SB
356
W8

UC-NRLF

QB 71 412

PROFITABLE FRUIT-GROWING

The Worshipful Company of Fruiterers'

PRIZE ESSAY

BY

JOHN WRIGHT, F.R.H.S.

THIRD EDITION.

LONDON:

J. H. MAY, 171, FLEET STREET, E.C.

YC 61758

All Rights Reserved.

LIBRARY
OF THE
UNIVERSITY OF CALIFORNIA.

GIFT OF

J. Burth Davy.

Accession

96963

Class

514

J. Burr Day.

PROFITABLE FRUIT-GROWING.

PROFITABLE FRUIT-GROWING

FOR
COTTAGERS & SMALL HOLDERS OF LAND.

BY
JOHN WRIGHT, F.R.H.S.

Assistant Editor of the *Journal of Horticulture*; Editor of *Garden Work*; Author
of *Mushrooms for the Million*; and *Allotments—their Advantages and
Utilisation*; Member of the Fruit Committee of the Royal
Horticultural Society.

WRITTEN FOR
The Worshipful Company of Fruiterers.

LONDON:
E. H. MAY, 171, FLEET STREET, E.C.
1891.

Third Edition.]

[*All Rights Reserved.*

LIBRARY

ST. JOHN'S COLLEGE

SB 356
W8

OF THE UNIVERSITY OF TORONTO

THE UNIVERSITY OF TORONTO

LIBRARY

OF THE UNIVERSITY OF TORONTO

ST. JOHN'S COLLEGE

UNIVERSITY OF TORONTO

DEDICATED

BY PERMISSION

TO

The Right Honourable

SIR JAMES WHITEHEAD, BART.

LORD MAYOR OF LONDON

BY THE

WORSHIPFUL COMPANY OF FRUITERERS

1889

PREFACE.

IN the preparation of this Essay I desire to acknowledge my indebtedness to Mr. E. P. Roe, an American author, for the small figures (p. 26) on planting Strawberries, which were reduced from his excellent work entitled *Success with Small Fruits*, London publishers Messrs. Seeley, Jackson, and Halliday, Fleet Street. I have to thank Mr. A. Pettigrew, Cardiff Castle Gardens, for photographs of Apple and Pear trees, represented on pp. 81, 93. It is right to add that the illustrations on grafting, pp. 109, 110, were taken from the *Journal of Horticulture*. The remaining thirty-three engravings are original. Those representing Currant and Gooseberry branches, both in a resting and bearing state, were sketched from bushes grown by Mr. E. Molyneux at Swanmore Park. I have grown many similar to them, also every kind of plant, bush, and tree referred to in the pages.

Varieties of fruits, notably of the most important—Apples—have been chosen for their usefulness, earliness in bearing, with good appearance and quality of the fruit, rather than for the predominance of some one particular merit esteemed by connoisseurs; and, as far as possible, those sorts have been included which have proved the most productive in generally unfruitful years. Slow, shy, and uncertain bearers, no matter how handsome and excellent the fruit, are not the most useful for planting by cottagers and small holders in gardens or fields.

I shall not consider this Essay satisfactory if it does not prove serviceable to many (at present inexperienced) cultivators of hardy fruit.

J. WRIGHT.

London, December 1st, 1889.

AUTHOR'S NOTE TO THE SECOND EDITION.

The author, while gratified by the generous reception that has been accorded to the first edition of this work, regrets that the sudden demand for a re-issue, which has to be prepared with the utmost possible dispatch, affords no opportunity for revision. The literary imperfections must therefore perforce remain, but they do not affect the practical lessons embodied in its pages.

London, October 1st, 1890.

AUTHOR'S NOTE TO THE THIRD EDITION.

As in the case of the second edition of this Essay so in the third. It has to be produced so quickly to meet pressing demands that the matter must remain as before, and it is hoped that its usefulness may equal its acceptability.

London, November 1st, 1891.

CONDITIONS FOR ESSAY
ON
PROFITABLE FRUIT GROWING
FOR
COTTAGERS & OTHERS WITH SMALL HOLDINGS.

1. A prize of twenty-five guineas, together with a Gold Medal, will be offered by the Worshipful Company of Fruiterers for the best Essay on the above subject, and which shall not exceed 20,000 words.

2. The object is to encourage fruit culture by cottagers and others with small holdings, as a substitute for, or adjunct to, the ordinary methods of cropping their gardens and allotments with roots or other vegetables.

3. The Essay must convey plain details on the selection of the most suitable varieties of fruits, and the planting, pruning, and other essential operations in the management of fruit trees and fruit bearing bushes, also on gathering, storing, and disposing of the crops.

4. The conditions are: (a) No person shall be eligible to compete who has not had at the least ten years' actual experience in the cultivation of fruit, and a declaration to that effect will be required from each competitor, setting forth in what part of the country and in what locality this experience has been obtained; (b) The *nom de plume* or motto of each competitor is to be plainly written on the top of his MS., and his name and address with motto are to be sent under seal in a separate envelope. The envelope containing the Essay is to be marked on the top left-hand corner with the words "Fruit Essay." Any departure from either of these conditions will disqualify for competition.

5. The envelopes containing the names of the competitors will not be opened until after the prize has been awarded, and Essays (except the successful one), will be returned to those writers of them who send stamped directed envelopes for that purpose within one month from the date on which the result appears in the gardening papers.

6. The Essays are to be addressed to the Clerk of the Worshipful Company of Fruiterers (O. C. T. Eagleton, Esq.), 40, Chancery Lane, W.C., not later than July 31st, 1889.

Sixty persons applied for and obtained the printed conditions, but only the number stated below sent in essays. The gentlemen appointed to examine them were Messrs. T. Francis Rivers, fruit nurseryman, Sawbridgeworth; A. F. Barron, Superintendent, Royal Horticultural Society's Gardens, Chiswick; and Shirley Hibberd, editor of the *Gardeners' Magazine*.

THE ADJUDICATORS' AWARD.

"Having carefully examined the fourteen essays submitted, we have unanimously selected that signed 'BRITISH WORKMAN' for the award of the prize. This essay combines practical knowledge with literary ability, and complies with the conditions of the competition. A considerable proportion of the fourteen essays deserve commendation, and it is a matter of regret to us that we have only one prize at our command, where perhaps three or four might be worthily awarded. We would mention those signed 'Pomona,' 'Progressior,' 'Jabez Chawley,' and 'Hope On,' as particularly meritorious, although not meeting with our entire approval in connection with the present reference.

"T. FRANCIS RIVERS,

"A. F. BARRON,

"SHIRLEY HIBBERD."

The prizes were presented to the successful competitor at the Mansion House, by the Lord Mayor, on September 25th, 1889, the Medal bearing the following inscription:—"Presented by ROBERT HOGG, LL.D., F.L.S., to Mr. JOHN WRIGHT, the successful competitor for the prize of 25 Guineas, offered by H. R. WILLIAMS, Esq., Past-Master, through the Worshipful Company of Fruiterers, for an Essay on the Profitable Culture of Fruit by Cottagers, 1889."

CONTENTS.

	PAGE
INTRODUCTION	1
METHODS OF PROCEDURE	4
EXAMPLES TO BE FOLLOWED	5
PADDOCK AND HEDGEROW TREES	15
FRUIT GARDENS	17
STRAWBERRIES	22
RASPBERRIES	33
GOOSEBERRIES	43
CURRENTS	56
APPLES	67
PEARS	91
PLUMS	97
CHERRIES	103
OTHER KINDS OF FRUIT	105
IMPORTANT ITEMS	107
CONCLUSION	116
INDEX	118

LIST OF ILLUSTRATIONS.

	PAGE
1. PLAN OF GARDEN	7
2. BUSH APPLE TREE	18
3. FRUIT GARDEN	19
4. RAISING STRAWBERRIES	24
5. PLANTING STRAWBERRIES	26
6. STRAWBERRY EDGING	27
7. PUNNET OF STRAWBERRIES	30
8. PACKING PUNNETS OF STRAWBERRIES	31
9. CHIP BASKET OF STRAWBERRIES	31
10. PACKING CHIP BASKETS OF STRAWBERRIES	32
11. RASPBERRY CANES	37
12. RASPBERRY IN BEARING	41
13. GOOSEBERRY CUTTING	44
14. GOOSEBERRY A YEAR FROM THE CUTTING	45
15. GOOSEBERRY BRANCH, ONE AND TWO-YEAR-OLD WOOD	48
16. HALF-PRUNED GOOSEBERRY	50
17. BEARING-BRANCH AND SUMMER PRUNING OF GOOSEBERRY	51
18. A GOOSEBERRY FENCE	53
19. A RED CURRANT BUSH	57
20. RED CURRANT, FRUITING BRANCH, AND SUMMER PRUNING	57
21. GROWTH OF RED CURRANT WITH SPURS AND BUDS	58
22. STANDARD CURRANT	60
23. BLACK CURRANT BUSH	64
24. BRANCH OF BLACK CURRANT, SHOWING OLD AND YOUNG WOOD	65

	PAGE
25. PLANTING APPLES	72
26. BAD PRACTICE IN PLANTING AND PRUNING	76
27. GOOD PRACTICE IN PLANTING AND PRUNING	77
28. APPLE BRANCH, WITH FRUIT AND WOOD BUDS	80
29. A GOOD APPLE TREE	81
30. A GOOD PEAR TREE	93
31. CORDON TREES	96
32. PLUM TREE PRUNED AND BEARING	100
33. PLUM SPUR	101
34. PLUM SHOOT	102
35. A FRUIT ARCH	106
36. SPLICE GRAFTING	109
37. CROWN GRAFTING	110
38. APPLES FOR MARKET, SORTED AND UNSORTED	115

INTRODUCTION.

AT no former period was such a widespread desire manifested as exists now for improving the condition of the industrial population, and for developing the resources of the soil in the production of an adequate supply of home-grown fruit.

The necessity for the accomplishment of these objects is apparent; for on the one hand we have men in abundance who, with the aid of sound guidance, could engage usefully in the work, and on the other the extraordinary fact of not cities and towns only, but even country villages, with fruit-growing land all around them, largely supplied with Apples grown on the western shores of the Atlantic. It is true we have orchards, but of what kind? In the majority of instances they are composed of trees planted generations, not to say centuries, ago, which can only bear fruit so small, juiceless, and uninviting, that consumers naturally purchase the larger and better-looking imported

samples which are so plentiful and so moderate in price.

If home-cultivators have not had a larger share of profit in producing the fruit-supply in the markets, where rests the fault? A number of answers, in the form of allegations, are ready to hand, and have been so often repeated as to have become common property. Here they are: Obstructive land laws; ecclesiastical charges; oppressive railway rates; high market tolls; salesmen's exactions; shop-keepers' extortions; free trade, and bad climate. Repeatedly have these reasons been given in all sincerity, as the causes of the great importations of hardy fruit.

We can admit the full force of all these impediments, but it will not be difficult to show that something remains more accountable than them all for the above-mentioned anomaly. What is the great omission?

Mark well the answer. There is not one obstacle, but three: namely, a lack of knowledge on the subject of fruit, of enterprise in producing it in its best form, and of art in placing it before the public in the most attractive manner for arresting attention and commanding purchasers.

Granting to Transatlantic cultivators all their natural advantages, which are possibly over-

estimated, still let us not forget our own apathy, our loose methods, and our unsystematic, unbusinesslike procedure — not forget, but abandon them; proceed on sounder principles and more intelligent lines, then the time will come when we shall to a far greater extent than now, and far more creditably, share in providing our population with the most wholesome of food, which will be increasingly required — FRUIT—the outcome of home effort and well-applied labour in British gardens and orchards.

Let trees and bushes be planted, of varieties of proved merit, in soils and situations in which they will thrive, and they will be growing into fruitfulness contemporaneously with the removal of legal and commercial impediments; thus those who take action the soonest will be the first to profit by whatever changes may be made. Even under existing conditions, fruit culture, well conducted, has been of real service to many, and while land under ordinary cropping has depreciated in value during late years, that on which young orchards and thrifty trees are established has increased in price. What better testimony can be needed of the improving character of fruit culture? And what more conclusive evidence is required for its extension than the predominance of cankered trees and

worn-out orchards nearly all over the country, with fruitless homesteads and treeless gardens on every hand? Let us see what can be done for those who are willing to help themselves in increasing the supply of useful, wholesome, hardy fruit.

METHODS OF PROCEDURE AND EXAMPLES TO BE FOLLOWED.

First, the principle has to be determined whether fruit shall be grown as a substitute for, or as an adjunct to, other crops. With very few exceptions the latter is strongly recommended. Unless a small holder of land is sufficiently near a town to drive in on market-days, with poultry, eggs, and butter, or any other products of his little farm or garden, he may not find the cultivation of fruit so profitable as he anticipates. The grower of a few hundredweights is so handicapped in respect to freightage that he cannot compete with the large fruit farmers in supplying distant markets; and whether railway companies reduce their rates for small consignments or not, with the view to developing trade, it is probable that the advantage will still rest with large consigners.

In recognised fruit-growing districts small plots may be devoted wholly to fruit culture, as regular channels exist for the disposal of the produce; but outside those districts the safest method will be for cottagers, allotment holders, and small farmers to grow fruit as an adjunct to, instead of a substitute for, other crops; they ought to afford their families an abundant supply, also endeavour to meet the demands of adjacent towns. As showing the practical working of the system advocated, and the advantages of fruit culture, a few examples may be adduced, as no teaching is so cogent as that founded on accomplished facts.

A Farmer's Example.—Thirty years ago a friend of the writer entered on a small farm and found a dozen Apple trees. The fruit being profitable, he planted about an acre of the adjoining land, near his homestead, with the best Apples and Plums, also a few Pears and the usual small fruits. His wife looked after the minor products of the farm, and all not required at home were regularly taken to market. Thrift, industry, and good management, enabled more and more land to be taken, until the “small holding” has become one of upwards of a thousand acres. With every increase of land the occupant planted some fresh trees, and the dairy,

poultry, and garden produce had the same attention as heretofore. Now mark the result. From the beginning until now, what are termed the "minor products" of the land and homestead have continued to defray domestic expenses, and these for the last ten years cannot have been less than £200 per annum. To this gratifying result, garden and orchard produce has contributed materially, indeed, without it the noteworthy achievement could not be recorded. This once small holder is now a County Councillor, and his last planted orchard of two or three acres is adding to his income from fruit.

A Widow's Example.—An example on a small scale may be cited next, which shows with great force the advantages of fruit culture in a cottage garden, thirty yards long by twenty yards wide, or practically an eighth of an acre in extent. This garden belonged to a working builder, who was an industrious, prudent, saving man. On his death his widow was left with an annuity of £15 a year, but with the proceeds of this small garden she was able to continue in her dwelling, paying the rent of £5 a year; she lived in homely comfort for twenty years, and, in fact, saved a few pounds, which could not have been done if £10 had not been made from the garden yearly.

A plan showing the arrangement and planting of this useful garden may be instructive. It will be seen on reference to fig. 1 (below), that the

Fig. 1.—PLAN OF FRUIT AND VEGETABLE GARDEN.

(Scale, 1 inch = 24 feet.)

- A Foot-paths. B B Beehives. ⊙ Apple Trees (6). ⊕ Pear Trees (2).
 * Plum Trees (6). --- Raspberry Canes.
 o Currant and Gooseberry Bushes. . . . Strawberries.

garden is divided and surrounded by a path, which down the centre is three feet wide for the con-

venience of traversing with a small wheel-barrow ; the end paths are two feet wide, and those along the sides eighteen inches, or just sufficient for the purpose of gathering the Raspberries on the west side, and Gooseberries on the east. The wider part of the garden, 36 feet, was set apart for vegetables, with an Apple tree in the centre, and bush fruits all round ; the narrower part, 21 feet, being devoted wholly to fruit culture.

The references show the number and kinds of trees grown, namely, six Apples and two Pears, as orchard standards ; six Plums, two continuous lines of Raspberries, planted as will be described, and a hundred Gooseberry and Currant bushes. A few Strawberries were grown across the north end of the garden near the bee-hives and flowers, the enclosure being entered there from the cottage. Originally Strawberries were planted next the paths, and afforded good crops when the fruit bushes were small. Owing to the necessarily reduced scale, the planting appears crowded, but it is not unduly so, and the arrangement answered well, as it will do again if carried out with good varieties in fertile soil. The Apple and Pear trees are twenty-four feet apart in line, fifteen feet in the angles, the Plums seven to eight feet ; small bushes four feet asunder, and half that from the path-

sides—all workable distances in single lines and narrow strips of ground.

