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THE VEGETABLE GARDEN
THE VEGETABLE GARDEN

ILLUSTRATIONS, DESCRIPTIONS, AND CULTURE OF THE GARDEN VEGETABLES OF COLD AND TEMPERATE CLIMATES
BY MM. VILMORIN-ANDRIEUX, OF PARIS
ENGLISH EDITION, PUBLISHED UNDER THE DIRECTION OF W. ROBINSON
AUTHOR OF "THE ENGLISH FLOWER GARDEN"
"THE PARKS OF PARIS," ETC.

WITH AN ADDENDUM
BY W. P. THOMSON

THIRD EDITION

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PREFACE TO THIRD EDITION

DURING the years of the War, vegetable growing received a decided stimulus, and in preparing a new edition of "THE VEGETABLE GARDEN" it has been thought advisable to include the new material in the form of an Addendum, to which references will be found in the form of footnotes in the body of the work.

A list of the newer varieties of our well-known vegetables—Peas, Potatoes, Cabbage, etc., is given with notes on their cultivation.

Descriptions of some really distinct new vegetables, as the White Sunroot (Jerusalem Artichoke), Daw's Champion Rhubarb, etc., have been added. In the case of Onions, no mention was made in the earlier edition of the handsome bulbs that are now to be seen at vegetable exhibitions during the autumn. How to raise and grow these form the subject of one of the added paragraphs; while the various diseases that attack vegetables and their remedy have also been dealt with. These include the terrible scourge, the wart-disease of Potatoes. As it has been proved that some varieties of Potatoes are immune from wart disease when grown on infected soil, the names of the sorts that, after extended trial, can be depended on to remain immune have been given. The growing of winter Tomatoes has also received attention.

W. P. T.
PREFACE

Many books on the cultivation of vegetables have been written, but "The Vegetable Garden" is the first book in any language which classifies, describes, and illustrates these most important of all plants to the human race. No excuse is needed for "making English" such a book for the benefit, not only of our own horticulture, but also that of America, and of Australia and our other colonies, in which the plants herein described may be grown. It will enable us to realise the wonderful variety of light, pleasant, and excellent food now within our reach, and make many good vegetables more widely known.

The relation of these plants to the movement towards food reform calls for a word at the present time. Leaving out of view any exclusive tendency of this kind, all agree that the greater use of the best vegetables in our food would be a gain. The reason why the more delicate vegetable foods are neglected is because the cooks of Europe have served an apprenticeship of a thousand years on the carcases of ox, pig, sheep, and we are meat-eaters because our fathers had little else to eat. The plains and hills of the cold north were dotted with wild grazing animals, as an English park is with deer, or a Western prairie with antelope, and men killed and cooked the only food they had. A few generations only have passed since our now commonest vegetables came from the Continent. We are adding to their number every day, and by the aid of cultivation we are winning back our way to a simpler, healthier food.

In London the chaotic struggle in Covent Garden tends to deprive us of the good qualities of the garden produce so well grown in the suburban fields. One simple way to improvement would be the adoption of district markets for local supplies. It is not necessary that permanent structures should be built: a wide road, or square, or
river embankment, would suffice. As wholesale dealings of this kind are usually done in the morning hours, it would be easy to make good use of open spaces for this purpose. Some of the useful little district markets of Paris are held in public squares and on the boulevards, and an hour after they are over, tents, stands, refuse, and all other signs of the market are swept away. Those who have their own gardens do not suffer from the ill-managed markets of our cities, but thousands have no remedy save through the improvements of our markets, the Paris markets being a model of what is best in that way.

The "muddle" method of planting the food garden with fruit trees and bushes, and so cutting up the surface with walks, edgings, etc., that the object of the garden is frustrated, should be changed. We cannot grow vegetables well under trees, and in attempting to do so we destroy the roots of the trees, and is one cause of our poor garden-fruit culture. One-half of the space wholly given to vegetables, divested of walks, large hedges, old frame grounds, old walls, rubbish, and other impedimenta, would give a far better supply. It is not merely the ugliness and the loss of the over-mixed garden which we have to deplore, but the wasted labours of the men who have to look after such gardens. How are they to succeed, with the many things so hopelessly mixed up—and perhaps rank groves of elms or other trees, their roots robbing half the space? Put the fruit trees in one part—the higher ground, if any—and devote the remaining part to vegetables, cultivating the ground in the best way as a fertile garden. The vegetables, too, would be more wholesome for good light and air; for shade from ragged and profitless trees and bushes and hedges is one of the evils of this hopeless kind of garden. The broken crops, too (for the most part sickly patches), are not such as one can be proud of. The many excellent vegetables grown for the Paris market are grown in the full sun, and these gardens are a lesson in good culture, and the quantity grown in them in proportion to their size.

It is the rule in most British gardens to give far too much space to the coarser vegetables like Cabbage and Potatoes, and far too little to the more delicate and nutritious kinds, some of which are usually not grown at all, or so ill grown as to be useless. The Greens and other vegetables that go with our joints are the coarsest, least nutritious, and
most indigestible of all, and there can be no full gain in a garden which does not include the vegetables which are served abroad as dishes by themselves, and indeed are quite worthy to stand alone. Leaving aside those not to be grown in our climate, we have among others Scorzonera, Salsafy, Lettuces, and Endives; with us there is great waste in not using Lettuces and Endive, and particularly the Batavian Endive, as vegetables; for good cookery they are far more important than Greens. Celeriac, an excellent vegetable, is rarely well grown with us. Cardoons are first-rate vegetables for our country, for which our soil and climate are well suited. Indian Corn, too, thrives in all the southern parts of the country, and, well grown, forms an excellent vegetable. Then there are Artichokes of the best varieties, edible-podded Runner Beans, edible-podded Dwarf Beans, early small Carrots, such as the French Early Horn, Witloof, Corn Salad, Potiron jaune, and Winter Gourds. The variety of delicious Gourds available during summer, and the keeping kinds through a great part of the winter, is a revelation to those who know nothing beyond the Vegetable Marrow.

For owners of gardens, big or little, there is waste through not gathering vegetables in the tender state. In almost every garden, in summer and autumn, one sees Kidney Beans and Peas in an uneatable state, useless themselves, and robbing the plant of the power to give a succession of edatable pods. All such crops should be gathered at the right time, whether wanted or not. Those who want vegetables in their best condition only would find it profitable to gather and give away rather than pursue the usual way of growing only to waste. It is a practice of market gardeners to allow things to get old and hard before gathering, so as to fill their baskets. They must be the best judges of their own affairs, but this practice is the cause of market vegetables being often almost uneatable. In Paris the cook has the upper hand, and no grower dare send him the woody fibre which is so largely sent as vegetables to the London market. It is an error to suppose that those who grow their own fruits and vegetables must pay more for them than they would in the market. The gain in having them fresh would be worth paying for. The advantage which all who live in their gardens enjoy might be much increased by growing only things good in flavour, and gathering them in their best state for the table. But it needs very strong pressure on the part of
owners to have things sent in their tenderest and best condition for the table.

All who have gardens should fight against the deterioration of some of our best vegetables through the mania for size. Although the flavour of vegetables may not be so obvious as of fruit, it is often their essential quality. A change in size, by adding to the watery tissue of the plant, may destroy the flavour, and doubling or trebling the size of the article itself, as has been done in the case of the Brussels Sprout, which is no longer the same little rosette of green, but a coarse Cabbage sprout. Bad, too, is the raising of new varieties lacking in flavour, and abolishing old kinds, from supposed deficiency in size. There has been, for example, for the last few years a French Bean in our markets, very large, but without any of the good flavour of the smaller kinds, but its huge mawkish pod has become popular with the market-gardener. Here is a delicate vegetable, the value of which depends entirely upon its flavour, and whether we get six beans or one bean matters little if the object of growing the vegetable is lost sight of. Sometimes a flavour may be too rich: many good cooks in London prefer the little long Turnip of the Paris market, which has a truer Turnip flavour, to some of the sweet kinds. We may lose much of what makes a garden worth having by not controlling the harmful efforts for size unaccompanied by other and more desirable qualities. Often Potatoes and Tomatoes and other things are raised and praised much, which in flavour are wholly inferior to the older kinds.

Loss and confusion arise from the practice now common among seedsmen of naming almost every good vegetable after themselves. England has almost a monopoly of the practice, which is not carried out in France. Honourable houses may do it for self-protection with us, but it is nevertheless a loss to the public, and scarcely less so to the trade. To be able to secure pure stocks of long-tried standard vegetables is not easy for the public while the seedsmen affixes a new name and the name of his house to almost everything he sells. One cause of failure is too many kinds—too many experimental plantings, instead of the garden being devoted to the things we know and like. This is a common error owing to the chaotic state of the names of vegetables.
Seedsmen and growers, at home, in our colonies, and in foreign countries, are compelled again and again to buy old things under new names, and to test them before embarking in their sale. If the practice were confined to the really new kinds raised, it would be fair. A common way of giving these new names is to secure a well-selected stock of seed of some old, good kind, and re-name it. Of late years we have seen in London, Orchid, Pear, and other conferences, which have had really little more serious raison d'être than the vanity or amusement of their promoters. The nomenclature of our most valuable garden crops might well occupy the attention of a body composed of representative seedsmen and growers. It would not be very difficult to seek out and give their true names to all the older and finer types of our vegetables, and prevent confusion in the future without interfering with the right to name a real novelty in a fitting way.

Even if we have all we desire in the way of good culture and varieties, there remains the question of cookery, which is sadly in need of change with us. In places of public resort where the best meat, game, and fish are to be had, the cooking of even the commonest vegetables is disgraceful. Ill gathered, overgrown, they are so cooked as to be uneatable. There is a movement now in the way of cooking the best vegetables in their own juices, by braising and stewing; and not throwing their nutritious juices away in quantities of water. However much our own cookery may improve in this way, much more is to be expected from the study of the ways of nations who live almost wholly on vegetable food. The best Italian cooks treat rice and the products of wheat so well that they form a complete and delicious food; the Indian vegetable curries are famous, and the Arabs have very agreeable dishes of vegetable food delicately flavoured. Among these people we see that good cookery even of a few simple things will give complete nourishment to man. How much more, therefore, might be expected from the vast range and variety of foods within our reach in all fertile countries, and how well worth our while it is to improve our ways of dealing with them! This concerns not only green vegetables, but cereals, pulse, roots, and fruits.

Books do not help us much in this way, because they are
usually based on the older ways as to flesh food; but there is one just come out which is helpful, and that is Colonel Kenny Herbert's book on "Vegetarian and Simple Diet" (Swan Sonnenschein). The fact that it leaves out such a rich source of food as the Apple shows the vastness of the subject. Of all sources of garden food nothing is more precious and varied than the finest apples of America and Britain. Good in the raw state, they add a variety of delicate dishes which nothing else equals.

W. R.
AUTHORS' PREFACE

(Abstract)

We have had some difficulty in fixing the limits within which we should confine ourselves in this work. It is not always easy to define exactly what a "vegetable" is, and to decide upon the plants to which the term is applicable and those to which it is not. In this respect, however, we thought it better to be a little over-indulgent rather than too strict, and, accordingly, we have admitted into the present work not only the plants which are generally grown for use in the green state, but also those which are merely employed for flavouring others, and even some which at the present day have, for the most part, disappeared from the kitchen garden, but which we find mentioned as table vegetables in old works on horticulture. We have, however, restricted our list to the plants of temperate and cold climates, omitting the vegetables which are exclusively tropical, with which we are not sufficiently familiar, and which, moreover, would interest only a limited class of readers.

We made it a point to determine the botanical identity of every plant mentioned in this volume by giving the scientific name of the species to which it belongs. Before commencing the description of any form of cultivated vegetable, we are careful to state, with strict exactness, the place in botanical classification occupied by the wild type from which that form is considered to have sprung. Accordingly, we commence every article devoted to one or more cultivated varieties, by giving a botanical name to all the subjects included in the article—a name which indicates the genus and species to which all these forms, more or less modified by cultivation, should be referred. For instance, all the varieties of garden Peas, numerous as they are, are referred to Pisum sativum, L.; those of the Beet-roots to Beta vulgaris, L.; and similarly in the case of other plants.
While on this subject, we may be permitted to remark that the constancy of a species is very remarkable and well deserves our admiration, if we merely take into view the period of time over which our investigations can extend with some degree of certainty. We see, in fact, species brought into cultivation before history began, exposed to all the modifying influences which attend seed-sowing incessantly repeated, removal from one country to another, the most important changes in the nature of the countries and climates through which they pass, and yet these species preserve their existence quite distinct. Although continually producing new varieties, they never pass the boundaries which separate them from the species which come next to them.

Among the Gourds, for example, which are annual plants that have been in cultivation from times so remote that assuredly many thousand generations of them have succeeded one another under the conditions which are best calculated to bring about important modifications of character, we find, if we give ever so little attention to the subject, the three species from which all the varieties of cultivated edible Gourds have originated; and neither the influences of cultivation and climate, nor the crossings which may occur from time to time, have brought forth any permanent type or even a variety which does not speedily revert to one of the three primitive species. In each of these species the number of varieties is almost indefinite, but the limit of these varieties appears to be fixed. Does any plant exhibit more numerous or more diversified varieties of form than the cultivated Cabbage? Is any difference more marked than that which exists between a Round-headed and a Turnip-rooted Cabbage, between a Cauliflower and Brussels Sprouts, between a Kohl-Rabi and a Tree Cabbage? And yet these vast dissimilarities in certain parts of the plants have not affected the character of the essential parts of the plants, the organs of fructification, so as to conceal or even to obscure the evident specific identity of all these forms. While young, these Cabbages might be taken for plants of different species, but when in flower and in seed, they all show themselves to be forms of Brassica oleracea, L.

It seems to us that the long-continued cultivation of a very considerable number of kitchen-garden plants, while it demonstrates the exceedingly great variability of vegetable forms, confirms the belief in the permanence of those species that are contemporary with Man, and leads us to consider each species as a kind of system
having a distinct centre (although this may not always be represented by a typical form), around which is a field of variation almost unlimited in extent, and yet having certain, though still undetermined, boundaries.

The idea of the species, in short, rests upon the fact that all the individuals of which it is composed are, to an indefinite extent, capable of being fertilised by one another, and only by one another. Now, as long as it has not been proved that a variety artificially produced by man has ceased to be capable of being fertilised when crossed with other individuals of the same species, while it continues fertile to an indefinite extent when impregnated by individuals of its own special form,—so long it cannot be said that a new species has been brought into existence; and, up to the present, no one, so far as we are aware, has ever asserted that such a case has occurred. Far from it, indeed, as this capability of being fertilised by its own members, and only by them, constitutes, so to say, the very essence of the species. It is this which alike ensures its permanence, its pliability, and its power of adapting itself to the various conditions under which it may be compelled to exist.

Reverting, however, to the plan of our work, we have taken care not to give any names that are not really in common use and well known, and have avoided mere translations. In publishing synonyms, we have been very cautious, taking especial care not to admit any that are not thoroughly well established, and, in most cases, verifying them by a comparative cultivation of those plants which we considered identical. Having accurately identified each plant under consideration by giving its botanical and various common names, we mention its native country, adding a brief history of the plant, when we possess any reliable data on this subject. After mentioning the native country and giving the history of the plant, we describe its mode of growth, whether annual, biennial, or perennial. Here it should be remarked that many plants are grown in the kitchen garden as annuals which are biennial or perennial as regards their fructification. For kitchen-garden purposes, it is enough that these plants attain in their first year a size sufficiently large for table use, and this is especially the case with most plants which are grown for their roots, such as Carrots, Beet-roots, Turnips, Radishes, etc.

The descriptions, properly so named, of the different kinds of
kitchen-garden plants have been to us a subject of long-continued labour and much care. Some persons, perhaps, may consider them to be somewhat vague and elastic in their expression, and such a remark may apply to many of them; but, on the other hand, if they had been more hard and fast, and had been drawn up in more peremptory terms, they would not be so true. Account must be taken of the variable appearance of cultivated plants under the different conditions in which they are grown. A season more or less favourable, or sowing earlier or later the same season, is sufficient to produce a material alteration in the appearance of a plant, and a precise description of it as it then presents itself would obviously exclude other forms of it which should be included. Nothing is easier than to describe a single individual in the most exact terms, just as it is the easiest thing in the world to draw precise conclusions from a single experiment; but when a description is to be applicable to a great number of individuals of the same variety and the same race, the task is more difficult, in the same degree as it is when one endeavours to form a conclusion at the close of a series of experiments which give different and sometimes contrary results. Nearly all our descriptions, which in the first instance were drawn up with the growing plants before our eyes, have been, from time to time and season after season, read over again with new crops of the same plants before us. It is the variations which we have noted in the size and appearance of the same plants when grown under different conditions that have induced us to pen our descriptions with a broadness which enables them to include the different aspects which the same kind of plant assumes according to the different circumstances under which it is grown.

Whenever we have been able to seize upon any prominent and really permanent feature in the characteristics of a variety, whether that feature may be found in some important peculiarity or in a fixed uniformity in the size or shape of variable organs, we have been careful to bring it conspicuously into view, as the surest means of recognising the variety in question. Most frequently, in fact, the experienced cultivator of kitchen-garden plants recognises different varieties from one another by the general appearance of each, the peculiar aspect which the plant presents, and which more frequently depends on certain proportions in the position and relative size of the various organs than on any strictly structural characteristics. Such distinctive marks, although they never escape a practised eye,
frequently baffle description and definition. Observation and practice alone can teach any one how to see and recognise them with certainty; therefore we are fortunate, whenever a variety is distinguished by a constant perceptible feature, to be able to express its distinctness by a single word or a short phrase. Characteristic features of this kind are found in the presence of spines on the leaves of the Prickly Solid Cardoon (Cardon de Tours), in the reversed curve of the pods of the Sabre Pea, in the greenish colour of the flowers of the Dwarf Blue Imperial Pea (Pois Nain Vert Impérial), and similarly in many other cases.

A part of each description on which we have bestowed much attention is that which refers to the seed. In addition to noting the character of its external appearance, we have been careful to state, as precisely as we could, its actual size and relative weight; and lastly, we mention the length of time during which the germinating power of the seed of each species continues active. It will be easily understood that this could only be expressed in figures representing an average. The duration of the germinating power really depends very much on whether the circumstances under which the seed has been harvested and kept have been more or less favourable. The figures given in this work represent the average taken from an exceedingly great number of trials most carefully carried out. The number of years tabulated is that during which the seeds under trial continued to germinate in a perfectly satisfactory manner. For our present purpose, we have considered seeds deficient in germinating power when they yield only half the percentage of plants which they did in the first year of trial which was made with seeds of the same year's growth. For example, if, in the first year, a certain variety of seeds germinated to the extent of 90 per cent., we considered the same seeds to be deficient in germinating power as soon as they began to yield only less than 45 per cent. of plants. Any seeds, of which the germinating power continues active for four or five years on an average, do not entirely lose it after the lapse of ten years or more. It is proper to add that our trials were all made with well-saved seeds. Nothing has a greater tendency to destroy the germinating power of seeds than the influence of dampness and heat. This is what makes carriage through tropical countries so often fatal to their good quality. Up to the present, no better method of keeping seeds has been discovered than that
of putting them in linen bags and storing them in a dry, cool, well-ventilated place.

As often as we could, we have supplemented our descriptions with figures of the plants described. The size of the page did not generally allow of these figures being given in large dimensions, but we have endeavoured to exhibit at least their comparative sizes by figuring the different varieties of the same vegetable on a scale of uniform reduction, so far as this could be done. The reduction has been, necessarily, greater in the case of very large kinds of vegetables, such as Beet-roots, Cabbages, and Pumpkins, than that which applies to the small kinds; however, we hope that, thanks to the talent of the draughtsman, M. E. Godard, even the most reduced figures will still give a sufficiently correct idea of the plants which they represent. The Strawberries, the Peas in pod, and the Potatoes are almost the only subjects which it was possible to figure in their natural size. Under the figures we also give the scale of reduction in fractions of the actual diameter of the plant. For example, when a subject is described as reduced to $\frac{1}{8}$, that means that the plant, in its natural size, is six times taller and six times broader than the figure which the reader has before him. We have been careful not to select any subjects for our figures except plants that were thoroughly well marked and of average size. It may be that, in this respect, and also in our estimation of distinctive features, we have sometimes made mistakes. If so, we shall gladly acknowledge our errors and rectify them as soon as possible. Our only ambition, in preparing this work for the press, is to do so in good faith and without prejudice.

Our cultural directions are to be regarded as nothing more than a help to memory, and we do not in any way put them forward as intended to supply the place of the full cultural instructions which are given in standard horticultural works or in various excellent special treatises which have been published in our own and other countries.

Finally, we conclude the article devoted to each plant with a few remarks on the uses to which it is applied, and on the parts of the plant which are so used. In many cases, such remarks may be looked upon as idle words, and yet it would sometimes have been useful to have had them when new plants were cultivated by us for the first time. For instance, the Giant Edible Burdock of Japan (*Lappa edulis*) was for a long time served up on our
tables only as a wretchedly poor Spinach, because people would cook the leaves, whereas, in its native country, it is only cultivated for its tender fleshy roots.

There is one mistake against which professional cultivators, and also amateurs, especially those who have not had much experience, should be on their guard. This is the delusion of imagining that they have succeeded in raising a new variety when a form that seems to possess some merit makes its appearance amongst a number of seedlings. The plants raised from seed obtained by crossing should at first be regarded merely as units, which may have a certain value in the case of trees or plants that are long-lived and are propagated by division, but which, after all, are only units. Taken all together, they can only claim to be considered a variety when they have continued to reproduce themselves, for several generations, with a certain amount of fixity of character; and, almost always, the really difficult and meritorious part of the work is the establishment of the variety—a tedious and delicate operation, by which, when successful, the new variety is endowed with the constancy and uniformity of character without which it is not worth offering to the public.

Many varieties obtained in this way remain confined to their own localities, because they are not more widely known; some cannot reproduce themselves faithfully when sown under conditions different from those of their native place, from which fresh seed must be obtained, from time to time, if it is desired to keep the variety very pure; hence those local reputations which are one of the mainsprings of horticultural commerce. Generally most of the cultivated varieties, although they continue sufficiently distinct and true when they are grown with care, are all the better for being raised from an importation of new seed from the place in which experience has shown that it is grown best and truest to name.

Paris, 4 Quai de la Megisserie.
THE VEGETABLE GARDEN

ANGELICA


A native of the Alps.—Perennial.—This plant has a very thick, hollow, herbaceous stem, upwards of 4 ft. high; leaves very large, from 1 to 3 ft. long, red-violet at the base, long-stalked, and terminating in three principal toothed divisions, which are subdivided into three similar smaller divisions. Flowers small, numerous, pale yellow, in umbels which unite to form a roundish head. Seed yellow, oblong, flat on one side, convex on the other, with three prominent ribs, and membranous edges. The germinating power of the seed continues for a year, or at most two.

CULTURE.—Angelica requires a good, rich, slightly humid, and deep soil. The seed is sown in spring or summer in nursery beds, and the plants are planted out permanently in autumn, and will commence to yield in the following year (provided they are well grown), when the leaves may be
cut. In the third year, at the farthest, the plants run to seed; in this year, both stems and leaves are cut, and the plantation is destroyed.

Uses.—The stems and leaf-stalks are eaten preserved with sugar. The leaves are also used as a vegetable in some parts of Europe. The root, which is spindle-shaped, is employed in medicine: it is sometimes called "The Root of the Holy Ghost." The seeds enter into the composition of various liqueurs.

ANISE

Pimpinella Anisum, L. Umbelliferae.


Native of Asia Minor, Greece, and Egypt.—Annual.—A plant from 14 to 16 in. high, with leaves somewhat like those of Celery, and finely divided stem-leaves, the divisions being almost thread-like, like those of Fennel leaves. The seed, which is small, oblong, and gray, is known for its delicate flavour and perfume. Its germinating power lasts for three years. Anise is sown, where it is to remain, in April. It prefers warm and well-drained soil. It grows very rapidly, and requires no care. The seed ripens in August. The plant is seldom seen in England, but we have grown it easily in the London district.

Uses.—The seeds are frequently used as a condiment, or in the manufacture of liqueurs and comfits. In Italy, they are sometimes put into bread. It is of very ancient use in England, and was known to the ancients, being indeed among the oldest of medicines and spices. It is one of the spices which the Grocers' Company of London had the weighing and oversight of from 1453. According to the wardrobe accounts of Edward IV., it appears the royal linen was perfumed by means of "lytill bagges of fustian stuffed with Ireos and anneys."
ARTICHOKE (FRENCH)
Cynara Scolymus, L. Compositae.


A native of Barbary and South Europe.—Perennial (but cultivated plants will not yield profitably after two or three years).—Stem from 3 to 4 ft. high, straight, channelled; leaves large, about 3 ft. long, whitish green above, and cottony underneath, decurrent on the stem, pinnatifid, with narrow lobes; terminal flowers very large, composed of an assemblage of blue florets, covered with membranous overlapping scales, which, in cultivated plants, are fleshy at the base. Seed oblong, slightly flattened, somewhat angular, gray, streaked or marbled with deep brown. Its germinating power continues for six years.

CULTURE.—The Artichoke may be propagated from seed, or by dividing the stools, or from suckers. The last method is that which is most usually employed, as it is the only one by which the different varieties can be reproduced true to their proper character. Old stools of Artichokes produce underground, around the neck, a certain number of suckers or shoots which are intended to replace the stems which flowered the year before. These shoots are generally too numerous on each stem to allow all to grow equally well, and it is the practice, in spring, to uncover, down to below the part from which the shoots issue, the old stools, which during the winter had been protected with a covering of soil or leaves. The shoots are then all detached from the stool, except two or three of the finest, which are allowed to remain to contribute to the crop. The operation of detaching the shoots is one which requires care and a practised hand, for it is important that along with each shoot a portion of the mother-plant (which is called the "heel") should also be removed, without too severely wounding the old stool, as this might cause it to rot away. The shoots, as soon as they are detached, should be trimmed and dressed with a pruning-knife, so as to remove from the "heel" any parts that are bruised or torn, and to shorten the leaves a little; the shoots may then be planted permanently. The best soil for a plantation of Artichokes is that which has been well dug, and is rich, deep, almost humid, and at the same time well drained. Low-lying level ground and valley-bottoms in which the soil is black and almost turfy are especially suitable for the cultivation of the Artichoke.

The shoots are planted in rows, at a distance from each other of from about 2½ ft. to nearly 4 ft. (according to the richness of the soil and the variety grown), and with the same distance between the rows. They are placed firmly in the ground, but not too deep, and then well watered, after which it is only necessary to keep the ground clean by frequent use of the hoe, and to water plentifully
when watering is necessary. If the plants are sufficiently manured and watered, almost all of them will yield in the autumn of the same year. Sometimes, instead of planting out the shoots permanently immediately after they are detached, they are first planted in nursery-beds, from which they are afterwards removed and placed out permanently at the end of June or July. The success of the plantation is, in this way, more certain, and the yield in autumn is, at least, quite as abundant as that produced by following the other mode of planting.

When Artichokes are raised from seed, it should be sown in February or March, in a spent hot-bed, and the plants should be planted out permanently in May. Plants raised in this way may yield in the autumn of the first year. A sowing on the spot where the plants are to remain may also be made at the end of April or in May, but the plants thus obtained will not yield until the next year.

At the commencement of winter, Artichoke plants should be protected against frost, which sometimes destroys them in our climate. In order to do so, all the stems which have flowered should be removed from the stools by cutting them off as close to the root as possible. The longest leaves also should be shortened, after which soil should be heaped around the stools to the height of 8 or 10 in. above the neck of the root, care being taken not to let any of it get into the heart of the plant. Should the frost be very severe, it is advisable to give the stools an additional covering of dry leaves or straw; but it is important that this covering should be removed whenever the weather is mild, in order to prevent the danger of its rotting the plants. At the end of March, or in the beginning of April, when hard frost is no longer to be feared, the soil is stirred and manured if necessary, the protecting heaps are removed from about the stools, and the work of detaching the suckers or shoots is proceeded with as described above. It is advisable to partially renew plantations of Artichokes every year, and also not to allow any plantation to last more than four years.

Artichokes are grown in every British garden, but rarely so well as they deserve to be.

The culture of the Artichoke varies somewhat according to situation and climate. In the north and midlands, it is necessary to cover it in winter with litter or leaves, to protect it from frost; in the south it is sufficient to earth it up, but even this precaution is not taken everywhere. The plants are increased by seed and offsets. Varieties of it, however, do not always come true from seed, and they require, besides, more time than offsets before they produce heads; offsets, therefore, are most generally adopted. With good culture heads may be had for six months in succession. Commencing with established plants that have been protected through the winter, these will afford the first supply in May
ARTICHOKE (FRENCH)

and June; and, for the next two months, good heads may be had from a planting of strong suckers made in March; for the end of summer and autumn, from a successive planting made in May. Another very good plan is to cut back, close to the earth’s surface, a few old plants early in spring, and occasionally afterwards. These will produce a thicket of shoots, which should be early thinned by pulling and cutting the weakest, and allowing only a portion of the strongest suckers to remain. These will produce, in succession, nice young heads. If the heads be allowed to attain their full growth, or nearly so, they are not so fine in flavour, and have lost most of their tenderness, so that only a part of the base of each scale and the base of the head are fit to eat. The Artichoke will grow luxuriantly in rich moist land in summer, but it will not stand our winter in wet quarters. It will grow on any kind of soil, if well manured, trenched, and pulverised; but no soil suits it better than a good open, sandy, rich loam, trenched and well manured. The plant is in its perfection at the second and third year after planting.

Years ago it was the custom in most gardens at the approach of winter to cover the plants entirely, or nearly, with litter, and then to bank them up with earth, in which condition they remained through the winter. The Artichoke is, however, much harder than was at that time supposed; and plants not protected seldom suffer injury. All the protection they require in the severest weather is a few dry leaves or a handful of Bracken placed over the crowns of each plant, to be removed when the weather changes. Plants are often allowed to remain too long in one spot, and where this occurs the heads all come into use at one time. The best remedy for this is to make a small plantation every year, which will come in after the old roots head.

