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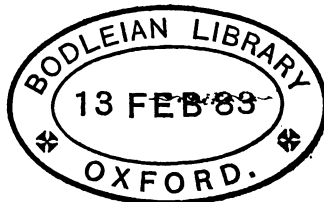
PROFITABLE
MARKET GARDENING.

ADAPTED FOR THE USE OF ALL GROWERS
AND GARDENERS.

BY

WILLIAM EARLEY,

Author of "High Class Kitchen Gardening," "How to Grow Mushrooms," "How to Grow Asparagus," &c.; Horticultural Editor, "Lloyd's Weekly London News;" Judge of Market Garden Farms, Royal Agricultural Society; eight years' Member of Fruit Committee, Royal Horticultural Society; seven years' only Writer Calendar of Operations in "Gardeners' Chronicle, &c"

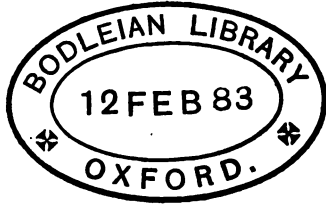


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P R E F A C E .

MUCH has been written on the cultivation of vegetable crops, but, nevertheless, the fact must be admitted that, even to this present date; whilst all else seems to be advancing, very little improvement from very old-fashioned ways has taken place in Home Gardens and Allotment Gardens.

Seeing this to be the case, we have prepared the following chapters on all essential crops, founded upon long practical experience and observation, and trust that the information contained in them may go some way towards securing beneficial results in the shape of larger and better crops in gardens of limited area, and will aid those engaged in this particular industry.

WILLIAM EARLEY.

Ilford, 1882.

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PROFITABLE MARKET GARDENING.

CHAPTER I.

INTRODUCTORY.—THE SOIL: ITS PREPARATION, ETC.

IN writing a work on the culture of "open air" plants we do not intend to follow the customary plan, consisting, as it does, of stereotyped repetitions regarding manuring, digging, trenching, &c., for it is certainly not the one pursued by market gardeners with the good results which usually attend their operations. The soil with its proper preparation is doubtless the medium through which their success is attained, but they are accustomed to proceed on broader considerations and more matter-of-fact knowledge.

The chief considerations with successful culturists are three, viz., abundance of manure, thick and constant cropping, and little hoeing.

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The Soil.—The ground will not bear heavily unless it be well manured. It will, indeed, unfailingly return threefold more on the outlay than will “poverty fare” in this respect, however well it may be worked by means of spade or fork.

Not that we advise a too limited forking or digging for the purpose of fine individual produce; but in dealing with a practical method to be followed, in view of good results from a moderate outlay, it is imperative to state facts as they are.

The market gardener invariably manures heavily after each crop, and before the next is planted. And there should be no time lost between the crops; indeed, it is no uncommon thing to observe a crop being removed one morning and on the following day to find another on the point of being planted in its place. Though the ground is heavily manured, in the majority of cases it is only once ploughed, harrowed, and planted.

Some soils require to be ploughed deeply at times, on account of the nature of certain crops, but it should be observed that the deeper the ploughing the less power has the harrow, which follows, to break up the lower layer of land.

The inevitable conclusion from this fact is that the top spit is turned down below and there merges with the fresh fertilising manure given, and the action of the manure and the latent moisture pre-existing in the ground so ameliorate or soften the hardened surface clods as to make them useful and proper mediums or roadways through which root-growths can travel, and amongst which the extreme and minute root-mouths or spongioles can feed freely.

It explains, besides, a truth which too few culturists give heed to, viz., that if by means of the proper manure a fertilising medium exists, roots really like a moderately firm soil, and

develop a far better surface growth than would be the case in a too loose one.

It is especially important to note this fact in connection with late spring ground workings, and when a dry period may prevail. For, far too generally, ground which is dry late in the spring—as many vegetable grounds invariably and improperly are—becomes too dry, and it needs no great skill to know that the less such ground is manured and the more it is manipulated or broken fine with spade or fork the drier it becomes.

If these facts were recognised more than they are, it would be well; they are worthy the deepest thought of all who would be growers for profit, as they really indicate the *pro* and *con* of successful growth, or the reverse.

Thick Cropping.—Whenever the ground is well prepared, it stands to reason that it ought and will give heavy crop results; and, whether in the case of green cabbage, kale, or broccoli and bean crops, &c., the small home grower will do well to follow the grower for profit in this respect. There is little, if any, reason why almost double the number of plants of every sort should not be grown on all limited vegetable grounds. It will be seen hereafter that as much as 15s. per acre is paid for putting in vegetable plants on field-garden grounds. Now, were these not planted more thickly together upon given areas than home growers usually put them, a price equivalent to 6s. per acre would often suffice. Yet does the result, as seen in the excellent produce supplied to our metropolitan and large town markets, speak loudly in justification of the means which we commend to notice. Consideration should, as a matter of course, be given to all unduly shaded sites, &c. This matter of thick cropping has, beyond doubt, great influence on the extent of subsequent outlay.

Hoeing Between Crops.—One great and profitable result from thick planting is to be found in the fact that the proper crop by this means covers the ground all over, to the necessary and most profitable exclusion of weeds. When, therefore, crops are planted thickly not a tithe the usual weeds form. Many perhaps may germinate, but the stronger plant-crop without difficulty assumes the mastery, and the weeds have perforce to succumb. To secure this great desideratum the more completely, a time is chosen after the legitimate crops have laid hold, and a start made (always during fine weather) to give the soil one good rapid “move-soil” hoeing. Before the weeds can shoot again, or others form, the proper crop, moved by a combination of incentives—not the least of which is this very hoeing—“grows over the ground,” and the result intended is thus easily secured.

It remains for us now to treat of the important crops *seriatim*, in connection with each of which we shall dwell on the special features of culture which may be needed.

CHAPTER II.

ARTICHOKE.

THE Jerusalem Artichoke is growing greatly into favour as a marketable crop, and it would appear that the liking for it is increasing. A few years since the crop was a very limited one, and the produce on offer was priced at as much as 10s. per bushel. Now, however, the usual rate is not more than a third of this, and we know that in one market, where our influence has tended to increase the supply, the crop—being increasingly grown—is more generally offered.

In growing this vegetable, very little trouble or attention is requisite beyond planting sets somewhat thickly, upon new and not over-manured ground. During an early spring and bright summer season, excellent crops are produced by this simple means.

It is immaterial whether the sets be planted in rows similar to potatoes or broadcast across lands. The sets produce best when placed the same distance apart as are potatoes, though if planted a little thicker, a good average crop can be secured. It is a too general practice to allow sets to remain upon the self-same ground many seasons in succession. Though this may be done for one or two years with but very little difference in

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the result, it is not at all advisable to do so beyond a second crop.

The labour incidental to this crop might be materially lessened by cutting down the excessive head growth before it becomes too hard and aged, and ploughing the crop up subsequently, when, even should the ground be stiff, a harrow would soon set the crop free and in proper state for picking up. It is not judicious to plant very small sets. All will grow and form young crops readily, but they succeed far best when strong shoots result from strong sets.

CHAPTER III.

ASPARAGUS.

THIS is a crop which hitherto has been grown extensively in the southern suburb of London, and moderately in the western suburb and at Colchester. Beyond this, the large quantities sold are obtained chiefly from across the Channel. The method employed is the old one of deeply trenching the ground and when this is done forming beds thereon some 5ft. across with 2ft. alleys between. The beds are allowed to nicely "mellow" over, by a few weeks' exposure to the sun and air, when they are broken down finely on the surface by aid of the rake, and the plants, with their roots spread out both straight and evenly apart, are put in some inch or two deep, and about one foot apart.

The plants are raised by sowing seeds in rows across the kitchen garden, or selected quarter, about the month of April in each year. The seedlings make a growth and form good plants during the first season, and are allowed to die down; the root bases then rest in the ground for the winter, and are carefully taken up and planted during the months of March or April of the following year, or the year after, as the case may be.

Planted in the beds they make a goodly growth during the

next two summer seasons, especially if good surface mulchings be placed over them during each spring month. The upper growths are cut away when ripe in the autumn, and the alleys are dug up as soon as convenient. But previously a layer of manure is placed over the beds, and some of the superabundance of soil in the alleys is then used for the purpose of covering them over. The latter operation, though performed at this season, is much better done during the month of March in each year. By this means a deeper, lighter, and drier surface is obtained, through which the young blade produce can push up and become well suited for market uses.

There are some new sorts accredited as being improvements on our old varieties; these are known by the name of Connover's Colossal, &c., and are of American origin.



CHAPTER IV.

BEANS.

As Beans comprise some very distinct species, it will be well to give each which is of marketable importance under a separate heading, commencing with the

Broad Bean.—Though the Broad Bean is on an average a good paying crop, it is not so generally cultivated as most of the other sorts. Its culture is, nevertheless, of a very ordinary kind.

A singular fact connected with it is that only the oldest or original garden variety now gains any great amount of patronage in the metropolitan markets and those of other large towns. This is the old true broad variety, in contradistinction to the newer long-pod, the Early Mazagan, and others. Indeed, so very distinct is the inquiry for this old "stock," that some growers who happen to possess it very pure are so scrupulously protective of it that they refuse seeds of their variety to any friend or neighbour, and the best kinds are therefore of limited distribution. Our seedsmen at this time are advertising very "improved" kinds, but these seem, in face of the above, to have very little influence on the market. They are good for

gardens, nevertheless, and, it may be added, useful for exhibition. On the other hand, perhaps, as regards actual produce, the old, short, thick variety is second to none when shelled.

This crop delights in a somewhat stiff, deep soil. The seeds are sown from November in one year until the end of the month of April in the next, to keep up a supply as long as demand exists. They are best sown about $1\frac{1}{2}$ in. apart in the rows, and in irregular or triangular form, if possible. Whether the rows are narrow or wide apart is not of such material importance as might be surmised, if proper room is left to work between them. There are many methods that may be employed to obviate the necessity of having this crop to stand alone. Excellent broad beans can be grown usefully between trenches of celery. By forming these trenches early in the season, or about the months of December and January, when open weather prevails, and planting in rows between and somewhat thickly, the beans will come up early and prove an excellent protection to the celery crop—in cases where celery seed is sown in the trenches, as it sometimes is, or when transplanted in very small seedling form.

Dwarf French Beans.—The Dwarf French Bean is a prolific cropper, considering the density with which plants can be grown, and the weight of produce they give successively for several months of the summer season. They also command a moderately good sale. The culture is very simple, though the ground cannot be too well prepared beforehand, being freed from weeds, and not too tenacious.

As regards the sowing, row-planting only is admissible, and the rows need only be sufficiently wide apart to allow room to work between the crop—"room," that is, for hoeing, &c.—and the proper picking of the produce when ready. This crop

is generally marketed by the bushel measure. Though many good old varieties exist, probably few exceed in usefulness that known as Canadian Wonder.

Scarlet-Runner Bean.—Though the fact may not be readily admitted, the scarlet-runner type of bean is unsurpassed in usefulness by any other green or transitory crop grown. If this is not exactly true as regards the consumption of the higher class of purchasers, those who visit the thoroughfares in the poorer districts of the metropolis and other large towns know it to be so in the case of the lower.

The practice followed in the culture of this crop is not at all intricate, provided certain simple rules are strictly carried out. On the whole, it is a very profitable one, and, moreover, does not greatly impoverish the ground. It has also another merit, which, when fairly good preliminary cultivation has been observed, is assured, and it is this: it grows such an abundance of foliage dwarf and down upon the ground as to choke the whole crop of seedling weeds which germinate and attempt to grow up during the summer and autumn months.

The crop is one which must be hand-sown, necessitating manual labour somewhat similar to that requisite in the case of many other green crops, such as cabbages, &c., though, of course, far less dibbling work is requisite per acre than is the case in connection with these.

I do not consider it necessary to enter into a minute consideration of the requisite soils or to determine which is best, because the plant is found to thrive pretty well even upon poor or but moderately manured soils. One fact should, however, be considered and strictly acted on, namely, that to form a fairly good crop the surface soil must be moved deeply and well. The initial starting or germination of the seeds demands this

the more especially because, if the soil be too lumpy above or too hard immediately below, the sowing bean seed cannot erect its head, and the delicate roots which simultaneously issue forth below cannot prosper.

It is probably difficult to make growers upon good free lands, and lands of good depth and a not too harsh or antagonistic subsoil, understand how very important are these considerations in the case of certain lands to be found in some neighbourhoods, and in Essex more especially. Though, as I have intimated, moderate success is certain on many soils, nevertheless the gain is immensely increased when the ground is ploughed up again and again, — twice, at least, — a good manuring being given before the second ploughing.

Much consideration should at all times be given to the seeds, which, well-ripened, are a very important factor in strong and sturdy young plant formation; but this result can only be insured by making it a subject of special care; and the plant is far best grown up in its own climbing habit upon sticks, the first, or nearly the first, flowers being permitted to produce seeds, and all others which follow, until the plants exhaust themselves and the pods hang thickly together. Indeed, they should in such a case be really set apart for seed production pure and simple, and however exceptional this practice may seem, it is really in the end as economical as any.

In all instances where the seeds are not well grown and ripened, their germinative power is also, independently of the strength of the seedlings, considerably reduced—a fact which tells considerably against them during all inclement or bad spring seasons. However the seeds be grown, it is nevertheless needful to use judgment and care in the matter of sowing. There are, of course, two objects in view in this connection.

Some growers, anxious to be first in the market, sow excep-

tionally early, but seeds so sown are very liable to injury. Should the soil be dry—as it not unfrequently is during the months of March and April—and continue so for some short time afterwards, with an approach to a low temperature, they are very liable to a kind of dry rot, which will result in an absence of anything like full rows, and the great drawback of a most irregular and imperfect crop will be the result.

It is better, therefore, not to risk too early sowings, nor yet to sow seeds during what appears to be a settled or prolonged period of dryness. An important reservation, however, is to be noted in favour of early sowings, which we advise at all times to be made.

That is to say, sow half the crop only at an early date and the other half later, when the weather is more settled. An advantage will be found in thick sowing, inasmuch as it advances early cropping, and, along with earliness, increases the quantity produced. Not only are thick sowings best for purposes of produce, but such cropping should prove of material assistance also in the matter of securing perfect rows. It will be well, therefore, for the purpose of an early crop, to err on the side of sowing too many seeds rather than too few.

As regards early sowings, one fact should not be overlooked. The scarlet-runner type of beans has an enduring capacity far beyond many which re-appear annually. The roots of the past year can be taken up, stored away, and planted out again in the early spring months in precisely the same way as those of *Marvel* of Peru, or the *dahlia*. The resting part, though very much smaller than either, has, nevertheless, very enduring vitality. Some market-garden farmers have occasionally retained these roots, clamped, during the winter, and replanted in rows in the early spring. The practice, however, did not pay so well as

was anticipated, ; consequently, it is not one that we can recommend generally.

