

**HORTICULTURE—PEAS, BEANS, RADISHES, LETTUCE, CABBAGE,
ONIONS.**

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THE *Pea* is one of the most delicious vegetables which our gardens produce; it is a universal favourite, and is grown abundantly by persons in every station of life; it is of ready culture, and very hardy, but there are points which ought to be investigated, in order to obviate certain inconveniences, and to promote larger crops with less danger of failure: these I shall shortly allude to.

Botanically—the *Pea*, *Pisum sativum*, belongs to the natural order *Leguminosæ*, and to its first suborder *Papilionaceæ*. In the Linnæan system we find it in Class XVII. Order IV. *Diadelphia Decandria*. Stamens 10, nine of the filaments are united for more than half their length into a semi-cylindrical keeled tube open on one side, but closed by the tenth filament, which is flat and awl-shaped. The essential character is found in the *style*, which is triangular, keeled above and downy. The two upper segments of the calyx are wider than the three lower. It is a native of the south of Europe, and was introduced to Britain at a period not known, nor perhaps now to be discovered. The species are few, but the varieties of the garden pea are very numerous, and capable of great extension, by hybridization. Some are highly valuable both for garden and field culture; none more so than the following, which afford ample choice for every appropriate season and situation.

It is but candid to observe, that the succeeding remarks apply to the climate of South Britain, a circumstance which I regret; nevertheless, the experienced cultivator in the north will be able, to make the required corrections without difficulty; the constitution of the plant is, in fact, so hardy, that it can adapt itself to almost any degree of transition; an assertion which the following anecdote will tend to establish. Three or four years since, I raised a few early frame peas in a hot-house, but the weather was so cold and ungenial, that I dared not transfer them to the open soil. The plants grew rapidly and became 'drawn': as an experiment, I cut them over very low, yet they sprouted vigorously afresh; and the season becoming much

milder, I one very fine morning removed them to an open border, with care not to injure the roots, also to bring the earth in close contact with them, raising it in a sort of ridge against the plants: two or three inches, however, of the stems remained unprotected. As evening advanced the temperature became much lower, and during night was reduced to three or four degrees of frost. In the course of twenty-four hours these peas * were subjected to a transition amounting to between thirty and forty degrees, immediately after the disturbance of their roots; yet they not only survived the severe frost, but produced a fair number of really good pods.

Approved varieties are the *Early Frame*, and *Early Charlton*, good bearers, which may be sown in October, November, and December, in single rows; and if the spring be propitious, they will produce moderate crops towards the close of May and the beginning of June; height three or four feet.

Early White Warwick, the new and most valuable pea alluded to in a former article: † it may likewise be sown in the autumn, and will come into bearing in a period as short as the nature of the season will by possibility permit. It is adapted also to medium and late crops; and possesses a high and peculiar flavour. The plants rarely exceed one yard in height. In the field they, of course, are never assisted by sticks, and are planted in rows, about a foot or sixteen inches asunder.

Bishop's Early Dwarf, a neat little pea, decorated with blossom from the soil to the extreme point of the stems, which rise little more than a foot high. The pods are small, and contain but a few seeds; the variety indeed is more curious than useful; and is not so early as the Warwick; I have noticed it, because I find that is a great favourite with some persons.

* It is usual to write the plural of pea *pease*; I object to this orthography, as I deem the latter word to be expressive of an "adjective" quality, as *pease-pudding*, *pease-soup*, *pease-straw*, and not of *plurality*; "*peas*" surely is correct, *pea sing.* *peas plur.* not *pease*.—TOWERS.

All lexicographers of authority spell the *plural* of pea, *peas*; and the spelling, *pease*, is used by them to denote the kind of seed in contradistinction to other seeds. Why the distinctive difference is made in the orthography of the same authorities are silent, but it certainly exhibits the beautiful variety of our language.—EDITOR.

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Spanish Dwarf grows from eighteen inches, to two feet high; is of a close compact habit, peculiarly suitable to dry seasons, and to districts frequently visited by high winds; it yields well for its size, and the flavour of the pea is pretty good, but it is not considered early.