Artichokes may be often seen starved under trees, where neither light nor sun can reach them. A clear, open piece of good soil, well manured and deeply trenched up into rough ridges, to get well pulverised and sweetened by atmospheric influences, free from trees and hedges, is the proper place to plant them—planting the first batch in March, and for succession another in May, afterwards keeping them thoroughly clean and maintaining an open free surface by often hoeing the ground about them. By such means a dozen stools will produce as many fine rich heads as double the quantity will do by the old-fashioned crowding, neglectful system. Make choice in early spring of good strong suckers, take off the stools carefully with a sharp, strong paddle-trowel or Asparagus knife, with some root or heel of the old stool to them, to hold them in the ground; plant them singly 2 ft. apart, in rows at least 4 ft. apart, or in groups of three in triangles, at 4 ft. apart, at least, in the row. Protect them as soon as planted, against the sun and cutting winds, with Seakale pots which are out of use, or with evergreen boughs, or some other convenient protecting material. Those thus early planted will produce fine crisp heads the same summer and autumn. If in cutting heads the stems also be cut close to the ground, new suckers will soon appear, and if duly thinned will produce a late crop; thus, in various ways, by a little trouble and attention a regular supply of good Artichokes may be had from.
May to October, which will be much more satisfactory than having a glut at midsummer and none afterwards.

Copious supplies of manure water may be advantageously given to Artichokes during dry weather, especially in the case of old stools that have been in the same soil for a length of time. Previous to watering, the soil between the rows should be slightly pricked over with a fork, to allow of the water soaking in more readily. Whenever watering is attempted, let it be done thoroughly, and if a good mulching of half-rotten manure can be afterwards applied between the rows, it will keep the roots in a moist state for a long time, and the effects of the watering will soon be seen. When grown on poor or dry soils, the effect of covering the soil with light manure, lawn mowings, or any such material that can be spared is excellent. In rich, moist soils it is not wanted, except in very dry seasons.

USES.—The base of the scales of the flower, and also the receptacle or bottom of the Artichoke, are eaten either cooked or raw. The stems and leaves may also be used, when blanched, like those of the Cardoon, to which they are in no way inferior in quality. The culture of this good vegetable deserves more attention with us; it should be more used as a vegetable, and the good French varieties should be grown more extensively. It is a vegetable of the highest value and delicacy when gathered fresh and properly cooked, as it may be in various ways. The London market often has heaps of Artichokes which have become shrivelled and “heated” on their long journey from the south of France, while our own valley soils are excellent for the plant.

VARIETIES

Large Paris Artichoke.—A vigorous, comparatively hardy plant, of medium height; leaves silvery gray, the ribs reddish, especially at the base, and without spines; stems stiff, erect, usually with two or three branchings. Heads large, broader than long, particularly remarkable for the breadth of the receptacle or bottom of the Artichoke. Scales very fleshy at the base, at first very closely pressed together, then broken, and in the two upper rows slightly bent backwards.
They are pale green throughout, except at the base, where they are slightly tinged with violet; they have few or no spines. The height of the stems does not exceed from 2½ to 3 ft., and a plant two years old will have three or four stems. This variety is the one which is most extensively cultivated in the neighbourhood of Paris. It is not a very early variety, but it is the best for yielding heads every year of its cultivation. No other variety has such a broad, thick, and fleshy receptacle or bottom; it also reproduces itself fairly well from seed.

**Green Provence Artichoke.**—A plant of medium height, with rather deep green leaves; heads green, somewhat more elongated than those of the preceding variety, but not so thick; scales of a uniform green, long, rather narrow and spiny, moderately fleshy at the base. This variety, which is extensively grown in the south of France, is usually eaten raw with pepper sauce. The seeds of this variety, when sown, always produce a large proportion of spiny plants.

**Flat-headed Brittany Artichoke.**—A tall and vigorous plant, 3½ to 4½ ft. high; leaves luxuriant; heads large, broad, and short, nearly globular in shape, flattened on the top; scales green, brown, or slightly tinged with violet on the edges, short and broad, rather fleshy at the base. This variety is very extensively cultivated in Anjou and Brittany, from which provinces large quantities are sent in May to the Central Market in Paris.

As the number of varieties of the Artichoke is very great, we shall limit ourselves to mentioning only those which we consider the most worthy of notice next to the ones which we have just described as being most generally cultivated.
Copper-coloured Artichoke of Brittany.—A rather low-growing plant; heads round, large, violet at first, but red-copper colour as they advance in growth; scales pointed.

Perpetual Artichoke.—A medium-sized plant not exceeding 27 or 28 in. in height, with silvery gray leaves and red stems, deepening in colour at the base. The young heads are tinged with purple, which turns into purple-gray as their size increases. The scales are indented, spineless, and very fleshy. It is much grown on the French Riviera for the sake of the numerous small heads it produces as early as January, which are usually eaten raw with oil and vinegar, as a delicate hors-d'œuvre for which there is always a great demand. For this reason the plants are abundantly watered from the middle of August onward. When fully grown the heads may be cooked and eaten in the usual way.

Early Purple Globe Artichoke.—A rather dwarf plant, not more than 28 in. in height; leaves grayish green, large but much laciniated; the heads are round, green when young, tinged with dark purple when full grown; scales long, pointed, lightly spiny. Although this variety came first from the south of France, it does well all over France, owing to its earliness. Like the preceding, it is best for use when young. It has superseded the Purple Provence Artichoke, and, like it, is apt to take cold, and should not be uncovered too early in the spring.

Gray Artichoke.—A variety with elongated, rather thin and loose heads, widening out at the top. It is specially cultivated in the neighbourhood of Perpignan, is a very early kind, and flowers
almost continuously. It is sent in large quantities to the Central Market in Paris during the winter and in the beginning of spring.

**Black English Artichoke.**—A very distinct kind, with numerous heads of medium size, nearly round and quite flat-topped, of a handsome dark violet colour.

**Roscoff Artichoke.**—A very tall plant; heads egg-shaped, of a rather pale green colour; scales spiny.

**Oblong St. Laud Artichoke.**—Heads large, elongated; scales loosely overlapping each other at the base, and much more closely set at the top, scarcely emarginate, with a small spine at the point.

**Sweet Artichoke of Genoa.**—A rather tender plant; heads pale green, elongated, spiny. The flesh of the receptacle is yellow, sweet, and very delicate in flavour.

**Purple Provence Artichoke.**—A rather low-growing plant, with swollen short and blunt heads, of rather deep violet when young and becoming green as they mature. A very productive variety, but only in spring, and somewhat impatient of cold.

**Violet Quarantain Artichoke of Camargue.**—Plant of medium height; heads rather small; scales round, erect, of a violet-tinged green colour. An early variety.

**Violet St. Laud Artichoke.**—Heads of medium size; scales green on the exposed parts, but violet on the parts covered by other scales, and also on the tips.

**Florence Artichoke.**—Heads very numerous, elongated, pointed, of an intense violet colour. This variety is very much grown in the neighbourhood of Florence. The heads, gathered when young and tender, are generally boiled and eaten entire.

**Purple Venice Artichoke.**—Heads of medium size, long, conical, dark purple, especially when young; scales fleshy and delicate in flavour; tinged with salmon-yellow on the part not exposed to the light. Hardy, but not very productive.
THE VEGETABLE GARDEN

JERUSALEM ARTICHOKE*

Helianthus tuberosus, L. Composite.


Native of North America.—Perennial.—A tall plant, with annual stems, but producing, year after year, underground shoots which are swollen into genuine tubers. It was introduced into Europe some centuries ago, and is very generally cultivated on a large scale. The stem is erect and very stout, sometimes over 6½ ft. high, often branching in the lower part, and bearing oval-acuminate leaves, which are long stalked and very rough to the touch; flower-heads comparatively small, seldom opening in the north of France before October; florets yellow; tubers violet-red, slender at the bottom, and swollen in the upper part, where they are about 2 in. in diameter, marked with hollows and scale-like enlargements. They form very late, and should not be dug until the stems have nearly ceased growing. The flesh is sweet and rather watery.

CULTURE.—The tubers are planted in the open ground, in March or April, in rows 2½ to 3 ft. or more apart, and with a distance of 12 to 14 in. between the tubers. The plants require no attention beyond the occasional use of the hoe, and the tubers are dug as they are wanted. They are not affected by frost as long as they are left in the ground, but are very liable to be injured if exposed to it after they are taken up. In warm countries the plant produces seed, from which it can be propagated. Experiments made with the view of raising improved

* See also p. 758.
varieties from seed have not hitherto been attended with very satisfactory results. From one of these experiments we obtained a variety with yellow tubers which have a finer and more agreeable flavour than the common kind, but the plant is far less productive. This variety may answer as a kitchen-garden plant, but is not suitable for extensive or field culture.

As this vegetable may be grown in almost any place, it is generally planted on gravelly pieces of ground that would be too dry for other crops. Knolls or mounds are usually cropped with it, and it is also grown along the sides of hedges and in shady places. A few growers, however, grow it on good soil in open and somewhat exposed positions, and the result is an abundant crop of fine tubers. After preparing the ground by manuring and digging or trenching it, the tubers are planted in February, in rows like Potatoes, and are allowed to grow unchecked, and without being earthed up, till November. It has not become very popular perhaps owing to its resemblance to the Potato, to which it is, no doubt, inferior, if looked at only from the Potato standard. But it never should be so regarded, being very distinct from any Potato, and having distinct uses in cookery. It is excellent as baked by French and Italian cooks, the flavour being richer and better this way.

Jerusalem Potato Artichoke.—A remarkable variety, the result of a series of sowings made at Verrières with seeds gathered in Corsica by Dr. Joseph Michaud. It is distinguishable from the common variety by the greater size of its tubers, which are also rounder, less angular and knobby; they are yellow in colour. In quality it is equal to the old sort and somewhat superior to it in yield.

ASPARAGUS

Asparagus officinalis, L. Liliaceæ.


Native of Europe.—Perennial.—A plant with numerous simple swollen roots, disposed in the form of a claw, from which spring several stems over 4 ft. in length, straight, branching, very smooth, slightly glaucous, with very minute cylindrical fascicled leaves.
Flowers pendent, small, greenish yellow, succeeded by spherical berries about the size of a pea, which in autumn assume a very vivid vermilion colour. Seeds black, triangular, large, preserving their germinating power for five years at least.

CULTURE.—Asparagus, which is one of our earliest spring vegetables, is also one of the most widely appreciated and extensively cultivated. In many districts, and notably in the neighbourhood of Paris, the cultivation of Asparagus for market is a branch of industry of the highest importance; and although there are, undoubtedly, some soils and localities in which its cultivation is attended with special success, there is hardly any place in which a plantation of this vegetable may not be made, if only some pains are taken in establishing it and keeping it in order. A light and well-drained soil is the best for this purpose, but a plantation may be successfully made in any soil which is not either absolutely wet or impermeably stiff; stagnant moisture being, above all other things, fatal to this plant.

In order to establish a plantation, the cultivator may either raise his own plants or purchase them ready for use. In the first case, the seed should be sown in March or April, in good, rich, mellow soil (in drills preferably), and lightly covered with soil, leaf-mould, or compost (a covering from \( \frac{1}{3} \) to \( \frac{2}{3} \) in. deep will be quite sufficient). After the seed is well up and the plants have begun to gain some strength, they should be thinned out, if necessary, so as to leave a space of about 2 in. from plant to plant in the drills. It is very important for the ulterior favourable development of the plants, and for the satisfactory appearance of the crop, that they should never suffer from the want of nourishment caused either by an insufficiency of manure or by the plants being placed too closely together. During the rest of the summer and autumn, water should be given copiously whenever there appears to be need of it, and the ground must be kept very clean by the use of the hoe, which should be carefully handled, so as not to injure the roots of the plants. Plants treated in this way will be ready to be planted out permanently the following spring; they will strike root sooner, and give better results than plants of two years' growth, while the crop which they yield will come in quite as soon.

Those who do not wish to take the trouble of raising plants themselves in this way can easily procure them from seedsmen. Young Asparagus shoots may be kept for several days, and even weeks, out of the ground, without any detriment either to their striking root or to the appearance of the crop which they will yield. The raising of these plants for sale has become an important industry.

It has been already stated that, in order to establish a plantation of Asparagus, a light and well-drained soil should, if possible, be
selected; but if the cultivator has no other soil except one that is very stiff and damp, he should, by a thorough drainage, render it wholesome to the depth of at least 12 or 16 in., and direct all his efforts to the improvement of the surface. The experience of the Asparagus growers at Argenteuil and other localities near Paris, who have brought the culture of this plant to a degree of perfection unknown before, seems to prove that the best results are obtained by liberally manuring the upper portion only of the soil in which the plants are growing, as the roots have naturally no tendency to descend deeper, if they find sufficient nourishment near the surface. It is obvious that, in establishing a plantation of Asparagus, account must be taken of the nature of the soil in which it is to be made, and which, consequently, must be dug more or less deeply; but it may be said generally that the chief point on which success mainly depends, is not to put the stools out of reach of the influence of heat, while, at the same time, placing them in a medium in which they will find an abundance of the nourishment which they require. The stools, then, should be planted at no great depth, and no great quantity of soil should be heaped over them, except at the time when the young shoots are growing, when it is absolutely necessary to do so, in order to obtain these of sufficient length. As to the disposition of the young plants, there is no fixed rule. They may be placed either in single rows, or in beds containing two or three rows each; but it is advisable, in all cases, to have a distance of at least 2 or 2½ ft. from plant to plant in all directions. This will be found advantageous from a double point of view, as ensuring a crop of greater abundance and better quality.

Planting in beds being the most usual way, we shall briefly describe how it is done, first observing that the methods of establishing and cultivating the plants are almost exactly the same as those pursued with plants grown in single rows. In March or April, or even later, the ground for the plantation is carefully laid out, having been previously well dug and plentifully manured before winter. The surface of the beds is then slightly
hollowed out to the depth of about 4 in., the soil being transferred to the alleys. Well-rotted farmyard manure, or some other active fertiliser, is then spread over the surface of the bed. In the vicinity of Paris, well-rotted manure or street-sweepings are much used for this purpose. The positions for the stools are then marked out, in two or three rows according to the width of the beds, at the distances mentioned above. At each of these positions is deposited a small heap of well-manured soil or leaf-mould, about 2 in. high, on the top of which the young stool is placed, care being taken to spread out the roots all around and to press them gently into the soil. When all the stools are in position, they are covered with leaf-mould or soil mixed with rotten manure, and a sufficient quantity of soil is spread over all to restore the bed almost to its former level. In this way the crowns of the stools will not be buried deeper than about 2 in., and the ends of the roots not deeper than 4 in. A good deal of soil which was replaced by the manure will remain in the alleys and between the rows, and this will be found useful afterwards for earthing-up the plants.

During the first year, the plantation requires no attention beyond the frequent use of the hoe and occasional waterings. At the commencement of winter, the stems are cut down to 8 or 10 in. from the ground, the portions so left serving to indicate the position of each stool. (It is a good plan also, at the time of planting, to stick a small rod into the ground beside each stool to mark its position, as the manure can then be placed exactly over the roots, and there will be little danger of injuring them in the course of hoeing or in any other way.) A portion of the soil which covers the stool is then cautiously removed, leaving only enough to cover the stool to the depth of between 1 and 2 in., and then the manure is applied. This is of various kinds. Those which, from experience, are considered the best, are well-rotted farmyard manure, street-sweepings to which a little sea-salt is sometimes added, and calcareous comports—plaster, marl, lime rubbish, quarry-dust, etc.—if the soil is deficient in such ingredients. The manure is allowed to remain on the surface all through the winter, and at the end of March is dug into and well mixed with the soil. The surface is then neatly levelled down, and the plantation, during the remainder of the second year, is treated exactly in the same way as in the previous year. When the stools are uncovered in the autumn, care should be taken to cut away, close to the root, the withered remnants of the stems which were previously shortened in October. A fresh covering of manure is then applied, which, as before, is left to lie on the surface all through the winter and dug in at the commencement of spring.

In the third year the plants are, for the first time, earthed up. This operation consists in heaping up over each stool some of the
soil taken from the alleys, so as to form a little hillock about a foot higher than the bed. If the plantation has been carefully attended to up to this time, some shoots may now be gathered for use, but not more than two or three from each stool: however, if it is desirable that the plantation should last for a considerable time, it is better to abstain from gathering any now, and to wait till the fourth year for the first gathering. In any case, it is very important to gather the shoots by breaking them off close to the neck of the stool, and not to cut them in the soil, as is often wrongly done, to the detriment, among other things, of the as yet undeveloped shoots. The best plan is to uncover the shoot to be gathered, by removing the soil of the hillock, and then neatly break off the shoot with the fingers or a special implement, replacing the soil of the hillock at once in its former position. This is the invariable practice of careful cultivators in the neighbourhood of Paris. If, from any cause, portions of shoots are found attached to the stool in autumn, they should be altogether removed before winter sets in. In the open air, in the climate of Paris, Asparagus is gathered in the beginning of April, but it is well not to continue gathering after June 15th, if an abundant and early crop is expected the following year. About London it is ten to fourteen days later, and lasts so much longer.

In the fourth year, the treatment of a plantation of Asparagus is precisely the same as in the previous years, consisting simply of the necessary hoeing, watering, and manuring. It is not absolutely necessary to apply manure every year; nevertheless, as the Asparagus is a very greedy plant in the matter of manure, the crop will always be in proportion to the quantity of nourishment it receives in this way. A plantation properly made and carefully attended to will continue productive for ten years or more.

As by the common English way of growing Asparagus it is impossible to get a good result, we give here what are the

Essential Points in the Production of Good Asparagus.

Although the details of the system of growing good Asparagus require some little space to describe on paper, the essential differences between that and the system commonly employed in England are so very clear that they may be shortly stated. Each plant is treated as an individual—as a vigorous subject requiring much space in which to grow, if strong growth and strong shoots are desired. Long experience has taught cultivators that a smaller space than 4 ft. apart will not suffice to give the very best result. At first sight people in this country might suppose that this means a waste of ground, but it really is not so. At first, when the plantation is young, waste of ground is avoided by taking a light crop off between the lines—say, one of Kidney Beans or of early Potatoes; but after a good year's growth, and when the Asparagus gets strong, its roots really occupy the whole space, and the result is
so much more satisfactory than in the common way that the ground affords a better and more satisfactory return. There are two principal ways of growing this crop near Paris—one, devoting a certain portion of ground to it, as usual with us; the other, putting single plants between Vines or small fruits, or placing a plant wherever there is room for one. This last way is important, because it may be carried out in small gardens everywhere, and by its means we should become more readily convinced of the value of giving plenty of room to the roots. Single plants here and there in the open spaces, or in "blanks" between bushes, fruits, or dwarf pyramidal Apple or Pear trees, or single lines, wherever room can be found for them, would, from the superior result, soon convince all of the value of the system.

PLANTING. — Healthy yearling plants are always chosen, and they are planted about the time, or a little before the time, when growth commences in spring. They are invariably planted in a shallow trench somewhat like a Celery trench—not quite so deep and not manured as that is, supposing that the ground is in fair condition. In a trench about 8 in. deep the plants are placed on little low hillocks, and they are carefully attended to for the first year. The plants, be it noted, are 4 ft. apart in the line, and 4 ft. apart in the trench. It will be noticed that the second essential difference between the common way—that in use with us—and the way it is now desired to make known is, that in garden soil of fair quality no manure is used at the time of planting. There are soils in which drainage and preparation might be required; but assuming that the soil is as good as garden soil generally is, no preparation whatever is given beyond the opening of the trench and the planting of each root in a little fine surface soil; the great preliminary expense which has been supposed to be necessary in the culture of this plant is avoided. It is when the plants begin to get strong and well established that a little manure is applied. There is thus a great economy in two things—in plants and in manure, which under the usual system with us is used to the most wasteful extent; so much so, indeed, as to seriously limit production by causing alarm as to expense.

HOME CULTURE.—Our markets are full of Asparagus in spring, grown in other countries, sometimes hundreds of miles from London. It is a vegetable which, perhaps more than any other, loses quality every day after it is cut. This is one reason why it should be grown in our own country. The soil and the climate of England, in almost every county, are admirably suited for the production of Asparagus. Nevertheless, not only do we not supply our own markets, but many possessing large gardens cannot get a really good sample. All this is wholly unnecessary, for every farmer's garden and every cottage garden might grow it well. In large places, where a few beds formed on a costly and wrong principle now furnish a very limited supply of very poor Asparagus, there ought to be an abundance of the best quality. Our markets ought to be supplied by our own people, the early supplies coming from the southern and the late ones from the northern counties.

BLANCHING.—The question of blanching it is more or less apart from the question of cultivation, and people may adopt the only true
system of culture without blanching, if such be their taste. But a closer acquaintance with the subject will probably teach many that there is something in this despised system of blanching, which so many persons, lamentably ignorant on the subject beyond experiences of their own overcrowded and ill-grown beds, declare to be an absurd practice. All good judges and good growers know that it is necessary in the highest culture, and to secure the most delicate flavour, and also to prevent the rising shoots breaking in warm weather into scales or leaves before they are fairly developed. The best foreign Asparagus is blanched by piling little mounds of friable earth over the stools in spring.

FORCING.—Obtaining early supplies of Asparagus should be the aim of all who have gardens of any extent and with the usual appliances for forcing and heating. A peculiarity of this, the most delicate and most esteemed of all vegetables, is that it never retains its true and delicate flavour when "canned" or preserved. We have tried many samples, both from France and America, and never found one that did not taste unpleasantly of the tin. The true way is to prolong the season of the fresh Asparagus as long as we conveniently can.

Forcing may be commenced in November and continued till Asparagus is fit to gather in the open air. One of the best ways is to make a slight hot-bed with stable manure, leaves, and tan (these last materials, if easily obtained, will do well to mix with the manure), in a Melon pit, or under a common Cu
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such material does not act so effectively in repressing the heat as ordinary garden soil. When the roots are taken up as completely and carefully as possible, and placed thickly on this, they should be covered with a few more inches of the same material. If the Asparagus be required of its natural colour, give the frame full light and air when fine. Water occasionally with tepid water. After one good watering in the early stage, a little will afterwards suffice, for the winter crops at all events, as the slow evaporation of the period and the moisture of the bed will preserve the soil in a sufficiently moist state. The heat of the bed must be preserved when it gets low by a lining, in the usual old-fashioned way, and by covering closely with mats or litter at night in cold weather—that is, if it be a common frame, but if in a brick pit this will not be necessary. The chief point is to be patient at first, to let it get a slow start, and not to be over-excited at any time, or it will start away and produce nothing but very weak, spindly shoots; whereas, by bringing it on gradually and regularly, a good cutting may be obtained.

An important way is by bringing the heat to the roots, and certainly by this plan a more permanent and stable kind of "grass" is obtained, because plant or root is not in the least disturbed. It is an expensive way, though simple. The beds are, in the first place, very well made of rich, deep soil, and the alleys of these beds are dug out to a depth of 3 ft. or so, and then bricked; or, in other words, the Asparagus beds are made between low brick walls, perforated with "pigeon-holes," to admit of the heat entering freely; and whenever forcing commences, the bricked trench on each side of a bed is filled with fermenting manure.
covered over by a rough shutter, and the beds themselves with small wooden frames made to fit; these are, of course, only placed on during forcing, the beds being exposed in the summer season. The beds should not be more than 4 or 5 ft. wide, to admit of the ready percolation of heat. This method is, however, only suited for places where a good deal of expense is devoted to the garden. The modification or improvement of it, which consists in having hot-water pipes passing between each bed and the chamber covered with a slab of stone, is even a more expensive one. No matter what system is employed, a steady heat of from 60° to 65° will be found most suitable.

In the royal gardens at Frogmore the beds are about 75 ft. long and 7 ft. wide, their sides being built with brick, "pigeon-hole" style. The spaces between the beds are 4 ft. deep, the lower 2 ft. being filled with rich soil; and in the upper 2 ft. are flow and return hot-water pipes connected with a boiler that heats six such ranges. On the tops of the beds are frames. In special severe weather the sashes must be covered with mats or litter.

The French mode of forcing Asparagus usually consists in digging deep trenches between beds planted for the purpose, covering the beds with the soil and with frames, filling in the trenches between the beds with stable manure, and protecting the frames with straw mats and litter to keep in the heat. A speciality is made of forcing the smaller-sized Asparagus in iron houses. There are frames within these houses, just as in many propagating houses in England, and beneath them the Asparagus is forced for the markets, and in large quantities. The houses are heated by hot water, and the culture in other respects resembles that which is practised in forcing gardens in England—that is, when the plants are taken up to be forced indoors or in pits. The disturbance weakens the roots a good deal, and the large table Asparagus is never forced by this method. It is produced specially in a small state for soups, etc., but it is impossible to obtain the large table Asparagus in this way.

USES.—The young shoots, blanched by being earthed up, and gathered as soon as the points appear overground, are used boiled as a vegetable. In Italy and some other countries, they allow them to grow 4 or 6 in. overground, and to become quite green before they gather them. In France, blanched Asparagus with a reddish or purple coloured head is generally preferred.

In Holland and Belgium, the shoots are completely blanched. Notwithstanding this, the Belgian and Dutch Asparagus has a delicate and excellent flavour. English people who only know foreign Asparagus as specimens a week or more old, gathered in Spain or France, make a great mistake in supposing that blanching destroys flavour. Fresh and properly cooked Asparagus is always delicate and good in flavour, whether blanched or not; but growers, cooks, market men, and others who have much experience know that the blanched is the best, and laugh at the dictum of those who say that "only an inch of the blanched grass is fit to eat." Many who discuss the question do not even know how the large Asparagus
is cooked, and have never tasted well-grown Asparagus freshly gathered and properly cooked. Another error is to suppose that only foreign produce is blanched, and our own green. The practice of the market gardeners of London has for many years been to blanch the shoots for most of their length. What they send to the London market is excellent in flavour, and has the advantage over the French of freshness. It may be useful to state here that French cooks boil the very fine Asparagus in bundles standing on end in the water, leaving an inch or so of the points above the water. This enables them to thoroughly cook the stem, without destroying the tops. These, if not enough cooked by the steam, are readily finished by laying the bundle on its side for a few minutes.—R.

VARIETIES OF ASPARAGUS

are pretty numerous, or perhaps it would be better to say that every district in which its culture is successfully carried on has given its name to a kind more or less distinct. It is owing to this circumstance that we have such names as Asperge de Gand, A. de Marchiennes, A. de Vendôme, A. de Besançon, etc. We shall describe only those kinds which appear to possess some really distinctive characteristics.

Common Green Asparagus.—This variety appears to come nearest to the wild Asparagus; the shoots are more slender, more pointed, and turn green sooner than those of any other cultivated kind.

Giant Dutch Purple Asparagus.—The shoots of this variety are thicker and more rounded at the end than those of the preceding kind. They are only tinged at the points with rose-colour or violet-red as long as they are not exposed to the action of light.

White German Asparagus.—Closely resembling the preceding variety, this is generally considered to be a little earlier and is somewhat more deeply coloured, but the difference is so trifling that the two varieties may be safely pronounced identical.

Early Giant Argenteuil Asparagus.—This very handsome variety, obtained by selection from seedlings of the Giant Dutch Purple Asparagus, forms the greater part of those fine bundles of Asparagus which are so much admired in the Paris markets in
spring. The shoots are very notably thicker than those of the parent plant, the head is slightly pointed, and the scales with which it is covered are very closely set, overlapping each other. It is a little earlier than the parent variety.

**Late Giant Argenteuil Asparagus.**—This variety is not inferior in appearance to the Early one, but it does not commence to yield quite so soon. It is called Late, not so much on account of this difference as because it continues to produce fine large shoots when those of the Early kind have become much thinner than they were at the beginning of the season, and shoots of the Late kind are used to set off the bundles. Experienced cultivators are able to distinguish this variety from the preceding one by the appearance of the point of the shoot, which in this kind has the scales parted from each other like those of the Artichoke, instead of being, as it were, glued down upon each other.

The Germans have a great number of varieties of Asparagus, under the names of Great Giant, Large Erfurt, Early Darmstadt, Large Darmstadt, Large Early White, etc. All of these appear to us to come very close to the Giant Dutch Purple and the White German Asparagus, both of which, as we have seen, are much about the same thing.

In England and America the variety named Conover's Colossal is very much extolled. From what we know of it, we do not think it superior to the Argenteuil varieties. [The difference in kinds is very often the result merely of difference in cultivation. There is a difference between the Early Argenteuil and the Late Argenteuil, and the Early variety should be encouraged by English growers, who should try to supply their own markets as early as possible.—R.]

**BALM**

*Melissa officinalis, L. Labiatae.*


Native of South Europe. —Perennial. —A plant growing about 1½ ft. high, with numerous erect and spreading branches and leaves of pure green;
BALM

flowers few, in small clusters; calyx covered with fine soft hairs; seeds brown. Their germinating power lasts for four years. The leaves and all the green parts of the plant exhale a very agreeable and penetrating aromatic odour, especially when bruised. This plant is of very easy culture in England. It is increased by dividing the clumps in autumn, winter, or spring. Like most of the herbs that come from South Europe, it enjoys warm positions, but grows anywhere.

USES.—The leaves are much used for seasoning, and especially in the manufacture of liqueurs and scents.

BASIL

Ocymum Basilicum, L. Labiatae.


A native of India.—Annual.—Stem about 1 ft. high, very branching; leaves green; flowers white, in whorled leafy clusters seeds small, black, covered with a mucilaginous substance, which swells in water like Flax-seed. Their germinating power lasts for eight years.

CULTURE.—As this plant is a native of warm countries, the best way is to sow the seed in a hot-bed in March or April. The seedlings are planted out in May, in the open air, on a warm border. All kinds of Basil are easily grown in pots. In England, Sweet Basil seeds should be sown about the middle of April, in a genial temperature, and when the seedlings are large enough to handle, they may be potted off singly, or they may be pricked into boxes or seed-pans, or into a frame on a slight bottom heat, from which they should be transferred to their positions in the open air about the beginning of June. Owing to the plant being very tender, this can seldom be done with safety at an earlier period. Sweet Basil succeeds best in a light, rich soil, in which the plants should grow at a distance of 6 or 8 in. apart, and should be well watered until they become established. As soon as they come into bloom they should be cut down to within a few inches of the ground, and the portion cut off should be tied up in small bunches and dried in the shade for winter use. As, however, green Basil is frequently required, the plants which have been cut down should have the soil surrounding them slightly stirred up, and the bed given a surface-dressing of fresh
soil, when the plants will quickly form themselves into healthy little bushes, which will furnish a supply of green leaves until about the beginning of October. A portion of them should then be lifted and potted, or planted in boxes, and should be placed in a somewhat genial temperature, where they will continue to furnish a supply of green leaves when required throughout the winter.

