

GARDENING FOR WOMEN



BY THE
HON. FRANCES
WOLSELEY



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*** START OF THE PROJECT GUTENBERG EBOOK GARDENING
FOR WOMEN ***



A PUPIL IN WORKING COSTUME, SCHOOL FOR LADY GARDENERS, GLYNDE, SUSSEX.

Photograph by Pictorial Agency.

GARDENING FOR WOMEN

BY

THE HON. FRANCES WOLSELEY

PRINCIPAL OF THE GLYNDE SCHOOL FOR LADY GARDENERS IN SUSSEX

WITH THIRTY-TWO ILLUSTRATIONS

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INTRODUCTION

How often it is that Fate places us amongst people whose characters, pursuits, and tastes we do not know! We hesitate how best to melt that barrier of icy reserve and shyness behind which we English remain frozen. How can we speedily break through the reserve which rises up between us and the stranger near us? There is at least one subject of conversation which usually calls forth a response—it is gardening.

Whether our neighbour be politician, soldier, architect, or painter, he will surely listen with interest to the mention of a garden. He will tell us of some newly-discovered plant, a flower show that he went to see, or he will expatiate upon the beauties of South African bulbs. We may be sure that if he himself is no gardener, he has someone dear to him who is a lover of flowers. After a hard day's work in the City, he will gladly turn his thoughts to the peace and quiet of a walled-in country garden, where the hum of bees and the scent of sweet briar or rosemary bring happiness and contentment.

It is the same with country people, who live in our quiet English villages that are as yet unspoilt by the dust of motors and the noise of holiday-makers. A little chat over the garden wall in the cool of evening, about the luxuriant growth of the peas, the beauty of madonna lilies gleaming white against the dark timber of the cottage, or the special size of this year's roses, will often make a lasting friendship. No make-believe pastime is gardening with them; it is their true recreation. Their lives have been passed amidst fields, trees, beautiful hedgerows, and consequently they look upon these objects as friends. Surely this love of Nature is wholesome both to body and mind, and greatly to be encouraged by all who wish for the well-being of England and her Colonies.

Are we not shown the vast importance of keeping our rural population away from towns? Do we not thus endeavour with every means in our power to improve the cultivation of our land? County Council lectures, flower shows, cottage-garden competitions, Nature-study courses, training colleges are provided for this purpose. But, perhaps, the surest way of all is to make our boys and girls fond of bee-keeping, fruit growing, gardening and all other industries of country life. It is with them that future success

lies, and by teaching them to tend small gardens of their own, and compete for prizes in tidiness and artistic arrangement of flower plots, we shall continue a love for the country in future generations. To keep them away from the gloom, squalor, and temptations of large towns is what we all wish to achieve. Well-tilled, wisely-worked farms, orchards, gardens, bring us prosperity; but we gain a love of Nature, too, from contact with such things. This must soften people. It brings us nearer God.

“A garden is a lovesome thing, God wot!
Rose plot,
Fringed pool,
Ferned grot—
The veriest school
Of peace; and yet the fool
Contentd that God is not—
Not God! in gardens! when the eve is cool?
Nay, but I have a sign;
'Tis very sure God walks in mine.”^[1]

^[1] From “My Garden,” one of the collected poems of T. E. Brown. By kind permission of Messrs. Macmillan and Co.

It is not alone amongst our village people that we hope for steady development in the cultivation of our soil. They unconsciously assimilate much from what they see carried out in the vicarage garden, the manor-house orchard, and the large park. These must set the example both in tidiness, artistic arrangement, and well-grown produce. Education in taste, as well as scientific knowledge, is required for the heads of these gardens. We know that in Japan gardening and flower arrangement have attained wonderful perfection. There it is necessary to learn for seven years before a requisite amount of skill is acquired. Not only are artistic effects studied, but flowers are used as modes of expression. Different colours and combinations convey distinct meanings.

Surely we Western races should also look upon a garden as of the same artistic value as a beautiful picture, or a many-coloured, skilfully wrought piece of embroidery? In short, so ancient a craft should be as intelligently and carefully studied as any Fine Art. A garden is a living picture. The painter having found a subject, studies each detail. Surroundings, background, the position it should occupy upon the canvas, what portion is to be accurately depicted, which objects are to be omitted or only faintly

indicated: all these points are considered before he takes up his brush. A gardener must do likewise. Sometimes, when ground is not yet laid out, he must do more. He then has to think some years ahead and imagine what this bare piece of meadow will be when plants have grown in it. The lay of the land, the character of the soil, the relation of the house with the garden—all have to be weighed before planting is commenced. Therefore, our gardeners must be artists as well as successful cultivators of plants.

True gardening gives scope for much sympathy and feeling. There is a soft repose in grey and pale pink. An arbour with such colouring invites thoughtfulness, quiet contemplation; whereas orange or bright yellow may, in some sad moments, be obtrusive, or jar upon our feelings. A brilliant bed of scarlet poppies, if put in the right natural surroundings, are gay with *joie de vivre*, whilst gentle pansies appear to look with melting human kindness as they raise their little faces appealingly towards us. Good effects have been gained by planting large, bold clumps of Pampas grass in empty spaces. The situation must be very carefully selected or it is apt to strike a discord. In the solemn graveyard it soothes; the waving plumes seem to bow down in sympathy with the mourners.

A real artist gardener not only has aptitude for placing right lines, and forming rich, telling colour effects, but he also understands the personality of flowers, the sentiments of colours and scent. A painter's instinct tells him where the varied colours of a mixed border are allowable, and how elsewhere a touch of strong, brilliant colour is wanted to lead again to a shaded path of mystery.

In order to successfully accomplish this Fine Art gardening, which we in England are now ambitious to have, artistic, well-educated, refined head gardeners are needed. From our Colonies, too, comes a cry for skilled and well-instructed "heads." There they have plenty of hands to do mechanical work, numbers of "coolies" to do menial jobs, but they want more intelligent directors and guides to industry. Again, in our schools, we require for the children those who sympathise with school garden work and Nature-study.

These, then, are the ambitions of lady gardeners. They do not wish to supplant able, clever men head-gardeners, nor even to compete with them. They do desire, however, to assist as far as their strength allows, by lending

intelligence, good taste, refinement, towards securing better cultivation of our great country. What they lack in physical strength they endeavour to compensate by other equally important, yet softer, womanly qualities.

This book has two objects in view. It hopes, by means of practical advice—in fact, by some it may be considered somewhat Spartan counsel—to draw attention to what is required of lady gardeners. The other aim is to show employers what would be gained by appointing them; at the same time to disarm any mistaken illusion which may have arisen that ladies wish to supplant men gardeners. They merely intend to supplement and increase the good work which men are doing for our land.

GARDENING FOR WOMEN

Part I

CHAPTER I

GARDENING AS A PROFESSION FOR WOMEN

Daughters of many professional men are obliged to earn a living. It often happens that the head of the family, after years of hard work, has to retire owing either to illness or age. His pension is a small one, and it becomes necessary for his daughters, as well as his sons, to make a career for themselves. They have been accustomed, perhaps, to a comfortable home, with a considerable number of luxuries, and the question as to the best method of earning a living must necessarily be a difficult one. In this connection it is, I hope, pardonable to quote a passage from Mrs. Creighton's recent article upon women's education, which created great interest among those concerned with the welfare of young women. She wrote:—"It is tolerably well agreed what men should be; but social conditions which produce a preponderance of the female population and make it impossible for some women, however much they may desire it, to be married, are inconvenient and disturbing to the views of most men.

"The existence of women who, whether they like it or not, are bound to work for their livelihood, is, as a rule, only unwillingly recognised as an exception; the existence of women who claim to have a life of their own is still more upsetting to all ideas of a well-constituted universe."

A somewhat mistaken idea is sometimes held that women who are obliged to follow a definite career are less likely to marry than their sisters who remain at home in quiet surroundings. It is often found, however, that of the daughters, say, of a country clergyman living in some remote corner of England, it is those out in the world as secretaries, companions, or gardeners who do marry. Not only has a wider sphere of life brought them friends, but their knowledge of the world has taught them how to keep them. They have larger interests, broader views, and are therefore happier than their sisters, who remain at home in village surroundings. They should, too, be better helpmates to men leading active lives. If they are sensible, wise, good women, they should not lose by contact with people of different types any of that gentleness and softness which are the chief attractions of a woman.

The choice of a career depends largely upon the character and bringing up of a girl. Unless she is fond of out-of-door life, however, she must not think of becoming a gardener, and she will probably find that her parents look somewhat critically upon this profession. They have an uncomfortable feeling that the head of a private garden is only a kind of servant, and in market, jobbing, or landscape gardening they see a life of constant digging and delving; a struggle to compete with the strength of a working man. The disadvantages—many days of rain and wind, early rising, disagreeable menial jobs—all assume larger proportions to them than the benefits that are to be derived. Parents are perfectly right to point out all these drawbacks to their daughter. They should be fully realised and weighed before she embarks upon such a career. Professional gardening is no child's play. It means at least three years of diligent study and hard work before any considerable remuneration can be sought.

Let the girl who is leaving college carefully view all sides of the question, and, above all, let her wait until she is twenty before she takes any decisive step. Having reached years of discretion, and being full grown and strong in health, the advantages of a gardener's life will probably attract her. If, during her childhood, she has had the care of a plot of ground in the home garden, or has had bees or poultry under her charge, it will be pain and grief to her to leave these pursuits and live in the confinement of a town. The thought of a stuffy London typewriting office, and the long, dark evenings in cheap lodgings, will be repulsive to her. She will miss the wide, open stretches of sky, the coming and going of the seasons. How she will long for a sight of cowslips in the meadows and the fresh, sweet scent of gorse. Perhaps, if she is a governess or companion, she may live in the country and have all these pleasures, but will she fully relish them if she has no freedom? Her evenings may possibly not be her own, and during the day, too, she will have to accommodate her wishes to those of others. The well-known lines of Richard Jefferies will constantly recur to her, and she will see the wisdom of them. "Let us be always out of doors among trees and grass and rain and wind and sun. Let us get out of these indoor, narrow, modern days, whose twelve hours somehow have become shortened, into the sunlight and the pure wind. A something that the ancients called divine can be found and felt there still."



THE "WALLED GARDEN" AT THE HOUSE OF F.M. VISCOUNT WOLSELEY, K.P.

THE ROSES WERE PLANTED AND PRUNED BY THE LADY GARDENERS.

Photograph by Pictorial Agency.

The profession of gardening offers a considerable amount of freedom, the refining influence of poetry and beauty, contact with intelligent, interesting people, and health and happiness to body and mind. These, to an active, out-of-door, young woman are very great advantages. Then, too, there are different branches of the profession, so that a selection is possible as to which best suits her talents. Should she be fond of teaching, she can hold classes in Nature Study or botany; if she has taste and talent for drawing, she can take up landscape gardening. With a small amount of capital to invest, she may start a market garden, with every prospect of success.

There are, too, the higher branches of horticulture, such as the treatment of rare greenhouse plants, hybridisation, cross-fertilisation, and the handling of orchids. All these intensely interesting, intellectual matters require such

dainty skill, so much thought, that there is no doubt whatever they are suited to ladies. Many who practise in these branches employ women to execute the minute operations that are so often entailed, because their light touch is better adapted to the purpose than the heavy hand of a man. Few women have up to the present studied long enough to surpass men in these matters, but there is a certain future for them in such work if they persevere in study.

It must be borne in mind that horticulture is still a comparatively new profession for women, and that unless those who enter it strive to give full time and application to learning its details they cannot hope to be successful. Some few failures have occurred already, much to the regret of all keenly interested onlookers. These have been caused by anxiety to earn something before proficient knowledge had been acquired. It is the same, I believe, in all new professions; and it is only now, after many years of striving, that women have attained success as sick nurses, secretaries, and teachers. The first who went into the arena made mistakes, and possibly paved the way for their successors, who noted the causes of failure, and mended their ways. Let us hope that this will be the case in horticulture, for there is no reason why women should not succeed in it. Moreover, we have already some brilliant examples of success. Those who are thinking of taking it up should spare no pains to gain a complete education, for only then, when they are themselves worth something, can they expect remuneration.

