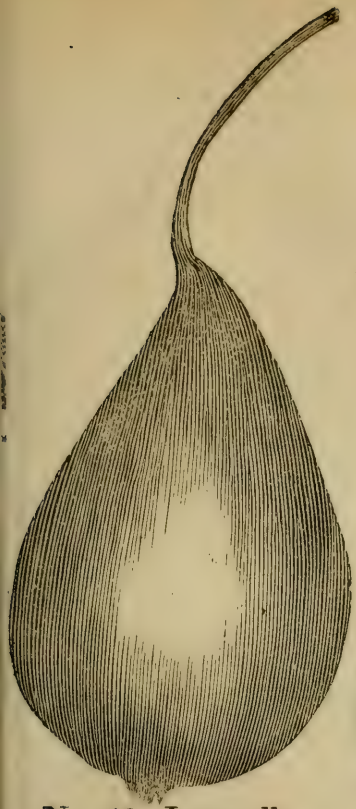
No. 9. Aurate.



No. 10. Epargne.

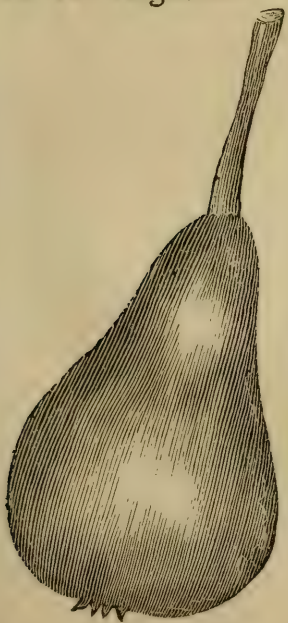


No. 12. Julienne.

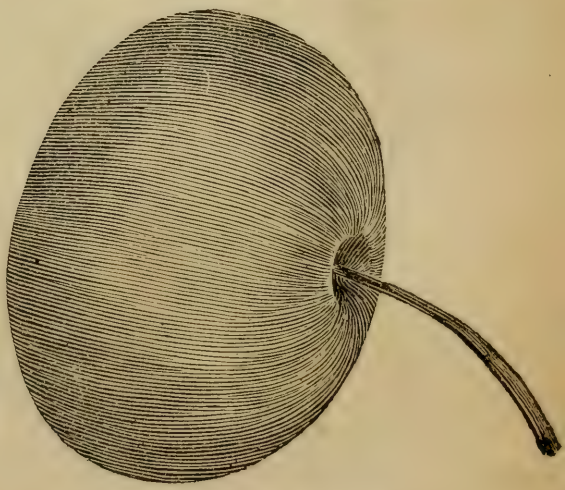


No. 13. Jargonelle.

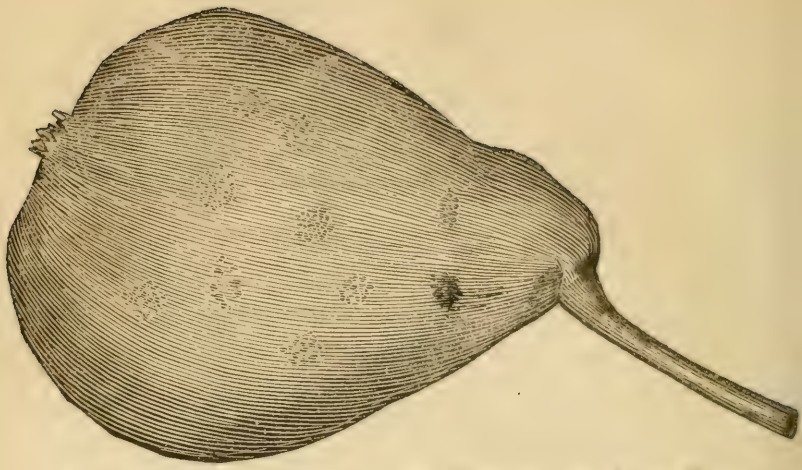
No. 14. Orange Musquee'.



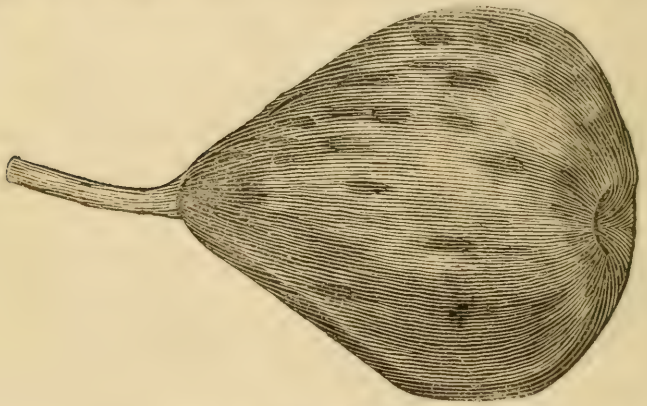
No. 11. Cuisse Madame.



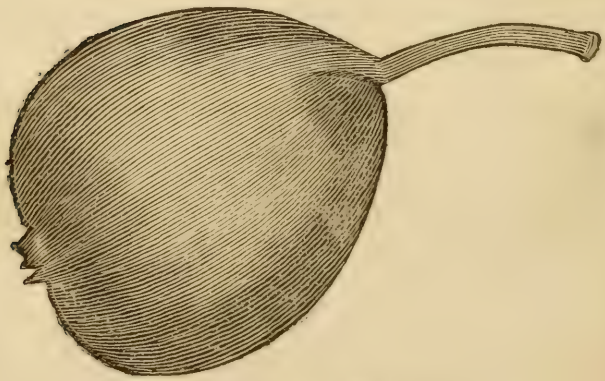
No. 15. Red Bergamot.



No. 18. Musk Summer Bon Chretien, or Sugar Pear.



No. 16. Green Catharine, or Rousselet.



No. 17. Grise Bonne.

9. AURATE.

This is a small pear of a regular form, diminishing towards the stem which is very long; the skin is rough, of a pale yellowish green—the flesh is highly flavoured, rich and luscious: it is a great bearer—ripens about the end of July.

10. EPARGNE.

This is a pear of a long shape, below the ordinary size, diminishing gradually towards the stem, which is about an inch in length, large, and planted rather on one side—the crown is not hollowed; the skin is of a greenish cast, blotched with spots of a fawn colour, and sometimes with a little blush—the flesh is melting; the juice sprightly and agreeable—it ripens about the beginning of August.

11. CUISSE MADAME.

This fruit is of a moderate size, very long, and small towards the stalk, which generally grows in a furrow, or small hollow—the eye is small and but little sunk; the flesh is sweet and juicy, a little musky—the skin

smooth and glossy; of a yellowish green, with a reddish brown cheek next the sun—it is very liable to be blown off the tree. The tree is of vigorous growth, the leaves of the common size, almost as wide as they are long, and very little indented—the time of ripening is the end of July.

12. JULIENNE, OR L'ARCHIDUC D'ETE' SOMETIMES CALLED THE SUMMER BEURREE'.

Is a pear of about the common size in good ground, but smaller in a less rich soil, or on old trees—it is of a round form, a little extended, and diminishing towards the stalk, which is short and rather small—the skin is smooth, when fully ripe, of a bright yellow, sometimes with a faint blush towards the sun—the flesh is sprightly, rich, and juicy if gathered before fully ripe, and kept a few days in the house—it bears young, and most abundantly—the appearance and qualities of this pear, have obtained the name of the Butter pear of summer: the tree is of singular growth, the branches long and bending, with large swellings at the extremities, the wood of a lively yellow brown; it continues several weeks in perfection, and is certainly among our finest summer pears; the time of ripening the whole month of August—according to age, aspect, and soil.

13. JARGONELLE.

This pear has not been much cultivated in America, and almost always under false names: it is a tolerably large pear, of the size of a middling Beurree, with a neck somewhat curved, and diminishing to a small point, with a long stalk, fleshy towards its junction with the fruit—the skin is a light green with small cloudy spots, blended with russet, particularly near the stem—the cheek next the sun has frequently a brownish red colour—the flesh is juicy, highly flavoured, and sprightly, but liable to rot—it is like most summer pears, best when picked before fully ripe, and matured in the house; it is in perfection about the latter part of July.

14. ORANGE MUSQUEE, OR MUSK ORANGE PEAR.

This pear is of a moderate size, of a round form, diminishing a little towards the stalk, which is rather large and long, and planted in an irregular cavity. The flesh is juicy and well flavoured, but uncommonly subject to rot—the skin is a greenish yellow: it ripens in August.

15. GREEN CATHARINE, OR ROUSSELET.

Is a fine sprightly pear—very pleasant as an eating fruit, and excellent for baking; it is a great and constant bearer—the size is rather small; the form very irregular; the blossom end round, diminishing towards the stem; the skin of a greenish yellow, with a russet brown cheek, scattered over with spots of a feuille morte colour—the flesh is firm and breaking, of a coarse grain—it ripens in August, and continues a long time—the tree grows somewhat like the early Catharine, and is very hardy.

16. RED BERGAMOT.

This fruit is sometimes large, but usually of a moderate size—the form round, flattened at both ends; the stalk very long, the flesh coarse and tender; very full of juice, of a fine flavour, rich, and sprightly; the skin is yellow, the cheek next the Sun of a lively red, dotted with small russet spots; the time of ripening in August; the tree is of vigorous growth, and large size; it does not bear while young, but when more advanced is a great bearer.

17. GRISE-BONNE, OR GOOD GREY PEAR.

This is rather a small pear, the form regular, diminishing with a gentle swell towards the stem, which is long; the blossom end rather flat, with no hollow at the crown; the skin green, dotted with black spots—the flesh large grained and juicy, of a pleasant taste—ripens from the beginning to the middle of August.

18. MUSK SUMMER BON CHRETIEN, OR LARGE SUGAR PEAR.

This is a large and handsome fruit, of very irregular form; the shape is oblong, swelled in the middle, and diminishing towards each end, but more towards the stalk, which is long and large, and frequently inserted on one side; the flesh is rich, melting, and of a highly musked taste, saccharine and waxy, yielding an uncommonly fine odour; the skin is very smooth, of a yellowish green, clouded with clusters of black spots.

It frequently cracks in the skin, which diminishes its excellence; when free from this defect, it is a very estimable fruit. The leaves are large and smooth, the tree of vigorous growth: it is often mis-named the Jargonelle in this country; the time of ripening, the latter

end of August; its value is much lessened by its ripening with the Seckle, and several other pears of high reputation.

19. MUSK, SPICE, OR ROUSSELET DE RHEIMS.

This excellent and popular pear, is less than the medium size---the form is oval, a little produced towards the stem, which is short and thick, the blossom end round and even; the eye large; the skin a greenish yellow, with a brilliant cheek towards the Sun, sometimes red, sometimes brown, spotted with small dots in every part; the flesh is half breaking, fine, and of a high and very peculiar musky flavour, whence it derives its name in common use.

The tree is remarkably vigorous, grows with long shoots like the Catharine, from which it is often called the late Catharine, or autumn Catharine; it does not bear till large, it is then very fruitful; the time of ripening in August and September; it is eaten in the highest perfection when fully ripe from the tree.

20. SALVIATI.

This pear is above the common size, nearly of a round form, very little lengthened; the stalk is long and straight, the crown even with the surface—the skin is of waxy yellow colour, sometimes with red spots scattered over it; the flesh is very fine, half buttery; the juice sweet and well flavoured; the time of ripening in August.

21. BON CHRETIEN D'ETE', OR SUMMER BON CHRETIEN.

The fruit is large and long, with a large long stalk inserted amidst several hollows and projections—it is swelled towards the blossom end, and diminished towards the stalk; the skin is smooth, of a clear green colour, which turns yellow when fully ripe; the flesh is white, tender, half breaking, very juicy and sugary; the time of ripening the latter part of August: the tree is very fruitful, the leaves large and handsome, and finely indented.

22. AUTUMN BERGAMOT.

This is rather a small pear, very flat at the blossom

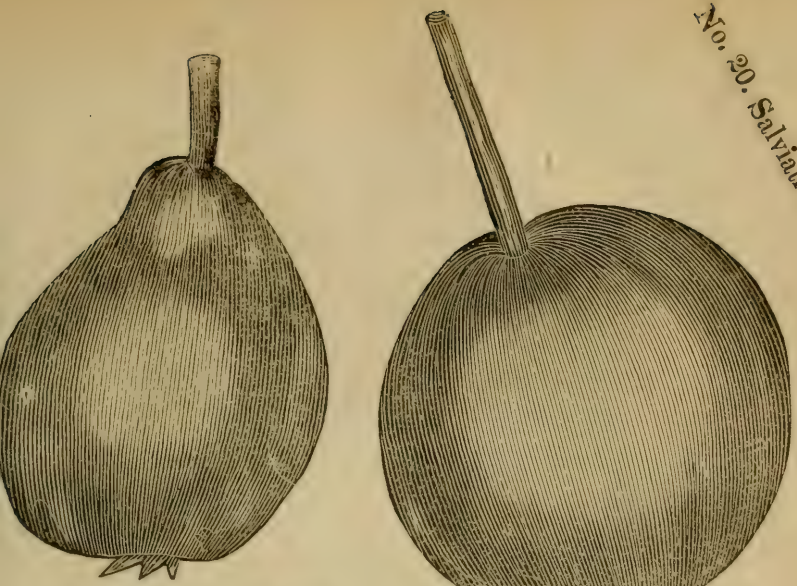
end, and diminished towards the stalk end which is also flattened---the stem is short, the skin green with black spots, the flesh is white, juicy and sprightly—the tree is not very vigorous, but produces abundantly; it is in season during the whole month of September.

23. BROCA'S BERGAMOT.

This is a very fine pear, superior to most of the Bergamot tribe, but a very uncertain and small bearer; the size is rather larger than the autumn Bergamot, the shape rounder; it is flat at both ends, diminishing a little towards the stem---the skin is rough, of a dull light green; the flesh rich, juicy, melting, and sprightly---the tree is remarkably deficient in vigour of growth, and loses its leaves very early in the season: they fall sometimes as early as the fruit—if this pear ripened at another season it would be highly prized, but ripening with the Seckle, Beurree', and several other fine fruits, it is less esteemed—it is in perfection about the middle of September.