USES.—The leaves are very aromatic and are used for seasoning. Formerly, and even still in some countries, Basil was considered to possess very active medicinal properties. Its agreeable perfume and flavour recommend it as a kitchen-garden plant.

**Large Green Sweet Basil.**—This appears to be the type of the species. A low-growing plant, forming compact dense tufts about 10 in. or 1 ft. high, and about as much across. Leaves shining green, 1 to 1½ in. long; flowers white, in long clusters.

**Large Purple Sweet Basil.**—A plant of the same height and habit as the preceding, from which it differs in having the leaves and stems of a dark purplish-brown colour, and the flowers lilac.

**Lettuce-leaved Basil.**—A variety with broad, crimped, undulating leaves, from 2 to 4 in. long, and of a low-growing thick-set habit, somewhat less branching than either of the two preceding kinds; but the plant is apparently derived from the same type. The flowers, which are closely set in clusters, make their appearance rather later in this variety. The leaves of this Basil, which are much larger than those of any other kind, are also much fewer in number.

**Curled-leaved Basil.**—A variety with green jagged-edged, crisped, or curled leaves; very distinct.

**Bush, or Dwarf, Basil** (*Ocymum minimum*).—A much dwarfer, more compact, and more branching plant than the Common Basil; the leaves also are smaller. Flowers white; seeds like those of the Common Basil. Culture and uses the same.

**Green Bush Basil.**—This plant, which is of a pleasing green colour, is particularly suitable for growing in pots, and is very commonly cultivated in this way. It may be often seen in the windows of the poorest houses, especially in warm countries, being highly esteemed for the fresh, bright verdure of its foliage and its fine strong aromatic odour. It forms very compact tufts, covered,
in the flowering season, with multitudes of small clusters of rosy-white flowers, which agreeably contrast with the intense green of the foliage.

**Compact Green Bush Basil.**—The distinctive characteristic of this variety is the very great number of stems and leaves which it produces, causing each plant to present the appearance of a round mass or ball of verdure, close and compact. It is, consequently, far better suited for forming ornamental vases or pots of greenery than the Common Bush Basil. It develops rapidly, and is generally preferred to all other sorts by market gardeners in the south of France.

**Purple Bush Basil.**—A plant of a deep violet colour in all its parts, except the flowers, which are of a lilac-white. It forms a small, very compact, bushy, and leafy clump.

**Compact Purple Bush Basil.**—A dwarf form of the Purple Bush Basil; very bushy and compact, and covered with small purplish bronzy leaves, borne on numerous threadlike stems. It is specially suitable for pot cultivation.

**East Indian, or Tree Basil** (*Ocymum gratissimum*, L.).—The plant which is commonly found cultivated under the name of Tree Basil does not appear to be the true *Ocymum gratissimum*, L., but rather *O. suave*, Willd. It is an annual, with an upright stem, branching from the base, and forming a pyramidal bush from 20 in. to 2 ft. high, and from 1 ft. to 16 in. in its greatest diameter. Leaves oblong, pointed, toothed; flowers lilac, in irregular spikes at the ends of the branches. The plant has an agreeable perfume, but it is late-growing and more suited for a warm climate.
THE COMMON OR BROAD BEAN

Faba vulgaris, Mill.; Vicia Faba, L. Leguminosae.


Native of the East.—Annual.—This plant has been cultivated, so far as we are able to learn, from the earliest ages, the large size and alimentary properties of its seeds having drawn attention to it and brought it into culture at some remote period of antiquity. Stem erect, hollow, quadrangular; leaves alternate compound, pinnated, without any odd one, and with broad oval leaflets of a glaucous or ashy green colour. Flowers axillary in short bunches of two to eight, coloured white and black, sometimes tinged purple. Pods erect or curved back, broad, green, often flattened, lined with a kind of felt or down, and containing from three to eight seeds variable in shape and colour. The pods are black and brittle at maturity. As the size of the seeds varies very much in the different kinds, we shall always mention it in the description of each variety. In all the kinds the germinating power continues for six years at least.

CULTURE.—Beans are usually sown, where they are to remain, about the end of February or the beginning of March. They like a rich, slightly humid, and well-manured soil, but they can be grown in almost any kind of ground. Many gardeners are in the habit of nipping off the tops of the plants when they are coming into flower; but, as far as we can judge, this practice is more effectual in preventing the plants from being attacked by aphides than in inducing an earlier and more abundant crop. It is a good plan, whenever it can be done, to run the hoe a few times through the drills. There is seldom any occasion for watering, as the crop is generally gathered before this is required.

Beans may also be sown in a frame in January, and planted out about a month afterwards. It is also not impossible, in the climate of Paris, to grow Beans after the winter mode of culture which is universally practised all through the south of Europe. According to this mode, a sowing is made at the end of October or the beginning of November in a position with a south aspect and well-drained soil, and the young plants are sheltered during the winter by placing frames over them. Instead of frames, we have sometimes seen hoops of casks stuck into the ground across the beds, so as to form an arched support for straw mats, which were spread over them in very frosty weather. This mode of culture is particularly well suited for dwarf or half-dwarf varieties. The plants which have been pushed on in this way are in full bearing three weeks or a month earlier than those which were not sown until spring.
In English gardens, years ago, it was the practice to sow Broad Beans in October, November, and December for the earliest crops, but this is now seldom done; the plants are generally raised in pots, boxes, or frames, and afterwards transplanted to the open ground. This is undoubtedly the best plan, as the ground that would otherwise be occupied by the seed can be ridged or roughly dug, and exposed to the weather to get pulverised and freed from slugs, etc. By adopting the method of transplantation, fuller and more even rows can also be ensured. The first sowing should be made early in January in a frame or pit from which frost is excluded, or a sowing may be made in heat in February, and gradually hardened off after the plants are up. The plants should be grown stout and strong, and be in readiness for turning out early in March, provided the weather is favourable. A south border, under a wall or hedge, should be chosen for them if possible, and after planting, if planks or thin boards can be placed edgeways on each side of the rows, to protect them from cold winds, all the better. The rows should be planted from 2 to 2½ ft. apart, and the plants in the rows should be 4 or 5 in. apart. This will be found to be room enough for early crops if dwarf varieties be grown. If the weather be favourable throughout the spring, the crop will be fit for use by the middle of June, which is as early as Broad Beans are generally expected to be fit for use. Successional sowings may be made in the open ground in January and February, and the principal sowings should be in March and April. If late crops be required, small sowings may be made as late as July; this is, however, seldom done. In order to obtain late crops some growers, after gathering the produce from the main or summer crops, cut down the plants to within a few inches of the ground, then give them a good watering, and in a few days they throw out young shoots, which eventually furnish a fair crop of late beans, though, of course, not so fine as the previous crop. Others sacrifice part of the summer crops, and cut down the plants just as they are coming into bloom; the produce from these is, of course, finer than that from plants that have previously borne a crop. Either of these ways is, however, preferable to sowing for late crops, inasmuch as the plants are hardier, and, being well rooted, stand the dry weather late in the summer and the cold in the autumn. By this method beans of fair quality may be had up till late in November, unless the weather be unusually severe.

Sowings for successional and main crops may be made on open quarters, or between rows of Spinach or any other crop that will be cleared before the beans get very high; the former, however, is best when ground can be spared. The seed should be sown in rows from 2½ to 3 ft. apart, the beans being placed about 4 or 5 in. apart, and they may either be put in with a blunt dibble, or drills may be drawn for them 2 or 3 in. deep. Previous to sowing main crops, the seed should be soaked in water for a few hours to accelerate vegetation. Earthing-up the young plants is advisable for early crops, for it affords a slight protection to the plants during cold, windy weather; for other crops it is not needed. When the plants show sufficient bloom to produce a good crop, their tops may be picked out in order to enhance the setting of the blooms and development of the
pods. Where tall varieties are grown, some support should be given to prevent their being broken by the wind. The best support is thick twine tied to strong stakes driven in the ground on each side of the rows. Long, slender sticks, tied to the stakes, lengthways along the rows, will answer, but the plants are apt to get bruised against them when swayed to and fro by the wind.

Kinds.—Although there have recently been many new and valuable additions made to our lists of beans, there are some of the older kinds that still maintain their position. Dwarf kinds are sometimes preferred for the smallness of the beans rendering them more delicate-looking than some of the larger varieties. Of dwarf kinds, Beck's Green Gem and the Dwarf Fan are two of the best; the plants assume a neat, compact habit, are abundant croppers, and good in quality; in this respect, however, Beck's Gem is preferable, on account of its green colour. The taller kinds of Mazagan are not worth growing in comparison with the Long-pods and Windsors; but where small beans are preferred they answer the purpose. Though recommended in every book on the subject, the Mazagan is for us the worst and most useless of its race. The Long-pods are earlier than the Windsors, and are therefore preferable to them for first and second early crops. The Seville Long-pod is a variety of Broad Bean that has been for many years in cultivation on the Continent, especially in Spain, where it has done good service in supplying food during times of war. It well deserves the high commendations bestowed upon it, and ought to be in every good garden. It is a very early variety, with immensely long pods, the points of which reach the ground and seem to prop up the plant. It is rather tender. The variety named Aguadulce is said to be the true variety of this. It is a taller and somewhat stronger grower. The Windsor is most suitable for main or late crops.

SOIL, MULCHING, AND WATERING.

—A deep, well-drained, strong loam is most suitable for Broad Beans, with the exception of early crops, when the soil may be of a lighter character. Where the soil is too light, it may be improved by treading it firmly whilst in a dry state, or planting without digging. If the ground in which Beans are to be grown has been manured for previous crops, it will be found sufficiently rich for them, as a very rich soil will produce too luxuriant a growth, which is inimical to the production of pods. During dry weather it is a good plan to give a good mulching of half-rotted manure between the rows of main crops of beans to save watering; but it should be done before the plants are in bloom, in order to keep the roots in a moist condition whilst the blooms are setting, this being highly necessary to the production of large, full pods. Watering is seldom necessary for Broad Beans if grown in a deep soil; where, however, the soil is shallow, it may sometimes be needed, in which case it should be thoroughly done, and afterwards the ground should be mulched.

In London market gardens, when these beans are grown, dry and light soils in warm positions are chosen for early sowings, which consist of the Early Mazagan. Sowings of this kind are made in January and again in February, in rows 2 ft. apart, running across or obliquely in the borders or quarters. Large sowings of the Long-pod are made in the latter half of February and in March, in rows equally distant as
THE COMMON OR BROAD BEAN

for Mazagans, but with less particularity as regards the way in which they run, the position of the quarter, or the quality of the soil which they occupy. The Broad Windsor, which forms the principal crop, is generally sown in March. The Green Broad Windsor is preferred by consumers; therefore market gardeners generally grow this sort for the main crop. Some cultivators grow beans for seeding purposes, and in this case about one-half or two-thirds of the pods, consisting of the earliest formed, are picked off for marketing in a green or usable condition, the remainder being left to ripen. If all were left the seeds would not be so large, plump, or heavy as when the pods are thus thinned out.*

USES.—The seeds, or beans, are eaten boiled, both in the green and dried state. In the south of France the young pods are sometimes boiled and eaten. Broad Beans are not thought so much of in private gardens as Kidney Beans, but by the poorer classes they are much grown. Generally they are not considered a remunerative crop, inasmuch as they do not continue long in bearing. The green-seeded varieties are usually preferred to the white ones, because they retain their green appearance when cooked, whilst the white ones become dark brown. The Bean suffers from the usual and bad practice of allowing the pods to become old and hard before they are used. It is an excellent vegetable when gathered at the right time and properly cooked, and as it is wholly distinct in flavour from any form of Kidney or Runner Bean, it deserves more attention both from the gardener and the good cook. Beans are often gathered for table before they have attained half their size; but this is not advisable, as they sometimes taste bitter when so small. The best-flavoured beans are those that are full-grown but young. If any be required for soup, a row may remain until they become black-eyed. When gathering for exhibition, choose young, long, straight, and shapely pods, as nearly alike as possible, and the more beans they contain the better.

Large Common Field Bean.—Stem quadrangular, erect, about 2½ ft. high, and almost always tinged with red; leaves usually consisting of four or five oval gray-green leaflets. At the base of each leaf, the stem is encircled, for about two-thirds of its circumference, by two broad, toothed, sheathing stipules marked with a blackish spot. Flowers, five to eight in number, in clusters, the first of which commences at the fifth or sixth leaf from the base of the stem; they are pretty large, white, marked on the standard with dark-brown streaks, and with a spot of velvety black on each of the wings. Pods often two or three together, sometimes curved when fully grown, or becoming pendent from their weight, at other times remaining quite erect. They are over 1 in. broad, and from 5 to 6 in. long, and contain from two to four very large seeds which are longer than broad.

* The Bean Aphis Disease, see p. 776.
There are numerous sub-varieties of this Bean: one of them is well known in the trade as the Large Sicily Field Bean. It is a little dwarfer, and more yellow in the foliage, and decidedly earlier than the variety from Northern France.

**Seville Long-pod Bean.**—Stem quadrangular, erect, 2 to 2½ ft. high, not very stout, sometimes quite green, and sometimes slightly tinged with red. The foliage is very clearly distinguished from that of other varieties by its lighter shade of green, and by the more elongated shape of the leaflets. The flowers in each cluster are not very numerous, usually from two to four, and sometimes there is even only one; the standard is green-white, longer than broad, and remains folded in the centre, even when the flower is fully blown. This peculiarity gives the flowers the appearance of being longer and narrower in this variety than in any other, and they have hardly any tinge of red or violet. The first cluster of flowers usually appears in the axil of the seventh leaf from the base of the stem. Pods something over ½ in. broad, and from 8 in. to 1 ft. long, either solitary or in pairs, and soon becoming pendent with their weight. They contain from four to eight seeds each, resembling those of the Large Common Field Bean, but generally a little smaller. This is an early variety, but not so hardy as the preceding one; its pods are, however, considerably longer.

**Aguadulce Long-podded Bean.**—This fine Bean, with its immense pods nearly 2 in. wide and 14 to 16 in. long, is not,
properly speaking, a distinct variety, but is the real Seville Long-pod in the highest state of development. As usual, however, the number of the pods is, in these plants, in inverse ratio to their increased size, and while the Large Common Field Bean or the

Extra Long-podded Aguadulce Bean (pods 3/4 natural size).

Broad Windsor may have ten to fifteen pods on a stem, it is a rare occurrence to find a stem of the Aguadulce Bean bearing more than three or four well-grown pods.

Perfection Bean.—Vigorous, tall, with stout stem and intense green leaves; pods long, resembling, without equalling, those
of the Seville Bean. While the Seville variety is rather delicate, the Perfection Bean is hardy enough for the climate of Northern France. It may be sown like the Common Field Bean, either in spring or in the autumn, with some protection during the winter.

**Broad Windsor Bean.**—Stem very stout, quadrangular, erect, 2 ft. 7 in. to 3 ft. 3 in. high, of a reddish or bronzy tinge, which extends to the leaf-stalks, and is deeper than the similar coloration of the stalks of the Large Common Field Bean. Leaves large, round-oval, rather glaucous green. Flowers of medium size, resembling those of the Large Common Field Bean, but not more than from four to six in a cluster, and having a reddish or violet-

coloured calyx. In this variety the first cluster of flowers does not commence before the eighth or tenth leaf from the base of the stem. Pods solitary or in pairs, almost always curved, and usually very broad towards the end; they seldom contain more than two or three well-grown seeds. The seeds are very broad, with an almost regularly rounded outline.

**Green Windsor Bean.**—This differs from the preceding kind only in the colour of its seeds, which, even when ripe, remain of a deep green colour. Windsor Beans are very strong-growing and productive varieties, but somewhat late, which is a serious drawback in dry climates, where Beans are exposed to the attacks of rust and aphides.

**Small July Bean.**—The general appearance of this plant very much resembles that of the Large Common Field Bean. Stems quadrangular, very erect, reddish, attaining a height of about
2½ ft.; leaves gray, with round-oval leaflets; flowers red on the calyx and at the base of the standard, and with well-marked black spots on the wings, four to six in a cluster, the first cluster appearing in the axil of the fifth or sixth leaf; pods erect, often three or four together, nearly cylindrical, and not much thicker than one's finger. They usually contain three or four seeds each, which are elongated, thickish, and not flattened at the sides, like those of the preceding kinds. The July Bean is a hardy kind, and less affected by hot, dry weather than either the Windsor Bean or the Large Common Field Bean, and, notwithstanding the comparatively small size of its seeds, it yields almost as heavy a crop as either of those kinds; for, although its pods are shorter and narrower than those of the large-seeded varieties, they are produced in far greater numbers, and the seeds are, at the same time, very uniformly well grown and well filled.

**Dwarf Fan, or Cluster, Bean.**—A plant growing 14 to 16 in. high, with a quadrangular stem tinged with brownish-red or copper colour, and rather slender, but stiff and strong leaves, ashy-green, with rather small, oval-elongated, pointed leaflets. Flowers small, four to six in a cluster, with a slightly reddish calyx, and the standard more or less purple at the base. The first flowers come in the axil of about the sixth leaf from the base of the stem. The pods are erect, in twos or threes, each containing from two to four square-sided, bulging seeds, of the same colour as those of the Large Common Field Bean.

**Beck's Dwarf Green Gem Bean.**—A very compact-growing variety, much dwarfer than the preceding kind, being only 1 ft. or 1½ in. high. Stem stiff, green, or slightly tinged with red; leaves very closely set and arranged like a fan on each side of the stem; leaflets oval, rather pointed, glaucous green; flowers small, with a
purple tinge at the base of the standard; pods small but numerous, about the size of the little finger, each containing three or four dark green, very full and rounded seeds, which are not much larger than a good-sized Horse Bean. Both the preceding kind and this one in particular are especially well suited for forcing in a frame. Although dwarf, they are great bearers, and even in the open air will yield a good crop without the drawback of throwing too much shade on other plants growing near them, which the taller-growing kinds of Beans sometimes do.

The Very Dwarf Scarlet Bean is a small and very early variety, but not very productive. It has erect, slender pods, about the size of the little finger, each generally containing two or three oblong seeds of a dark brown colour.

**Early Mazagan Bean.**—Under this name are cultivated several kinds, which are certainly distinct from one another, all of them small-seeded varieties, but varying in height and earliness. They usually produce numerous erect, very slightly flattened pods, each containing three or four seeds intermediate in size between that of the July Bean and a large Horse Bean.

There are two other varieties: one with pure white and the other with red flowers. They are sometimes cultivated, but are of no great merit. There is also a Broad Bean with yellow pods, like those of the Butter Beans, but unfit for use, and the plant is a mere curiosity.

**KIDNEY BEAN, or FRENCH BEAN**

*Phaseolus vulgaris, L.*  *Leguminosa.*


Native of South America.—Annual.—A plant of rapid growth, flowering and seeding soon after it is sown. Stem slender, twinning,
KIDNEY BEAN, OR FRENCH BEAN

usually channelled or angular, rough to the touch, always twining in the direction of from right to left (but there are several dwarf varieties, with stiff stems, which do not require any support). Leaves large, composed of three triangular leaflets, which have the angles at the base rounded, are rough on the surface, and of various shapes and sizes. The flowers are produced in the axils of the leaves, in clusters containing from two to eight flowers each. They resemble other papilionaceous flowers, but are rather irregular in shape, the petals being often twisted in an unsymmetrical manner, and the keel especially being generally reduced to two small blades which are more or less convex and non-adherent to each other. Hence it results that the pistil is not so completely covered as it is in most other papilionaceous flowers, and consequently spontaneous crossing very frequently occurs amongst the varieties of this plant. The pods and seeds of the different kinds vary much in shape, colour, size, and substance.

We shall describe each variety separately, merely observing here that the difference in the texture of the pods has led to the division of the plants into two classes, viz. the Tough-podded, the pods of which become hard and leathery when ripe, and the Edible-podded, the pods of which never become stringy, even when dried. The germinating power of the seeds continues for three years.

The Kidney Bean does not appear to have been known to the ancients; for, although Columella and Virgil mention a plant under the name of Phaseolus or Phaselus, this could not have been our Kidney Bean, which, even in Italy, does not accommodate itself to being sown in autumn, like the Phaseolus of these authors. It is certain that the Kidney Bean is a native of a warm climate, and in the absence of positive documentary proofs of its original habitat and the time of its introduction into cultivation, there are good grounds for assenting to the opinion of Monsieur Alph. de Candolle, that it was originally a native of South America, and was introduced into Europe in the sixteenth century. The old French writers on kitchen-garden subjects do not mention it before that period, and give it but scant notice in comparison with that which they bestow on Peas and Garden Beans. Since their time, however, and chiefly owing to the power which the plant possesses of producing numerous varieties, its culture has acquired a considerable amount of importance. In France, every year, many millions of kilogrammes of the seeds are harvested (the kilogramme is equal to 2½ lb. avoirdupois); and, besides this, considerable quantities are imported, and form a large part of the national food. They contain more azote or nitrogen than almost any other vegetable, and their chemical composition in some degree approaches that of the flesh of animals.

CULTURE.—The Kidney Bean is very sensitive of cold, and
will not grow well or vigorously in a temperature which is not over 50° Fahr. It is destroyed by one or two degrees of frost. It likes a rich, light, well-drained soil, with which manure has been thoroughly well mixed, and it may be observed that it does better in soil which has been well manured in the previous year than in newly manured ground. This remark applies to field cultivation, as well as to that of the kitchen-garden.

We will now rapidly review the various modes of cultivation under which Kidney Beans are grown. As they delight in fresh air and light, they are seldom sown in hot-beds for a first crop before February (they are sometimes so sown in December or January, but it is not unusual to see plants which are raised at that time pine away or damp off). The seed is sown in a frame, placed on a bed of fresh manure, which is covered with good soil or leaf-mould to the depth of 5 or 6 in. Air should be regularly given whenever the weather permits, taking care at the same time not to bring down the temperature to a degree that would be injurious. As the plants increase in size, all sickly or discoloured leaves should be removed, as well as any of the healthy ones which give too much shade or hinder the free circulation of the air.

The first crop may be gathered eight or ten weeks after sowing, and sometimes sooner when the weather is favourable. Sowings on hot-beds may be continued until March. The plants so raised in April are usually planted out in the open air; and, in fact; plants raised in hot-beds may be always advantageously pricked out. Some gardeners keep their forced Flageolet Beans growing, and after taking from them a crop of green pods, leave some to ripen, from which they obtain another crop of fresh ripe Beans in May, when they command a high price. The varieties which are generally used for this purpose are the Dwarf Dutch Kidney Bean, which is much the same as the White Flageolet; the Early Étampes Flageolet, and the Scalloped-leaved Flageolet. The Black Belgian Kidney Bean and the Yellow Chalandray are also well adapted for forcing.

The time for making a sowing, in the open air, of Kidney Beans, the pods of which are intended to be gathered in the green state, commences as soon as all danger of frost is over, and the soil has become sufficiently warm. Successional sowings may be made from April to August. The seed may be sown either in holes made with the dibble, or in drills, according as the kinds sown vary in vigour and growth. This mode of culture requires hardly any attention except the use of the hoe and watering in hot weather. Some gardeners are in the habit of earthing-up the plants at the first hoeing, and this generally appears to be productive of good results; the flowers come into bloom continuously, and the growth of the young pods is very rapid, so that gatherings
may be made from the same drills every two or three days, and if
the plants which were latest sown are protected from frost, green
pods may be gathered in the open air up to the end of October.
It is usually the tough-podded kinds which are grown for use in
the green state, and the preference is given to those varieties in
which the young pods are long, straight, very green, and rather
cylindrical than flattish in shape. The kinds which are chiefly
grown about Paris for this purpose are Swiss Kidney Beans,
especially the Gray Swiss and the Black Flageolet.

In gardens, hardly any kinds are grown for the seeds or beans
except the White or Green Flageolets, and they are cultivated just
in the same way as the kinds of which the pods are used in the
green state. The pods are gathered when they begin to grow
yellow, and are no longer brittle. Dry seeds are obtained by
allowing them to ripen thoroughly, but some may be preserved
tender for winter use by taking up the plants a short time before
the pods are ripe, drying them in the shade, and then packing
them closely together in a dry place, when the leaves will gradually
fall off, while the pods continue attached, and the seeds will remain
tender and possess nearly the same flavour as if they had been just
newly gathered.

Tall-growing Kidney Beans, whether grown for the sake of the
green pods or the seeds, are treated in exactly the same way as
those already described, except that they require to be supplied
with poles or branches to support their climbing stems. These
supports, which are of different materials in different districts, vary
in height from 5 to nearly 10 ft., according to the height of the
variety grown. Those used about Paris consist chiefly of Chestnut
loppings, with few branches or none, and when staked they are
usually inclined, so that two rows of stakes meet at the top. The
object of this arrangement is to make the rows firmer, and better
able to resist high winds. Sometimes, for greater security, every
two opposite stakes are tied together near the top, thus forming
a series of gables, which are fastened to poles laid lengthways
in the forks, and, in this way, although it may seem a little trouble-
some, a structure of great strength and stability is obtained.

Though we by no means make such good use of the Kidney Bean
in its many and valuable dried forms as the French do, its culture
in Britain is of the highest importance, and we look to its being much
more so in the future, when the value of the many kinds described
in this book is generally known.

Sowing and Culture Out-of-DOORS.—An early sowing is gene-
really made, in order to be able to
pick Kidney Beans before it is
possible to have those of the Scarlet
Runner type in bearing; but as
soon as these come in, French
Beans too often are almost lost
sight of. For small gardens the
French Bean is invaluable as a
summer vegetable, being easily
grown, many kinds requiring no stakes, and being one of the most remunerative of vegetable crops. It may be had out-of-doors both earlier and later in the season than the taller-growing kinds, owing to its dwarf habit adapting itself to any situation—as, for instance, under hedges or walls, or other sheltered positions; it also comes into bearing much more quickly than Runners.

Where French Beans are grown in the open air without protection, it is impossible to have them fit to gather before the latter end of June or the beginning of July, unless it be indeed an exceptionally favourable season. Where, however, they are sown in a warm, dry situation, and somewhat protected from cold winds and late frosts, they may be had fit for table during the second and third weeks in June. Where it is desirable to have Beans out-of-doors as early in the season as possible, it is a good plan to sow thickly under hand-lights in a warm corner, and then transplant when the plants have made the first pair of rough leaves. After preparing the ground in which they are to be planted, which should be the warmest, driest, and most sheltered available, they may be carefully lifted with as much soil adhering to the roots as possible, and planted in rows 1½ or 2 ft. apart, or in patches, whichever is most practicable; in either case the plants should be about 6 in. apart. If the planting be done early in the day, they may receive a gentle watering to settle the soil round the roots; if otherwise, it will be better to leave them unwatered until the next morning. All possible protection should then be given them; if hand-lights be plentiful they are the best, in which case planting in patches should be practised, as the lights can be more easily placed over them; but small twigs of Laurel or Fir fixed neatly round them answer the purpose in the absence of anything better. Rough hay-bands stretched lengthways over the rows, about 6 or 8 in. from the ground, and firmly secured to stout stakes driven in the ground at each end of the rows, may be employed with advantage. A rough frame, made with sticks driven in the ground and others tied across them to admit of mats, straw hurdles, or any other protecting material being laid upon them at night, is also useful; but whatever is used to protect them, care must be taken so to place it as to avoid draughts as much as possible. Sowings for this purpose may be made in the beginning of April. If the weather be favourable, the ground in which early Beans are to be grown should be deeply dug and left rather rough. The next day, when the sun is going down, the ground should be again turned over with a fork, in order to turn the warm soil underneath and expose the cold to the next day’s sun. If this can be done two or three days consecutively, a great advantage will be gained. The last time on which the soil is moved it should be made fine on the top, to prevent the under-soil again becoming cold.

When the seed is sown where it is to remain, drills may be drawn with a hoe, 2 ft. apart and 2 in. deep, and sufficiently wide to admit of two rows of Beans being placed 3 or 4 in. apart. The distance from bean to bean in the rows is usually 8 or 9 inches. Where seed is no object, they may be sown much thicker, and thinned out to the required distances apart, after
they are up, by removing the weakest plants. In any case, a few extra seeds should be thrown in at the ends of the rows to provide for filling up blanks, which often occur in early crops when the ground is cold and wet. The earliest sowing out-of-doors should be made the second or third week in April, if the weather be favourable, otherwise it is better to wait a little longer. It is not advisable to plant very largely for early crops, unless they are wanted in quantity; it will be found better to make two or three small sowings at intervals of a week or ten days during April; after that the principal or main sowings may be made until the middle of June, after which time make a few smaller sowings for autumn use. The last sowing should not be later than the end of July, unless protection can be afforded the plants in the autumn. For principal crops the plants should be thinned out to 9 in. or 1 ft. apart in the row, the rows being 2½ or 3 ft. asunder, according to the varieties grown.

Earthing-up the row is a point that has been much disputed, some growers being of opinion that it is beneficial, while others think the reverse. For early crops we should, however, strongly recommend earthing-up, as it has a tendency to keep the soil around the roots in a drier, and consequently a warmer, state than it otherwise would be; for the main crops, however, we would recommend rather deeper planting, and heavy mulchings in dry weather in preference to earthing-up. Stopping the points of the shoots is practised by some growers; it is, however, immaterial for general crops, but in the case of early Beans and those grown under glass it is advantageous.

Soil.—French Beans like a light, rich, sweet soil; therefore if the ground does not already possess these qualities, good rotten manure or leaf-mould should be added. If worms abound, a good dressing of soot or lime should be given, and if this can be done in the winter, and the ground thrown into ridges or roughly dug, it will be all the better. For pots and beds under glass the soil should consist of three-quarters light turfy loam, and one-quarter decomposed manure or leaf-mould. Soil in which Cucumbers have recently been growing will generally answer well for Beans; in all cases a sprinkling of soot amongst it will be found beneficial. We have seen trimmings from the edgings of walks, chopped up and mixed with fresh horse-droppings, used for pot culture with the very best results.