Another characteristic of the scarlet runner is that when late frosts kill off the young growths of the beans just as they begin to "spear," or issue from the ground, the bean below ground has still the capacity to form other young growths and to re-appear as before. We do not suggest that this is desirable. We only point to the fact that early sowings are not always lost, even when smitten by late frosts. The crop is not so good nor the plant quite so robust; nevertheless, we have picked a fair average quantity in such a case, and that in good season. Probably this characteristic is exceptional in the economy of plant life. Few, if any, other seeds seem to possess the power of making a similar duplicate effort, and that, too, immediately on the failure of the first.

Early produce, as already intimated, is the most profitable, because a moderate crop, produced by judicious management and placed in the market before the influx arrives, makes much higher prices.

Early pickings, then, being a result of early sowings, another important factor may be noticed—viz., thicker sowings produce marketable beans much earlier than do ordinary distance ones. It is advisable, therefore, in a sunny situation and a warm soil, to sow the bean seeds more thickly together in the rows.

A good ordinary distance for the plants to be apart is from 8in. to 9in., but for thick sowings 5in. or 6in. may be ample. In view of horse-hoeing, stopping, &c., and late autumn growth, it is not judicious to sow more thickly between rows, the same distance as for peas, or about six to seven rows to the "land," being necessary.

One word, *en passant*, regarding the work of sowing and con-

cerning quantities. Something will always depend on the size and quality of the seeds. In general, however, if the latter consideration be satisfactory, one bushel of seeds per acre will suffice.

Two methods of planting are followed, both of which are convenient and advantageous. One plan is to have a man with a hand dibble, using it as for potato dibbling, but, of course, making holes much more shallow and nearer to the surface than for the potato crop. The more general method pursued is for the man to plant his own seeds, with the aid of a long line, and in company with a boy—one being at each end of the line; or two men together use small hand dibbles, making holes very rapidly, and inserting the seeds as they go on. The price paid for this is about 6s. per acre, or, in other words, 6s. per bushel. It should be considered that only 15s. per acre is paid for transplanting cabbages or autumn hardy greens, which, in quantity, are about three or four times more.

The uniformity of the crops greatly depends on the regularity with which they are planted in, and it is for this reason that the hand dibble is best. When a larger dibble is used, and the beans are tossed down into the holes by women or boys who follow, there will always be great dissimilarity as to depth, &c. The hoeing and cleaning are important elements, which must not be left until too late, else the weeds will become so large that it will not be possible to free the plants without injury.

As already intimated, the season for sowing must be chosen with great judgment, if real success is to be assured. Indeed, the ultimate result of a good rather than an indifferent crop depends upon successful germination.

Only those who are accustomed to bulk or weight results, as shown respectively by a regular and an irregular crop, can

realise how very great is the difference. The two great drawbacks to successful germination—viz., sowing immediately before or during either a very dry or very wet season,—can, however, only be neutralised in many instances by sowing in some sheltered position a good batch of seeds, and taking care by artificial waterings, when the weather proves exceptionally dry, or by some kind of protection when too wet, that these really germinate freely.

These ultimately come in very handy for the purpose of transplanting and the filling up of such “gaps” as occur in the crop generally. Where, on the other hand, no preparation has been made to secure this, then, in the case of thin crops, the next best thing is to take up a row or two from field side or headland, and with these to make good all vacancies.

Field culture for market does not admit of stick or pole supports, and for this reason the plants require more direct and constant attention than when they are induced to climb such things, and so exhaust their energies. The young seedlings, as soon as they assume strong leaves and show a tendency to “run,” are well earthed up with horse labour, after having, where necessary, been first thoroughly hand-hoed around from end to end of the rows.

The next process, as soon as the young growing shoots are a few inches in length, or from two to three joints long, is to stop them. This operation, both in the first instance and subsequently, is quickest and best done by the aid of a sharp long-bladed table-knife.

Any active lad or woman can cut off the tender young points, a row at a “bout,” almost as fast as they can walk. From this stage the real secret of abundant crops consists in keeping all shoots which form subsequently persistently and regularly cut

off. As soon as shoots begin to appear they should be stopped, because, as they continue to form in very antagonism, as it were, to such severe treatment, they become more and more short-jointed. Hence, even if they be taken off very short, or very young in their stages of development, nevertheless, as they distend their growth after they are stopped, they will be seen to possess generally not less than three joints. These will be ample; each will produce at least three or four spikes of scarlet bloom and their ultimate accompaniment of as many pods.

By neglecting to "stop" the crops as indicated, a too gross growth will be the result. The leaves will become too large—so much so as to unduly shade the whole base of the plant. This will cause the young shoots to form far less abundantly, and such as do form will become drawn and weakly; hence, also, fewer flower spikes and a less likelihood of fruiting in such as do form; and so the crop gradually becomes enervated and quite the reverse of what is essential for purposes of fecundity both in the present and—what is more serious—in time to come.

Next in importance, which should ever be attached to a judicious method of stopping, is the gathering of the crop. The least negligence in this regard will cause a check which always proves but too lasting.

The pods being picked young, the plants do not seem to suffer nearly so much as when left too long unattended to in this regard. The reason is obvious. Picking the pods when they are a mere mass of tender succulency obviates the tax which is placed upon the plants when two or three bean-pods are permitted to become large and the bean-seeds within them to swell.

Not only does this take place to their detriment, but also—and it should be borne well in mind—there are other pods

advancing, in such manner as to force the plants to support, all at once, a weight equal to two crops, compared with what they would carry under the system of early and constant picking. We have dwelt upon this matter somewhat emphatically, knowing how very important it is, in order to impress it upon the mind of the reader.

Produce that is worth growing is certainly worth growing well, and in such manner that, whilst it shows the best possible results, will also give the most continuous and enduring ones. In picking, every care must be taken to remove too aged pods which may have escaped the vigilance of the pickers.

It is important also to get the sample which is sent to market as clean, uniform, and young as possible, in conjunction with good size of the pods. Bean-pickers often require to be very narrowly watched when picking, which is generally done at so much per bushel ; else they may throw a mixed lot into sack or basket, which not only destroys the sample from an immediate pecuniary point of view, but is very likely to injure the credit of the grower to his lasting detriment.

It may not be in our province to state the fact, but it often happens that much leaf or growth finds its way in lieu of beans into these sacks. In filling the latter, take care that a few are put in at a time, and that the bulk is shaken down as the filling advances. It is a bad practice for two men to throw the sacks down and tread upon them.



CHAPTER V.

BRUSSELS SPROUTS.

It is only during very recent years that Brussels Sprouts have become at all general or moderately cheap, and to be found plentifully on sale at our metropolitan and other large town markets. They are grown very commonly as permanent or standard crops upon market garden farms. A few years since they were very paying, and though they often return a goodly price at this time, the market is "kept down" somewhat by the quantity produced. The crop is not at all a difficult one to manage, though it is generally considered so.

Every possible attention should invariably be given to the proper preparation of the ground, because Brussels sprouts are of little, if any, real value unless thoroughly well and efficiently produced. The object to be held in view is the formation of good sprouts. To grow fine stalks, therefore, is of little avail, unless these are also forthcoming.

The soil should, as far as practicable, be well manured and ploughed up during the late months of autumn—the later the better—the surface being left as rough as possible. This should be done in all instances where circumstances allow of winter fallow, which, however, is not generally available to the real

market-garden farmer, whose land must produce crop after-crop in rapid succession; and the land will perhaps have been occupied with peas, Lisbon or winter onions, lettuces, and similar early crops.

Meanwhile a serious drawback occurs to this all but forced method of culture, especially in connection with so important a crop as the one under consideration; and it demands the utmost possible practical cultural skill. When the ground is turned up—however well it may be manured—following such crops as those just described, during the months of April, May, or June, as the case may be, it is very liable, should the weather prove at all dry, to lose what latent moisture it may possess, to be incapable of becoming again thoroughly moistened until the advent of the autumnal rains, and so to lie hollow and parched for the summer months.

When, therefore, it is imperative from the exigencies of routine that Brussels sprouts should follow such spring crops, the ground should be ploughed up as soon as possible after the previous crop is off, then rolled over with a heavy roller immediately after the plough, and, if very lumpy, again harrowed and rolled. By these means, evaporation will be less, and such latent moisture as may exist will be retained in the soil, whilst that which is in the manure will be conserved and better capable of dissemination throughout the mass. From this point of view it will be readily observed also that the more moist and solid is the manure that is placed in such soils, and the more direct it is taken from the manure heap and buried, the better.

We must not omit reference to one great drawback which occurs in connection with this as with all other "seed-beds" of the kind. The black fly often proves a very discouraging and

determined enemy, often destroying the entire plant as soon as the young seedlings show well through the ground.

As a cure or preventive of this, lime is often sown broadcast in a freshly slackened state, lightly and thinly all over; or in the neighbourhood of London or where there are breweries, fresh spent hops are freely sown. Once the young plants can be freed of the pests, or can be induced to outgrow the attack and assume a somewhat matured leaf, the crop then is generally free from danger; hence, therefore, too great precaution cannot be taken in this regard at the earlier stages of growth.

The plants should be of moderate size before the final process of transplanting takes place, though, of course, comparatively young ones may be used during showery and all more favourable states of weather. The nearer they are to a full-grown size, however—as full-grown, that is, as it is possible for them to be in beds so close together—the better; because, in the case of this particular crop, we by no means recommend any severe check to growth at so early a stage.

It will probably always remain a matter of dispute as to what is the best and most profitable distance for planting apart, in view of producing the longest stalks, strong or stout, and abundant sprout producers. While some insist on rather thick planting, in the belief that the practice tends to encourage and increase length of growth, others advocate wide planting, because by that means a sturdier plant is formed, bearing finer and more numerous sprouts. We incline, for our part, to a happy medium. The three remarkable stalks which gained the premier honour for ourselves at the International Exhibition of the Royal Horticultural Society were certainly grown somewhat closely together. Yet, for length and for mass of sprouts, they could not well be excelled. The medium we recommend, therefore,

would be 24in. to 28in. apart in the rows, a wider interval to be chosen as individual growers may determine. In sheltered places, meanwhile, the plants do not succeed better, if so well, as when sown in open fields upon properly prepared beds. This is no doubt owing to the fact that a more favourable mean exists in the field than near to walls, &c., which are subjected to radiation by day and to the cold by night. No one, therefore, should have misgiving as to early sowings in fields.

The seeds so treated will succeed equally, if not better, than they generally do under what may appear to be more favourable circumstances. As regards the "seed-bed" formed in the field, it requires to be levelled and broken down fine, precisely similar to such as are made in gardens. Rolling and harrowing are necessary until this has been insured. The seeds should be sown broadcast.

Though we have given what we consider to be a desirable distance for planting the young plants apart, it will be well to add that we have done so with a full knowledge of the practice usually followed. This is, to plant five rows to the land, or 2ft. between rows, and 20in. between plant and plant in the row.

There is, of course, a customary fixed price for transplanting. It averages 7s. 6d. to 9s. 6d. per acre, according to state of ground and weather, as the work is very much influenced by varying conditions. Where the soil can be prepared for the crop beforehand, there is every probability that even during very dry weather there will prove to be an ample amount of latent moisture within it.

When, on the other hand, ground has to be ploughed up following other crops, especially such as tares, &c., which not unfrequently happen to be excessively dry at the base, it is necessary to add very liberal dressings of manure, and this as

nearly as possible immediately after or even during rain. These should in turn be rolled down, if at all convenient so to do, to cause them to become more firm, and thereby aid in the retention of moisture.

Hence to have a stock of early plants and plant at an early date often proves beneficial. Moreover, the ground is generally cooler, more moist, and the sun's rays less scorching, which together tend to aid the plants in getting a firm and ready hold. So much we have said by way of contrast to a practice which sometimes obtains of ploughing up ground and planting during hot weather, with the not improbable result that the plants dry up and die.

The necessary operation of periodical hoeing performed, the plants now require little attention beyond occasional careful hoeing as weeds continue to grow, and as soon as growth really commences and is well established, the needful operation of moulding up. When this is done, the soil should be in the best possible condition for "soiling," and the plough must be "led" and held with care not to approach unduly near to the roots of the growing crop.

The crop now remains to perfect itself, and needs no other attention or anxiety until it becomes ready for use, unless, indeed, the ground be what is known as foul, and long large seed weeds grow which may need pulling or some other mode of destruction.

The gathering of the crop is generally influenced by markets and the weather. Sometimes the heads are cut off, sieved, and sold at a very handsome price, during severe "bouts" of weather, &c., and the sprouts are often handy for gathering when other things are not. There is one indefensible practice connected with the marketing of the crops, which is, that, whilst

the general bulk is gathered and put into the body of the sieves, some of the finest sprouts are selected to be placed neatly over the top. This may be well for appearance sake, but it is hardly commendable, and really brings no gain in the end.

Buyers become accustomed to such practices, and are not deceived by them ; but they have, nevertheless, their ill effects. Good produce is always saleable, and generally at good prices ; but owing to the manoeuvre I have described, assorted—legitimately assorted throughout—goods are rarely appreciated at their value. Those, however, who would excel in market work may, by the maintenance of an uniformly genuine article, generally attract good buyers in the end, and so establish a good name and a profitable business. Sprouts, or shoots of spring or second growth, often repay the picking when but a moderate supply of “green stuff” exists. When the crop is done, it is necessary to pull up the stalks and cut them off the ground before the land can be again worked up.

CHAPTER VI.

CABBAGE.

THE word Cabbage is often accepted, in a general sense, as meaning more than it really does. Certain sorts included together require to be separately classed, and for this purpose it is necessary to divide our subject anew, and distinguish several fresh divisions in giving each under a distinct heading. First, then, we properly place—

Cabbage.—This is a variety of Brassica, sown, grown, and intended for “hearting in,” so as to form large heads of well-defined distinctiveness. Cabbages proper are the produce of autumn-sown seeds. At least, the custom is to sow after the middle of July and during the early part of the month of August. There are several esteemed varieties, the most profitable, and, indeed, popular, with market growers being “Early Rainham” (which, when procured true, is a remarkably good stock), “Enfield,” and “Early York.” The first is a large, very rapid growing and hearting variety of excellent form and substance; the second is also very large and fine, but somewhat slower in developing, though a great weight producer; and the third is medium to small in size, and, as the name implies, earliest to “heart in.”

In the market garden districts it is not uncommon to see one or two acres of seed beds—for so are these young cabbage and other beds called. So evenly are the seeds sown and uniformity of germination secured that the regularity of the plants is well worth remarking.

Any land that can be cleared of other crops from about the month of August to November is generally utilised for the growth of this crop. The sooner it is well manured after the former month, and subsequently ploughed over, the better.

According to the season, these plants from the seed bed are transplanted. They are placed in rows apart, so as to leave sufficient room during the time of early growth to be easily worked between by hosing, in which a variety of ways are employed.

In market gardens the plants are generally placed more thickly in the rows than in ordinary gardens. Prices for planting by the acre vary greatly in different localities, though perhaps an average is 8s. 6d. to 9s. At present, much larger plants are used for planting out than was considered requisite some few years ago.