24. BEURREE' GRISE OR BROWN BEURREE'.

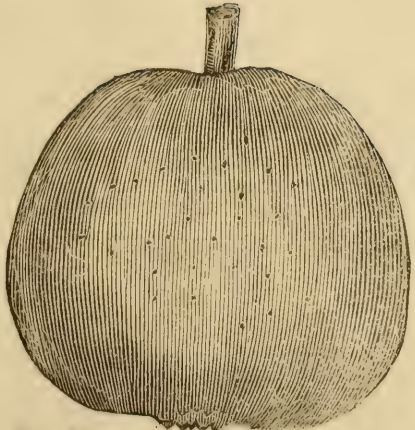
Is a large juicy pear, and in some seasons has a fine flavoured flesh of great sprightliness—it is of very



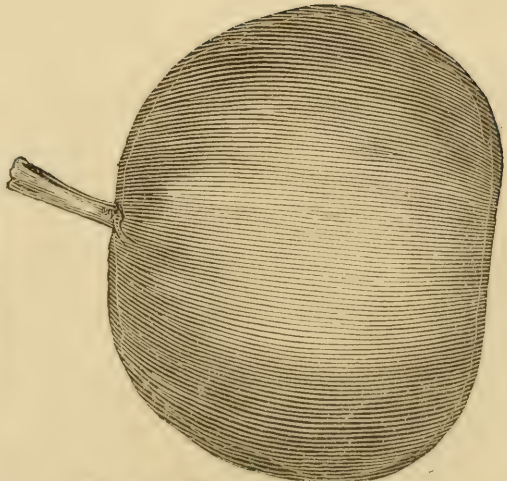
No. 19. Musk, or Spice.

No. 20. Salviati.

No. 21. Summer Bon Chretien, or Gracioli.

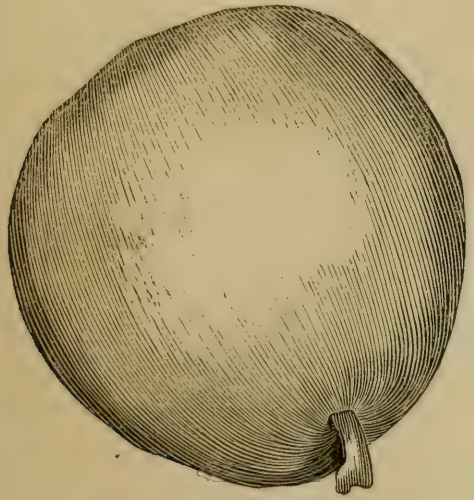


No. 22. Autumn Bergamot.

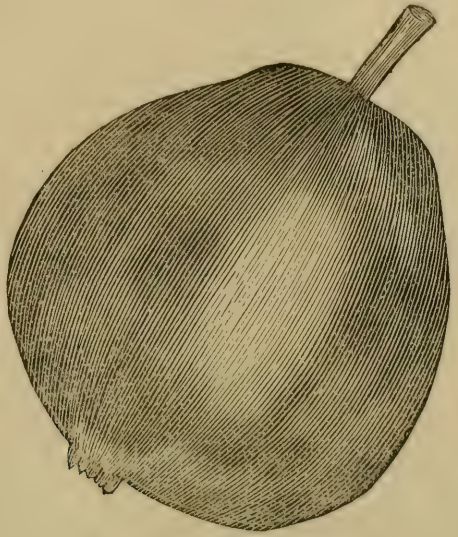


No. 23. Broca's Bergamot.

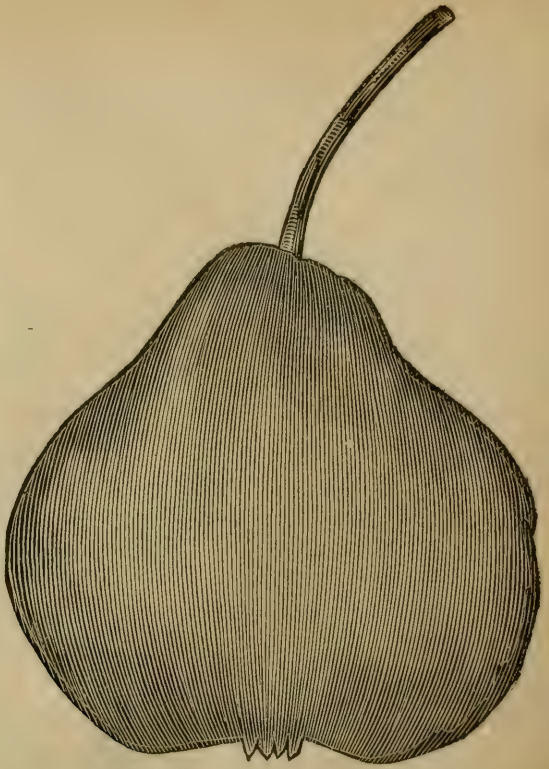
No. 24. Beurree' grise.



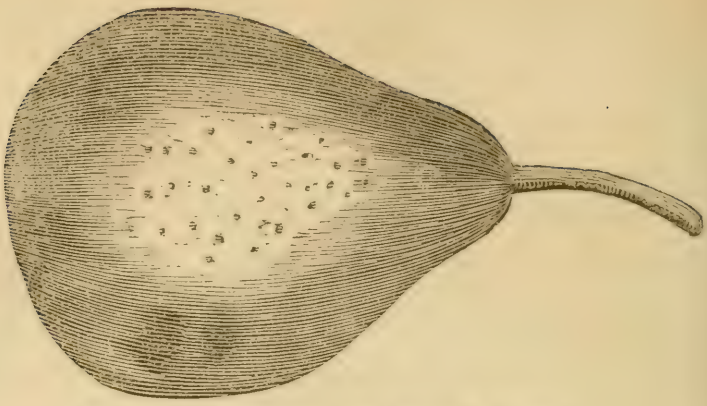
No. 27. Butter Pear.



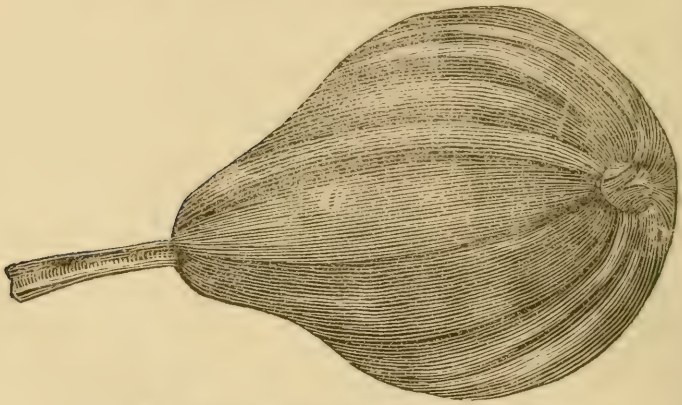
No. 25. Seckle Pear.



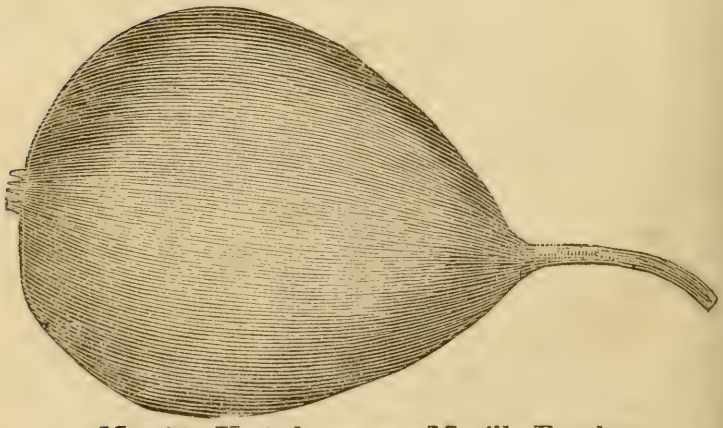
No. 26. Holland table pear.



No. 28. Angleterre, or English Butter.



No. 29. Verte longue Panachee'.



No. 30. Verte longue, or Mouille Bouche.

varying excellence—it is too often acid in the extreme with little flavour; its character changes with the season—when the year is unfavourable the fruit cracks, and the trees lose all their leaves prematurely; when in perfection it is a fine plump fruit, of almost elliptical form, very little diminished towards the stem—resembling the yellow Beurree` in shape; the skin is green with clouds of black, the flesh white—it ripens in September, and lasts a long time in favourable seasons.

25. SECKLE PEAR.

So called from Mr. Seckle of Philadelphia, the proprietor of the original tree now growing on his estate near that city—it is in the general estimation of amateurs of fine fruit, both natives and foreigners, the finest pear of this or any other country—it is believed to be a native fruit, produced from the seed of a fine pear (of which the original proprietor owned many varieties) accidentally dropped where this tree now grows. The form and appearance, vary with aspect, age, and cultivation—the size generally is small, the form regular, round at the blossom end, diminishing with a gentle swell towards the stem, which is rather short and thick; the skin is sometimes yellow, with a bright red cheek, and smooth; at other times a per-

fect russet, without any blush—the flesh is melting, juicy, and most exquisitely and delicately flavoured; the time of ripening is from the end of August, to the middle of October. The tree is singularly vigorous and beautiful, of great regularity of growth and richness of foliage—very hardy, and possessing all the characteristicks of a new variety—neither L'abbe' Rozier or de La Quintinye among the French, nor Miller or Forsyth among the English writers, describe such a pear as the Seckle—nor have I found one among the intelligent French gentlemen in our country, who has any knowledge of the pear in his own country.

26. HOLLAND GREEN, SOMETIMES CALLED THE HOLLAND TABLE PEAR.

This is rather a large pear, of very irregular form, the skin is green, with a number of indistinct spots, and small russet clouds—the flesh is remarkably juicy, delicate and luscious, melting and sprightly, of a greenish white cast—it is very wide at the blossom end, lessens suddenly to an obtuse point at the stem, with an uneven though smooth skin—the stalk is very long; Few pears are more admired at a season when fine pears are common—it ripens in September and October—the tree is of strong and vigorous growth, with

long branches, the foliage luxuriant—it is a great and uniform bearer; it was imported from Holland by the late William Clifton of Philadelphia.

27. YELLOW BUTTER, OR BEURREE' DOREE', OR ST. MICHAEL'S PEAR.

This pear in the opinion of many good judges, is on a par for excellence of flavour with the Seckle—it is large, fair, handsome, melting, juicy, and delicately flavoured; to have it in perfection, it should be gathered before fully ripe when it begins to turn yellow, and be kept some time in the house, or otherwise it will lose much of its juicy and melting qualities; it is round and rather oblong in shape, somewhat diminished towards the stem, which is short and thick; the flesh white and singularly cold, the skin a bright yellow, sometimes with a blush, at other times covered with a bright russet---it is in season from the beginning of September to the first part of November, when carefully preserved, by gathering with the hand in dry weather; it is a never failing and abundant bearer, and produces fruit at an early age---the tree is of small size; this is the same with the Doyenne', or Deans pear, and is probably more extensively cultivated than any pear in our country---this fruit is very erroneously called the Virgouleuse in New-York, and East

Jersey; the Virgouleuse is a late winter pear: see No. 38.

28. ANGLETERRE, OR ENGLISH BEURREE'.

Is rather above the medium size, round at the blossom end, diminishing to a point at the stalk, which is long and large---the skin is smooth, of a greenish yellow; the flesh tender, half buttery and melting, apt to rot soon; it ripens in September with many of the finest pears, which lessens the estimation in which it would otherwise he held.

29. VERTE LONGUE PANACHEE', STRIPED LONG GREEN, OR CULOTTES DE SUISSE.

This is supposed to be a variety of the Mouille Bouche, or Long Green—the shape is round at the blossom end, lessening gradually by a gentle curve to the stem. The skin is yellow, with green stripes from the crown to the stem, with spots of dark green; sometimes a portion of red towards the sun is blended with the green. The stalk about an inch in length, the flesh melting, fine, and delicate, with little core—very juicy and sweet; it bears abundantly, and ripens in the latter part of September.

30. VERTE LONGUE, MOUILLE BOUCHE, OR LONG GREEN.

This is a small pear, the skin green when fully ripe; the flesh melting and juicy, with a spicy taste, not universally admired, very similar to that of the Verte Longue Panachee'. It ripens in the end of September, and beginning of October.

31. SUCRE' VERT, OR GREEN SUGAR PEAR.

This pear came from France; it is of moderate size; the form round, a little oblong—the blossom end flat, the eye sunk but little below the surrounding part, towards the stalk it is a little diminished; the stem large, about an inch in length—the skin is smooth and green—the flesh buttery, the juice sweet and well tasted—it ripens in October. The tree is of vigorous growth.

32. BERGAMOTTE SYLVANCHE.

This is a very fine pear imported from France, of a large size for a Bergamotte—it is round and flat at both ends; a strong stalk, a thick green skin, very tender, melting, rich, and juicy flesh, continues in sea-

son during the month of October, and sometimes later: it may be ranked among the finest fruits of the season.

33. MESSIRE JEAN, OR MR. JOHN.

This pear is held in high estimation in France, but in this part of America it is very apt to rot; it is of moderate size, but sometimes on young trees and rich ground, it grows large; the blossom end is full and round, diminishing suddenly towards the stem, which is of moderate length; the skin is rough, and when fully ripe, yellow, with a portion of russet. It is sometimes called the Monsieur Jean doree`; the flesh is coarse, juicy, and sprightly; but not very rich or highly flavoured---it ripens in October.

34. CRASANNE, OR BERGAMOTTE CRASANNE.

This pear is among the most estimable varieties; it is generally of the medium size, but on young trees and rich ground it sometimes grows large, it is of the Bergamotte shape, rather round, the skin when ripe a greenish yellow, full of distinct black dots, very thin and tender: the flesh is singularly melting, rich, juicy and sweet, but not sprightly--it is sometimes in France called the flat Beurree`; it ripens in October after the

yellow Beurree', and with care in gathering it from the tree when dry, will keep a month or six weeks in the house: it is a great bearer, of vigorous growth, and hardy; I know few pears more deserving extensive cultivation.