CHAPTER II

THE TRAINING REQUIRED

There are various ways of obtaining the necessary training to be a lady gardener. Both at home and abroad numerous colleges and schools exist where young women are well instructed in all branches of Horticulture. A college course is necessary, but if a girl is not more than twenty years of age (and it is advisable that she should not be much younger when she commences her training) it will help her to be apprenticed for a year or two first in a private garden. Should she prefer, it will be better still to spend two years at a small school where instruction is more individual and personal than in a large college. Here the students are few in number, and carefully selected, and it is possible to learn in the same way that the working man learned, when he began as a garden boy. The pupil will be ordered to do menial jobs, such as turning manure, wheeling refuse, sweeping leaves, or mowing a lawn. This comparative drudgery must be gone through in order to understand how to direct others. Even wheeling a barrow full of soil and washing out pots is interesting if the heart be in the profession and there is the wish to succeed.

In a private garden or small school, too, it will be possible to follow the ultimate use the pots are put to, after they are washed, and the reason for each operation will be more easily made apparent than is the case in a large college, where lectures and theoretical classes are sometimes put before practice. When there is a large number of students, too, it is impossible that all should take part in each operation. Personal interest in the garden is apt to be lost sight of, and teaching becomes a “demonstration,” where the expert does the work, and the students look on. They cannot thus learn in the only thorough way, by working themselves.

In a college course, hours are often suited to the requirements of expert lecturers, and students are apt to ignore the fixed hours of work observed in a private garden. I have known students to whom it never occurred that it might not be agreeable to the family to hear the sound of raking on a gravel path outside the breakfast room, and who were unconscious of its being an offence against garden etiquette for them to shout remarks to fellow

students across the flower beds. Then, too, fixed school holidays, which are necessary in large communities, sometimes interfere with the possibility of seeing certain operations performed.

I therefore strongly advocate a course of manual work, like that of the garden boy, as an introduction to more serious training. This routine work will enable the pupil to understand college lectures, when the time comes to attend them. Theoretic teaching can then be applied to the treatment of soil and plants.

Not possessed of the strength and facility for manual work of a man, the girl student must make up for this deficiency by intelligent reasoning. She should follow closely in the footsteps of science, and have a reason for each operation. What is heard in the chemistry laboratory has to be applied in practice in the garden. When the dismal herbaceous border, upon which so much money has been spent, is seen, the cause of failure will be known. After all the talk, trouble and expense, why does it lack colour? Surely some ingredient in the soil is missing—dress it with lime, put more manure or leaf mould, as the case may be.

I believe that some people imagine that a lady gardener is intended always to remain at work amongst the swept-up leaves and garden refuse! But if her intelligence is not sufficient to make her soar speedily beyond the powers of a £1 a week man gardener, she had better take up other work, for she certainly cannot compete with him in physical strength.

A course of study for two or three years, such as I have described, is certainly not too lengthy. Each plant, shrub, tree, goes through the same phases once in each year. Although these processes are repeated year after year, they may be subjected to variations of weather and temperature. Different treatment is probably necessary each year. Time only can show this. Books teach much and so also do lectures, but only when supplemented by practical experience, will they make a competent gardener.

The intending girl-gardener should make up her mind from the beginning that she must spend money on a three years' course of training. It should be taken in the way that best suits the individual case; there need never be regret for the money spent upon it. It is only by skill and knowledge that employment will eventually be secured.

Therefore the beginner should do some practical work in a garden, and cram botany, chemistry, and physics into her head. When she has a free day, or if other opportunity occurs, visits should be made to other gardens. Then it will be possible to learn the names and habits of new plants, and, by studying a different treatment of them, the powers of observation will be increased.

After college training an effort should be made to get a subordinate paid post, for whatever branch of Horticulture it is decided to specialise in. No attempt should be made to superintend a large garden until, as they say of children, the student has learned “to feel her feet.”

I propose to give a short account of the different branches available from which a selection can be made. It will be convenient to divide them into two classes:—

A. Which require training and education only:—

I.—Landscape Gardening.

II.—Jobbing Gardening.

III.—Head gardener in a private garden.

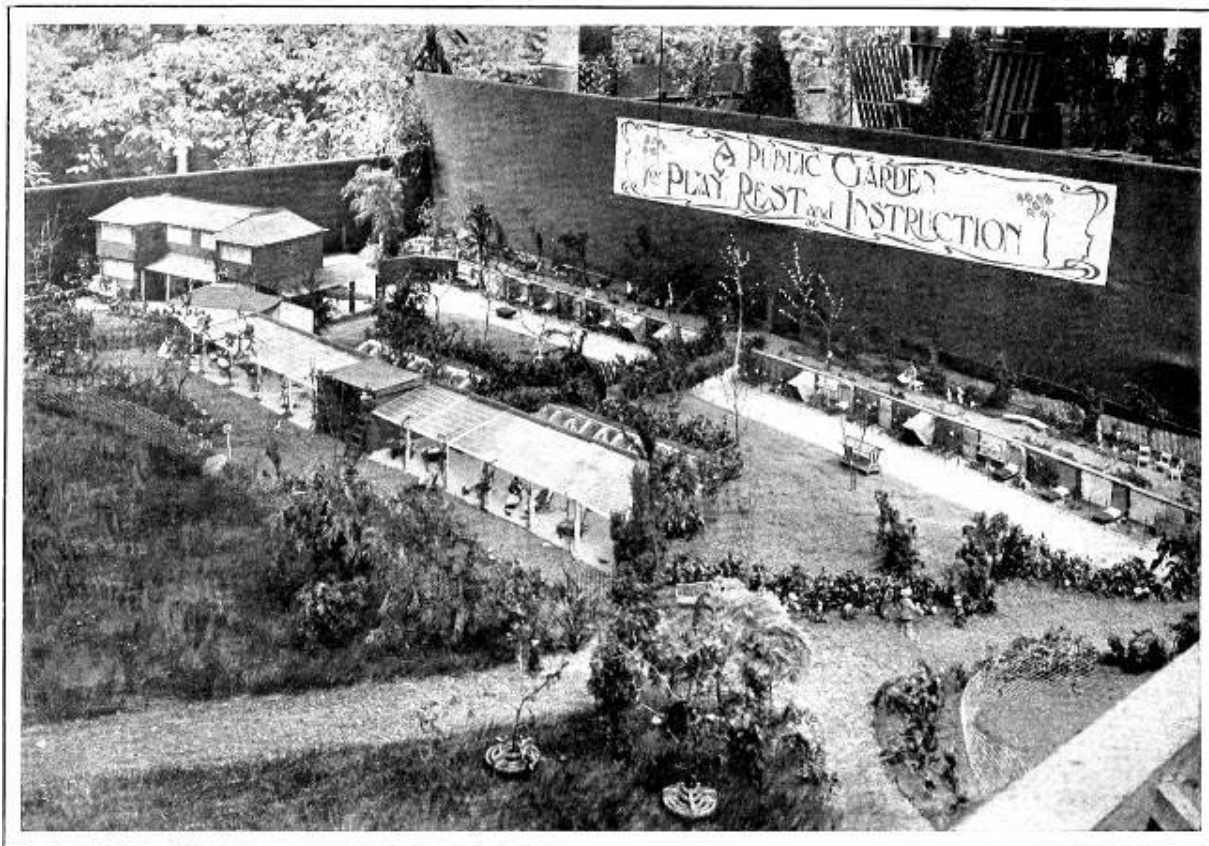
B. Which requires capital as well as training and education:—

Market Gardening.

CHAPTER III

LANDSCAPE GARDENING

This wide field of study is one which women are well suited to, provided they have brains and good taste. In order to be really successful, imagination is required, as well as other qualities that are needed by an ordinary head gardener. No amount of study or training can adapt an inartistic woman to this profession, but given artistic feeling, the power of conveying her ideas to her employers and to those working for her, great possibilities are within reach. Many fail, perhaps, by a headstrong desire to carry out their own plans; they do not regard sufficiently the views and wishes of those for whom they work. A considerable amount of tact is necessary, in order to obtain the confidence of the owner of the garden. Having ascertained his requirements, and made these the centre of the scheme, the woman-gardener's imagination should help to fill in all details.



MODEL BY MISS A. C. SEWELL OF A CHILDREN'S GARDEN, EXHIBITED AT THE WHITECHAPEL COUNTRY IN TOWN EXHIBITION.

ILLUSTRATION OF WHAT CAN BE SHOWN OF A GARDEN BY MEANS OF A MODEL.

Photograph by Clarke and Hyde.

I assume that the candidate for such a position has had a good general education, and is well grounded in botany and botanical geography. It is necessary that she should be able to draw, and a knowledge of simple plane geometry and geometrical drawing is essential. She must be able to make a sketch plan showing the proposed alterations with their measurements. In some cases, where the employer is not himself a draughtsman or does not read a ground plan easily, the lady gardener may find it useful to have recourse to a different system for conveying her meaning to him.

I have seen a rough model made in cardboard to represent the house, and real soil used to surround it, with little twigs placed here and there in imitation of trees or hedges. This is a somewhat childish means of experimenting upon future alterations, but in cases where the owner is

undecided or unable completely to grasp the effect which will be attained by moving soil, or planting trees, the model may be exceedingly useful. The soil can be so easily shifted from side to side with the hands, a tree planted here, a dividing hedge placed there, until the desired effect is attained. Then, too, it may convey well to the contractor (who possibly undertakes the whole alteration) the exact amount of labour that he will have to expend.

Another way of conveying ideas for proposed alterations is by means of a “prophetic drawing.” That is to say, if a rose arbour is to be made, a sketch, with finished details of what it should look like two years hence, when the roses have climbed to the summit of the pergola, may influence the owner in his decision to put the matter in hand. It is important that all these methods of conveying intentions should be studied.

A slight acquaintance with geology will be useful in forming rock work. Most of these subjects, together with surveying, can be learnt at a Municipal School, but the more thoroughly they are acquired the better.

Methodical habits are essential. So many women, compelled to earn a living, fail in this. They do not note expenses carefully; they are not business-like in rendering an account of wages paid out; and they do not trouble to obtain estimates of work to be done. The education of women is much at fault in these respects, but certainly, until this lack of business qualities is replaced by methodical ways, we shall be considered the reverse of helpful.

It will greatly assist the young gardener if visits are paid to many gardens, both private ones as well as market gardens. Small cottage gardens or wayside hedgerows should not be despised; much can be learnt by looking at both. The plants that are natural to the climate and soil are at once detected in this way, and knowledge is obtained as to what will most speedily lend itself to an effect of foliage or colour. Often, the chance arrangement of a large mass of gypsophila with bright coloured nasturtiums interwoven with its feathery flowers, or pansies springing up between an old paved path, may give ideas for a large garden. The “Traveller’s Joy,” and blackberries, that grow so rampantly on chalk, will make a pergola look clothed before a rarer plant could grow three feet up it.

If possible, a trip abroad should be taken; it would give fresh ideas, if the fields of mauve autumn crocuses in France, or the terraces and vineyards of Italy, could be seen. There are so many different ways of building pergolas, training creepers, and tying vines to posts. If we adopt some of these foreign styles in England it gives a touch of Italy to our tame English gardens. Copious notes should be made of all that is seen, and the knowledge thus acquired can be readily applied to designs for gardens here.

All books on landscape gardening, new and old, must be studied; many old-fashioned plans of mazes and beds can so easily be used or adapted to modern grounds, and with some knowledge of architecture, it will be easy to place the right design near a house.

All gardens must be chiefly considered with a view to improving the appearance of the house. This must be the starting point and first consideration. Planting specimen trees and lovely plants is of secondary moment. No school or college can teach good taste; some people will learn it instinctively, others will never acquire it. With constant observation and copious notes, artistic feeling in gardening may certainly be increased. It will be helpful to know the habits, mode of growth, etc., of trees, shrubs, and garden plants. Their time of flowering, and appearance, are more important matters for consideration than the actual ability to grow them. A head gardener can cultivate them, when the broad effects of colour have been planned and decided upon.

As much knowledge as possible must be gained concerning soils, manures, road making, draining, pond making, levelling, embanking, and there must be the ability roughly to calculate the cost of such operations. By apprenticeship, or by going to watch someone who is making large and extensive alterations, much can be learnt. Facility is acquired in estimating the time that is taken in carting soil, or loading manure, by watching a large staff of men at work; experience can thus be gained as to the best method to map out work. It is so essential to save labour and untidiness. A job that has to be done twice over is distressing to all concerned. The organisation of work can only be arrived at by planning out each detail beforehand, and orders can at once be given as to where the excavated soil is to be placed so that it may, at a future time, be handy for a further development of the plan.