Mulching and Watering.—A good mulching of seaweed or half-rotted manure from old linings, or litter from Vine borders, applied between the rows of all kinds of Kidney Beans that are grown out-of-doors, will be found beneficial in keeping the soil about the roots in a moist condition, and in promoting a free and luxuriant growth, which is highly necessary to the production of long supplies of fine, tender, and juicy Beans. Copious waterings at the roots will be necessary for all kinds of Beans, wherever they are grown, when they are coming into flower, if the weather be dry—otherwise, instead of the blooms setting, they will fall off. Manure-water may also be advantageously applied after they are set, but not before, as it promotes so much growth, which is iminal to bearing. Guano-water may be given to those grown in pots with advantage; but it is no better than good manure-water from the stable-yard,
or that made from cow manure. Where, however, the latter is used, a little lime should be previously dissolved in it, otherwise it has a tendency to make the soil sour and breed worms. Water in all cases should be applied in a tepid state; and avoid pouring it close to the bases of the stems, as they may be injured by so doing.

**Culture in Pits and Frames.**
—The method to be adopted for growing Beans under glass must necessarily depend upon the nature of the structures in which they are to be grown. Where only cold-pits and frames are employed Beans cannot, of course, be obtained during the winter months, but by a little attention and skill they may be had very late in the autumn, and much earlier in the spring than they can be obtained in the open air. If heating material, such as stable litter and leaves, be plentiful, sowings may be made in pits or frames early in March. If pits be used, they should be filled up with heating material to within 2 ft. of the glass, firmly treading it down as the work proceeds. This done, a layer of rotten manure or leaf-mould may be spread over the litter to the thickness of 3 or 4 in.; 6 or 8 in. of soil may then be placed on the top, the lights put on and allowed to remain until the soil is found to have got warm, when the beans may be put in rather thickly, eventually thinning out so as to leave the plants 6 in. apart each way. If the soil be dry, watering will be necessary, but too much moisture must be avoided at this season of the year. If a lining of warm manure can be put round the pit it will be beneficial to the growth of the plants. A thick covering will be necessary at night to protect the plants from frost. Where wooden frames or boxes are used, a good bed of leaves and litter should be made, and the box should be placed upon it, building the lining up round the box to the level of the lights, as is done in the case of Cucumbers and Melons. If treated afterwards as recommended for pits, the plants will grow rapidly —i.e. if the weather be at all genial. When they have made two joints beyond the seed-leaves, the plants may be pricked out, in order to keep them dwarf and sturdy, and cause them to throw out stronger side-shoots than they otherwise would do. If a few small twigs be stuck in the soil between the plants, they will not be so liable to get broken. Abundance of air will be necessary when the plants are well established, but it must be given with care, as a rush of cold air suddenly admitted would cause the tender foliage to shrivel, and render the plants worthless. If it be found that too much steam accumulates in the frame during the night, it will be necessary to leave a “crack” of air on. Beans may be obtained in this way by the end of May or beginning of June, and, if properly treated, will yield a fair supply until the early outdoor crops come into use. If, however, there be convenience, another sowing may be made in the same way a fortnight later, in order to ensure a supply in the event of any disaster befalling the first outdoor crop.

Some growers prefer raising the plants in pots or boxes and transplanting them into frames, and where time can be spared this plan is not without advantages; others prefer growing them entirely in pots, and plunging them in the pits and frames. Thus managed, they come into bearing rather sooner, but they do not generally last so long, neither is the produce so fine as
from those planted out. Where there are pits heated by flues or hot-water pipes, good Beans may be produced throughout the winter by adopting the same mode of culture as that recommended in the case of cold-pits, with the exception that linings will be unnecessary, neither will bottom heat be needed; but where it is not used, growing in pots placed upon boards near the glass is preferable to planting out, as the roots are not then surrounded by such a bulk of cold soil. In order to prolong the season, a sowing may be made in August in cold-pits or frames; those lately cleared of Melons or Cucumbers will answer perfectly. It is a good plan, before sowing, to choose a fine, sunny day, and give the soil a good soaking of water, and to wash well all the wood or brickwork with a syringe, after which close the lights and let the sun have full power on the glass; this will quickly put an end to insects. After sowing, the lights may be left off night and day, until the coldness of the weather necessitates their being put on. A good warm covering should be afforded during cold nights. By this means a good supply of Beans may be had until late in November, unless the weather be very severe. For this crop stopping the shoots is unnecessary, inasmuch as the plants will continue longer in bearing if left undisturbed.

Forcing Kidney Beans.—Forcing Kidney Beans in November, December, and January is not easy work, as unless the house in which they are growing is light, airy, and well warmed, the crop can never be a profitable one. In badly heated damp structures Kidney Beans may be induced to grow, and even bloom, but very few pods will be formed. Warm air alone suits them when in flower during the shortest days, and where this cannot be given freely forcing had better be deferred until February. When the days are lengthening and brightening, forcing is easy. I have grown them in beds, in pits, in wooden frames, in boxes, and in pots, and for convenience I prefer and recommend the latter. The seeds may be sown in 3 or 4 in. pots. These should have a few leaves put into the bottom of each; then fill them half-way up with a mixture of sand, loam, and leaf-soil in the proportion of one part of the first and last to two of the loam. When all have been half filled and the soil made firm, six or eight seeds should be put into each; then cover them over with more soil.

As soon as sowing has been finished the whole should be placed in a house or pit, where the temperature ranges from 60° to 70°. Do not give any water until the growths are seen pushing through the soil; then never let them suffer from want of it. When the young plants have attained a height of 4 in., they should be put into their fruiting pots. These should be 8 or 9 in. ones, and to begin with they should be properly drained; over the drainage place a layer of leaves or rough pieces of soil. The mixture of soil this time should be substantial; no sand or leaf-soil need form part of it; loam and half-decayed manure should be the sole ingredients. Old Mushroom-bed manure answers well for this purpose, and we prefer it to any other.

The roots should not be disturbed when taken out of the small pots, and three or four of the small potfuls may be put together in one of a larger size. One hundred pots of seedlings may thus be reduced to thirty. Firm potting induces
robust and fruitful growth. When potted, they should be again placed in a genial atmosphere, in which they will grow on rapidly and be in bloom from five to six weeks after sowing. Then it will take the pods about a fortnight to swell up, and the crop will be ready for the table in about eight weeks after sowing. As the pots fill with roots, large quantities of water must be given them, and frequent syringing as well, as having the atmosphere in which they are growing humid will prevent the attacks of insects. Red spider and thrips are very fond of indoor Kidney Beans, but both may be checked by water. When potted in good soil, manure-water will not be required until the first pods have been formed; then it may be given them in quantity so long as they continue to bear. Sowings made every three weeks until the middle of April will keep up a constant supply of fine fresh pods until those sown outside come in.

Those who wish to keep up a constant supply of forced Beans should sow a quantity every fortnight, beginning in September. We have kept up a fair supply by sowing five dozen potfuls at a time, but this, of course, must be done according to the demand. At times we have placed only one of the small potfuls of young plants in the 8 in. one, but where space was limited we have put three small potfuls into this size. When this can be conveniently done, it is a profitable way of growing Beans, as a great many more are secured from the pots with the most plants than from the others, and the space required for both is about the same.

When in bloom the flowers should be kept as dry as possible, as the fruit forms with more certainty than when the blooms are damp. We never allow any of the growths to fall over the sides of the pots, as this checks them; but when any of them are so tall or weak as not to be able to stand without support, pieces of birch from old brooms are put in to hold them up. As soon as any of the pods become large enough to gather, they should be removed from the plants at once, as there is nothing so much against the production of a long succession of pods from the same plants as allowing some of the first-formed pods to become old.—J. M.

**Kidney Beans to Force.**—It was generally supposed that the best forcing Beans were Newington Wonder, Sir Joseph Paxton, Early Prolific, and Osborn’s New Early Forcing. Mr. R. Gilbert then took to forcing Canadian Wonder, and it is likely that a great many more kinds might easily be forced. Amongst the French varieties, the most generally grown for that purpose are Triumph of the Frames, Étampes, Black Prince, Chalandray.

**Culture in Market Gardens.**

When Peas and Broad Beans begin to get comparatively scarce, French Beans are always welcomed in the London markets. They always command a sale, provided they are good and fresh, and overstocking the market with them is almost a thing unknown; but when large quantities of them are introduced prices are of course affected. Under any conditions, however, and all through the summer, a good crop of Beans is a profitable one, and where soil and situation are at all suitable, market growers cultivate French Beans in large quantities. The principal kinds grown are the Newington Wonder and
Long-podded Negro, which, although old varieties, are reckoned to be the best for the market. Their productive qualities are great, for when well attended to as regards timely picking of the pods, they continue fresh, vigorous, and fruitful for a long time, and their pods, as a rule, are less apt to turn tough and unusable with age than is the case with some varieties. The Black Belgian has also found its way into the market-gardens; it is a good, dwarf, early sort, much like the Negro, of which it is considered to be a variety. It is very useful for late sowings and for early frame work. Some growers prefer the Newington Wonder to all other sorts; it is a very prolific dwarf-growing kind. Other growers prefer the Negro, which they grow in frames, for their earliest, main, and latest crops; but most of them also grow the Newington Wonder. The Canadian Wonder or Red Flageolet is one which will doubtless be grown largely for market. It is a robust grower, a good cropper, and its pods are nearly as large as those of a Scarlet Runner and of good quality.

**Early crops in market gardens** are grown in frames, such as have been cleared of Cauliflower and Lettuce plants; the mould in the frames is pointed over with a spade, and the beans are sown in four rows under each light, and about 3 or 4 in. from seed to seed in the row, when the soil is dry. The middle of March is the common time for sowing in frames, and then the sashes are kept close till the seeds have germinated, when they are tilted up a little at the back in favourable weather; but care is always taken to keep them close in the case of cold winds, and to cover them over with mats or litter in the event of frost. As the plants advance they are treated more hardly, but judiciously, according to the weather. After the middle of May, when all fear of frost has passed, the sashes are entirely drawn off throughout the day, if fine, and replaced at night. Whilst growing, plenty of water is given them at the roots, and picking commences about the second or third week in June, or about three weeks sooner than the earliest border crops come into use. A few frames, too, are also frequently occupied by French Beans sown thickly, for the purpose of transplanting thence to the open ground, and to fill any blanks that may exist in the frames in which the sowings for fruiting therein have been made.

**The first outdoor crop** is usually transplanted from such frames, and the warmest possible position is selected for this purpose; the time for so doing entirely depends on the state of the weather and nature of the ground. If the weather be fine, the soil moderately dry and light, and the position warm and sheltered, the plants are commonly transplanted during the first fortnight of April, but if otherwise, they are delayed a little later. They are then lifted with as much earth adhering to their roots as possible, and are planted in little patches under hand-lights. The usual way is to draw lines 3 ft. apart across the border, others 2½ ft. asunder lengthways, and upon the middle of every little square thus marked place an ordinary hand-light, under which place six or eight plants. If there be not sufficient hand-lights for the whole space to be planted, half-bushel vegetable baskets are inverted over the plants; and, as they are so open to the wind, they are sometimes covered for a time with
mats. As soon as the Beans have got a good hold of the soil and begun to grow, their protection is removed. Great care must be exercised with hand-light Beans, otherwise they are a deceptive crop, and sometimes die off altogether, especially when nursed too tenderly and changed too suddenly, if the ground be cold and wet, and their top covering insufficient. Those grown in frames, and which come into bearing early in June, last in good picking condition for six weeks; and those in warm borders begin to yield a fair crop for nearly two months in a moderately moist season, if kept closely picked. The first main crop immediately follows the border ones, and, as a rule, lasts the longest. Drought makes them short-lived sometimes, but in rich soils, and warm, moist seasons, the yield is so heavy that it is scarcely possible to pick them as quickly as they grow. Drought, too, induces red spider, with which large fields are sometimes completely overrun; and although this pest is very prejudicial to the health and longevity of the crop, there is no remedy for it.

French Beans are gross feeders; they require manurial substances of such a character as can be speedily turned to account; therefore, land that was richly manured for the previous crop—such as for Celery—and which has afterwards again been liberally dressed with short manure, such as that from Mushroom-beds or old Cucumber-pits, suits them perfectly. The crop to succeed such as are grown under hand-lights is planted on a south border, in front of a wall or thick hedge if possible, which is dug over and lined off in cross-rows at 18 in. apart, drawing the lines in the form of seed-furrows with a hoe. Herein are planted Beans 5 in. asunder in the row; they are earthed-up in due time, and, if the weather be favourable, come into bearing three weeks after those grown in frames. Some growers erect barricades of mats in an upright position to stakes driven in the earth, and placed to the windward side of the borders; and they also surround frames containing them, but not covered with sashes, with the same protection to ward off cold and frosty winds.

Out-of-door sowing begins during the first fortnight in April, just as the state of the weather and soil permits, and the warmest available position is selected for the purpose. If the ground be free from all other crops at the time of sowing, there is more need for a sheltered place than if it were cropped. In sowing, the lines are drawn at 2, 2½, and sometimes 3 ft. apart, and the seeds planted about 4 or 5 in. asunder. The earliest crop is often sown in drills drawn between lines of Cauliflowers, Cabbages, or Lettuces. These crops, instead of being injurious to the French Beans when they appear above ground, are very beneficial to them, inasmuch as they protect them from cold winds until they have gained some strength and the weather becomes mild and warm, by which time the bulk of the Cauliflowers will have been removed for market. Even then, however, the Beans do not get all the space to themselves, for no sooner is the earth cleared of the other crop than it is loosened a little between every alternate line, and those spaces replanted with Lettuces or similar crops. Thus one space contains another catch crop while the other is empty; and by means of having this empty space
to walk in, the women can pick two
lines of Beans, one on either side of
the empty alley, and never disturb
the other crops in the alternate alleys.
Should the French Beans have come
up well, and be nearly ready for
picking before the first occupants
of the soil are entirely removed, the
alleys are not cropped again until
they become exhausted. The drills
for sowing are drawn in the morning
of a fine day and until the after-
noon, when seeds are sown and some
earth drawn over them.

The first main sowing is made
in the open fields about the second
or third week in April, under the
same circumstances as that already
mentioned, or the field may have
been previously planted out with
Cos Lettuces in lines 12, 15, or
18 in. apart; between every two
lines of these would be sown one of
Beans. Along both sides of Aspara-
gus ridges Beans also often find a
place. Some growers sow late crops
in rows 4 ft. apart, and plant two
rows of Coleworts in every interven-
ing alley. Before the seeds appear
the soil immediately over the seeds
is gone over and slightly loosened
with an iron-toothed rake, so as to
permit of an easy egress of the seed-
lings. When sown in bare fields,
even though Lettuces be planted
amongst them, a little ridge of soil
is frequently drawn to the north or
windward side of them as an addi-
tional protection from cold winds.
Whilst the plants are growing they
are carefully attended to as regards
keeping them clean and hoeing
the soil, and when they reach 4 in.
in height they are earthed up a
little. The catch crops, too, are
cleared away as soon as they are
ready, in order to give the French
Beans every opportunity of a healthy
development. Successive sowings
are made every fortnight or three
weeks, until the end of June, by
some, but most of the large growers
sow about April 8th and 20th, the
first and last week in May, and
the first week in July. The last
sowing consists of the Negro, and
just yields a good crop of young
and fine pods before being destroyed
by frost; whereas, were they sown
a fortnight later, they would be
apt to be nipped when coming
into bloom.

Gathering is well attended to,
for if full-grown pods be allowed to
remain too long on the plants they
soon cease to bear. The Beans are
gathered by women into baskets,
which, when full, they carry on
their heads to the end of the rows,
there to leave them to be carted
home, where they are washed to
remove the grit. They are then
packed into round half-bushel vege-
table baskets, which are covered
with Rhubarb leaves fastened down
with withies, and piled one above
another on the waggons that convey
them to market three times a week.
Most market-gardeners save their
own seed, and a piece of the main
sowing is generally selected for this
purpose. The plants in the rows to
be saved for seed are first subjected
to two or three pickings for market;
them they are left untouched until
the beans are fully ripe, when the
plants are pulled up by the roots,
tied into little bunches, and sung
in pairs across a fence or rail to dry.
Sometimes, too, the haulm is spread
over sashes to dry, and, in the event
of wet weather, is strewed under
some spare sashes, where it gets
well dried without getting wet.
They are then housed, and during
wintry weather are threshed, cleaned,
and stored in rough brown paper or
canvas bags, or placed in drawers,
or in the corner of a loft, until
sowing time arrives.
1. French Bean Black-speckled.
2. " " Emperor of Russia.
3. " " Pride of Lyons.
5. " " Dwarf Parisian.
7. " " Black Negro.
8. " " Black Hermitage.
10. " " Dwarf Lyonnais Long-pod.
USES.—The young and tender pods of many kinds are eaten boiled. Every one knows the use which is made in cookery of the seeds or beans, either when dried or when gathered before they are quite ripe, but when the pods can just be opened without difficulty. And lastly, the Edible-podded or Mange-tout varieties are used from the time the seeds begin to swell until they are quite ripe. We heartily wish that English housekeepers and gardeners would look into the qualities of many of the fine varieties described in this book. Apart from the greater variety of valuable kinds of the types they know so well, two very valuable series deserve attention—those of which the pods may be eaten when large and mature, and the Flageolet kinds, which are very little used with us.

TOUGH-PODDED KIDNEY BEANS

French, Haricots à écosser.
Italian, Fagiolli da sgusciare.

I. TALL-GROWING VARIETIES

Soissons Large Runner Bean.—A plant with a slender green stem, growing 6½ ft. high or something more. Leaves pretty large, at wide intervals from each other; leaflets moderately crimped, rounded at the base, dark green slightly yellow; lower leaves larger than the upper ones; flowers white, passing into yellow; pods green, but turning to yellow when ripe, broad, somewhat curved, and generally irregular in shape, owing to the unequal growth of the seeds, which are seldom more than four in number, and are white, kidney-shaped, and more or less humpy or round-backed; they are nearly 1 in. long, about ½ in. broad, and

Soissons Large Pole Bean.

* Climbing French Beans, see pp. 758, 759.
nearly ¼ in. thick. They are late in ripening. The dried seeds of this variety are highly esteemed for their delicate flavour and the thinness of the skin. The plant is found to succeed in the greatest perfection in its native district, where it most probably enjoys conditions of soil and climate which are specially favourable to it; but, when grown under a warmer sky, it sometimes suffers from the heat—the skin of the seed becomes thickened, and the seed loses its fine quality, and also degenerates in size and colour.

Soissons Green-seeded Pole Bean.—In growth this variety is very much the same as the preceding, and equally vigorous and very productive. Pods long, broad, slightly curved. Seeds thick, kidney-shaped, a little over ¼ in. long and ½ in. broad, less than ¼ in. thick. This variety is remarkable for the green colour of its seeds, as much so as in some of the dwarf Beans, such as the Green Flageolet and the Green Bagnolet; while the crop produced is considerably larger.

White Dutch, or Scimitar, Bean (H. Sabre à rames).—A very vigorous-growing kind, nearly 10 ft. in height. Stem thick and green; leaves very large, deep green, crimped; flowers large, white, fading to nankeen yellow, and forming long clusters; pods straight, sometimes undulating on the sides, 10 in. to 1 ft. long, containing eight or nine seeds each, numerous, produced in succession for a long time, especially when the first have been gathered green; seeds white, glistening, kidney-shaped, very like those of the Large White Runner, but more regular in shape and
TALL TOUGH-PODDED KIDNEY BEANS

one-third less in size, seldom \( \frac{3}{4} \) in. in length. They ripen rather late. The young pods may be used as green Haricots. The seed or bean, when used fresh from the pod, is one of the best; it is also very good when dried. This is certainly one of the best varieties; the only objection to it is that it requires very long stakes when growing. The Germans cultivate a great number of sub-varieties of it, characterised chiefly by having broader and straighter pods; but, notwithstanding numerous trials, we have never found any of them to surpass or even equal the variety here described; it is the most tender for use and also the most productive.

**White Sallandre Improved Pole Bean.**—Height not exceeding 5 ft., but very vigorous growing. Stem stout and branching; leaves broad, crimped, light green more or less striped with darker green; flowers yellowish white. Pods about 6 in. long, \( \frac{1}{2} \) in. broad, flat, light green, containing six white elongated seeds, like those of the White Swiss Bean \( \frac{1}{2} \) in. to \( \frac{3}{4} \) in. long, a little over \( \frac{1}{3} \) in. broad and about \( \frac{1}{4} \) in. thick. This variety, raised in the vicinity of Laon, is one of our best Pole Beans, and very productive; the pods are numerous, very long and well filled.

**Large White Liancourt Kidney Bean.**—Stem green, slender, tall, reaching a height of from 7 ft. to nearly 10 ft.; leaves large, of a rather dark green, not quite so much crimped as those of the Soissons Bean, the upper ones much smaller than the lower ones; flowers white, turning yellow after impregnation; pods longer and narrower than those of the Soissons Bean, slightly curved, each containing about five or six flat, slightly kidney-shaped seeds, rather irregular in form, like those of the Large White Runner (but of a dull or dead white, while the seeds of the latter variety glisten like porcelain), about \( \frac{3}{4} \) in. long, a little over \( \frac{1}{4} \) in. broad, and less than \( \frac{1}{4} \) in. thick. This is a rather Hardy, strong-growing, productive, and half-late variety, and is chiefly grown for the ripe dried seeds.

**Chartres Red Kidney Bean.**—This kind requires hardly any staking, as the plant is of compact growth and seldom more than 3 or 4 ft. in height. Leaves slightly crimped; flowers white or inclining to yellow, large; pods 4 or 5 in. long, slightly curved, each containing about five or six flat, short seeds, which are often square at one or both ends, of a deep wine-lees-red colour, and having an almost black circle around the hilum; their average length is about \( \frac{1}{4} \) in., breadth a little over \( \frac{1}{4} \) in., and thickness less than \( \frac{1}{4} \) in. They ripen early.

**Long Scarlet Pole Flageolet Bean.**—Contrary to what happens usually, this Pole variety is of more recent introduction than its dwarf form, which has been cultivated and appreciated for a long time. It possesses the same qualities of pod and seed, its gain being to produce on a given surface of soil a much larger crop and for a longer period.
Extra Early Pole Bean.—A variety, not exceeding 5 ft.; leaves large, light green, lightly crimped. Pods straight, full, green, often in bunches of five or six. Seed white, flat, very small. This Bean is remarkable for producing good-sized, serviceable pods at a time when most of the other pole Beans are hardly beginning to flower. It is at this early stage of their development that the pods ought to be used, for they harden quickly and are never altogether free from parchment. The seed, though small when quite dry, may be used in a fresh state, when the pods are turning yellow.

Round White Rice Runner Kidney Bean.—A variety of moderate height, seldom exceeding 5 ft., and sometimes not much over 4 ft. Stem very slender, light green; leaves medium sized, long, pointed, not much crimped, and of a clear green colour; flowers white; pods green, narrow, very numerous, especially at the lower parts of the stems, where they often grow in clusters of fours or fives, while hardly any are produced near the tops of the stems; seeds five or six in each pod, nearly round, with a very smooth, thin, almost transparent skin, and not much over \( \frac{1}{4} \) in. in diameter. This variety presents an appearance so peculiar and so different from that of most other kinds, that it might be readily supposed to be derived from a distinct botanical species, were it not that its flowers exactly resemble those of other Kidney Beans. It branches and spreads more than the majority of tall-growing varieties, forming a clump nearly 2 ft. wide, with weak, slender stems, which do not exhibit much of the climbing character. The seeds are so small and so peculiar in shape that it is difficult at first sight to imagine that they belong to a plant of the same species as the Soissons or Liancourt Beans. However,
as the pods are produced in very great numbers, the plant is productive enough. The dried seeds are of an exceedingly good and delicate quality, with a very thin skin, which seems to dissolve in cooking, on which account they are highly esteemed. The only defect which can be ascribed to the plant is that the pods are very liable to rot in wet seasons, when they trail to the ground before they are quite ripe.

There are many other tall-growing varieties of Kidney Beans in cultivation, of which we shall only mention the following, as being very distinct and of special interest in various respects:—

**Harlequin Kidney Bean.**—A tall-growing, rather late-ripening kind, with long, crimped leaves. Pods numerous, short, and curved; seeds very flat, oblong, scarcely kidney-shaped, coffee-coloured, and irregularly streaked and furrowed with black lines. It is a hardy and productive variety, and may be often seen in the Central Market at Paris.

**Dwarf White Long-pod Kidney Bean.**—A plant 4 to 5 ft. high; flowers large, white; pods exceedingly numerous, very straight and long, and nearly cylindrical, of a fine green colour; seed oblong, nearly as thick as broad. This variety, which requires only very short stakes, can be highly recommended for the production of green Haricots.

**Tall Early Englefontaine Bean.**—A rather tall variety, vigorous, and very early, with some resemblance to the Liancourt Kidney Bean, but ripening much earlier. It is the earliest of the tall Beans.

**Soissons Red Kidney Bean.**—A tall, rather slender-stemmed variety, not overburdened with leaves. Pods long, slightly curved, and rather narrow; seeds nearly the same shape as those of the White Dutch or Case-knife Bean, and of a brilliant coral colour just before ripening, after which they assume a wine-les red tint. This handsome kind is tolerably early, but only moderately productive.

**Partridge-Eye Kidney Bean.**—A plant of medium height, with lank, slender stems, and lilac flowers. Pods short and flat, each containing four or five seeds, which are flat, shortly oval, or almost square, and of a white colour finely streaked with greenish gray. This variety has been a long time in existence, but, being a poor bearer, it is very little grown.

**Old Homestead, Kentucky Wonder, Seek-no-Further Bean.**—One of the varieties most commonly cultivated in the United States. A very vigorous plant, growing as high as 6½ ft.; early, and very productive. Pods very abundant, long, curved. Seeds slightly flattened, oval, and dark brown.

**Southern Prolific Bean.**—Much less tall than the last named, with shorter, almost straight pods, and smaller seeds. Also a little later.
Red Speckled Cut Short or Corn Hill Bean.—A late variety, with short cylinder-shaped straight pods, the seed almost square, and streaked with red-brown. In the United States it is often sown along with maize, which serves as a support for it.

Saint-Seurin Kidney Bean.—A very vigorous and rapid kind, with large, broad, deep-green leaves, and lilac flowers. Pods very numerous, almost straight, marked when very young with violet streaks; seeds flat, kidney-shaped, salmon marbled and spotted with black. It is hardy, very productive, and early, and is well adapted for rather warm climates.

II.—DWARF VARIETIES OF TOUGH-PODDED KIDNEY BEANS

Dwarf White Flageolet, or White Canterbury Kidney Bean.—The best known and most esteemed of the Tough-podded Kidney Beans. The name Flageolet Bean is given to varieties more or less similar to this, and the seeds themselves are known as Flageolet Beans for culinary purposes. It is a low-growing thick-set variety, with a stout stem, not more than 1 ft. or 14 in. high; leaves smooth or slightly pitted, of medium size, and deep-green; flowers white, with a faint tinge of nankeen yellow; pods numerous, rather flat and somewhat curved, and frequently irregular in breadth through the abortion of some of the seeds. These, usually four or five in a pod, are white, flat, and kidney-shaped, nearly ½ in. long, over ¼ in. broad, and less than ½ in. thick. In cases where only one variety of Kidney Bean can be cultivated, a better selection cannot be made than this one, for the young pods may be gathered and used as well as the seeds. The seeds are sometimes dried but are best when fresh.

Dwarf White Long-pod Kidney Bean.—More vigorous, with larger leaves and greater length of pods than the preceding. The seed is white when ripe, and somewhat larger than that of the common Flageolet; the young pods are long and thin and very tender.

Extra Early Dwarf Étampes Kidney Bean. —This new variety, which was raised by M. Bonnemain, is a decided improvement on the White Flageolet, and is distinguished
from it in a marked degree by its leaves, which are large, somewhat crimped, and deep green. The flowers, pods, and seeds do not perceptibly differ from those of the White Flageolet, but the plant is earlier by five or six days, and is a truly valuable variety, most probably destined to gradually supersede the other in cultivation. The seeds are white, even when the pods are green.

Nettle-leaved Canterbury Kidney Bean.—This variety is very distinct from the Common White Flageolet, and is a dwarf, hardy, early, and productive kind, easily recognised by its leaves, which are small, of a dark, almost black, green, and finely crimped on their entire surface. The small size of this plant renders it very suitable for frame culture, and its hardiness makes it equally good for field cultivation, as it is usually grown about Paris. It ripens nearly at the same time as the White Flageolet, and its chief merit consists in resisting disease and unfavourable weather, and in its being easily distinguished by its foliage from all other varieties.

Matchless Dwarf Bean.—In clumps about 1 ft. in height; stem green, branching; leaves medium-sized, light green, slightly veined and crimped; flowers white. Pods 4 to 6 in. long, flat, produced in pairs, each containing six seeds, which resemble those of the Long White Canterbury Bean, but smaller and marked with two dots near the hilum; they are a little over \( \frac{1}{2} \) in. long, by about \( \frac{1}{4} \) in. broad, and \( \frac{1}{4} \) in. thick. An early and prolific variety, to be recommended for the production of young green pods for the table.

Inexhaustible Bean.—Quite distinct from all the other dwarf Flageolet Beans, this variety is easily recognised at first sight by the growth of its flowers, which rise in stout bunches above the foliage. The pods are long, green,
narrow, and tender, and are produced in constant succession, becoming the more abundant the more they are picked. The seed is like that of the White Flageolet.

**Bonnemain Dwarf Kidney Bean.**—This variety was raised some years ago from seed by M. Bonnemain, secretary to the Étampes Horticultural Society, and we class it among the Flageolets because it resembles them in size, earliness, and in having white seeds; but that it is totally distinct from all the other varieties can be seen at a glance. It forms very low-growing, thick-set clumps, with leaves of a pale gray-green and white flowers; pods straight, almost cylindrical, shorter and more slender than those of the Kidney Bean; seeds white, egg-shaped, thicker, and with less of the kidney outline than those of the White Flageolet. They are green until they ripen. The great merit of this variety consists in its unequalled earliness, the seeds being ripe for shelling five or six days sooner than those of the Early Étampes Flageolet, which was at one time considered the earliest of all. We have obtained very satisfactory results from growing the Bonnemain Kidney Bean in the open air, while its small size and great earliness make it most suitable for frame culture. It is certain to become one of the most esteemed varieties for producing an early crop.