What may be regarded as a fair average return from the above number of trees and bushes when in a full bearing state? Taking one year with another, it will be conceded the following is a moderate computation for trees and bushes in full bearing :

					£	s.	d.
6 Apple and 2 Pear trees, at 7s. each	...	...	...	...	2	16	0
6 Plums, at 3s. each	...	...	...	...	0	18	0
100 Gooseberry and Currant bushes at 1s. each					5	0	0
160 feet line of Raspberries	...	...	...	...	1	6	0
					<hr/>		
					£10	0	0
					<hr/>		

During some years the crop of one or other of the kinds failed, a natural incident of fruit culture, but it is quite certain the amount named was realised annually during a period of twenty years. That is a lesson from life of the usefulness of fruit well managed in a cottager's garden.

A Labourer's Example.—Although the above demonstrates the value of fruit in the gardens of cottagers, another case may be adduced in confirmation. A labouring man who worked for several years in a garden with the writer had an enclosure attached to his cottage. His wages averaged from twelve to fifteen shillings per week. He was an

active worker, and strove hard to save a little money by rearing pigs, keeping a cow, and making the most of his garden. This was rather more than an eighth of an acre in extent. It contained eight or nine Apple trees, some of which he grafted with improved varieties, and grew under and between them as many Gooseberries, Currants, and Raspberries as he could, also marginal rows of Strawberries. Two-thirds of the ground was thus occupied, and the remainder devoted to early potatoes and other vegetables; a field allotment plot of a rood affording him a supply of late potatoes and other roots for winter use. He died at the age of fifty, but left his widow in a position to open a small shop, and by carrying on the work he initiated in the garden, and other ways mentioned, she not only brought up her family, but orphan grandchildren also, without calling on the parish for a penny. This is an example of what can be accomplished by persevering effort with the provision wisely made in the form of fruit-trees and bushes.

A Tradesman's Example.—Fruit-trees enhance the value of property, and homesteads on which they are established let better in consequence. An instance can be given. A tradesman purchased some village property and erected small cottages.

In each plot of ground attached he planted 10s. worth of fruit-trees and bushes, with the result of readily letting the dwellings at a rental of £4 10s., though it was originally intended to charge only four guineas for them. As the tenants left, and the trees came into bearing, the rents increased to £5. It is not suggested that everyone who planted similarly everywhere would reap the same advantage, but the fact remains that the rent of land occupied with thrifty fruit-trees has been rising during the past few years, while much land that is fruitless has been falling in value.

An Allotment-Holder's Example.—During the preparation of this essay the following letter was received from Mr. William Jacob of Petworth :

“Nothing is more refreshing to me than gardening and fruit-growing, in which I have been interested from quite a boy, and have now had sixty years' experience. I never yet met with a man whose theory upon any subject was equal to practical experience. The field of allotments, of which my garden forms a part, has about fifteen tenants. It was formerly worked by the landlord as a cornfield. He could not make it pay, so made it into gardens, about forty rods each, and I should think the value of the produce from the land is upwards of £400 a year from fruit and vegetables ; and the owner realises an annual rental of nearly £35 per annum. I give £5 10s. for only seventy-five rods, but it is in the best position and worth more than the rest.”

Here was once a corn-field that did not pay, now

yielding a rental of between £8 and £9 an acre, and one of the tenants paying at the rate of more than £11 an acre. Yet he has not a word of complaint, but on the contrary is well satisfied with the profit he derives from his culture. The essayist has inspected the plot, which is almost entirely occupied with fruit-trees, enclosed with a hedge of Raspberries, which this year gave a yield of upwards of two quarts of fruit to the lineal yard. This fruit-plot is remarkable for its productiveness—the result of high cultivation and well-chosen varieties.

A Landlord's Example.—Passing from cottagers to small farmers, landlords may find it to their advantage to plant a few fruit-trees for striving tenants, also for securing good tenants as holdings become vacant. Again an example will be illustrative. A gentleman of property, who understands fruit culture, has planted an acre of land next the homestead of one of his tenants, with Apples, Plums, and bush fruit, the extent of the holding being about thirty acres. The trees are all standards, the Apples eight yards apart, in rows about ten yards asunder, the Plums closer in the rows. In the lines with the trees, not in the spaces between the rows, Currants and Gooseberries are planted five feet asunder. The space between

the rows is wide, for the purpose of being worked with the plough, and cropped with roots or whatever the farmer prefers, or he can grow Strawberries or more bush fruits if he chooses to raise or procure them. He can, in a word, either make the whole into a fruit garden and keep it as such, or grow vegetables for market, or roots for stock, so long as there is space between the trees; then as these spread the land can be sown down for forming an orchard on grass. Whatever method may be adopted will be of advantage to the tenant, and the trees, being of good varieties, will enhance the value of the land. The owner having purchased the trees, planted and staked them well, will also prune them for a year or two, till good heads are formed; the tenant can then easily manage them; and he can have no pretence to a claim for compensation when he leaves, no matter how valuable the trees may be. The plan is an excellent one, worthy of more general adoption. It is perfectly just as between landlord and tenant, and may be of service to both.

A Society's Example.—Provincial Horticultural Societies may usefully aid in the work which it is the object of the writer to promote. He had long been aware of the admirable practice of the Grantham Horticultural Society in distributing fruit

trees and bushes among the cottagers and artizans of the district; and the following record of the work, obligingly supplied by the Honorary Secretary, Mr. William Olive Yeatman, proves how satisfactory it has been. "We commenced," writes Mr. Yeatman, "giving fruit trees in 1874, and vegetable seeds in 1878, and continued these gifts until 1885, when we had pretty well stocked the villages around Grantham. We distributed 1,672 fruit trees—the best sorts of Apples, Plums, Pears, and Apricots; 2,006 fruit bushes; 458 collections of vegetable seeds and potatoes. The result has been that not only have those persons who received these gifts made their gardens profitable to themselves but that we now have a first-rate fruit and vegetable market at Grantham. Another result has been that numbers of persons who had not been recipients, seeing their neighbours' gardens so much improved, have followed their example. We sent forms to the clergyman, squire, or a farmer in each village, to be filled in with the names and addresses of persons most worthy of encouragement, and the number and kinds of trees most suitable for their gardens."

Honourable mention is due to the Society in question for having initiated the good work and carried it out so well. Cannot other societies follow the excellent example?

Paddock and Hedgerow Trees.

Isolated trees are often wanted for purposes of shade in paddocks, and instead of these being hawthorns, elms, sycamores, and others, why cannot they be Plums and Damsons, Apples, and Pears? Where wild trees grow well, fruit-trees will thrive if carefully planted and protected from stock. They will also grow in hedgerows where the land is of good staple, the same as Damsons are grown in Kent, and Apples in Nottinghamshire and Worcestershire. Many a holder of from five to twenty acres of land might grow orchard fruit enough for his family in that way, and have some to spare, without occupying the land he has under ordinary cropping.

When trees are isolated, or in hedgerows, they must be strong in constitution, as they have to resist more wind than in orchards. The Prune Damson, Czar Plum, Hessle Pear, and Bramley's Seedling Apple, are good. The full value of this Apple for standards (on the true Crab stock) and exposed positions is not generally known. A farmer's orchard of one and a half acres, last year, a notoriously bad Apple year, yielded fruit on fifteen-year-old trees that sold for £70, the purchaser gathering the crop, and the farmer has scores of trees coming into bearing round his fields.

Large stations are important for planting in the positions indicated. The soil should be broken up to a depth of two feet, and a width of six feet or more, removing a few barrowfuls of the subsoil, if inferior, and adding better, taken from the surface elsewhere, preferably of a turfy nature. Grass should not grow within two feet of the stems for a few years, nor weeds, but a thick covering of manure spread on in the autumn, and there left to decay, will do good. The trees must be staked, taking particular care that the ligatures are kept from the bark with a few soft willow twigs between the stem and the stake. These prevent abrasion, while admitting air, thus the stem is not made tender, and liable to be affected by canker.

It is also absolutely necessary to prevent the stems being nibbled by rabbits or sheep. A few stakes driven down, straight straw bound round them, and this smeared with tar occasionally, will render them safe. So will furze or briars if tied round them, or dry plasterer's laths. Trees in open paddocks should have stems not less than six feet high, and fenced against cattle; three posts of larch or oak firmly planted triangularly, and their tops slanting outwards, with a few battens nailed across from post to post, will answer the purpose. If the posts are well charred before insertion,

especially those parts six inches below, and the same distance above ground, they will last as long as protection is needed; they invariably decay near the surface of the ground, under the combined action of air and moisture

FRUIT GARDENS.

Some small holders of land may desire, not an orchard of standard trees merely, but a regular Apple and Plum garden, the majority of the Apples being grown as bushes on a dwarfing stock (hereafter referred to) for early bearing; with longer lived standards at suitable intervals for coming into profit when the more precocious dwarfs fail, and remaining productive for perhaps two or three generations. With well chosen varieties, planted in good soil, a quicker return on outlay is attainable by this method than by any other, but the trees must have attention. Obviously a far greater number is required for planting a given extent of ground than for ordinary orchards; but these dwarf trees, purchased as "maidens", or one year's growth after grafting or budding, are the cheapest of all, and nurserymen sell them at reduced rates by the hundred; but

“two year olds” are worth their extra cost and are excellent trees to plant. Older trees can be had, set with fruit buds, at enhanced prices, but usually the younger trees overtake them in a very few years. When trees bear

Fig. 2.—BUSH APPLE TREE. (Page 19.)

prodigiously in a year or two after planting, and astonish inexperienced observers, who forthwith go into ecstasies on the profits of fruit growing, it may be taken for granted that they will not “wear”; they are enfeebled in infancy,

and their true character may be fairly expressed in the familiar sentence as applied to abused humanity —“ A short life, but a weak merry one.” Let these precocious prodigies on French stocks be avoided

Fig. 3.—FRUIT GARDEN. (Page 20.)

(Scale, 1 inch = 24 feet.)

○ Standard Apples. o Dwarf Apples. x Plums.

by all who desire to see their trees increase in profit with increasing years.

An illustration of a good bush Apple tree on the English broad-leaved paradise stock, is given, Fig.

C 2

2, page 18, and an example of pruning, and the bearing resulting therefrom, shown; details will be given in subsequent pages.

With the object of aiding persons who desire to have a genuine fruit-garden of the nature suggested, a plan (fig. 3, page 19), is prepared, which shows the method of arrangement at a glance. It is drawn to the same scale as the preceding plan (page 7), in which small fruits have prominence; but in this eighth of an acre they are not shown. It is a section out of a field designed as capable of extension to any desired extent in any convenient direction.

The large Orchard Standards are 30 feet, the Plums 15 feet, and the Dwarf or bush Apples $7\frac{1}{2}$ feet apart: Strawberries or other low growing crops can be grown between the rows for a time. If it is desired, three Gooseberry or Currant bushes can be grown in the spaces in line with the trees, instead of one dwarf Apple, as shewn in the plan. Such a garden well managed will yield fruit quickly, and continue profitable for half a century. Varieties to plant will be found in the chapters devoted to the different kinds of fruit.

Small Fruits.—As shewing the great usefulness of small fruit a miner's experience is adduced—one of Lord Ravensworth's allotment-holders at Wickham, as recorded in the "Financial

Reformer" for June. The statement appended shews the result of cultivating about 420 square yards (an eleventh part of an acre) a few miles from Newcastle.

<i>Dr.</i>					£	s.	d.
Rent of Garden	...	...	...	...	0	6	0
Manure	...	...	...	...	0	7	6
Seeds	...	...	...	...	0	3	6
Interest on £4 capital	...	...	...	...	0	4	0
Balance, being profit	...	...	...	...	5	7	8
					<hr/>		
					£6	8	8
					<hr/>		

SALES.

<i>Cr.</i>					£	s.	d.
Raspberries, 20 qts. @ 6d.	...	...	...	...	0	10	0
Strawberries, 100 „ „ 5d.	...	...	...	...	2	1	8
Black Currants, 20 „ „ 6d.	...	...	...	...	0	10	0
Gooseberries, 6 st. „ 3s.	...	...	...	...	0	18	0

HOME CONSUMPTION.

Gooseberries, 24 qts. @ 3d.	...	...	...	...	0	6	0
Raspberries, 6 „ „ 6d.	...	...	...	...	0	3	0
Strawberries, 12 „ „ 5d.	...	...	...	...	0	5	0
Black Currants, 6 „ „ 6d.	...	...	...	...	0	3	0
Leeks, Savoy, Cabbages, Lettuces, Peas,							
Beans, &c.	...	...	...	...	1	12	0
					<hr/>		
					£6	8	8
					<hr/>		

Details of Cultivation.—These are absolutely necessary, and the smaller kinds of fruit shall first have attention, because they are quickest in yielding a return to the planter, are well

adapted for small gardens, and because the information will be preparatory to that relating to the larger kinds. While admitting the value of large fruit, the condemnation of small, by writers in magazines and newspapers, is much to be regretted, and for the reasons stated they are accorded priority here

STRAWBERRIES.

The Strawberry may not generally be considered a poor man's fruit, but in one important respect it is deserving of being so regarded, for if equal sized plots were planted at the same time with different kinds of fruit, all grown equally well, and the crops sold, not one could approach the Strawberry in profit during the first five years. It is the dwarfest in growth, and the quickest in productiveness.

It is within the knowledge of cultivators and residents in localities where Strawberry-growing has been introduced, and well conducted, that the value of the land has been raised 100 per cent., or from a rental of 30s. to £3 per acre, and in some instances more.

Near Botley, in Hampshire, about fifteen hundred

acres are grown, chiefly by tenants of a quarter of an acre to ten acres. Sixty tons of fruit were sent from Botley Station on June 25th, 1889. Large early fruit sold for 10s. a gallon of 7lbs.; smaller and later crops falling to eighteen pence. Good crops pay at a shilling. Salesmen charge a little under two shillings for a case of a hundred punnets, each weighing slightly less than a pound. An acre in a good season yields a return of £50, cost of culture, including rent, labour, picking, manure (twenty tons per acre) £17; profit £33. Small plants are sold at five shillings a thousand. That represents open allotment or field culture. Heavier crops are obtained from richer soil in gardens.

Strawberries usually bear about three full crops, but some should be planted every year for maintaining profitable plantations, removing the older as the plants become exhausted.

Raising Plants.—The first essential to success is the establishment of strong plants ready for planting in good ground by the first week in August. This is perfectly practicable. The secret of success is to be found in early runners and the quick rooting of the plantlets that form on them. For insuring these it is of the first importance to establish a few early young plants yearly in the best soil and position available. These afford

runners much sooner and stronger than can be obtained from old plants partially exhausted by fruiting. The earliest plants are established by pegging the runners into small pots of rich soil, or in newly pared turf (containing no couch), cut into three-inch squares and placed close together, grass downwards, as shown in fig. 4, below. The latter plan is within the means of many cottagers and allotment-holders, and if the turves are kept moist and planted in good ground in August, some

Fig. 4.—RAISING STRAWBERRIES.

of the plants may bear a pound of fruit the first year. Simpler methods have, however, usually to be resorted to. Stir the earth round the plants, press down the plantlets into it with pegs or flat stones, and, with regular moisture, roots quickly form and plants are ready for removal during the month named; these, if carefully planted in good ground and duly watered, occasionally with soap-suds, will bear fine fruit the following June.

It is necessary to refer to still another plan, not

so quick in fruit production as the foregoing, but which has to be resorted to extensively. Late and small runners are planted five or six inches apart in rows nine inches asunder in the autumn, and remain there till they can be finally planted in March for bearing. They will not produce any substantial crop the same year; indeed, if the plants are weak, it is a gain to pick off the few flower trusses, and the plants will be the stronger for the next season's crop, which ought to be a full one. But though these plants occupy the ground for a season without producing fruit, or only a light crop, the space need not be wholly wasted. It is economical to allow a distance of two-and-a-half feet between rows of Strawberries, even if the plants are arranged closer in them, or eighteen inches from each other, as then recourse can be had to intercropping. For occupying the space between the rows the first season, onions are particularly suitable, because the tops do not spread, while the bulbs are highly serviceable. Two or three rows may be grown in each strip, either by sowing seed in March or, preferably, transplanting from beds sown in August.