In all market gardens an important variety is known under the name of

Hardy Greens.—These are a very hardy or field variety of what was doubtless first recognised as the “Collard.” The stock now grown is, however, slightly different from this, as is apparent not only from its greenness and peculiar hardy-hearting qualities, but from the fact that it will withstand successfully the most severe weather, and continue to heart in during the mild intervals.

The actual produce in comparison with perfect cabbages is

individually much smaller, though all may well be called excellently formed minute cabbages. And this crop may be grown at all seasons, as seed beds are sown equally regardless of season ; thus there are early and late season, or spring and summer sowings.

The greater number are planted out permanently about the months of July, August, September, and October, and they are set very near together, so near, in fact, as to almost touch after they have started and had a few weeks' growth. It is customary to pay as much as 15s. per acre for transplanting them, and, when it is seen how very rapidly this work is performed, and the quickness, comparatively speaking, with which acres are planted, some idea may be formed as to the quantity of plants which go to make up such an area. The *modus operandi* is to take cart-loads of plants on to the ground, and then "shoot" them in heaps, from which girl or boy "droppers" carry them on coarse, canvas aprons, and drop each plant in its place ready for the following planter, who does his work so very rapidly as to cause the "dropper" to use every effort to keep out of his way.

A simple hoeing is all that such crops subsequently require, but it must be undertaken very judiciously, and in such manner that, whilst it destroys all weeds which had formed, no other hoeing will be requisite, owing to the fact that the crop will then cover the ground before other weeds will have time to grow.

As soon as the crops are ready—but this depends much on the state of the weather and the markets—they are all drawn and sent away.

The usual method is to send "a hand" to draw the desired quantity. This he does with a stiff short stick, and while with the right hand he pulls each up by the roots, with the stick

in his left hand he strikes the base of the root, so as to jerk off all the soil. Then each is laid separately upon its crown, roots upward. The next process is carting, for which the plants are conveniently laid. They are then taken into "bunching sheds," where they are generally washed in large water tubs, and are next tied into tempting display bunches for an early morning's transit and sale. There is quite a "knack" in this, the finer and whiter hearts being exposed most, while the lesser ones, as fillings in, occupy the less prominent interstices. And it is to keep them neat and retain both form and freshness that peculiar shaped and packed loads have come to be the characteristic of our early morning vegetable market carts. It only remains for us to mention the

Savoy.—This is near akin to though distinct from some of the former in general appearance. The crops when well grown are very heavy, and have, no doubt, as a consequence, additional power of robbing the ground whereon they grow. The culture should be precisely the same as that which is needful to secure good crops of Brussels sprouts, to which we shall, in view of saving repetition, refer the reader. Though several varieties are grown, none seem to gain more firmly in favour than the larger varieties, though it is also too evident that many such have been unduly crossed with the coarser form of so-called cow cabbage. This appears from the fact that the leaves of many grown stocks have of late years become so very much smoother than they should be, and at one time were. The minor or dwarf varieties, are, however, unsuited for market purposes.

Purple Broccoli Greens.—These can well be added here, as they are all but invariably grown for and sold as broccoli

greens, being cut and marketed in the green or all leaf form. Immense quantities are grown in some eastern districts of the metropolis and elsewhere. The crop is treated precisely as are savoys, so far as the earliest kinds are concerned, the plants being put closer together the smaller they are and the later in the season they are planted. Often young plants become greatly drawn in the seed beds, so that the stalks are as much as two feet in length. When this is the case, they are laid on their sides with their roots in a furrow from which a plough is retreating, and are ploughed in by a return bout. Purple broccoli greens are generally sold in a trimmed state in heaped sieves.



CHAPTER VII.

CARROTS.

THE carrot being very partial to a light sandy soil, those who possess that advantage have so furnished the market and secured a monopoly that it would serve no purpose to enter upon the culture. Suffice it that the soil should be deep, and if manure can be placed some seven or eight inches down so much the better will it be for the crop. Thick sowing is always objectionable. It injures the crop greatly, both in appearance and in bulk. The supply appears quite equal to the demand, and in point of storing, &c., the crop has its drawbacks.

CHAPTER VIII.

CAULIFLOWER.

It is not necessary to enter here into all the intricacies of the culture of autumn-sown spring cauliflower, as the crop, to say the least, is a precarious one. Besides, cauliflowers are cultivated so abundantly and early in the West of England as to dissipate the hope of commercial success in the more central parts of the island.

A profitable trade has, however, grown up in one speciality, the "working" of which it may be well to notice in passing.

A splendid example of cauliflower is that known as "Veitch's Autumn Giant," probably of continental origin, which is being profitably cultivated for late autumn uses around London and elsewhere.

Seeds are sown, grown, and transplanted into their permanently blooming ground at the same time and in the same manner as Brussels sprouts. Anyone, therefore, desirous of growing this particular kind of cauliflower should follow the directions given in regard to it, to which we add the fact that the ground cannot be too richly manured.

CHAPTER IX.

CELERY.

CELERY is a speciality in certain hands. Some home growers possessing good ground for the purpose grow as much as thirty acres, and, besides realising the very best of produce, are able, owing to full power of irrigation during dry summer months, to secure the best results; besides which, the crops which are grown between the rows so thrive in this particular soil as to greatly diminish the chance of a profitable return elsewhere. To succeed well these conditions are of great weight, as the land, besides being fit for summer growth, should, be of a comparatively dry porous nature for winter dryness.

In practice the trenches are generally thrown out during the months of February or March, and are well manured and forked over.

Seeds are sown broadcast in cold frames, having a little fermenting material underneath to assist both germination and early growth. As soon as the plants in these seed-beds are large enough to handle, they are "pricked out" or transplanted into other seedling nursery frames somewhat thickly together. By the time they are large enough, the season has so advanced that the young plants can be again taken up gradually as they

advance to the requisite size, and finally transplanted in rows into the enriched soil. This done, even though they be somewhat small, they will, if placed somewhat thickly, and so that they can be thinned out as required, furnish sufficient plants for the rows. Such as are drawn from amongst them can, if requisite, be subsequently planted into other rows. With the needful hoeing and watering during dry weather, a slow but sure advance will be made until the approach of autumn, when a more rapid start will take place.

When the plants become sturdy, so as to fill by the growth of their leaves the sides of the trenches, all the lower lesser leaves and side or sucker growths should be removed, without in any way causing real injury to the main plant. This is often effectually done with the aid of a trowel. Next, chop from the sides of the trenches a little of the soil down, and level over between plants, and between them and the sides of the trenches. Good waterings would be very beneficial at this juncture. After this the rows may be slightly earthed up, some two or three inches at a time, and at intervals of about four or five weeks, at which time they should remain, to be finally earthed as required for use, or until, if for late uses, sharp winter weather suggest the need of protective measures. Whenever final blanching is requisite, it is absolutely necessary that air be excluded from entering at the apices of the mounds, and thence travelling directly to the hearts of the plants. Nor must frost be permitted to descend too freely in that direction. Among the numerous sorts of celery grown, Clarke's is, perhaps, one of the best.



CHAPTER X.

CUCUMBER.

Few of the many crops habitually grown by market-garden farmers are so well understood as cucumbers. Numerous, however, are the country growers who still doubt whether it is possible to grow a crop on anything like a natural system, and devoid of some artificial aid. Nevertheless, the facts we give will demonstrate the possibility. To see such a crop grown to the best of its capacity, the "pickling grounds," so to speak, should be visited at a time when cucumbers, besides many other things, are annually submitted in huge quantities to the pickling process.

To commence, then, with the necessary preliminaries connected with the growth, it may be well to say that deep, rich, loamy soil, well drained, upon a sunny southern field, is of the utmost importance, and that this ground should be deeply and well manured during the preceding autumn.

Preliminary to seed sowing or planting, temporary protections are "erected" by the aid of "growing walls," or, in other words, by sowing rye seeds in rows in time to grow up and form protective screens from the colder winds of the early spring months. The rows are sown thickly, and possess the strength and power to

stand erect and undeviating without support of any kind. The position is generally from north to south, and in such wise that the sun shines as fully as possible upon the crops during its warmer periods, though other angles may be and are at times occupied. In the early spring, the space between these rows, which is allotted to the cucumbers, receives an additional amount of culture, and is made into the most friable and free state possible for receiving the seeds.

These are sown in rows, often in triplets at short distances apart, about the first week in the month of May, or by some growers a week sooner, though probably the second week in May will be found a good time when the season is at all cold and inclement, as many of the spring seasons have been of late.

Endeavour so to sow as to get germination to take place as quickly as possible, for if the seeds lie in the ground either as a consequence of excessive wet or too dry weather, they all but invariably become abortive, and waste away either by a process known as dry rot, or by actual decomposition. By this cause alone the prospect of many a good crop has been ruined.

The lesson to be learned, therefore, is that too early planting is to be deprecated, and that it is well to entrust the seeds to the keeping of the ground during warm sunny periods and following rain, or under as nearly such favourable conditions as may be practicable. As soon as the plants are well formed above ground it will be well to give them a gentle and careful hoeing. This is the more necessary because such soil as suits these cucumber crops properly prepared becomes quickly beaten down very flatly by heavy rains.

The fact that the seed lobes of the young plants lie flatly upon the surface makes it more needful so to hoe them that the soil may not unduly cover them during the operation. After

this process is completed, growth ought, with proper growing weather, to commence somewhat rapidly. This the more because, the soil being now ruggd on the surface, radiation is freely effected without any injury accruing from undue fixity of the sun's rays, which is often a danger for a flattened smooth surface with plants lying so closely upon it.

Should growth not prove quick and obviously healthy, as is the case sometimes, there will be danger of attacks from insect pests, and not infrequently the green fly or the aphid gain a lodgment ere they are known to exist.

Where possible, it will be well to hand-hoe this crop frequently after the first hoeing, when the plants begin to extend and to spread out around. As soon as really rapid growth commences, it will be well to pinch back or stop the points of the longest shoots. This will not only cause the more weakly shoots to extend, but also make laterals form, and these will, in turn, give the earliest of crops. Every opportunity, moreover, should be taken to remove such weeds as may form around the immediate centre of each plant, which are frequently numerous and very detrimental.

Thus much may be said in favour of the usual or common method of growing. Great additional advantage is to be found in abundant dressings of spent hops, cocoanut-fibre, tan, or finely-powdered horse-droppings and sweepings, such as are procurable from town stables, littered down with sawdust. These are worthy of far more general use. Not only do they tend to maintain increased moisture, so essential around the base and over the roots, but they prove also very fertilising after rains.

To grow cucumbers well in the open ground, it is also requisite, during hot dry weather, to supply the roots with copious waterings. This may be easily done in case of crops of

limited extent and grown conveniently for the purpose, but not so in regard to more extensive plantings, though doubtless the outlay would repay itself, and the labour give a good return.

When the crop is well started and growth has become rapid, it is well to remove the "rye plant walls" from either side, and, in lieu of the confined air with extreme radiation of heat, to let the winds pass freely over all.

Care must be taken, when the plant commences to form cucumbers, not to permit them to remain a day longer than is absolutely necessary for the attainment of the requisite size. It is a disadvantage of this kind of culture that the cucumbers are prone to go to seed, and if, therefore, they are not gathered as quickly as is possible after they become large enough, the plants will suffer, and a great reduction in bulk of crop will result.

There is, however, one advantage in this crop over most others, namely, that the individual cucumbers may be cut as they become ready, and stored away in a cool place until a convenient market day arrives.

Connected with marketing, it is important to observe that fine cleanly-grown produce alone brings good prices, and every effort must be made, therefore, to ensure it; hence selections of the best and straightest, greenest and cleanest, should always be placed together, and all such as are indifferent in size or form be kept separate, one indifferent example in each dozen fruits having a tendency to lower the price very materially.

By the exercise of judgment in going through the crop at the time of cutting, much good may be done in removing all bottle-necked or "seedy" specimens at the youngest stage; these are known by the undue enlargement of the extremities wherein the seeds are forming or have developed.

Where this crop is neatly marketed, the fruit is periodically sent in stiff wicker baskets with lids, wherein it is laid neatly together in cool green grass. Much might be done by a judicious selection of varieties, especially in connection with seed saving. Some few examples have been chosen, though they are not generally to be met with. An excellent variety, known as Leslie's Ridge, is one, and is probably in the possession of leading seedsmen.

For pickling, of course, gherkins are employed, and a good crop of such may often be made to pay well, by uniting two forms, so to speak, in one; that is, letting the fine-formed gherkins extend so that they become long and large enough for table use, and cutting off the lesser, which are then basketed, for pickling purposes.

It is hardly within the scope of this chapter to refer to the great advantage which such a crop receives from additional protection in the early spring. This may consist of frames proper, handlights, or cloches of French manufacture, otherwise known as bell-glasses, &c. An excellent contrivance is that of small square boxes, about 9in. by 6in., having glass attached to one flat side. These dipped in tar before the glass is inserted last an indefinite time, and for placing in rows, sowing seeds below, and retaining over the young plants when they first germinate, and until, after elevation, they force their way through, are really useful, and indeed prove very profitable.

CHAPTER XI.

LETTUCES.

LETTUCES, like other crops, vary in value at our metropolitan and other markets. Often, however, autumn sown early crops fetch an excellent paying price. This the more, as, no doubt, our winters destroy many which are grown upon heavy, tenacious, and too water-logged soils. Hence it is not advisable to venture too far upon these. Where, however, a naturally dry soil, having porous subsoils, exists, good results may be confidently anticipated. Two sorts are most generally grown, viz., cabbage lettuce of the hardy or Hammersmith type, and hardy green cos. Some growers, however, go so far as to plant largely of the brown cos (black-seeded), which is as hardy as any, and, though wanting externally in that greenness which is so desirable a feature in town, proves, nevertheless, grown upon well-enriched ground, excellent in hearting qualities.

The practice followed in connection with this crop is to secure a clean space of ground, and to sow seeds broadcast about the 11th of August. The young plants formed thereon are subsequently placed out separately during showery weather, as soon as they are large enough. The ground requires somewhat exceptional preparation, according to our remarks at the commence-

ment, in so far as manuring is concerned. After it has been ploughed in, it is as well to harrow it across, and to again pull a cultivator through it, repeating subsequently the harrowing process. This cannot well be done, however, in the case of very foul ground, and for this reason it is always desirable not to choose such ground for this crop.

For lettuces, land cannot be prepared too lightly, nor be too greatly enriched at the first, though it should be done in such a manner as to permit of its settling down nice and firm before the advent of real growth takes place. When the ground is prepared the plants must be dibbled out in rows some 9in. apart, the plants being "set" therein about 5in. or 6in. between each other. It is found in practice that a great enemy to field culture are ground slugs, and, to neutralise their injurious nibblings, it is necessary to occasionally dust the plantations over with fresh slackened lime. A slight dusting during showery weather is equal to a heavy one at any other time.

To produce summer crops, the seeds must be sown on highly enriched grounds, and transplanting must be avoided. Poor ground and the process of transplanting will alike have a tendency to cause the lettuce to bolt, which inevitably destroys its saleable qualities. To secure a "good market," it is necessary to tie each one up, so as to make good hard, well-blanchd hearts. Women perform this operation of tying, and the best of all material to use is the ordinary Russian matting, or its equivalent, in the several forms now offered.