**Long Green-seeded Flageolet Bean.**—The first green seeds of the Flageolet Beans may have originated by the mere accident of some one pulling a few pods before their complete maturity and allowing them to dry in the shade. However, it is indisputable that by careful observation and selection the Paris growers have succeeded in obtaining certain strains in which the green coloration of the seed not only exists, but has moreover a tendency to last, given appropriate treatment. We are going to give a description of the more interesting of these strains, all of which are derived more or less directly from the original green-seeded
Flageolet Bean, the pods of which are of a darker colour outside, and the seed being permeated throughout with a larger amount of green colouring matter, which latter is of a more durable nature than is found in any other of the Tough-podded Kidney Beans.

**Chevrier Dwarf Flageolet Bean.**—A distinct variety, differing from the Green-seeded Flageolet almost as much as that differs from the White Flageolet, so intense is the green colour of the seed. Sent out only a few years ago, it has quickly become very popular among the growers in the vicinity of Paris.

**Wonder of France Dwarf Bean.**—The Chevrier Bean, like the White Flageolet Bean, has the serious defect of being very much exposed to the attacks of rust. This evil is considerably lessened in some of the later strains, the first of which in date, the Marvel of Paris, is a fine variety with numerous, long, straight, beautiful deep green pods and well-coloured seeds. It differs but little from that of the Chevrier Bean in these characteristics.

**King of the Green Bean.**—Of remarkable vigour in growth, and somewhat taller than Wonder of France, though not quite as early. It is a hardy plant, suited for field culture, and wonderfully productive. It is one of the best for the production of dry green Flageolets; for not only is the skin of the seed very thin, but the bushes shed the whole of their foliage as soon as the pods are full and ripe, so that the plants, if pulled up then, may be easily stacked at once.

**Dwarf Flageolet Triumph of the Frames.**—Very dwarf and compact, suited for cultivation under glass, not exceeding 8 in. in height. Leaves of average size, pretty smooth; pods very
numerous, round, well filled, containing six to eight seeds each. The seeds are of the Flageolet shape, about \( \frac{\frac{3}{4}}{4} \) in. long by about half as broad, and about \( \frac{1}{4} \) in. thick. Owing to its small size and great earliness this variety can be recommended for growing in frames for an early crop. The seeds are bright green, and they keep their colour if the pods are pulled at the right moment and dried in the same way as the Chevrier Beans.

**Green-seeded Bagnolet Bean.**—A very branching dwarf variety, remarkable for its vigorous growth and productiveness. Foliage dark green, very abundant. The tufts are compact, erect, with numerous straight pods of vivid green. The seed is small and very green. Though not as early as Wonder of France, it is much more productive. It is especially suited for producing green pods or *Haricots verts*, of which it produces an enormous quantity. If allowed to ripen the green colour of the seed gives it an increased value in comparison with white and coloured Beans.

**Long Yellow, or Pale Dun, Flageolet Bean.**—A vigorous very dwarf variety, about 18 in. high, with large broad gray-green leaves, somewhat plaited but not much crimped. Flowers white; pods large, long, straight, and broad, edible as *Haricots verts*, rather pale in colour; seeds oblong, very slightly kidney-shaped, about \( \frac{3}{4} \) in. long, a little over \( \frac{1}{4} \) in. broad, and about the same in thickness, uniform chamois colour, excepting the hilum, which is white, surrounded by a circle of a rather dark-brown. The seeds are commonly eaten fresh, before they are fully grown, and they ripen rather earlier than those of the white-seeded kind. The plant is also much more productive.

**Dwarf Long Scarlet Flageolet Kidney Bean.**—(American *Red, or Scarlet, Flageolet*).—A vigorous kind, about the same height as the preceding one, but a much darker green, with long, narrow, pointed leaves and rosy-white flowers. Pods long and straight, yielding very good green Haricots; seeds \( \frac{3}{4} \) in. or more long, over \( \frac{1}{4} \) in. broad, and about \( \frac{1}{4} \) in. thick, straight, or slightly kidney-shaped, nearly cylindrical, and a wine-lees red colour. This variety is one of the hardiest and most productive. It is chiefly grown for its seeds, which are of fine quality when dried. It also produces long straight pods, which are excellent eaten as such.

The **Crimson Wonder** and the **Canadian Wonder** Bean are sub-varieties of this kind, differing from it but slightly by the shape of the seed.

**Fame of Vitry Flageolet Bean.**—Earlier and smaller in size than the preceding kind, from which it has sprung; stem light green, between 15 and 16 in. in length; leaves broad, and pointed; flowers pale lilac. Pods about 6 in. long, generally solitary, and containing usually six seeds, resembling those of the Long Scarlet Flageolet Bean, but smaller. An early
and prolific variety, to be recommended for the fine green pods (*Haricots verts*) it produces, and which are much appreciated on the market.

**Bouscat Early Long-pod Forcing Bean.**—In general appearance this variety resembles the Black Negro Bean, but is more vigorous, more productive, and also has longer pods, and the colour of the seed is also different. Plant dwarf, between 11 and 12 in. high; stems vivid green, leaves large, pointed, of a lustrous dark green colour; flowers white. Pods light green, long, cylindrical, produced in pairs or in clusters of three; seed light brown, less than ½ in. long, about ¼ in. broad, and about as thick. This variety is well suited for forcing under glass, but it succeeds also in the open ground in sheltered places where Beans are sown for an early crop.

**Scarlet Flageolet Wax Bean.**—A vigorous yet persistently dwarf variety, 16 to 18 in. high. Leaves very large, uncrimped, and light or yellow green; flowers lilac; pods long, broad, straight or slightly curved, quite yellow (like those of the Algerian Kidney Beans), but rather flattened and pointed (like those of the Tough - podded Kidney Beans); seeds almost exactly like those of the Canadian Wonder in shape and colour. This is a very fine and distinct kind, but, unfortunately, its pods are not free from membrane, at least when ripening; but gathered before the seeds are too much grown, they are very tender and fleshy.

**Black-blue Seeded Dwarf Bean.**—A dwarf, rather late variety; plant erect and vigorous, of good habit, not exceeding 20 in. in height. Stem stout, light green; leaves dark green, smooth,
slightly veined; flowers lilac, in bunches raised above the foliage. Pods very long, flat, light green, about 5 to 7 in. long, a little over \( \frac{1}{4} \) in. broad, and less than \( \frac{1}{4} \) in. thick, generally produced in pairs, and containing from six to eight long bluish black seeds. A disease-resisting, productive variety, well suited for growing for the market. Owing to the colour of the seed, it is used exclusively as a Haricot Bean.

**Negro Long-pod, or Black Canterbury, Kidney Bean.**—This is a very distinct variety, and one of the best edible-podded varieties. Leaves large, not much crimped, deep green, usually horizontal and not pendent; flowers lilac; pods slender, very straight, and nearly cylindrical. The plant is remarkable for the length of the young pods. The seeds are of moderate size, being between \( \frac{1}{4} \) and \( \frac{3}{4} \) in. long, and nearly \( \frac{1}{4} \) in. broad and thick; they are entirely black, on which account they are not used in cookery, and the plant is only grown for the sake of the green pods.

**Dwarf Extra Early Black Prince Bean.**—A truly dwarf and early variety, compact in growth, with numerous short stems, broad leaves, and a great number of flowers; distinguished by the intense green colour of the whole plant, and especially of the pods, which keep their dark green colour up to complete maturity. The pods are produced in abundance, of medium size; the seed is black, very small, flat, thin, and oblong, it is about \( \frac{1}{4} \) in. long, \( \frac{1}{4} \) in. broad, and a little less in thickness. The Black Prince Bean is unexcelled for producing green pods for the table. Its dark green colour proclaims its descent from one of the forms derived from the Green Flageolet
or the Chevrier Bean. The seed is of less importance in varieties specially grown for their pods, but this origin has had a most favourable influence in imparting to the pods that healthy and agreeable dark green appearance so much valued in the market.

**Dwarf Belgian Black Negro Kidney Bean.**—A very dwarf early kind, chiefly used for forcing in frames. When grown true to name, it seldom exceeds 10 in. or 1 ft. in height, and forms a small, close, compact tuft or clump. The leaves are medium size, rather pointed, not much crimped, and a pale wan green. Pods straight, very green while young, afterwards slightly streaked with violet; seeds rather small, slightly kidney-shaped, not very flat, and seldom over about \( \frac{1}{2} \) in. long, of a fine black colour, with a white hilum. Like the preceding variety, owing to the colour of its seeds it is only grown for the green pods.

**Dwarf Black Hermitage Bean.**—A sub-variety of the preceding, having all its characteristics, but slightly taller; the pod is also longer, about 5 in. in length, and the seeds are somewhat larger, but they are the same shape and colour. A variety much appreciated by the growers of Provence.

**Chocolate Dwarf Kidney Bean.**—Another very dwarf and early kind, with small long leaves, not much crimped, and light green. Flowers lilac; pods rather short, and curved, often to a semicircle; seeds flat, somewhat kidney-shaped, \( \frac{1}{3} \) in. or more long, varying from a chamois to deep slaty gray, and often both colours together. This variety is chiefly remarkable for its earliness, and is well adapted for growing under a frame for an early crop of ripe seeds.

The *Comte de Vougy Kidney Bean, Mohawk*, and the Dwarf Free-bearer, which are now seldom grown, are closely allied to the Chocolate Kidney Bean. They are, however, not so early, and on that account not so valuable.

**Dwarf Yellow Hundredfold Kidney Bean.**—A dwarf and very hardy variety, of compact growth, with medium-sized slightly puckered leaves, deep green tinged with gray. Flowers white, changing to yellow; pods rather short, numerous, each containing four or five straight, almost cylindrical seeds, which are sometimes square at the ends, and dark yellow verging on brown. This is a very productive kind, and is mostly cultivated in the east of France, where it is often grown in the vineyards.

**Early Dwarf Chalandray Kidney Bean.**—An exceedingly dwarf and early variety, forming a compact clump seldom over 10 in. high. Leaves small, long, and bright green; flowers rose or
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pale lilac; pods slender, long, and slightly curved; seeds small, almost cylindrical, with very little of the kidney shape, about \( \frac{1}{2} \) in. long, and a light mahogany-brown in colour. This kind is almost as early as the Étampes Flageolet, and is especially well adapted for forcing. Both green pods and fresh seeds may be obtained from it.

**Dwarf Yellow Extra Early Kidney Bean.**—A dwarf plant, 10 or 12 in. high; leaves not very numerous, gray-green, becoming soon yellow. Pods 5 in. long, flat, light green, produced in bunches of four or six at the end of the stems. Seed yellow, about \( \frac{1}{2} \) in. long and \( \frac{1}{2} \) in. broad and thick, usually five per pod. This variety is the earliest of all the Beans with coloured seed, and is well suited for growing under frames. Its pods are of excellent quality as *Haricots verts.*

**Dwarf Barbès Bean.**—This variety comes very near the Yellow Hundredfold Bean, but is taller and more vigorous. The seed is also larger, longer, and a clearer yellow, nearly that of the Yellow Canadian Bean. It is straight in shape, cylindrical, and often squared at both ends. The pods, like those of the Yellow Hundredfold Bean, are well filled, very fleshy, and may be eaten almost up to the time of their full development. In the south of France and Algeria it is much grown for producing green Haricots.

**Royal Dwarf White Kidney Bean.**—Under the name of "Swiss Kidney Beans" are grouped a certain number of varieties which are almost identical in habit of growth, and present hardly any difference except in the colour of the seed. In Italy these varieties are named *Fagioli cannellini,* and at Bordeaux they are known under the general name of *Haricot Capucine.* Almost all have the bad habit of sending out, above the leaves and flowers, a slender barren stem, of greater or less length, which never twines. This variety sometimes has this drawback, but possesses some very good qualities also, especially great productiveness and hardness; very suitable for field culture. It has large and very rough, dark green coloured, and sometimes finely crimped leaves; flowers large and white; pods long and numerous, each containing five or six seeds, which are white, straight, almost cylindrical, often flattened.
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at one end (whence its French name of *Haricot Lingot*). They are usually about \( \frac{3}{4} \) in. long, and something over \( \frac{1}{4} \) in. in breadth and thickness. They can be eaten dried, but the skin is rather thick.

**Early Dwarf White Bean.**—A very pretty sub-variety of the preceding one, but free from the long sterile stems referred to above. It is also a few days earlier. The plant is of a dwarfer habit, more even in growth, and also more regular in earliness. The pods and the seeds do not show any marked difference.

**Black Speckled Kidney Bean** (*Haricot de Bagnolet*).—A kind much grown about Paris for its green pods. As a general rule, it does not exhibit the objectionable habit of growth alluded to in the description of the Royal Dwarf White Kidney Bean, and, in this respect, it is better than most of the Swiss Kidney Beans. It grows 14 to 16 in. high and has large deep green leaves, not much crimped, and lilac flowers; pods straight, long, very green, and, when young, almost cylindrical; seeds straight, long, rounded at both ends, nearly as thick as broad, black-violet variegated with nankeen yellow streaks on about one-third of their surface, these markings being sometimes reduced to a few light-coloured spots on a nearly black ground. There is also a white-seeded variety, which is identical in all other respects.

**Nettle-leaved Bagnolet Bean.**—A sub-variety of the preceding kind, about 16 in. in height. Stem light green, very branching. It differs from the Black Speckled Bean by being a little earlier, and by the leaves, which are smaller, much crimped, veined, and of a lighter green; flowers white instead of lilac; the pods are longer, about \( 4\frac{3}{4} \) in., and flat. The seed resembles exactly that of the Bagnolet Bean; each pod contains six.

**Dwarf Parisian Bean.**—A dwarf plant of vigorous early growth and rapid development, with dark green leaves and lilac flowers; pods straight, very long, marked with black streaks, which disappear in the cooking. The seed is flat, kidney-shaped, spotted dark purple on chamois. It is a good variety for the
kitchen-garden and also for field culture, where it yields abundantly about ten days earlier than the Black Speckled Bagnolet Bean and like sorts—a great advantage from the grower’s point of view.

**Glory of Lyons Bean.**
—Though resembling somewhat the Bagnolet Bean, it differs from that in some respects. The leaves are larger, and gray-green; the pods are broader and flatter; the seed is slightly smaller, thin, almost straight, and speckled yellow on brown. The chief difference, however, is in being eight to ten days earlier than the Bagnolet Bean, for which reason, though less productive, it is preferred by market gardeners.

**Dwarf Marvel of Paris Bean.**—A field variety, rather early, very vigorous, hardy, productive, above all remarkable for the length and slenderness of its pods, which are intensely green and almost cylindrical. The seed is thick, dark purple streaked with yellow; it is generally about $1\frac{1}{2}$ in. long, and half that breadth, and less than $\frac{1}{4}$ in. thick. This variety is most probably derived from the old Bagnolet Bean. The seed has about the same appearance; it is, however, somewhat smaller and shorter, resembling in size that of the Solitary Bean.

**Sion House Dwarf Kidney Bean.**—This is a variety for field culture and is hardy, early, and productive. Leaves numerous, of medium size, slightly puckered, and a rather deep green; flowers rose-coloured or lilac; pods long and straight. The shape of the seed resembles that of the Swiss Kidney Beans, but the colour, like that of the Cranberry Bean, is flesh colour finely dotted with light red or lilac. Although
true enough to its dwarf character, this kind forms less compact clumps than the Swiss Kidney Beans, and the stems are usually long and semi-trailing. It is not very particular about quality of soil, and requires very little attention, on which account it is one of the kinds which are most frequently sown in vineyards or amongst other crops.

**Dwarf Emperor of Russia Bean.**—A dwarf, half-early variety, rather compact in growth, very productive, with large slightly crimped leaves; pods numerous, slender and fleshy; seeds long and narrow, and light chocolate-brown with deeper-coloured stripes; less than \( \frac{3}{4} \) in. long, about \( \frac{1}{2} \) in. broad, and about \( \frac{1}{4} \) in. thick. An excellent variety for the production of green pods for the table, especially in warm climates. The seed may be gathered when fully ripe without being liable to become stained, as is the case with most other varieties.

**Dwarf Red Speckled Kidney Bean** *(Haricot suisse rouge).*—A vigorous, branching variety, which does not usually produce the sterile stem before mentioned. Leaves stiff, not very large or numerous, smooth, and slightly gray-green; flowers lilac or rosy; seeds long, nearly straight, marbled with spots of a wine-lees red, which sometimes form longitudinal streaks on a pale red ground. This is a very productive kind, and the dried seeds are much esteemed. A variety cultivated in America, under the name of Improved Goddard or Boston Favourite, presents many points of similarity to this.

Besides the varieties of Swiss Kidney Beans which we have just described, the following also are in cultivation:

**Dwarf Blood Speckled Kidney Bean.**—This variety bears a striking resemblance to the preceding one, both in habit and foliage. The flowers are a pale rose; seeds similar in shape to those of the Black Speckled Kidney Bean, but a deep red, dotted
with white or salmon colour. For some years past this variety has often been called “The Indian Kidney Bean.”

**Dwarf Light Dun-coloured Kidney Bean.**—A vigorous variety, forming strong clumps, not producing the barren stem of the Swiss Kidney Beans, but sometimes bearing clusters of pods above the foliage. The leaves are large, slightly crimped, and gray-green; pods long, straight, nearly cylindrical, each containing five or six seeds of a light chamois colour, darkening with age, and brown around the hilum.

Other varieties of Swiss Kidney Bean are the Large Gray Swiss, the seed of which is yellow-white, streaked with black; the Bourvalais Swiss, with white seed marbled with light violet; the Red Ingot, the seed of which is paler than that of the Long Spotted French Bean and not marbled. Among the Swiss Kidney Beans may also be included the variety named the Giant Dwarf, which is remarkable for the width of its leaves and the length of its pods; but in cultivation it is now superseded by the improved variety of the Royal Dwarf White Kidney Bean.

**Russian Dwarf Kidney Bean.**—A very good dwarf variety, equal to any other for producing green pods. It is a very vigorous plant, with exceedingly broad leaves, finely crimped, dark and rather dull green in colour. Flowers lilac; pods very straight, and remarkably long and handsome. The seed, which in shape and colour has some resemblance to that of the Dwarf Light Dun-coloured Kidney Bean, is easily distinguished from all other kinds by the dull appearance of the skin. There is a sub-variety of this plant which has small black seeds, and produces pods that are perhaps longer and more cylindrical than those of the ordinary kind. There are often six, or even seven, seeds in a pod, and as each seed is nearly \( \frac{3}{4} \) in. long, and lies in the pod at some distance from the seed which is next to it, the length of the pods is easily accounted for.

**Spread-Eagle, or Dove, Kidney Bean.**—Another dwarf tough-podded variety, which appears to belong to the section of the Swiss Kidney Beans, and grows to the height of 16 in. or more. Leaves light green, broad, long, and finely crimped; flowers white, and rather large; pods straight and long; seed very full, rather kidney-shaped, and quite white, except near the hilum, where it is marked with a black or brown blotch, the outline of which has some likeness to a bird with extended wings. Hence its most common names of “Spread-Eagle” and “Dove” Kidney Beans.

The **Shah Bean.**—A very vigorous plant, truly dwarf, because it does not send up any twining shoots. It grows into large erect bushes, not exceeding 15\( \frac{1}{2} \) to 19\( \frac{1}{2} \) in. in height; the leaves are very large and broad, dark green, smooth, not crimped; the lilac-coloured flowers are succeeded by fine green, long, straight.
pods, much superior to those of the Black Flageolet Kidney Bean, or even of the Russian Kidney Bean. The pods are not only very long, but also very thin and perfectly round. The seed is black, narrow, straight, or slightly curved into kidney shape, somewhat flattened, about $\frac{4}{3}$ in. long, about $\frac{4}{3}$ in. broad, and less in thickness; hilum white. Judged by its vegetation this variety belongs clearly to the series of the Swiss Kidney Beans, but it may be said to excel them all by the length and beauty of its pods. Of all the sorts grown it is the best for producing choice Haricot Beans. It is too tall to be grown under glass, and is much better suited for outdoor culture.

**Dwarf Red Orleans Kidney Bean.**—A variety which is usually true to its dwarf character, but occasionally runs at the top. Stems thick and short, forming a rather broad, compact clump; leaves stiff, medium-sized, crimped, a glistening green; flowers violet; pods rather numerous, short and slightly curved, each containing four or five rather small egg-shaped seeds, which are less than $\frac{4}{3}$ in. long, of a deep, brown-red colour, with a black circle around the hilum. This variety is cultivated in the vineyards of Orléanais, just as the Yellow Hundredfold and the Turkish Kidney Bean are in the vineyards of Burgundy. It is sometimes erroneously confused with the Chartres Red Kidney Bean, which is a tall-growing kind, with seeds of a flatter shape and more squared at the ends.

**Dwarf Soissons Kidney Bean.**—A variety which is true to its dwarf character, and also early, but only a moderate bearer. Plant low-growing and thick-set. Leaves rather broad, smooth, and dark glistening green. It does not produce the sterile stem of the Swiss Kidney Beans, but clusters of pods are sometimes borne above the foliage. Pods usually curved and of irregular width, owing to the unequal size of the seeds, which are much

The Shah Dwarf Bean.
smaller than those of the Large White Runner, and are more like those of the Liancourt Kidney Bean, being white, rather flat, and moderately kidney-shaped.

**Dwarf Green-seeded Soissons Bean.** — Resembles the preceding but is a little earlier, and its leaves are a darker green. Pods curved, about \( \frac{1}{2} \) in. long, a little less in breadth, usually produced in pairs, and containing six large green seeds, a little over \( \frac{1}{2} \) in. in length, rather more than \( \frac{1}{2} \) in. broad, and \( \frac{1}{4} \) in. thick. The method practised for drying the seed so that it may keep its green colour is the same as for the other green-seeded kinds.

**Early Dwarf Scimitar Kidney Bean.**—This very distinct and valuable variety differs completely from the old Dwarf Case-knife, which is now no longer cultivated. It is a low-growing and very thick-set plant, with broad leaves, slightly crimped, and dark lustrous green. Flowers white; pods long, broad, straight, and well filled. The plant comes into flower almost about the same time as the White Flageolet, and its earliness, and also the fineness of its seeds, render it a valuable kind for forcing under a frame. The seeds are broad and well filled, nearly \( \frac{3}{4} \) in. long, over \( \frac{1}{2} \) in. broad, and \( \frac{1}{4} \) in. thick, pure white, and, like the skin, sometimes slightly wrinkled.

**Common White Flat Bean.**—An ancient variety, still used in certain countries for field culture. May be classed also with the Runner Beans, because the branches, though they do not climb well, run to a considerable length, and trail on the ground. The foliage is abundant, rather
folded, leaves inclined to be small, and a dark green; flowers white; pods short, with four or five medium-sized seeds, similar in shape almost to those of the Liancourt Bean, glossy and a pure white.

Common Round White Bean.—Like the last-named, very irregular in habit, and almost entitled to be called a Runner Bean. A slender light-green stem, about 3 ft. 3 in. high; leaves a decided green and smooth; flowers white; pods light green, not long, and containing generally six white rounded seeds. In spite of its faulty habit, this variety is commonly used in field culture for the sake of its seed. A variety cultivated in Canada, under the name of Pea Bean, and in the United States, under the name of Navy White or Boston Small Bean, differs very little from the Common Round White Bean.

Dwarf White Rice Kidney Bean.—A dwarf but remarkably branching kind, forming clumps over 2½ ft. wide. Leaves very numerous, rather pointed, medium-sized or small, and light green; pods short, very numerous, containing five or six seeds; seeds white, egg-shaped, nearly ½ in. long, ¼ in. broad, and about the same thickness, with an exceedingly thin skin; of remarkably good quality, and consequently much used in the dried state. Although its seeds are small, it is very productive, but is rather late, in consequence of which the seeds are sometimes spotted and blemished if the autumn is cold and damp. There is a very small-seeded variety of this plant, which produces vast numbers of pods, and is known as the Dwarf Hungarian Bean, or the Hungarian Rice Kidney Bean. (Syn. Haricot Comtesse de Chambord.)

Dwarf White Bagnolet.—A handsome, vigorous, hardy kind, which in habit of growth is rather like the Black Speckled Kidney Bean, but differs from it entirely in the seed, which is white, rather flat, and kidney-shaped, and is good for use either dried or in the green state.

Impératrice Dwarf Bean.—In appearance and foliage this kind resembles the Swiss Kidney Beans, but it has broader and slightly curved pods. Seed large, full, kidney-shaped, and remarkable for a large deep red blotch encircling the hilum, and extending over about one-third of the surface of the seed, the remainder being pure white thickly dotted with small red specks, which appear in bold relief on the white ground.

Mexican Dwarf Kidney Bean.—One of the earliest of all the Tough-podded Kidney Beans, of low and scantily branching growth, with medium-sized leaves, deep green tinged with gray. Flowers very pale lilac; pods short and rather broad, each containing four or five egg-shaped, slightly flattened seeds, salmon-rose, with a brown circle round the hilum.

Neapolitan Kidney Bean.—Under this name are grouped several varieties with white, egg-shaped seeds, like those which are
imported in large quantities from the south of Italy and from Sicily; but it is more a commercial name than that of any special variety.

Round Yellow, or Six-Weeks, Dwarf Kidney Bean.—A low-growing, thick-set kind, with slightly grayish and elongated leaves. Flowers pale lilac or rose; pods rather broad and short, each containing four or five egg-shaped seeds, about \( \frac{3}{4} \) in. long, and of a uniform deep yellow colour, except about the hilum, where they are of a darker shade, closely approaching brown. A remarkably early and very productive variety.

Solitary Prolific Kidney Bean, or Bush Haricot.—A very branching plant, which forms a strong clump, does not produce a barren stem like the Swiss Kidney Beans, and attains a height of 16 to 20 in. Leaves rather small, very numerous, long, pointed, and deep green; flowers pale lilac. The seed somewhat resembles that of the Black Speckled Kidney Bean, but is seldom more than \( \frac{1}{2} \) in. long, and is of a pronounced violet colour. The chief merit of this variety is that it forms a strong clump and branches very much, in consequence of which some cultivators sow each seed separately, instead of putting several into the same hole or pocket.

Dwarf Green Vaudreuil Bean.—Resembles the Chevrier Bean by its seeds being of a bright green colour, which colour they keep when dry, if the plants are pulled before complete maturity. It is hardier than the Flageolet Beans, and differs from them in the pods being rounded and straight, and also in the seed being short, thick, and almost square.

Plein de la Flèche.—A good variety, of vigorous, thick-set growth, and resembling both the Black Speckled (H. Bagnolet) and the Solitary Bush Kidney Bean; the former in its habit of growth, and the latter in its seed.

The following varieties are of English or American origin:—

Early Light Dun and Early Dark Dun.—These two kinds bear some resemblance to the Yellow Flageolet, but their seed is uniform in colour, without any circle around the hilum. The seeds of the two kinds are distinguished by those of the first being a lighter brown than those of the second.

Early Rachel.—A dwarf and productive kind, with dark-brown, elongated seeds, slightly spotted with pale brown or yellow. It has some resemblance to the Chocolate Kidney Bean.

MacMillan's American Prolific.—Somewhat resembles the Sion House Kidney Bean in its general appearance and in the colour of the seed, but is more compact in growth, forming denser clumps.

The Monster.—A dwarf and exceedingly vigorous-growing variety, with enormous leaves, resembling in their amplitude those of the most highly developed Swiss Kidney Beans. Pods of medium size, straight; seeds black, longer, and more curved than those of the Belgian Negro Bean. A tolerably productive, half-early kind.
New Mammoth Negro.—The pods and seeds of this kind are rather like those of the Negro Long-pod, but in its mode of growth and the colour of its leaves it bears a greater resemblance to the Belgian Negro. It is not so good a kind for green Haricots as the Negro Long-pod.

Newington Wonder.—This dwarf variety can hardly be recommended for any other purpose than frame culture for the production of seeds, as its pods are too short for green Haricots. The seed is of a light yellow colour and remarkably small.

Early Mohawk Bean.—Very hardy; pods long, flat, straight. One of the Beans most commonly cultivated in the United States, and as often grown under glass as in the open air. The seed is pale green, marbled with dark violet or brown.

Best of All Bean.—A vigorous, ramified, fairly productive half-early kind; the pods long, fleshy, intense green, becoming lighter at maturity, and marked with bright red shades; seed pale yellow stippled with red.

Currie's Rust-proof Wax Bean.—Resembles the Dwarf Flageolet Wax Bean, except that it has black seeds.

Davis Kidney Wax.—A species of Dwarf Flageolet Wax Bean, hardy and productive, with long yellow straight pods, not free from parchment, and requiring to be pulled when young. Seed long white kidney-shaped.

Emperor William.—Resembles in foliage and growth the Dwarf Scimitar White Bean, with rather flatter pods. The seed is white, flat, and rather kidney-shaped.

Ne Plus Ultra Bean.—Dwarf; leaves light green, flowers white tinged with pink. Seeds resemble those of the Yellow Hundred to One, but the pods are longer.

New Bountiful Kidney Bean.—Seed like that of the Long Yellow Flageolet, but the growth of the plant is freer, and the foliage lighter, and the pods more whitened.


Sutton's Prolific Negro Dwarf Bean.—A good variety of the Negro Black or Dwarf Belgian, but with longer pods.

Osborn's Early Forcing.—A good dwarf kind, of dense branching growth, producing large numbers of medium-sized pods, each containing four or five short bulging seeds, deep-brown, with some spots of light yellow.

Refugee, or Thousand to One.—A rather compact-growing variety, with remarkably long, straight, smooth, dark-coloured leaves, and violet flowers. Pods straight and rounded; seed hardly kidney-shaped, almost cylindrical, light yellow, variegated with wine-lees-red markings.
Extra Early Refugee is bushier and earlier than the type, and the foliage is paler green.

Sir Joseph Paxton.—A small-sized, very early, dwarf kind, with rather short pods. The seed is almost exactly like that of the Yellow Hundredfold, but is of a deeper, and nearly brown, colour.

Williams's New Early.—A very early and rather productive kind, the seeds and pods of which are marbled with violet. This colouring of the pods, added to their flat shape, lessens their value for table use.