Methods of Planting.—Since there are three wrong ways to one that is right, and as the latter would be the least likely to be adopted by the in-

experienced, it will be useful to show them all, as it is quite as instructive to make clear what to avoid as what to practice. The small figures, (fig. 5), will permit of no excuse for rough, careless, and erroneous methods of inserting the plants. The first (*a*) is sunk much too deeply, burying the heart, and cannot grow. The second (*b*) is not planted deeply enough, the neck or collar being above ground, and the roots too straight down in the hole. It will not make a strong, fruitful plant.

Fig. 5.—PLANTING STRAWBERRIES.

The third (*c*) has had the roots thrust into a shallow excavation, and must succumb during the first term of dry weather. The fourth example (*d*) represents the proper way of planting Strawberries, the roots being spread out in a natural manner, the heart of the plant not being buried, while the neck or collar is not exposed to the air to become hard and dry, with the inevitable contraction of the sap vessels. A plant thus placed in the ground will in a few months' time be worth a dozen of the others.

When a square of land, no matter of what size, cannot be occupied with several rows of Strawberries marginal lines may be conveniently and profitably grown by the side of paths. This plan should be more common in small gardens. . These edgings occupy little space and bear bountiful crops, handy for picking. A marginal row is shown in

Fig. 6.—STRAWBERRY EDGING.

conjunction with dwarf and standard Currants, in fig. 6. Insert the plants a foot apart, and there will be no vacant spaces between them in a year after planting.

General Management.—This consists in snipping off the runners as fast as they form, except when they are wanted for producing young plants; giving all the soap-suds possible during the period

of growth, and an occasional soaking with liquid manure when the fruit is swelling, but not after colouring commences; hoeing the ground to prevent the growth of weeds, and covering it with straw or other suitable material for keeping the fruit clean, as heavy rains often dash the soil into the berries, and spoil them. This may be prevented, and another useful purpose served in one operation.

During the first crisp frost in autumn, all runners and rubbish having been cleared away some time previously, and the ground between the rows lightly pointed over with a fork, turning in a little short manure (deep digging with the spade being injurious), cover the ground two or three inches thick with partially decayed manure containing a good amount of short stained straw. This must not be packed closely round the plants; it will be washed by the winter rains and be perfectly sweet by the spring, forming a close, clean cushion for the fruit to rest on. The covering also prevents the escape of moisture from the earth by evaporation, and it is retained for the support of the plants and crops—a most important point in dry hot weather.

When the manure covering is omitted in the autumn, straw should be spread between the rows

some time before the fruit ripens. This is often deferred till it is colouring, and the trusses have to be raised and the stalks bruised by placing it under them—a most reprehensible practice. Better by far is it to apply the covering when the plants are flowering, if not before, as it can then be completed much more expeditiously, and without injury to the crop. Where convenience exists for passing the straw through a “cut box”, such as is used to prepare food for horses or cattle, severing it into inch or two-inch lengths, it can be very quickly spread on the ground amongst the plants for keeping the fruit clean, while the movement of slugs is baffled, as they cannot travel over the unstable particles.

The ground for Strawberries should be well worked, and enriched to the depth of eighteen inches or more; then, if light, made firm; but if it is in a condition to grow cauliflowers, onions, and lettuces well, it will suffice for a good yield of excellent fruit. Much inferior subsoil should never be brought to the surface when digging or trenching for either this or any other crop.

Varieties.—The most generally useful and extensively grown is Sir Joseph Paxton. President equals it in some, and especially light, soils; Garibaldi (Vicomtesse Héricart de Thury) is hardy

and productive; James Veitch larger and later. The old Princess Alice is good for field-culture and travelling. The comparatively new variety, Noble, is the first and largest Strawberry in the market, and tons realised a shilling a pound last June, selected fruits considerably more. This and Sir Joseph Paxton are especially recommended for affording profitable crops.

Packing the Fruit.—Selected fruits placed in the market in the best condition, without bruises or abrasions, always realise high prices, and especially if arranged in neat receptacles such as

Fig. 7.
PUNNET OF STRAWBERRIES.

purchasers can take away with them. Round chip punnets (Fig. 7) have long been used for this purpose. They are made in different sizes, and those about six inches in diameter, and two deep, are in

favour for fine fruits. For later pickings, which are smaller, narrower and deeper, punnets known as “deep pounds” are preferred. They are packed as shown in fig. 8, page 31, a number being arranged in a box. The boxes may be deep enough for holding two or more tiers, the movable floor for the upper resting on battens nailed on the sides of

the box. In this case, the fruit should not be piled above the edge of the punnets. Punnets can be

Fig. 8.—PACKING PUNNETS OF STRAWBERRIES.

had from the leading fruiterers, and independently of them from, amongst others, N. J. Nicholls, 377 Goldhawk Road, Hammersmith. They vary in price from 2s. to 4s. a gross

Square chip baskets made by Mr. J. Leedham, Rotherham, have come into favour, and they look very tempting when neatly filled with good fruit. They are even cheaper than the punnets, not costing more than a farthing each in quantity. They are about five inches across the top, three across the bottom, and three inches deep. They do not quite hold a pound of fruit, but when this is fine and in the market early, scores of thou-

Fig. 9.

CHIP BASKET OF STRAWBERRIES.

sands sell for a shilling each. One of these baskets is shown in fig. 9, page 31. The handle bends down and fits closely over the edge of the basket, then any desired number, according to the size of the box, can be arranged as in fig. 10. It is a common practice to have a number of boxes about $3\frac{1}{2}$ inches deep and make a stack of five or six of these, binding them tightly together for market. A few Strawberry or soft rhubarb leaves without mid-ribs are spread on the fruit before placing on the lid.

Fig. 10.—PACKING CHIP BASKETS OF STRAWBERRIES.

The fruit should be gathered before overripe for travelling, each with half an inch of stalk attached ; and above all things growers should treat their customers as they would themselves be treated if buying instead of selling, and not attempt to deceive by “ topping ” with extra fine fruit, while that below is inferior. Smaller fruit for preserving does not receive the same care in packing, but it should never be forgotten that the better it is presented the better the price it commands. These

remarks apply to all small or "soft" fruits, and it will not be necessary to repeat them in treating of different kinds.

In sending Strawberries by post, each fruit should be placed in a leaf and packed closely in boxes two inches deep containing a layer of wadding, the fruit to be covered with leaves for the lid to rest on.

RASPBERRIES.

Raspberries are among the easiest of fruit to cultivate, and the most certain to afford profitable crops when justice is done to the plantations. Except in the best managed gardens, Raspberry-culture is practically ignored. It is true that clumps or thickets are plentiful, but they practically grow themselves, or if attention is bestowed on them it is very far from being of the best kind. Of what does it consist? Allowing all the young canes that push up from the roots to grow into a crowded mass during the summer, one spoiling the other; then in winter, or more likely in spring, cutting some of them out with the dead bearing canes of last year, bundling the rest together; next, with a spade, digging deeply between the rows for

burying weeds, and, perhaps, manure, at the same time mutilating the roots. That time-honoured method of so called culture is absolutely wrong, and with a change in practice, the value of the crop can be, often has been, and it is hoped will be, increased 100 per cent. in two years, without a penny of extra expenditure being incurred.

An example—the narration of a positive fact—will render the matter clear. In a large and good garden, in which excellent vegetables and most kinds of hardy fruits were grown, the Raspberry plantation was unsatisfactory. After trimming and tying up the canes in February or March, manure was liberally added, often so liberally that it could with difficulty be covered by digging it in with spades. It was done, however, and in the process, fibrous roots were turned up in masses; after hoeing to destroy weeds later on, the then dried fibrous roots were raked off in barrow-loads. The manure and labour were worse than wasted. The plantation became weaker yearly, till at last it was condemned as worn out, and it was decided it should be left to take its chance until newly planted canes arrived at a bearing state. The following year the old plantation was made presentable by tying, hoeing, and raking, but no manure was added, and no digging done. The result was much

finer canes, and the season following a much better crop of fruit than had been seen for years. This suggested a change of treatment. Manure was spread on the surface of the ground, and left there to decay, and for years the plantation was famed for its productiveness.

It was the custom to sell the fruit after sufficient had been gathered for home use; and at the price then obtainable, 6*d.* a quart, the amount realised was at the rate of £50 per acre, seldom less, but generally more. And this, be it remembered, from a once condemned plantation, ruined for a time by erroneous treatment, which is now far from obsolete; restored by a change to more rational methods, founded on the natural habit and character of the plants.

The Raspberry delights in deep fertile soil, moist, yet not saturated. It is generally found wild not far from water-courses in openings in woods, where there is some shelter from the hot sun, but not dense shade. This suggests its adaptability as an undercrop in young or thin orchards; though when the soil is rich and deep, so that the roots do not lack moisture, the best crops are obtained in the open, and not under trees.

It is essentially a surface rooting plant, and the better the fibrous roots are preserved, and the better

they are fed, the finer is the fruit. Still the plants also produce strong woody roots which enjoy a deep run, and the deeper and better it is, the stronger are the canes and the better is the growth supported in dry weather. The two classes of roots thus have important missions to perform—the strong and deep to produce substantial canes; the finer and multitudinous surface fibres to feed the crops of fruit. Bearing these facts in mind, the soil should be made friable and good to a depth of at least 18 inches, and 2 feet if possible. In preparing the ground the best soil must be kept towards the top. The lower can be enriched with rough manure and decaying vegetable refuse of any kind. Heavy soil should be lightened with whatever porous material can be collected, and if this cannot be freely mixed through the mass, place the lightest and best around the roots when planting, as the growth is often very slow when the roots are in contact with strong, clay-like soil.

Planting.—The ground being in readiness, next follows the planting. The sooner this is done in the autumn after the leaves can be shaken from the canes the better, or when they separate easily when the hand is drawn up them; the next best time being when the buds commence swelling in early spring. It is most important that the roots are not

dried during the process of removal ; they shrink quickly, and must always be kept moist when out of the ground.

Instruction is needed on the selection of canes for

Fig. 11.—RASPBERRY CANES.

planting, and their after management. Examine the above illustrations, fig. 11 ; *a* is a small cane, two to three feet high, with fibrous roots ; *b* the same cane, showing the effect of cutting it back when planted, *c* a very strong cane, upwards of

four feet high, with comparatively few roots. Most persons not experienced would choose the strong canes with few roots, in preference to the smaller with bushy fibres, and would undoubtedly choose wrongly. Again, ninety-nine persons out of a hundred, for whose benefit these instructions are prepared, would leave the canes their entire length after planting, in the hope of obtaining strong-bearing plants the sooner. The hope is a vain one. Look at the figures again; the small cane *a*, when planted, was shortened to the cross-mark in *b*, leaving the stem not more than nine inches high. What is the result? The strong canes springing from the base of *b* are calculated to bear fine bunches of fruit, and the foundation is laid for a profitable bush, which, under good management, will yield abundantly for many years.

Now glance at *c*; the strong cane was planted, and not shortened. What is the result? The cane may or may not produce a few miserable fruits the first season, but whether it does or not, it dies, and leaves nothing behind but one or two small apologies for young canes (which see). These will probably die in turn, and if not it is not possible they can develop into a productive bush, even in another year, and not one in ten will produce strong bearing canes in three years. As it is often

as instructive to show the wrong as the right, it is hoped no one who reads these lines will make the great mistake of choosing long, strong, and badly-rooted Raspberry canes, and leave them their full length after planting.

In planting, spread the roots out as shown under the ground line, work free soil well amongst them, tread it down moderately firm, spread a layer of manure on the surface of the ground over them, and for a foot beyond their extension, leaving it there to decay. A few copious waterings in dry weather in summer will accelerate growth, but the manure covering will do more good by preventing the escape of moisture from the soil than several waterings will with the surface of the earth exposed to the sun.

Summer Management.—This consists in preventing the appearance of weeds by timely hoeings, which is in every respect preferable to allowing them to grow, because much more labour is necessary for their removal, and without weeds the soil's virtues are conserved for the useful crop. Another important but much neglected operation which should not be overlooked, is the thinning of superfluous suckers. Six or seven canes at the outside are sufficient for securing to a stake, yet twice that number often push up, and if permitted to extend,

crowd and spoil each other. Those not wanted should be pulled up when six inches high (they will grow if transplanted in showery weather), and the remainder will be the stronger, sturdier, and more fruitful.

Autumn Help.—After the crops are gathered, it is the custom to let the old canes, which have produced the fruit, remain to die, and a very bad custom it is. It is much better to remove them promptly by severing them at the bottom and drawing them carefully downwards, so as not to break the leaves of the summer canes for next year's fruiting, and the additional sun and air admitted to these will, by ripening them, greatly increase their productiveness.

Winter Work.—The sooner this is completed after the leaves fall the better. When the canes are tied to stakes, six or seven of the best and shortest jointed should be selected, and instead of tying them all above the stakes in the orthodox manner, and thus having fruit at the top only, shorten two of the canes about fifteen inches from the ground, two others at about twice that height, and the remaining two or three a foot or so above the top of the stakes in the manner shewn in fig. 11, *d*, page 37. The result of this simple method of pruning is seen in the accom-

panying illustration, fig 12, namely, fruit nearly

Fig. 12.—RASPBERRY IN BEARING.

from the ground to five feet or more above, it if the canes are strong; and in hot dry summers the

finest fruits will be found, not at the top of the bushes, but towards the bottom, where in the ordinary course of pruning none is produced.

Lines of Raspberries.—Training the canes, either as shown for Gooseberries (page 53) upright, or slantingly to wires or cross laths is unquestionably good. Hedges of Raspberries five feet high on this system are highly productive, and if several rows are grown together the distance between them should equal, or somewhat exceed, the height of the canes. Plant them six inches asunder in the row, cut them down as advised, and when established, shorten every alternate cane to the first wire, and the others nine inches above the second, which may be $4\frac{1}{2}$ or 5 feet from the ground.

Self-supporting Canes.—More Raspberries are grown without supports than with them on fruit farms and in market gardens, also as undergrowth in orchards. For this cheap method of culture a short, sturdy-growing variety should be chosen, and there is none to surpass, if equal, the true Carter's Prolific, raised by Mr. John Carter, of Keighley, and more of this is grown in that way than of all others put together. As previously mentioned, a broad line of Raspberries without stakes, laths, or wires, round Mr. W. Jacob's small allotment at Petworth, gave upwards

of two quarts of fruit to the yard last summer, and the fact is worth repeating.

Tall growers of well-proved merit, for wires and stakes, are Rivers' Hornet, Prince of Wales, and Superlative. Any of these may be tried that are the most readily obtainable, and the number can soon be increased if desired.

If there is no material departure from the instructions given, a fair measure of success may be expected by cottagers and small holders of land who have had little or no experience in growing crops of this nature for home use or market purposes.

GOOSEBERRIES.

Strawberries are delicious and wholesome, especially in their natural state, and Raspberries take high rank, especially for preserving, but both are useless when unripe: it is not so with Gooseberries. These occupy the same position early in the season that Apples do later as food products, and both are indispensable—one the most substantial and most in demand of small, as the other is of large fruits grown in this country.

Gooseberry trees are raised from cuttings, and the process is so simple and easily explainable that

it is not conceivable that any intelligent person can fail in comprehending and carrying it out.

Fig. 13.
GOOSEBERRY
CUTTING.

Fig. 13 represents a Gooseberry cutting ready for insertion. It is a firm, short-jointed, summer shoot cut from a bush in the autumn as soon as the leaves could be shaken off. The strongest growths are not necessarily the best for propagating, as some of these may be gross and soft, containing much pith. They should be firm, with little pith, yet almost as thick as the stem of a tobacco pipe. They may be from 15 to 18 inches long, thus affording a sufficient length for inserting firmly in the soil for rooting, with at least six inches of clean stem above it to the branches; or in other words, 4 or 5 inches of the stem may be in the ground, and 10 or 12 inches above it, 6 to 9 inches of this quite free from buds, the top four inches or thereabouts containing them for the production of branches. These figures are given as approximative, for cuttings cannot always be had of the exact length desired, and an inch or two either way is not of material importance.