Woodford's Marrow Pea, one of the most estimable of the new, or newly named, varieties; height thirty inches, extremely prolific. Pods of medium size, seeds large, and full of a high flavoured, delicious pulp; none can surpass it for general spring culture, unless it be the

Dwarf Blue Imperial. This indeed is surpassingly excellent. I know not its origin, but conceive it to be a hybrid between the Prussian-blue, and one of the marrow-fats. Height three feet, herbage rich, strong, and of a fine glaucous bluish tint; that is, in situations and soil favourable to it; but some complain that it does not prosper with them. I believe that it requires a soft, unctuous, and rather open loam, enriched with black vegetable earth, and not with common mixed manures. Season of sowing between February and June.

Prussian-blue.—A hardy and most fruitful variety, suitable to any climate; to the field as well as the garden, for the middle crops. The fruit is a bluish grey when quite ripe, and not so large as that of the imperial. Of the taller growers, the *marrow-fats* and *rounceval* claim precedence; but they are very inconvenient to the grower, and are liable to injury from high winds. One variety, however, merits particular notice, because it evinces the importance of cross impregnation; I allude to

Knight's Tall Marrow-fat, the history of which may prove interesting to many who are not acquainted with its origin.

Mr Knight, the President of the London Horticultural Society, has described his experiments in the Philosophical Transactions of 1789. Two years preceding (1787) he had a degenerate sort of pea growing in his garden which was not restorable by attention and culture. "Being thus a good subject of experiment, the male organs of a dozen of its immature blossoms were destroyed, and the female organs left entire. When the blossoms had attained their mature state, the pollen of a very large and luxuriant pea was introduced into the one half of them, but not into the other. The pods of both grew equally, but the

seeds of the half that was unimpregnated withered away, without having augmented beyond the size which they had attained before the blossoms expanded. The seeds of the other half were augmented, and matured as in the ordinary process of impregnation, and exhibited no perceptible difference from those of other plants, of the same variety—perhaps because the external covering of the seed was furnished entirely by the female. But when they were made to vegetate in the succeeding spring, the effect of the experiment was obvious. The plants rose with great luxuriance, indicating in their stem, leaves, and fruit, the influence of this impregnation; the seeds produced were of a dark grey. By impregnating the flowers of this variety with the pollen of others the colour was again changed, and new varieties obtained, superior in every respect to the original on which the experiment was first made, and attaining in some cases a height of more than twelve feet.”

The *Sugar Pea* is not recommended for the ordinary uses of the table, but as forming a most excellent pickle. Its shell is destitute of that tough membrane which is found in other peas; hence the entire pod is occasionally cooked, and eaten with melted butter; it is extremely sweet, and on this account, as well as for the little resistance its husk opposes, birds devour the seeds rapaciously.

The foregoing list contains ample materials wherewith to form a very complete collection of peas; small families would require two or three varieties only, as for example, the white Warwick for the earliest and latest crops; because it vegetates speedily, and is quickly off the ground; and the Prussian blue, and Woodford's marrow, for the main summer crops.

The soil for peas ought to be a mellow, rather light, and sandy loam, enriched with vegetable compost, wood-ashes, and perhaps by a sprinkling of salt. In sowing the seeds, drills should be traced an inch and a half or two inches deep, and not less than a yard apart; they vegetate more perfectly, and the plants yield a better crop, when the seed is sown in long single rows; but space and situation will not always permit this to be done: the soil also becomes less contaminated than when large beds are planted.

The *Sugar Pea* affords one of the strongest evidences of the truth

of the "*excretory theory*;" for not only does the root emit a most powerful specific odour, which fills the soil; but it produces a species of mouldy excrescence in great abundance,—in so much that, in shallow land, over chalk or marly loam, the pea refuses to vegetate, or at least to perfect its growth after three or four reiterated croppings. I have witnessed the entire failure of pea crops in land so saturated,—and in some districts the common people have a local term to express this specific poisoning of a soil—they say it is "*over-pea'd*."