35. POIRE DE JARDIN, OR GARDEN PEAR.

A large pear, rather long, and flat at the blossom end, diminishing gradually towards the stalk, which is about an inch long, and large; the skin yellow and thick, the flesh yellow, rich, firm, juicy, and melting; it ripens in November.

36. SWANS EGG.

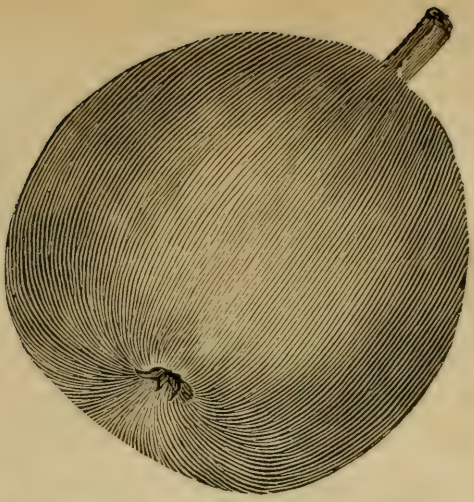
A pear of ordinary size; of elliptical form; a long stem; the skin green, thinly covered in part with brown: the flesh melting, and full of a pleasant musky juice; ripens in November, and with care may be preserved for some time. This fruit is by many called the Poire d'Auch; this must be an error; Forsyth says the Poire d'Auch resembles the Colmart, but fuller in the neck; the Colmart is delineated by the Abbe' Rozier as a very different pear, much larger, with a distinct neck: see figure no. 44.

37. L'ORANGE D'HYVER.

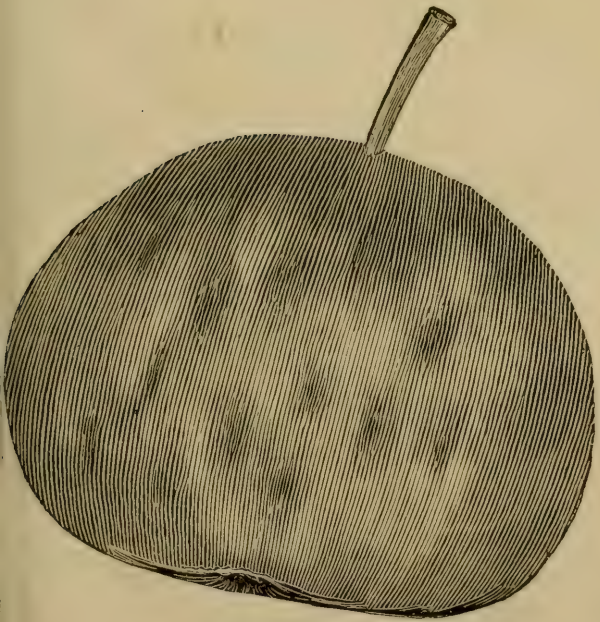
This name I have given to a pear I imported from France under the name of L'Echasserie, which is certainly incorrect---it bears a stronger resemblance to the Orange d'Hyver as delineated and described by the Abbe' Rozier in the Cours d'Agriculture, than any other fruit; it is of estimable character as a fine winter pear; the size is not larger than a small orange, nearly round, a little flattened at each end, the stem long, the skin a dull yellowish green, with faint blotches of russet coloured dots, rough, thick, and firm: the flesh white, melting, juicy, sprightly and finely flavoured---it ripens in November, and in favourable seasons will keep till January.

38. VIRGOULEUSE.

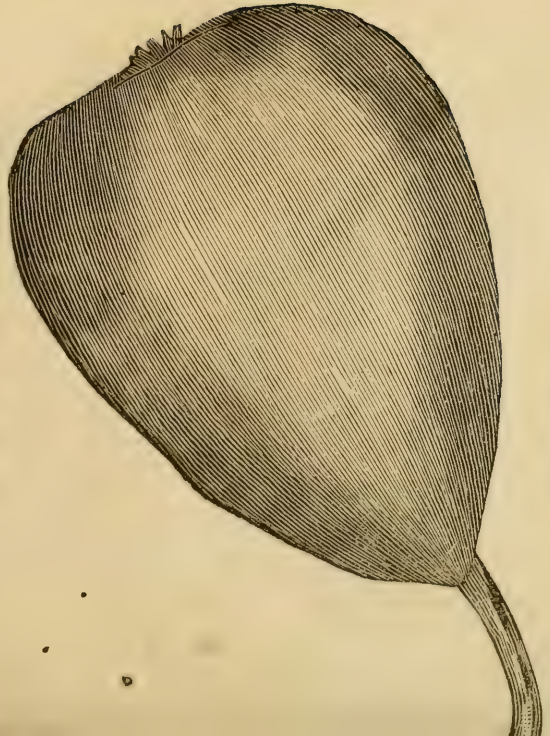
This pear I imported from France; it derives its name from a village called Virgoule' in Limousin---in size and appearance it resembles the yellow Beurree', (which by most persons in New-York and East Jersey is erroneously called the Virgouleuse) but the skin is thicker and rougher; the flesh is singularly firm, rich, juicy, and highly flavoured---it ripens in November and keeps in perfection till March; it is one of



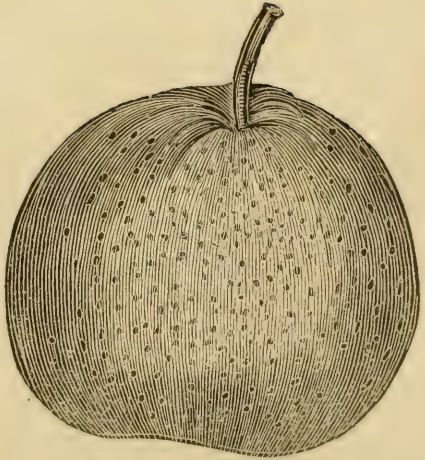
No 31. Sucre' Vert, or Sugared Green.



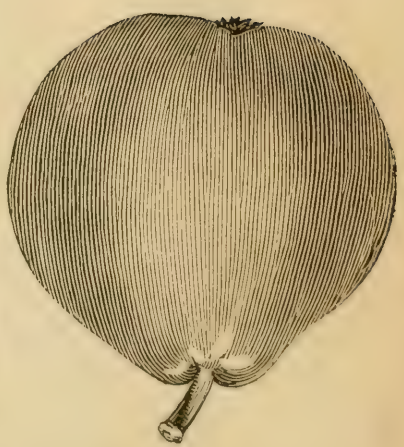
No. 32. Bergamotte Sylvanche.



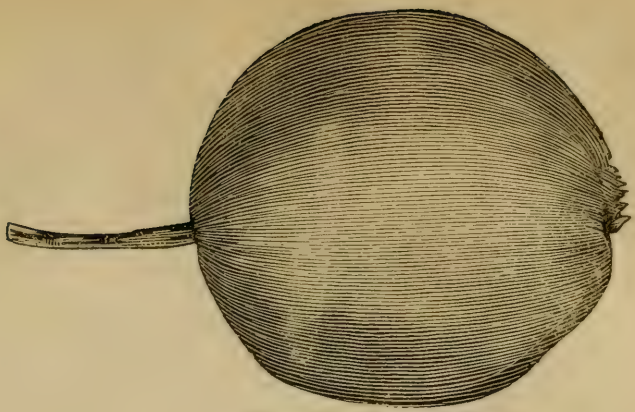
No. 35. Poire de Jardin.



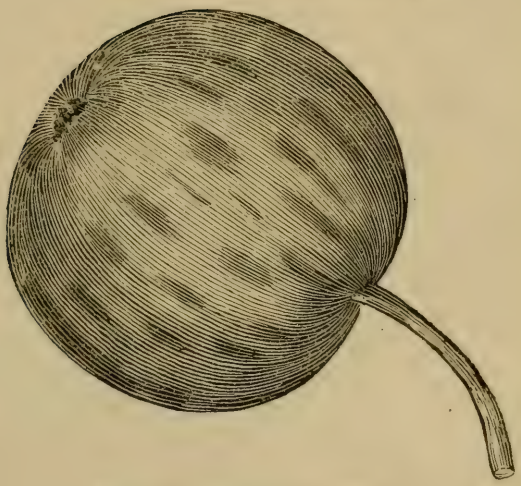
No. 34. Crasanne.



No. 33. Messire Jean.

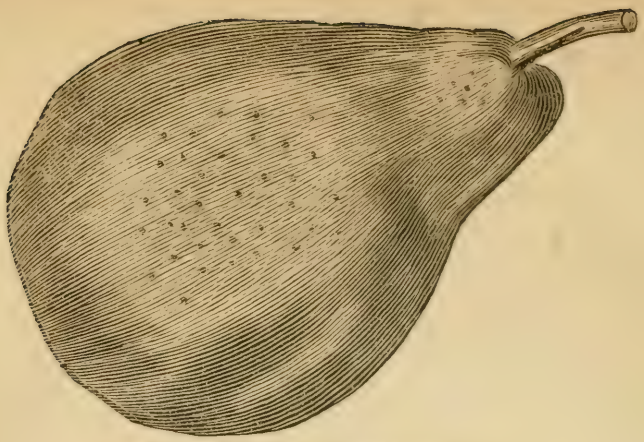


No. 36. Swans Egg.

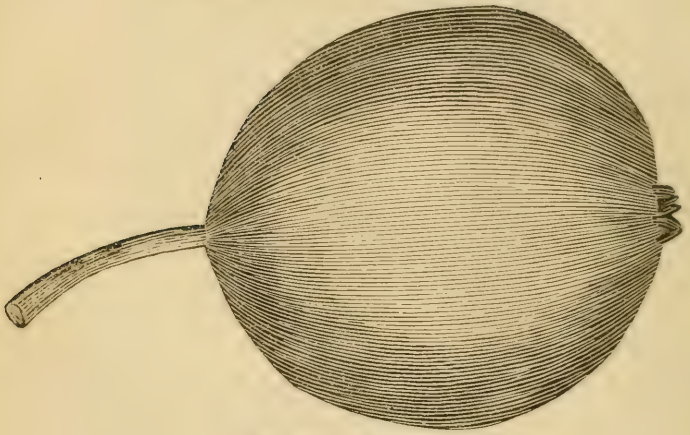


No. 37. Orange D'Hyver.

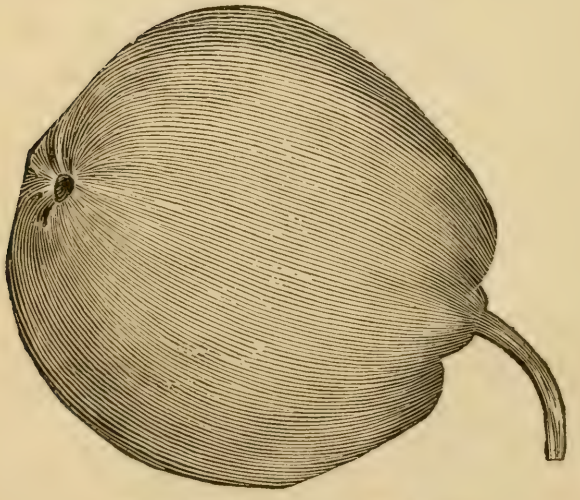
No. 38. Virgouleuse.



No. 39. St. Germaine.



No. 40. Ambrette.



No. 41. Merveille D' Hyver.

the most admired winter fruits of France, and highly deserving of extensive cultivation; it is sometimes subject to cracking in the skin; but this affects little of the fruit growing on vigorous trees in rich cultivated ground.

39. ST. GERMAINE.

Is a fine winter pear, by many erroneously called the green Chissel, (which is a summer pear) the size is large, of an irregular form, generally diminished towards the stem, and sometimes towards the crown---the skin is green till fully ripe, and very thick, whence it is often called the walnut pear---the stem is short and generally planted in an oblique direction, the crown is large and not much sunk; the flesh is very highly flavoured, rich, juicy and sprightly beyond any other pear when the season is favourable; it ripens in November in a close warm situation, it is frequently kept till late in the winter by care and attention. It is to be regretted that the tree is very subject to the fire blight, so destructive of the finest and most delicate pears in this country—it would be highly useful to the cultivators of fruit could the cause or cure for this evil be discovered; whether it be founded in any peculiarity of our climate, or in the long duration of the variety, is a point which has not been satisfactorily

ascertained—the tree is of singular growth, very dark and thick foliage, the leaves being furrowed through the centre, and arched by a contraction of the middle tendon.

40. AMBRETTE.

This is rather a small pear, of an oblong form with a long stem—the colour when ripe is green, the skin rough with small russet spots and some black clouds; neither the crown nor stalk end is indented—the flesh is rich, juicy and highly flavoured; it ripens in the beginning of December, and in favourable seasons will keep till March. This pear resembles L' Echasserie in many of its properties, but differs from it in having an unindented leaf—it is a fruit of uncommon excellence, and merits extensive cultivation: it is known in this vicinity by the name of the Tilton pear.

41. MERVEILLE D'HYVER, OR THE WONDER OF WINTER.

Is very irregular in its shape, and in its size, which is usually rather small—the skin is remarkably thick and firm, the colour a dull green, with some russet spots—the stalk about an inch long, grows in a hollow furrowed in different directions: the flesh white, mel-

ting, and luscious—the eye is very singular, frequently without any crown; it is destitute of beauty, but is estimable in its other properties—the time of ripening is in December.

42. EPINE D'HYVER, OR WINTER THORN.

Is a large pear, round at the blossom end, diminishing gradually with a gentle swell towards the stalk, where it is somewhat round. The stem is large, about an inch in length; the skin is smooth, of a yellowish green; the flesh rich, melting, and tender; of an agreeable flavour: it ripens in November, and will keep till January.

43. PADDINGTON, OR EASTER BERGAMOT.

This is a large fruit; of a round full shape, diminishing towards the stem, which is short and thick—the skin is green, with small grey dots, inclining to yellow as it ripens; the flesh is white, half buttery, sprightly, and somewhat acid: it is in season from January to March.