It will be seen by the sketch referred to that

not only are the spines removed, but the buds are cut out except five at the top, also that the end is cut off above the highest bud. If four of the buds grow, as may be expected, and extend equally, the branches thus produced lay the foundation of the future bush. The end of the cutting for insertion in the ground is cut square across, almost close to the lowest bud, and not midway between the buds or the stem. The knife cannot possibly be too sharp for this purpose, for if the bark is bruised by a blunt one the end of the cutting may decay, instead of first swelling, then producing roots. It is by attention to what the uninitiated may regard as trifling matters that success is achieved.

The next step onwards is shown in miniature fig. 14, in which the cutting in a year from its insertion is transformed into a tree well rooted, and with four stout branches, and a sucker

Fig. 14.—GOOSEBERRY A YEAR FROM THE CUTTING.

springing from the base. This sucker, however, shows bad, not good, workmanship, for it proves the bud from which it has issued was not completely cut out, as all buds should be in making the cuttings.

One or two growths of that nature may spoil a single-stemmed bush. It is of little use cutting them back, for it will only be cutting to "come again" stronger than before, and with the number increased. It is true some persons do not object to growths direct from the roots, but in that case they do not remove any buds, and although they may have good crops of fruit, they cannot be better than from single-stemmed trees, which are much the more convenient for working amongst, also for gathering the crops; and, broadly speaking, one kind of bush represents culture, the other slovenliness.

Supposing there is no sucker to our miniature tree, as there should not be, how are the new branches to be dealt with? If they remain unshortened, they simply elongate, the lower pair soon reaching the ground, except in the case of upright growing sorts (which are not the most profitable) and are then of little further use. A great point to secure in Gooseberry growing is to have the branches well above the soil, both for keeping the fruit clean and admitting a free circulation of air under and amongst the branches, this conducing to fruitfulness. The first young branches are thus cut back more than half their length, as shown by the cross lines. The effect of this is that

the branches are at the least doubled in number the next season, as indicated by the dotted lines (page 45). Instead of four we now have eight, and may have more. These branches need not be shortened materially, and if they do not exceed a foot in length, the removal of two or three inches from the ends will suffice; if they much exceed a foot, cut them back to that length after the leaves fall. In doing this, let an apparently small matter be attended to, for it is of far greater moment than it may seem to the inexperienced. See that the end bud left after cutting is a good one and pointing upwards or outwards, not downwards or inwards, for the growth that follows will be in the direction in which the bud points, and if that is downwards, or towards the centre of the tree, either crowding will be induced, or low, flat bushes formed; we want an open bush, as upright as the variety will allow, and with the branches well clear of the ground, even when the weight of fruit drags them towards it.

Pruning.—As the bushes attain size, pruning must be resorted to, and just as it is intelligently conducted, so will the crops be. Some Gooseberry bushes in the gardens of cottagers and small farmers are never pruned, the result being small fruit and speedily exhausted trees; on the other hand, when

pruning is conducted in the absence of knowledge, it often prevents good crops of fruit. If all the

Fig. 15.

GOOSEBERRY BRANCH, ONE
AND TWO-YEAR-OLD WOOD.

young shoots of healthy trees are systematically cut back, a thicket of luxuriant growth is induced. Main branches, thinly disposed, should be allowed to extend; the side growths issuing from these must be cut back to within an inch of the base, thus forming the spurs; but, in addition, where there is space for a young shoot to bear fruit, such shoot should be left, because the Gooseberry, though bearing well on spurs of two or more years old wood, also produces fruit freely on firm annual shoots, when these are not overcrowded.

Fig. 15, annexed, shows a branch, the thicker and darker part of which is two years old, the thinner and lighter wood of one summer's growth. It will be seen that natural spurs are forming on the former, also

that two side growths have been cut back at xx. If these had not been shortened, the interior of the bush would soon have become so crowded that the hand could not be passed down between the branches for gathering the crop. A very simple guide for the pruner is to let the branches be far enough apart to admit the hand between them without coming in contact with the spines. A young shoot may be left here and there, one of these being shown in the figure. If there had not been space for the hand to pass down between the two, the shoot would have been cut back like the two others; but as there is room, it is left, and every bud on it may produce blossom, to be followed by fruit. It is desirable to retain young shoots their full length, or nearly so, in good-sized bushes, even if an old wearing-out branch is cut out or shortened, to make room for them; there must be no overcrowding, but always room for reaching right into the centre of the bush.

Now examine the branch above mentioned of two-year-old wood with spurs, and one-year-old wood with spines and buds only, in connection with the bush shown in fig. 16, page 50, and it will be apparent that this bush is composed of a number of these branches. In order to make the subject of pruning so clear that it cannot be

misunderstood, half the bush is represented as pruned, the other half unpruned. It will be seen that in the pruned part, space is afforded so that the hand can pass down to the base of the branches for gathering the fruit, should there be any; a bush, however, soon ceases bearing except on the outside,

Fig. 16.—HALF PRUNED GOOSEBERRY.

if this unfortunate thicket system is permitted to continue, and it will become worse during each year of neglect in pruning.

Cropping and Summer Pruning.—It now remains to show the results of keeping the branches thinly disposed for the production of spurs, which cannot form when the growths are crowded. Fig 17, page 51, represents the individual branch of a Gooseberry bush on which spurs have formed,

blossomed, and produced fruit. This is no imaginary branch, but a "lesson from life". It will be seen that young shoots are pushing from the upper side of the branch, and if all these were

Fig. 17.—BEARING BRANCH AND SUMMER PRUNING OF
GOOSEBERRY.

permitted to extend, they would overcrowd the branches above, and exclude light and air from them. This evil can be averted by nipping the ends off several of the young shoots in June, as in example xx, this method of "summer pruning" is

not half sufficiently practised. It prevents crowding and promotes fruitfulness. Every shoot may be pinched or cut off when five or six inches long, leaving two or three pairs of leaves on the part left, only allowing a shoot to extend here and there when there is room for such extension, in accordance with the principle above described. When other growths follow the stopping, pinch them off in turn, and fruiting spurs will form, and fruit follow exactly as shown in the engraving.

The Gooseberry is one of the most certain, profitable, and reliable of fruits. Young trees grown two feet apart will produce at the least a pint of fruit in three years, probably much more, and the value of this, at the low price of a shilling a peck, is at the rate of over £30 an acre. They may be grown at that distance until they touch each other, then half of them can be taken out and replanted five or six feet apart if it is desired to extend the plantation. In six years the above value of the crop will be doubled. They like deeply worked fertile soil, and may be planted in the autumn or spring.

Gooseberries for Hedges, Walls, or Fences.

—Particular attention is directed to the plan now to be recommended. More fruit can be had from a given extent of land in this than in any other way.

The plants may be six inches apart, confining each to a single stem : otherwise plant thrice that distance asunder, taking three stems from each as represented in fig. 18. They may first be secured to upright stakes, and eventually to cross-wires fixed

Fig. 18.—A GOOSEBERRY FENCE.

to posts. All that is necessary is to pinch the side growths which push in summer, as above advised, and let the leading shoot extend. Upwards of 300 fine fruits have been gathered from a stem four feet high, and it is remarkable that birds neither attack the buds nor ripe fruit with anything approaching the persistency they often do in the case of ordinary bushes.

Soil that will grow first rate crops of wheat or potatoes will also grow good Gooseberries. In dry soil manure should be spread thickly on the ground over the roots, and left there to decay.

Manuring.—When the young wood much exceeds a foot in length the ground will be rich enough; if it does not attain that length the land must be enriched. In the absence of stable manure equal parts of superphosphate of lime and kainit, applied at the rate of from 2oz. to 3oz. to each square yard, will be a suitable application.

Varieties.—For affording abundant crops to be gathered in a green state for cooking, bottling, or preserving, any or all the following are suitable; Whinham's Industry, Crown Bob, Whitesmith, and Lancashire Lad. The first named is comparatively new, and is valuable because it attains a good size early. Its popularity is indicated by the fact that one firm sold 100,000 trees last season. All varieties do not thrive equally in differing soils, but those named are not likely to fail, and the sorts that succeed the best in any particular garden can be propagated the most extensively. For gathering ripe, for preserving, and keeping late, no variety excels the Red Warrington. For early ripening, Early Sulphur is one of the best, and the richest of all for dessert is Red Champagne.

Enemies.—The greatest of these are birds such as bull-finches and sparrows, destroying the buds in the spring; and caterpillars, eating the leaves, destroying the crops, and seriously injuring the trees in the early summer.

Where the bushes are not numerous, and the branches at the distances apart suggested, it is not half so tedious as it seems to smear them with the following mixture, covering every particle of stems and buds with the aid of a painter's brush. Take fresh lime and soot, nearly double the quantity of the former, also some clay, and mix them to the consistency of paint, adding also some melted grease of any kind best obtainable. This mixture adheres for months, and birds seldom pick out the buds, while caterpillars rarely attack the leaves, and the stems are kept free from moss. A quicker method of covering the stems with a bird and moss antidote, is to throw freshly slaked lime amongst them when every twig is wet, after having a heavy mist or fog. If the work is well done, the trees will be quite white when dry, and the lime that falls will be of benefit as a manure. If caterpillars appear, dredge them with Hellebore powder when wet, and it will destroy all that are reached, then syringe well with clear water to wash off the powder, which is poisonous; but where lime is used as

above directed, freely and regularly, caterpillars seldom trouble the trees.

CURRENTS.

Estimating the crop of even a fairly well-grown Currant bush at the low weight of ten pounds, and the value of the fruit at even a halfpenny a pound, the crop will be worth at the rate of nearly £40 an acre, with the bushes five feet apart; but as all experienced cultivators know, the yield is often much greater than that stated, and the price is distinctly below the average. It follows that the growing of Currents might be pursued with advantage by persons who have good ground at disposal.

There are three kinds of Currents—Red, White, and Black. The two former require identical treatment as regards propagation and pruning, but the latter is wholly different in habit, and must be managed accordingly, in the way that will be described. The White Currant is more of a “fancy” than a serviceable fruit, and one bush of it to fifty or even a hundred of the Red and Black will suffice as a rule, apart from personal preferences or special local requirements.

A young Red Currant is formed in the same way as a Gooseberry tree, and the figures on pages 44-45,

Fig. 19.—A RED CURRANT BUSH. (Page 53.)

with the accompanying instructions, may be followed in raising and establishing both; but as soon as

Fig. 20.—A FRUITING BRANCH OF RED CURRANT. (Page 58.)

a sufficient number of branches are produced for a

Red Currant bush, additional young growths should not be encouraged. A few sketches will make the

Fig. 21.—GROWTH
OF RED CURRANT,
WITH SPURS AND
BUDS.

process quite plain. Fig. 19, page 57, represents a Red Currant bush pruned and ready for bearing. That bush has averaged 20 lbs. of fruit for the last seven years. There are nine branches, each five feet in length. Seven as a rule suffice, but as there appeared room for two more, they were allowed to extend, branching from the mains on the left of the figure. Nearly all the buds on the stem are blossom buds, but there are a few wood buds amongst them, that push growths in the summer. These are first pruned back to two or three pairs of leaves in June, as shown at xx, in the fruiting branch, fig. 20, page 57, one growth being left unpruned to show the difference, for it ought also to be taken off at the cross-mark. In winter these summer-shortened growths are cut back close to the clusters of buds as shown on the enlarged three-year old branch (fig.

21, page 58), this being one of the branches of the miniature bush in the preceding sketch. It will now be seen how easy it is to prune a Red Currant bush properly; also it will be perceived how easy it is for the inexperienced to go wrong without these little "object lessons".

There are two important points still to be mentioned, and they should not be forgotten. The first is, to have the main branches so wide apart that not the hand only of a man can be passed easily between them after pruning, but there should almost be room for his hat. The fruiting branch shows both the necessity and the result of, say a foot of space between the branches after the pruning is completed. The crop is not in the slightest degree exaggerated, and such yields cannot be had from crowded bushes, nor can they be gathered half so quickly as when the main branches are thinly disposed.

The next point to be remembered, is not to allow more than a foot of young wood to remain at the ends of the main branches yearly; the growth may extend beyond that in summer, then to be topped, but should be cut back in winter to nine inches. If more is permitted, less spurs will form, and consequently less fruit follow.

Standard Currants.—Most persons know

what standard roses are, and those who have not seen standard Red Currants may be told that they are nearly as ornamental as standard roses, and much more useful ; they are, moreover, very easily produced.

Fig. 22.—STANDARD CURRANT.

A standard Currant tree, nearly full grown and pruned ready for bearing a heavy crop of fruit, is shown in fig. 22, above. The pruning for forming the head is exactly the same as described above, and all that is needed is the narration of the process for producing the stem. Choose strong, yet firm, young shoots, as soon as the leaves have

fallen, or can be rubbed off, for cuttings. These may be eighteen inches or more in length, and the eyes or buds must be carefully cut out of the lower six inches, which insert carefully in sandy soil. Do not remove the tops of these cuttings, but place a tall stick to each, and secure the leading shoot to it as it extends, pinch the side growths that push from the stem as soon as two leaves form, and as often as other growths follow pinch the tips out at one leaf. Continuing the practice, the stems are covered with green leaves, which assist them to thicken, and the sap flows the more freely upwards to support the head. Allow the leading growth to attain a height of four feet, then, when the leaves fall, cut off the top at a little below that height, and four or five shoots will push in the spring for forming the head. At the end of the third year all the pinched back growths may be cut from the stem. But what is the use of such trees? They can be grown by the sides of paths in gardens with other crops between and under them, the Currant crop being practically a distinct gain, and of substantial value. A small sketch will explain the matter better than a thousand words. A strip of ground about five feet wide is occupied with dwarf Currant bushes along the side of a walk. Managed as above described, these bear 20lbs. of fruit each; but

plant standard Currants between them and allow only 10lbs. of fruit for each, and it is obvious that the value from the same plot of land is increased fifty per cent., because the standards rising above the dwarfs as shown in fig. 6, page 27, do not impair their productiveness. Now have a marginal row of Strawberries planted a foot from the path, and the same distance asunder in the line, and ornament will be combined with utility.

The Red Dutch is one of the best red Currants for standards, and is good also for bushes. If a few extra large fruits are desired for exhibiting at cottagers' shows, a tree of the Victoria will produce them, but for general purposes this is not so useful as the other. The only White Currant that need be grown is the White Dutch, and one or two trees will suffice for small gardens.

Black Currants.—This most useful fruit is quite distinct from the foregoing, and requires entirely different treatment. It will grow in stronger and moister soil than, perhaps, any other fruit, and if one position in a garden is cooler and damper than the rest, it may be planted with Black Currants: the bushes also grow and bear well in good soil under trees, where the sunshine can pass down between them and filter through the branches. Black Currants are in great demand for cooking

and preserving, and good crops of fine fruit are very profitable, but they cannot be grown remuneratively in dry and poor land. Some of the most profitable bushes seen by the writer grew on the sloping banks of a wide ditch or stream that passed through a cottager's garden. They bore on an average thirty pounds of fruit each, which sold for 2*d.* a pound. The bushes were six feet through, and overhung the water. The crops were not easy to gather, but beyond the little trouble involved in that respect they cost absolutely nothing to produce, and the bushes occupied a position on which nothing else could be usefully grown.

Black Currant cuttings may be made and inserted in the way advised for Gooseberries, with the important exception that no buds need be removed; it is desirable, however, to cut off the top of each cutting for inciting the production of branches.

Suckers that are objectionable when springing from the stems beneath the surface of the ground in Gooseberries, and often ruinous in the case of Red Currants, are advantageous rather than otherwise to the black fruited kind. The crops are borne mainly on the young shoots of the previous year, and the stronger these are, as a rule, the finer the fruit: and as the suckers make strong branches, by encouraging their production and cutting out the

older and weaker parts, the bushes remain profitable for a number of years. Lee's Prolific and Black Champion are profitable sorts to grow.