: Not many weeks since, I had an opportunity to converse with one of the best kitchen gardeners in the kingdom, and observing a peculiar mode of cropping the borders, I made it the subject of minute inquiry. The *permanent* crop is the strawberry, planted in rows about a yard asunder, and retained strictly within its limits; between each row a crop of *early peas* is succeeded by one of *Cape Broccoli*; the ground is manured once a-year, and is kept in perfect heart and condition by this rotation. The gardener is a native of Scotland, a man of acute discernment, and who duly appreciates the facts which come under his observation. His experience had satisfied him that the broccoli took up and cleared the land from that peculiar matter which pervades it, when crop after crop of peas is sown; and hence that broccoli, and, I may add, the *brassica* tribe in general, become excellent successions to the pea, and perhaps to other leguminous vegetables.

Times of Sowing.—These must depend upon climate, and the object of the cultivator. Most persons affect an early crop of peas, and there are several methods by which the plants may be forwarded in their early progress. If the season be open, an October or November sowing may succeed perfectly; and it will not be improper to try a few drills of *frame* and *Warwick* varieties. The very finest crop of peas which I saw in the early part of the present year, was sown in November 1835, in one long drill, three or four feet in advance of a high wall, with a south aspect; there was scarcely a blank throughout thirty or more yards; the plants were closely supported and protected by small branchy sticks of the spruce fir; and where this material is to be had in abundance, its close, well-set and regular spray serves equally to protect the advancing plants again

the attacks of birds and frost. But peas sown early in the open ground, present but a very insecure promise of ultimate success: mice, birds, and insects assault them; alternations of temperature, profuse rains, swampy ground, and rigorous frosts, all combine to thin the plants, if not to destroy them altogether. Nothing can be safely effected till the end of February; for with the best winter treatment, a very great waste of seed must be anticipated. The most effectual remedy is found in a hot-bed frame and lights, simply supported on four bricks—one at each corner,—and furnished with a bed of good, light earth, six inches deep: a bank of coal-ashes might be placed around the frame, rising almost to the top of it, and sloping off at a pretty considerable angle. Seed sown thickly in such a bed, early in February, would vegetate perfectly; the lights, covered with a mat in the event of a severe frosty night, would afford ample protection, and the plants would rise slowly, yet securely, without any loss. It is well known that peas sown in the open ground become, as before observed, an easy prey to field-mice and birds; scarcely one-third of the seed produces perfect plants; whereas in a glazed frame, a quart of seed will yield an abundant crop, and cause a real saving. One objection, however, of some moment, may be started against the frame culture of peas; the plants must be taken up, and transplanted one by one, and the operation requires much time and attention. To obviate this objection, I would suggest an alteration in the mode of raising the peas; for as to the practice of *transplantation*, it is one of real utility, which, far from retarding the growth of the plants, promotes it, and brings them into bearing at a period comparatively early. The plan now to be proposed was first described to me by a young gardener who witnessed its success at one of the first gardens in Nottinghamshire.

A number of grass turfs, three inches thick, and of the same breadth, must be collected: their length, individually and collectively, determined by that of the row or rows of plants intended to be formed, and the convenience for bestowing the turfs. If twenty yards of plants be wanted, as many turfs may be cut; and it perhaps is desirable to cut them in such short lengths, as they will be found more manageable than long ones, at the time of final planting out. Invert each turf, and