44. COLMART.

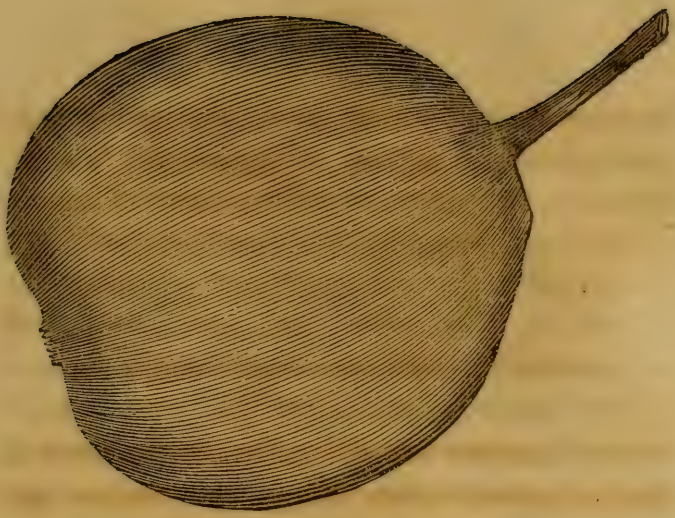
Is a large pear, somewhat resembling the Winter Bon Chretien—the blossom end is flat; it diminishes towards the stalk, which is large and fleshy, planted in a deep hollow, surrounded with protuberances—the skin is smooth, green, with little brown spots; it inclines to yellow, with the maturity of the fruit—the flesh is yellowish, very fine, buttery, and melting; the juice very sweet and sprightly—it ripens from January to April: the tree is vigorous, the leaves large, arched and guttered.

45. WINTER RUSSELET.

Is a small pear, of regular shape, gradually diminishing towards the stem: the skin is a lively russet like a Golden Pippin—the flesh is yellow, rich, and sprightly, rather too firm for a table fruit, but excellent for baking and stewing; it is a fine keeping pear, and an abundant bearer.

46. BEZY DE CHAUMONTEL, OR WINTER BUTTER PEAR.

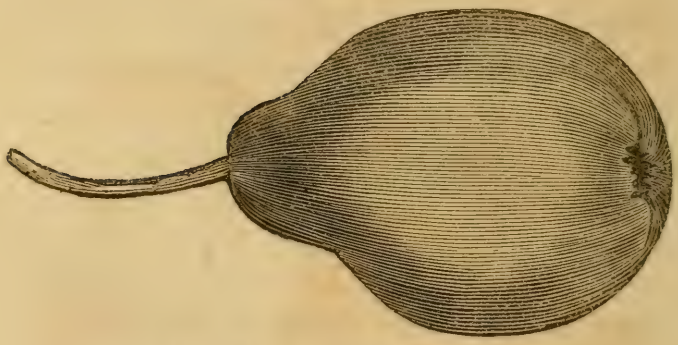
The size is large, the form very irregular—in some



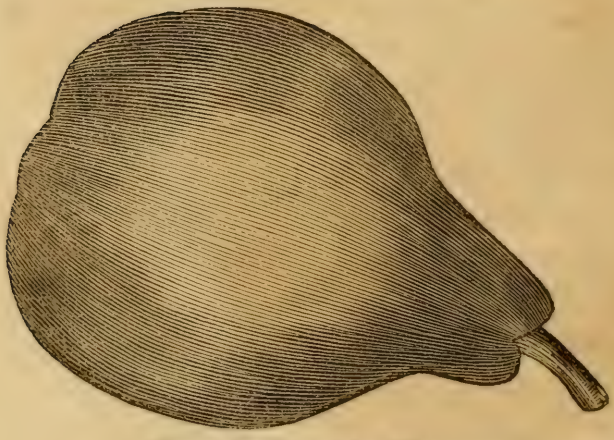
No. 42. Epine D' Hyver.

No. 43. Easter Bergamot, or Paddington.

No. 44. Colmart.



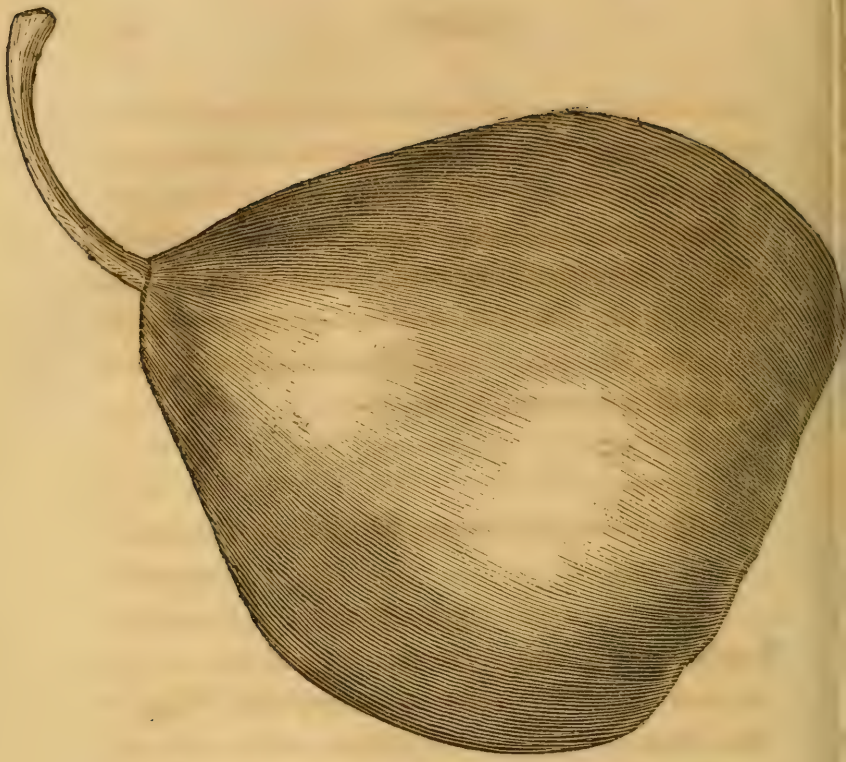
No. 45. Winter Russelet.



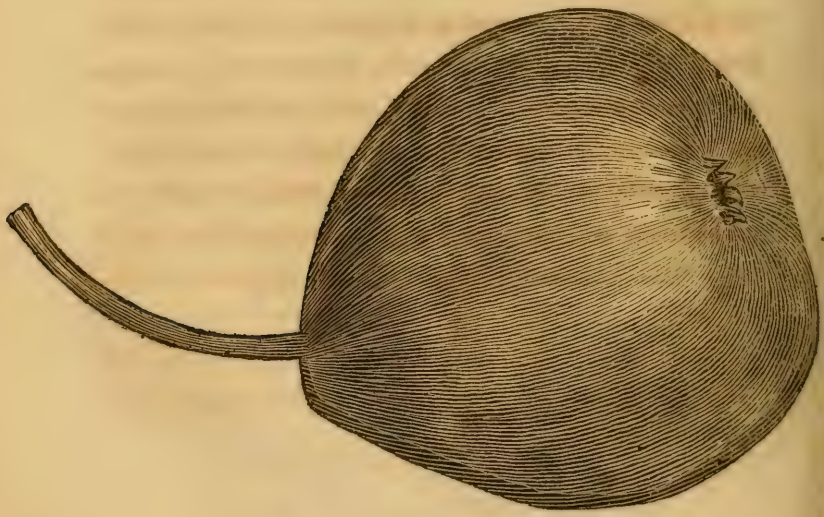
No. 46. Bezy de Chaumontel.

No. 47. Muscat Allemand.

No. 48. Bequesne.



No. 49. Royal Winter, or Royale D' Hyver.



No. 51. Fine Winter Baking Pear.

diminishing to a point at the stalk, in others with a pear like neck—the crown very deeply hollowed, bordered with little elevations, which reach to the central part of the fruit—the stem is large and short; the colour of the skin varies much, sometimes with a lively red next the sun, sometimes spotted with grey, without red—the flesh is half breaking and melting; it keeps till February.

47. MUSCAT ALLEMAND, OR GERMAN MUSCAT.

Is a very fine winter pear, ripening in November; and in good seasons continuing in perfection during the winter, when it is of much superior quality to that of ordinary years; the blossom end is wide, and very flat, so as to appear almost triangular in profile, diminishing suddenly at the crown, with a very long stem; the skin is rough and green, with black clouds and some russet—the flesh is yellow, rich, buttery, and of a sprightly flavour—it ranks among the most estimable pears imported from France: the tree is vigorous, of large growth, and very fruitful—there is a peculiarity in this pear worthy of notice; the eye is very small, frequently naked, entirely without the flower leaf.

48. BEQUESNE.

This is a large and long pear, full and round at the blossom end, and diminishing gradually to a point at the stem, which is very long—the skin is yellow, full of very distinct dark dots; little or no hollow at the crown; the flesh is firm and without any great degree of flavour or juice: it is however, a cooking fruit of great excellence, it requires little or no sugar—when baked is rich, melting, and luscious, it keeps well through the winter.

49. ROYALE D'HYVER, OR WINTER ROYAL.

This is a very large pear, of a pyriform shape, much swelled at the blossom end, and diminished towards the stalk in such a manner as to exhibit a triangular figure when viewed in profile—the skin is smooth and fine, a handsome red towards the sun, yellow on the shady side, spotted with little dots on the red, and russet spots on the yellow—the flesh is half breaking, melting, of a yellowish cast, the juice very saccharine; the eye is very small, and planted very deep---the stalk long, and large at the extremity; the time of ripening is from December to February; in the appearance of this pear and the Muscat Alle-

mand there is little perceptible difference; as delineated by the Abbe' Rozier, they resemble each other very much, and it is stated by the same author, that they are frequently confounded by the French gardeners, they are both highly estimable winter fruits.

50. BON CHRETIEN D'HYVER, OR GOOD CHRISTIAN OF WINTER.

This is a very large pear, of the form of a truncated pyramid---the blossom end is much swelled, the eye deeply sunk in a furrowed cavity, which forms angular ridges extending themselves to the body of the pear; the end towards the stalk is much diminished, without being pointed; it terminates obliquely: the stalk is about an inch long, and fleshy---this pear is sometimes six inches in length and four in width; the skin is a finely grained clear yellow, approaching to green on the shady side, with a bright red towards the sun---the flesh is fine and tender, though breaking, very juicy, mild and sugary; sometimes odoriferous and vinous---it is ripe in January and lasts till Spring; the leaves are of moderate size, the foot stalks of great length.

51. FINE WINTER BAKING PEAR.

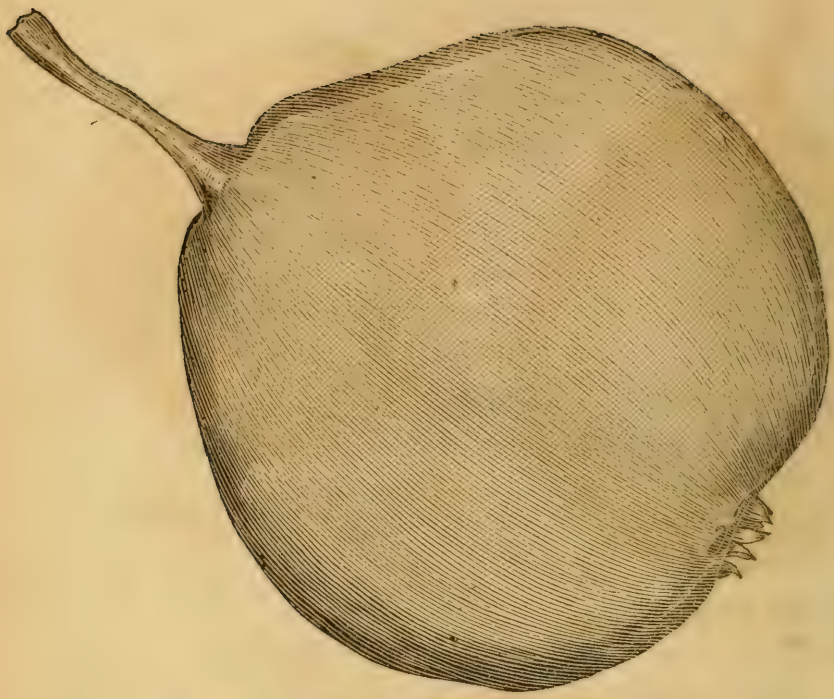
This is a pear of moderate size, a great and uniform bearer; it is rounded at the blossom end, terminating rather suddenly at the stalk, which is very long—the flesh is without much flavour or juiciness, only fit for baking, which turns the flesh to a fine red: the skin is green: it is generally known by the name of Bloomfields winter; it is equal to any pear for culinary purposes—it keeps well through the winter, but is never fit for the table uncooked.

52. HARRISONS LARGE FALL PEAR.

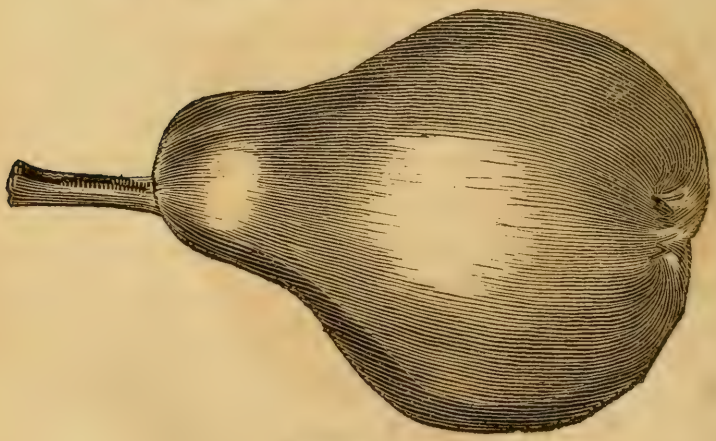
This is by Mr. Prince called the Swans Egg; but is a much inferior fruit—it is however excellent for baking, requiring when ripe no sugar; it is of very large size, flat at the blossom end, otherwise very round, but little diminished towards the stem, which is large and long: the flesh is coarse, without much juice or flavour; the tree is very large and vigorous, a great and uniform bearer—it ripens in September, and continues without rotting a long time.