For this, or the summer crop, the Brighton cos is the one employed. Every care must be taken to sow somewhat thinly; and hoeing in view of thinning out additionally if necessary, as well as to destroy weeds, and to move and freshen up the soil, cannot be too well or frequently done. The crop is

drawn when ready, and is packed, roots and all, into carts or waggons for direct transit to market, where it is sold by "the score." Those who secure a crop in the early spring months following a severe winter, and one during an arid summer, are certain to find good markets.



CHAPTER XII.

ONIONS.

WITH greatly fluctuating markets and foreign competition on the increase, farmers may well ask, what crop should be grown with a fair prospect of paying? Not only, be it remembered, is foreign competition on the increase in respect both of variety and bulk, but also in regard to the quality of the many kinds imported into this country. We say "imported," for is it not becoming daily a more confirmed fact that middle men in metropolitan markets, and those of all large towns, are, by personal visits abroad, &c., doing their utmost to induce foreign growers to place their crops in their hands?

Onions are a crop for which a steady and sure demand exists. In price they vary greatly, owing to the uncertainty of these foreign importations, though on the whole they fetch at least remunerative returns. They, however, require some skill in the growing, and are comparatively weighty as articles of transit; and these are facts more or less favourable to the home grower.

With fine summers there is, therefore, no reason why the British grower should not be able to hold his own in regard to them.

The culture of onions for market purposes is by three distinct methods, viz., 1, spring sown and summer ripened and stored; 2, autumn sown and spring transplanted, or drawn in the green state for market; and 3, grown for pickling. With respect to the last method it would hardly be wise to enter into competition with existing growers in this country, who have thoroughly established themselves both in the routine of culture and in the details connected with the process of pickling. Such, at least, is our advice, and it may be believed that we have good reason for giving it.

If we turn our attention to the two other crops we have just referred to, we find that they are each very important items of commerce in the vegetable markets of the metropolis, and especially important are they in regard to the markets of all the great centres of industry in more northern towns. Indeed, it is not to London alone that the British farmer should look for all the benefit which he may be able to realise from a revived prosperity following on what, let us hope, are passing bad seasons. In London, competition with the foreigner is as high as it can well be. In other large, and the larger towns more especially, this is not yet so. The grower will do well, therefore, to turn his attention thereto whenever possible.

To succeed thoroughly with onions, land must be held under perfect culture. It must be deep in quantity, comparatively open, yet rich in quality, and, independent of liberal cultivation, must also receive heavy and deep dressings, with well-prepared or decomposed manures.

From these remarks it will be seen, therefore, that varying capacities of soils prove important factors for good, or the reverse. Where the land is very stony it should be more heavily manured, and this additional manure should as far as possible be

coarse for deep or bottom layers, and finely decomposed for the surface. Light lands should, besides, be prepared at least a month or two before the sowing season arrives, requiring only to be lightly harrowed, or raked over on the day when the seeds are sown. And for this reason: Onions delight in a firm foothold for their roots, provided always it be in congenial soil, well prepared and in good heart.

As regards heavy soils, these cannot be manured too liberally nor worked too much during the six months immediately preceding seed sowing. Early in the autumn months, a heavy dressing of manure should be given, and the power of three horses applied to plough the "bed" up, and in so doing this dressing be placed as deep down as possible. As soon as the weed surface ploughed in has decayed, another light turn over will benefit it greatly. Then, towards the early spring months, or a dry period in the month of February, another slight dressing and a shallow ploughing should finish this part of the work. This kind of treatment is the more necessary from the fact that to grow onions the land must be in really thorough working order. By this I mean that it must be open and so free as to admit of being hoed well—autumn crops expeditiously and effectively, as regards the easy destruction of growing weeds. If this be not the case, it will not be possible to grow a good crop economically.

It is in this regard that my previous remarks as to cultivating the soil had their importance. Where soils will not "work," and that freely and well, the undertaking becomes a heavy one, and quite inconsistent with profitable returns on the basis of economy of management. None should, therefore, attempt to grow this crop under any other condition. It is not enough to have a clean surface and to get the seeds in com-

paratively well if, during all the after growth, the grower is not, in every detail, master of this important element. The great outlay, it is to be noted, has yet to come, especially should anything like a "damp" season prevail.

Nor will it answer simply to prepare the land, however well that may be done, unless judgment be used both in the procuring and sowing of the seeds. As far as possible, every grower must secure the best strain.

Few vegetable crops show more distinctly the benefit derivable from selection than does this of the onion. It is on this ground alone that the Danver's, Deptford, Nuneham Park, Reading, James's, Globe, and other varieties, have attained a well-earned reputation.

Though it may be difficult always to guarantee that seeds are thus produced from good strains, little doubt need be entertained when these are purchased from houses of good standing; because, responsible tradesmen who have a reputation to maintain always examine personally such stocks as they buy at the growing period, and thus they have the best possible guarantee, both by ocular demonstration, and in the well-known honesty of the growers with whom they deal.

Much is often advanced as regards the profits of seed selling. That our leading salesmen really will, and do, give high prices for first-class examples of seeds, we can, however, bear ready witness, having ourselves received as much as £9 per ounce from them for seeds in large quantities, which they had subsequently to retail, added to many expenses, before they could get their returns or any profit.

By all means, therefore, whether in the matter of onion growing or any other kind of vegetable culture, endeavour to secure good strains, even if it is necessary to give somewhat

higher prices for them. As regards onion culture, it is an excellent plan also, as far as is possible, to obtain seeds such as were grown on soil different to your own.

In this regard the sandy grown seeds are generally good, owing to the fact that the soil has every capacity for producing them well-formed, developed, and matured. And to these considerations no mean importance should be attached in connection with the onion.

Having secured seeds, the next requisite is—and it is a very important one—the soil must be in exactly proper condition for sowing. Not only should it have received all possible care and attention in the matter of preparation, but seeds must not be sown when the ground is in too moist or wet a state. To do this would be to greatly neutralise all previous efforts. And for this reason: it is necessary that the seeds should be got in cleanly and well to an uniform depth, which is an important item in culture, and they should also be sown as shallow as possible. In other words, having been sown lightly upon moderately dry land, they need the soil to be placed over them very finely and thinly. This cannot be done if it be at all wet, or in any degree adhesive.

In preparing the seed bed, therefore, by working it, in the matter of harrowing, both as regards first harrowing and the raking which follows the roller on the second occasion, the soil must be dry and in a highly “workable” condition.

This should be ensured, even if time is lost at intervals during these successive preparations of the bed.

Thoughtful practical growers will so endeavour to manage these things as to make the sowing take place at the same time as the final preparation of the seed bed. At no date in the history of agriculture or market-garden farming has it

been more necessary for them to economise labour than at this. The more, therefore, they can unite their labours "in-and-in," the better progress will have been made at the end of each week.

Though it is well to get onion seeds in in good time, and ere the month of March has registered too great an advance, yet it is better to wait another week or two than to entrust seeds to the ground whilst too cold and wet, even if it were practicable to do so.

There is a very important reason for all this beyond what may appear on the surface, to which we have previously alluded, though our allusion may not have been clearly understood.

Not only are these directions needful for the well-being of the young plants, but seeds should be sown in such manner and at such a time that they immediately start into activity, and in that activity gain, in so far as it is possible for them to do, a start upon the weeds which otherwise (no matter how clean the land or how well prepared) will run favourably in the race provided for each alike by the all powerful season and its attendant showers.

Let the reader contrast this simple yet considerate method of procedure with a different one, too often followed, of a "ding-dong" routine, and he will not fail to appreciate the immense advantages which accrue to the profit account by such practical brain-work.

An important element in connection with successful culture is sowing the seeds to a proper thickness. All but invariably it is absolutely necessary to sow seeds more thickly than it is desirable the crop should ultimately be. This for two reasons: the first of which is the doubts which may exist as to the full germinating power of all the seeds; and, secondly, the desire to

ensure a really good and full crop, however great the risk of having the "seed bed" too thick.

So greatly does the weight of onion seeds vary, that it would be difficult for the grower to act too stringently in this regard, fine weighty seeds being, it is almost needless to say, less in number to the lb. than are seeds as such a season as that of 1881 produced. Yet will very badly matured seeds often germinate and ensure "a plant" of some sort.

With good preparation of a warm light soil, onions may be sown much thinner than is customary. Our own practice has been when growing fine examples for exhibition to simply drop seeds in at distances in the rows of about an inch apart, and at thinning time to thin out to about three inches between the plants. A moderately well grown onion should not be less than 12in. to 14in. in circumference, and this should receive about four inches of room in which to grow.

The mistake often made following too thick sowings is to insufficiently thin them out. Growers are too prone to allow their practice to linger on the side of plenty, or numbers, forgetful of the fact that two onions 12in. in circumference are more readily marketable and heavier than are three bulbs measuring 8in. in circumference each.

Having chosen a fine dry day and soil on which to sow the seeds, it will be of great help to future growth, &c., to run a wooden roller over the ground, that is, if it can be done without undue compression of the soil by the horse's feet. In all cases where sowings are of such limited extent as to admit of a hand roller being used, its efficient application should be studiously followed out.

Not only does this enhance, so to speak, the mechanical capacity of the soil, giving the young seedling plants a firmer

footing which they so delight to have, but it also crushes sundry intractable lumps, and thus prepares the bed besides for the readier and more easy use of the hoe when hoeing becomes necessary.

Having had the ground well prepared, harrowed, and again harrowed if necessary—and it is an excellent plan to twice harrow where the soil is at all lumpy, and for this reason, that a seed bed well prepared for onions cannot be too firm, nor will it be so if the final operation of levelling is done when the soil is neither too dry nor too wet—the actual consideration now is, what is the proper quantity of seeds required to sow an acre? Were we to return an answer to this question on what may be termed a gardener's practice, accepting his dictum as so much per rod, we should no doubt frighten the grower, especially at such a time as this, when seeds are so dear.

Much will really depend on the quality of the seeds employed. Well ripened, or plump seeds, are not, it is needless to remark, nearly so numerous, weight for weight in given bulk, as are poor seeds which have been badly matured and harvested. However, the fact that indifferent seeds show more to a given bulk is obviously counterbalanced by the probability that a larger percentage will not germinate, or if they do, will form such weak plants that many will dwindle and die. When good sound seeds are employed, I should tack my faith in results on $12\frac{1}{2}$. In the case of inferior seeds, however—such, in fact, as may be said to have marked the season of 1881—it will be well not to use less than 15lb.

In regard to sowing, this is an operation which should only be performed by what we may call an expert in seed sowing. Not only will a firm, regular step, an unvarying hand or finger-distribution be requisite, but also no mean degree of judg-

ment as to the bulk to be distributed on a given space of ground.

However this operation be carried out, of course each division or "land" must be sown without cessation, and, as far as possible, with its own share. Take up only enough seeds as are considered requisite for a "land;" measure and sow them. Then will it be necessary to measure up an equal quantity for the next, and so on, until all are sown.

There is one fact we wish to touch upon by way of parenthesis in this place before we turn to the next division of the subject. We observe that at the present time many soils really in an excellent state of culture are greatly infested with insect pests. Especially numerous are minute slugs, whilst varieties of the eggs are exceptionally abundant upon even prepared lands.

The grower who may chance to have prepared his land roughly the evening or afternoon before will do well, therefore, to give a good harrowing to the beds in the early morning of the day of sowing. By this means many insect enemies will, without doubt, be destroyed.

Following sowing my belief lies in bush-harrowing, the bush-harrow to be a lightly-constructed and comparatively slender one. But upon soils which are somewhat "lumpy," a wide, light wooden roller would be the best and only implement requisite.

With beds more limited in extent, a wooden rake, having its teeth cut down somewhat, drawn rapidly over the bed, would be best, followed by a roller such as may be conveniently to hand.

We have given our opinion regarding sowing, and, as will be seen, it is in favour of "broadcast," or hand distribution. It must

be understood, however, that onion seeds—like most other kinds of seeds—are sometimes drilled. It is only requisite to place a proper quantity of free compost into the drill along with the seeds to do this effectually. For gardening purposes, drilling seeds is considered best, because it admits of hoeing more readily between the rows.

It is a strange fact, in contradiction to this, however, that market-garden farm labourers, those, that is, who hoe such things as onions, carrots, and turnips by the acre, prefer broadcast “plant.”

The real explanation appears to be this. Not only do they “take” work to hoe weeds up amongst the “plant,” but they also at the same time thin the young plants, or, in other words, “set the plants out.” It would appear, therefore, that there is far greater freedom for a man amongst an uniformly scattered plant than where he is “walled in,” so to speak, and has to keep himself within the limited areas of rows only. According to the manner in which the seed is got in, and, in connection with this, to the kind of weather which follows, favourable or otherwise, will be the working capacity of the soil during the early part of the young plants’ subsequent growth.

Where seeds have been sown and the beds finished off in a dry state, showers of rain which come subsequently will only tend to make them work well.

The longer the young seedling plants stand without subsequent movement by use of the hoe, or otherwise, the better; this remark being qualified, of course, by the assumed need of a thorough good hoeing at an early date. In other words, though moving the soil around the plants presently will be beneficial and will be absolutely necessary for the removal of weeds, it is not

however, at all desirable that it should be done whilst they are in too young and tender a state.

By permitting them to stand undisturbed for a week or two after they are well up, there is every probability that they will individually push down young roots more numerous than they are likely to do when hoed early and the soil loosened around their base, causing them to stand during hot weather, which, it should be needless to remark, is antagonistic to duplicate root formation. It is owing to the number of roots they are able to produce and push down into the soil at this early period of growth that great success is ultimately possible.

Though we have taken some pains to show this, it should not, however, be inferred that it is at all necessary for the soil to be subsequently kept up well around the base of each. The fact is, that, once a good root has been assured, the more the rounded bottom of each is exposed the better.

The finest onions are always produced when shallow buried than when fixed too deep in the soil. The truth of this will be seen when we turn our attention, presently, to transplanted onions. And it is such considerations as these that cause us to attach so much importance to the formation of a solid bed, to shallow sowing, &c.

After the first hoeing, which requires judgment as to the time and manner, it will be immaterial how often onions are hoed. Indeed, it will be necessary to keep a perfect mastery over the weeds at all cost. Once these are permitted so to extend as to foul the crop, all hopes of a "weighty" result will be at an end.

During wet seasons it is often simply impossible to keep the beds clean. By a little foresight, however, and, above all, by anticipated hoeings, undertaken in such wise that the last rod will have been hoed just at the time required, much unnecessary

labour will be avoided. It will be seen, then, that to let a crop remain until it really wants hoeing will be to have the last hoed portion really too dirty ere workmen can get to do it; hence will the cost be doubled, even if the weeds are destroyed, whilst the crop will of a surety receive irremediable injury.

Thinning, or, as growers say, "setting out," the plants might be done finally at the second hoeing, at least. Good hands with the hoe will, however, with right and left cuts, do much to reduce any over-thick crops.