Yellow Canterbury.—A dwarf variety, with small yellow bulging, straight seeds, very much resembling the Yellow Hundredfold.

EDIBLE-PODDED KIDNEY BEANS

French, Haricots sans parchemin.  
German, Zucker-, oder Brech-, Bohnen.  
Danish, Snitte- bonnen.  
Italian, Fagiuoli mangia tutto.

I. TALL-GROWING VARIETIES

Tall White Algerian Wax or Butter Bean.—
A rather vigorous kind, about 6½ ft. high, very remarkable for the light or yellow tint of its leaves, which renders it conspicuous at a distance. Stems wax-yellow or white, as are also the leaf-stalks; flowers white; pods long and slender, more or less curved, each containing, with some distance between them, five or six white egg-shaped, somewhat elongated seeds over ¼ in. long. An Edible-podded variety, it has, besides, this advantage—that its dried seeds can be sent to table.

White Tall King of the Skinless Beans (Haricot Roi des Mangé- tout).—A very vigorous-
TALL EDIBLE-PODDED KIDNEY BEANS

growing and productive variety, with strong and long stems and abundant foliage; pods numerous, yellow, sickle-shaped, extremely fleshy, entirely free from parchment, and containing from five to seven seeds each. The latter are large and white, squared at one end, ½ in. long and ¾ in. broad.

**Cambrai Tall Wax or Butter Bean.**—Not exceeding 5 ft. in height; stem slender, pale green; leaves small, light green, striped gray-green; flowers white, turning to nankeen-yellow. Pods about 5 in. long, ½ in. broad, straight, of a pleasing butter-yellow colour, containing five or six fairly large white egg-shaped seeds, about ½ in. long, slighter in breadth, and about ¼ in. thick. A very productive variety, producing pods of excellent quality. Its very vigorous growth enables it to resist the disease to which the tall Beans are liable.

**Mont d'Or Wax or Butter Bean.**—This handsome and good variety was raised near Lyons, whence it has been widely distributed throughout France. It is a very distinct kind, scarcely as tall as the Algerian Wax Bean, with pale green stems tinged with red, and smooth, uncrimped light green leaves and blue flowers. Pods very numerous, straight, pale yellow, like those of all the Butter Beans, nearly 6 in. long, very free from membrane, each containing five or six egg-shaped violet seeds, spotted and marbled with brown, and perceptibly smaller than those of the Black and White Algerian Wax Beans. This variety, which is only grown for the pods, is remarkable for its earliness and productiveness.
Algerian Tall Black Wax or Butter Bean.—A very distinct and well-known kind, probably the oldest of the varieties which are called Wax or Butter Beans from the colour of their pods. It is a plant of medium height, seldom exceeding about \(\frac{6}{5}\) ft., with rather thick pale or yellow-green stems sometimes tinged with violet; leaves of average size, not much cramped, gradually decreasing in size from the base to the top of the stem, and slightly ashy gray. The pods, which are green at first, assume, when they are about 2 in. long, a pale yellow semi-transparent tinge, very much resembling that of butter or fine wax; they are usually somewhat curved, each containing from four to six seeds, which are blue at first, then violet, and when ripe quite black, and of a slightly flattened egg-shape, and a trifle longer than those of the Prague Kidney Beans. This is a productive and moderately early kind, and one of the best of the Edible-podded varieties. The pods are entirely free from membrane, and have hardly any fibre, so that they are quite tender and fleshy when fully grown, and may be sent to table almost until they are perfectly ripe. The dried seeds are seldom eaten on account of their very dark and unattractive colour.

Edible-podded Giant White Kidney Bean.—This very fine variety appears to be the offspring of the Purple-podded Kidney Bean, of which it exhibits all the vigorous and productive qualities; it has, moreover, the advantage of producing green pods and white seeds, thus being free from the only two blemishes that can be attributed to the Purple-podded Kidney Bean, viz. the objectionable colour of its pods and seeds. It is a half-late but productive kind,
TALL EDIBLE-PODDED KIDNEY BEANS

with stout stems 6 to nearly 10 ft. high. Leaves very large, but not numerous; leaflets rounded and crimped. The flowers are white; pods very broad, and very numerous, 4 to 6 in. long, entirely free from membrane, thick and fleshy, each containing four to six flat white seeds, resembling those of the White Dutch or Case-knife Kidney Bean. When grown under favourable circumstances, this variety produces such an abundance of pods as to weigh down the stakes which support it.

Broad-pod Skinless Kidney Bean.—This variety, which was raised by M. Perrier de la Bathie, is one of the most singular and distinct varieties that has appeared for some years past. It is a vigorous, rather late productive kind, and remarkable amongst the Edible-podded varieties. Stem 4 to 6 ft. high, bearing pods abundantly near the base; leaves large, very green, slightly crimped; pods so thick and fleshy that the diameter from side to side is one-third greater than the distance between the front seam and the back. There is, however, no empty space inside the pod, which is so thick and fleshy that the seeds have hardly room to grow, and appear deformed by the pressure to which they are subjected. They are white, elongated egg-shaped, sometimes faintly kidney-shaped, about \( \frac{1}{2} \) in. long, and \( \frac{1}{2} \) in. broad and thick;
they are almost unique in being irregular in shape, being almost always flattened cross-wise, and the hilum, instead of occupying its usual position, is situated on one side of the line which would divide the seed into two equal parts. The seeds vary very much in size, however, according to the season.

The Fat Horse Pole Bean or Mobile Bean resembles the preceding variety, but is a little earlier.

Geneva, or Plainpalais, White Butter Bean, or Wax Bean.
—This variety is highly esteemed by the Geneva market gardeners. It is a tall-growing kind, coming very near the preceding one, but differing from it in a few points. It is more decidedly a pole bean, being a better climber than the other. The pods, which very much resemble those of the Broad-pod Kidney Bean, are not so fleshy, but they are produced in greater abundance, especially at the middle and towards the top of the stems; they also ripen more
readily. The seeds, or beans, are white, and of an elongated and nearly cylindrical shape. It is, in fine, a good mid-season tall variety of Butter Bean.

**Four to Four Bean.**—Stems green, about 6½ ft. in height, and bearing pods at a short distance above the ground. The pods, which are long, straight, thick and intensely green, are often produced in bunches of four, or even more—hence its name. The seed is short, square at the ends, fairly full and white. Though not free from fibre, the pods may be eaten green until they are three-fourths of their full size. The white colour of the seed allows of its being used in a dried state. The Four to Four Bean is productive and fairly early.

**Skinless Saint-Fiacre Bean.**—One of the most productive varieties of Skinless Pole Beans. Stems green, tall, with large, smooth leaves; pods very numerous, quite straight, about 10 inches in length, entirely without membrane or fibre, and tender and fleshy even when fully grown. The seed is oblong and thin, dun-coloured, about ½ in. long, about ¼ in. broad, and about half as thick. A fairly early variety, bearing during the whole summer.

**Skinless White-seeded Saint-Fiacre Bean.**—An offspring of the preceding, with all its good qualities added to white seeds, enabling the surplus of the crop to be made good use of when dry.
The pods equally fine and excellent. The seed is the same shape and size, but of white colour.

From the Valley Skinless Bean.—Stem stout and branching, 10 ft. or more in height; leaves light green, pointed and smooth; flowers white. Pods rosy white, 7 to 9 in. long, twisted, with a well-marked groove and bulging seeds eight or ten in a pod. The seeds, like those of the Saint-Fiacre Bean, are light brown, but more flat; they are about \(\frac{3}{4}\) in. long and about half as broad. A very early and productive variety, the pods very fleshy, and tender almost up to their complete maturity.

Golden-yellow Tall Skinless Bean.—A vigorous variety, about \(6\frac{1}{2}\) ft. in height, quick-growing, but slackening early. It is one of the earliest Tall Skinless Beans. It sheds its leaves as early as the Princess and the Pré-dôme Beans. The pods are in bunches of four, five, or six, long and slightly curved, green and fleshy. The seed is rather small, straight, squared at both ends, light yellow streaked with deep golden-yellow; it seldom exceeds \(\frac{1}{2}\) in. in length by half as broad, and is of about the same thickness.

Purple-podded Runner Kidney Bean.—A very vigorous and tall kind, sometimes attaining a height of \(9\frac{1}{2}\) ft. and upwards. The stems, which are stout and rather thick, are purple, as are also the
TALL EDIBLE-PODDED KIDNEY BEANS

leaf-stalks and the calyces of the flowers; the leaves are rather distant from each other, very much crimped, and dull green; flowers lilac; pods very numerous, straight, slender, at first of a very deep purple, but, as they advance in growth, becoming paler, and more or less bulged and undulated, but always very solid and fleshy. They are sometimes 10 in. long, and relatively slender, and contain six to eight seeds each. The seeds are long and flat, something larger than those of the Flageolet Kidney Beans, and almost the same shape; and are rosy colour marbled with lilac-gray. A rather early and exceedingly productive kind, and one of the best edible-podded sorts, being quite free from membrane, and, when cooked, as green as those of any other kind.

Edible-podded Black Scimitar Runner Bean.—A distinct kind, with flat kidney-shaped seeds, and pods entirely free from membrane. It is a tall-growing plant, being over 8 ft. high, with thick pale green stems. Leaves large and broad, rather distant from each other, pale green, and crimped; flowers lilac; pods long and broad, not curved, but frequently bulged or undulating on the edges, 6 to 8 in. long, violet at first, but losing this colour as they increase in growth, each containing six to eight seeds of the same size as those of the White Dutch Kidney Bean, but somewhat more humpy and irregular in shape, and with a very shining, brilliant black skin. This variety is remarkable for the great size and beauty of its pods. It is very productive, but rather impatient of damp, and half-late in ripening.
New Zealand Runner Kidney Bean (Haricot de Prague Marbré).—A variety of moderate height, seldom exceeding about 4 ft., with thick green stems. Lower leaves large, slightly crimped, the rest of medium size, narrow, and rather dark green; flowers pale lilac or rosy white; pods broad, about 5 in. long, green at first, afterwards becoming tinged with violet-red on a white ground, and sometimes entirely red when ripe, each containing five or six egg-shaped seeds, of a salmon-rose colour, spotted, dotted, and striped with deep red, and having a brownish yellow circle around the hilum. This kind, which was introduced about the middle of the eighteenth century, is well known and extensively cultivated under the name of "Coco Rose." It is more generally grown for the dried seeds than for the pods.

White Prague Kidney Bean.—Although this variety resembles the White Coco Bean in the colour and shape of the seed, it is distinguished from it by several marked characteristics. It is later and longer-lasting; the leaves are more abundant and do not fall so soon; they are large, not much crimped, and rather a dark green, and those at the top of the stem are nearly the same size as the lower ones; the flowers are white, and the pods, which are abundantly produced up to the tops of the stems, are longer and narrower than those of the White Coco; the seed also is larger, something flatter, and not so regularly egg-shaped. A very productive variety, with the single drawback of being somewhat late, and therefore less valuable in localities where the autumn is cold and damp.

White Coco, or Lazy Wife, Kidney Bean.—Stem green, about 6½ ft. high; leaves of medium size, stiff, rather long and pointed, of a dark, rather dull, green, and slightly crimped; flowers white; pods of medium length, rather broad, green, each containing five or six white egg-shaped seeds, about ⅜ in. long, nearly ⅚ in. broad, and over ¼ in. thick. This variety, although ranking amongst the Edible-podded kinds (especially when the pods are young), is more esteemed for its seeds, which are used in the dried state.

The Sophie Kidney Bean is considered to be only a sub-variety of the White Coco, from which it differs in having rather larger pods (which are sometimes tinged with red, like those of the Prague Kidney Beans) and somewhat larger leaves.

Red Prague Kidney Bean.—This variety differs from the preceding in the seeds being a uniform dark brown-red.

There is also a sub-variety, known as the Two-coloured Prague Kidney Bean, the seeds of which are half red and white.

Among the Prague Kidney Beans should be included the variety named Imperial Austrian White Coco, or Bossin. This is a large, productive, and rather late kind, the seed of which is white.
and nearly round, with a black bird-shaped blotch around the hilum, something like the seed of the Spread Eagle, or Dove, Kidney Bean.

The Two-coloured Italian Kidney Bean should also be classed with the Prague Kidney Beans. It is a very productive, tall kind, producing seeds of excellent quality for the table. There is a sub-variety of it, the pods of which, immediately before ripening, assume an exceeding lively uniform red colour, giving the plant quite an ornamental appearance. The seeds of both kinds are round, slightly egg-shaped, half white and half very pale chamois-colour.

The Mammoth Potted Horticultural Pole Bean, or Worcester Mammoth, Hampden, Mugwump, Carmine Potted Pole Bean, cultivated in America, is only a sub-variety of the New Zealand Runner Bean, with longer and stouter pods and larger seeds.

Two-coloured Coco Prolific Bean.—Seed a long oval in shape, \( \frac{1}{2} \) to \( \frac{3}{4} \) in. in length, about \( \frac{1}{4} \) in. broad and of the same thickness. The part opposite the hilum is entirely white; the hilum itself is marked with a narrow dark yellow ring, girdled by streaks like those of the Marbled New Zealand Runner and extending over one-third of the whole surface.

Tall White Prédome Kidney Bean.—Stem about 4 ft. high, green, thick, and twisted; leaves of medium size, rounded at the base, crimped, and a rather deep green colour; flowers white, changing to yellow; pods very numerous, straight, fleshy, deeply indented on the sides by the bulging of the seeds, 3 or 4 in. long, each containing six or seven very white nearly round seeds, which are often flattened at the ends, and are about \( \frac{1}{2} \) in. long, \( \frac{1}{4} \) in. broad, and less than \( \frac{1}{4} \) in. thick. The pods are very tender and brittle, and free from membrane, in this respect surpassing all other varieties of Tall-growing Kidney Beans. The seeds, also, are of very good quality,
so that the plant supplies an excellent vegetable, not only while the plants are green and the seeds half-formed, but also when the seeds are fully grown and ripening. The pods, also, are free from fibre, and can be cooked just as they are gathered, without any trimming. This is one of the best kinds of Edible-podded Kidney Beans, and is very extensively grown in France, particularly in Normandy, where there are two or three forms of it which differ slightly from each other in the size of the pods and seeds. It is a half-late variety.

The *Haricot Friolet* and the *H. Petit Carré de Caen* are local forms of the Prédome Kidney Bean rather than distinct well-marked sub-varieties. The *Friolet* is usually considered to produce smaller seed, but this does not appear to be a universally constant characteristic.

**Princess Runner Kidney Bean.**—Stem green, thick, twisted, 6½ ft. high or more; leaves round, of medium size, crimped, and deep green; flowers white; pods very numerous (especially at the base of the stems, where they form regular bundles), straight, green, bulging greatly over the seeds, and turning yellow when quite ripe; they are from 4 to 6 in. long, and seldom contain more than eight seeds each. The seeds are white, slightly egg-shaped, and very like those of the preceding variety, except that they are never flattened at the ends. A very good, hardy, exceedingly productive, and fairly early variety. It is extensively grown in French Flanders, Belgium, and Holland. While it much resembles the Prédome Kidney Bean, it is sufficiently distinguished from it by the greater distance between the seeds in the pod, and also by growing fully one-third higher. When grown true to name, the seeds of the Princess Kidney Bean (which never touch each other
in the pod) preserve their natural slightly elongated egg-shaped form, while those of the Prédome are pressed against each other, and, consequently, become flattened at the ends.

There is a sub-variety with longer pods and greater distances between the seeds, known as the Long-pod Princess, which is quite as early and productive as the ordinary variety.

From amongst the almost innumerable other varieties of Tall-growing Edible-podded Beans, we may also mention the following as possessing the greatest degree of merit:

**Cherry Japanese Bean.**—A very distinct variety, with numerous, very short pods, slightly over 2 inches long, containing 4 or 6 oval seeds of wine-lees-red colour and white hilum.

**Tall Ivory Wax or Butter Bean.**—A tall-growing kind, 6½ to over 8 ft. high. Stems whitish, slightly tinged with red on the side next the sun; leaves numerous, of medium size, and of a light green; flowers lilac; pods numerous, fleshy, straight or slightly curved, entirely free from membrane, and especially remarkable for the white tint which they assume when they are two or three days old, and which becomes more pronounced as they advance to maturity. Each of them contains from five to eight egg-shaped
seeds of red-violet colour, and of the same size as the seeds of the Red Prague Kidney Bean, from which they differ in colour only. This is a good Edible-podded variety, somewhat late, but an abundant and remarkably continuous bearer.

**Saint-Joseph Butter Bean.**—This variety forms the connecting link between the Prague Kidney Beans and the Butter Beans properly so called. Its pods are straight or slightly curved, and are streaked with red on a butter-coloured ground. The seeds are marbled either with violet on a rose-coloured ground or with rose-colour on a violet ground. The plant is not a tall-growing one, as it seldom exceeds 4 ft. in height. It was raised about the year 1860 at the agricultural colony of Citeaux, near Dijon.

**Bulgarian Bean.**—Rather late, vigorous, and prolonged in vegetation; stems tall and twining; leaves dark green, large and abundant; flowers lilac; pods long, straight, very fleshy and brittle, dark green in colour striped with violet, and free from parchment. The seed is long, flat, gray streaked with purple, about ¾ in. long, ½ in. broad, and about half as thick. In the climate of Paris it is one of the best and most prolific Beans for producing green pods, but for maturing its seed it requires the warmth of Southern France.

**Imperial Kidney Bean.**—This is distinguished from the Tall White Butter Bean only by the colour of its stems and pods, both of which are green instead of butter-yellow.

**Climbing Yellow, or Dunes Yellow, Kidney Bean.**—Of medium height, productive, and fairly early. Seeds yellow, nearly cylindrical, resembling those of the Yellow Hundredfold. Pods straight, very fleshy and tender, and from 4 to 6 in. in length.

**Lafayette Kidney Bean.**—A tall variety, rather late, and with pods not altogether free from membrane. Flowers white; pods pale green, becoming yellow when ripe, each containing six to eight chamois-coloured seeds marbled with light brown and shaded with reddish brown around the hilum.

**Nankeen-yellow Geneva Bean.**—A tall early plant, bearing an abundance of pods in bunches of four, five, and even eight on the same stalk. Seed kidney-shaped, flat, pale nankeen-yellow.

**Asparagus, or Yard Long, Kidney Bean.**—A very tall kind, nearly 10 ft. high. Leaves very large and distantly placed; flowers copper-coloured or lilac; pods almost cylindrical, exceedingly long and slender, sometimes more than a foot in length; seed very long, nearly cylindrical, but narrowed at both ends, of a more or less coppery chamois-colour. A late kind, requiring a warm climate.

**Rose-coloured Prédome Butter Bean.**—A plant of medium height, seldom exceeding 4 ft., but branching and clumpy. Flowers rose-coloured; pods exceedingly numerous, growing in profusion from the base to the top of the stem, but seldom
TALL EDIBLE-PODDED KIDNEY BEANS

exceeding 2 or 3 in. in length, and each containing four to six small nearly round seeds of a salmon-rose colour.

Val d’Isère Kidney Bean.—This is a very vigorous, leafy, late kind, laden, in the end of autumn, with green, fleshy, well-filled very much curved pods. Seed black, egg-shaped.

Villetaneuse Kidney Bean.—This variety, which was formerly very much grown about Paris, is now almost entirely superseded by the Tall-growing Butter Beans. It is a productive, somewhat late kind, bearing rather long, tender, and thick pods, each containing five or six flattened, almost square, coffee-coloured seeds marbled and streaked with brown.

Gray Zebra Runner Kidney Bean.—A late and very vigorous kind, nearly 10 ft. high, with large, spreading leaves and lilac flowers. Pods thick, fleshy, curved, streaked with violet on a green ground;

La Val d’Isère French Bean.

Gray Zebra French Bean.

seeds egg-shaped, of a dark gray colour, dotted with lighter gray, and striped with black. Raised by M. Perrier de la Bathie.
The American variety, *Giant Red Wax Pole Bean*, is a tall-growing Edible-podded Kidney Bean, 6½ ft. high, with large flat white or yellow pods, resembling those of the Edible-podded Black Scimitar Kidney Bean, and red seeds. It is a rather late kind.

II. Dwarf Edible-podded Kidney Beans

**Dwarf White Wax or Butter Bean.** — A very good but somewhat tender variety, forming low, broad clumps, which sometimes sprawl on the ground. The leaves become smaller and paler towards the tops of the stems. Flowers white; pods almost transparent, waxy white, and about 4 in. long, each containing five or six short, egg-shaped, creamy white seeds, sometimes slightly wrinkled. The dried seeds are excellent for the table.

**King of the Wax Bean.** — A dwarf, compact plant, with short but stout rigid stems. Pods numerous, very thick (compared with their length), tender and fleshy. Seed white, full, oblong, thin-skinned. Among the numerous varieties of Wax Beans, this takes an important place, its production being more abundant and longer than that of any other. The dry seed is very tender and of excellent quality.

**Very Early Dwarf Wax or Butter Bean.** — Regular and dwarf in habit and very early; stem short; leaves broad and pointed, veined, gray-green. Pods long and numerous, yellow, free from membrane; seed small, short, buff-coloured, about ½ in. long and about half
DWARF EDIBLE-PODDED KIDNEY BEANS

as broad and a little less in thickness. A very interesting variety owing to its small size and great earliness. Admirably adapted for forcing, but also well suited for open ground culture.

Dwarf Golden Wax Bean.—Very dwarf, compact, early and productive; pods tender and fleshy even when fully grown. The seeds five or six in a pod, small, oval, bright yellow, and about \( \frac{1}{2} \) in. long, about \( \frac{1}{4} \) in. broad, and a little less in thickness. Its earliness and the little space it occupies suit it well for glass as well as for open ground culture.

Digoin Wax Dwarf Bean.—A vigorous, half-early and very productive variety for field as well as kitchen-garden culture. Dwarf, bushy, compact, branching, with large dark green leaves; numerous fleshy, thick pods of a beautiful golden yellow, and free from parchment. The seeds are oval and of chamois-colour.

Mont d'Or Dwarf Wax or Butter Bean.—A very productive and very early variety of Dwarf Butter Bean. Stems 1 ft. to 16 in. high, branching; leaves large, rough, but not crimped, deep green, remarkable for the very variable shape of the terminal leaflet, which is sometimes long and pointed, and sometimes nearly round and quite blunt at end; pods very numerous, 4 or 5 in. long, well filled, and pale yellow; seeds small and round, dark red, deepening into black.
Dwarf Algerian Black-seeded Butter Bean.—An established dwarf variety of the Agerian Wax or Butter Bean, with rather large yellow-stalked leaves, the colour of which varies, on the same plant, from dark to light green. Flowers lilac; pods very fleshy and butter-colour; seeds black, egg-shaped, a little smaller than those of the Tall-growing variety. This is an early kind, very productive, and of excellent quality, and is one of the most extensively grown varieties of Kidney Beans. It has the precious peculiarity that the pods on maturity become curved or bent, thus escaping contact with the soil.

The Black Wax or Butter Bean is an early dwarf, with pale gray-green foliage and black seed. It may be considered as identical with the Dwarf Algerian Black-seeded Bean.

The Prolific German Wax or Butter Bean, cultivated in the United States, differs only from the Dwarf Algerian in having the pods slightly longer, more curving and more swollen.

Long-podded Dwarf Algerian Butter Bean.—This is to be a sub-variety of the Dwarf Algerian Butter Bean, differing in its longer pods, and also the shape of its seeds, which, instead of being egg-shaped, are almost cylindrical, nearly \( \frac{3}{4} \) in. long and over \( \frac{1}{2} \) in. broad and thick. The pods are very free from membrane, and are more slender and less
fleshy than those of the preceding kind. This variety has come into very general cultivation about Paris, where it is grown in the fields for the city markets.

**Early Dwarf White Edible-podded Kidney Bean.**—Stem tall and branching, attaining a height of 20 in., leaves medium sized, numerous, rather crimped; flowers white; pods 6 in. long, flat, very thick and fleshy, almost always curved or twisted, each containing five or six white flattened, moderately kidney-shaped seeds, sometimes slightly squared at the ends, varying from \( \frac{3}{4} \) to nearly \( \frac{5}{4} \) in. in length, about \( \frac{1}{4} \) in. broad, and about \( \frac{1}{8} \) in. thick. This variety is fairly good for field culture, a good bearer and pretty early, but the seeds are easily spoiled by cold or damp autumn weather.

**Unique Dwarf White Kidney Bean.**—Stem tall, vigorous, and branching; leaves rather deep green, large, rounded, and crimped; flowers large, white; pods numerous, straight, 5 or 6 in. long, each containing five or six white, long, very bulging, straight or curved seeds, almost as thick as they are broad. This is one of the best Dwarf Edible-podded Kidney Beans. Its dried seeds also are of excellent quality, and perfectly white—a great recommendation, as Kidney Beans of this colour are generally preferred for table use.

**Quarantine Dwarf White Kidney Bean.**—A plant of medium height, with branching stems, forming a rather compact clump. Leaves of average size, stiff
almost triangular, long, pointed, and dark lustrous green; flowers white; pods flat and broad, and from 4 to 6 in. long. A hardy, early, and fairly productive variety, but not always maintaining a strictly dwarf habit of growth.

Dwarf Extra Early Wax or Butter Bean.—A very dwarf plant, extremely early, forming and maturing its pods before any other variety of Edible-podded Beans. In growth it resembles the Dwarf Algerian Black-seeded Butter Bean; its pods, however, are not quite so fleshy or so yellow. The seed is white, oblong, measuring about \( \frac{1}{2} \) in. in length, a little less than \( \frac{1}{4} \) in. in width and in thickness; very handsome and regular in shape, and ivory-white in colour. Its chief merit is its great earliness, the pods being ready for the market fully eight days earlier than those of any other variety.

White-seeded Dwarf Lyonnais Bean.—A white-seeded sport of the following, the characteristics and qualities being the same. The pods, 6 in. in length, contain six or seven straight, thin seeds, slightly flattened.

Long-podded Dwarf Lyonnais Bean.—Dwarf, not over 12 to 15\( \frac{1}{2} \) in. in height; stems strong and branching; leaves long, broad, and lightly crimped; flowers lilac. Pods very long, very fleshy, almost as solid as those of the Intestin Bean, but much longer, more pointed, and frequently curved. Seed long, straight, thin, slightly flattened, dark chamois or light brown in colour. A very productive variety, yielding pods of exceptional quality and beauty. First grown about Lyons only a few years ago, and likely to gain favour everywhere.

Haricot du Bon Jardinier.—Dwarf, bushy, with short, branching stems; dark green, rather small, and finely crimped leaves; flowers rosy lilac. Pods of medium size, not very long, of the thickness of the little finger, dark green, and free from parchment; seed yellow, cylindrical,
square, or rounded at both ends, resembling closely that of the Hundredfold Bean.

Émile Dwarf Kidney Bean.—An exceedingly dwarf and remarkably early variety, seldom more than 8 or 10 in. high. Leaves medium sized, of a rather dark green, and slightly crimped; flowers white or very pale lilac; pods somewhat curved, 4 or 5 in. long, very fleshy, green before ripening and never turning white or yellow, each containing from five to seven oblong violet-coloured seeds marbled with light gray, about \( \frac{1}{2} \) in. long and \( \frac{3}{4} \) in. broad and thick. This variety, which was recently raised by M. Perrier de la Bathie, seems to us to be both the dwarffest and the earliest of all the Edible-podded Kidney Beans, and is specially suitable for forcing.

Dwarf Purple-podded Bean.—A dwarf Bean remarkable for the dark blackish colour which extends to all its parts; the stems dark purple, the leaves tinged violet, especially towards autumn, and the pods so much so as to appear almost black. Like those of the Purple Runner Bean, the pods become green in the cooking. The plant is bushy, vigorous, half-early, and produces very fleshy, tender pods, distinct from those of any other sort.

Prédome Dwarf Kidney Bean.—The pods and seeds of this variety are exactly like those of the Tall-growing Prédome Kidney Bean, but less abundantly produced, and this deficiency is not redeemed by any other particular merit. The ordinary Prédome Kidney Bean does not require very tall stakes, so that it is not one of those kinds in which the raising of a dwarf variety is any advantage.
Dwarf Prolific Bean.—Dwarf, very bushy and branching; leaves rather small, narrow, but numerous, and vivid green in colour; flowers white or rosy, pods abundant, rather short, almost cylindrical and bright green, containing each from four to six small white oblong seeds, resembling those of the Rice Bean, but a little longer. A very good half-early, hardy, vigorous and very productive variety.

Pink-marbled Dwarf Prague Kidney Bean.—A very dwarf, compact, moderately productive kind, with rather abundant gray-green leaves and lilac flowers. Pods green, straight, or very slightly curved, plentifully striped with red, each containing four or five seeds resembling those of the common Cranberry Bean, but somewhat smaller.

Yellow Canadian Dwarf Kidney Bean.—A very good variety, hardy and productive, but somewhat late, well adapted for market-garden or field culture. Stems rather vigorous, branching, 16 to 20 in. high, thickly covered with medium-sized leaves light green. Flowers lilac; pods very numerous, green at first, changing to yellow, each usually containing five egg-shaped seeds a little smaller than those of the Prague Kidney Beans, and deep yellow, merging into brown about the hilum. The dried seeds of this variety are much esteemed. The pods, to be tender, should be gathered before they are fully grown. Although closely resembling the Yellow China Kidney Bean, this variety is distinguished from it by the deeper colour of its seeds, and by its leaves being larger, less crowded together, moderately crimped, and a darker green.

Oval Yellow China, or Robin's Egg, Kidney Bean.—A rather branching kind, with stems about 16 in. high, forming an airy-looking clump. Leaves medium-sized, and of bright green, those at the top of the stem being small and long-stalked; flowers white; pods green, turning yellow when ripe, each containing five or six egg-shaped sulphur-yellow seeds, with a more or less marked bluish circle around the hilum. This variety is one of the most
widely cultivated in different parts of the world, and is to be met with almost everywhere in the colonies and America, under the same name and exhibiting the same characteristics.

Besides those already described, there are many other varieties of Dwarf Edible-podded Kidney Beans in cultivation, of which we shall only mention the following:

**Variegated White-podded Butter Bean.**—Seed variegated, straight, and almost cylindrical in shape, creamy white with spots and marblings of a wine-lees red or red-violet colour. This variety is dwarf and rather tender. The American variety *Early Valentine* may be considered identical with it.