with a sharp knife cut a groove along its centre, about an inch and a half deep. One pint of "Warwick," "frame," or Charlton peas, will sow a row of twenty yards, and the same measure is considered amply sufficient to sow thirty yards of the imperials or marrow-fats. Drop the seeds one by one along the groove, to the extent of two or three in an inch, according to the variety, and then cover them with fine earth moderately enriched with leaf-mould, or perfectly decayed manure, filling up the groove, and pressing the earth firmly upon the seed. Place these planted turfs in a frame, or upon the floor of a vinery, or other convenient glazed structure. Air and moderate moisture must be attended to; and with these, and a free exposure to light, the plants will rise freely and grow rapidly, without danger of being "drawn" up. If the peas be raised in a warm vinery, it will be prudent to harden the plants when grown an inch or two high, by removing the turfs to a frame, giving air freely in the forenoon particularly, and closing the lights in the evening, and whenever the weather is very cold and heavy rain falls. As soon as the ground becomes moderately dry, and the weather appears propitious, small trenches should be opened rather wider than the turfs, and an inch deeper, throwing the loose earth to the north or east side of the trenches. Drop the turfs into them, regulate them by the line, press earth close to their edges, and thus a complete row of peas will be formed at once, without that trouble of arranging and fixing every individual pea which must attend the practice of raising the seed in pots or beds of earth.* The loose earth from the trenches should be placed as ridges of defence, which will ward off in a degree the force of cold and piercing winds. Peas so planted out cannot be too early defended by low branchy sticks. These are of great benefit to the plants, which they greatly protect, and, I may say, excite; for the pea being a climber, sends out its tendrils very early, and thus attains that perpendicular growth which nature ordains it to assume. Without it, the plant can be productive of fruit on one side only, to say nothing of the injury that it must receive when its

* We dare say this convenient method of transplanting peas in rows may not be known to farmers, and is worth their attention. The process was first described some years ago in the *Memoirs of the Caledonian Horticultural Society.*—EDITOR.

stem lies prostrate on the cold and damp surface of ground, which during the spring is frequently covered with hoarfrost.

Transplantation, I have said, accelerates the crop, but it refers chiefly to those sowing which are forced, or stimulated under glass. After the third week of March the sowings may be made in the open ground; and if plenty of garden traps be set about the beds, and the peas be closely sticked almost as soon as they rise, or have received their first hoeing, they will generally succeed perfectly.

It only remains to observe on the cultivation of peas generally, that, in order to have a regular succession during the season, a fresh sowing ought to be made, as soon as the plants of the one preceding shall be fairly above the surface of the soil: this holds good with respect to every variety which may be selected; and if there be plenty of space, an abundant supply may be secured. But the season will operate much in producing success, or the contrary; for if it be dry and parching, peas do very little good; and water, unless given profusely, is applied in vain. It is advisable to provide against consequences; and previous to sowing the seed, after the end of April, to drench the soil completely. In a day or two after this operation the surface will become sufficiently dry, and the drill may be formed to receive the seed, which would not be injured by another watering, before the earth is turned upon it. During the summer months, if rain do not follow speedily, and at short succeeding intervals, pea sowing is not likely to be successful, unless these copious waterings be resorted to; but with ground thus duly prepared, it has been proved that gatherings of the finest quality have been made during September, and even to the middle of October. At these periods, this vegetable is an extreme delicacy; and one which cannot be purchased in the market;* and, therefore, is worthy of the utmost attention.

The Bean, Vicia Faba, is another member of that comprehensive natural order, *Leguminosæ*,—and, as its family name imports, it belongs to the Vetch tribe. The flowers are papilionaceous; their colour chiefly white, or white tinted with

* There are plenty of peas in the vegetable markets in Scotland in Octo-

bluish-purple; a black spot is on the wings of most of the varieties, though one or two are free from it. The flowers are peculiarly and most gratefully fragrant: they are succeeded by pods, growing erect from the stems, and nearly without footstalks. The leaves are not furnished with tendrils. The plant is supposed to be a native of Egypt, and to have been introduced by the Romans. The bean abounds with a farinaceous pulp, and therefore is presumed to be highly nutritive. The horse-bean—a variety termed *V. Faba equina*—is found to be excellent food for horses, when blended with a considerable quantity of bran. A bushel of these beans are stated to yield about fourteen pounds of flour more than a bushel of oats. The garden varieties are rather numerous, but three or four of them are sufficient for any family. Some are esteemed for their precocity, others for their fertility, or excellence of flavour.