We are considering this branch of gardening as one that may be gone in for without capital. When the training is completed it will be best to advertise for work. The terms for paying a preliminary visit and giving general advice should be stated. After this, should an understanding with an employer be arrived at, the further charges will depend upon the way in which the work has to be carried out. Perhaps it may only be necessary to pay an occasional visit to the scene of operations and see how the head gardener is executing his orders. In this case a guinea or more a visit would be the remuneration. It may answer the purpose better to obtain the services of a local contractor, and having explained the whole plan carefully to him, let him quote a price for the fulfilment of the contract. The fees would then be so much per cent. upon the total.

Under all circumstances it will be necessary to deal tactfully with the men who do the work. The ideal way of carrying out landscape gardening would be to have a staff of permanent workmen, who would accompany the landscape gardener to the various gardens, and carry out her directions. How much more quickly things would often go, if she had her own men to rely upon. As this, however, means capital, it should not be considered here, and stress can only be laid upon the necessity for making orders concise and clear, and studying the characters of the various workpeople, so as to succeed in obtaining the largest value possible out of their services. The power of interesting them in their work is a useful adjunct. Often a friendly word, or placing some slight responsibility upon a workman, will double the amount he tries to do.

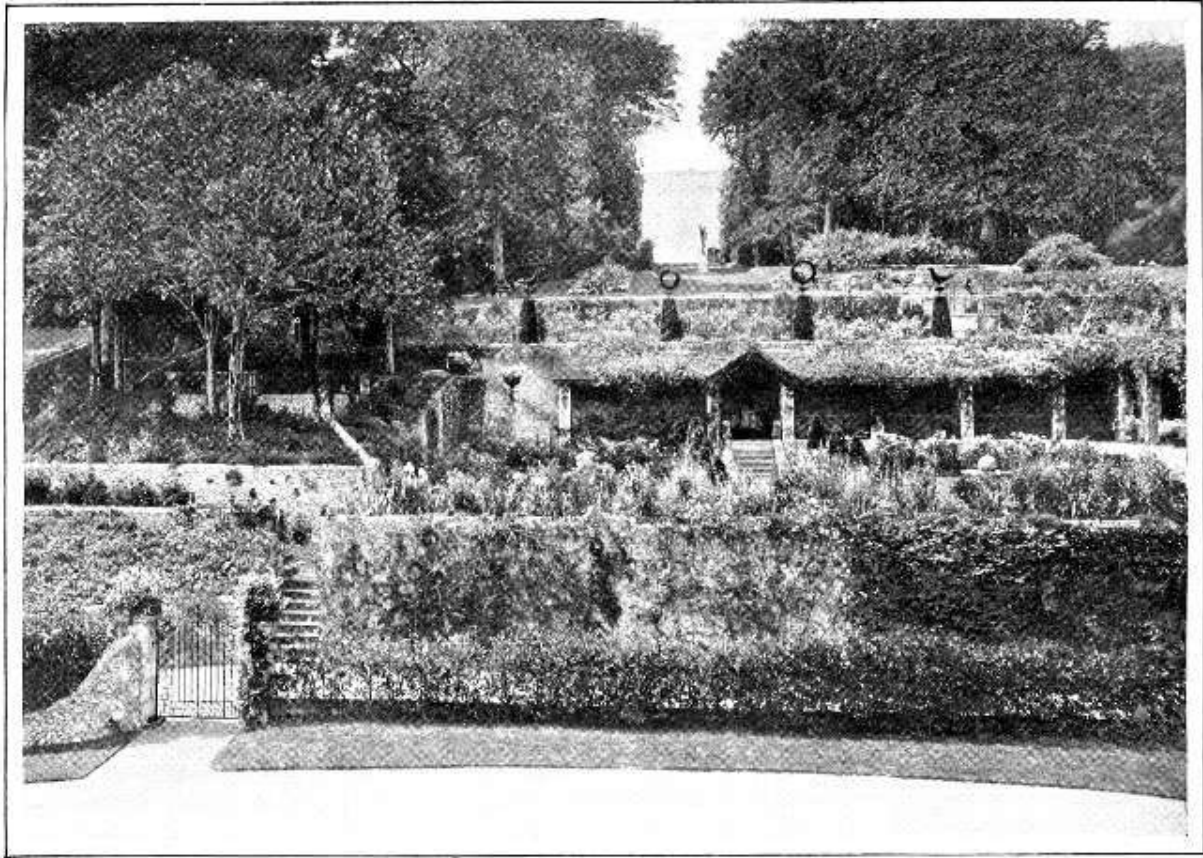
At first it will be difficult to obtain work. Any successful plans that are carried out gratis for friends are sure to lead to further employment, and each good thing achieved will bring other opportunities. Should there still be time on hand, perhaps an architect may be found who is willing to secure the help of a well-trained garden designer.

No fixed rules for obtaining employment can be laid down. Ambition and keen desire to get on will steer best to the right channel for seeking work. Several municipal authorities are willing to employ women as landscape gardeners. Should it be possible for women to make a success of private garden designs, it would surely help towards their appointment to larger spheres of landscape garden work. The laying out of parks, squares,

and garden cities could be handed over to them, and what a large source of interest this would be.

It is unfortunate that we in England attach so little importance to the study of forestry. In none of our agricultural colleges is it taught in the same thorough way as in Germany. A great future might be open to a lady who studied this subject. It might be possible to induce a consulting forester in England, Scotland, or, better still, in Germany, to take a pupil. This subject, if fully mastered, would be of the greatest use in carrying out large alterations in public parks or private grounds.

To any lady with a love of nature, the possession of taste, and possibly the wish to improve and add to the beauty of our English country homes, this branch of gardening will greatly appeal. What a pleasurable sensation it is to see a lovely picture growing daily more like the plan that was roughly sketched out. How satisfactory to watch the building up of that stately terrace beneath the house, which puts the finishing touch to the beauty of the building itself. Without a terrace, the house would appear insignificant and poor—now it seems to have grown in dignity and stateliness. What pleasant days, too, can be spent in noting the happy results of garden-making, such as we see in the great yew trees of Levens, the grand Avenues of Le Nôtre, at Versailles, or the clever grouping of trees in many an English park. Here we, who come some two hundred years after, reap the full benefit of what then had the appearance only of a flat field dotted with stiff little baby trees. We can follow the old plans and ideas, but by using quicker growing materials it is possible to develop a picture under our eyes.



THE HANGING GARDENS, RATTON PARK, SUSSEX.

LAI D OUT BY THE HON. MRS. FREEMAN-THOMAS.

Photograph by Pictorial Agency.

CHAPTER IV

JOBGING GARDENING AND FLORAL DECORATION

Often, as we drive through London suburbs, we see remains of some former stately Georgian house. Perhaps, a hundred and fifty years ago, when it was built, it stood isolated, with only a quiet country village near by. In the gardens were hedges of rosemary and lavender, fruitful pear trees were trained upon high walls, a slender little lady in a flowered brocade made sweet pot pourri with pink rose leaves. All that now remains of the garden is a small Adams summer house, built up into the wall, having a quaint shaped Dutch roof. A charming outlook it was when "My Lady" watched for "My Lord" riding home from London. All that now brings to us a touch of romance is the undisturbed yew hedge and a few box-edged formal beds. The garden has been divided off into villa plots.

Everywhere these villas spring up. We see long roads of them in each suburb; in seaside towns, watering places, and golfing centres we find them too. Each house has a garden, which is not necessarily large enough to supply the family with vegetables, but usually a small, level lawn is contrived for tennis or croquet; and a small portion near the road is kept gay with flowers. It is amusing, as we walk along, to compare taste in gardening at Clarence House with that displayed next door at Highclere Villa; to note how preferable is the natural arrangement of well-grown tea-roses in one, to the star-shaped beds of stiff geraniums in another.

Who looks after these small gardens? Often an uneducated working man, whose chief idea is to keep them tidy. This is commendable, but tidiness is not the only pleasurable feature of a garden. To plan successful combinations of colour really brings happiness, to have means of tending little bits of tender, precious plants, gifts of friends, is what contents us. It would help many owners of such gardens to hand them over to the care of a lady. The size of the piece of ground is not too much for her to look after, the work is not arduous. In fact, she can limit her work to a given number of days a week, or even half days.

This kind of jobbing gardening, although well paid, would only content those who are obliged to live at home and require some light garden work,

after their course of training is completed. It is remunerative, very little responsibility is entailed, and, to a certain extent, it is possible to combine it with home duties. The interest of it need not be restricted to the actual manual labour of mowing and rolling the small lawn and planting out seedlings. A small greenhouse is perhaps attached, and pleasant social intercourse may be had, if the owner is also interested in gardening.

To those who are ambitious for a wider scope to their capacity, this kind of jobbing gardening will be insufficient. If they have a little capital and some experience, it will well repay them to start a small nursery garden and not only supply labour for these villa gardens, but also sell plants to them. Some business capacity is necessary, but if, in addition, strong, healthy plants are raised, there is no limit to the possibilities of such a business. Should friends combine in such an undertaking, it can be worked without assistance from working men. If, however, as is very likely to occur, the staff of lady assistants is called upon to give advice in laying out small gardens, arranging plants in window boxes, decorating rooms for concerts, dances, etc., men would have to be employed to do the heavy work. The planning, organising, and directing is what ladies should excel in.

By procuring large instalments of bulbs, raising quantities of perennials from seed, keeping up a plentiful supply of bedding-out plants on their own land, a satisfactory effect can be produced in many villa gardens at comparatively small cost. For a fixed sum per annum the jobbing gardener could undertake to keep in good order, plant and tend all in each small garden. It is easily estimated that this kind of work becomes, after the first outlay, exceedingly remunerative and interesting. There is employment for old and young, strong and delicate; a happy combination of interests and tastes is what should perhaps be most sought for by the staff of ladies in such an enterprise. Secretarial work, planning tempting price lists, would fall to the lot of one, whilst landscape gardening would belong to another.

In all branches of horticulture the remuneration to be obtained by a lady should not be less than that earned by a man. She is indeed entitled to receive even more than a man head gardener, as compensation for her superior taste and good education. The particulars which I am able to give of Mrs. Chamberlain's work on p. 257 show how large a sphere can be covered by jobbing gardening, and in Miss Agar's account (p. 253) will be

found particulars of the remuneration that can be usually claimed by a lady expert.

Floral decoration may be combined with jobbing gardening, or it may be undertaken apart from any other interests.

All will agree that the work of arranging flowers is undoubtedly suited to ladies. It needs good taste, an eye for colour, lightness of touch and great patience. These qualities are possessed by most young gentlewomen, but if they are not natural to them, practice will, as a rule, teach sufficient for the execution of the mechanical part of the work. The preliminary stage of training is perhaps least tempting, for it involves long, tiring hours, spent in a hot, unrestful florist's shop. It will be found best to serve an apprenticeship in this way for some months. Possibly the people met there are not very obliging or polished; often work has to be done under extreme pressure, as many orders have to be ready at the same moment, and the freshness of flowers has to be greatly considered. Bouquets, dinner-tables, all have to be postponed until the last safe moment. Consequently there remains but little time for enjoyment of completed work, and there is very scant appreciation. Work which has to be hurried is seldom pleasing. Being chiefly mechanical, however, it rapidly becomes easier to carry out the different orders, and then real enjoyment begins. The business becomes interesting to the novice when she is sufficiently trusted to exert her imagination, and make suggestions as to blending different flowers and foliage. From the moment when she comes into contact with those who give the order, that best incentive, personal interest, is aroused. As in the case of jobbing gardening, it is possible for a girl to live at home and yet have floral decoration as a daytime interest. This, too, is a saving.

The premium for acquiring experience is a heavy one. It varies according to the position and reputation of the florist's shop, but it is never less than £15, and it often reaches £50. During the first year it is not usual to obtain a salary. There are exceptions to this rule, as will be seen on p. 257, in the account of the Women's Gardening Association.

Only those who have tried it know what tiring work flower arrangement is, and only strong, able-bodied girls should contemplate such a profession. Success, as in all undertakings, comes after long perseverance and patience. The ideal method of carrying on this business is to have a nursery garden

and raise suitable flowers in it to supply one's own shop. It is then merely necessary to superintend, and give general ideas as to arrangement.