The character of a Black Currant bush is displayed in the small sketch, fig. 23. As will be seen, there are no "spurs" as in the Red Currant and Gooseberry, but the branches are simply studded with buds; strong suckers are also

Fig. 23.—BLACK CURRANT BUSH.

seen pushing from the ground a little distance from the main stem. All that is necessary in pruning is to thin out the older and weaker parts to give the stronger more room, and these may be five or six inches asunder. As further elucidating the matter a branch is shown on a larger scale in fig. 24, page 65. The old wood is dark, the young lighter. The best fruit will be borne by the latter, therefore, when the branches are too close together, the old, as represented by the central one, should be cut out at the cross-mark. A shoot will push from the

bud below for bearing another year, and one older near can be removed to give room for it. The simple routine of pruning Black Currants is cutting out old branches and encouraging young growths, also preventing these being unduly crowded.

Digging and Manuring. — Currant bushes should not be dug amongst with the spade, but the ground may be pointed over carefully with a fork. Manure, especially for Black Currants, which produce fibrous roots near the surface, and suffer from drought, is best spread on the soil and there left to decay. Lime is good for Currants, and if it is dashed amongst the branches when wet, for adhering and destroying moss, enough will fall to the ground for the roots.

Fig. 24.—BRANCH OF BLACK CURRANT, SHOWING OLD AND YOUNG WOOD (*see* page 64).

Common salt is good in dry soils, applied at the rate of 2 or 3 cwt. per acre, or a little more than one ounce to each square yard, in dry weather in March.

Enemies.—Small green and black flies (Aphides) are the chief enemies of the Red Currant; they attack the tips of the young shoots, the leaves curl, and growth stops. The quickest method of riddance is to nip off the points of the shoots and burn them, though soap-suds as hot as the hand can be borne in for a quarter of a minute will destroy many and not injure the trees. Black Currants are liable to injury by a very small mite (Phytoptis), almost invisible, attacking the buds, which swell to a large size, but little or no growth follows. There is no certain cure, though sometimes, when the trees are cut boldly down and the branches burnt, clean growths follow. Cuttings should never be taken from trees thus attacked; and if fresh trees are obtained, they should be planted as distantly as possible from the old.

APPLES.

Unquestionably the Apple is the most important, because the most substantial and serviceable, fruit of temperate climes, and it is very apparent that the increase of home-grown fruit of the best quality has not been commensurate with the demands of an ever increasing population. How is a change to be effected? One thing is clear, if we stand still, American growers will not, and the worse our samples become by neglect, the better will theirs become by cultivation; and the best samples, no matter whence they come, nor what they are called, will find the readiest sale. Let it be said emphatically that the ONLY WAY TO COMMAND A SALE FOR HOME GROWN APPLES IS TO IMPROVE THE SAMPLES, and this can be done. It is pitiable to see the generally low grade of the produce of gardens and orchards attached to British homesteads; and it is because of this inferiority, more than anything else, that imported fruit finds its way, not to populous cities only, but to small country towns, and even rural villages. For improving the market supply of British Apples, there must be an enormous limitation of varieties, as then, and then only, can the best, most reliable, and most uniform supplies be insured. That is the American plan; and by carrying it out

in its integrity confidence has been gained in their consignments, and a great trade, creditable to them but humiliating to us, established in our markets.

Raising Apple Trees.—The habit of raising Apple trees from pips in cottage gardens, and growing the trees till they bear, must be abandoned. That is the origin of thousands of worthless Apple trees. Young trees may be raised in that way, but only for stocks on which sorts of proved merit can be grafted. But there are other kinds of stocks, dwarf in growth and quick in flowering; and when small fruitful trees are wanted in the shortest time they should be bought from nurseries; they are very cheap, in fact the cheapest of trees, and very soon pay for the outlay.

Stocks for Apples.—These vary extremely, and greatly influence the growth of the trees established on them, also the crops of fruit. The same variety of Apple was grafted at the same time, on different stocks, and the trees grown together in the experimental gardens of the Royal Horticultural Society. The blossoms following were counted. At the end of five years the tree on the French Paradise had produced 460 blossoms; on the Broad-leaved Paradise, 185; on the Crab, 23. But a tree may produce too many blossoms when quite young, and become stunted—a mere toy. This is often the case with

trees on the first-named stock, in some soils. We must have regard to growth as well as precocity. Seven years after grafting near the ground, and the trees grown as bushes, that on the French Paradise was nearly three feet high, with more than 300 blossoms (too many), that on the Broad-leaved Paradise was five feet high, with 150 blossoms, quite sufficient for a crop. The tree on the Crab had no blossom that year, and was upwards of six feet high. These particulars were taken by the writer, and are accurate. The Broad-leaved Paradise stock, then, combines free growth with fruitfulness, and trees grafted on it are suitable for growing either as free bushes (see figure 2, page 18) or dwarf standards in the gardens of cottagers and small holders of land. The Nonesuch is a valuable stock for dwarf bush trees, imparting sturdiness with productiveness. Tall standards for orchards or on grass must be grafted on Crab stocks.

Soil and Situation.—As before indicated, land of a staple that will grow good crops of wheat, potatoes, or cabbages, will grow good Apples. It should be well worked to a depth of two feet, the subsoil being broken up, but not brought to the surface. If water stand two feet below, drains should be laid five yards apart and three feet or more deep, with proper falls and outlets. If this is

not practicable, plant the trees on mounds above the general level, and keep the soil covered with manure, especially in summer, for attracting and retaining the roots near the surface, for if this is dry in hot weather, they will go downwards to the water, and remain there to the detriment of the trees. There may not be much choice as to site, but if there are damp hollows and higher and drier ground, choose the latter, as the roots will be warmer, and the blossoms have a better chance of escaping injury by frost, for the drier the air the less they are damaged.

Purchasing Trees.—First look to the character and position of the vendors, and deal with those who have reputations to maintain. They cannot afford to sell inferior trees, or what is of vital importance, distribute varieties under wrong names. It is a very serious matter to grow fruit trees for some years, then, when they bear, find they are not the sorts ordered, but inferior. Time thus lost cannot be regained. Order early in October, and the sooner the trees arrive and are planted after the leaves fall the better they will grow. Many are planted in spring, and answer very well; and it is better to plant just when the sap commences moving and the ground is in good order, than in mid-winter when it is in a cold, wet,

adhesive state ; but the best trees are sold first, or in the autumn. If they cannot be procured till spring, and the roots arrive in a very dry state, plunge them in water for a day before planting. Do not buy so-called "cheap" trees in markets, in April, with the roots as dry as hay through long exposure. They are the unsold stock of nurseries, and may or may not die, and may or may not be true to name. They are not to be trusted to give satisfaction.

Planting.—The best of trees are spoiled by bad planting, and it is deplorable to see how roughly the work is often done, through lack of knowledge. A man must be taught to plant a tree before he can plant it properly. He may honestly believe he is doing work well that he does not understand, when, at the same time, he is entirely at fault. It is intended that there shall be no excuse for bad planting by persons who read the instructions here given, and it is hoped they will act in accordance with them.

The subject cannot be made clear to the inexperienced without the aid of sketches : with them it can scarcely be misunderstood, therefore a few are provided. Three trees are represented in miniature, in fig. 25, page 72. The first (*a*) shows bad planting, either in the garden or grass fields. The

second (*b*) represents good planting in drained land. The third (*c*) shows how planting should be done in wet ground, in which water may stand within two feet of the surface. An ordinary man who has not been taught how to plant trees, will almost

Fig. 25.—PLANTING APPLES (*see* page 71).

certainly proceed as if digging a hole for a post, push the roots down in it a foot below the surface, cover them thickly with manure, stamp it down, pile the soil up around the stem, then, if in a grass-field, place on the grass in the form of a neat mound. The tree may not die the first season, but it is impossible it can flourish with roots twisted in, and surrounded with soil almost as firm as a wall, while the mound effectually excludes moisture. Trees innumerable have been prevented

growing by that rough and erroneous method of planting, which should forthwith cease.

The right method is to spread out the roots as in *b*, the soil beyond their extremities being well broken up to the extent of at least three feet from the stem, and twice that distance preferably; indeed, it is best to have the ground well worked throughout. If the site is not wet, the roots near the stem may be just below the ground line, the fibrous portions very slightly inclining downwards; good soil should be worked well amongst them, but not manure, and they may be covered about four inches deep, pressing down the soil carefully till it is moderately firm, but not hard, and finish by spreading three inches of half-decayed manure or vegetable refuse on the surface, and for a foot beyond the extremities of the roots.

Exactly the same course as to spreading out the roots to their full extent must be followed in planting in wet land, but they may be arranged on the surface or nearly so, as shown, digging soil from around for working amongst them, and covering as before, then adding manure as above advised.

Each tree will then be distinctly on a mound. and it is important that this be three feet wider than the spread of the roots, or in other words, their extremities should be eighteen inches from

the outside of the mound. It is surprising how well trees grow and bear in wet, low-lying soil when thus planted, especially if the outer edge of the mound be thickly covered with manure or litter of any kind in summer, to keep the soil moist there; this encourages the multiplication and extension of roots near the surface, and these produce fruitful wood; whereas, if the roots are driven down to the cold wet subsoil in search of moisture, the growth resulting, though it may be strong, is essentially unfruitful. If a layer of soil and ashes from burnt vegetable refuse be spread on the mounds annually, and a covering of manure given in summer, the trees will continue in a profitable bearing state for many years.

Three main points to be kept in mind when planting, are—1, always make excavations much wider than the extension of the roots when spread straight out; 2, never sink the stem deeper than it was before the tree was dug up from the nursery, judging by the earth-mark on the bark; and 3, never plant when the soil is in a very wet, unpleasant working state, but bear in mind previous remarks on the subject.

Root and Branch Pruning.—Though the figures previously referred to show how planting should and should not be done, they are too small

for showing the character of the roots, and the treatment these should receive—a matter of vital importance. As the roots are, so will the growth be. As a rule, too much attention is paid to the tops of trees, and too little to the roots. A tree with a small top and a plenitude of healthy fibrous roots in good soil, will arrive at a profitable bearing state long before a tree with a large top and a few unhealthy roots. Look then to the roots; they are as the main-spring to the watch, or fuel to the engine—the motive power. If damaged, they must be repaired and put in the best working order when planting. As it is quite certain that the majority for whose benefit these instructions are intended know little or nothing about the nature of the roots of trees, and as it is absolutely essential they should know something on the subject, particular attention is invited to the two following sketches, for they teach valuable lessons.

When a tree is dug from the ground, the roots are more or less broken. Even with the greatest care they cannot be retained in their integrity. As a matter of fact, trees are often dug up quickly, and the strong roots roughly chopped off or broken. This is not of great consequence if they are rightly treated, but if neglected, the results may be serious. A torn or jagged wound in the flesh is slow in

healing, a clean cut quickly heals. So it is with the roots of trees. Look at fig. 26 below; the main roots were broken, and planted with their

Fig. 26.—BAD PRACTICE IN PLANTING AND NON-PRUNING.

ends jagged. What was the result? Decay, as shown by the dark portion, few fibres issuing for supporting the tree, and scarcely any growth followed. Now turn to fig. 27, page 77; the

jagged ends were cut smoothly off. Result; the wounds healed forthwith, swelled at the end, and pushed fibres freely, these in turn pushing the tree

Fig. 27.—GOOD PRACTICE IN PLANTING AND PRUNING.

into growth. The root force of this tree, in two years after planting, was five times greater than the other, and the growth differed proportionately, as may be seen on inspection.

Shortening the Branches.—Examine the trees closely, root and branch. They were planted in well-prepared ground in the autumn. The long young shoots of the badly rooted tree were not cut back in the spring following, but left their whole length. All the young roots could do was to imbibe and send up just enough sap to enable small leaves to form on the shoots. These neither increased in length nor number, but fruit buds formed on them, including one at the end as is shown on the naked branch on the left, fig. 26, page 76. They formed on the three other shoots similarly, but are not shown. The following year they blossomed, and set fruit towards the end of the branches, and these being weak were dragged down as shown. The crop exhausted the tree, and it was practically ruined, the roots being totally inadequate to force further growth. The only way of restoring such a tree would be to cut all the five branches boldly back to within six inches of the main stem. But look at the time lost! the whole procedure of letting both the roots and branches alone was a mistake, and the penalty an enfeebled and practically useless tree. It does not matter about fruit weighing down the branches when trees are well-rooted, and make shoots as well as produce fruit, but in the case of young trees with few roots and weak shoots, it is a misfortune.

It is pleasant to turn to the well-rooted tree. The five branches, fig. 27, page 77, were cut back in spring at the lower cross-marks, to less than half their length; the root-force was thus concentrated on fewer buds, with the inevitable result of free growth ensuing. The five branches were multiplied to ten, incipient fruit spurs forming at the base of the originals, and wood and fruit buds as shewn on the two branches on the left. After this shortening, sufficient branches often form for the framework of a standard tree, but, if not, they may be cut back again the second year, though not so low down as shown in the two cross marks at X, page 77, or all the buds below will be forced into growth as shewn, and the interior of the tree crowded and incapable of bearing; but if only the tips of the shoots were cut off, two or three growths would push from near the ends and blossom buds form on the part below, the number of branches being increased, and fruit buds induced by the same operation.

Perhaps an enlarged sketch of a branch will enable the matter to be fully comprehended as it ought to be, for it is assuredly of great practical importance. Fig. 28, page 80, represents a branch exactly as it was cut off an Apple tree when the buds were swelling. The round, scaly buds are

blossom and fruit producers, the small buds growth extenders. The terminal bud, it may be noticed, is

a blossom bud, and should be cut off for starting the buds below into growth, if extension is desired. but if the shoot had been shortened half way down the year previous, what are blossom buds now would have been forced into shoots, crowding the tree with useless wood, above referred to as an evil to be avoided. We want, not a thicket of useless growths, but a series of thinly disposed branches studded with fruit buds from the base to near the extremity; then, with a favourable season, we have the reward of as much fruit as a tree is capable of producing. And what is more, indeed the gist of the whole question, any cottager can, by following the plain instructions given, produce such a tree.

Fig. 28.—APPLE
BRANCH WITH FRUIT
AND WOOD BUDS.

Fig. 29, page 81, will show exactly what to strive for. It is a photographic reproduction of a Cox's Orange Pippin Apple, ne-

cessarily greatly reduced, but represented with absolute fidelity. The branches of the tree as it is growing, are far enough asunder to admit the head and shoulders of a man; that is the secret of its fruitfulness. The action of the

Fig. 29.—A GOOD APPLE TREE.

light and air on the leaves compels fruit spurs to form, as they are shown, all over the tree in question. If the branches had been crowded, thus excluding sun and air, blossom buds could only have set towards the ends of the branches, and

the crop of fruit would not have approached half of what the tree now produces, namely, one-and-a-half hundredweight, worth, at the least, 2*d.* a pound when ripe, or 28*s.* The tree is twelve years old from the graft, or nine years from planting, is 12 feet high, and the same in diameter. If an acre of such trees were grown at 24 feet apart, the crop would be worth just £100. This uniformity, however, cannot be relied on, and it will be fair to take off half for contingencies, and the profit on culture, placing the cost at £12, will be highly satisfactory. It is to be remembered, however, the tree is only half grown, and in five years' time will be capable of bearing thrice the above weight of fruit. A tree of the same character, of a variety of the Nonpareil, in Mr. Jacob's garden, has this year afforded eight bushels, sold at 8*s.* a bushel. It is twenty years old, and improving every season. But it must be clearly understood that the best of trees, in the care of the best of cultivators, cannot be relied on to bear full crops every year.

Pruning.—The yearly pruning of trees grown on the common-sense principle represented, is of the simplest. All that is needed is to examine them about midsummer, also in August or September, and cut back any young shoots then which threaten to crowd the tree, leaving

four or five leaves at the base of each shoot. Also at the same time the pruner should not hesitate to cut out a main branch here and there that may cross or otherwise press against the others. The great object is to secure the admission of the sun's rays between the branches when in leaf. Note the condition "when in leaf", for on that success hinges to a far greater extent than is generally recognised, even by persons who have been long entrusted with the management of trees. Thinning out rather than shortening the main branches, is a golden rule in pruning for the production of fine fruitful trees.