As regards the actual thinning out of the crop, the state which the land is in will influence the thoroughness with which it should be done. Where a deep rich soil exists the plants should be considerably thinner than upon such as is of a lighter, or "brashy" stony nature. There is little danger of injury to the crop, however closely it is hoed up to, providing the young plants are really not hoed up.

Nor should we leave this part of the subject without some reference to the cost of hoeing, which, per acre, really seems to be somewhat heavy, though certainly at a charge not too heavy for the amount of labour necessary during wet rainy seasons. Indeed, were it not that oft-times whole families work together at this trying operation, it is questionable whether the work could be done for as little as it is.

We may quote here a general, or starting price, for such work, which is £7 per acre, varied, or rather, we might say, increased according to wet weather, foulness of ground, &c.

Growers who live at long distances from the market garden farms whereon this work is carried out may be surprised to hear that the work is done with a short-handled hoe, the handle being about 15in. in length and neatly curved, so as to give the workman a kind of handy leverage power in its use. Besides this

a "weeder" is generally carried in the other hand, which is really the blade of a knife neatly curved round, and is used to extract lesser weeds, such as grow too closely to any plant which it is desirable to retain.

This short implement is also of great assistance to the workman who does not operate upon his knees, serving as a slight prop, or stay, in alternate hands, which greatly eases a very trying stooping position.

As with all other crops, much will depend on the season for efficient hoeing and cleanliness eventually.

During inclement springs and early summer seasons it is frequently absolutely necessary to carry the weeds when hoed off the beds, for if this be not done, they again take root, grow, and soon become as firmly attached to the ground as they were previous to hoeing.

It is for this reason that some growers bargain with hoers to maintain the beds clean for certain periods. To save expense, summer onion beds do not generally receive such late hoeings as would be beneficial to them. The consequence is that at or about the harvesting time seed weeds too frequently abound.

It is very desirable to hoe amongst onions whilst "bulbing" is in process, by which means not only are these seedling weeds checked, but the onions also are freed somewhat of an adhering soil, and, as a consequence, they swell more freely and well.

It is an excellent plan, as soon as some of the earliest have bulbed and the green tops attached fall into a recumbent position, to walk through them with a long rod, and, by moving it above the ground line to and fro, to thereby force all the stiffer-necked ones down also. Not only do they bulb better by this means but the whole crop also ripens off together more uniformly,

which is no small gain considered in connection with future harvesting and storing.

In regard to harvesting, it is usual to "draw" the crop and throw it singly in neat rows on the ridge of each furrowed bed. Here it lies until comparatively dry, when it is drawn over during a fine period on to a fresh spot, which, being drier, assists greatly in ripening off. Nor must it be permitted to remain out too long, if it is desired to retain a bright fresh colour, and this is an important consideration from a marketing point of view. Each rain which falls over it after it is drawn tends to discolour it, and so to reduce the value.

In all operations connected with the regular growth of such crops, skilled labour contributes much to the right side of the account. The practised workman, at the collecting and harvesting, will deftly select and collect the useful bulbs, and fill his collecting basket in a third of the time taken by an inexperienced hand.

Thick-necked bulbs are always objectionable. They come of a bad selection of seeds and indifferent culture, added to wet seasons. They must be discarded from the bulk selected for storing. Not only do they spoil the sample, but they are liable to decay, and thereby do great injury around.

When a crop is well grown and harvested dry, and with the outer "leaves" rustling, it is not at all desirable to pull these protective coatings off. Do not these assume the place of paper foldings, attached, it would appear, for the greater protection of the bulbs, and which, as such, should be permitted to remain on?

Onions properly harvested keep well in heaps in a cool shed where all excess of moisture which abounds can have vent. The grower should, as a rule, have convenience for storing his crops, so that he may be the better able to command the

markets. Even though he may not wish to market his crop directly himself, he can strike a bargain with those who trade in this and other produce, when the purchaser will take advantage of a convenient storage, and accordingly pay a better price.

The onion crop has one characteristic advantage, in that it is rarely at so low a price as to be absolutely unremunerative. It is very marketable, and has little attendant waste; even the smallest size command ready prices for pickling, whilst with proper growth and attention "pippy necked" examples are very limited. It is not difficult generally to command £8 or £10 per ton in the metropolitan markets.

Finally, as regards the permanent crops of bulbing onions, I may add that they are generally found to succeed best when grown upon land previously devoted to cabbages, or any similar winter green crop, such crops having been thoroughly well provided for and supported from the resources of the farmyard or stable. When the land is inherently of a poor or impoverished nature, a surface dressing of short decomposed manure may be advantageously employed.

Having followed the routine necessary in connection with the culture, &c., of "bulbing" onions, we now direct attention to the mode generally employed in the production of the pickling-onion crop. Perhaps it may be well to say at the outset that it is necessary either to enter largely into the cultivation of this variety, or to let it alone altogether. Moreover, it would be better to ensure a market for such produce before commencing operations than to grow crops on the risk that "a market will turn up."

Important as has been the proper preparation of the soil, with strict cleanliness, or in other words, freedom from weeds, &c., in respect of the main, or bulbing crop, these considerations may

be said to be equally or even more important in connection with this densely grown one.

And this for a variety of reasons, not the least of which is the fact that as the seeds are sown thickly, so also are the young plants so exceedingly dense that if a superabundance of seed weeds are permitted to form amongst them, especially should a moist season follow, it will be all but impossible to keep them clean.

From another point of view, it will be seen that to succeed with this crop, hoeing, which certainly must be done as in the case of all others, must be reduced as far as possible to a minimum of actual requirements. If, therefore, this is necessary, so also is it essential that the ground be in that free state which will admit of its being done easily and well. In a word, the soil must be of an open, giving texture, well pulverised and as far removed as possible from all that is of a lumpy retentive nature. This we scarcely need say is only brought about, or ensured, before autumn and winter, by continued spring preparation.

Though it is necessary, as has been premised, that the land should not only be in good heart, but also in good working order, it must, notwithstanding, be as firm as possible. It is not very material what crop has preceded, provided this can be assured. Crops of peas, potatoes, summer coleworts, autumn drawn lettuces, &c., would all tend to prepare the soil.

In regard to growing these pickling onions, some importance should be attached to the selection of seeds, for without this a uniform sample cannot be looked for. Small Paris Silver-skinned is an acknowledged good sort to grow for this purpose. Latterly, also, a new Neapolitan kind, named Queen, has been

brought prominently forward as an excellent variety. Certainly it has one great merit : it bulbs or ripens off very quickly, which is a very valuable feature.

Probably many casual growers will be startled when the amount of seeds necessary to sow an acre for this pickling crop is taken account of, as much as 60lb. being often employed. As with the sowing and rapid development of the general crop before referred to, so also with this. The quicker the seeds germinate, and the more uniformly also, the better. Well grown pickles, when they show the young blades, have the appearance, at a short distance away, of the neatest and trimmest of swards. Not a weed is to be seen to mar the general effect ; an even, level expanse lies before the eye.

As soon as the "blades" are well "straightened," and each becomes upright, with roots firmly attached downwards, it will be necessary to move the soil or hoe amongst them, in view of which a bargain should be struck with a care-taking man. The rapidity with which this work is performed by those accustomed thereto is very remarkable. It is generally done on the knees, a small bent knife-blade being chiefly used for the purpose. Many women are also very handy at this work.

Though traces of the workpeople are very evident following this process of hoeing, they are quickly erased by ulterior growth and the weather, and when knelt upon and apparently greatly crushed, the crop does not seem to suffer therefrom. We have seen drifts, so to speak, in a too strong grown rainy season crop, caused by the weeders, entirely removed in less than a week. Hence it will be seen that the most important consideration is to be rid of the weeds, and in process of doing so, if the young plants are really not rooted out they suffer in no degree from being loosened around, even to being "lain," so

long as any simple rootlets still exist upon them, having their originally developed firm hold on the ground below.

Following this thorough hoeing an active growth is generally made, and with soil in good heart and a dry season following, the weeds are often greatly mastered by the crop, needing at times only the withdrawal of the larger solitary ones.

It is otherwise in a wet season, when endless is the work and the difficulty of thoroughly mastering them. Indeed, it is sometimes impossible to do so without carrying such as are hoed up away from the bed. Two hoeings in tolerably good seasons prove, on the contrary, a material preventive of this, and advantage to the crop. With a sufficiency of seeds sown evenly throughout, the crop will prove to turn in earlier than may be supposed. The earlier it does this the more likelihood is there of good harvesting weather, a dry warm period lessening and shortening this operation greatly.

Our suggestions show that in dealing with this crop a heavy outlay is requisite. With a market, it is not, however, more "risky" than are many others. A bad season only deteriorates and does not destroy its prospects altogether. Certainly the labour, unless, indeed, very hard bargains are driven with weeders in the early season, is greatly increased. Thick-necked and inferior produce abounds, and needs much sorting. Generally, however, the price is increased accordingly, though, even in ordinary seasons, an acre of goodly-finished should produce about £120, to meet such expenses as are necessarily incidental.

Having treated of "bulbing" and "pickling" onion crops, I now direct attention to "autumn sown," or such as are for spring use, in one or two forms. "Lisbons" are those most generally grown for this crop, in one of several varieties, the latest and most improved form being known as Giant Rocca.

The two objects in view when growing, one of which, at least, is always in view of growers, consists in producing crops entirely for drawing for sale in a green state, and growing others on to a more ripened stage.

For the former, it is absolutely necessary that the soil be very rich and of good heart, and this, we need not add, should include deep enrichment and working; because, should it not be so prepared, it will be impossible to carry so thick and trying a soil-taxing crop to a successful issue.

It may not be a very important consideration what crops should have preceded, provided the soil is, or can be made such as I have described. Practically, however, onions are made to follow crops of cucumbers, vegetable marrows, potatoes, or even autumn cabbage, which give a main crop in spring and are subsequently retained for a second crop of "greens" for summer use.

As a matter of fact, the ground is richly prepared for these preceding crops, though probably it is less thoroughly enriched after a crop of cabbage than of any of the others named. After vegetable marrows, or, more rarely, cucumbers, owing to the lesser number grown, the land is in a highly enriched condition, and, as a rule, greater success is attained.

The general preparation of the soil for this crop is, in point of detail, like that needful and already explained in connection with bulbing and other crops. The quantity of seeds sown per acre, and that most generally broadcast, varies somewhat according to the quality, the maximum being at the rate of 50lb. per acre.

There is sometimes a difficulty in getting the seeds to germinate at the proper time, for the reasons—first, that other crops may not be quite off the ground, and, secondly, because

even when the land is prepared and the seeds sown, or ready to sow, such an arid period intervenes as to positively preclude germination. This is one of the great drawbacks to successful autumn sown onion culture.

To these drawbacks may be added another. Should the seeds be sown a week too soon and an early germination take place, owing to showery weather, especially if a showery autumn follow, no little risk arises that the crop will become too strong, robust, and forward, being, in effect, what is known as "winter proud." Such a crop will naturally incur some danger of destruction from excessively hard winter frosts.

On the other hand, if the seeds be sown only a week or two too late and an arid period ensue, the crop which results therefrom will be most generally a weak and backward one, such as will not grow on so rapidly as may be desirable to insure a useful and marketable size at a saleable time.

Though, then, we intend fixing proper dates at which to sow this crop, it will be seen from the various difficulties enumerated that, to succeed, no mean amount of judgment will be necessary on the part of the grower in these respects, to say nothing of the peculiarities of soil and situation.

Where proper preparation of the ground can be insured and a fairly growing or germinating period follows, we would fix August 1st as, generally speaking, the time at which to sow, deferring it, the more southerly the neighbourhood, gradually later, up to August 11th or August 14th.

Where a ready market exists and growers are well versed in its needs and contingencies—where also they base their practice upon past experience and probable changeableness of weather, &c.—two sowings are habitually made.

Even if one sowing fail, there is the support of a second to

fall back on ; the general result being that both sowings come in well and afford to the seller a successional crop which aptly meets market requirements. The former, or main crop, is generally drawn when large enough, according as market prices rule ; whether in very late autumn, in instances where the crop is large enough, a mild period in winter, or early to late spring. Of course, the larger the produce and the more bulb end it has, the more is its value enhanced. Where the crop stands until April and growing weather invites it to make renewal of growth, the main point then is to make the tops or green part become as strong and as green and fresh as possible.

To ensure this, many experienced growers during showery weather give a slight broad sowing of nitre. We are no great advocates of this stimulant. It appears to us to incite too much to growth and to tend to ultimate impoverishment of the land. Soot is a good fertiliser, and acts both quickly and well. There are also guano and other artificial manures, many of which are beneficial.

For marketing, it is necessary to "draw" the crop with all its roots attached, and with the green parts as little injured as possible. A good buncher is also requisite not only to make each bunch showy, but also to form it shapely and large enough.

It is convenient to bunch on drawing, which can be done by having a migratory table board on trestles for the purpose. The produce then needs to be well washed and rinsed. Even in packing for market, neatness of appearance and avoidance of bruising are worthy the consideration of all who would succeed in getting good prices ; and prices are at all times ruled more or less by the excellence and freshness of the vegetable offered for sale.

We turn finally to early summer bulbing onions, the produce of autumn-sown seeds. This branch of culture is the one least generally practised of any, and it is, as we take it, a valuable one yet in its infancy.

By these means fine large onions and a heavy produce per acre are the all but invariable result of what is a very simple procedure. The produce comes in, besides, at a most convenient and acceptable time—*i.e.*, about the months of June and July, when the past season's crop is either quite exhausted or grown pippy and useless for general culinary purposes. It is the want of good home-grown produce at such a season as this which creates for the early Spanish onions, imported at this date, so ready and profitable a sale—a circumstance the more easily understood from the fact that the season for young ducks, &c., coincides therewith, when something more than green summer-formed leaves, &c., are very necessary.

Though, however, the production of all good onion crops is, by comparison with most others of a kindred growth and intention, an expensive process, this one of summer bulbing is perhaps more so than any other, with the exception of that known as pickling. The process is, however, a very simple one, as we shall now endeavour to show.

Probably the best kind to grow for this purpose is that known as Giant Bocca, a variety of comparatively recent introduction, and one which has a capacity for forming fine large bulbs and a goodly weight per acre.

Those who intend growing this crop should prepare a piece of ground in an open airy situation by the first week in the month of August. It is not necessary that it be particularly deeply or richly prepared, though there are advantages in having the surface soil to a depth of about six inches pretty well enriched

with well-decomposed manure and of a free open texture generally.

The seeds should be sown broadcast, at the rate of about 20lb. per acre, as near to August 11th as convenient. If the season should prove to be an arid one, and not such as is conducive to quick and free growth, it is important that the sowing should not be later than this.

But in the case of a rainy, growing season, and when germination, consequent on the amount of latent or actual moisture in the ground, is sure to take place quickly, a week later would have its advantage, from the fact that, by delaying the operation of sowing somewhat, the plant would be less likely to become too large, or what is generally known as "winter proud," a point which is certainly worth considering.

Beyond the sowing of the seeds at this time, nothing more can be done until about the month of October, or early in November, when the seeds being well up, and a moderately dry period prevailing, it will be a great advantage to hoe well amongst them.