With thorough business habits and very good taste, there is no saying what sum might not be realised by a woman in this direction. Like millinery or dressmaking, it needs a combination of qualities, and is essentially a woman's art.

CHAPTER V

THE TEACHING OF NATURE-STUDY

When, at Christmas time, we search the shelves of a London book shop, to find fresh "Golliwog" adventures or new fairy tales, are we not struck by the importance given to another class of child's book? "The Fairchild Family," "Struwelpeter," Hans Andersen's tales, books that we were brought up upon, are superseded by a totally new kind. Anything relating to living things, birds, mammals, plants, wild flowers, fruit, is what we now give our children. In short, nature-study, and everything connected with it, is the fashion. It forms not only an important part of education, but it also is recreation. Possibly we encourage it as a reversion from over-much science and book-learning, which is apt to produce a somewhat unhealthy, overstrained, nervous condition. The philosophy of the "Simple Life," which is preached so much, is a reaction from these abnormal conditions to the natural, healthy order of existence.

Up to now, we stand only upon the threshold of these new ideas, we hardly realise the wealth and meaning of this new philosophy. We only know that a still greater use is in store for it, and that, through it, greater happiness will ensue for us. The right application of nature study and all that it embraces, to the education of children, is one of the most important developments of our day. All those who are ambitious for the prosperity of our future England should give very careful consideration to these matters. More and more we learn that the first endeavour of a school is to teach people to live. This new study tends to connect school teaching with life at home. By means of such schooling, our children acquire from earliest days habits of observation. They appreciate all wonders and beauties of natural objects around them. Lovely wild flowers on our downs, many grasses in our meadows, clouds, stars, all become real friends.

Obs
the wild clematis.
Ther: reg. $70\frac{1}{2}^{\circ}$.

July 12th Obs: smut on oats.
It is a small black
powdery fungus.
Bar: reg. $30\frac{1}{20}$
Ther: ... : 68° .

July 13th Obs a chrysalis of the
horse bot fly.
Obs evening primrose
in a hedge.
Bar: reg. $30\frac{1}{20}$.
Ther $91\frac{1}{2}$.
 74 sh

Obs:

the wild clematis.

Ther: reg. $70\frac{1}{2}^{\circ}$.

Obs: smut on oats.

July 12th

It is a small black

powdery fungus.

Bar: reg: 30-1/20°

Ther: ,, : 68°.

July 13th

Obs a chrysalis of the horse bot fly.

Obs evening primrose in a hedge.

Bar: reg: 30-1/20°.

Ther: 91°s

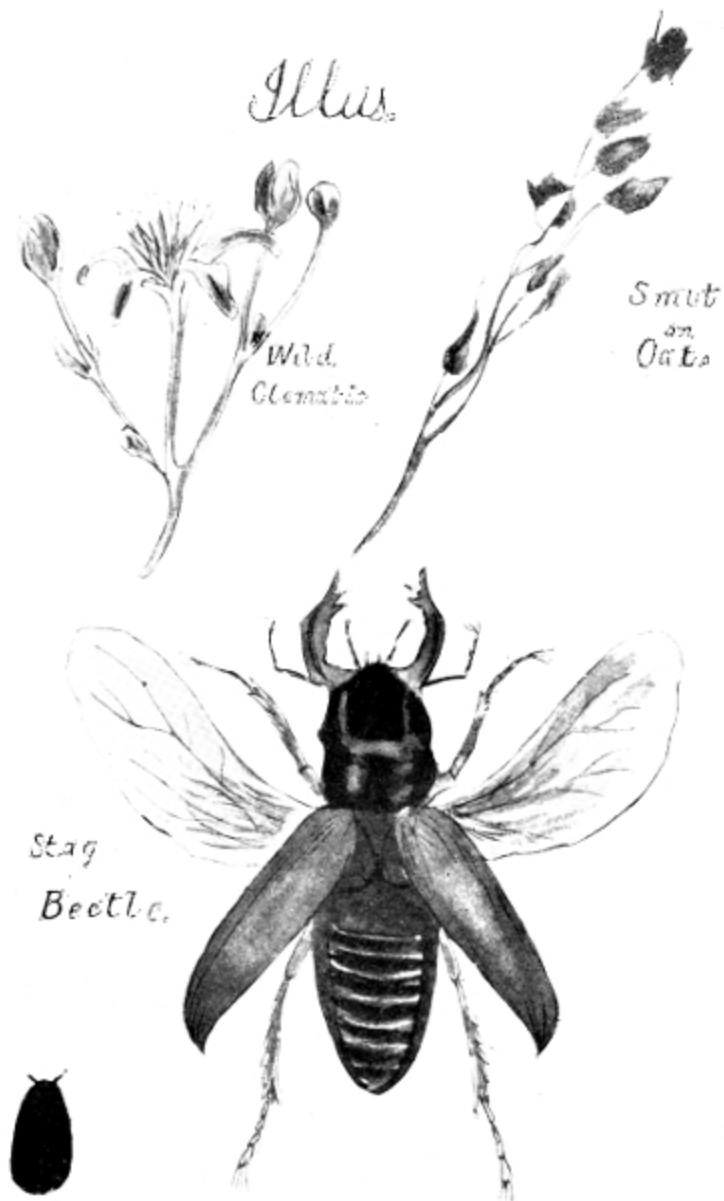
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A PAGE FROM A BOY'S NATURE STUDY SKETCH-BOOK.

A PUPIL OF MR. J. P. WILLIAMS. HURSTPIERPOINT, SUSSEX.

(See opposite Plate.)

Love of nature, which familiarity with her beauty breeds, is not only wholesome for children of the upper classes. It is good for them, but more especially do we need an increase of such knowledge amongst the poor little waifs and strays of our great cities and towns, who have so few bright moments in their dull grey lives. If these nature study classes can help them, should we not do our utmost to encourage more ladies to take up this form of study in order to impart it to them with sympathy?



Wild Clematis

Smut on Oats

Stag Beetle.

A PAGE FROM A BOY'S NATURE STUDY SKETCH-
BOOK.

A PUPIL OF MR. J. P. WILLIAMS, of HURSTPIERPOINT, SUSSEX.

Then, too, in our country villages, is it not wise to foster in young people a love of everything connected with country life? Will it not help largely to

induce them to remain on the land and not migrate to the hardships and squalor of crowded towns?

The two chief aims of education are to draw out individuality and personality. This is certainly accomplished with success when we see representations as are shown herewith from a child's nature study diary.

We in England are sadly behind Germany and America in this branch of education. It is only a short time ago that children in our schools were encouraged to bring objects from out-of-doors into the schoolroom for examination. They were asked to make collections of lichen, ferns, or wild fruits; and what charming devices one has seen, wrought by ingenuity out of all these lovely things. Now, however, we have made a decided stride, for by means of school gardens, which gradually replace the dreary bit of asphalt playground, we go out to seek objects in their natural surroundings. Soon, teachers in our elementary schools, possessing the Froebel and kindergarten certificate and a Government teacher's certificate, will doubtless be fired with ambition; will vie with each other in improving upon this system of education. We shall have others following the example of the late Miss Lucy R. Latter. She it was who did such good work in this respect as head infants' mistress of the Invicta Road Council School, Westcombe Park. Having carefully studied the question in Italy, France, and the United States, she was given a commission by the Government of the Maharajah to start school gardens in connection with the public school system of Mysore. Teachers were prepared by her to carry on the work; and let us hope that, although gloom has been cast by her sudden death, they will yet have been inspired by her to continue their efforts.

There is no doubt that the school garden successfully developed is the pivot round which nature-study revolves, and as time goes on it will be seen more and more that gardening and nature-study have much in common. Those ladies who have talent for teaching, and have been through a course of gardening, will find many openings for work. A garden, although artificial, is far less so than a schoolroom, and it combines scope for general education, quite apart from mere manual horticultural teaching.

I am informed by one of the greatest authorities upon this subject that science mistresses do not exist in sufficient numbers to supply the demand for them. In this country it is a great recommendation for a woman to be

able to teach nature-study, and there is no difficulty in the way of a post being obtained by one who possesses knowledge and who can impart it. As new training colleges and secondary girls' schools are instituted, the demand will become greater, and it is in the realms of possibility that there may be women teachers of nature-study wanted in South Africa and in India, though Canada and Australia are capable of supplying all the teachers they want themselves.

Those who are interested in this subject will do well to read the Notes in the Swanley College and other reports in the second part of this volume.

CHAPTER VI

SOME HINTS UPON TAKING UP A POST AS HEAD GARDENER

I assume that a candidate for a position as head gardener has been through a two years' course of study at one of the Horticultural Colleges or at a school, and has been under-gardener for a year or more in a private garden. No doubt she has learnt how to grow flowers, vegetables, and fruit, but it is possible that she does not know much about the routine work which she will now have to superintend. As principal of the Glynde School for Lady Gardeners, I have had to study this subject, and the following notes, some of which are compiled with the help of a former superintendent, Miss J. S. Turner, are offered for use.

A lady gardener is still somewhat of an experiment to owners of gardens, and, therefore, each one who takes up the work is, in a sense, the pioneer of a new profession for women; it rests with her to make or mar the success of future lady gardeners. If she is a failure, or does not give satisfaction, it may prevent other employers from engaging lady gardeners. This should not, however, be allowed to discourage or intimidate an applicant for such a post. There is no doubt that a lady, with superior education, tact and taste, should succeed where many men have failed. It must be borne in mind that the employer's pleasure has to be studied, and that the men will have to be managed with firmness and strict fairness. Where these points are carried out intelligently, the success of an intensely interesting career is fairly secured.

If possible, it is advisable that the duties should commence at Michaelmas, which is the beginning of the agricultural and horticultural year. If a start is made in the spring, most of the praise or blame that ensues during the remainder of the horticultural year belongs by right to the previous gardener.

Autumn and winter are the seasons for laying a good foundation, for forming plans, and cleaning up. "Well begun is half done," but it is more than "half done" in gardening. Unless the winter foundation is correctly laid, the summer superstructure will be wrong, or there is a chance of there being no structure at all.

The first thing for a lady “head” to do is to have a good look round. She must see what crops are still on the ground, what preparation has been made for winter and spring crops, and the state the houses and frames are in. Everything under her care must be clean and in good order.

Her aim is to fulfil all requirements of the family which she serves, and, in order to succeed, she must ascertain their wants. These vary with each family, and it is not possible to lay down any fixed rules. Many questions that will need answering should be noted down, and an interview should be requested of the lady of the house, or whoever is most interested in the garden.

I will only draw attention to a few points which need consideration, and these can either be decided by the gardener herself, should she be given a free hand, or settled by the employer.

(1) The hours of work and holidays for the garden staff. Arrangements should be made also for power to dismiss any subordinate who is lazy or misbehaves; and this should be acted upon without hesitation upon the first proof of neglect.

(2) The payment of men, and the number of extra ones allowed for additional work. In large gardens, this matter comes under the estate department, but in small gardens the head gardener deals with it.



THE COUNTESS BATHURST'S GARDEN, PINBURY, NEAR CIRENCESTER

Photograph by Pictorial Agency.

(3) The days and hours that will be most convenient for the despatch of routine work, such as mowing, tidying, etc. Some ladies have weekend parties, and require the place to look especially neat on Sundays. There may be small but necessary rules about sweeping and tidying the carriage drive, cleaning and washing garden steps or benches, the position of seats, tents, croquet hoops, marking tennis courts, etc. The employer's wishes should be ascertained, orders given accordingly, and it should be seen that these are carried out.

(4) The days and hours for picking flowers for the house. If it is the gardener's duty to arrange the cut flowers, this must be gone into carefully, as it is probably one of the most important matters in the eyes of the lady of the house. Should the family be in London, there will be fixed days for sending flowers, vegetables, and fruit to them; all these matters have to be carefully noted. The amount of green foliage required for mixing with cut

flowers also varies with different people's taste. It must be ascertained whether many pot plants are required in the sitting-rooms, or if cut flowers are chiefly used; and if so, which are the favourite kinds and colours. It will then be easy to decide which plot of ground should be used as a reserve garden for cut flowers, and what proportion of mignonette, violets, lilies of the valley, etc., will be needed for decoration.