No. 50. Bon Chretien D' Hyver.

No. 53. Orange Bergamot.

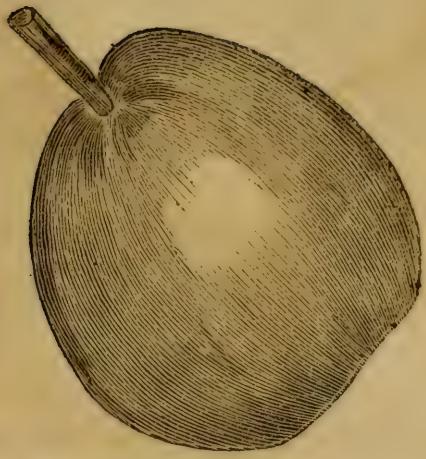


No. 52. Harrisons Fall Baking Pear.



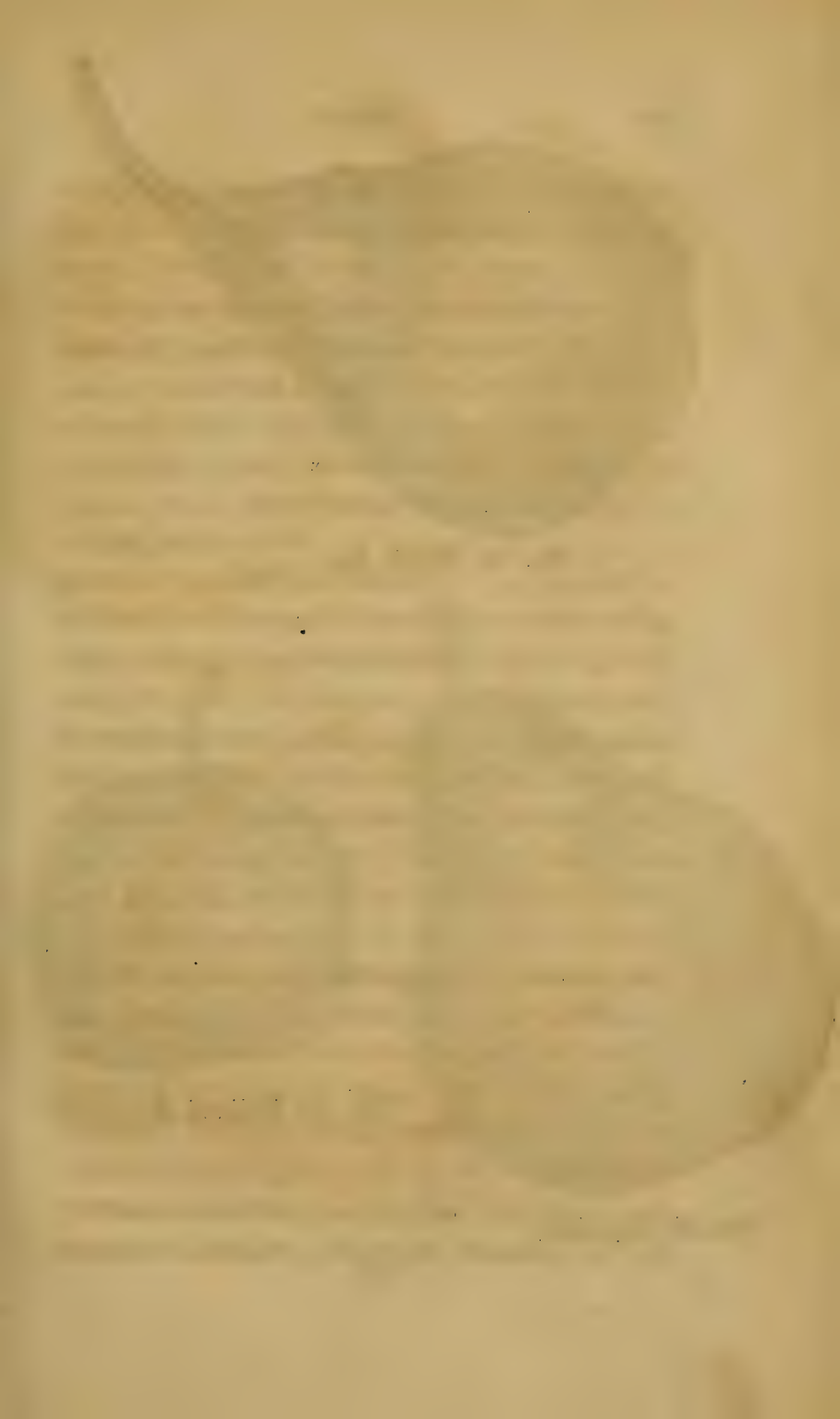
No. 54. Frangipane.

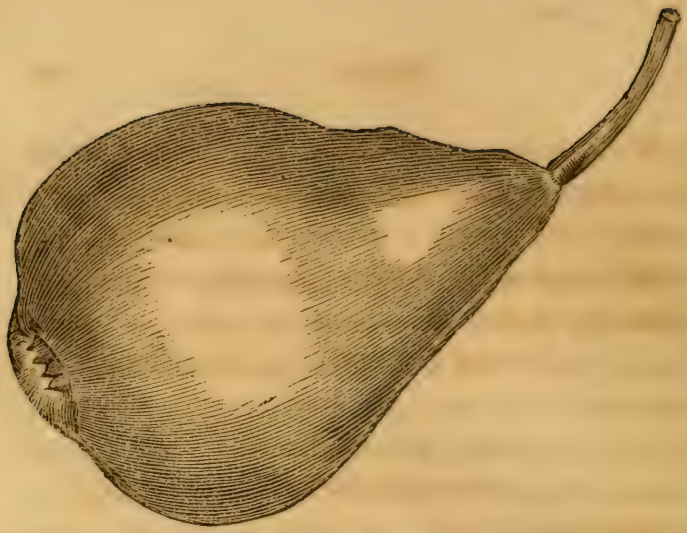
No. 55. L'Echasserie.



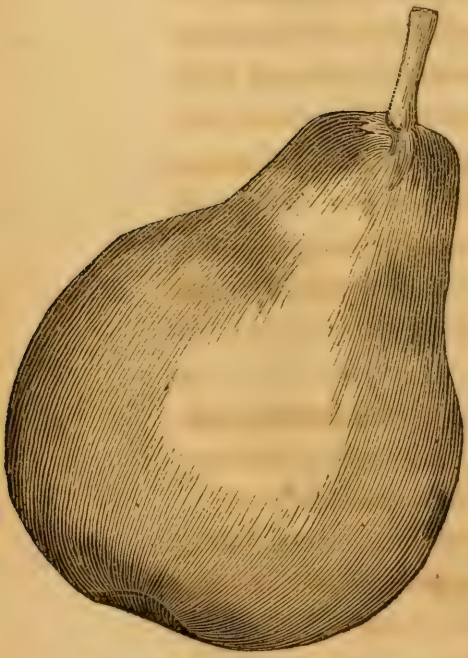
No. 58. Bezy de Caissoy.

No. 56. Winter Bergamot.

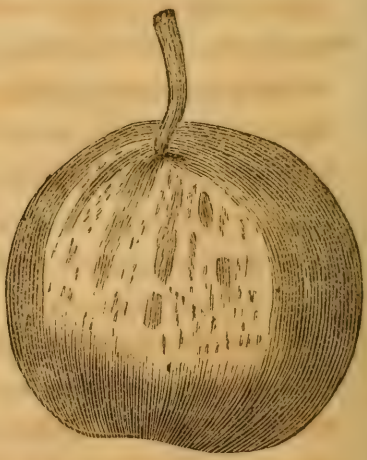




No. 59. Martin Sec.



No. 57. Imperiale,



No. 60. Holland Bergamotte.

53. ORANGE BERGAMOT.

Is a large handsome pear, flat at the blossom end, gradually diminished towards the stem; the skin is rough, yellow, and of a bright russet towards the Sun; the flesh is rich, firm, and very sprightly, rather too acid for the dessert, but the best baking pear of the season, which is in September: it is a great bearer, and a hardy tree.

54. FRANGIPANE.

This pear is of moderate size, long shape, spotted with small points; the eye is large, not sunk, the blossom end round, it diminishes towards the stalk, which is short and thick; the end is truncated obliquely—the skin is smooth, oily to the touch, of a fine clear yellow, with a lively red towards the Sun; the flesh is half melting, the juice mild and sugary, of a peculiar taste, like perfume: it ripens in the latter part of October.

55. L'ECHASSERIE.

This pear is of the medium size, an oval form, diminished towards the stalk, the blossom end very

round, the eye not sunk, the stalk is large: the flesh is melting, buttery and fine, the juice sweet, musky and very pleasant—the skin is of a light yellow, inclining to white; its maturity is from November, to February, and it is an excellent pear: the tree is very handsome and fruitful, and is an early bearer.

56. WINTER BERGAMOT.

Was originally imported from England; it is sometimes called the Townsend Bergamot, and the Cape May Bergamot; the size is moderate—the skin rough, with russet and iron spots scattered over it; the shape round, flatted at the ends, a little diminished towards the crown; the taste is pleasant, but it is deficient in juiciness and sprightliness: it ripens in December, and is an abundant bearer.

57. IMPERIALE FEUILLE DE CHENE, OR OAK-LEAF PEAR.

The fruit is long, and of middle size, about as large as a Virgouleuse: the blossom end round, the eye small, not sunk, diminishing uniformly towards the stem---round at the insertion of the stalk, which is large: the skin is even, smooth, and green; as it ripens it shrivels and turns yellow; the flesh half melting, the

juice sweet, though not very highly flavoured—it ripens late in the spring; it derives its name from the peculiar form and curl of the leaf, resembling that of the oak—the tree is vigorous, the foliage very handsome.

58. BEZY DE CAISSOY.

This fruit is small and round, a little flat at the crown; the stalk is straight and deeply planted, the eye small, and much sunk; the skin green, turning yellow when fully ripe, and covered with clouds or spots of brown—the flesh tender and buttery, the juice resembles that of the Crasanne: it ripens in November.

59. MARTIN SEC.

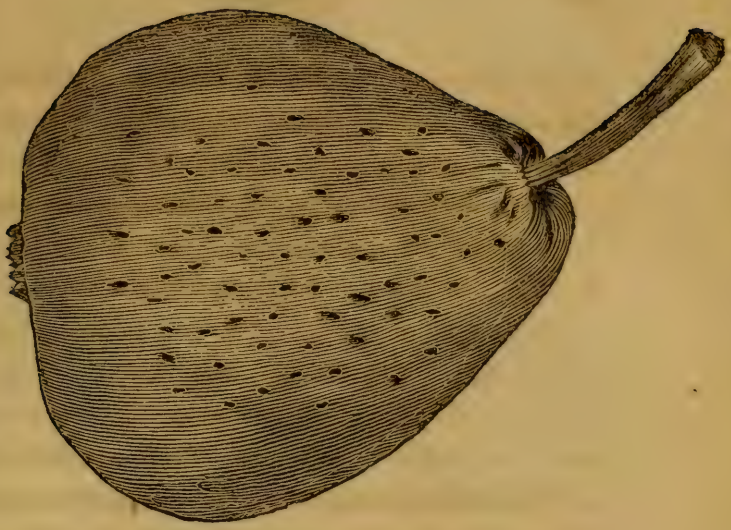
This is a pear of moderate size, of a long pyramidal form, the colour brown, with a clear red next the Sun, dotted with small white points, the flesh is breaking, sometimes a little stony, sugary, slightly perfumed, and of a pleasant taste—the stalk is long and bent, the eye small, but little sunk; it ripens in November and December.

60. HOLLAND BERGAMOT.

Is a pear of middle size, flat at the crown, round at the stem, of the ordinary Bergamot shape; the stalk is large, and about an inch in length—the eye is inserted in a deep, narrow cavity—the skin is uneven, in autumn covered with brown spots, in February and March it becomes lightly shrivelled, and turns a clear yellow—the flesh is coarse but good, half breaking, and a little stony: the juice is abundant and sprightly. It may be kept till very late in the season.

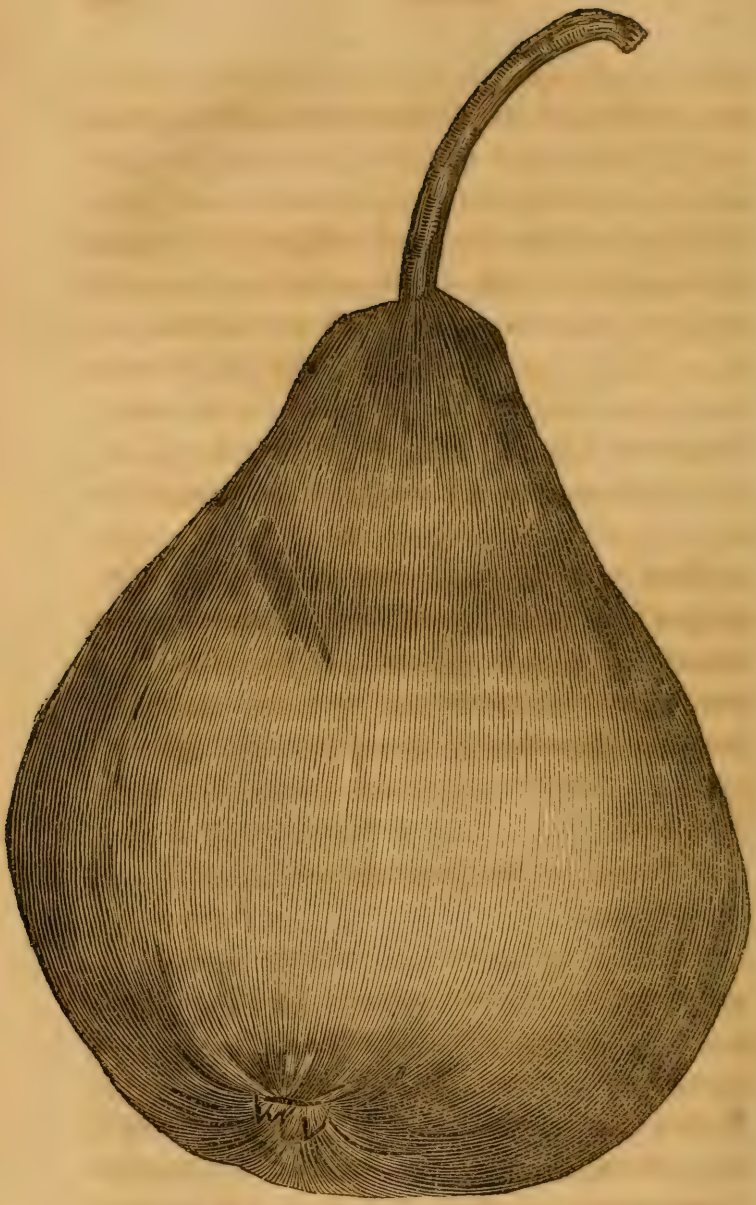
61. MARQUISE.