This operation will be beneficial, not only in view of destroying all weeds, but also, by opening the soil around the base of the plants, it will conduce to greater hardihood, fitting them to stand hard winter weather better, and it will tend further to prepare a better root base for subsequent removal. This hoeing completed, they remain without further attention until the month of February following.

As early, therefore, in the month of February as the weather will permit, let the necessary space of ground which it is intended should be finally planted with young onion plants for "bulbing" be prepared. If some preliminaries towards this can

be done earlier in the autumn months, the land being at liberty, so much the better.

In any case, the ground should be as deeply and richly cultivated as possible. And it may be well, in this place, to digress a little in regard to the matter of deep culture as applicable to onion crops generally, and to explain that, though to many it may not appear to be the case, onions, nevertheless, are usually as deeply rooted as perhaps any crop grown. Small and weakly as these roots may seem, it is to be noticed that they go directly downwards from first to last, and that they branch out little, if at all, in process of growth.

Were we to explain, further, how they are to be found, following a well-grown crop, at depths varying from six feet onward, we could add little to our suggestion that deep culture is essential, except, indeed, it were to show that we base our remarks upon something more than whim or fancy. Deep culture, in truth, is no figure of speech in respect of this early spring crop of onions for bulbing.

When the ground selected for the crop is well prepared, it should be well harrowed or raked and rolled, and during the month of February, or as soon afterwards as the weather will permit, the young onion plants should be carefully forked up from the seed bed, and each dibbled singly and separately into the newly prepared bed. The neatest and best way is to dibble them out in rows to line. They should be about $4\frac{1}{2}$ in. to 5 in. between plant and plant.

One very important fact must be borne in mind in connection with the dibbling. While it is essential that the roots be dibbled down firmly, it is, however, not at all necessary that the base of the young onion should be buried in the soil. Indeed, it will "bulb" as well, if not better, without.

If it be possible to stand each on its base without burying it at all in the soil, so much the better; even should the onion itself lie flat on the ground, its roots being dibbled in, it will succeed well. Owing, however, to the habit of worms in the early spring season of drawing such things into their holes, it is necessary to fix them very firmly in the ground. And in any case, as soon as a bed is planted a dusting over with lime, or lime and soot mixed, is of great advantage in warding off the injury worms may do in this regard.

As the season advances and the young crops get well hold, frequent hoeing becomes very needful, and should not be omitted. Care must be taken, however, in process of hoeing, not to injure the crop by scratching the bulbs, as is too frequently done by indifferent workmen. Every such injury shows ultimately when the crop is harvested. As soon as bulbing is well in progress the green tops should be bent over, or "laid," a simple process which hastens the perfecting of the crop.

Subsequently, when of goodly size, the tops having ripened somewhat, it is well to pull them up whilst yet somewhat green, and thus secure an earlier market. In view of this, each process might be done successionaly, and so the ripening and marketing be prolonged.

Even when "pulled" the crop is best out of doors whilst the leaves are green, but should subsequently be placed in an open airy shed.



CHAPTER XIII.

PARSNIPS.

THIS vegetable is a convenient "change-course" crop, and will prove an excellent substitute for a too great repetition of the several main crops, to which, of necessity, greater importance has hitherto been attached. It succeeds best on moderately stiff deep loamy soils, and is not at all adapted for light stony ones, or such as lose too rapidly a moderate latent moisture in the arid summer months. It is not one of the most profitably grown amongst market crops, as the demand is but a limited one, and the supply is nearly equal to it. The soil should not be too rich near the surface, and should be well worked and levelled down nicely before the seeds are sown. These are generally placed in rows at distances of about 9in. apart. It is not at all judicious to sow too thickly, and those who do so in the hope of securing heavier crops are sure to lose on the score both of quantity and quality. This is greatly owing to the fact that, when a crop succeeds, it produces a fine spreading leaf surface as opposed to an upright one. The more, therefore, the leaves spread along the ground, the more likely are they to shade and overgrow each other. Whenever this occurs it is not possible to secure a good crop of large and heavy roots.

There is a new variety known as the Student, for which several merits are claimed. Strange it is, however, that, as with the old broad bean, buyers invariably refuse it in favour of the long-known original Hollow Crown variety.

It is very desirable to sow this crop early, that is, in the first week of the month of March. The young plants are very hardy, and if they commence growth before any dry warm weather sets in, the crop always succeeds much better. In hoeing the seedlings are chopped out, when it is well to move the soil deeply that lies between the rows.



CHAPTER XIV.

PEAS.

To the true market-garden farmer the Pea crop is a very important one in what may be termed market-garden-farm routine of culture. Peas are grown not so much by the smaller market-garden growers to be found immediately around the metropolis and some few other large towns, but more especially by those growers who make a rule of "mixing up" farm produce proper with market-garden produce. They afford the land an excellent change from other crops, and bring ready and valuable returns to the exchequer at a very convenient season. It is in this aspect that we shall endeavour to treat of them.

Originally introduced from southern Europe, this plant, in its now greatly improved forms more especially, should not be accredited with too great hardihood. Indeed, where really heavy crops of fine pods are to be produced, it cannot be treated too considerately. Certainly, earlier crops can be picked by very early sowings, though these special products are light and of questionable value as a means of profit. To this, however, we shall refer more in detail presently.

As a somewhat tender hardy annual, like all its congeners, it is of rapid growth and equally rapid bloom and "podding in"

capacity. This fact should explain to all thoughtful growers how very desirable it is that it should have a rich, open, free, and friable soil in which to grow and develop itself. For it is true in respect of all plants of rapid development that the most kindly surroundings are essential to amplitude of growth and abundant fruitfulness. Seeing that it is the seed-pods only which are used for commercial purposes, we have, therefore, an additional incentive to force the plant into as prosperous a state as possible, in view of its producing much and free growth, along with numerous fine pods following free, abundant, and simultaneous blooms of the freshest kind.

These descriptions alone are to be accounted as of high merit, and capable of realising the more remunerative prices. For the grower may be assured there are peas and "peas," and the buyer at first hand at all our larger markets knows full well, from experience and external appearances, what are well grown and tender and likely to be appreciated by his retail buyers.

We can add but little in respect of duly preparing the land on which seed is to be sown; nor is it to be supposed that much preparation is essential to every crop. As in other cases, much will depend upon the real "heart" lands may be in; much also on the kind of crops which preceded, and not a little on the kind of early summer weather experienced.

A moderately moist season, with sunshine and warm winds, gives just that kind of southern weather which this crop so delights in, thrives and develops so rapidly upon.

The Pea, like the Onion, is deep rooting, and, though this may not be anticipated by those unaccustomed to it, has a wonderful capacity for impoverishing the ground and absorbing the latent moisture within it. Indeed, so much is this the case, that during a moderately showery period the soil immediately

below a crop becomes extremely dry—a fact which goes far to show how necessary it is to place abundance of manure for the plants to warm down amongst and feed upon.

As already intimated, the pea is a very convenient crop, from the fact that it may be sown in succession to many others. For instance, it will succeed admirably after a wheat crop, and also after a collard crop, which is well known in districts where it is grown as a “hardy green” crop.

It may be well to add one word in regard to the nature, as to firmness or otherwise, of the various soils in which the pea may be grown, the working condition of these having something to do with ultimate success.

Where soils are habitually strong, light, and porous, with an open subsoil, it is not well to plough up during a dry early spring season immediately before sowing. The grower should aim rather at a late January deep ploughing following a free manuring, and so work only over the immediate surface at the sowing time, in such manner that all superficial seedling weeds be destroyed and the work of drilling be carried on in a free and easy manner. The somewhat compressed, naturally light soil will by this means, especially with its leaven of manure lying amongst it, form the best possible bed for the roots to “prospect” amongst.

Heavy lands, on the contrary—and they comprise a very large area of pea-growing districts—ought, as far as possible, to be worked when at a medium state of moisture some week or two only before the seeds are committed to the ground. These latter soils claim in the working a certain peculiar treatment which helps to develop such a state of soil consistency and firmness as meets this crop's requirements. For instance, after the manuring, ploughing, and cross-harrowing, such soils are invariably very

lumpy, the whole surface being a mass, so to speak, of soil boulders, which it is imperative should be crushed. This is invariably done either by an ordinary roller or a crusher.

Such a process includes the needful artificial compression which we have suggested as of moment to such a crop, but which is insured by more natural means in the case of lighter soils. Before leaving this part of our subject it may be well to suggest that a pea crop is a convenient one, not only from the fact that it may be made to follow many previous crops, but owing also to the various crops which it is convenient to place in the same ground in succession to it.

It comes off opportunely for transplanting in its place, after proper preparation, such things as Brussels sprouts, Veitch's Autumn Giant cauliflower, purple broccoli, celery, when that is grown, collards, &c., to say nothing of even more permanent farm crops.

Independent of the value of this crop from its more immediate marketable point of view, the haulm is a useful kind of provender for cattle generally, when properly used, and it is capable of being stacked, and will keep a long time. This, therefore, is a secondary crop of real monetary value, being worth, at a fair computation, from fifteen to eighteen pence per truss.

Nor do we understand why pea haulm is not more generally used for stock feed during the long winter months, more especially in the case of milch cows. Such stock are given habitually much moist food, including stores of swedes, man-golds, &c., which are very relaxing. As pea haulm has an opposite tendency, it presents a corrective of no small value.

Those who have no experience of it should take care not to feed incautiously or too indiscriminately with it. It may be best

and most profitably used by way of admixture cut up along with straw and hay for chaff.

We turn now more particularly to the matter of sowing the seed peas. Having succinctly described the process of land preparation in a variety of phases, our next inquiry has reference to superficial treatment.

When the land is in good heart, and, indeed, following immediately upon preparation for the crop, it is customary to finish it off above, in "lands," &c., in the usual way. By this means the surface is provided more or less against any flooding rain periods which may follow.

A too flat surface is avoided, and crops are "quartered," for the better growth of distinct varieties, for sale to jobbers in separate parts—if this method be desirable—and for division of labour in the matter of piecework, whether hoeing, gang picking, or the like.

It should be understood that there is really no reason, beyond those we have referred to, why the crop should not be planted on a broad level.

It is at the option of the grower either to market his crop himself or to call in the middle man, better known as "jobber," to whom he can sell it, at per acre, and avoid all future risk.

So greatly do prices vary according to sorts, seasons, and crops, that it is often difficult to follow the quotations from maximum to minimum, even on succeeding market days. Well-grown, well-gathered, and marketed samples always bring fairly good returns notwithstanding.

Jobbers, of course, give better prices where a degree of competition can be brought to bear, which is secured by advertising, or advising those who habitually deal in this produce at

as early a date and as long before the crop approaches maturity as possible. This can be done as soon as the seed is well through the ground.

A convenient time for judging well of the merits of a crop is immediately after the earthing-up is completed. This process is done with the usual plough used for such purposes. The haulm by this means is generally made to lay on one side uniformly throughout each row, and the soil is so moulded up to it as to cause it to remain in that position.

The method of sowing suggested, being a medium one, is best as a general rule; but something should be allowed in practice for the particular kinds of peas sown, whether early, dwarfs, or tall rambling kinds. And it may be as well in this place to state, as a matter of detail, that market-garden, or field peas, are hardly ever staked out or "sticked." Nevertheless, the height, &c., of the crops has much to do with the proper method of sowing, even when they are to be grown recumbent upon the ground.

Early peas, known mostly as "Early Whites," consisting of the old standard kind, called "Sangsters," in its many forms, being comparatively early bloomers and yielders, are generally sown somewhat thickly, more so than Laxton's Supreme—at least, this should be the case.

Regarding the other methods of sowing practised, sometimes two rows are sown close together, a little more room being left between these and the next double row, &c. Again, broader, denser rows are sown, which in practice are somewhat akin to the last. By means of these the process of picking the crop is sometimes expedited. Though each of these several plans has its merits, much must ultimately depend upon the season.

Should a damp, sloppy period ensue, as I have suggested, each alike will run greatly to growth. On the other hand, the double row and the thick row will revive, owing to the multiplicity of seedling plants—a check which may in some degree subdue this. During a fairly favourable season also these double rows will do very well, but the weather must not change at or about the advent of podding to drought and aridity, or the crop must, on the contrary, suffer in great degree.

On the whole, therefore, we advocate medium thick sowings in rows equi-distant apart as most likely to give a fair and profitable return. It is customary to sow peas due north by south in the rows when it is convenient so to do. By this means the sun, morning, mid-day, and noon, exerts an even influence on all sides, &c., whereas if sown east by west the rows are liable to be drawn somewhat unduly towards the south.

In dealing with the various methods practised in the actual sowing of pea seeds, it will, perhaps, be advantageous that we add, somewhat in detail, further information beyond that previously given generally in its proper place. For the sake of the uninitiated, we must not omit the actual quantities of seeds required, &c.

Generally speaking, two bushels of seed per acre will be requisite, however much the sorts may vary; but there are one or two exceptions. We have already said "Early Whites" should be sown thickest. This is reconcilable with the general rule when it is considered that the seeds in this case are far more numerous to the bushel than the general run of larger mid-season and marrows.

A distinction, however, must be drawn in respect of all peas of a branching habit. It is for this reason, therefore, that

we advise that not more than five pecks of seeds of that most excellent sort, Veitch's Perfection, and all similar habited sorts, be sown.

Though some growers may incline to sow large wrinkled marrow seeds more thickly than by two bushels to the acre, it will hardly be advisable to do so, considering that not only does the haulm become strong, but the leaves do not get large, which, to insure well "swollen" and developed pods, they ought to be.

Besides, each haulm will produce one or two pairs more of these large pods, where they are permitted to grow away freely; whereas, by stinting the growth of all, as is invariably done in the case of overcrowded plants, the whole of the pods will invariably prove to be but of second-rate merit, much to the lowering of that high price which is only secured by the finest produce.

After the process of sowing, very little time should elapse ere the plant is up, and the next stage of operations demands attention, viz., hoeing or cleaning. The double-bladed horse hoe is generally used, and it is fixed as regards depth to suit a variety of conditions of soil.

When weeds, grass-weeds more especially, have been ploughed and buried therein, it will be well not to plough too deeply, at the risk of exhuming them. Nor should deep ploughing be resorted to upon brashy soils and where very shallow sub-soils exist. In such cases, shallow seedling weed eradication alone should be aimed at.

On the contrary, where the soil is deep and rich, deep horse hoeing and consequent lightening up is most advantageous, because immediately after this process the young roots of active growth will rapidly run and ramify with great vigour and

benefit. The horse hoe cannot, however, be relied on to do all that is necessary in this regard, and hoeing should be "let" to the men at so much per acre. The price given by piecework depends entirely on the state which the ground may be in for cleanness, or the reverse, and the ready or easy working of soils. As a rule, from 4s. to 5s. per acre is given at such a stage as this.

Of course, in process of hand hoeing, every weed must be carefully removed from the growing rows of the crop. A shirking of this part of the work may, indeed, help the operator in getting over his "job," but assuredly every weed so left to grow will soon rise into large proportions and prove most troublesome at the time of pea-picking.