(5) Another matter, which only the lady of the house can decide, will be the arrangements for bedding out, or the grouping and colouring required for herbaceous borders. If she has taste, and is artistic, it is necessary only to carry out her plans. Possibly she may leave the matter to the gardener; in which case visits should be made to a few neighbouring gardens to ascertain what plants and climbers are best suited to the climate and soil. Having put the plans on paper, an estimate can be formed of the quantity of bulbs, plants, shrubs, or climbers required for the whole garden. The autumn is the best time to order these. There remains then a further point upon which advice should be asked.

(6) The ordering of seeds, plants, tools, and garden requisites may be in the gardener's department, or it may be managed by the estate. In any case, it will be a good plan to touch upon these matters to the employer. Unimportant as they may appear, it is wise for him to deal with local tradesmen, and, therefore, a stranger to the neighbourhood will have to learn their names, and what things they each excel in. The carting of purchases from the station to the garden is a matter for careful consideration. Should this be done by the estate, it must be borne in mind that, when the yearly accounts are sent in, the estate will wish to appear economical as regards its own requirements, and if the gardener is not on good terms with the agent or bailiff, it is possible that the total at the bottom of the garden expense column may be surprisingly large. My advice, therefore, is to make friends with the estate department. When pea boughs, and timber for rails are needed, when locks are to be repaired, or hinges fixed, it is good to have a friend at court.

(7) Occasionally matters are put under a gardener's direction which can hardly be called garden work. The washing down of drains, cleaning away leaves from the roof gutters, brushing snow off the roof, emptying receptacles of refuse, burning waste paper from the house, may fall to a lady gardener's lot. In any case, when specific duties are ascertained, no

responsibility connected with them should be handed over to subordinates. Washing a drain down is not, perhaps, an especially elevating task, and it may be urged that any fool can do it. It will only be done, however, and well done, if the men know that a look-out is being kept for their neglect or carelessness. If they are sometimes unexpectedly watched it will be found that the work is well done, and instead of their thinking less of their "head," they will respect her all the more.

If a holiday is asked for them sometimes, or a kind act is performed for their wives or children, they will work with a good will which should be encouraging to their chief.

It is not very probable that anyone, after only two or three years' training, will soar at once to the height of being head gardener on an estate, or of having the direction of many labouring men. I have noted most of the points of importance for a start in the garden profession; they must be added to from experience as the ladder is mounted towards success.

I have not, so far, touched upon the main point for consideration, whether the garden be large or small. This is the vegetable garden. It will be necessary, without loss of time, to interview the cook, and ask what vegetables are most required.

"Different people, different opinions; some like apples, some like onions." Do not grow what is not wanted. It is well to try and make friends with the cook, for if not, any failure in the vegetable course at dinner will be laid to the gardener's door. They will be too young or too old, too tender or too tough, or it will be said that the cook has expressed an opinion that "no one couldn't cook them vegetables which that there lady gardener sends in." Therefore, spare no pains to be friends with the head of the kitchen, for success or failure may depend much upon her opinion. A few compliments upon her skill in cooking will be a good preliminary to any explanations that may have to be made in introducing a new vegetable to her notice. I have heard of a sad instance of the Mont d'Or butter beans that were given to the pigs "because they were yellow." In this case, had the cook been interviewed beforehand, those lovely golden beans would not have been cast "like pearls before swine." The requirements of houses as regards flowers and vegetables vary very much, and it will only be by asking advice of the lady and the cook that a gardener can guess at all what she is

expected to send into the house. The first year will naturally be somewhat of an experiment in this respect, and it will be well to point out these difficulties to the employer, for fear he considers that there is either undue extravagance or too economical a saving of produce.

Having interviewed the cook, the next thing is to arrange the crops.

For an ordinary kitchen garden of one acre, the following should generally be ordered.

Peas	6 qts.
Broad Beans	2–3 qts.
French Beans	½ qt.
Runner Beans	½ lb.
Spinach	1 qt.
Winter spinach	8 ozs.
Mustard and Cress	1 qt. each.
Beet	2 ozs.
Carrots	2 ozs.
Leek	1 oz.
Lettuce, Summer	1 oz.
Lettuce, Winter	½ oz.
Onions, Spring	4 ozs.
Onions, Autumn	1 oz.
Parsley	2 ozs.
Parsnips	1 oz.
Salsify	1 oz.
Turnips	4 ozs.
Endive	1 oz.
Radish	1 pint.
Kale	1 oz.
Brussels Sprouts	1 oz.
Cauliflower (of sorts)	1 oz.
Broccoli (of sorts)	1½ ozs.
Cabbage	1 oz.
Red Cabbage	½ oz.
Savoys	½ oz.
Celery	1 pkt.

Cheap plants can be bought of these latter, and also marrows and cucumbers. If the garden is a small one, it will be more economical to do this than to raise them from seed. The above are ordinary vegetables; for

special ones, such as cardoons, chicory, etc., a small packet of seed will be sufficient.

There are three vegetables not usually grown, but which are most useful. They are:—

Phœnix Kale.—Will stand the most severe winter, and the more it is cut in the late winter or spring, the more it will shoot.

Seakale Beet (not Spinach Beet).—Can be cut all the autumn. It will stand an ordinary winter, and will furnish another cut in spring when vegetables are scarce. It has a broader midrib than spinach beet, is perfectly white, and is cooked like seakale. The green blade can be used as spinach.

Couve Tronchuda.—Is used much in the same way as seakale beet. Cut the lower leaves first, and use the thick fleshy leaf-stalks; when the lower leaves are done, there still remains very good cabbage on the top. Sutton calls it “rather tender,” but it is not always necessary to protect it in winter.

It will be found useful to obtain a large chart of the vegetables usually grown, and the time of sowing, planting, and cutting. This can be obtained from the Stores (Book department).

If a rough plan of the garden can be obtained, it will be of help; if not, a copy book should be bought, and on one page a rough sketch made of each plot, with the length and breadth marked upon it. This need not necessarily be drawn to scale. Upon the opposite page should be put the crop which is on the ground. Probably someone can supply information as to what crop was previously there, and when the ground was last trenched and manured. Any notes that can be made in this respect will be useful. It is a good plan to divide the garden under cultivation roughly into four quarters, disregarding, for the moment, that part which is under permanent crops, such as asparagus, rhubarb, etc. By trenching and manuring one plot every year, it can be arranged for each quarter to have a good dressing at least once every four years.

Bastard trenching is generally better than trenching; and the more constantly the ground is stirred the better.

As farmyard manure is often scarce, and labour for thorough trenching is expensive or difficult to obtain, it will be found that doing a quarter of the ground each year is a sure way of getting it all under cultivation. This, and

digging in the refuse, will supply the necessary humus. Between times dig as deep as possible and use artificial manure.

The reason for ascertaining the crops that have been grown before is to enable some sort of rotation to be practised. It is impossible, in gardening, to do this as perfectly as in agriculture, but there are a few things which it is well to bear in mind. The three fundamental rules are as follows:—

- (1) Plants of the same natural order should not follow each other.
- (2) Crops which have occupied the same ground for several years should be succeeded by others of short duration. This gives an opportunity for constantly stirring and cleaning the ground.
- (3) Plants grown for their roots, or bulbs, should not be followed by others grown for the same purpose. Plants grown for their seeds should also not succeed each other.



THE YEWE TREE AVENUE KNOWN AS "THE NUN'S WALK," IN THE COUNTESS BATHURST'S GARDEN, PINBURY, NEAR CIRENCESTER.

Photograph by Pictorial Agency.

In a small garden, it is best to grow only early potatoes. Others can be bought as cheaply as they can be grown, and the space they would occupy is valuable. A piece of ground may be under early potatoes these should be cleared by the middle of June, when a sowing of peas can be made, selecting one of the early varieties for a late crop. When they come off, they can be followed by turnips, which are drawn off during the winter. In January the ground can be bastard trenched, but not manured. Let it lie fallow awhile; then put in carrots, parsnips, or beet. The order can be varied indefinitely, so long as the rules are followed, and the plot of ground kept well trenched, and manured every fourth year.

The next things to consider are the crops still on the ground, and those coming on. In a fairly well-managed garden late peas, runner beans, cauliflowers, and marrows all "in cut," should still be found in the autumn.

The runner beans and the marrows should bear until they are cut down by frost. Their bearing capacity can be prolonged by careful picking, by a mulch of well-rotted manure, or with a drenching of liquid manure, according to whether the season is wet or dry.

If there is likely to be a shortage of winter stuff, fully ripe marrows can be hung up in an airy place, and runner beans put down with salt. A breadth of celery should be found coming into use, and parsnips that will stand until they are required. The main crop of carrots and beet will still be there to store, and there should be a break of sprouts, kale, and other things to come in later. If the supply is likely to run short, it will not be too late to plant cabbage and colewort.

First then, clear off all crops that are over, such as peas, early cauliflower, and potatoes. Burn all this refuse, as well as the weeds, and return it to the ground. Keep on hoeing. If there is no winter spinach in, make a sowing at once, and also make a sowing of turnips.

October is the great storing month. Take up all beet, carrots, and parsnips; but artichokes and salsify are best left where they are.

Corn salad can be sown, to come up in early spring. Cauliflowers should be pricked out into a cold frame where they can be protected from frost.

All leaves should be swept up and stored in a heap, to make leaf mould. In the process they will generate steady heat, and if a frame can be spared it should be put over them. Tender plants can be stored in it, or winter salad grown in it.

By now the work will have got into swing, and the routine of it has consequently been acquired. Any mistakes or omissions that have occurred will have been rectified.

As the crops come off, settle what it is intended to put in next, and prepare the ground accordingly. Some things require little or no manure; others need much. All ground is better for being stirred, therefore keep on digging. War must be waged against all weeds between the rows of greens, decayed leaves should be removed. All crops that are likely to be injured by frost must be protected.

Now is a good moment to see about obtaining a supply of pea and bean sticks, flower stakes and canes. Two important matters can be done in bad

weather, when the land cannot be worked. Stakes may be sorted out in sizes, pointed and tied into bundles, and put away in a shed. Any painting of stakes, tubs, or labels can also be done, and it will be found a good plan to go over the stock of tools.

There is much more work that I could suggest, but if the hints already given are carried out, a good start will have been made. By taking in a practical garden paper, such as "The Gardener" (1d. per week), "The Journal of Horticulture" (2d. per week), or the "Gardener's Chronicle" (3d. per week), a reminder of the regular rotation of work will be secured. By reading these it will be seen exactly when to harvest fruit, prune shrubs and roses, clean over borders, layer carnations, etc. All details connected with these different operations will have been learned at college, so I need not add another to the many gardening books that will already have been read.

I want to draw attention to one quality that a lady head-gardener may find herself in need of. It is humility. I do not know a profession in which this is more necessary than in gardening. Because all difficulties of the soil in a chalky southern county have been learned, the requirements of that poor land mastered, and preparations made to guard against the violent attacks of the south-west wind, do not suppose that these same torments exist necessarily in other counties. Enemies and insect pests will be found, but they may not always be the same kind. The good advice and hints, therefore, that may be obtained from smock-frocked residents in the neighbourhood should not be despised. They have, perhaps, never been further than the nearest town close by; reading and writing are difficulties which they cannot overcome, but they have fully taken in how to grow vegetables and flowers on their own bit of land. Watch the time of year they undertake different simple operations, and learn to do likewise. Disappointment may be saved if they are humbly watched. Bitter experience has taught these men, and, by taking their advice, one may learn quickly what a lifetime has shown them.



MISS E. DOUGLAS IN HER GREENHOUSE AT SHEDFIELD GRANGE, BOTLEY HANTS.

Photograph by Pictorial Agency.

TOOLS

The lady-gardener can turn her attention to the question of tools when she has carefully looked round her new garden and when she knows how many men are to be employed. A list should then be made of those that are wanted, and they should all be ordered together, as by that means they will be cheaper. Those of an inferior quality should not be obtained just for the sake of saving a few shillings. They are dear at any price, so the best should be had and treated well. I have known instances of spades that “came to pieces in my 'and,” as the housemaid says. If they broke off at the first trial of a lady gardener, they certainly would do so when used by a man. Therefore all spades and forks should be obtained from a trustworthy manufacturer.