This is a very large pear of pyramidal shape, rather flat at the crown, gradually lessening to the stalk, which is large and about an inch long, planted in a furrowed cavity—the skin is even, and green, with dots of a deeper green, growing yellow when fully ripe; sometimes a light shade of red towards the sun—the flesh is buttery and melting, the juice sweet, mild, and sometimes a little musky; it ripens in November and December.



No. 61. Marquise.

No. 62. Bon Chretien D' Espagne.



No. 63. Pound Pear.

62. BON CHRETIEN D'ESPAGNE, OR GOOD CHRISTIAN OF SPAIN.

This pear is very large and long, gradually lessening towards the stem, a little curved and truncated about the foot of the stalk, which is large and very long—the eye is small, and planted in a deep and wide hollow, bordered with ridges which extend towards the middle of the fruit; the skin is spotted with dots, of a brown colour, of a fine lively red towards the sun, with a pale yellow on the shady side when ripe; the flesh is white, blended with grains of green, dry and hard, or breaking and tender, according to the season and soil—the juice is mild and sweet when growing on a favourable soil, and well exposed; it ripens in November and December.

63. POUND PEAR.

This is one of the largest winter pears, it sometimes weighs from twenty-six to twenty-eight ounces—the form is regular, full and round at the crown, lessening gradually towards the stem, which is long and large—the skin is green, with a brown cheek; it becomes yellow, and the cheek takes a lively red when kept from the air towards the spring; it has a firm flesh, which

becomes red like a quince when cooked, for which purpose only, it is preserved through the winter—it is a great bearer; the tree grows large, and is very hardy; these pears should be suffered to hang on the tree as late as possible, they may be kept in bran, chaff or paper, excluded from the air, which preserves their fullness, renders them more juicy and tender, and gives them a fine colour.

64. WILLIAMSON'S VIRGOULEUSE.

Is a fine winter pear ripening in December and keeping well for a considerable time—it is a large fruit, of a light green colour, with a rough skin, clouded with black spots—the stalk is large and fleshy, and of irregular form, the crown not much sunk, of a full round form next the blossom end, gradually lessening to the stem—the flesh rich and juicy; the tree is a vigorous growth and bears well: a native fruit from New-York.

65. BENSELL'S WINTER.

This pear takes its name from the original cultivator near Philadelphia. It is a large full round pear; the skin yellow, the flesh firm and juicy, somewhat astringent—it is a fine keeping fruit, and a great bearer.

A selection of 20 varieties, ripening in succession for a private garden.

1. Green Chissel.
2. Early Catharine.
3. Early Bergamotte.
8. Fin or d'Ete'.
9. Julienne.
10. Red Bergamotte.
11. Spice.
12. Seckle.
13. Yellow Beurree'.
14. Holland Green.
15. Crasanne.
16. Orange d'Hyver.
17. St. Germaine.
18. Virgouleuse.
19. Muscat Allemand.
20. Ambrette.

There are some kinds of table pears in the European collections, which have not yet been introduced into notice among us—L'Abbe' Rozier describes one hundred and twenty—La Quintinye eighty-six, Miller eighty, and Forsyth seventy-two varieties; in my own collection I have upwards of one hundred kinds, from which I have made the foregoing selection of those which I considered as the best, principally of French origin.

In England the pear is much cultivated for its liquor—vast quantities of most exquisite perry are made from pears of a character entirely unfit for eating—in 1805 I imported three kinds most esteemed in Hereford; of which I have an orchard of fifty trees planted in 1810, none of them have yet produced a single

pear or blossom, though growing among trees which have all borne—the original trees perished from the blight, but the young orchard thrives well, and promises to be not the less valuable eventually from the lateness of its maturity: the kinds are.

1st, TAUNTON SQUASH.

The fruit of highest estimation in England for perry; it is an early pear, remarkable for the tenderness of its flesh—if it drops ripe from the tree it bursts from the fall, whence probably its name—the liquor made from it, is pale, sweet, remarkably clear and of strong body; it bears a price fourfold of other perry.

2nd. THE BARLAND. 3rd. THE BESBERRY.

In addition to the foregoing selection, there are many kinds of pears cultivated in this and the neighbouring States, which have been recommended by their size, beauty, or the partiality of those who had not the means of comparing them with the finer kinds, which were a few years ago unknown in this country, but are now extensively cultivated by the admirers of good fruit among us—of this description are the following kinds, growing in my orchards.

Bell pear of Prince	ripening in July.
Windsor pear	do.
Early Bell, or Long-stem	do.
Early Red-side	August.
Denton	do.
Brown's Pear	do.
Vine Pear	do.
Grey Sugar	do.
Peach Pear	do.
Early Beurree du Roy	do.
Delicate	do.
Coopers Fall	September.
Norris's Fall	do.
Large Bell	do.
Coles Pear	do.
Rhode Island	do.
Russellet	do.
Gros Roussellet	do.
Fall Seedling	October.
Crasanne Bergamot (of Prince)	do.
Winter Rose	do.

CHAPTER XXV.

QUINCE. (*Cydonia.*)

Of this fruit there are five or six varieties. The one most esteemed is the Portugal—I obtained it from England and from France; I weighed one which was 23½ ounces; they are to be found in most of our gardens; the best trees are raised from cuttings, which grow like a willow, and are freer from suckers about the roots than those raised from suckers—those from seeds, are equally good, but are longer in coming to maturity. The quince is much used for stocks for ingrafting summer, tender pears, and for Espaliers; they do not suit winter pears so well, as they are very apt to crack: this tree thrives best in damp ground, but will grow well, and bear abundantly, in almost any kind of upland. The quince is a very hardy tree, and requires little more attention than keeping the roots and stems free from suckers—like other fruits however it will become better by ingrafting and inoculating—they ripen in October, and will hang till frost destroys them.

CHAPTER XXVI.

PEACHES.

The peach belongs to the twelfth class of Linnæus's system—it was brought from Persia to Europe, thence to this part of the continent of America: it also is found growing in the forests of South America. It is, when in perfection, the finest fruit of our country, for beauty and flavour: it is deeply to be regretted that its duration is so short, and that it is subject to a malady which no remedy can cure, nor cultivation avert. Of the numberless modes of mitigating or preventing the diseases of the peach tree, with which our publick prints are daily teeming, none have yet been found effectual—the ravages of the worm, which destroys the roots and trunk of this tree, may be sometimes prevented, and with care may be at all times rendered less destructive, but the malady which destroys much the largest portion of the trees, has hitherto baffled every effort to subdue it; neither its source, or

the precise character of the disease, appear to be perfectly understood; in one of the consequences of this disease every cultivator of the tree will agree, that it cannot be cultivated with success on the site of a former plantation, until some years, and an intermediate course of cultivation have intervened: in a nursery established on ground previously occupied by peach trees, the stones may possibly sprout, but in a few weeks they will assume a languishing appearance, the leaves will turn yellow, they will dwindle, and the greater part will perish the first season.

If trees are brought from a sound nursery and planted on the site of an old peach orchard, or in a garden previously occupied by them, or among old trees, the young plantation will share the same fate with the nursery plants, it will seldom survive the first season, and will never be vigorous or thrifty.

The fine peaches which are raised for the Philadelphia market, are cultivated in the following manner. The trees are procured from nurseries established on fresh ground; they are planted on land not previously occupied by the cultivation of the Peach tree; the land is cultivated with manured crops of corn, potatoes, vines, or pulse, without intermission: the trees are carefully searched for the worm, in the spring, summer and autumn. Fresh cow-dung is an excel-

application for wounds made by the worm; ashes and lime, being caustic manures, are offensive to the worm; marle has been successfully and extensively used as a manure around peach trees—several shovels full around each tree—with this management, a peach orchard near a market, or on navigable waters, will be a profitable application of land, but no precautions will ensure its duration beyond two, or three, or at the utmost four years. If it succeeds even for this short time, with a judicions selection of kinds, the product will amply remunerate the trouble and expense, beyond any other mode of employing the land in this country.

The proper soil for a peach orchard, is a rich sandy loam; I have no recollection of a very productive one on very stiff, or cold land.

The following selection comprizes a succession of the most admired kinds, cultivated in this country.

1. WHITE NUTMEG PEACH.

Is very small, the juice sugary: it soon grows mealy, and has little merit, except that of being the first ripe. It is in season in July. *See fig. 1. of Peaches.*

2. RED NUTMEG.

Is larger than the white, and often a fine fruit; it is a small peach, with a bright red cheek, and musky taste; ripens late in July, or early in August. *fig.* 2.

3. MONSIEUR JEAN.

Is a fine early peach, oval shaped, a greenish white, with a red cheek, very juicy and well flavoured—ripens in July and August.

4. NEW-YORK EARLY NEWINGTON.

Is a beautiful round clingstone peach, rich, juicy, and highly flavoured: the stone is small, the colour red and white—it ripens late in July.

5. OLDMIXON CLINGSTONE.

This peach was imported by Sir John Oldmixon. It is an uncommonly fine fruit, of a large size, with a beautiful red cheek—it ripens in August.

6. FAVOURITE.

A beautiful red and white clearstone peach, of a long shape, and large size, the taste very luscious: it ripens early in August.

7. THE EARLY ANNE.

Is a very fine early peach, ripening in August.

8. WHITE MAGDALEN.

Is a peach of middle size, round shape, flat at the stem, the colour a pale yellowish white, with a light red cheek; the flesh sweet, melting and juicy—it ripens in August. (*fig.* 3.

9. RED RARERIPE.

Is a peach of uncommon excellence, frequently called Morris's red Rareripe— it is of unusually large size, sometimes weighing eight and nine ounces; of a round form; beautiful red and white skin; rich, tender, and melting flesh, full of sugary highly flavour-

ed juice, equal to any peach cultivated at the same season—ripens in the early and middle parts of August—clear at the stone.

10. NEW-YORK RARE-RIPE.

Is a very fine rich, clearstone peach, ripens about the middle of August.

11. ALBERGE.

Is of middle size, yellow skin, with a dark red cheek, very melting rich flesh, with a sugary and vinous juice—the flesh is a deep yellow, tinged with red towards the stone. It is deeply indented by a seam running from the stem to the blossom end: ripens in August. (*fig.* 4.)

12. MONSTROUS PAVIE.

This is a very large clingstone, of an oblong form divided by a deep gutter: the skin is a whitish green, with a fine red cheek; thin, smooth, and covered with a light down; the flesh is rich, the juice vinous, musky and sweet. It varies with seasons, and ripens in August. (*fig.* 5)

13. EARLY NEWINGTON.

The Newingtons were originally brought from England: there are several varieties of them, all clingstones—this is a very fine round fruit, with a white skin and red cheek; it is very rich, juicy and luscious, melting and tender flesh; ripening in August.

14. LEMON PEACH.

Is a pale yellow clearstone, almost white, of a middle size, very juicy, melting, and highly flavoured; ripens in August and September.

15. DIANA.

A beautiful large and oblong clingstone; the skin red and white; the flesh very juicy and luscious; ripens in August and September.

16. SWALSH.

Sometimes called the English Incomparable. It is a singularly fine, luscious, juicy, and highly flavoured

clearstone peach—it has no beauty, the skin a dull yellowish green, the flesh green and melting, of very superior quality; makes an uncommonly fine preserve when not too ripe. It ripens in August.

17. OLDMIXON CLEARSTONE.

A beautiful large flat peach, with a white skin, and red cheek; juicy, rich and luscious: ripens in August.

18. PETITE MIGNONNE.

Is a rich peach of small size, and of oval form: the skin is green, with a pale red cheek next to the sun, the juice of a vinous taste: it ripens in August.

19. WHITE RARERIPE.

Or white cheek Malacotan peach, sometimes called the Freestone Heath: is a fruit of uncommon excellence; the size is large, the flesh a rich white, inclining to yellow, melting, rich and finely flavoured; firm like the flesh of a clearstone plum; the skin is a pale yellowish white; the stone frequently separates on the opening of the peach, leaving the kernel exposed, the shells ad-

hering to the flesh, though a freestone: it is the most admired fruit of the season, which is in August. When not too ripe it makes a most delicate preserve. *(fig. 6.)*

20. DUTCHESS.

A very large fine peach, with a white skin, a red cheek and clear stone: ripens in August and September.

21. GROSSE MIGNONNE.

Is a large round peach, flattened at the ends, divided by a deep furrow frequently into unequal parts—the stem small, a small point at the blossom end, the skin covered with a thin fine down, the colour a clear green approaching to yellow, towards the sun a deep brownish red; the flesh is fine, melting, juicy delicate and white—tinged with red near the stone: the juice is sweet, vinous and sprightly; ripens in August. *(fig. 7.)*

22. ROYAL GEORGE.

A large, long, and very handsome clingstone: the skin a pale yellowish white, with a blush towards the

sun—a small point on the blossom end—juicy and finely flavoured—ripens in August.