It does no harm whatever to remove any shoots and branches in summer that may need removal, and at no other time is it possible to judge with such accuracy what portions to take out for the benefit of the tree. No escape of sap follows to weaken the tree, as is erroneously supposed by persons who talk without thinking, or write without experimenting; but the sap is simply turned into other channels, where it will be of far greater service than in the crowded parts removed. When summer pruning is carefully done, very little winter pruning is needed. A few snags may require to be cut back a little closer, and a branch shortened here and there which may be

encroaching on space it is not desired to occupy. That is all. Summer pruning, intelligently carried out on the simple lines indicated, is promotive of fruitfulness, whereas encouraging trees to make a crowd of young shoots in summer to be cut out in winter, is very much akin to working on the treadmill; for there is little or no fruit at the end of the labour, and nothing but shoots keep pushing up, to be cut out again in the tedious, profitless, yearly round.

If dwarf Apple trees miss fruiting for a year or two, through frost destroying the blossoms, too much growth is often made. This can only be checked by reducing the roots, severing some of the strong ones, as shortening the branches alone aggravates the evil.

Varieties.—A good choice is important, because obviously inferior varieties take up as much space, also as much nutriment out of the land, as superior sorts do. At the National Apple Congress of the Royal Horticultural Society in 1883, upwards of fourteen hundred varieties considered distinct were shown. The experience there gained exploded a popular fallacy, namely, that certain varieties only succeed in certain districts. Facts proved conclusively that those Apples which were best in the south were also best in the north;

with trifling exceptions, and everywhere; yet where a good local Apple is found, it would be foolish not to grow it when it is of great value.

In choosing varieties for planting, the habits of the trees must be kept distinctly in view, with freedom of bearing and general usefulness of the fruit. Some of the most handsome Apples seen at exhibitions are not the most profitable to grow; and varieties that bear most abundantly on very small trees do not continue profitable for many years, but are soon "worn out", especially in dry districts, and where the soil is not of the best kind for fruit culture. For practical purposes it will suffice to arrange a few useful varieties in three groups, namely, early bearers for bushes, productive medium-sized standards for gardens, and large standards for orchards.

Early Bearers for Bushes.—Early Apples grown on the Paradise stock are the first to yield profit, and as they are sold direct from the tree, the trouble of storing is avoided, and they are placed in the market before the arrival of large consignments of fruit from distant lands.

For *cooking* the following are good: 1, Lord Suffield, though it cankers in some soils and may possibly be superseded by 2, Lord Grosvenor; 3, Ecklinville Seedling; 4, Stirling Castle; 5, New

Hawthornden ; 6, Domino ; 7, Potts' Seedling ; 8, Frogmore Prolific ; 9, Cellini (on crab) ; 10, Tom Putt ; for succession—11, Small's Admirable ; 12, Lane's Prince Albert. If six varieties only are wanted, choose the second, third, fourth, seventh, and twelfth ; if three, the third, seventh, and twelfth ; if one, the third. It is much better to plant several trees of one sort than one each of many.

For *table* use six varieties will suffice, and the following are serviceable : 1, Early Red Juneating (Margaret) ; 2, Fearn's Pippin ; 3, Duchess of Oldenburg ; 4, Cox's Orange Pippin ; 5, King of the Pippins ; 6, Scarlet Nonpareil. Ribston Pippin is omitted because the trees usually commence cankering soon after they commence bearing. If only three are wanted, choose the third, fourth, and fifth ; if one only, plant the fifth.

Productive Medium-sized Standards—These are very useful for planting six or seven yards apart on small plots, with dwarf or bush fruits between. For *cooking* : 1, Early Julyan ; 2, Keswick Codlin, or Grenadier ; 3, Potts' Seedling ; 4, Ecklinville Seedling ; 5, Lane's Prince Albert ; 6, Dumelow's Seedling, also known as Wellington and Normanton Wonder. If three only are required, plant the third, fourth, and fifth ; if one, the fourth. For *dessert*, Worcester Pearmain,

Yellow Ingestrie, with the third, fourth, and fifth in the dessert list for dwarf trees. If three only are wanted, choose Cox's Orange Pippin, Worcester Pearmain, and King of the Pippins; if one, the last named.

Large Orchard Standards.—For planting ten yards apart, to be growing into profit while the dwarf sorts are bearing, the choice falls on—1, Warner's King; 2, Beauty of Kent; 3, Bramley's Seedling; 4, Mère de Ménage; 5, Annie Elizabeth; 6, New Northern Greening. If three only are desired, the second, third, and sixth will give a long succession of valuable fruit. The old favourite, Blenheim Pippin, is not included, because half a generation at least must elapse before the trees prove satisfactorily remunerative.

The fourteen hundred varieties of Apples are now reduced to twenty-eight, with the more rigid selection to less than half the number. In choosing, consideration has been given to hardiness, productiveness, cheapness of the trees, and the quality of the fruit. It is customary to evade the difficulty of choosing a small number of varieties by naming many. It is easy to select fifty, but not easy to reduce by gradations in the manner adopted, without including the varieties recommended.

It is to be observed that while they will afford

Apples over a period of nine months, the great bulk are in season either before the arrival of large foreign cargoes, or after these are disposed of, thus leaving the markets practically open for home-grown fruit—a point of no small importance to the majority of cultivators.

In large private gardens or experimental plantations several more varieties may be grown for home use and educational purposes. There are many good sorts omitted from the above selection such as (*culinary*): Alfriston, Betty Geeson, Blenheim Pippin, used also for dessert; Cox's Pomona, Emperor Alexander, Golden Noble, Golden Spire, Lady Henniker, Lord Derby, Mank's Codlin, Nelson Codlin, Peasgood's Nonesuch, Queen Caroline, Stone's Apple, Reinette de Canada, Striped Beefing, Tower of Glamis, Yorkshire Beauty, and others—good *dessert* sorts worthy of being included in extended collections are, in addition to those previously mentioned: Astrachan (Red), Braddick's Nonpareil, Court Pendû Plat, Devonshire Quarrenden, Claygate Pearmain, Dutch Mignonne, Gravenstein, Irish Peach, Kerry Pippin, Lord Burghley, Mabbot's Pearmain, Margil, Melon Apple, Petworth Nonpareil, Ribston Pippin, Sturmer Pippin. All of these possess good qualities, and the list could be extended. Well-grown collections of hardy fruit

on the estates of large proprietors would not only add a feature of interest and usefulness to their homes, but be in effect small pomological schools that might be of service to cottagers and small holders in the surrounding districts.

A few comparatively new Apples of promise worth trying are : Bismarck, Lady Sudeley, Mrs. Barron, The Queen, The Sandringham, Newton Wonder, Gascoigne's Scarlet, September Beauty, Beauty of Bath, Tyler's Kernel, Washington, and Baumann's Red Winter Reinette.

Enemies.—These are : mainly (1) the American blight, a woolly Aphis which infests the stems and seriously injures the trees: The remedies for scale on Pear trees (page 96) are equally effectual for the Aphis in question if vigorously forced into every crevice where the insects are visible. (2) The Codlin moth, the caterpillar of which causes "worm-eaten" Apples. Immediately the fruits fall the caterpillars leave them and ascend the trees; they may be prevented doing so by a band of cotton-wool, hay, or sacking, well smeared with cart grease and oil; soft soap half-a-pound, Stockholm tar and whale oil, three parts of the former to one of the latter, the whole slightly heated and mixed; or of resin and oil, two-thirds of the former and one of the latter, melted and mixed; the bands to be

placed round the base of the stem. (3) The Winter moth, the caterpillars of which devour the blossoms and leaves and ruin the crops and trees. It is the most destructive of pests. The wingless female moths crawl up the stems in September for depositing eggs. The smeared bands should therefore be applied in good time, though they are not always effectual. After the leaves fall the petroleum mixture recommended for the woolly Aphis may be syringed all over the trees, or the great American remedy, Paris Green, a form of Arsenic, to which Brunswick Green sold in this country is similar. This may be used at the strength of an ounce to six gallons of water in winter, and at half the strength just when the blossoms are expanding. Hellebore powder beaten into paste with hot water, then mixed at the rate of an ounce to a gallon of cold water, is safe and good for the purpose, killing all the caterpillars it reaches and not injuring the blossom or trees. The larvæ of the Lackey moth and other caterpillars attack the trees, but the same remedies are applicable.

Fowls are of great service in fruit gardens in devouring insects, except at a time when they might also partake somewhat too freely of the smaller kinds of fruits. In plantations of Apples they can do nothing but good.

Lime washing the stems and dusting the branches thickly in winter, as advised for Gooseberries, is good for the trees, root and branch, and obnoxious to their enemies.

PEARS.

Pears are more of a luxury than a necessity, but a most refreshing and wholesome luxury in large demand by a great and important section of the community. They should be grown where they can be grown well, as they may be in deep fertile soils. Pyramidal shaped bushes on the Quince stock usually produce the finest fruit, because the roots are more fibrous and spread near the surface, where the soil is generally richer than below. Where it is of the best character to a depth of two or three feet, trees grow strongly and bear fine fruit on the Pear stock.

The procedure in respect to planting, trimming the roots, and pruning the branches, is precisely the same as that advised for Apples. Except in very warm localities, only late summer and early autumn pears should be planted as orchard standards. A few of the best are Jargonelle, Williams' Bon

Chrétien, Fertility, Hessle, and Marie Louise d'Uccle. Of these the three last named are as reliable as any, and are extensively grown in various parts of the country. If one tree of a stewing Pear is desired the Catillac may be chosen. It is hardy, a free bearer, and boys do not often steal the fruit.

For bush or garden-culture good varieties from August to the end of the year are: 1, Williams' Bon Chrétien; 2, Souvenir du Congrès; 3, Beurré d'Amanlis; 4, Beurré Hardy; 5, Beurré Superfin; 6, Maréchal de Cour; 7, Louise Bonne of Jersey; 8, Pitmaston Duchess; 9, Durondeau; 10, Beurré Diel; 11, Doyenné du Comice; 12, Emile d'Heyst. Marie Louise is excluded because the blossom is tender and the fruit is liable to attack by a fungus. For a reduced list choose the first, third, fourth, fifth, seventh, eighth, and eleventh. The fine old Jargonelle is one of the best early Pears for standards in the Midlands, and walls in the north, but is not a good (or much less good) southern Pear. Later Pears, which require to be grown against a wall in cold and northern districts, are Glou Morceau, Josephine de Malines, and Bergamotte Esperen. The varieties named will give a supply for nine months, and are chosen as among the best and most useful out of six hundred.

There are two kinds of pyramid, or bush Pears.

1. Pruned trees restricted to a certain size and shape, suitable for certain positions in gardens.

Fig. 30.—A GOOD PEAR TREE (*see* page 94).

2. Naturally grown bushes, which are only slightly pruned, and assume much larger dimensions than the others. Both kinds bear well, but the latter eventually yield the greater weight of fruit, and

are much the easier to manage. These are the trees for cottagers and busy working-men to produce, and the nearer they approach the specimen, fig. 30, page 93, the better. It is a splendid tree of Pitmaston Duchess Pear, twelve years old, fifteen feet high, and nearly as much in diameter. Any fruiterer would have given £2 for the crop last year, before it was gathered, and it was as good the year previous, this year it is not. The best of fruit-trees cannot be depended upon to bear uniformly every year. The branches appear crowded, but that is the consequence of the enormous reduction by photography, to represent such a large tree in the small space. The branches are more than a foot apart, indeed, sufficiently distant for the sun and air to play amongst them, hence the fruiting spurs the whole length of the branches, and the heavy crops of splendid fruit produced. The tree is on the Pear stock, and growing in soil that is good to a depth of two or three feet. It is standing evidence of the truth of Mr. Shirley Hibberd's aphorism, namely: "IT MUST NEVER BE FORGOTTEN THAT FRUIT IS THE PRODUCT OF CULTIVATED LAND AND CULTIVATED TALENT"—a sentence which should stand out bold and clear, and be committed to memory by every person who is engaged, or about to engage, in the occupation of

growing fruit; no matter of what kind. The pruning to which this fine Pear is subjected is precisely the same as that described on page 82, in the chapter on Apples. It is the essence of simplicity, and practically and philosophically sound.

Trees for Walls.—The finest of fruit is produced by trees trained to walls or to boarded fences, provided the roots are in good soil. It may be said there are acres of unoccupied wall space, such as cottages and other buildings, as well as divisional fences between gardens, that might be utilised in the manner suggested. There is no other way in which walls can be covered so quickly as by planting what are known as cordon trees, or in other words, trees limited to one stem. If these are planted about twenty inches apart, the leading growth not shortened till it reaches the top of the wall or fence, and the side growths are trimmed in to within an inch or two of the main stem, the trees bear abundantly, and the wall is quickly covered. These are the cheapest of all trees to purchase, and the easiest to manage. Both kinds, the upright for lofty walls, and diagonal for low fences, are represented in fig. 31, page 96. When side-growths extend in summer, nip off the ends at the sixth leaf, and shoots that push again to one

leaf as often as produced. In winter cut back the snags to rounder buds at the base, as indicated by the cross-lines in the figure, and that is all the pruning needed by these easily-managed and productive trees.

Fig. 31.—CORDON TREES.

Enemies.—Scale insects on the branches, and the slug-worm, the larva of the saw-fly (*Selandria*), on the leaves, are the chief enemies of the Pear.

Where scale abounds, the branches have a rusty incrustated appearance. Methylated spirit brushed well into the bark destroys scale; as also does a solution made by dissolving a quarter of a pound of soft soap, and a walnut-sized lump of soda, in a gallon of boiling water, and while hot stirring in violently a wine-glass-full of petroleum such as is

burned in lamps. In the winter apply with a brush, stirring the mixture as the work proceeds. The slug-worm is destroyed by dusting with freshly-slaked lime, or syringing with clear lime water, which is made by mixing a pound or two of lime in lumps in a pail of water, stirring well, then allowing it to get clear. If any lime settles at the bottom of the vessel, the lime-water is as strong as it can be made; if there are no settlings it is not so strong as it should be. Slugs cannot endure it, and it is beneficial rather than injurious to all kinds of fruit trees and garden crops.

PLUMS.

Wherever blackthorns or even common haw thorns grow freely, Plum trees will thrive, indeed they succeed in any fertile soil, and especially that which contains some lime. Plums are essentially useful. In some districts they are more profitable than Apples, and they come into bearing sooner. They cannot be depended on to produce full crops every year, as their early blossoms are occasionally injured or destroyed by frost. This, however, is a contingency to which all fruits are liable, but failures may be reduced to a minimum by the selec-

tion of hardy and prolific varieties. Foremost amongst these stands the Victoria, with its large, red, egg-shaped fruit. It is the Plum of Plums for cottagers and small holders to plant. As an indication of the extent of its cultivation, 200 tons of fruit were sent from a small railway station in North Notts last year, and sold at an average price of £10 a ton, or an aggregate of £2,000 from one district, as produced by a number of cultivators. The year previous, which was a great Plum year, 400 tons were sent from the same station (Tuxford), and realised an average price of £8, or a total of £3,200. It is not unusual for a healthy tree to yield a hundredweight of good fruit, and this at the low price last named, is equal to £77 per acre with the trees 15 feet asunder, leaving a profit of at least £50. The late Ven. Archdeacon Lea, of Droitwich, who planted three acres of land with fruit trees in 1865, for experiment, and a similar extent in 1874, with the object of determining the profits derivable from different kinds, found Plums the most satisfactory of trees when the right sorts were planted. His experiments with fifty-one varieties justified his recommending the Victoria, Rivers' Prolific, Pershore, the Diamond, and Pond's Seedling, as the most profitable for cottagers. To this list may be added The Czar,

early and productive; Cox's Emperor (red) and **Monarch** are valuable Plums; Oullin's Golden, rich and prolific. Those may be taken as some of the most serviceable Plums in cultivation. Rivers' Prolific and Victoria do not make such large trees as the others, but are the most certain of bearers. A Plum of the largest kind is Pond's Seedling (red), and Pershore (yellow) is the favourite of its colour for market. The others, where the colour is not indicated, are bluish purple, the first-named (Rivers') being the smallest, but valuable because early, and worthy of its name "Prolific". The very hardy and free-bearing Crittenden and Prune Damsons must not be overlooked. Planted in good soil they practically require no attention, and good fruit meets with a ready sale in the markets.

The remarks on planting and the general management under Apples apply equally to Plums; and with the sketches here following the cultural routine cannot easily be misunderstood.