It is not enough, however, that reliance be placed upon the first hoeing already referred to. Upon enriched, cultivated, and worked lands, seed-weeds will continue to germinate very rapidly after each rain, and it is after some amount of growth has been made that a thorough hoeing is of even greater importance in view of thoroughly checking all weeds at the latest time possible.

We have often seen crops of peas which, during a rainy season, had been neglected in this respect, and which had, in consequence, become thoroughly overrun and smothered by the foul companionship thus forced upon them.

During rainy seasons a crop grown without sticks often becomes unduly thick. Indeed, it is liable at such time to run away or outgrow the seedpods which it is desirable it should carry. In such a case it is customary, and is probably the only good plan available, to procure a long thin rod, and by switching it to and fro, up and down, respective lands, to cut off the too strong-growing points. By such a check which, from a crop-

producing point of view, is very useful, the strength of each plant is diverted to pod increase, and ultimate crop production promoted.

Next in importance to growing good crops is the picking and marketing them in good order. And it is a fact, which should not be overlooked by the grower, that, however well grown the produce, if it be not picked and marketed properly, and in the needful conventional form, no great amount of success is to be secured.

The earliest pickings, such as are very early, may—nay, of necessity, should—be younger in the pod and less well filled than later ones are generally expected to be. Fitness of crop is a very important item for consideration, and the “slatting” is a process requiring well watching and some amount of able calculation in regard to the time when the crop is likely to be ready; because, though very early pickings, when they can be made, may be less well filled than is proper generally, the main crops must, on the contrary, be secured just at such times as the pods are well filled, but young.

Two new varieties of pea likely to become popular with growers are Day's Early Sunrise and Princess Royal.

The work of pea-picking is onerous if you elect to gather and market the peas yourself. It requires a large gang of women, or women with their families, to secure a goodly load or two per diem. And this, as we have already intimated, is a very important point, especially during dry, arid, and hot weather; as it is during such periods that peas develop and ripen so very rapidly. When it is considered that the chief markets are only available three days a week, very quick work is imperative. As regards the prices paid per sieve for

gathering, they depend on the season and the kind of crops produced.

The actual prices have varied from 4d. to 7d. In the former case the haulm was moderate, the crop good, and the kind large in the pod, and such as admitted of the whole crop being gathered. At such a time we have known one woman and her child to pick as many as sixteen bushels per day—a really great and clever performance. When the season is wet, however, and the haulm long and, as it not infrequently is during such seasons, wet and muddy, few comparatively can be gathered, and 7d. is not at all too high.

It is usual to place a man along with gangs of pea-pickers, whose duty it is to see that the crop is picked cleanly and properly, that proper measurement is observed, and that one uniform clean sample is placed throughout all the bags. Usually, it is also his duty to give metal checks for each bushel or bag of peas gathered. This important personage is called "pea bailiff." He is always to be seen, soldier-like, switching a small hand-stick about, enjoying a life of rural abandonment, save in the duties mentioned, amidst a gang of very motley appearance, working severely and often for long hours. At a given period the waggon approaches upon which the pickings of the day are packed, "time" is called, and all cease as rapidly as even quantities can be secured. It only remains to add that very fine peas are generally packed in baskets, and that it pays well to do so. They are bought at a higher price for the "Upper Ten."

Bags should not be placed nor permitted to lie too thickly in heaps, whether in the warehouse or open market yards, else they commence to heat, and no little injury often follows. Sometimes beginners in the business save a few best pods for

“topping” with. This is a practice, however, which should always be discountenanced. It is not usual, and the buyer is perfectly justified in returning and “shooting” them, should he feel aggrieved; and this is occasionally done.



CHAPTER XV.

POTATOES.

GREAT as has been the advance in the "garden farm" culture of the potato, aided latterly by the addition and diffusion of newer varieties—not excepting the many excellent ones of American origin—still there remains much more to be done in this respect. The International Potato Exhibition has, no doubt, been greatly conducive, not only to the production of improved varieties, but also to their popularity, for market growers are loth to depart from old rules and to discard old kinds for which an unfluctuating demand occurs. Nevertheless, it is to their interest to grow such varieties as are likely to produce the heaviest crops, and such as are in shape and first size likely to be the more appreciated.

The potato disease, now so firmly established in this country, makes the crop a very doubtful one from season to season, though the demand equals the supply, notwithstanding the immense quantities annually imported from the Continent and elsewhere. The chances are, therefore, that a profit will accrue in all instances where early markets are provided for, and it has become a very precarious speculation to keep back crops for late sales, in the hope that better prices may rule at the end of the season.

Some among the newer varieties of potatoes are announced by the holders as disease proof. These may in some respects have good constitutions. They prove, however, to have no great capacity of successful resistance. Among these may be mentioned *Champion* and *Magnum Bonum*. It is, indeed, patent to all growers that the merits claimed for these varieties are hardly worth taking account of. To the seasons must be attributed disease or immunity therefrom, and to no other cause.

Success in marketing depends greatly on the rapidity both of planting and forwarding this particular crop. It is, no doubt, possible to produce crops which would pay in distant parts of the country on low rented lands; but unless something more than the old method were adopted, it would not be practicable where rents, as well as labour, are so high as they are around metropolitan and large town districts.

As with all other crops, the land must be well "worked," and more or less specially for the potato. Deep ploughing is needed, and manipulatory additions, however set about, which will obviate all harsh and lumpy tendencies. It has been found that greatly enriched land is generally preferable to trench manured on the old plan. If the soil be well worked after a process of plentiful manuring, it turns up soft and mellow, and if any crop has an inclination for such a state of root home it is this. Though such preparation is the best, it is not always possible for growers to observe it who have two or three crops succeeding each other on the same ground, within the limits of the year. Generally the land can be turned over some month or two before planting, where no former crop is continued therein too long a time. It should then be twice ploughed, receiving afterwards a good dressing of well decomposed heap manure, which has been twice turned, and is thus doubly fermented.

Between these two ploughings the two rows of soil turned over form a line, which becomes the first line of planting. Along this a man travels with a long-handled dibble, which he thrusts into the soil at the necessary distances apart. Immediately behind him follows a woman generally, having an apron filled with "sets," which she drops into the holes. In the returning bout the plough turns over the next layer on to the plants, thus completing the process of planting the field. It is no unusual thing to see a crop of another kind upon the ground one day and on the next to observe that a crop of potatoes has already been safely placed therein. Indeed, on one occasion, when judging the Essex farms, we walked through and criticised one of the finest crops of cabbages possible, and two days after found in their place a crop of potatoes already earthed up. In this instance the potatoes had been planted between the rows of cabbages at the moulding-up time, and when the former crop was in the smallness of its early stage of growth. This rapidity of work has many advantages. During the months of March and April dry weather often prevails; and to leave the ground bare for some time after a crop has been removed is to allow weeds to rob it of much moisture which the former crop had conserved. Besides, at such a season, manure cannot be too quickly hurried thereon nor too expeditiously buried.

As soon as the potato plant is well through the ground, or its main shoots two or three inches high, it is customary to well harrow the whole surface of the ground. The grower must have no fear of injurious results to the young plants. The harrow may take its course over or through and between the plants, even to tearing them half down. The sure result will be that in two or three days the crop will have made quite a rapid advance, the growth assuming a far more healthy appearance. Not only will this harrowing kill the weeds which are forming over the ground,

but in loosening the soil it will make it more friable and better for the moulding-up process. This latter operation need not, however, be completed for some short time yet. And if, by the way, a heavy rain follows this harrowing and batter down the soil unduly, it will again be judicious and needful to run the cultivator between the rows before the moulding-up is done. It matters not—nay, it is better—if in process of travelling between the rows each plant is seen to rise up as if being exhumed; no injury, but rather good, will accrue, and greater growth result. Potato roots delight to run abroad into light, loose, rich soil, and such as has air in free intercourse. Therein they develop strongly, and, in the end, a stronger shoot growth forms.

The process of moulding-up must be done at a studied time. It is not judicious, on the one hand, to mould until the growth is somewhat well advanced, as it will have a tendency to check its progress. On the other hand, too late moulding causes—especially during dry weather—some of the best roots to limit their travels, to contract their growth, and less abundantly to form tubers eventually. Nor is too deep moulding-up to be commended. In some places, the neighbourhood of Manchester, for example, the moulded ridges are made nearly upright, so much so, that during an arid season the drought travels through them beneath and amongst the roots. Should a rainy season set in, then such a practice may prove beneficial.

As the disease seems now to be general, and during moist seasons is almost universal, it has become imperative on growers to plant as wide apart in the rows as possible. By this means the haulm dries more quickly during fine intervals, and the virulence of the disease is lessened accordingly. In furtherance of this design, we would recommend that a distance of 2ft. be permitted between rows. If it be thought needful,

moreover, the sets may be planted closer together in the rows, though we certainly do not advocate that course.

Early crops and early digging and marketing have much to do with this crop on the score of success. Nor is it at all necessary to wait until the haulm shows signs of ripening before a commencement is made. It must, therefore, be calculated not only that an increased price will compensate for want of full growth, but that it is absolutely needful to make a beginning, else all will ripen off too quickly before any advance has been made.

As soon, therefore, as the tubers have attained to a fair size and saleable, a load should be taken up and despatched, if but for the purpose of "feeling" the market.

The operation of digging is, as with all other parts of routine, conducted very rapidly in regular marketing grounds. A man and a boy are set to work. The man wrenches, so to speak, each root up, and tosses it from the points of the fork some feet from him in such manner that it "skids" along the ground, is divested of its soil, and the crop rolls up clear and ready for the boy, who takes hold of the collar of the haulm, beats it against the side of his basket so that the tubers roll in, and, picking up all odd ones, he follows onward, keeping pace with the digger. As soon as the "skip," or basket, is filled, he carries it on to an improvised table, leaving it there, and secures other baskets for filling. A man, on good cropping land, and in a good season, has been known to fork up as many as three tons of tubers in one day. This is, however, a very exceptional case, but it goes far to prove what masters district workmen are of the situation.

Not only is it necessary in market garden districts, for the reasons we have already given, to dig early, but it is, besides,

desirable from the fact that other crops, such as turnips, for instance, should take their place as soon as possible.

We add one other important fact. It is that early planting is very desirable and that the practice should always be followed where possible. Indeed, growers for market—field growers, that is—generally commence operations in this regard before many garden-ground growers have begun to prepare their ground.

With respect to sorts, which vary as the seasons pass on, little can here be added of permanent utility. Dalmahoy, Ashleaf (upon light good grounds), Beauty of Hebron, Magnum Bonum, Snowflake (on light good ground), Victoria, Schoolmaster (not too heavy ground), and Champion, along with Dunbar Regents, to succeed the Dalmahoy above, which is a kind of early Regent, are those which, at this time, have precedence amongst growers, though a great change is sure to take place before long.



CHAPTER XVI.

SPINACH.

SPINACH can scarcely be said, as yet, to be a people's crop, though it is assuming more and more a favoured place upon urban "Bills of Fare." We refer to it, therefore, as being amongst the least marketable crops. The summer spinach or round seeded is generally sown upon deep rich loams, from the month of March onward until about the end of the month of May. Prickly seeded or winter spinach is sown from the 1st to the 11th day of the month of August. By keeping the latter well hoed and thinning the young plants out well, it often, if it stands the winter, gives a good profit in the spring months. Though a good price is generally obtainable, the quantity which an acre at that season gives is so small as to reduce the crop to a secondary place in the grower's estimation. This vegetable has the merit of being no great drawer of the ground. It is usual by growers to sow broadcast, and to freely hoe or thin out the plants before late autumn sets in. It should not be sown upon land subject to wireworm, nor will it succeed upon winter-waterlogged or badly drained sites. When marketed, it is first picked leaf by leaf, and towards the spring months whole plants are cut up. Both are well washed and sieved for final transit and sale.

CHAPTER XVII.

TURNIPS.

NEXT to the several "main crops" that are grown, the turnip takes its stand as a marketable comestible. Throughout the whole winter season and during such times as it is obtainable in summer, immense quantities meet a most ready sale in all markets. Even when other vegetables prove a "glut," the exception is all but invariably to be met with in this product. Following most spring and summer crops the turnip is sown—a fact particularly to be noted in its favour. Moreover, even when the land has been well prepared for former crops and is in good condition, the turnip may, during any moderately rainy period, be sown to follow, and with but little additional preparation, excepting a good scarifying, if at all foul or weedy, and the necessary subsequent harrowing.

The white varieties are alone cultivated for this purpose, and if they come of a good stock very little heed is given to the name, because, owing to the merits of such stocks in large or reputed seedsmen's hands, there is no danger of doing far wrong.

The seeds are sown in drill rows, in width more or less according to the season at which the sowings are made. The earlier they are placed into the ground the nearer is the usual space of 15in. apart to be approached, but late sowings should be made

at a less distance. As soon as the plants assume form and consistency the rapid hoeing so usual in market garden districts is applied.

By a judicious choice of time for hoeing, this one first effort is ample, and "the plant" quickly covers the ground to the exclusion of weeds. As soon as the crop is fit, the best roots or the whole crop is drawn and thrown into heaps. Carts follow, into which they are loaded and carted thence to the bunching shed. Here they are cleared of needless leaves, have invariably their tail roots cut off, and are forthwith tossed into a water tub. The hands have to do the work of washing, and during very cold weather more especially, fingerless flannel gloves are employed for this purpose. Very fine tender young crop turnips are occasionally washed with the others to save them from injury by too hard handling. Following this washing they are launched upon an appropriate table, and neatly arranged and tightly tied with willow. For the reason just stated, loading is done with equal care. Each bunch is neatly jerked up to the loader, caught by him, and planted with the clear white forming an upright wall on either side. Recently growers from a distance tried bagging them for market, and for a short season the reduced price took, even to influencing local growers to do likewise. The practice has not, however, attained to permanence, simply owing to the fact that neither wholesaler nor retailer can exhibit his ware in equal freshness, which, it is needless to say, is to the individual retail buyer a great recommendation.

Late sown winter turnips, or such as from any cause have remained upon the ground until they "bolt" in the early spring, form a good marketable commodity as turnip greens. These are especially valuable when, following severe winters, greens of all sorts have become scarce. They are generally picked when young and tender, and are marketed in sacks or sieves.

CHAPTER XVIII.

VEGETABLE MARROWS.

THE vegetable marrow crop is often an exceedingly productive and profitable one, and, like other crops of market garden importance, is grown in a manner which would surprise even a duke's gardener of superior knowledge. The latter takes care to sow his seeds in pots, and so bring on the seedlings that he may be enabled to plant out early, cut soon, and, as he imagines, steal a march on time. Yet, with all this preparation—and unnecessary preparation—field-grown examples grace the greengrocers' boards before the gardener has any to see or show.

The simple method followed by our growers for market is to thoroughly manure the ground, to turn the soil up subsequently as deeply as possible, and to sow the seeds in the open field under all exposure, in the same manner as broad beans or peas.