23. YELLOW PRESERVING PEACH.

A small clearstone peach, the skin a greenish yellow; the flesh of the same colour; dry, and without much flavour—the real preserving peach is without a tinge of red on the skin or near the stone. It ripens in September.

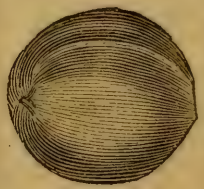
24. LARGE YELLOW PINE APPLE.

Sometimes called Kennedys Carolina clingstone; is a very large rich peach, of an oblong form, pointed at the blossom end—the skin a dark yellow, with a brownish red cheek—the flesh very yellow and rich; of a very sprightly taste, sometimes inclining to too much acidity; the part next the stone highly tinged with red—it ripens in September. (*fig.* 8.)

25. HILLS MADEIRA.

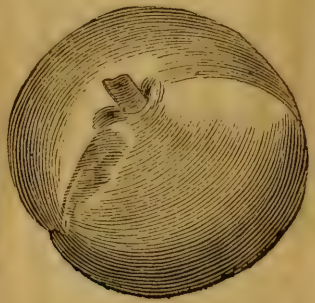
Is a very large clearstone peach, raised by the late Henry Hill Esq. of Philadelphia, from a stone brought

No. 3. White Magdalen.



No. 4. White Nutmeg Peach.

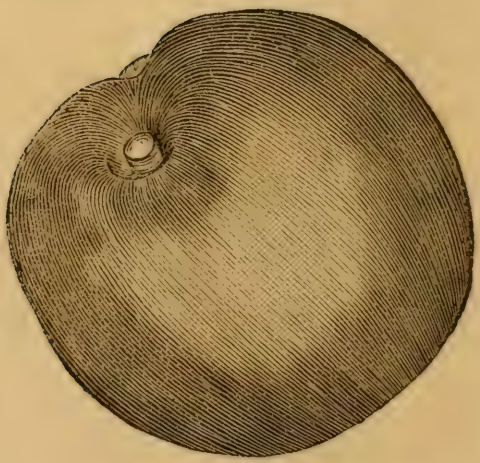
No. 4. Alberge.



No. 2. Red Nutmeg.

No. 5. Monstrous Pavie.

No. 6. White Rareripe.

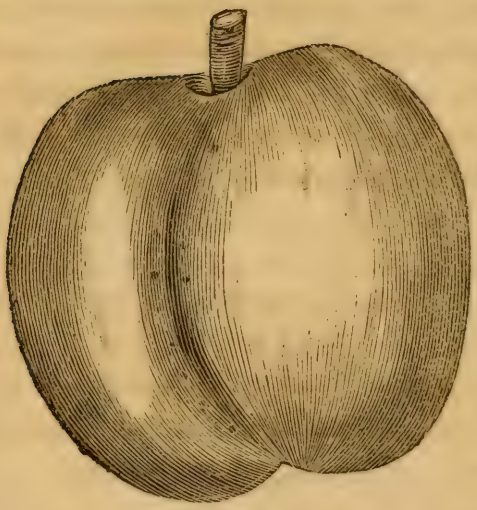


No. 7. Grosse Mignonne.

No. 8. Large Yellow Pine Apple.

No. 9. Red Magdalen.

No. 10. Columbia.



No. 11. Admirable.

from Madeira; it has weighed twelve ounces: the skin is white, with a pale red cheek; the flesh highly flavoured, melting and juicy—ripens in September.

26. BELLE CHEVREUSE.

A large long clearstone; the skin is white, with a pale blush; the flavour very fine— ripens in September.

27. NOBLESSE.

A large and beautiful clingstone; the skin white, with a pale blush, with some dark iron spots—the flesh rich and highly flavoured; resembling the Heath, except in the point, in which it is deficient: ripens in September, and sometimes later.

28. RED-CHEEK MALACOTAN.

A large yellow clearstone, with a red cheek; the flesh is rich and juicy: ripens in September, sometimes earlier.

29. RED MAGDALEN.

Is of middle size, round form, flat next to the stem; the skin a fine red next the sun—the flesh is white, tinged with red near the stone; the juice sweet and sprightly: ripens about the middle of September. (*fig.* 9.)

30. COLUMBIA.

This very singular and superior peach, was produced by a stone brought from Georgia to this place: it is a very large clearstone; the skin is rough, resembling flock paper—of a dull russetty red, full of dark blotches of a red cast, of a texture remarkably thick—the form is flat, with a furrow from the stem to the point: the flesh is a bright yellow, rich, juicy and melting, the grain or fibre like that of an over ripe Pine-apple. I gave it the name under which it has been cultivated, to distinguish it, as a fruit of uncommon excellence. It ripens about the beginning of September. (*fig.* 10.)

31. LARGE NEWINGTON.

Is a large and rather a long fruit, with a white skin

and red cheek; a very rich, juicy, melting and highly flavoured clingstone: ripens in September.

32. ADMIRABLE.

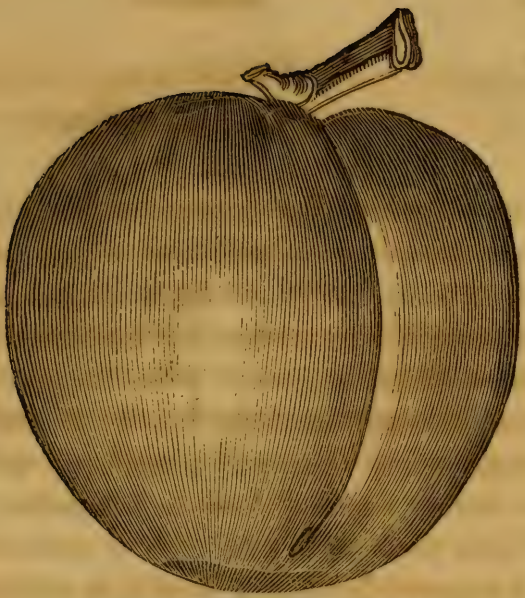
The size is large and form round, divided by a longitudinal furrow; the head is round, with a small point like the head of a pin; the stem grows in a deep and wide cavity—the flesh is firm, white and melting, tinged with red near the stone—the juice is mild, sugary and sprightly—the skin a pale straw yellow, with a lively red next the sun; the character of this peach is very high: it ripens in September. (*fig.* 11.)

33. TETON DE VENUS.

This is a large and round peach, divided by a furrow on one side running from the stem to the point at the head of the fruit, which is so large as to characterize it—the stem is large and planted deep; the skin is covered with a fine yellowish red down next the sun—on the shady side of the colour of straw: the flesh is fine, melting and white, tinged with red near the stone—the juice is finely perfumed; when separated from the stone it leaves long strings of flesh; It ripens late in September. (*fig.* 12.)

34. HEATH.

This very fine clingstone peach is generally esteemed the finest in our country: the original stone was brought by the late Mr. Daniel Heath from the Mediterranean: it has ever since been propagated from the stone in Maryland, where I have seen it in great abundance and high perfection, as a natural fruit, in September and October; it is usually propagated in this and the adjoining States by inoculation; I have for some years raised them from the stone, and have now a number of vigorous trees from stones brought from Maryland. It is a very large fruit; of a form rather oblong, and uniformly terminating in a point at the head—the flesh is singularly rich, tender, melting, and juicy—the stone frequently opens, disclosing the kernel—the skin is a rich cream-coloured white, some times with a faint blush, but the finest peaches are entirely white—the juice is so abundant, as to make it difficult to eat this peach without injury to the clothes; the leaf is luxuriant and smooth at the edge, the tree vigorous, hardy and long-lived, compared with other trees—the fruit ripens in September, lasts through the month of October, and is frequently eaten in high perfection in November: it is of all peaches, when not too ripe, the most admired when preserved in sugar, or in brandy.



No. 12. Teton de Venus.

No. 13. Late Heath.

No. 14. Teindoux.

No. 15. Persique.

35. ROSE, OR FLOWERING PEACH.

This is a beautiful and very much admired tree when in bloom; the blossoms are double, and of the size and appearance of the May rose: they do not usually produce fruit; but in favourable seasons, and in a strong soil, I have known them to bear two, and sometimes three peaches from one blossom; they are small clear-stones, perfectly white, very rich and highly flavoured; ripening in September.

36. TEINDOUX.

This is a large and round peach; rather wide than long, with a furrow on one side; the skin is covered with a fine light down, of a delicate red colour—the flesh is fine, and white, tinged with red next the stone; the juice is sugary, of a delicate taste: it ripens about the end of September. *fig.* 14.

37. PERSIQUE.

Is a large and long peach; the skin rough, with large spots and inequalities of surface near the stem—the cheek next the Sun a fine red—the flesh firm and

juicy, white, tinged with lines of red near the stone; the juice lively, delicate and of a pleasant taste: it ripens in October. *fig.* 15.

38. SCARLET PEACH.

Is cultivated merely for preserves and pickles; more for the colour than any particular excellence: it is called Sanguinole by the French gardeners. There is a scarlet clingstone which has less flavour even than the clear-stone.

The term Pavie is used by the French writers to denote a clingstone; the clearstone fruits only they call peaches. It is usual to save peach stones in earth through the winter, exposed in the open air to the frost: in the spring, those which do not open from the effect of the frost, are carefully cracked by a blow on the side, so as not to injure the kernel: these kernels are then planted like beans, in rows four feet asunder, and one foot apart in the rows—when sprouted, they are cultivated by the plough and harrow, and inoculated the first autumn—those which fail the first season are budded in the second, about the first of August—in one year, if they grow well, they will attain in good ground the height of six and seven feet; they are in the fittest state to plant out in one year from the

inoculation. In two years from that time, if well cultivated, they will be bearing trees.

CHAPTER XXVII.

PLUMS.

Are natives of the United States; in many parts of which they are found in great abundance, in numerous varieties of colour, form and size, many of them of good flavour. The kinds cultivated in our gardens, have chiefly been brought from Europe, or produced from the stones of imported plums; of these I have selected the following kinds, which comprize a succession for a private garden.

1. CHERRY PLUM, OR MIROBALAN.

Is the earliest of our plums—it blooms so early in the season, that the blossoms are generally destroyed by the spring frosts: they are very unproductive of fruit from this cause, but are cultivated for the beauty of the form and foliage. The fruit is small, very round

No. 2. Drap D'or, or Yellow Gage.

No. 1. Mirobalan, or Cherry Plum.

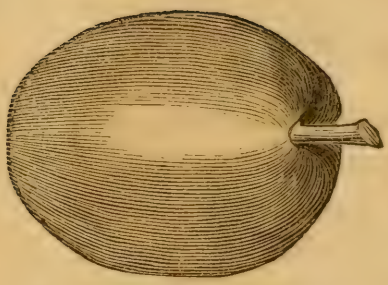
No. 4. French Copper.

No. 3. Orleans.

No. 5. Elfrey.

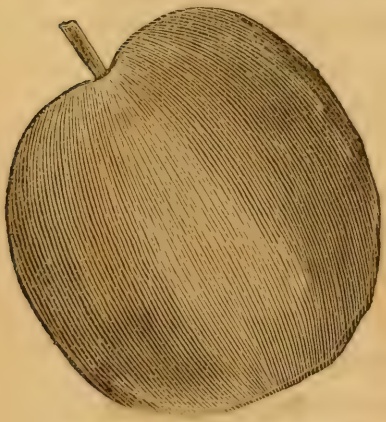
No. 6. Perdrigon Rouge.

No. 8. White Magnum Bonum.



No. 10. Imperial Violet.

No. 7. Prune.

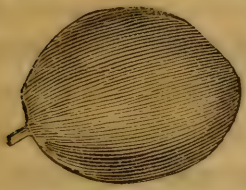


No. 12. Coopers Plum.

No. 11. Red Magnum Bonum.

No. 13. Wine Plum.

No. 14. Reine Claude, or Green Gage.



No. 15. White Damascene.

No. 9. Blue Gage.

No. 17. Prune Suisse.

No. 16. Jacinthe.

at the crown, and flat at the stem, which is long like a cherry stalk; the skin of a bright red colour; the flesh yellow, juicy and pleasant, except near the stone, which is astringent: it ripens about the middle of July.

(*fig.* 1.)

2. DRAP D'OR,

Cloth of Gold, or Mirabelle double—commonly called the Yellow Gage.

Is a most valuable fruit for its productiveness and flavour, and much admired for its beauty: although it is smaller than the Green Gage, on vigorous trees in good exposures, they will attain a pretty good size; the skin is a bright yellow with a fine down, and red spots; the flesh separates from the stone, is juicy and rich—when in good condition, but little inferior to the Green Gage: it ripens in July. (*fig.* 2.)

3. MOGUL,

White Imperial, White Magnum Bonum, or Egg plum.

This plum is cultivated under all the above names; principally for preserving, from its large size: the form is oblong; the skin, when fully ripe, a bright yellow;

the flesh is sprightly, juicy and firm; the flavour not very high; it is usually gathered before fully ripe, for the greater beauty and delicacy of the sweet meat; the tree is fruitful and hardy—it ripens late in August. (*fig.* 8.)

4. FRENGH COPPER.

Is a very fine large early plum; the skin is blue, with a cast of copper; it is a free-stone, and a great bearer: ripens in July. (*fig.* 4.)

5. ORLEANS PLUM.

Is a plum of rather small size; the form round, the skin red, the flavour fine and delicate: it ripens in August. (*fig.* 3.)

6. ELFREY.

Is a natural plum, of fine flavour; rich, and melting, but firm flesh; when ripe it splits open—the size is small—the skin blue—the flesh dry, and green; the the foliage of the tree is rich, and glossy: its productiveness very great—few plums more admired: it ripens in August. (*fig.* 5.)

7. RED PERDRIGON.

Is a small, handsome, red, round plum; the flesh rich, juicy, and highly flavoured, a small hollow on one side—the skin spotted with a fawn colour; the tree bears abundantly: ripens in August. (*fig.* 6.)

8. PRUNE PLUM.

Is a large oblong plum, the skin blue, the flesh rich, sweet, and dry—the flavour fine: it ripens in August. (*fig.* 7.)