**Two-coloured China Dwarf Bean.**—This variety does not seem to be very much grown, and yet it is known almost everywhere. It is rather tall and very branching, with white flowers. The pods are of medium size, pretty free from membrane, turning white when ripe, and each containing five or six straight, cylindrical seeds, often square at the ends, and deeply striped with red around the hilum to the extent of half the surface of the seed, while the other half is entirely white. A rather productive and very early kind.

**Dwarf White Malmaison Kidney Bean.**—A productive and moderately early variety, with fine fleshy, bulging pods, which are usually straight. Seed rather long, oval, and white.

**Dwarf Aix Kidney Bean.**—A variety with small round rosy white seeds. Pods yellow, and rather short, but free from membrane.

**Prédome Flesh-coloured Wax Bean.**—A dwarf, much-branching variety; pods numerous, short, straight, green; seed rosy, egg-shaped.

**Princess Dwarf Kidney Bean.**—This is not a very vigorous kind, and its crimped and rounded leaves are very liable to disease, arising either from the attacks of insects or from minute fungus growths. It is also rather late. The pods are short and curved, free from membrane, and deep green. The remark made upon the Dwarf Prédome is also applicable to this variety; however, as the ordinary variety of the Princess attains a tolerable height, it may sometimes be advantageous to have a dwarf form of it.
The following are of American origin:

**Crystal Wax White Bean.**—Dwarf, but usually running at the top. Pods short and white, almost transparent; seeds white and oblong.

**Detroit Wax or Butter Bean** is closely related to the following one, the only difference being that its seed, likewise white, is streaked with gray about the hilum.

**Golden-eyed Wax or Butter Bean.**—A very early Bean, the pods yellow, large, and abundant. Seed white, short, and strongly marked with orange about the umbilicus.

**Golden Wax Bean.**—A pretty and productive variety, early, with pods free from parchment, and pale yellow. Seed white, partly streaked with red, almost the same as the Early China Bean.

**Improved Early Red Valentine Bean.**—A good summer Bean, especially if gathered when green. Pods fleshy. Seed resembles that of Blood Speckled Bean.

**Iron-pod Wax Bean.**—Not a reliably dwarf kind, nor very productive. Pods free from membrane, white, tinged or slightly striped with violet; seeds white.

**New Golden Wax Bean.**—A fine, productive, and early kind. Pods free from membrane, and pale yellow; seeds white, partly marbled with deep red, almost like those of the Two-coloured China Kidney Bean. This is a good variety.

**Rachel Dwarf Bean.**—Dwarf, productive, with thick bulging pods; seed oblong, chamois-coloured, blotched white at one end.

**Valentine Wax Bean.**—A sub-variety of the foregoing with yellow pods.

**Wardwell's Kidney Wax Bean.**—Dwarf, free from parchment, fairly early, with pods long, yellow, slightly curved, rather flat, and larger than in the Flageolet Wax Canterbury. Seed long, white, with a large violet stain on the umbilicus.

**White Wax Bean.**—Allied to the Dwarf White-seeded Wax Bean, but more leafy, later, and with flatter pods.

**Ward's Centenary Bean.**—A productive light green variety, with yellow, short, broad pods. Seed the same as that of the Two-coloured Italian Bean—that is to say, like the Prague Bean.

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**SCARLET RUNNER BEANS**

*Phaseolus multiflorus*, Willd.


Native of South America.—Naturally a perennial, but cultivated as an annual.—These plants, while extremely valuable as vegetables, are esteemed as ornamental climbers, on account of their rapid growth and the abundance of their flowers.
SCARLET RUNNER BEANS

The Scarlet Runner is the most valuable, and frequently the most beautiful, plant in English cottage gardens. It is grown in thousands of gardens, even in London and our large cities and towns, hiding with its quick-running and vigorous shoots many ugly surfaces in summer, and affording a quantity of wholesome food. The pods are often, like many other vegetables, allowed to get too old and hard before being gathered.

Scarlet Runners are generally raised from seed, but the roots may, if desired, be taken up in autumn and preserved through the winter in dry sand or in soil in any shed or cellar from which frost is excluded. If roots thus wintered be brought out and planted about the latter end of May, they come into bearing a fortnight or three weeks earlier than those raised from seed sown at the same time. They are also sometimes left in the ground all the winter, and protected from frost by a good thick layer of coal ashes placed over the rows. Thus treated, they start early in May, if the weather be favourable; and when they have attained the height of 3 or 4 ft., if stopped, will produce beans much earlier than by any other method; but if a profitable crop be desired, this plan is not to be recommended, as the plants do not continue in bearing so long as those that are raised from seed.

Among positions chosen for Scarlet Runners may be named small patches of ground at the corners of walks, planting five or six seeds in a patch, 5 or 6 in. apart. Three stout poles or sticks, as used for Peas, are then placed round them in the form of a triangle, bent so as to meet at the top, where they are tied. In small gardens they are often trained over wire or woodwork, so as to form summer-houses or coverings for walks.

CULTURE.—In large gardens the general practice is to sow in open quarters, and where beans are required as long in the season as they can be obtained, and in large quantities, this is undoubtedly the best plan. They should be allowed a distance of at least 6 ft. between the rows, and if more can be afforded them, all the better. For early crops, a few rows may be made close under a south wall or fence, keeping the points regularly pinched out, in order to keep them dwarf and encourage the earlier development of the pods. In this case they will, of course, need no support, but be allowed to lie in a thick row along the ground. Beans may be produced in this way several weeks earlier than in open quarters, but they do not continue so long in bearing, nor do they produce such abundant crops. Where, however, earliness is an object, this plan may be followed with advantage. Seeds for this purpose may either be sown in heat and transplanted, or sown in the open ground where the plants are to remain. The former way is the more troublesome, but it is the best where covering is at hand to protect them from cold winds and frosts after they have been planted. If sown in heat, the seeds should be put in about the second week in May, either in boxes or pots, boxes being the best; they should be shallow—say, not more than 4 or 5 in. deep—their size in other respects being of no great importance; they should have holes at the bottom for drainage, and should be half filled with half-rotted leaf-mould pressed down rather firmly with the hand; slightly cover with fine soil, and upon this sow in rows 2 in. apart, and cover with about ¾ in. of finely sifted leaf-mould, giving the whole a good watering. If placed in a Cucumber or Melon
frame at "work," they will soon be up, and should be kept as near the glass as possible, in order to prevent them from becoming drawn. After they have made two single leaves, they should be taken to a cold frame or pit, gradually inuring them to the open air, so as to make them as hardy as possible previous to planting out, which may be done the first week in June. Before planting them out, they should have a good watering, and be taken out of the boxes with as much earth adhering to them as possible. Plant either in double or single rows, 4 or 5 in. apart; as close to the wall or fence as may be convenient. If they be then well watered and shaded from the sun for a day or two, and protected from cold at night, they will soon make a good start.

_Sowing in Open Ground._—The first sowing in the open ground for a general crop should be made not earlier than the first week in May, for if they are up before the end of that month they are liable to be cut off with frost, unless protection can be afforded them—a rather troublesome matter where large quantities are grown. Some draw drills in which to sow the seeds, but the best way is to plant them in with a dibble about 1 in. deep, and then draw the rake over the ground to fill in the holes. Double rows are to be preferred to single ones, as they produce more beans. Each seed should be at least 6 in. apart. Managed in this way they grow strongly, and if stopped when they have attained the height of 5 or 6 ft., they will produce fine large trusses of bloom from top to bottom. Where successions are desired, several sowings must be made. The general rule is to sow one good crop and let that serve all purposes; but if a sowing be made the first week in May, a second a few weeks afterwards, and another not later than July 1st, a continuous supply of young and tender beans will be the result; the last sowing, however, should be only a small one. Sowing in trenches has lately been much practised, and in some cases no doubt with advantage; but when sown in deeply dug ground, trenches are unnecessary. They are generally made with the view of affording an effectual means of watering the plants; but they necessitate the water being applied close to their bases, which is hurtful rather than beneficial to Runner Beans. Where, however, the earliest crop of Scarlet Runners has to be sown in open quarters, the best way is to take out a trench; say, 3 or 4 in. deep, laying the soil on each side of it in ridges. Pea-wires or bent Hazel sticks may then be placed on the rows after the seed has been sown and covered; these will afford good supports for mat or canvas protections until the plants will do without covering; after which time the soil may be put back in the trench, and no further earthing-up will be necessary.

_Stickfing Scarlet Runners._—Where procurable, common Pea-sticks are best adapted for Runner Beans, but they require to be rather larger and stronger than for Peas; for unless firmly sticked, they are apt to suffer during rough, windy weather. Where, however, such sticks are not obtainable, stout poles, 7 or 8 ft. long, may be used, placing them firmly in the ground at intervals of 6 or 10 ft. apart along each side of the row. Slender sticks cut the same length as the distance the poles are apart may then be tied lengthways along the poles, 1 or 1½ ft. apart; the plants will twine firmly round these, and thus support themselves.
With respect to soil, a light rich loam is best for the Scarlet Runner, and it should be deep, to allow of the roots descending in time of drought. Previously to planting, the ground should be deeply trenched and enriched by means of a liberal supply of good rotten manure. Where, however, time cannot be spared for this, trenches may be taken out, 2 ft. wide and from 2 to 3 ft. deep, according to the depth of the soil. The soil thus taken out should then have plenty of good manure mixed with it, and be replaced in the trench. If this be done in autumn, it will be all the better.

Market Garden Culture.—Scarlet Runners, on account of their taking up more room, are not so much grown in London market gardens as the dwarf French Beans. Their yield is not so great in proportion to the ground occupied, and they are also, unless supported by stakes, more difficult to gather. Around Wandsworth, and in some parts of Kent, within twenty miles of London, however, large fields are devoted to their culture. In some places stakes are used, but, as a rule, the points of the shoots are kept stopped, and the haulm is allowed to rest on the ground. In some respects this latter practice is best, for the rows can be placed close together, and, moreover, the haulm shades the ground and keeps the soil moist, a condition essential to the growth of Scarlet Runners. A rich, light soil and an open situation is that usually chosen for them. Some plant a few rows in warm, sheltered places for early use, the seeds of which are sown in a temporary frame in April, and are transplanted from thence to the open ground as soon as the weather is warm enough to admit of it, but, as a rule, the seed is sown in drills in an open field about the first week in May. Ground previously occupied by Celery suits these Beans perfectly, the soil being deep, well worked, and rich. The seeds are sown in broad drills from .4 to 8 ft. apart, according to whether the plants are to be staked or not. Two rows occupy each drill, and the plants when up are left from .4 to 6 in. apart each way, the thinnings being used to fill up gaps, should such occur. When the plants are fairly up, a ridge of earth is drawn to each side of them, to protect them in some measure from cutting winds and late frosts. When in full flower, the points of the shoots are pinched off, which causes the stem to branch and keep dwarf. Early in July Scarlet Runners appear in Covent Garden, and when that happens French Beans are not in so much demand as hitherto, the majority of vegetable consumers preferring Runners to French Beans. Some market gardeners sow successional crops for autumn use, but the bulk of the produce is brought to market in the end of July and throughout August.

There are several varieties, differing in the colour of their flowers and seeds; the principal are:—

1. The Scarlet Runner.—The seeds of this variety are light wine-colour, blotched with black.

2. The Black-seeded Runner.—The flowers of both this and the preceding variety are a uniform scarlet.

3. Painted Lady, Bicolor, or York and Lancaster Runner.—
The seed of this variety hardly differs from that of the Scarlet Runner, but the flowers are half red and half white, the keel and wings being white, and the standard scarlet-red.

4. Hybrid Scarlet Runner.—The seeds of this kind are very distinct, being a gray-yellow blotched with brown; the flowers are variegated like those of the Painted Lady.

5. The White Runner.—This is the only kind that is sometimes grown in France as a vegetable. Stems very vigorous, climbing, attaining a height of nearly 10 ft. in a few weeks; flowers white, in numerous long-stalked clusters; pods broad, very flat, seldom containing more than three or four seeds each; seeds white, full, very large, kidney-shaped, sometimes 1 in. long, \( \frac{3}{8} \) in. broad, and \( \frac{2}{3} \) in. thick. The seeds of Scarlet Runner Beans do not usually ripen well in the climate of Paris. In the south of France, however, this species, which is very hardy and very productive, is grown, to a moderate extent, as a vegetable, and in some other countries it is very highly esteemed. In the north of France, the seeds are too thick-skinned, and are deficient in delicacy of flavour. They contain a great deal of flour, but are inferior, especially in the dried state, to any of the good French varieties of Kidney Beans. In England the pods are most generally used in the young green state, many preferring the flavour of these when quite young to that of the Kidney Beans in a similar stage. They are best pulled when they have attained about two-thirds of their development, just when the seeds begin to form, and if cut lengthwise in narrow strips they cook much more readily.
LARGE LIMA BEAN

Phaseolus lunatus, L.


Native of South America.—Annual.—Stem climbing to the height of nearly 10 ft.; leaves composed of three triangular leaflets, longer and narrower than those of ordinary Kidney Beans; flowers small, greenish white, in numerous stiff long clusters; pods short, very flat and very broad, rough on the outside, like those of the Scarlet Runner Beans; seeds flat and short, slightly kidney-shaped, with one half nearly always larger than the other, and usually marked with wrinkles or flutings from the hilum outwards. The varieties of the Lima Bean are grown in the same manner as the ordinary Tall-growing Kidney Beans, but they are later, and seldom ripen seed in the climate of Paris. The seeds are sent to table either fresh or dried. They are farinaceous, and are highly esteemed in the United States and in some warm countries.

Common Lima Bean.
—Rather late-growing, never ripening more than a portion of its pods in the climate of Paris, and never ripening there at all in cold damp seasons. Stems thick, and pale green; leaves medium-sized, smooth, and gray-green; seed broad and flat, white, slightly tinged with yellow, over \( \frac{3}{4} \) in. long, about \( \frac{1}{2} \) in. broad, and about \( \frac{1}{4} \) in. thick. There is a green-seeded variety, and another which has
white seed, like that of the type, but marked with a small brown or blackish blotch close to the hilum.

**Dwarf Lima Bean.**—An American variety, distinct, and much appreciated in the United States, where Lima Beans are amongst the vegetables most generally used in the autumn. Its leaves, flowers, and pods resemble much those of the Sieva Bean, but it is a truly dwarf variety, forming low, compact bushes, which do not require any support. Added to this, its earliness ensures its success in many localities where the tall Lima Bean fails to reach maturity.

**Mottled Lima, or Marbled Cape, Bean.**—This differs from the Common Lima Bean only by the peculiar variegation of the seed, in which a large patch of red, more or less deep, surrounds the hilum, from which it extends to one end of the seed, which it entirely covers for about one-third of its length; the remainder of the surface being finely dotted with the same red on a white ground. This variety is almost as late as the Common Lima Bean.

**Small Lima, or Sieva, Bean.**—Stems slender and green; leaves smaller and darker in colour than those of the Common Lima Bean. This variety of *Phaseolus lunatus* differs from the preceding ones in having much smaller seeds, which in other respects resemble those of the Common Lima Bean, but are seldom over \(\frac{3}{4}\) in. in length, about \(\frac{1}{8}\) in. broad, and \(\frac{1}{4}\) in. thick. The Small Lima Bean is also earlier than the other varieties of *Phaseolus lunatus*, and its first pods ripen regularly in the climate of Paris; but it is very far from being as productive there as it is in warm climates, where it often continues bearing for three months. In the United States a variety is grown which has the seed streaked with red.

In the United States, where the Lima Bean is one of the most valued of autumn vegetables, there are some half-a-dozen varieties in cultivation, both runner and dwarf. Among those in the first category are the following:

**Burpee’s Willow-leaf Lima Bean.**—Resembles the Sieva Bean, but distinct from it in its linear-lanceolate leaf, from whence its name of Willow-leaf.

**Challenger, Dreer's Improved, Potato Lima Bean.**—A very vigorous and fairly productive medium-early variety. The pods are thicker than in the other varieties, and contain three to five large rounded, swollen seeds. A very good kind.

**Extra Early Jersey Lima Bean.**—Eight or ten days earlier than the Lima Runner Bean, but with smaller seeds.

**King of the Garden Lima Bean.**—A vigorous variety, producing pods of a length rarely obtained by the other varieties, and containing five or six very large seeds of excellent quality.

**Siebert’s Early Lima Bean.**—Fairly early, abundant, and constant producing; the pods, of medium size, seldom contain more
LARGE LIMA BEAN

than three or four seeds, which are, however, very large and tender.

Among the American varieties of the Dwarf Lima Bean, we may mention:


Dwarf Large White Lima Bean, Burpee's Bush Lima Bean.—Only differs from the foregoing in being earlier.

Burpee's Quarter-Century Dwarf Lima Bean.—The same remark applies to this.

Kumerle Dwarf Lima Bean, Dreer's Bush Lima Bean.—A dwarf form of the Challenger Lima Bean described above.

Dwarf Sieva Lima Bean, Henderson's Bush Lima Bean, Wood's New Prolific Lima Bean.—A frankly dwarf form of the Small Lima or Sieva Bean, forming low thick tufts. Earlier than its runner variety, it ripens its seed in the Paris climate. In the United States it is one of the most valued and most cultivated kinds.

DOLICHOS

Several species of the genus Dolichos also are cultivated as kitchen-garden plants, especially in warm countries, but of these we shall only mention kinds that can be grown in the climate of Paris.

Black-eyed Dolichos (Dolichos unguiculatus, L. Leguminose).—An annual plant, usually growing from 20 in. to 2 ft. high, with leaves composed of three triangular, elongated leaflets, which are rounded at the base, very smooth, and dark green. Flowers large, changing from white to rose-colour and lilac, with a deeper-coloured blotch at the base of the petals, and growing in twos or threes on a thick stout flower-stalk; pods pale green, straight, or curved as they become heavy, varying in length from 6 to 10 in., nearly cylindrical, and slightly bulged over the seeds, which usually lie at some distance from each other; seeds rather variable in size and colour, usually white, short kidney-shape, blunt or square at both ends, slightly wrinkled, and marked with a very pronounced black blotch around the hilum. In those countries where, as in Italy, the Black-eyed Dolichos is extensively cultivated, a great number of varieties are grown, which differ from one another principally in the size of the seeds. The climate of Britain is too cold for these plants, but many parts of the Colonies are suited for their culture. They bear a degree of heat which would injure the Beans that thrive with us. CULTURE is the same as that of the Dwarf Varieties of Kidney Beans. This plant, however, is not very particular as to the soil in which it is grown. The young pods are cooked in the same way as green Haricots.

Years ago, M. Durieu de Maisonneuve, director of the Botanic Garden at Bordeaux, introduced a very singular variety of this
plant, the pods of which, instead of being straight, are curved round and round, from which peculiarity it received the name of Ram's-horn Bean. Its culture and uses are the same as those of the ordinary variety.

**ASPARAGUS BEAN**

*Dolichos sesquipedalis, L. Leguminose.*


Native of South America.—Annual.—Stems climbing, 6 to over 9 ft. long; leaves deep green, rather large, long, pointed; flowers large, greenish yellow, with the standard bent backwards, remarkable for two small parallel auricles which compress the wings and the keel: they are borne either solitary or two together on the top of the flower-stalk. Pods pendent, cylindrical, light green, very slender, and long; not unusually exceeding 1½ ft. in length. The seeds are few for the size of the pod, being generally from seven to ten in number; they are kidney-shaped, and red or pale wine-lees colour with a black circle round the white hilum; they are seldom more than about ½ in. long. The plant is cultivated in the south of France, especially in Provence. The culture
is similar to that which is employed in the case of late varieties of Tall Kidney Beans. A good warm position is desirable, the best being one against a wall. The green pods are used in the same way as Kidney Beans.

**Long Tonkin Asparagus Bean.**—A remarkably early variety, producing in the open ground, in the vicinity of Paris, as early as July or August, long, thin, very tender, and fleshy pods. The seed is rather small for use as a vegetable by itself: it is yellow-white, with a black ring around the hilum; it measures less than \( \frac{1}{2} \) in. in length, and a little less still in breadth and thickness.

**Very Early Long-pod Asparagus Bean.**—A sub-variety of the Cuban Asparagus Bean; like the latter, very vigorous in growth and productive, but distinguished from it by its very great earliness, which allows it to mature its seed in temperate climates. The seed is small, chocolate-brown, with a white eye surrounded by a black ring, and measures a little over \( \frac{1}{4} \) in. in length and about \( \frac{1}{4} \) in. in breadth. Ripens in the climate of Paris.

**Giant Extra Early Asparagus Bean.**—Distinguished from the preceding ones by the extreme length of its pods, sometimes as much as 3 ft. 3 in. They are very numerous, and broader than those of the Cuban Asparagus Bean, and they contain a large number of red seeds, marked black around the white hilum. Ripens in the climate of Paris.
Cuban Asparagus Bean.—A vigorous climbing plant, attaining a height of from 10 to 13 ft.; leaves very large; leaflets long, spear-shaped; flowers of medium size, green, mostly solitary, succeeded by pods of remarkable length, being often over 2½ ft. long when fully grown. They are then inflated by the swelling of the seed, and are about ½ in. broad. The seed, in form and colour, exactly resembles that of the Asparagus Bean, of which this appears to be a variety, but a very distinct one, as it grows much taller and is a thorough climber. It is cultivated, however, in the same way, and the pods are similarly eaten when green, before they are fully grown.

LABLAB, or EGYPTIAN KIDNEY BEAN


Native of India.—Annual.—A climbing plant, with stout branching stems, which are sometimes from 13 to over 16 ft. long. Leaves compound, with three large broad leaflets of a dark green colour, and slightly puckered or crimped; flowers sweet-scented, large, in long dense clusters; pods rather short, wrinkled, and very flat, growing sometimes seven or eight together on the same stalk; seed short, oval, flat, three or four in each pod; *hilum* white, much marked, occupying nearly one-third of the circumference of the seed. There are two principal varieties, one with white flowers and white seed, and the other with violet flowers and black seed. They are grown in the same way as Tall Kidney Beans. In France they are only grown as ornamental plants, but the seeds are eaten in those countries where they are grown for table use.
Stringless Lablab Asparagus Bean.—The tendency in the ordinary Bean of the stringy fibres to disappear under careful cultivation is also seen in the Lablabs. The variety under consideration is exceedingly vigorous in growth, and yields an enormous quantity of pods. Stem light green, very branching; leaves large, very pointed, and smooth; flowers white, in large trusses; pods very numerous, in bunches, yellowish white, slightly downy, short, broad, and rounded at the end. Seed brown, provided with a curious white aril or keel along one of the edges; it is about $\frac{1}{2}$ in length and a little more than $\frac{1}{4}$ in. broad and thick.
Native of Europe.—Biennial.—A plant which, in the first year of its growth, forms a more or less long, thick, and fleshy root, and runs to seed in the second year. The fruiting stem is about 4 ft. high, and as the calyx of the flower continues to grow after the flower has faded, and completely covers the seed, it becomes corky in substance and appearance, and forms what is commonly called Beet-seed, but which is really a fruit, nearly as large as a pea, and almost always containing several seeds. The true seeds are very small, kidney-shaped, brown, and with an exceedingly thin skin. They retain their germinating power for six years or more.

It is not exactly known when the Beet-root was first introduced into cultivation. The ancients were acquainted with the plant, but we have no account from which we can be certain that they cultivated it. Olivier de Serres mentions it as having been introduced into France from Italy not long before the time at which he wrote.

CULTURE.—Beet is sown, where the crop is to grow, in the open air, as soon as the spring frosts are over, and best in drills, for greater convenience in hoeing; and the young plants are thinned out, with a greater or less space between them according to the size of the variety grown. They prefer a deep, rich, well-manured, and well-tilled soil. It is a good plan to dig in the manure in the autumn, as fresh strawy manure is apt to cause the roots to become forked. A few waterings in dry weather will be the only additional attention required by the growing plants, the roots of which come to maturity from July to the end of autumn, according to the time at which sowings were made.

A deep sandy loam, trenched to a depth of at least 30 in., suits it better than any other kind of soil, and if poor, it should have been well manured for the previous vegetable crop. In such soil, the evenest and cleanest roots are produced; but Beet will also succeed on calcareous soils, if of sufficient depth. Heavy or stiff loams intended for its growth should be thrown up into ridges before winter sets in, so as to get well pulverised, and, if very heavy, a light dressing of coal ashes worked into them would prove advantageous, and materially assist in producing “clean” roots. Stable manure should not be added to the soil unless it is trenched deeply, when it may be placed quite at the bottom of the trench; if otherwise, as soon as the roots reach it they become forked, instead of making straight and well-shaped roots; therefore, if the soil be so poor as to require manure, a sprinkling of guano or
superphosphate, applied to it between the rows as soon as the plants are fairly established, will be found the best stimulant.

Sowing, Etc.—Beet must have an open situation; it never grows or looks satisfactorily when grown under the shade of fruit trees—a position to which it is often relegated; but this should not be, for most varieties of Beet are ornamental as well as useful, and one would, therefore, suppose that a conspicuous place would be selected for them. The time for sowing varies from the beginning of April to the middle of May. In the majority of soils, about April 20th will be found to be the best time; if sown too early, especially if the soil be rich, it is liable to run to seed, or the roots to grow too large—medium-sized roots being always most highly valued, more particularly for salads. The seed should be sown in drills 15 in. asunder, and 1½ in. deep; and it should be covered in by hand—a rake should not be employed for this purpose, as by its use half the seed is often drawn out of the drills, and the plants come up irregularly. Thin out the seedlings, as soon as they are large enough to handle, to 9 in. apart in the row, and if dark, bronzy leaved kinds be grown, see that the greenest-looking plants are drawn out. After thinning has been completed, by means of the hoe frequently loosen the soil between the rows—an operation which will aid the growth of the Beet, and at the same time keep down the weeds. If blanks, through failures, occur in the rows, they should be filled up with young plants in showery weather, though roots obtained in this way rarely prove satisfactory, being small and irregular in growth; still, it is worth doing, if only for the sake of appearance.

Varieties.—As a rule, the colour of the roots is the first consideration; but flavour should in our opinion have precedence, rather than colour. Where both are combined, however, as is the case in Dell’s Crimson, which has many synonyms, such a variety must be the best to grow; moreover, this variety has the additional attraction of deep crimson-coloured foliage, and is of no small importance as an ornamental plant. Other good varieties are—Henderson’s Pine-apple, Dimmick’s Nonpareil, Nutting’s Dwarf Red, and Egyptian Turnip-rooted, the last being more especially valuable for early summer supply, as it comes into use nearly a fortnight earlier than any of the long-rooted sorts. It is also suited for growing on shallow soils, and, although pale in colour, is of excellent quality.

Storing Beet-root.—Frost is most injurious to Beet-roots, which should, therefore, be dug up by the end of October, or provision should be made for protecting them in the ground, in the event of severe weather setting in. Stable litter, hay-bands, or Bracken (Pteris aquilina) will effectually protect Beet; but, where neatness is studied rather than utility, this manner of protection should not be thought of. In that case, the roots should be dug up at the time mentioned above, and “clamped” in the same way as Potatoes; or they may be layered in dry soil or sand, in a cool shed,—but it must be really cool, or they will start into growth, and the flavour will go.

For market-garden culture, a good crop of Beet-root is very remunerative, and when there is a ready sale for it in the market it pays better than any other root crop. The main sowing is made to succeed Wallflowers, Radishes, Spinach, or Cabbages, and it is also often grown
on Asparagus ridges, between rows of fruit bushes, and between lines of Vegetable Marrows; and even when growing in the open field, it is often intercropped. An early sowing is usually made, in lines about 15 in. apart, in the first week of May, between rows of Cabbages or Lettuces, recently planted; after the seeds germinate and the plants are well above ground, they are thinned out into patches with short hoes, and when they have formed a few rough leaves they are thinned out to single plants by hand. Some make a sowing even as early as in March, in a sheltered piece of ground, for yielding an early supply. In harvesting a crop of Beet-root which has to be kept through the winter, the roots are carefully dug up, preserving them their whole length intact, and keeping 2 in. of the stalks attached after the leaves have been twisted off by hand. They are then built in pyramidal-shaped clumps, and covered with straw, over which a coating of soil is put to exclude frost. Leaving the roots in the ground is the best plan, as their proper flavour is thereby preserved better than when lifted and stored: but they are liable to be injured by frosts in January, or to be locked in the soil when it might be convenient to send them to market. Some of the darkest and finest-shaped roots are kept for seed-bearing plants, and are planted in some out-of-the-way nook by themselves. Transplanting Beet is only resorted to to fill up vacancies in the rows, as in the operation the main roots are often broken, or otherwise so damaged as to render it almost impossible for them to produce good roots. Dark crimson-coloured Beets are those which are most esteemed by market gardeners, most of whom grow their seeds saved from selected plants. Carter's St. Osyth is a favourite kind with many growers, but none are liked so well as the selected Dark Crimson.

USES.—A great number of varieties are grown for table use, the roots being either plainly boiled or baked, or pickled or used for salads. Other varieties are used for feeding cattle, or for the manufacture of sugar, for which reason we do not mention them. When lifted, the tops should not be cut, but screwed off, and the roots should not be injured more than can be helped, as injury to them induces decay. Before cooking, the roots should be well washed, but not peeled or scraped, or the skin bruised; for, if such be the case, much of the saccharine matter escapes during the boiling. Boiling doubtless renders Beet most agreeable to the generality of consumers; though some prefer to bake it, by which a deeper colour and a firmer texture of flesh are ensured.

GARDEN BEET

I. RED-FLESHED VARIETIES

Large Blood-red Beet.—This is the kind which is most extensively grown in France, being intermediate between the garden and the field varieties. It is very productive, very hardy, and of good quality for table use. It is also the kind which is most
frequently brought ready boiled to the market-places. Root almost cylindrical, as thick as a man's arm, and 1 ft. to 14 in. long, growing with over one-third of its length overground, sometimes becoming tap-rooted and forked at the extremity. The colour of the skin of the part covered by the soil is of a uniform deep red, while the part overground is more or less reddish and wrinkled. Flesh deep red; leaves large and stout, green marbled and veined with red; leaf-stalks very red. The large size of the roots of this variety and the heavy crop which it yields recommend it as the best of the kitchen-garden varieties for field culture. For some time past, very red-fleshed and red-juiced kinds of Beet have been much sought after for various economic or manufacturing purposes, and the variety now described is eminently adapted for such uses.