To secure good crops of young plants, the custom is to place three separate seeds in the ground at a distance from each other of about six inches. These are sown in rows at about four or five feet apart, along the centre of each "land." Should dry weather follow immediately on the sowing, it would really repay to water them slightly, though this is not often done. They

cannot well germinate too quickly, however, after they are once placed into the ground ; and this is the more to be desired, from the fact that such seeds as are not well matured—as is often the case following bad seasons—are very likely to contract what is not inaptly called the dry rot. Whereas, by instant activity and germination, they may ward off this.

It is not judicious to sow these seeds before about the 15th of May in any year, owing to the fact that occasionally frosts which would be likely to injure, if not to destroy them, often occur during the month of May.

As soon as the plants are up and have formed the first rough leaf following the cotyledons, they require careful hoeing between. In doing so it is well to draw the surrounding soil around them and their collars, so as to steady them and to draw up a small circular mound of the soil all around. The latter will act as a protection against the winds, for unfortunately in most market garden districts the trees have been so destroyed or injured as to leave none.

Little now remains to be added in regard to this crop beyond the fact that the whole space around must, by hoeing, be kept free from weeds, and that it will be well to travel along each row occasionally, and turn the young shoots into a proper course, so that all radiate from the common centre in such a way as not in too great degree to overgrow each other.

Do not, as is too frequently the practice, resort to stopping the young shoots. By permitting them to grow freely they advance more rapidly, from the fact that growth comes from growth ; and marrow crops will come on more quickly upon such as are allowed freedom in this respect than is possible where too great restraint is the rule.

When once a crop commences, it will be requisite to look

through frequently, and to examine minutely the abundant foliage, because to permit any fruit to remain upon the vines when of sufficient marketable size is to unnecessarily tax and rob the parent plants.

The marketable size is, by the way, too large, though it is difficult to educate buyers in this respect. The crop is generally cut and loaded into the necessary cart or waggon beside the growing plants, and taken to market direct. Large kinds of a white tint, and long in form, are the more saleable. It will be found that green skinned and round or oval varieties do not win favour.



CHAPTER XIX.

ADDENDA.

WE have, as probably will be observed, omitted some few subjects in alphabetical order; this we have done advisedly, however. Our aim has not been to write a book, but to afford a means of useful information and reference in respect of such crops as can be grown profitably, and for which a market can be obtained. Certain products, such as parsley, Globe artichokes, beet, spring cauliflowers, seakale, herbs and salads generally, are not included, for the simple reason that they are mainly a monopoly, and because, unless the grower were a salesman himself, he would have very great difficulty in disposing of them.

It is one of the drawbacks of our British system that bulk alone seems to prosper; and for this reason—so different from most other nations—the very best produce, being in small spaces and small quantities, as it so generally is in gardens and allotment grounds throughout the country, lies and rots upon the ground, for want of a channel through which it might be utilised to advantage. Besides, as already suggested, salesmen who sell their own produce always take care to meet all minor demands by their own personal enterprise.

Middle Men, or Jobbers.—Our task would be incomplete did we not refer to a most useful class of men connected with vegetable growing industry to be found so numerous in all outlying suburban districts, and generally known as jobbers. Their practice is to buy “standing crops,” as many as can possibly be utilised. They give so much an acre, and by aid of their own horses and carts, collect, clean, cart to market, and sell them. It is a safe method for the grower, when sure of his money. By selling at a given sum per acre, he is master of the situation, dispenses with the always laborious process of marketing, saves his horses, and is at liberty to prosecute his more needful future cropping farm work, to say nothing of the risk he avoids of falling markets and commission dues. Frequently have we personally known that a jobber has given as much as £18 to £20 per acre for crops which have not realized as much; yet has had all labour to pay out, &c. As a matter of fact, the debit account is, occasionally, on the other side.

Finally, for the grower who does not market his own produce, it will be found a far better plan to grow a few crops in bulk rather than aim at having some of many things, as the result often proves that his returns, though numerous, are like his crops, greatly wanting in bulk.

Foreign Competition.—It is well, perhaps, for British growers to know on what basis they have to contend with the vast foreign competition, which, though it goes far to feed our numerous population, nevertheless severely taxes the outcome of their home industry. The real secret of the foreigners’ entry into and security of our home markets is to be found in the fact that he not only has the advantage of nominal land rents and cheap labour, and possesses a better climate, &c., but

he is satisfied with very small profit returns, and while this is the case, his hold on a share of the trade is unassailable. To illustrate this: Baskets, about a sieve measure, of excellent plums, baskets and all, are annually sold by auction in our market produce auction sales for as little as 2s. 6d. Taking carriage, commission, gathering, packing, basket, &c., into account, the profit must indeed be extremely small. So it is, however, and the facts speak for themselves. It is well, therefore, for anyone who would embark in such industry to know with what he has to contend. English grown fruits, however, being fresher, always do and will command the best prices, though they are and must be influenced by the disadvantages described.



CHAPTER XX.

GARDEN MARKET MEASURES.

A bunch of greens, consists of as many as the hand can hold, spread out neatly and tied firmly.

A bunch of turnips, about two dozen.

A bunch of carrots, not less than three dozen.

A bundle of rhubarb, about twenty-five stalks.

A bundle of celery, from eight to sixteen sticks.

A bundle of asparagus, about 100.

A hand of radishes, fourteen to twenty-eight.

A pottle is $1\frac{1}{2}$ pints.

A pottle of strawberries, one quart to one gallon.

A punnet, 8in. top, 2in. deep.

A sieve, seven imperial gallons.

A sieve of peas, one full bushel.

A bushel sieve, $10\frac{1}{2}$ imperial gallons.

A bushel of potatoes, 56lb. weight.

Lesser punnet, $1\frac{1}{2}$ pints.

Third punnet, one quart.

Second punnet, one pottle.

Large punnet, $5\frac{1}{2}$ pints.

Quarter sieve, one gallon.

Half sieve, one peck.

One sieve, half bushel.

Two sieves, one bushel.

Four half sieves, one bushel.

Eight quarter sieves, one bushel.

Twelve large punnets, one bushel.

Sixteen second punnets, one bushel.

Thirty-two third punnets, one bushel.

Forty-eight least punnets, one bushel.







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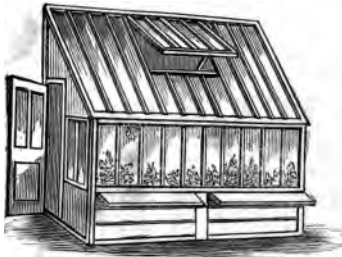
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Is universally in high repute for its unprecedented success during the last 80 years in promoting the growth, restoring, improving, and beautifying the human hair. It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandruff, and makes it beautifully soft, pliable, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair, while its introduction into the nursery of Royalty is a sufficient proof of its merits. Sold in usual four sizes.

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An Eastern botanical preparation, perfectly free from all mineral or metallic admixture. It is distinguished for its extremely bland, purifying, and soothing effects on the skin; while by its action on the pores and minute secretory vessels, it promotes a healthy tone, allays every tendency to inflammation, and thus effectually dissipates all redness, tan, pimples, spots, freckles, discolourations, and other cutaneous visitations. The radiant bloom it imparts to the cheek, the softness and delicacy which it induces of the hands and arms, its capability of soothing irritation, and removing cutaneous defects, render it indispensable to every toilet. Gentlemen after shaving will find it renders the skin soft, smooth, and pleasant. Of all Chemists, at 4s. 6d. Avoid cheap spurious imitations. Sold by all dealers in perfumery.

Why many Persons Permanently Submit



"For every defect of Nature

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vexatious
and
unsightly
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of

Art offers a remedy."

GREY HAIR

Rather than attempt to Restore it.

- 1st.—Because the old fashioned and objectionable Hair Dyes dry up and spoil the Hair.
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The following Testimonials (of many hundreds received) declare the value of

LATREILLE'S HYPERION HAIR RESTORER

As positively restoring grey or white hair to the REALLY NATURAL colour, gloss, softness, luxuriance, and beauty of youth; it so perfectly accomplishes its work and fulfils its promise, that in brilliant sunshine, or under glaring gaslight, the user can alike defy detection in ever having been grey, or used a remedy, while as a nourisher and strengthener of weak hair it has no equal.

Price 3s. 6d., sent in return for Stamps or Post Office Order, by the Proprietors,
LATREILLE & CO., Walworth, London, or may be had of Chemists;

But it is strongly advised that anything else, offered from interested motives, be resolutely refused, as Latreille's Hyperion NEVER DISAPPOINTS. All Chemists can readily procure through wholesale houses, if they have it not themselves in stock.

SPECIMEN TESTIMONIALS.

20, Royal George-street, Stockport,

February 26, 1880.

DEAR SIR,—My hair went white through trouble and sickness, but one bottle of your Hyperion Hair Restorer brought it back to a splendid brown, as nice as it was in my young days. I am now forty years old, and all my friends wonder to see me restored from white to brown. You can make what use you like of this. Yours truly,

(MRS.) MARIA WORSTINGTON.

132, High-street, Stourbridge, May 16, 1878.

SIR,—I find your Hyperion Hair Restorer is a first-class and really genuine article, and is well worth the money. After using it thrice, my hair began to turn the natural colour whereas before it was quite grey; it also keeps the hair from falling off, and I shall always recommend it to every one I know. You are at liberty to publish this if you choose. Yours truly, (Mrs.) M. DAVIS.

Thirsk, Yorks, January 26, 1876.

DEAR SIR,—I use your Hyperion Hair Restorer, and find it everything which has been said in its favour. I am, dear Sir, yours truly, T. COATES.

Porchester, near Fareham, Hants, Oct. 16, 1875.

SIR,—Please send me another bottle of your Hyperion Hair Restorer; it is better than any other restorer I have tried. Yours faithfully,

(Mrs.) C. CHRISTIE.

High-street, Corsham, Wilts,

December 2, 1874.

DEAR SIR,—I enclose stamps for another bottle of your Hyperion Hair Restorer; its clean qualities are sufficient to recommend it anywhere.

Yours respectfully, E. MATHEW.

St. Heliers, Jersey,

August 1, 1873.

SIR,—Please send me another bottle of your Hyperion Hair Restorer; I bear willing testimony to its being very pleasant to use, both as to cleanliness and absence of disagreeable smell.

Yours truly, F. DE LUSIGNEAUX.

2, Fir-street, Sydenham,

July 15, 1873.

DEAR SIR,—I am most happy to tell you that I have reason to commend your excellent Hyperion Hair Restorer, as it has already turned the grey hair of a person fifty-seven years old to its natural colour.

Yours respectfully,
T. WEAVER.

83, Dewsby-road, Leeds,

May 23, 1873.

DEAR SIR,—I want half-a-dozen more bottles of your Hyperion Hair Restorer, some for friends and the remainder for myself; it is the best restorer of grey hair to its natural colour.

Yours truly, JAMES DAWSON.

"Be careful to ask for Latreille's Hyperion Hair Restorer, as the many factorer is also proprietor of Latreille's Excelsior Lotion, which is a separate preparation, of universal repute for 20 years past, as a Producer of Hair."

LUXURIANT AND BEAUTIFUL HAIR.



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"And on this."

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(Celebrated among all classes of society all over the world as the only real producer of

WHISKERS AND MOUSTACHIOS,
AND CURER OF BALDNESS.

Price 2s. 6d. per bottle. Can be had of any chemist, through Barclay, Sengor, Newbery, Edwards, Sutton, Thompson, Movenden, Maw and Co., or any other Wholesale Chemist, or direct from the proprietors, LATREILLE and Co., Walworth, London, on receiving Post-office Order or Stamp.

CAUTION.—Be careful to ask for Latreille's Excelsior Lotion, and refuse anything else that may be offered, as the enormous success, extending over twenty years, has led to many useless imitations, which can only disappoint. The title "EXCELSIOR LOTION" is a registered Trade Mark, to copy which will incur criminal prosecution.

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INSTANTLY AND PERMANENTLY

REMOVES SUPERFLUOUS HAIRS

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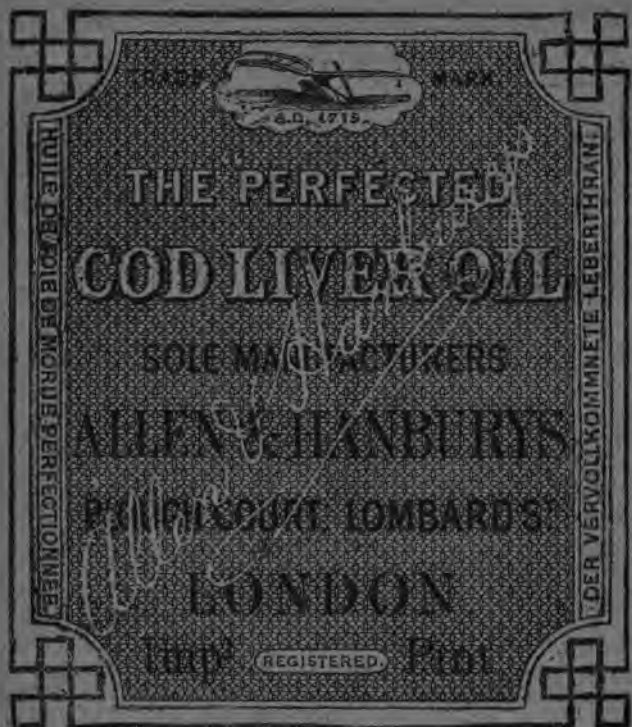
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NO LADY SHOULD BE WITHOUT IT.

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"It is so pure and tasteless, that when oil will agree at all, this is sure to do so."—*Herbert Donist, M.D.*, "On Loss of Weight, Blood Spitting, and Lung Disease."

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Of Chemists throughout the world.

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A SPECIFIC FOR NEURALGIA.

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in the context of public administration and government operations.

2. The second part of the document outlines the various methods and tools used to collect, store, and analyze data. It highlights the need for robust systems that can handle large volumes of information while ensuring data integrity and security. The text also mentions the importance of regular audits and reviews to verify the accuracy of the records.

3. The third part of the document focuses on the challenges associated with data management and record-keeping. It identifies common issues such as data fragmentation, inconsistent formats, and limited access to information. The text suggests several strategies to overcome these challenges, including the implementation of standardized protocols and the use of advanced data management software.

4. The fourth part of the document discusses the role of technology in modern record-keeping practices. It explores how digital tools and automation can streamline processes, reduce errors, and improve the overall efficiency of data management. The text also touches upon the importance of training staff to effectively utilize these technologies.

5. The fifth part of the document addresses the legal and ethical considerations surrounding data collection and storage. It emphasizes the need for clear policies and procedures that comply with relevant regulations and protect individual privacy. The text also discusses the importance of transparency in how data is used and shared.

6. The sixth part of the document provides a summary of the key findings and recommendations. It reiterates the importance of a comprehensive and integrated approach to record-keeping and data management. The text concludes by encouraging organizations to continuously evaluate and improve their practices to stay current with evolving standards and technologies.

7. Finally, the document includes a list of references and a bibliography, providing sources for further reading and research on the topics discussed. It also includes a contact information section for those interested in learning more about the project or the organization.