The Small Early Mazagan. The seeds may be sown for the earliest crops in October or November, and thence to the end of January, in a warm and sheltered situation, open, however, to the sun; but as beans transplant very well, it will be a good plan to select a small spot of ground about six feet square, and after digging and reducing the earth quite fine, to open small drills three inches asunder, and two inches deep, making them very even and solid at the bottom. In these the seeds are to be sown rather closely, that is about three inches apart, and covered with fine soil, which is to be pressed very firmly upon them. This small plot can easily be protected, either by a frame and lights, or by mats laid over hoops, placed archways over it. I have raised the larger beans in pots of earth, in the spring, and transplanted them, when five or six inches high, into drills, with perfect success. Give air freely to covered and protected beds; remove the coverings in mild weather;—in February, or early in March, if it appear settled;—transfer the plants to the open ground, prepared by manuring, digging, and pulverising. The drills should be two feet apart, and be made sufficiently deep to receive the mass of roots. The earth is then to be brought into close contact with the fibres, and raised two inches high about the stems.

The *Long-pod*.—The name expresses the appearance of the pod, which abounds with seeds of a medium size. It is a sure and prolific bearer, though not esteemed for its flavour, and is cultivated everywhere on account of its hardihood and fertility; and as it is suitable to the cottager, by bringing abundant crops at an early period, the absence of high flavour is deemed a secondary consideration. The seeds are sown in rows three feet asunder; the beans two or three inches deep, and four inches apart. Seed-time extends from the first week of February to end of May.

The *Sandwich* is a fine and fertile bean.

The *Broad-Windsor*, the best as respects flavour, but it is rarely prolific; sometimes the pod contains one seed only, frequently not more than two.

With a view to retain the rich, full flavour of this fine bean, but to render it prolific, it has occurred to me, that the object might be attained by hybridizing the two varieties; and I have this year attempted an experiment, on a new and rather large scale, which has yielded me a fair crop of seed, although the spring and early summer were droughty to a distressing degree. What the result may be, another season must determine; and if it be gratifying, I will not fail to describe my simple process very particularly.

Soil, and General Culture.—Beans prefer a rather strong, rich, and moist soil; but they will do pretty well in most kitchen-garden mould.

Drill-Sowing is the best method: the beans should be dropt regularly into the drills, at three, four, or five inches distance apart, according to the size of the seeds, and ordinary growth of the plants. The earth should be pressed firmly upon the beans; and as the plants advance, they should be moulded up a little, and the spaces between the rows kept free from weeds. Sowing after June must not be expected to produce much of a crop; those of February and March, if the season prove rather showery, always yield the best crops. When the plants grow large, and the blossoms expand, it will be prudent to nip off the tops, as it will tend to divert the nutritive fluids into the ripening pods, and frequently arrest the progress, if not wholly stop the attacks of the black Aphid. When these baneful

insects have obtained complete possession, it will be wise to cut the plants down to within five or six inches of the soil; as then, they may be expected to push two or more healthy young stems.

The *quantity* of seed required for a row of eighty feet of the smaller early varieties, is about one pint, according to Abercrombie; for the main crops, where the beans are planted further apart, a somewhat less quantity may be sufficient. The rule given to regulate the sowing of *peas* for succession-crops is applicable to the present subject.

The vegetables which may be raised from seed, by sowings performed in January and February are:—*Peas* and *Beans*, as by the foregoing directions; *Radishes*, at different periods; *Lettuce*, a few of the hardy Cos, Dutch and Green Cabbage; *Cabbages*, the young plants of the summer sowing may be transplanted into open beds, if the work were omitted in the late autumn; *Onions* may be sown or raised from bulbs; the latter process I mean to describe in an early article; it is very interesting.

ON PURIFYING SALT MADE FROM SEA-WATER.

IN the thirty-first number of this Journal, published in December 1835, I observe the following remarks, by Mr James Dickson, cattle-dealer, Edinburgh, in an essay "On the Application of the points by which Live-stock are judged."

"While alluding to the subject of salting beef," says Mr Dickson, "I cannot refrain from making a few observations on the quality of the salt which is in this country used for that purpose. It is well known that the salt manufactured in this country from sea-water is bitter and harsh to the taste. The rock-salt is not devoid of the bitter taste. The salt from St Ube's, or what is called Bay-salt, is somewhat similar, though not so pungent. The salt, on the other hand, which is manufactured from sea-water in Holland has not the slightest bitterness or harshness to the taste. It has a pleasant, pure, saline taste. It is crystallized