In some cases, a tool for each person employed will be required. In other instances, one or two of each kind will be enough, according to the size of the garden. Of these “sets” had better be ordered.

Spades.—A spade must be chosen to fit the user, and Nos. 2 and 3 are the most generally serviceable. One with a solid socket is strongest, and if the bend of the handle is right, it will not be appreciably heavier than others.

Forks.—A digging fork or grape with four prongs may be either flat or round. For general use, the round pronged ones are best, as they can be used for stirring the ground, digging potatoes, or forking manure. When digging, a flat pronged fork is strongest.

Rakes.—These can be obtained with iron or steel teeth, three to a set, in sizes of 16 in., 12 in., and 8 in. The end teeth and head should be in one piece, the other teeth rivetted, and very slightly curved. The socket should be long, and have at least three holes for rivets.

Draw hoes should be two to a set, 9 in. and 4 in.; the blades of steel welded to an iron neck which is slightly curved or swan-necked, as it is easier then to keep free of weeds.

Dutch hoes should be two to a set, 9 in. and 6 in.

Trowels.—A trowel should be chosen not too concave in the blade. A small mason’s trowel is useful.

A strong pruning knife will be required for each person. Besides these tools, there will be required, according to the size of the garden, one or two shovels, several manure forks, some wooden rakes, and two or three dibbers.

A garden roller.

A pick with one end sharpened to a point, and the other wedge shaped.

A crowbar, pitch bar, or punch.

A couple of hammers and a wooden mallet.

An edging iron.

A pair of shears for cutting grass verges.

A pair of straight hedge shears.

A pair of lopping shears.

One or two pairs of secateurs.

A large axe and a couple of hatchets. The American are best, or if these cannot be had, those with American handles should be obtained.

Several scythes.

A couple of saws, one an ordinary carpenter's saw, the other a pruning saw. A cross-cut, to be used by two men, is very useful.

One or two garden lines and reels.

A measuring rod, 10 ft. long, and marked in feet and quarters.

A diamond for cutting panes of glass.

Several wheelbarrows.

A hand barrow.

Several baskets or trugs.

Watering cans.

Mowing machine. This will depend upon the amount of grass; but in a garden of any considerable size two will be required, one large one for the lawns, and a small one, 10 in. or 12 in. wide, for borders and edges. For the first, the American make is light, cheap, and simple in construction, but as they have no back roller, they will not work on narrow borders. The "Pennsylvania," to be worked by a man and a boy, and a small "Green," will probably be the most suitable.

It must be seen that the tools are kept in first rate order. A grindstone, one worked with a treadle, will be necessary. If good tools are bought and kept clean, well oiled, and sharp, they will last a long time; and those that have been used are the easiest to work with. They are broken in, as it were.

It will be advisable, upon the first opportunity, to clear out every hole and corner, and get rid of the rubbish. Old tools, however, should never be thrown away, as wooden handles will turn into dibbers and measuring pegs. Short handles will do for trowels, etc. Old spades can be cut down, re-

sharpened, and used for digging amongst shrubs and in herbaceous borders. When they are past work, they can be put into the ground, blade upwards, as foot scrapers. Old forks can have their prongs shortened and turned down at right angles, or nearly so, to the helve. They are then useful as drag hoes for loosening soil among young crops.

It is a good plan, in a garden where extra labour is employed, and when neat and tidy habits cannot always be expected from the labouring men, to have receptacles for different kinds of refuse. There should be one for crocks, another for glass, a third for paper, and one for bits of wood. It should be seen each night that tools are carefully put away clean.

No pains should be spared to master thoroughly the mechanism of mowing machines. The lady-gardener must also know how to stoke a greenhouse furnace, and repair broken glass in frames. If these matters have been learned in student days there will be no difficulty for her in directing men. Should she be unable herself to put a piece of glass into a frame, she must not be angry with her workman if he fixes it insecurely. As thorough master of her trade, she will make herself respected.

Care, too, should be taken from the first to look ahead, as regards what has to be purchased, such as pots, soil, manure, peat, nails, raffia. It is provoking in finishing a job to be delayed because, at the right moment, some necessary article was not ordered.

“Thinking ahead” in this way is a habit, and can be acquired.

It is well never to be without a pocket-book and pencil, to jot down at once any things that may be required or jobs which need attention.



MISS HESTER PERRIN AT WORK IN HER BROTHER'S GARDEN AT FORTFIELD HOUSE,
TERENURE, CO. DUBLIN

Photograph by Pictorial Agency

CHAPTER VII

DRESS FOR LADY GARDENERS

The question of clothes is always an important one to the feminine mind. It is impossible to lay down any fixed rules as regards the costume best adapted to a lady gardener. Chief considerations are neatness and suitability to the climate.

It is best to have few clothes, and to have them good. It should be remembered that lady gardeners usually must brush their skirts, and possibly have to clean their own boots. A small cottage does not afford much space, so nothing should be bought which is not absolutely necessary.

Underclothing.—Wool should be worn next to the skin, both in winter and summer, and the weight of clothes varied according to the weather. A plain fitting flannel belt to cover the waist and abdomen is advisable. This is worn next the skin, whether the usual underwear be merino or not. Knickerbockers, and not petticoats, should be worn. For winter wear, ready-made blue or black stockinette ones are best. Cheap ready-made cotton ones are useful for summer; or they can be obtained in khaki drill, should that material be preferred.

Blouse or Shirt.—This should be of the simplest, untrimmed make. For student days, when there are digging and other exertions to be performed, a turn-down flannel collar, with a tie, will give most freedom of movement. For a head gardener, a stand-up linen collar will give a neat appearance. In winter a flannel or Scotch wincey blouse is warm. For summer, a tussore silk one is cool. Wincey and silk cost more than flannel and cotton, but they wear longer, and do not shrink in the wash, so the expense in the end is the same.

A strong leather belt round the waist will keep both skirt and blouse neat. If one or two swivels and spring hooks are fixed to it, a knife, keys, etc., can be attached, and thus will always be at hand.

Skirt and Coat.—Several of these are needed, all thoroughly business-like and tailor made. The skirts should clear the ankles well, and be very even all round. Nothing looks worse than one that hangs lower at the back

than in front. Care should, therefore, be taken to get the tailor to see to this. In rough weather, one should be worn with a 3 in. or 4 in. lining of thin waterproof inside. This enables one to wash off the mud with a sponge, and it will help preserve the dress. Thin waterproof is preferable to leather for this purpose, as it is lighter, and does not hang like a log round the wearer when she has been out in the rain for some time.

The colour of the coat and skirt should depend upon what will least show the soil when it rubs off as tools are handled or heavy mud is walked through. For winter, homespun, Scotch, West of England, or Irish tweed should be worn; a heather mixture or light brown are best, as these show dust less than darker colours. In summer, navy blue looks smart and workmanlike, but will get dirty easily, so it should only be kept for when clean jobs are undertaken.

Blue fishwife's flannel is inexpensive, and washes well. A loose coat or Norfolk jacket of the same material as the skirt is useful to slip over a blouse when the weather is cold, or after work is finished.

It should be seen that the tailor gives two comfortable deep pockets, and makes a wide collar with a flap, by which it can be fastened at the neck in rainy weather. Unless the necessity of these details is pointed out, he will probably skimp cloth and work. The tailor should be consulted as to the material best suited, an explanation having been given to him of the hard wear to which it will be put. Several colleges and schools for lady gardeners have designed special costumes for their students, but although some are becoming to slim, graceful figures, they are by no means suited to all, and are somewhat too conspicuous to be really desirable.

Waterproof or aqua scutum.—This will be needed for stormy weather and night work; and the latter is preferable, as it is pleasanter to work in than a mackintosh.

Hat.—In summer, a shady, thick straw hat looks best. It should not be “floppy,” as this is troublesome in windy weather, and it must be plain, not trimmed with chiffon or flowers. A bit of ribbon round it is all that is wanted. Although a sun-bonnet is picturesque, it is hot and close, for it keeps off the air as well as the sun. The old-fashioned plan of putting a couple of cabbage leaves in the crown of the hat is not to be despised,

should the heat be felt very much. For winter, a soft felt hat or cap will be required.

Boots.—This is the most important item of all, and one, curiously enough, usually neglected by lady gardeners. I often notice that students, when they begin work, wear ready-made and badly-made articles of the thickness only of paper. Boots are better than shoes, but they must be good. Cheap boots are dear at any price. If possible to afford it, they should be made to order, for a good many hours of the day will be spent in them. It is well to have a few nails in the soles; those made of aluminium are best. From 1 to 1½ ozs. will be sufficient for a pair of boots, and the difference in weight between them and the ordinary tackets is worth the extra cost.

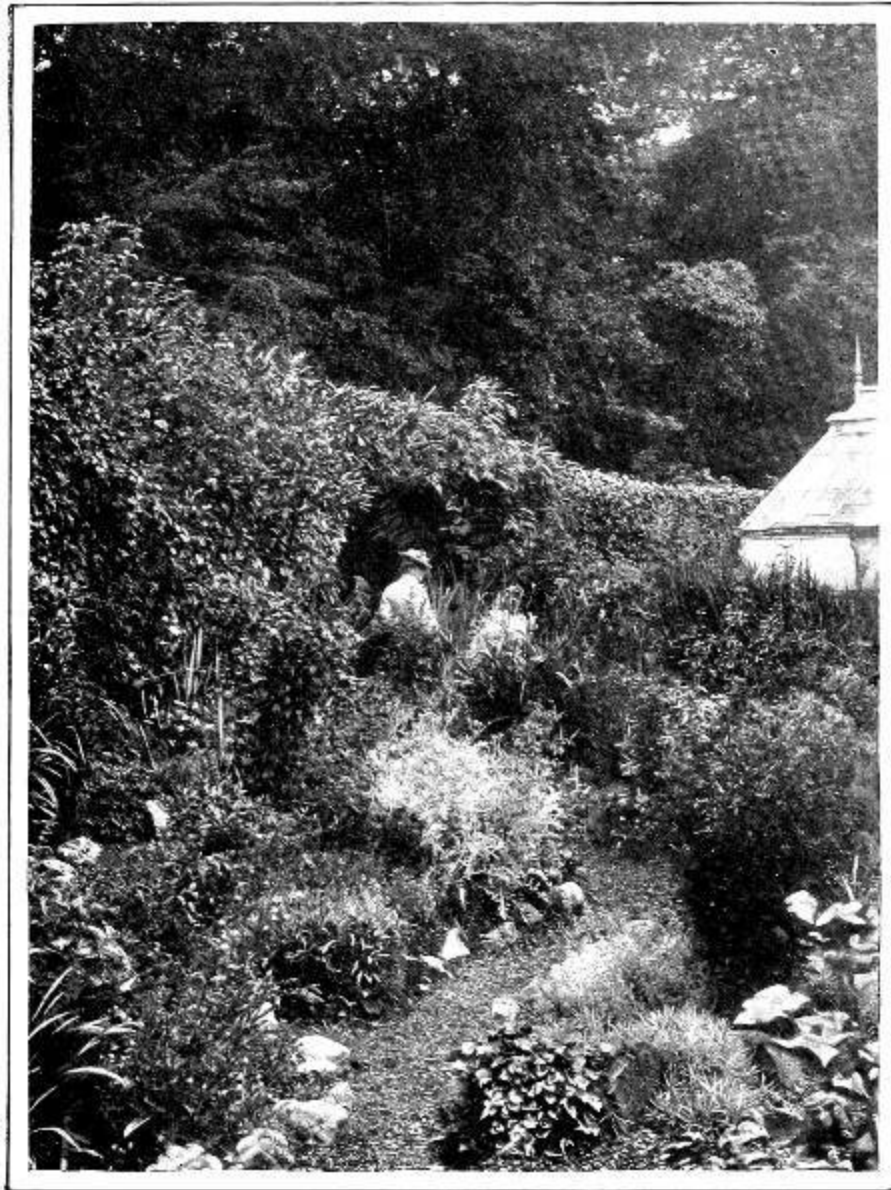
Boots should never be blacked, but always greased. This makes them warm in winter and wonderfully cool; in summer they are then really waterproof. If they are dressed once or twice a week with Gishurstine, they will wear well, and keep soft and pliable. A 1s. tin will last a long time. Castor oil, too (the cheap veterinary kind), is also excellent. Two pairs of boots are necessary so that they can be worn on alternate days, and thus be properly dried. There is a foolish, old-fashioned rule in some gardens that the men must have their boots neatly blacked on Monday mornings. This should not be encouraged.