Fig. 32, page 100, represents a Victoria Plum tree—one side as it should appear when pruned, the other showing the result, the crop. It will be seen the pruned side is not a mass of interlacing shoots, but is open, with a sufficient number of small "twiggy" shoots. However, after once or twice shortening the shoots when a tree is young,

for obtaining the requisite number of main branches, all that is needed with Plum trees generally is the occasional removal of a branch here and there that may crush against the others, and cutting back a few young shoots to the spurs, or clusters of blossom buds at the base. But in the case of bearing trees

Fig. 32.—PLUM, PRUNED AND BEARING.

of the Victoria, it is a good plan to shorten strong shoots that are made in summer, as if these attain a great length, the brittleness of the wood causes the branches to break with the weight of fruit. That is the only fault of this valuable Plum. It is

often necessary to support the branches with forked props, but these may be to a large extent, if not entirely, dispensed with, by keeping the head somewhat compact, as shown in the figure. This plan of shortening a luxuriant branch here and there, when it extends much beyond the others, is practised by the best Nottinghamshire growers, but is not generally adopted, because not generally known. It is seldom, if ever, needed by other Plums. Victoria Plum trees are best on stems not more than 4 feet high, for convenience of pruning and gathering the crops. They are excellent also for walls, fences, and buildings, bearing and ripening well on north aspects in the southern and midland counties.

Fig. 33.—PLUM SPUR.

It is desirable that beginners in fruit-growing should learn to distinguish between growth-buds and blossom-buds, or they may do more harm than good with the knife. Blossom-buds are round, as on the spur, fig. 33. The spur was cut from a tree when the buds were swelling, and the shoot on the next page was cut off the spur, leaving

one growth-bud, which is apparent, and equally apparent is one blossom-bud on the shoot removed, (fig. 34, below). Better specimens of the different buds could not be desired, nor a better

Fig. 34.
PLUM SHOOT.

example of spur-pruning for producing a large cluster of fruit. The great point to remember, is the importance of preventing the interior of the trees being crowded with shoots by cutting out those which obstruct the light and air about midsummer. If they are allowed to remain to grow into a thicket evil is done, and cutting them out in winter is very far from being a satisfactory remedy. The summer is the time for relieving, or rather preventing, overcrowded trees, which never did produce, and never can produce, the fullest crops of the finest fruit.

Enemies.—These are mainly aphides, popularly known as lice; the red spider, an almost invisible insect that extracts the sap from the leaves, causing a yellowish hue, as if scorched; and mildew, or fungus, that appears in multitudinous specks. The remedy for aphides is tobacco water, which may be made

by pouring soft boiling water at the rate of one gallon to two ounces of the strongest shag tobacco and allowing it to stand till cool; its efficacy is increased by dissolving two ounces of soft soap in each gallon at the time it is poured on the tobacco. If this fails, further add a decoction of quassia, made by boiling "chips", obtainable from chemists, at the rate of two ounces to a gallon of water. Tobacco juice, when required in large quantities, can be purchased more cheaply than it can be made at home. The remedy for the red spider is the soft soap solution, mixing a large handful of sulphur in three gallons. The remedy for mildew is half an ounce of sulphide of potassium in a gallon of water. The mixtures are best applied with a syringe, at the first moment the "enemies" are seen; if allowed to become firmly established, they are most difficult to eradicate.

CHERRIES.

Except in the great Cherry districts, where large numbers of trees are established, Cherries are the least serviceable of fruits for cottagers to grow. The reason is this: where there are a thousand

times more Cherries than birds can eat, those they take are not missed; but where the trees are comparatively few, and birds relatively numerous, it is most difficult to prevent their devouring the crops, of the sweeter kinds especially. Isolated trees of these must be netted if the fruit is to be preserved, and then the cultivation is not profitable. Where Cherries naturally grow and bear well, and birds do not unduly abound, the crops are lucrative; and all the cultural details for producing them are embodied in the chapters on Apples and Plums. If a few sweet Cherries are particularly desired for home use, it is the best to plant a tree or two against a wall or fence for convenience of netting, the alternative being to grow dwarf trees in the open where they can be protected. Early Rivers, black; Elton, pale yellow; Governor Wood, mottled red; and Black Tartarian are excellent varieties. If one only is required, no great mistake will be made in choosing Governor Wood, which bears abundantly fruit of the best quality. Birds, however, do not attack Morello or Brandy Cherries, so long as they can obtain any sweeter; and trees grown as bushes in the open bear heavy crops in the southern and midland counties, and the fruit usually finds a ready sale at a remunerative price to the grower. They are excellent for growing against the north

sides of buildings. It is to be understood that cottagers and small farmers are not recommended to engage in the culture of sweet or dessert Cherries as a profitable undertaking, except under the special conditions above mentioned, and with the experience of owners of established trees to guide them. For enemies and remedies see remarks under PLUMS.

OTHER KINDS OF FRUIT.

There are other kinds of hardy fruit besides those above mentioned, but however delicious they are not of substantial value to cottagers, allotment-holders and small working farmers, hence descriptions of the cultivation of Peaches, Nectarines, Figs, Vines, Mulberries, and even Apricots would be out of place in an essay of this nature. In some localities where Apricots flourish, good bearing trees are occasionally seen trained against dwellings, and where these trees exist they form examples for imitation to persons who wish to have similar specimens; and Figs grow well in warm sunny chalk pits: but practically speaking, the kinds of fruits named are beyond the scope of the great industrial body for whom guidance in useful fruit-growing is desired.

The large American Blackberries may be grown if desired, and they cover old walls and fences profitably where the plants grow well. They like rather strong and moist soil, succeeding better in the cool damp north than the dry and sunny south. In planting and pruning, the advice given for growing Raspberries is applicable, cutting out the

Fig. 35.—A FRUIT ARCH.

old growths and leaving the young for bearing being the most important point in management. They afford clusters of large black fruit in September and October, and what is known as the parsley-leaved Bramble is one of the best sorts to grow. They cover arches over walks, as may Apples, Plums, and Pears, either trained as shown in fig. 35, page

106, or as single cordons, previously referred to. In this way much excellent fruit may be grown, and space utilised which otherwise could not afford a pennyworth of produce.

IMPORTANT ITEMS.

Manuring Fruit Trees.—As a rule too much manure is given to trees when young, and not sufficient when old or bearing freely. If stout young wood extends much over a foot in length the soil is rich enough: if less than that assistance is needed. The simple mixture recommended for Gooseberries on page 54, is good for all kinds of fruit, to be applied as there recommended, as far as the roots extend. So is a mixture of one part bonedust, two parts Kainit, and twenty parts of charcoal dust, as recommended in the *Herefordshire Pomona*, to be applied at the rate of a quarter of a pound to the square yard. Genuine guano is excellent; so is nitrate of potash (saltpetre), at the rate of 2 oz. per square yard; and good stable manure spread on the ground in the autumn, and there left to decay, encourages growth in weakly trees. Persons who desire a more scientifically complete

manure for fruit trees may adopt the formula of Mr. Edmund Tonks, for Apples, though it is good for other kinds—superphosphate of lime, twelve parts (or pounds); nitrate of potash, ten; chloride of soda, four; sulphate of magnesia, two; sulphate of iron, one; and sulphate of lime, eight—mix and apply at the rate of a quarter of a pound to the square yard to trees that do not make satisfactory growth. Liquid manure of any kind, applied in summer or winter, is of great benefit to weakly trees.

Grafting Trees.—This is one of the oldest arts in gardening, also one of the most simple and useful, yet a great number of persons who are interested in fruit-culture are necessarily unacquainted with the process of converting a Crab into an Apple, a Quince into a Pear, or making a tree that bears bad Apples or Pears produce good ones by putting on new heads. The first conditions for success are that the cut-down trees, termed stocks, are healthy; and the portions to be added, which are called grafts, or scions, must be of firm, clean, young wood, not soft succulent shoots.

These grafts or scions should be taken off in winter before the buds start into growth, and be laid in damp soil in a cool, shaded place to keep them back until the sap in the stocks has com-

menced moving. That is one of the things to be remembered—the growth of the stock to be a little in advance of the scion or graft. Trees, whether large or small, to be grafted should be cut down in spring. When other trees are pushing fresh growths, the still dormant and retarded scions

Fig. 36.—SPlice GRAFTING.

may be attached. A good time for grafting is usually early in April. The illustrations, A, B, C, fig. 36, will make the process clear. The shoot A is the graft or scion, with the first slice cut off the end. B is the same, showing an upper cut in

the front, and a small shaving taken off the back to make the end wedge shaped. *c* is the branch, or a small tree, shortened, and cut for receiving the scion, which is placed in position for growing. With a sharp knife, thoughtfully guided, the work is easy. That is called splice-grafting, and care must be taken that the *inner* bark on one side, at least, of the stock and scion are brought exactly together.

Fig. 37.
CROWN GRAFTING.

In dealing with large branches, crown-grafting is the simplest plan to adopt, and it can be made plain in a few words. Given a stock, fig. 37, headed down (*B*), three scions, *c*, *c'*, *c''*, are inserted. They are cut as shown and slipped down between the bark and the wood, slits being made for their inser-

tion at *D*, and tied; then the crown of the stem, also the ligatures, are well covered with wax or clay; this applies to both forms of grafting.

Grafting-Wax.—There are different methods of preparing grafting-wax. The two following are simple and good: 1. To be used warm. Resin, 8

parts; tallow, 3 parts; red ochre, 3 parts; burgundy pitch, 1 part. First melt in an iron pot the resin, add the tallow, and lastly the red ochre. Stir well together, but do not make, nor use, too hot. 2. To be used cool. Equal parts of yellow wax and turpentine, with half as much burgundy pitch as either, and half as much mutton suet as pitch. Melt altogether, mix thoroughly, leave them to cool, then form into small balls and use when required. The object of grafting-wax is to exclude air, and, if any cracks appear, they must be promptly filled, leaving a smooth surface. In the absence of the above preparations, the object in view may be accomplished with thick plasters of clay, made by beating tenacious clay into a paste with about half the quantity of cow manure and horse droppings. It must be pressed closely round the stems, and as often as any cracks form they must be plastered up.

Thinning Fruit.—Some Apple and other fruit-trees are notorious for bearing heavily one year, and remaining practically barren the next. That is because they are so much exhausted in maturing the load of fruit, that they cannot at the same time form and develop blossom buds; but if the clusters are well thinned when the fruit is small, leaving one or two Apples or Pears on a spur, instead of thrice

that number, and the same with Plums, the fruit attains a much larger size, the crops are more valuable, and the trees are not unduly weakened. Occasionally complaints are rife about "gluts of fruit", and the "crops not worth gathering", but high-class samples have always met with a ready sale during periods of the greatest abundance, and these are always to be had by thinning crowded crops on healthy trees—hence the work ought not to be neglected.

Gathering Fruit.—It is only necessary to say in respect to small fruit left to ripen, that it should not be over-ripe when gathered for travelling, or it may reach the market in a jam-like mass, and not realise half the price it would if gathered a day or two sooner; still, the other extreme of sending it obviously unripe must be avoided. Apples and Pears are ready for gathering when the fruit, if lifted up by the hand, separates easily at the contraction between the stalk and the spur. If the stalk has to be broken by twisting, the fruit is not ready, and if torn from the trees in that way, it soon shrivels. The pips or kernels are sometimes brown before the fruit is quite ready for gathering. Late varieties have often to remain on the trees till late in the autumn. Easy separation at the natural junction, which no one can fail to observe,

is the best guide for the inexperienced cultivator to follow in securing his crops, and he does not then drag the buds for future crops off the trees.

Fruit should be handled more carefully than eggs, for it is much more liable to injury than they are by rough usage. Throwing tender-fleshed Apples and Pears into baskets, then turning them out carelessly, as if they were so many potatoes for pigs, spoils the samples by bruising. The bruises may not be apparent at the time, but they are there, and will quickly spread to such an extent as to reduce the value of the crop at the least fifty per cent. With a little practice the work can be done about as quickly when done well as when conducted in a thoughtless, slipshod manner. The less fruit is moved about the better, and as far as possible the sorting should be done at the time of gathering, separating the small, specked, and malformed from the large and clear specimens. Thrifty persons offer the best only for sale, keeping the relatively inferior at home, after the manner of our business-like American competitors.

Storing Fruit.—Cottagers and small holders of land shall not be tantalised with instructions for erecting elaborate fruit-rooms and stores. These are luxuries for the affluent, rather than requisites for the working population. It is only necessary

to remember that fruit keeps much better in a cool and dark place than in a light and warm one, and if the surrounding air is a trifle damp, it is better than if very dry; but cleanliness and sweetness are indispensable. Fruit absorbs impurities the same as butter does. Two examples will teach a lesson on this point easy to be remembered. A gardener made mushroom beds in the lower bins of a fruit-room, the upper being filled with Apples and Pears, but the effluvium from the manure employed in the mushroom beds was absorbed by the fruit, and this, in consequence, spoiled. A gentleman had a quantity of Apples in a building, into which rats found their way, and for stopping them had tar placed in their runs, with the result that all the fruit was strongly flavoured with tar, and could not be used. Flour barrels are excellent for storing fruit in, but petroleum casks or soap cases would be ruinous. If unblemished Apples are placed in sweet barrels, and these sufficiently covered with straw, or placed anywhere beyond the reach of frost, the fruit will keep as well as in the most elaborate structures.

Marketing Fruit.—It may appear a strange statement to make, but it is true, that in agricultural districts less care is exercised in sending Apples to market than potatoes. The latter are sorted,

but tons of Apples are offered for sale, specked and clear all mixed together, just as they come from the trees. It is a costly mistake. Every season, both in London and other markets, English Blenheim Orange Apples cannot be sold for more than a shilling a bushel, while "foreigners" of the same variety realise four times the price. There is as much difference between the two as is represented in fig. 38, below, in which sorted and unsorted

Fig. 38.—APPLES FOR MARKET, SORTED AND UNSORTED.

Apples are shown side by side. Is another sentence needed to enforce the better way? One is required for urging growers not only to sort their fruit but to let the bulk be uniform throughout. That is the American plan. If a thousand barrels are sold by auction, only one, or at most two, are opened, and

according as the brand marks are x. xx. xxx. so will the bulk be. It is that system of care, with honesty, that has built up a great trade, and it ought to teach home-growers a great lesson. Do not hide the bad under the good, but, as before advised, let each grower deal with others as he would wish them to deal with him if they were sellers and he a purchaser of fruit. That is the case in a nut-shell, with the shell cracked and the kernel shown for displaying its soundness, as representing the true principle of marketing fruit.

CONCLUSION.

Endeavour has been made to treat the important subject of this essay as fully as possible within the stipulations—to condense the essentials of fruit culture and fruit management into its pages; to teach soundly, and, above all, plainly, in the hope of teaching usefully those who have or can acquire land for producing fruit for their families, and for the inhabitants of adjacent towns, to the mutual advantage of all. Given knowledge on the subject, and industry, many an example proves, and some have been adduced, that—to quote the words of Alder-

man Sir James Whitehead, Bart., Lord Mayor of London (1889)—“there is no reason why much land should not be made three times, five times, as profitable as it is now, by fruit cultivation; and if the work is carried out with energy and zeal, it will be of great benefit to the country we love so well.”

INDEX.