**Gardanne Beet**, which is in high repute in the south of France, comes very near this variety, differing from it only by being a little thicker under the neck, and growing with less of the root overground.

**Long Smooth Blood-red, or Long Smooth Rochester, Beet.**—Root very long, almost cylindrical, attaining a length of 14 in., with a diameter of hardly 2 in., and almost entirely underground; skin smooth and uniform, of a dark red colour; flesh blackish red. A handsome variety, of good quality, and keeping well. To grow well, it requires a deep, well-dug, and well-manured soil.

**Rough-skinned Red Beet-root (B. Rouge Crapaudine).**—One of the oldest varieties, and distinguished from all the others by the peculiar appearance of the skin, which is black and broken by small cracks or crevices, like the bark of a young tree, or perhaps still more resembling the skin of a Black Winter Radish. Root rather long, almost entirely buried in the soil, and frequently somewhat irregular in shape; flesh very red, sugary, and firm; leaves numerous, slightly twisted, spreading rather than erect, almost entirely green, with red stalks. This variety affords a striking instance of the absence of any invariable correspondence between the colour of the flesh of a Beet-root and the colour of its leaves. No other kind has deeper-coloured flesh than this, and yet many have the leaves much more deeply tinged with red.

The Beets known as the Little Negress of Rennes and the Red Beet-root of Diorières do not appear to differ from this variety.
Deep Blood-red Castlenaudary Beet.—Root small, nearly buried in the soil, rather slender, straight, sometimes with a tap-root of some length; skin black-red; flesh very dark red, compact, solid, and very sugary; leaves dark red, with long stalks. This variety does not yield a heavy crop, but its quality is excellent. The English varieties Long Deep Red and Very Dark Red are very similar to this. The same may be said of Dobbie's New Purple and Goldie's Superb Black, their roots being only a little thicker.

Whyte's Black Beet.—Synonyms: Osborn's Improved Blood-red, Barratt's Crimson, Oldacre's Blood-red, Perkins's Black.—A handsome medium-sized kind. Root long, thick under the neck, sometimes a little angular instead of being regularly round; skin smooth, of a very deep slate colour; flesh black-red, firm, and of good quality; leaves rather stout, slightly crimped and undulated, of a brown-red colour, more or less tinged and mixed with green; leaf-stalks red. This is one of the best varieties; the flesh is very deeply coloured, and the root can be easily distinguished from all others by the gray or leaden hue of the skin. It is fairly productive, and keeps well.
Dwarf Red, or Nutting's, Beet.—A very handsome variety. Root very symmetrical in shape, small, slender, long, deeply sunk in the soil; leaves deep red, half-erect, uncrimped, slightly undulated, and much longer than broad.

Dell's Dark Crimson Dwarf Beet.—There is no great difference worth mentioning between this variety and Nutting's Beet, except that the foliage is larger, well crimped, and turned backwards; it has the same root and is used sometimes for bordering. This variety, like the preceding one, produces small roots, but to make some amends for this, they can be grown very close together. Both varieties are moderately early.

Many other English varieties resemble the Dwarf Red and Dell's Crimson, without being exactly like either of these kinds. Of these we will only mention Bailey's Fine Red, Sang's Dwarf Crimson, and the Saint Osyth Beet. The two following varieties are to be commended: Omega Dwarf-topped, a medium-sized, handsomely shaped Beet, with delicately sweet, rich crimson flesh; and Nonpareil Dwarf Green-top, a very dwarf kind, with small, well-formed, scarlet-fleshed roots.

Dracæna-leaved Beet.—A very pretty and peculiar variety, with a slender lengthy root, almost the same shape as Nutting's Beet, but smaller; it differs from that by its narrower, longer,
more numerous leaves, which are generally curved in the shape of a sickle, the top forming a very elegant rounded nosegay, which at first might be mistaken for the foliage of a Dracaena or a Croton. While thus ornamental, it is not without merit as a vegetable.

**Covent Garden Red Beet.**—A very handsome variety, thicker and smoother than the preceding sorts. The root is long ovoid rather than spindle-shaped, smooth and entirely underground; the flesh a deep blood-red, the foliage rather light, tinged purple turning to very dark brown in the autumn.

The varieties of the Covent Garden Beet are *Dewar's Dwarf*

![Image of Beet Varieties](image)

* Dell's Dark Crimson Dwarf Beet.
* Dracaena-leaved Beet.

Red, Drummond's *Nonsuch*, and Ferry's *Half-long* and *Half-long Blood Beet*, though perhaps a shade shorter; but the difference is so trifling as to be negligible.

**Black Queen Beet.**—In some respects this new variety resembles the Pear-shaped Strasbourg Beet, with smaller, compacter leaves, more proportionate to the size of the root. The root is conical in shape, both above and below ground, but more tapering at the base than the Strasbourg. The flesh is almost black; the leaves are also deep coloured. They are of fair size, slightly crimped, short and almost round, and at no time absolutely green, which is seldom the case with black-rooted Beets, even such varieties as have the darkest leaves in the autumn. The Black Queen Beet
may be used, like the Dell’s Beet or the Dracæna-leaved Beet, for bordering or for dark-coloured beds.

**Strasbourg Pear-shaped, Non Plus Ultra, or Intermediate Dark Beet.**—An intermediate variety, very deeply sunk in the soil. Skin and flesh of an extremely deep red, the leaves and leaf-stalks almost black. This is one of the deepest coloured of the kitchen-garden varieties. It is not a very productive kind, and the leaves and leaf-stalks are rather large in proportion to the size of the root,

which, unlike that of the Dwarf Red variety, when pulled, belies the promise given by the foliage.

**Trévise Early Salad Beet, or Turin Red Spring Beet.**—A very pretty Salad Beet, intermediate between the half-long and the round or flattened varieties. Its top-shaped form proclaims its relationship with the long-rooted sorts. It is remarkable for its light foliage and slender leaf-stalks. No other Salad Beet, not even Nutting’s Beet, produces so few leaves.

**Dewing’s Early Blood-red Beet.**—A handsome variety of American origin, it comes between the Early Blood-red Turnip Beet and the Eclipse Beet, mentioned below. The root is thick, smooth, rounded above the ground, but slightly conical and
top-shaped below. The flesh is good in colour, but not very dark. The leaves are of no great size, rather light, green tinged with red during summer, but a more uniform brown-red colour towards autumn, and are much like those of the Egyptian Beet.*

The Arlington Favourite is a good American variety of the Dewing. It is high coloured and scant in leaf, and differs very little from the original.

**Eclipse Turnip Beet.**—May be described as a spherical Egyptian Beet. Like the latter, it is very early, smooth, and has a very scant foliage, but it is distinguished from it by its globular root, which, when of the same diameter, is about twice as productive, and has, moreover, the advantage of attaining a good size without

spoiling its shape. Originated in America, it is undoubtedly the best Salad Beet yet received from that country.

Allied to this variety is the Model Beet, an English Beet with leaves much reduced in size and highly coloured flesh.

The **Crimson Globe Beet**, also an English variety and of recent introduction, possesses characteristics very similar to those of the Eclipse Beet. The root is clean, very smooth, rather long than broad, with pinched extremities and well-coloured flesh—that is to say, deep violet slightly zoned, tender and saccharine; the foliage scant, and in colour brown-red.

**Early Blood Red Turnip-rooted Beet.**—An early variety, with a round and half-flattened root, scarcely half buried in the soil; skin dark violet-red; flesh a fine red; leaves rather large, green, broadly marbled and veined with brown-red. To this variety may be referred, as almost identical with it, the kinds named Flat

* A Non-bleeding Beet, see p. 759.

The American varieties, Edmand's Early Turnip, Bastian's Blood Turnip, and Early Blood Turnip Beet, come very near to this, even as regardsearliness and colour.

**Detroit Dark Red Turnip Beet.**—One of the Beets the most cultivated in the United States, it appears to be a selection of the Early Blood-red Turnip Beet. It has a round, somewhat ovoid root, very smooth, and a fine deep blood-red colour. The flesh is bright red, tender and good in quality; the foliage very erect, scant, and in colour green with deep red veinings.

**Egyptian Dark Red Turnip-rooted Beet.**—An exceedingly early variety, and certainly the best of the early kitchen-garden kinds. Roots rounded and flattened, especially underneath, almost entirely underground, and resting on the surface (to which it is held down by a rather slender tap-root), very symmetrical in shape until it has grown larger than the fist, when it frequently becomes irregular or sinuated in form as it increases in size. Skin very smooth, violet or slaty red; flesh dark blood colour; leaves slight, brown-red, more or less mixed with green; leaf-stalks long and slender, and bright red. When sown in the open air under favourable conditions, the roots of this variety may be pulled for table use in June, when they are about as big as a small orange, their quality being then at its best. If sown on a hot-bed, they may be pulled still earlier. Like the Dwarf Red variety, the roots of this kind also may be grown very close together.

**Early Flat Bassano Beet.**—A stout-growing, broad, flat variety, with numerous but rather slender green leaves; leaf-stalks tinged
with red; skin of the root grayish red, especially the part above-ground; flesh in bands or zones of white and rose, firm, sugary, delicate, and highly esteemed in some countries. This is a moderately early and very productive kind.

The following varieties deserve to be mentioned as very distinct:

**The Cheltenham Green-top Beet.**—An English variety, with very long, clean, regularly tapering root. A very deep-rooting variety, it offers even in a more marked degree than the Rough-skinned Beet a contrast between the colour of the foliage, which is pale green, and that of the root, which is a very intense red.

**Crosby's Egyptian Beet.**—A variety much esteemed in the United States; the only similarity it bears to the Extra Early Egyptian Beet is in its great earliness. It has a thicker and altogether larger, but less highly coloured, root than its Extra Early namesake, being a distinct vermillion. It is scant in leaf, and is one of the earliest varieties.

**Lentz Beet.**—Also of American origin, and very early. The root is top-shaped, and the flesh red with lighter coloured zones. The foliage is very short and green, tinged with brown.

**Short's Pine-apple Beet, Pine-apple Dwarf Red, or Henderson's Pine-apple Beet.**—A compact-growing kind, with a rather short root, which is tap-rooted, and about 2 or 3 in. in diameter; flesh very dark in colour; leaves stiff and spreading, red with orange-coloured stalks.

**Victoria Beet.**—A variety of German origin, with an intermediate root of a deep red colour, less remarkable for its value as a vegetable than for the singular metallic appearance of its leaves, and quite as much grown for ornamental as it is for kitchen-garden purposes.
II. YELLOW-FLESHED VARIETIES

**Long Yellow, or Orange, Beet.**—This variety is almost as much grown in the fields as in the kitchen-garden, and is the kind which is principally cultivated by the cowkeepers of Paris and its vicinity, on account of its highly reputed nutritious and milk-producing qualities. Root long, almost cylindrical, about half of it above-ground; leaves erect, stout, green, with yellow stalks; skin of root orange-yellow; flesh golden-yellow, marked with zones more or less pale, and sometimes nearly white. It is the most productive and one of the best Yellow-fleshed kinds.

**Yellow, or Orange, Turnip Beet.**—Root slightly top-shaped, with a stout tap-root; skin orange-yellow; flesh bright yellow, zoned with pale yellow or white; leaves rather short and broad, crimped, undulated, with yellow ribs and stalks. A very sugary and fine-flavoured variety, the root, when well boiled, becoming tinged with orange. It is one of the best additions which of late years has been made to the list of kitchen-garden plants.

**BORAGE**

*Borago officinalis, L. Boraginaceae.*


Native of Europe and North Africa.—Annual.—Stems 12 to 18 in. high, hollow, bristly, with pointed hairs; leaves oval, rough, and haired like the stems; flowers in a scorpioid cyme, about 1 in. broad, of a fine blue colour in the common variety, sometimes violet-red or white; seeds rather large, gray-brown, oblong, slightly
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curved, streaked, and marked with a projecting midrib or ridge. Their germinating power continues for eight years.

CULTURE AND USE.—This plant can be grown without trouble, by sowing the seed in any corner of the garden at any time from spring to the end of autumn. It will come into flower in a few months. In the London market-gardens it is grown in temporary frames out of doors for supply during late autumn and winter; for spring use, seedlings are raised in heat and transplanted into glass-covered frames, which can be easily removed when the weather is sufficiently mild to admit of the plants being exposed without injury. Throughout the summer and autumn it is as easily grown out of doors as any common annual or weed, yet in remote country districts we have seen people much puzzled to find a sample when they required it! It is so vigorous and hardy that there need be no difficulty in country places in naturalising it on any half-waste place, chalk bank, steep slope, or copse; a handful might be found in such a place in case its culture had been forgotten in the garden. It is one of the pretty true blue flowers, and almost worth growing in certain places for its beauty. It is naturalised in various counties in England, but is not a true native plant, belonging naturally to the shores of the Mediterranean, where so many of our old garden plants are native. It is sold chiefly to hotel-keepers for making claret-cup. The flowers are used for garnishing salads, but the plant is grown for the manufacture of cordials.

BROCCOLI.—See after Cauliflower

BRUSSELS SPROUTS.—See after Cabbage

BUCK’S-HORN or HART’S-HORN PLANTAIN, or STAR OF THE EARTH

Plantago Coronopus, L. Plantagineae.


Native of Europe.—Annual.—Leaves numerous, long, narrow, deeply lobed, bearing a few long hairs and forming a very regular
rosette close to the ground; stems each surmounted by a spike of minute yellow flowers, which are succeeded by small membranous capsules filled with very small, egg-shaped light brown seeds. Their germinating power continues for four years.

**CULTURE.**—The seed is sown, where the crop is to grow, either in spring or autumn; in either case, the ground is cleared off at the end of summer. The plants require no attention, except whatever weeding is needed to keep the ground clean, in addition to plentiful waterings, without which the leaves soon become hard and leathery. As the plant yields abundantly, the sowings are usually made on a limited scale.

**USES.**—The young leaves are used for mixing in salads. Very rarely cultivated in England. It is a widely distributed and common native plant in sandy and stony places, especially near the sea.

**EDIBLE BURDOCK, or GOBO**

*Lappa edulis,* Hort. *Composite.*


Native of Japan.—Biennial.—Radical leaves very large, heart-shaped, somewhat resembling those of the Patience Dock, but not so much elongated; stem red, very branching; flowers violet-red, in heads bearing hooked scales like those of the Common Burdock; roots of the kind known as tap-roots, cylindrical, rather fleshy and tender when they are young; seeds oblong, grayish, with a hard covering, resembling that of the Artichoke. Their germinating power lasts for five years.

It is doubtful whether this plant is specifically distinct from the Common Burdock (*Arctium Lappa*), a very common weed in all parts of Europe. It is certainly larger in all its parts, but this might be the result of cultivation, as it has long been grown in Japan in exactly the same manner as Salsafy and Scorzonera are with us.

**USES.**—The roots, which grow from 1 ft. to 16 in. long, are boiled and served up in various ways. The plant was introduced
into Europe from Japan by the traveller Von Siebold, who says that it succeeded well in his garden at Leyden. In order to have the root tender and agreeable to the taste, it should be used when it is two and a half or three months grown. If it is left until it is fully grown, it branches and becomes hard and almost woody, so that it is not surprising that when sent to table in that state, it has often been pronounced detestably bad, whereas if eaten when young, as it is by the Japanese, although it cannot be termed delicious, it is certainly not a bad vegetable.

Almost all hardy biennial plants with fleshy roots should be experimented on with the view of converting them into kitchen-garden vegetables, and many, perhaps, might be available for this purpose under the condition of their roots being not too fibrous, nor possessing any disagreeable flavour which cooking would not remove. The Wild Carrot and the Wild Beet are not superior in quality to the Burdock, and the second of these plants certainly has a more disagreeable flavour, and yet continued cultivation and persevering selection have converted these two plants into excellent vegetables, producing roots which are large, tender, and well tasted, at least when they are cooked, and quite different from what they are in the wild state. There is no reason, then, why the Burdock should not be a good table vegetable, if the plant appears to be worth the trouble. It is hardy, vigorous, and of rapid growth; its roots are long and naturally fleshy, and consequently can be increased in size and made tender by judicious cultivation. At the present moment, in the condition in which we now have the plant, a bed of it will yield as heavy a crop as a bed of Salsafy, and in half or one-third of the time. As a vegetable it is deserving of serious consideration.

**SALAD BURNET**

*Poterium Sanguisorba, L. Rosaceæ.*


Native of Europe.—Perennial.—Radical leaves, pinnate, with an odd leaflet; leaflets oval-rounded, very much toothed; stems usually
very erect, 16 in. to 2 ft. high, angular, branching, and ending in
spikes of female flowers, the flower at the base being male or
hermaphrodite; seeds oval, four-angled, with more or less pro-
minent ridges on the angles,
and reticulated on the sides
Their germinating power
lasts for three years. The
Salad Burnet is an exceed-
ingly hardy and long-lived
plant, and grows wild through the greater part of
France.

CULTURE.—The seed is
sown in spring or at the
end of summer, usually in
drills 10 to 12 in. apart. It
is often grown as an edging
to beds of other vegetables,
and may also be sown in
beds by itself. The plants
do not require any attention.
The leaves are cut for use with a knife or sickle, and successional
cuttings are made so as to have a constant supply of fresh young
leaves. Leaves are produced in greater abundance and for a longer
time if the plants are not allowed to flower.

USES.—The young, tender leaves are used as salad; they have
a peculiar flavour, resembling that of the Green Cucumber.

CABBAGE

*Brassica oleracea, L.* **Crucifera.**


Cabbage, a plant which is indigenous to Europe and Western
Asia, is one of the vegetables which have been cultivated from the
earliest times. The ancients were well acquainted with it, and
certainly possessed several varieties of the head-forming kinds.
The great antiquity of its culture may be inferred from the
immense numbers of varieties which are now in existence, and
from the very important modifications which have been produced
in the characteristics of the original or parent plant.

The Wild Cabbage, such as it still exists on the coasts of
England and France, is a perennial plant with broad, lobed,
undulated, thick, smooth leaves, covered with a glaucous bloom.
The stem attains a height of from nearly 2½ to over 3 ft., and bears at the top a spike of yellow, or sometimes white, flowers. All the cultivated varieties present the same characters in their inflorescence, but, up to the time of flowering, they exhibit most marked differences from each other and from the original wild plant. In most of the Cabbages, it is chiefly the leaves that are developed by cultivation; these, for the most part, become imbricated or overlap one another closely, so as to form a more or less compact head, the heart or interior of which is composed of the central undeveloped shoot and the younger leaves next it. The shape of the head is spherical, sometimes flattened, sometimes conical. All the varieties which form heads in this way are known by the general name of Cabbages (Choux pommes), while other kinds with large branching leaves, which never form heads, are distinguished by the name of Borecole or Kale (Choux verts).

In some kinds, the flower-stems have been so modified by culture as to become transformed into a thick, fleshy, tender mass, the growth and enlargement of which are produced at the expense of the flowers, which are absorbed and rendered abortive. Such are the Broccolis and Cauliflowers. In other kinds, the leaves retain their ordinary dimensions, while the stem, or the principal root, has been brought by cultivation to assume the shape of a large ball or Turnip, as in the case of the plants known as Kohl-Rabi (Choux-raves) and Turnip-rooted Cabbage or Swedish Turnip (Choux-navets). And, lastly, there are varieties in which cultivation and selection have produced modifications in the ribs of the leaves (as in the Couve Tronchuda), or in the axillary shoots (as in Brussels Sprouts), or in several organs together (as in the Marrow Kales and the Neapolitan Curled Kale). We make no mention here of the Colza, another variety, grown exclusively for the sake of its seeds, from which an oil is obtained, and which, therefore, is to be classed amongst the plants which are grown for economic or manufacturing purposes.

Culture.—The different kinds of Cabbages vary so much in constitution and treatment that it is impossible to lay down precise rules for the cultivation even of each entire class or section. We shall, therefore, when describing each variety, give instructions as to the proper times for sowing and planting it, merely mentioning here a few particulars which are applicable to the cultivation of almost all kinds of Cabbages. Further information as to cultivation will be found under the head of Early Cabbages, and also under the Drumhead varieties.

A cool moist climate seems to be the most suitable of all for the culture of Cabbages, which generally grow to greater perfection in districts near the sea-coast than they do in either low-lying or
elevated inland parts of the country. Heat and drought are injurious to them, while they grow well in moist, foggy weather, even when somewhat cold. They like a clayey, rather stiff soil, rich in manure and decayed organic matter; they do not seem to mind a little sourness in the soil, and grow well in ground that has been newly broken up. In the kitchen-garden, Cabbages should occupy the coolest and moistest positions, except the early spring kinds, which require a warm and sheltered aspect; the ground should be deeply dug and plentifully manured, and always kept clean and free from weeds. The plants must be watered from time to time during the summer, and care be taken to prevent them from being overrun by the caterpillars of the white Cabbage butterfly, which, if not attended to, will damage them severely.

SOWING AND PLANTING.—The most important sowings of Cabbage are those which are required to form a supply through the spring and early summer months. These sowings should consist of several varieties that succeed each other in coming into use. However, very early kinds should not be sown too early in the summer, as there is a possibility of their running to seed in dry weather. From the middle of July to the middle of August is the time usually chosen for sowing; but much will depend upon the season, soil, and locality. The beginning of August will in most places be found to be the best. Plants from seeds sown at that time are generally ready to plant out by the end of September or beginning of October, and they have then ample time to get established before the winter sets in. For autumn supply a sowing should be made from the middle of March to the beginning of April, and planted out in June and July—they then come into use in August and September; and if a second and rather larger sowing be made in the last week in April, and planted out in July and August, they will come into use from October to December; and

a small sowing of a dwarf kind that hearts quickly, sown in May, will form nice little heads for use in January, which, with the Greens produced from the stumps of those that have been cut, will last until the spring Cabbage comes in. Cabbage plants intended to stand the winter are best planted with a crowbar in firm undug ground, such as has recently carried a crop of Onions, or other surface-rooting plants that have not impoverished the ground too much. The ground must, of course, have been well manured for the crop previous to Cabbage, or good results cannot be expected. A firm, stiff, rich soil is best for Cabbages; for if grown in loose, light soil, they do not "heart" so well, neither is the quality so good. Cabbage seed should at all times be sown on light rich land, and the plants should not be allowed to overcrowd each other before they are put out, but as soon as large enough to handle be pricked out 6 or 8 in. apart, or be thinned out, and the remainder transferred to their final positions as soon as they are sufficiently large. The distance to plant them apart depends upon the variety grown; but 2 ft. between the rows, and from 15 to 18 in. from

* See also p. 759.
plant to plant in the rows, will generally be found sufficient space if the ground be in good heart.

Cutting.*—A little more attention might be paid to this than is generally the case; for although Cauliflowers and Brussels Sprouts cannot always be had just when wanted, tender Cabbage may be had with very little management. Supposing we plant Cabbages in autumn, they will come into use tender towards the beginning of summer; but if the household be generally not able to use them as fast as they grow, the heads are allowed to swell until they burst, or go to seed or rot, and eventually become quite useless for cooking purposes. In gardens from which large houses have to be supplied, Cabbages are generally wanted as soon as they are ready, and a number of heads are cut daily; but the experienced gardener does not cut the head off at the surface of the soil, but just at the neck, leaving a few of the bottom leaves. Consequently, before the quarter has been cut over the first-cut plants have made another break, and become furnished with a whole cluster of young succulent heads, which heart immediately, and are fit to cut before the first heads are quite finished. The plants will even break and heart a third time, and in this way a plot of Cabbage may be made to afford a supply nearly all the year round. The vigour, free growth, and tenderness of the heads will be greatly promoted by frequent stirrings of the soil between the rows, and mulching with any loose material, such as short Grass or leaves, at command. Cut your Cabbages, therefore, even if you have to give them away to your neighbours, before the heads get over-ripe and useless, and you will have a continuance of young and tender heads, which are greatly to be preferred to those which are large, white, and hard.

The Cabbage is one of the most important of green vegetables for market-garden culture, and although not considered by many so profitable on account of its gross-feeding character, it comes into use when there is little else to send to market, and often realises high prices. In spring large areas of Cabbages may be seen about Wandsworth, Fulham, Gunnersbury, and, in fact, all round the suburbs of London. The Cabbages sent to market in April, May, and June are the produce of seed sown in July, and the plants are put out in September or early in October. Succession crops are sown in spring as soon as the weather is favourable. If sown too soon, as is sometimes done, the young leaves get injured by frosts, especially if these occur immediately after a period of mild weather.

The Enfield Market Cabbage is that which is principally used in the market gardens about London. It is one of the oldest in cultivation, and one of the best, and for this reason the growers generally save their own seed, and take great care that their plants of it are not crossed with other sorts. The newer variety, Early Paris Market Cabbage, could easily take the place of the Enfield Market Cabbage, and with advantage for all purposes. The sowing for the principle crop of these Cabbages is generally made about the end of July and up to the middle of August, on poor ground if possible, as in that case the plants come up stocky and hardy, and stand the winter well; whereas, if made on rich ground, a soft rank growth is produced, which is much more easily injured. This sowing

* See also p. 760.
is, as a rule, made in 4 ft. wide beds—a width found to be convenient for weeding and hoeing amongst the plants. When sufficiently strong to be transplanted, they are planted on ground cleared of Onions or Potatoes, and a second batch is planted on land cleared of Celery, French Beans, or Vegetable Marrows. Every empty space, under fruit trees or elsewhere, is planted with Cabbages. In planting, the ground is lined off into rows, 30 in. apart, and in these the plants are put 15 in. asunder. Between every two rows first planted another is then put in with less care, thus making the plants stand 15 in. apart each way. Early in spring the alternate lines of plants, and also every other plant in the lines or rows left, are lifted and sold as Coleworts. This allows the permanent crop plenty of room to come to maturity. With a view to subsequent plantations, which are made all through the winter wherever ground is vacant, the young plants in seed-beds are removed and pricked out into others a little farther apart, in order to keep them in good condition for planting out as long as possible. In this way, indeed, many of the plants are kept till spring, when they are transplanted to succeed those placed out in autumn. They will thus come in before the produce of the spring sowings, made late in February or early in March, to furnish Cabbages from June to August. The plants from this sowing are put out in rows 2 or 2½ ft. apart, and in the intervening spaces are put lines of Lettuces, a plant of which is also set between every Cabbage in the row. In May men may be often noticed busily engaged in tying up early Cabbages in the market gardens at Fulham and elsewhere. The operation is simple—just, in fact, that adopted in the case of Cos Lettuces. The succulent outer leaves are folded carefully around the heart or centre of the plant, and the whole is bound firmly with a withy or a piece of bast. There are several good reasons for this practice. The centre being protected from the weather, the Cabbages heart sooner than they otherwise would do, and they are more easily handled in gathering and packing for market. Early Cabbages, the leaves of which are so brittle, would lose half their value if some precaution of this kind were not taken to keep them from being broken by loading and unloading them.

Red Cabbages are sown in March, but the produce of the July sowing is generally considered better than that of spring. The plants are put out in rows from 3½ to 4 ft. apart, and the plants stand about 3 ft. asunder in the rows. As this crop stands until the heads are large and solid, a piece of rich land is devoted to it, and intercropped with Potatoes, ordinary Cabbages, Lettuces, French Beans, or other vegetables of that kind.

The different sections of Cabbages differ perceptibly from one another in the size of the seed, the Borecoles and Kohl-Rabi producing the largest seed; next to these, the ordinary Round-headed varieties and the Turnip-rooted Cabbage or Swedish Turnip; and, lastly, the Cauliflowers and Broccolis, which have the smallest seed of all.

USES.—The leaves of the common headed varieties and of the
Borecoles are cooked in various ways, or used in salads, as in America, or fermented so as to form what is termed Sauer-kraut. The heads of the Cauliflowers and Broccolis, the stems of the Kohl-Rabi, the roots of the Turnip-rooted and the Swedish Turnip, and the small heads which grow along the stems of the Brussels Sprouts are most usually eaten boiled, although they are also well treated in other ways by foreign cooks. The very commonness and cheapness of Cabbages leads to the ignoring of their existence on the part of many superior persons. It is a great mistake, as they are by far the most precious vegetables we have, eaten young, in the right season, and well cooked. Though forms of the same wild plant, the variety of flavours is remarkable. It is not more remarkable, however, than the way the common cook usually spoils this vegetable. In the hotels and restaurants it is usually an unappetising mess, heavily charged with soda. The best cookery of Cabbages may frequently be observed among cottagers and servants brought up in country cottages. One result of the neglect of Cabbage on the part of the affluent is that they miss some of the most delicate and wholesome vegetables we have, in various little-known forms of this family, which will be described farther on in this book. This vegetable in its wondrous variety is better fitted for our country than for any other, and comes to greatest perfection in it. To despise it and neglect it is a mistake and a loss. Those possessing good gardens would do well to grow and use the more delicately flavoured forms and those best suited to their localities, and thus lead the poor to a fuller knowledge of things so easy for all to grow, and which yield so abundantly. Under the best conditions, not a few of them are as good as any vegetable that is grown, and, if rare, they would be sought as delicacies.

This question of cooking is undoubtedly of paramount importance, and must necessarily have an immense influence upon the use of many otherwise excellent vegetables, of which Cabbage is a typical example. It may, therefore, not be out of place here to give a few indications as to the way Cabbage is usually cooked and used in France. 1st. As a soup (soupe aux choux).—The head of a Cabbage or of a Savoy is freed of its outer leaves, cut in two or four, washed and placed in cold salted water on the fire, adding a few Carrots, Turnips, Potatoes, and a fair-sized piece of bacon or ham. Let boil slowly at least three hours. 2nd. As a vegetable.—The head is cut into small pieces, washed, put in boiling salted water on the fire, and cooked for half an hour, then placed in a strainer. Cook sausages or lean bacon cut in small pieces, and when done add to the Cabbage, and let all slowly simmer together until the time for serving. 3rd. As a garnishing.—Take only the white heart of some Cabbages, cook for half an hour as above, strain, mince and place in a stewpan with butter and a little broth, and let simmer slowly until time for serving. *

* Cabbages Clubbing, see p. 776.