The best way to dry boots, when absolutely soaked through, is as follows:—Take 2 or 3 lb. of oats, and heat them in the oven; when the boots are taken off, stand them in a pail, and pour the hot oats up to the top of the polish. The oats absorb moisture, and as the boot dries they will swell, and act as a last. The same oats may be used over and over again. To clean brown boots Bucknell's saddle soap is better than any of the patent preparations.

Stockings.—For winter wear, stockings should be knitted of soft, thick wool. Woven ones are the best in summer.

If, when the mid-day hour of rest arrives, boots and stockings are wet through, they should be changed at once. It is false economy to neglect to do this, for a rheumatic future may be the outcome. It will be found, however, that, if they are not wet, there will be less suffering from tired feet when the same stockings and boots are kept on all day. If they are removed, and a rest is taken in easy shoes during dinner time, the feet will swell,

cause pain, and blisters will probably rise when a fresh pair of boots are put on for the afternoon. Beginners usually have to put up with tender feet until they become accustomed to heavy boots. For this reason, thick stockings are preferable. It will be found that camphorated Eau de Cologne cools the feet. Another and better remedy is Balm of Bethesda, which can be had from most chemists. The feet should be soaked in warm water, and while still damp a few drops of the balm rubbed in. This should be done every night until a cure is effected. It may be necessary to repeat the remedy each spring when the first warm days arrive.



IN THE GARDEN AT FORTFIELD HOUSE, TERENCE, CO.
DUBLIN.

WHERE MISS HESTER PERRIN DEVOTES MUCH TIME TO THE SUCCESSFUL
CULTIVATION OF BULBS AND PLANTS.

Photograph by Pictorial Agency.

Leggings.—These, too, are important, and should be of leather, and similar to those worn by men. Buttons or spring fastenings are to be avoided. The spiral strap fastening with a buckle is the most practical, and brown leather is better than black, as it is more easily cleaned. Cloth

leggings, gaiters or puttees should not be worn they are troublesome to clean.

Gloves.—Thick leather gloves are useful when working among thorns and thistles. Many jobs, such as thinning out small things, pruning and nailing, cannot be properly done in gloves. When working among wet vegetables, they only make the hands cold, and encourage chilblains. Hands will wash, but it is as well to be provided with a bottle of nail-cleaning fluid, a box of orange sticks, and a little cotton wool. A hand nail brush must not be used, but soap and water should be vigorously applied.

Apron or Overall.—This will keep the skirt clean, and if there is a large pocket in the front it will be useful to keep scissors, a knife, raffia, or string in it for tying roses to pergolas, or picking flowers. A blue serge apron looks best, or an overall made of sacking, with a belt round the waist, is neat.

OTHER REQUISITES

Medicine Chest.—There will often be exposure to rough weather. A bottle of Eau de Cologne saturated with camphor is a necessity. It should be rubbed on the skin after washing, and it will tone it up and keep the surface smooth. It is a good hair tonic, and relieves headache; it also takes away toothache, and twenty drops on a lump of sugar will generally prevent a cold after working in damp weather. Scrubbs' cloudy ammonia put into a very hot bath is refreshing after a hard day. Quinine is indispensable to those who can take it.

I need mention no other requisites for a medicine cupboard, as, unless one is strong and active, a gardener's life will not be chosen. The chief risk that arises is that of taking cold, especially when work necessitates going in and out of a greenhouse, and thus being subjected to unusual changes of temperature. To guard against this, a knitted woollen golfing blouse should be kept handy. It is so thick, that it will keep out the coldest, most piercing wind, and can be easily slipped over the flannel blouse when leaving a greenhouse.

Bicycle.—Should there not be a cart for the gardener's use, a bicycle is indispensable. Visits to other gardens are of interest if only for the sake of comparison. Often, too, by making friends with neighbouring gardeners, cuttings of new plants or seeds can be exchanged. A basket can be fixed to

the handle-bars of the bicycle, in which can be put books and papers, whilst larger things are tied to the carrier behind. It will be found useful to understand the management of a repair outfit for punctures. The more independent of outside help a lady gardener is, the better she will get on, and the happier she will be.

CHAPTER VIII

COTTAGE AND FOOD

The question of finding a suitable cottage for a lady gardener is sometimes considered a difficulty by employers. But this need not be so. As a rule, the cottage stands alone in the kitchen garden, or near by, and what is large enough for a married man with many children will suit a lady admirably.



IN THE GARDEN AT FORTFIELD HOUSE, TERENCE, CO.
DUBLIN.

BELONGING TO L. PERRIN HATCHELL, ESQ., AND IN WHICH MISS
HESTER PERRIN DEVOTES MUCH TIME AND LABOUR.

Photograph by Pictorial Agency.

A lady gardener will want either a companion or a servant, as it is too tiring for her to cook and manage for herself after a hard day's work. There are several ways of arranging this comfortably. Should the salary be a large one, it will be best to have a servant to cook and undertake all household duties. If the cost of a resident servant is too great, it will probably be possible to make some arrangement with a woman in the village. She will come for so many hours a day for cleaning and rough work, and the

cooking can be dealt with by the gardener herself. As, however, it is extremely important that she should keep in good health, I urge that she should endeavour, by some arrangement or other, to get the cooking and house work done for her. There is sure to be an extra bedroom in the cottage, and should it be impossible to keep a servant, it can probably be arranged to have either a friend or a garden student as companion, who is willing to take over these small responsibilities. Often there are ladies training for Colonial work, who would gladly come and manage, in exchange for board and lodging. Vegetables are allowed to a gardener, and, therefore, she can easily afford to pay for the board of someone who helps her. Sometimes milk is provided for the use of a head gardener, and also coals. Before a post is accepted it should be ascertained exactly to what she is entitled, and then a calculation should be made as to how expenses can best be met. It must be remembered, however, that good, well-cooked food often saves a doctor's bill; so no pains should be spared to live well. The greater variety that can be managed in the case of food, the better the health will be. Women living alone are very apt, from laziness, to fall into a habit of drinking tea and eating only bread and butter. Work certainly cannot be done on this; solid food is absolutely necessary.

With a view to assisting lady gardeners to undertake their own cooking in cases of emergency, I am able, through the kindness of Miss J. S. Turner, to give a few hints which may, I hope, be of use.

For roasting, an American roaster, which can be placed in the oven and requires no attention for basting, is necessary. If there is a close range, the earthenware French *casseroles* and *marmites* are nicer than saucepans. There are many American "notions" too, that save labour.

Asbestos mats for placing under saucepans on a closed stove only cost 4d. each, and prevent the contents burning.

Aluminium utensils are much better than those of iron or tin. They cost more, but are indestructible, and easily kept clean.

To commence with, the following utensils should be provided:—

1 large saucepan. It should be the largest that can be fitted on the stove, and a steamer to fit it is also required.

1 spirit lamp for quickly boiling hot water or eggs.

1 small saucepan.
1 double saucepan or porringer.
1 kettle.
1 gourmet boiler.
1 American roaster.
3 frying pans for meat, fish, and eggs.
1 oven tin.
1 pudding bowl.
2 pie dishes.
2 basins.
2 jugs.
1 teapot.
1 coffee pot.
1 bowl for mixing paste.
Pastry board and rolling-pin.

Cups, glasses, knives, forks, spoons, egg-cups and table-cloths will be needed.

With the above-mentioned articles most things can be done, and other utensils can be added as required.

Breakfast.—Breakfast should consist of porridge and milk, a boiled or poached egg, and a rasher of bacon if necessary.

The porridge should be made overnight. Half a breakfast cup of Provost or Quaker Oats, with a good pinch of salt, should be put into a saucepan. A cup and a half of *boiling* water must be poured over it and well stirred. Put on the lid, and allow the whole to boil for ten to twenty minutes. Leave it by the side of the stove all night, and it will only want heating up in the morning, which can be done on a paraffin stove. Do not forget to put water in the lower half of the saucepan.

It will only take a few minutes to boil an egg or fry some bacon.

When going out early in summer, it may be convenient to make a hot cup of tea, and for this the spirit lamp will be useful.

Midday meal.—If lunch has to be prepared by oneself, bread and cheese, cold meat, soup, a hard-boiled egg with salad, will be the most easily managed. Tinned food should not be relied upon; it is dear and unwholesome. If a hot luncheon can be obtained it will be better. I only give the above suggestions to those who have to manage for themselves.

Supper.—As work ceases at 6 p.m., there will be plenty of time to prepare a meal for 7.30 p.m. A gourmet boiler is most useful. Put in meat, potatoes, onions, etc., and a teacupful of water. Place the boiler in a large saucepan, and fill up with water to the rim of the boiler. If this be put on the fire at luncheon time, a good stew will be ready in two hours, and a still better one in eight hours' time. One visit to replenish the water in the saucepan will be necessary

Beefsteak pudding, too, can be left on for hours, with the assurance that it will be all the nicer for long cooking.

Many dishes can be prepared beforehand, and heated up when required. It only needs a little thinking out.

Coffee.—Buy the whole berries roasted. Grind them as they are wanted. Small mills can be procured cheaply. Put the coffee in an earthenware coffee jug, and place it upon the stove for ten minutes or until it gets thoroughly heated. Pour on boiling water, and let it stand for five minutes. Stir it up, and then let it settle.

Tea.—Should the locality be one where the water is “hard,” “Hardwater tea” should be obtained. This is economical. Other blends are expensive, because the water does not extract the full flavour, and more tea has to be used.

Milk.—If milk is bought, get new milk, and do not skim it. Put it into a jug as soon as it is received. Let it stand twelve to twenty-four hours according to the season, and stir it well before it is used

Butter.—An icicle butter box, to hold from 1 lb. upwards, can be obtained, and if butter is kept in this box it will be firm even on the warmest day.

Pot au feu.—When tired after a day's work, and not up to cooking, this and Pepperpot or Lancashire Hot Pot (the recipes in Mrs. Beeton's cookery book) will be found a great stand-by. The pot merely has to be put on the stove, and in a few minutes a respectable meal is ready.

Life in the open air gives a good appetite, and, as a rule, no difficulty will be found in responding to it, if these slight instructions are followed.

CHAPTER IX

MARKET GARDENING

This is a branch of horticulture which requires great consideration and careful reflection, before a lady undertakes it. It needs both brains and capital. Market gardening resembles that larger sphere of jobbing combined with nursery gardening which is described towards the end of Chapter IV. Possibly less artistic sense is necessary, but far larger business capacity is essential. To succeed at all everything grown must be of the best quality, and suit the prevailing demand. There are fashions in flowers and vegetables, and these have to be studied and responded to. Then, too, in order to sell to London or other big markets, advance must be kept of others. It well repays to have green peas a fortnight before your neighbour, and more money is made if the supply of choice vegetables can be prolonged throughout the winter months. Then, again, white flowers sell better than others. These and many other tricks of the trade are not learned in an amateur way. They have to be studied under a competent master. Flowers have to be picked before the sun has opened them; they have to be packed with skill, and only certain kinds will travel well. Experience is necessary in order to know the right kind of foliage to send away with flowers.

So much, indeed, has to be learnt which cannot well be acquired at a college, that I strongly advise apprenticeship for a year or two to a nursery gardener. If it is preferred to study first at a school where surplus flowers and vegetables are sold, a good foundation of knowledge can be laid, which is considerably added to later in a market garden. I would suggest at least four years' training for this particular branch of Horticulture.

An apprentice might well suppose that many secrets of the trade would be revealed to her. But this may prove to be a mistake. Business people are cautious as to what information they impart, and possibly more is to be acquired by keeping eyes and ears well open. Constant and careful inquiries should be made as to the price obtained for various vegetable produce, and the most likely quarters where there is a demand for it in that particular part of the country.

I am inclined to think, however, that the most useful business information is to be gained during the first year or two's work in one's own garden. It is gloomy to foretell such things, but mistakes are sure to happen, and from experience comes knowledge. To lose one's own money hurts more than to see others lose.