9. BLUE GAGE.

Is a small blue plum of the size of a Drap d'or; round at the stem—rather flat at the blossom end: it is highly flavored, with rich, and firm flesh—and is thought a very fine and delicate fruit. It was imported from France: the time of ripening is in August. (*fig.* 9.)

10. IMPERIAL VIOLET.

Is a very large blue plum, with a reddish cast, of an oblong form; the flesh rich, juicy, and highly flavoured; ripens in August. *(fig. 10.)*

11. RED MAGNUM BONUM, OR RED IMPERIAL.

Is a very large plum of an oblong form, with a dark red skin, inclining to purple, covered with a light down; the flesh is firm, somewhat acid and dry, fit for preserves—in which way it is chiefly used: ripens in August. (*fig.* 11.)

12. COOPERS PLUM.

This is the largest plum I have seen: it was produced from the stone of an Orleans plum, planted by Mr. Joseph Cooper of Gloucester county New-Jersey. It is when fully ripe, a very fine, rich, juicy fruit; the skin a rich dark purple; the colour of the flesh a yellowish green: before it is too ripe, it makes an exquisite and beautiful preserve, by taking off the thin outward skin. The disposition to rot is the great defect of this plum, arising probably from the luxuriance

of the tree, which grows vigorously and to a great size: it ripens in August. (*fig.* 12.)

13. WINE PLUM.

Is a large plum of an oblong form, and pale green skin, with a long stem; the size is less than that of the white Magnum Bonum, but otherwise much like it in appearance: the flesh is rich, juicy and well flavoured: it ripens in August. (*fig.* 13.)

14. GREEN GAGE, OR REINE CLAUDE.

Of this plum there are several varieties. The size in good soils is large, the form round, and the skin green; the flesh is green, melting, juicy and exquisitely flavoured, beyond any other plum when growing in a good exposure, well sheltered and protected by a pavement over its roots. It is a delicate clear-stone fruit, and seldom succeeds either in grass or open situations, without shelter from buildings; but when it does succeed, its excellence repays amply any care or trouble in the cultivation: it ripens in August. (*fig.* 14.)

15. WHITE DAMASCENE.

Is a small plum of oblong form, the skin a dull green, with brown spots, a tolerably rich and juicy cling-stone: ripens in September. (*fig.* 15.)

16. JACINTHE.

Is a large blue plum, of an oblong shape—the skin of a violet colour, rather thick, covered with fine down; the flesh is yellow, firm, and dry—the juice sprightly. I imported this plum from England: it ripens in August. (*fig.* 16.)

17. PRUNE SUISSE, OR SWISS PLUM.

This plum is of ordinary size, and rather round in form, without any furrow—a little flat at the blossom end; the skin is of a violet colour, covered with down; the flesh a clear yellow, very juicy, and sweet: it ripens in the beginning of September, and continues in perfection a long time. (*fig.* 17.)

18. HOLLAND PLUM.

Is a remarkably fine clear-stone plum, of a round and rather flat shape—the colour blue; the flesh rich, juicy, and highly flavoured: it hangs on the tree after being fully ripe, and frequently dries without falling: the maturity of the fruit is in September. It is supposed to derive its name from the circumstance of its being much cultivated among the descendants of the original Dutch settlers in New-York, by whom it was probably brought into this country.

CHAPTER XXVIII.

APRICOTS.

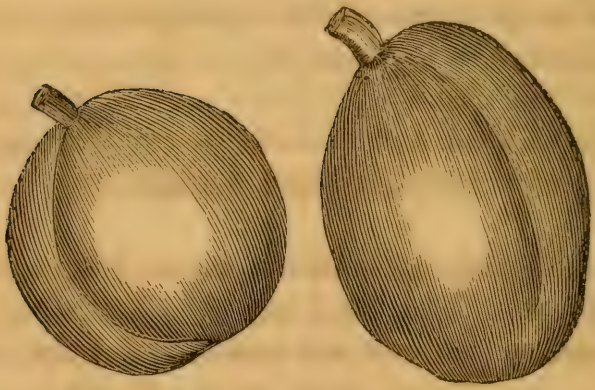
Linnæus comprehends the apricot in the same genus with the plum and cherry: yet the two latter will not take on each other, nor will the apricot take on the cherry: but peaches succeed on apricots—and the apricot will take on every kind of plum. I have found the apricot produced from the stone a more vigorous stock for the peach, than any kind of plum stock.

This fruit is extremely tender in our severe winters, in exposed or open situations, unprotected by a wall. The following kinds have been found by experiment to succeed the best in our climate.

1. THE EARLY APRICOT.

This is round, a little inclined to an oblong in

No. 2. Peach Apricot.



No. 1. Early Apricot.

No. 3. Brussells Apricot.

shape, with a furrow running from the stem to the head—the skin is a bright yellow, with a red cheek; the flesh a yellowish white—its greatest merit is its early maturity: ripens in July. (*fig.* 1.)

2. PEACH APRICOT.

This is the largest, and in general estimation, the finest of all the varieties of the apricot; the form is round, the colour a yellowish fawn, on the shady side, slightly coloured with red towards the sun; the flesh is yellow, sprightly, juicy and highly flavoured. I have measured one more than five and a half inches in circumference. (*fig.* 2.)

3. BRUSSELLS APRICOT.

This is the most hardy tree, and the most certain in our climate: it is a large, long, and rather flat fruit, the colour a pale yellow with a portion of red, and some red spots, the flesh a pale yellow, firm, rich, tender and juicy—it is clear at the stone, never grows mealy, and ripens from the middle to the end of July. (*fig.* 3.)

4. LARGE EARLY APRICOT.

This is a fine fruit, resembling the Brussells, but not so large nor so pale a colour in the flesh; ripens in July.

5. BREDA APRICOT.

This is a large, round, deeply coloured yellow fruit; the flesh tender and juicy; ripens in july.

6. ALGIERS APRICOT.

The form is oval, and flatted—the skin a straw colour; the flesh highly flavoured and juicy: ripens in July.

CHAPTER XXIX.

NECTARINES.

They belong to the twelfth class of Linnæus, and are arranged by the French writers among the peaches: the tree differs in no respect visibly from the peach; the fruit is smooth and naked, without fur or down, the flesh firmer. It seldom succeeds in the climate of this State, unprotected by buildings—the tree grows as vigorously as the peach, subject to the same diseases— and blossoms and bears fruit in abundance, but they generally fall before perfectly ripe; from the nakedness of the fruit, they are equally liable as the plum, to be injured by the various species of Aphides.

I could never raise them in an open situation, more than one year—my trees were then young and vigorous, they bore abundantly, and a large portion of the fruit of several kinds ripened in the fullest perfection; after several subsequent, but vain attempts, I have a-

bandoned the cultivation of them—I believe they will thrive as well as the peach in the sheltered gardens of our large towns.

1. RED ROMAN NECTARINE.

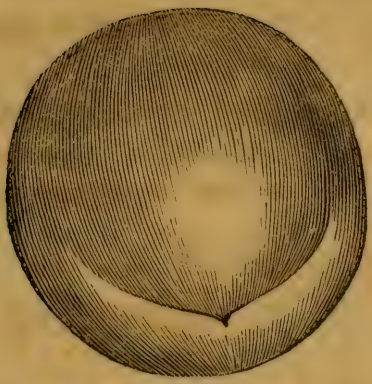
This is the most hardy in our climate. It is a large, handsome, red cling-stone; of a dark colour next the Sun, the shaded side yellow; the juice is rich; the leaf smooth: the time of ripening July and August.

2. BRUGNON.

Is a cling-stone, of a pale yellow colour, with a deep red cheek towards the Sun—a well flavoured, juicy fruit: ripening in August and September.

3. JAUNE LISSE.

The form of this nectarine is round; the skin yellow, a little spotted with red towards the Sun—the flesh yellow, and firm, sweet, and highly flavoured: ripens in September. *(fig. 1.)*



No. 1. Yellow Nectarine.

No. 2. Musk Violet Nectarine.

4. MURRY NECTARINE.

Is a pale green colour on the shady side, a red cheek towards the Sun—a well flavoured fruit: ripening in September.

5. MUSK VIOLET NECTARINE.

This fruit is of large size; the colour a yellowish white, with a fine red violet towards the Sun with whitish spots—the flesh yellowish white, firm, vinous, sweet and musky: ripens in September. *(fig. 2.)*

CHAPTER XXX.

CHERRIES.

The cherry, of an inferior quality, and very diminutive size, is found in great abundance in a wild state in many parts of America—it belongs to the first section of the twelfth class of Linnæus.

The numerous varieties of the cultivated cherry found in our gardens, have been brought from Europe; into which country they were introduced originally from Pontus in Asia.

The following kinds have been selected as the most in estimation.

1. MAY DUKE.

Of which there are several varieties, is a handsome,

round, large red cherry; of fine flavour: ripens about the end of May, and is usually the earliest fruit in our markets.

2. WHITE HEART.

Is a beautiful, delicate fruit: of a heart shape, with a waxy white skin, tinged with a pale red next the Sun; the flesh firm, and finely flavoured—is a very bad bearer: ripens with the May-duke, about the last of May, and beginning of June.

3. THE PORTUGAL.

Is a fine early red-heart cherry, very rich, and finely flavoured: ripens early in June.

4. HOLMANS DUKE.

A fine early variety of the May-duke: ripening early in June.

5. BLEEDING HEART.

Is a very fine rich cherry—when fully ripe, of very superior quality—the juice and flesh are both of deep red; the best cherry about the middle of June.

6. JUNE DUKE.

In the neighbourhood of Philadelphia, called the Shippen cherry—and well known as the Wetherill cherry—is the most valuable cherry of the season: it comes to perfection when the common black, or mazard affords food for the birds: it is an abundant bearer—with very rich juice—of a large size; and very free from rotting. The tree is of vigorous growth: it is remarkable for the uniform swelling of the stem and larger limbs at the knots: it ripens late in June, and hangs for a long time on the tree in a sound state.

7. MAZARD, OR COMMON BLACK.

The fruit most universally planted through the country, used for stocks on which to inoculate or ingraft every kind of heart cherry: ripens late in June; much used for bounce with rum or brandy.

8. KENTISH RED, OR PIE CHERRY.

Is a tree of small growth, very much cultivated for pies. The flesh and juice are of a light colour, and too acid for eating in an uncooked state: the size is small and round: ripens late in June.

9. AMBER, OR IMPERIAL.

Is a large, round, and most beautiful cherry—the skin is of a rich glossy cream colour, with a faint blush on one cheek; the flesh very luscious and firm—the tree grows large, is of a form remarkably regular and spreading, the foliage large and luxuriant: ripens late in June, and in the beginning of July.

10. OX-HEART.

Is a long and large cherry, with a dark red skin, dotted or rather striped with deep blood red strokes: the flesh is rich, the stone very long—ripens late in June and early in July.

11. TRADESCANT.

This is what is sometimes called the Harrison heart, more frequently the Ox heart, and by many the Amber cherry: it is a most beautiful fruit, of a large size, somewhat pointed or heart shaped—the skin is a smooth yellow with a bright red cheek, a little variegated; the flesh firmer than that of any other cherry, and clear at the stone, resembling when bitten, a firm plum—the flavour exquisite: this is probably our most admired cherry—it is however a very tender tree, and rather an indifferent bearer; very liable to be affected by the frost and sun, on the south-west side: it ripens late in June, and early in July.

12. LARGE BLACK-HEART.

When fully ripe, this is a very fine, large, rich, cherry: it is frequently eaten before it is fully ripe; even then it is a good fruit, from its great sweetness—it ripens early in July: the tree is of uncommonly vigorous growth, and a great bearer.

13. CARNATION.

Is one of our most excellent cherries; the form is round—the size large; the skin a beautiful variegated red and yellow; the flesh yellow and rich; the juice very sprightly, and light coloured. It is when fully ripe, an admired dessert fruit, and is preferred to almost every other cherry for preserves: it ripens late, and is remarkably free from attack by birds and insects from the thinness and delicacy of its juice: it is in season in July, and lasts free from rot longer than any other fine cherry.

14. HONEY CHERRY.

When growing on vigorous trees this is a middle sized fruit; otherwise it is small—the form a little pointed; the flesh very rich, and sweet, and sprightly enough to be finely flavoured—the skin is a deep red; the tree hardy, and an abundant bearer: it is much admired at a season when there are many fine cherries: ripening with the Carnation and Amber, late in June.

15. MORELLO.

Of this cherry there are several varieties: some of them of very large size; all of them of great sprightliness and richness. It is the finest cherry we have, for pies, for brandy, for preserves, and for drying: it will keep in high perfection, when bottled, without sugar or spirits—and from the lateness of its maturity, it is seldom injured by birds or insects; but is frequently gathered from the tree, perfectly dry and shrivelled, very sweet and in good condition.

There is in addition to the foregoing list, many other kinds, divided by slight shades of difference, arising from soil, aspect, and climate: but the selection I have made appears to possess as many advantages as can readily be combined in one collection both for variety and duration. American gardeners, borrowing their habits from their European ancestors, use the distinguishing terms of Heart and round cherries; comprehending under the latter term, the different varieties of the Duke cherry. The French gardeners have adopted a different arrangement, viz.

1. Bigarreaux. 2. Guigne.	Sweet cherries.
3. Cerisier. 4. Griottier.	Acid cherries.
5. Merisier.	Heart cherries.

The cherry is propagated by budding and ingrafting—from its disposition to throw out gum from wounds in the vessels of the bark, the former mode is most generally adopted. The heart cherries do not succeed well on any but the black Mazard stocks, but round or duke cherries do as well on Morello stocks, which are often preferred from their being less liable to the cracks in the bark, from frost and sun on the south-west side; this injury may be almost effectually prevented by planting on the east side of board fences or buildings, or by fixing an upright board on the south-west side of each tree in open situations.

The best stocks are raised from stones planted in the nursery. Stocks raised from suckers of old trees, will always generate suckers, which are injurious and very troublesome in gardens: diseases of old or worn out varieties, are likewise perpetuated by the use of suckers for stcoks.

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