American blight, 89
Aphides, destroying, 102, 103
Apples, bush tree, pruned and bearing, 18
 — precocious prodigies, 19
 — importance of, 67
 — improvement in desirable, 67
 — British and American, 67
 — raising trees, 68
 — stocks for, 68
 — relative productiveness of, 68
 — soil and situation for, 69
 — purchasing trees, 70
 — planting, 71
 — right and wrong methods of planting, 72, 73, 74
 — root and branch pruning, 74, 75
 —, examples of, 76, 77
 — shortening the branches, 78
 — exhausting young trees, 78
 — result of correct pruning, 79
 — fruit and wood buds, 79, 80
 — a good tree, 81
 — value of crop of, 82
 — summer, autumn, and winter pruning, 82, 83
 — reducing roots of luxuriant trees, 84
 — good varieties, 84
 — early bearers for bushes, 85, 86
 — productive medium - sized standards, 86
 — large orchard standards, 87
 — for large collections, 88
 — experimental plantations, 88
 — new varieties, 89
 — enemies and remedies, 89, 90
 — smeared bands for trees, 89
Apricots, 105
Arches for fruit trees, 106
Bark, preventing abrasion of, 16
 — protecting from animals, 16

Blackberries, American, 106
Caterpillars, preventing and destroying, 55
 — on apple trees, 89, 90
Cherries, and birds, 104
 — good varieties, 104
Codlin moth and caterpillar, 89
Cordon trees, 96
Currants, value of, 56
 — Red and white, pruned bush, 57
 — fruiting branch, 57
 — summer and winter pruning, 58
 — distances of branches, 59
 — standards, 59
 — standards, formation of, 60, 61
 — varieties, 62
 — Black, value of crops, 63
 — cuttings and suckers, 63
 — character of bush, 64
 — digging and manuring, 65
 — old and young wood, 65
 — lime and salt for, 65, 66
 — enemies and remedies, 66
Damsons, good varieties, 99
Early bearing fruits, 22, 85
Examples to be followed :
 A farmer's, 5
 A widow's, 6
 A labourer's, 9
 A tradesman's, 10
 An allotment holder's, 11
 A landlord's, 12
 A society's, 13
Fences for fruit trees, 16
Fowls in fruit gardens, 90
Fruit, as an adjunct to farm produce, 4

Fruit, distribution of trees, 14
— varieties for fields and hedge-rows, 15

— stations and planting, 16
— staking trees, 16
— gardens, trees for, 17
— thinning, 111
— gathering, 112
— storing, 113
— handling, 113
— marketing, 114

Fruits, value of small or bush, 20, 21
— kinds not of value to cottagers, 105

Gathering fruit, 112

Gooseberries, raising from cuttings, 44

— pruning trees, 45, 46, 47
— suckers, 45, 46
— spurs and young wood, 48
— half pruned bush, 50
— cropping and summer pruning, 50, 51
— value of crops, 52
— for hedges, walls, or fences, 52, 53
— soil and manuring, 54
— good varieties, 54
— enemies of, 55
— painting and liming bushes, 55

— destroying and preventing caterpillars, 55

Grafting fruit trees, 108, 109, 110
— wax, 110, 111

Hellebore solution 90

Insects and remedies, 55, 66, 89, 90, 96, 97, 102, 103

Keeping fruit, 114

Land values and fruit, 3, 11, 117

Lime washing fruit trees, 91

— water, how to make, 97

Liquid manure, 28, 103

Manures for fruit trees, 106, 107

Marketing fruit, 114

Methylated spirit, 96

Mildew, destroying, 103

Nitrate of potash, 107

Obstacles to fruit culture, 2

Orchards, character of British, 1

Paris green, 90

Pears, Quince and Pear stocks, 91

— varieties for orchards, 91
— varieties for bush or garden culture, 92

— a good tree, 93

— value of crop, 94

— pruning, 95

— trees for walls, 95

— cordon trees, 96

— enemies and remedies, 96

Petroleum mixture, 90, 96

Plan of fruit and vegetable garden, 7

— of fruit garden, 19

Planting fruit trees, 16

— distances for, 19

Plums, usefulness of, 97

— value of fruit, 98

— good varieties, 98, 99

— cultural routine, 99

— tree pruned and bearing, 100

— fruit spurs, 101

— wood and blossom buds, 102

— enemies and remedies, 102

Produce from small garden, 9

Quassia water, 103

Raspberries, errors in management, 33

— digging amongst injurious, 34
— rational methods of culture, 35

— soil for, 35

— character of roots, 36

— planting and shortening canes, 36, 37

— choosing canes, 38

— watering and mulching, 39

— summer management, 39

— thinning suckers, 40

— removing canes after fruiting, 40

— winter work and pruning, 40

— bush in bearing, 41

— lines of, 42

— training the canes, 42

— self supporting canes, 42

— varieties of, 42, 43

- Red spider, 102
 ——— destroying, 103
 Scale, destroying, 96
 Slugs, destroying, 97
 Soft soap and petroleum mixture
 for insects, 96
 ——— water, 103
 Storing fruit, 113
Strawberries, improving land, 22
 ——— cost and profit on culture, 23
 ——— raising plants, 23, 24
 ——— distances for planting, 25
 ——— intercropping with onions, 25
 ——— methods of planting, 26
 ——— edging for borders, 27
Strawberries, soapsuds for, 27
 ——— liquid manure for, 28
 ——— keeping fruit clean, 28
 ——— preparing ground for, 29
 ——— good varieties, 29, 30
 ——— packing fruit in punnets, 30
 ——— packing fruit in chip baskets,
 31
 ——— gathering, 32
 ——— sending by post, 33
 Sulphide of potassium, 103
 Thinning fruit, 111
 Tobacco water, making, 103
 Winter moth and caterpillar, 90

LONDON :

WHITING AND CO., 30 & 32, SARDINIA STREET, LINCOLN'S INN FIELDS.

OPINIONS OF THE PRESS.

"It was a bright idea of the Fruiterers' Company to expend a small sum for a Prize Essay on Fruit Culture for Cottagers. That the result was the admirable book by Mr. John Wright may be counted a fortunate circumstance, for prizes do not necessarily bring forth productions worthy of them, and in this case a public benefit is the result of what we will term a spirited policy. Mr. Wright's book should be universally read and extensively acted on."—*Gardeners' Magazine*.

"This is the essay which was premiated by the Fruiterers' Company, and its sensible practical character justifies the award. It is free from exaggerations as to the profit to be derived from fruit culture, at the same time it is not too discouraging to those who embark in the business judiciously, and with knowledge of what they are about. As regards the cultivation and management of market fruits, the author's advice is plain and good, and growers of fruit would do well to read, and take note of much that he has written."—*Gardeners' Chronicle*.

"Written by a trained horticulturist of great experience as a practical gardener, a judge at horticultural shows, and a capable instructor in his journalistic capacity, the treatise is in all respects to be recommended. Mr. Wright was one of the first to urge the need of the more extensive cultivation of fruit in this country. Yet he has been careful to avoid such exaggerated estimates of the profits of fruit culture as have lately been put before the country by sensational writers."—*Agricultural Gazette*.

"To all interested in the culture of fruit, but more especially to those pursuing the practice on a small scale, this is a most valuable work. It is composed of the essay that gained the twenty-five guineas and gold medal offered by the Worshipful Company of Fruiterers for the best essay on 'Profitable Fruit Growing for Cottagers and others with Small Holdings.' The numerous varieties of fruit all find attention from the essayist. They are dealt with in a brief but clear and thoroughly practical manner. The book is freely illustrated, well printed, and neatly bound, and we heartily commend it to the attention of all connected with the culture of hardy fruit."—*Farming World*.

"Not long ago a prize was offered by the Worshipful Company of Fruiterers for the best essay upon fruit growing for cottagers and others. This essay was required to be confined within a certain length, and it was necessary that a person eligible to compete should have at least ten years' suitable experience in the cultivation of fruit. In this way, the Company insured, as far as human foresight could do, the handling of the subject in a practical and therefore valuable manner. The prize was awarded to Mr. John Wright, who also received a gold medal from Dr. Hogg. It is to this essay that we now refer. As far as we have seen there is nothing of the kind in print which is calculated to be of such signal service to the small cultivator, showing him, as it does, what to grow, how to grow it, and how to improve the trees and bushes, and thus insure larger and more valuable crops of fruit."—*Rural World*.

"The book should be in the hands of every farmer, every shopkeeper having a garden, and every owner of a villa and suburban residence where they can grow fruit. The Board of National Education should be requested to place it on their list, so as to make it accessible to their teachers and the higher classes in the schools. If the teacher understood and grew fruit, and gave an occasional lesson to his higher

classes, using his own garden as an illustration, this would give a very needed stimulus to fruit culture all over Ireland.”—*Irish Farmers' Gazette*.

“Mr. John Wright's essay on ‘Profitable Fruit Growing,’ which won the gold medal offered by the Fruiterers' Company, is a thoroughly practical treatise, and affords much information on a subject which has of late years been attracting more and more attention.”—*Daily News*.

“‘Profitable Fruit Growing’ is the title and subject of the essay which gained the prize offered this year by the Fruiterers' Company for competition among the occupiers of small holdings. The author is Mr. John Wright, who has written extensively on horticultural questions, and it contains the maximum of good advice, fully illustrated and explained, in the minimum of space.”—*Morning Post*.

“‘Profitable Fruit Growing,’ the prize essay written by Mr. John Wright, F.R.H.S., for the Worshipful Company of Fruiterers, will be found a most useful handbook on the subject. Mr. Gladstone has elevated jam into the region of politics, and Mr. Wright is qualified to take office as the First Minister of Preserves.”—*Evening News*.

“The merits of Mr. Wright's essay are made patent by the fact that the judges—men who have devoted special study to the subject—considered it was worthy of the first prize. It is likely to further very considerably the aims and objects of those who pay attention to the cultivation of fruit.”—*City Press*.

“The essay on ‘Profitable Fruit Growing,’ written by Mr. John Wright, which gained the gold medal of the Worshipful Company of Fruiterers of London, is so full of sound sense and practical advice that it deserves the close attention of all who are interested in its subject.”—*Scotsman*.

“The prize essay on ‘Fruit Growing,’ written by Mr. John Wright, F.R.H.S., is thoroughly practical, and contains full instructions for the economical culture of all kinds of fruit grown in the open air in the British islands.”—*Scottish Leader*.

“Mr. Wright is a thoroughly reliable authority on ‘Fruit Culture,’ and he has written a book which cannot fail to be useful. It is instructive and stimulative. The advice it gives is quite sound, and is stated with commendable clearness. The written instructions are supplemented by excellent illustrations, in which many of the directions as to pruning, etc., are put before the reader in a way to catch his eye at once and impress the teaching of the written words upon his mind. We have nothing but praise for this valuable manual.”—*Midland Counties Herald*.

“Mr. Wright's prize essay on ‘Fruit Culture’ is a practical treatise, written with much literary spirit and effectiveness, and it puts the various aspects of the problem before us with excellent lucidity, and with a close attention to all helpful details. There are some useful illustrations in the book, and, altogether, it may be heartily recommended as a valuable handbook for small holders in England.”—*Newcastle Daily Herald*.

“An extremely interesting and practical account of a branch of industry that is unfortunately much neglected. To the amateur gardener, the small farmer, and cottager, Mr. Wright has rendered a positive service, and we are pleased to record our appreciation of what, in our opinion, is a most useful work.”—*Liverpool Journal of Commerce*.

“The author of the essay written for the Worshipful Company of Fruiterers, that gained the prize of twenty-five pounds and a gold medal offered by that body, is a talented and well-known authority on advanced fruit culture. It treats concisely and most practically of

the most improved methods of producing all kinds of hardy fruit. There can be no doubt that fruit growing is a coming industry, and that the book in question will hasten and expand it more than any volume that has hitherto been published."—*Leeds Mercury*.

"Mr. Wright's essay is a carefully prepared digest of all the details of fruit cultivation, and the writer conclusively proves that, if tended properly, the fruit tree can be made the source of considerable profit to the small landholder; and, after a study of the book, cultivators cannot fail to improve their knowledge of this industry, which promises to become one of the most important in the kingdom."—*Kentish Express*.

"Mr. John Wright, F.R.H.S., the author of this essay, is a well-known authority on advanced fruit culture. It treats concisely and most practically of the most improved methods of producing all kinds of hardy fruit. The instructions are as plainly displayed and as easily understood as the alphabet. There can be no doubt that fruit growing is a coming industry, and that the book in question will hasten and expand it more than any volume that has hitherto been published."—*Cardiff Weekly Mail*.

"The Fruiterers' Company's prize essay, by Mr. John Wright, F.R.H.S., is published in a convenient volume. It is at once a stimulus to better fruit cultivation, and a practical guide to the means whereby this may be secured. The writer deplores the fact that so much of the fruit consumed in this country should be imported from abroad, especially from America, and he thinks that want of care and skill, and general improgressiveness on the part of English fruit growers, have as much to do with the matter as the defects of our English climate and other things often blamed."—*Reading Mercury*.

"The Worshipful Company of Fruiterers deserve the warmest thanks for publishing in book form Mr. John Wright's admirable prize essay on 'Profitable Fruit Growing.' The question of fruit growing is one that is now, happily, more closely engaging the attention of farmers and others. Hitherto England has given a very poor report as to cultivation in this respect, with the result that the importations of fruit are increasing every year. To make fruit growing profitable, however, they are many rules to be observed, and these Mr. Wright, in his essay, dilates upon in a common-sense practical manner."—*Gravesend Journal*.

"We heartily commend the volume to the notice of cottagers and allotment holders, also to those gentlemen who are anxious to promote the success of these struggling working-men. A copy or two placed in the village reading-room would be of great value. The essay conveys details on the selection of the most suitable varieties of fruits, and the planting, pruning, and other essential operations in the management of fruit trees and fruit-bearing bushes, also on gathering, storing, and disposing of the crops. Like its gifted author, we shall not consider it satisfactory if it does not prove serviceable to many (at present inexperienced) cultivators of hardy fruit."—*Lincolnshire Chronicle*.

PUBLISHED OPINIONS OF EXPERTS.

(From the JOURNAL OF HORTICULTURE.)

"Many thanks for the very handsome and excellent essay on fruit growing. The more I examine it the better I like it."—A. F. BARRON, *Royal Horticultural Society's Gardens, Chiswick.*

"I have had a run through Mr. Wright's essay on fruit culture, and am very much pleased with it. It is a sound 'multum in parvo,' and cannot fail to be useful to all who may master its contents and have an opportunity of acting on them."—D. THOMSON, *Gardener to the Duke of Buccleuch, Drumlanrig.*

"I have read Mr. Wright's prize essay, and truthfully assert that I have never before seen a subject treated in such a brief yet thoroughly instructive manner. The work is turned out in first-class style, and gardeners generally ought to possess a copy, for they will find nothing nearly so plain, reliable, and instructive in any other work of the kind."—W. IGGULDEN, *Gardener to the Earl of Cork, Marston.*

"The treatise on profitable fruit growing, although so concise, really contains all that is necessary, and if the advice in it be followed it will justify the title. Being naturally rather critical, I thought it possible I might find in it something with which I might not agree, but as to treatment I have found nothing."

"I have carefully read the prize essay of Mr. J. Wright. It is written to aid cottagers and other small holders of land to grow fruit, and is just what is needed by them. But it should also be in the hands of every gardener. Young men especially should read it attentively, and they may learn more about hardy fruit growing than they frequently do after several years of ordinary practice in gardens. I regret that such a good and cheap little book was not in my hands twenty years ago. It would have saved me many blunders and mistakes since then."—WM. BARDNEY, *Gardener to Sir A. B. Walker, Bart, Osmaston Manor.*

"Both Mr. Wright and the Worshipful Company of Fruiterers must be congratulated on placing before the public such a wonderfully cheap and practical essay. There are capital selections of the various fruits to be grown, and plain and concise instructions are given on the different modes of culture. The illustrations as to form of trees, planting, pruning, packing the fruit, with plans of gardens, are useful, and altogether we have a capital shilling's worth."—A. YOUNG, *Abberley Hall Gardens, Sturport.*

"I sincerely hope my Irish countrymen will read well and inwardly digest the handbook on profitable fruit culture by Mr. J. Wright, which places within the most convenient brief limits the most practical information on this increasingly important subject. The soil and climate of Munster cannot be excelled in the British Isles for fruit culture. Information is necessary. That information Mr. Wright gives succinctly and in such a way that it would be impossible to do justice to it by summarising."—W. J. MURPHY, *Clonmel.*

"A most practical and valuable work for small gardens, cottage, or allotment owners; fully illustrated, and valuable for its sound teaching. Just the work for distribution among cottage garden societies, etc."—GEORGE BUNYARD, *Maidstone* (in "Fruit Growing for Profit").

**RETURN
TO**

CIRCULATION DE
202 Main Library

2

3

4

5

6

Renewals and Recharges may be made 4 days prior to the due date.

Books may be Renewed by calling 642-3405.

OCT 2 1987

AMT DISC JUN 22 1987

UNIVERSITY OF CALIFORNIA, BERKELEY
BERKELEY, CA 94720

YC 61758

GENERAL LIBRARY - U.C. BERKELEY

8000900589