Should the intending market gardener be a free agent, and able to select any part of England for her garden, there are two important matters for her to weigh. Where will be the best market, and what land has the most plentiful supply of water? Probably for the first venture the neighbourhood of a large seaside town, a watering-place or golf links, will be a safer market than London, which is so large and well supplied. It should be ascertained who the most likely customers will be—schools, boarding-houses, private families, etc., and the garden should be adapted to supply their wants.

Many are the ways of arranging work in a market garden. A lady of ample means can afford to keep an experienced foreman, a large staff, and horses and vans. By paying the head man so much per cent. upon the sale of produce, his interest in the concern will be kept alive. In this case a thoroughly dependable and honest man is necessary. Should more scope for energy be needed it will be advisable for the principal to do the secretarial work, decide the rotation of crops, conduct the sale transactions, as well as attend to the social part of the business. She should also supervise most of the operations and have good skilled labour to carry out all manual work.

If it can be avoided a field should not be converted into a market garden. The money that necessarily has to be spent at the start will more quickly be repaid if land is worked which has been used as a garden before. However good the soil, climate, and situation may be, a garden can only barely pay its way during the first two years on account of the many expenses that have to be met.

As opinions can best be formed by hearing real experiences, I propose inserting the following letter, written by one who has known what it is to overcome obstacles, and finally reach well-earned success. This interesting letter and several detailed accounts of market gardens given on p. 253 show what a suitable career this is for a woman. One, too, which will bring not

only health and happiness from work in the open, but considerable remuneration, if it be carefully and well conducted.

BASHLEY NURSERY,
NEW-MILTON, HAMPSHIRE,
October 11th, 1907.

DEAR MADAM,—

In answer to your request for information about my market garden here, I think it will be best if I give you a short history of the undertaking. I bought six acres of land here fifteen years ago, with a view to start a garden on a more or less remunerative footing. I had been brought up in a town, but had always been fond of botany—of plants as individuals—and as years went on, felt drawn to a country life. I got to know something of cultivated plants by studying in the Botanic Gardens at Cambridge, where I lived. I hired a quarter-acre allotment in a field let out in that way. I got very much interested in it, and decided to go in for a country life with a garden, which I hoped to make pay its way, if not more. I studied gardening for two years with a family who had taken up market gardening in Wales, and proceeded to buy a small plot of land to begin upon. I had enough capital to start a place and build a small house for myself, and, fortunately enough, means to live upon in a somewhat bare way. I did not feel the least sanguine of making ends more than meet, and this was fortunate, as for many years it was a most unpromising and expensive undertaking. I was entirely without business knowledge in general, or of any of the detailed knowledge of the horticultural trade, and also, being town-bred, I was led into many errors. The soil proved poor and sour from lack of draining, and thickly infested with wire-worms, and being far from any town (Bournemouth, nine miles, being the nearest) there was absolutely no local demand for anything. I should say one of the main points in starting any place of the kind is to be near some town. I had not originally intended to go in for market gardening, but circumstances seemed to favour it more than any other branch, of gardening, so after many misgivings and qualms at further sinking of capital, I put up a block of five greenhouses, each 100 feet by 12 feet. This necessitated having a skilled man to live on the place, and consequently the building of a cottage, as there was none near. I intended to grow tomatoes for Bournemouth market, followed by chrysanthemums and other winter crops. The first season of tomato growing proved enough of a success to encourage me to persevere, and I bought a horse and van to begin a trade with Bournemouth shops, and engaged a man as salesman. On the whole this proved a success from the first. Our chief crops to start with were tomatoes in the houses, followed by chrysanthemums for cut flowers in the winter, and out of doors a variety of plants for cut flowers, especially early flowering chrysanthemums, also strawberries, rhubarb, and vegetable marrows. After a short time we took up narcissus, forcing for a spring crop, followed by bedding plants in pots and boxes, and a variety of pot-plants, such as genistas, ferns, cyclamen, freesia, and pelargoniums.



BOXING BULBS FOR FORCING AT MISS BATEMAN'S MARKET GARDEN, BASHLEY NURSERY, NEW MILTON, HANTS.

After a few years I bought nine acres more, adjoining the first field, and two years ago I bought another small field of four acres. A few years ago I was able greatly to improve our water supply, and to put up an engine for pumping all water used in the houses, and to build a second cottage for workmen. My original staff consisted of one labourer; it is now about nine men and boys. Last year I was able to add a large tomato house 100 feet by 30 feet, and a small fernery.

Whilst living here the neighbourhood has become a residential one, and consequently a good deal of trade has come from the immediate locality.

A good many people are glad to have their gardens superintended, or to have suggestions about the laying out of their borders.

I cannot say I have ever found it a very remunerative undertaking; it has certainly been a laborious one, but to me it has been immensely enjoyable.

Other crops we grow out of doors are gooseberries, raspberries and currants, and large quantities of roots, such as pansies, polyanthus, wallflower, forget-me-not, for spring bedding. Among the out-of-door flowers for cutting the chief are: narcissi, chrysanthemums, roses, carnations, violets, gypsophila, sweet-peas, marguerites, dahlias, astors, coreopsis, mignonette, gladioli, Spanish iris, pæonies, scabious, alstromeria, daisies, and many others. We also have a number of herbaceous plants and a good many shrubs to supply retail customers.

I am, yours faithfully,

A. BATESON.

CHAPTER X

THE MEDICAL ASPECT OF GARDENING FOR WOMEN

Anxious parents often ask whether gardening is a really healthy occupation for their daughters. These doubts, shared by many, are perhaps not so easily dispelled as, at the outset, might be supposed. We are all prone to view with suspicion any project which has for its purpose the fitting of women for the more arduous tasks of life. "For men must work and women must weep" is what we are accustomed to hear. We know that amongst all primitive peoples it has been found that women are capable physically of carrying out hard work in the open. We have evidence to prove that crofter women, those engaged at coal-pit mouths, women peasants in France and Germany, North American Indians, African races and the aborigines of Australia, are not less long-lived than their more favoured sisters in leisured countries. Amongst civilised races, however, the principle is upheld that only light tasks are relegated to women, and surely so it should be. The charm of woman lies in her softness and gentleness. Must we not preserve this above all else?

Thus the father of a family views with alarm the profession of a gardener, when it is first suggested to him for one of his daughters. It seems undesirable to him that she, who has been accustomed to gentle living and refinement, should lead the monotonous, solitary life which he pictures it to be. He sees her, in imagination, constantly weeding and digging amongst plants, without leisure during the day for any of the relaxation to be found in mental employment or development, and returning home at night physically exhausted. Her mother thinks that rough exposure to all weathers will play havoc with a good complexion; visions of a brown sunburnt face, or a wrinkled parchment one, knotted fingers, stiff joints, uneven shoulders, rise up to alarm her. Many are the prophetic croaks that the young girl hears about rheumatism and age before its time, or misgivings as to the results of digging and trenching and the bad effect they may have on back and hip muscles. I know one young woman who was so frightened lest she should develop a huge hump on her back from stooping, like the old road-mender whom she met daily, that she always laid down quite flat on her bed, during rest hours, to counteract any harm that might be likely to come to her.

It is most natural that many should be alarmed and have a strong disinclination to advise gardening as a healthy profession. I cannot help thinking that they may alter their views when they realise fully that it is not hard manual work that is needed of women in this profession. They are not meant to do spade-work like the ordinary labouring man; we have plenty of fine, strong hulking men who do this, but we do need more directing heads to plan out work and guide others. This is what lady gardeners are to do. It has become evident, in recent years, that women have determined to shake themselves free from former occupations and interests. They intend to apply their energy in new directions. Frequently, it must be admitted by all, they are successful. Practical experience shows us that women can acquit themselves with honour and success in games and in the pursuit of sports, which formerly were reserved only for men. Hunting, shooting, golf, cricket, swimming, hockey, climbing and walking are acknowledged to be fields of activity in which women may safely indulge. In Jane Austen's day such pursuits were considered not only dangerous to health, but likely to produce awkwardness of figure and ungainliness of movement. Physical activity was supposed to unfit young girls for society. Things are changed since then, and although many of us see with regret some loss of feminine softness and charm in occasional specimens of the new woman, we cannot put all the evils to the profession of gardening. There must always, I suppose, be eccentric individuals who exaggerate their peculiarities, but these exist in all professions, and classes.

Much attention is now paid to the physical development of girls and young women in our schools, and we cannot fail to see the immense advantage gained by comparison through this over the results of early Victorian education. We have all, it is to be hoped, learnt that open air life is no longer a privileged form of existence suited only to men. We know that it is, when carried out on sensible lines of moderation, immensely helpful to women. The medical world has lately been awakened to the importance of improving the physique of our young people. Both Sir Lauder Brunton and Sir John Cockburn (chairman of the Swanley Horticultural College for Women) have impressed this fact openly upon the world. We see daily before us leisured women who from lack of pleasant, wholesome interests and bodily exercise, without scope for reasonable aspirations, have become anæmic parodies of the sex. The insidious malady which dogs the steps of a nation's progress towards highly cultured, unlimited leisure and freedom,

masquerades under the old-fashioned term “*ennui*” or the new-fangled names of nervous exhaustion, break-down, overwork (!), hysteria, decadence.

I believe I am justified in saying that medical men, who can appreciate the often aimless, humdrum existence of many women of the wealthier classes and the debility of those in our large towns, find in gardening a good agent for the removal of such evils. Possibly a year spent in rising early, out in sun and rain, with simple food, pure interests, physical exercise, does more for some than many medicine bottles, rest cures, Swedish movements, and other modern remedies. The same may be said for those who are mentally troubled—insane, that is, in a legal sense. The managers of our asylums are appreciating more each year the benefits to be derived by occupations. In this instance such interests act not only upon the individual, but also upon the health of a nation.

No one who has given the least attention to the advances made in the modern treatment of pulmonary tuberculosis can fail to recognise that open-air treatment has proved to be of immense value to sufferers from consumption, and that by its means cure, in the real sense of the term, may be established. It is a matter of national gratification that this sensible mode of cure should have been initiated in this country, by Bodington and MacCormac, years before it was adopted elsewhere. It is an instance of our national slowness to do what is obviously right, that our Continental neighbours have, till recent years, outstripped us in the perfection of these methods of cure. Our own pioneers, too, have been subjected to ridicule and temporary obloquy. We now know that though outdoor life at high altitudes is especially successful in the treatment of tuberculosis, high altitude is not a necessity. A cure can be effected in the lower altitudes of our own country, so long as the principle is maintained of a constantly “open window.”

Quite recently practical proof has been brought forward by Dr. M. S. Paterson, of the Brompton Hospital Sanatorium at Frimley, which shows that even the success of the Continental patterns of sanatoria can be greatly enhanced by allowing the sufferers to work in the gardens. By giving them this healthy employment they harden themselves, and instead of being confirmed idlers, they leave the institution vigorous in muscle, as well as healed of their lung trouble. The patients, men and women, are encouraged to execute all the lighter duties of gardeners, and the more robust of the men

are allowed to excavate and trench ground. All minor ailments, such as nasal catarrh, or “common cold,” bronchitis, sore throat, headaches and muscular rheumatism, are remediable by means of a life regulated in accordance with the principle of the “open window.” It can hardly be doubted, therefore, that if those exercises which take the form of outdoor games are in part replaced by the more primitive and infinitely more profitable ones of gardening and botanical study, the same excellent effects will be realised.

Those who advocate gardening for women do not seek to deprive them of intellectual pursuits through a constant devotion to physical effort. They wish to secure to them the certain assurance of a healthy physical state by moderate devotion to a refined and pleasant occupation. Direct experience is fortunately available to carry conviction on this point to those who consider it with proper calmness and reasonableness. Healthy women who have essayed the experiment of gardening have no sort of doubt as to the beneficial results to be derived from it. Again and again it has been found, not only by devotees themselves, but by others whose training as medical men and women has enabled them to detect any undesirable results, that gardening is little short of an unmixed blessing. One distinguished medical authority who has made the agricultural education of women a life-long study, says that the young women who have taken up gardening as a profession are in consequence “as lithe as panthers and of splendid physique.”

Not only, therefore, does such a life increase muscular development and consequently help circulatory, respiratory, digestive and other normal processes, but it helps to make a healthy mind. If a serious bit of thinking has to be done, a piece of trenching or some purely mechanical exercise will greatly assist the brain. To quote a passage upon digging from Mr. Halsham’s admirable book, “Every Man His Own Gardener,” “You will find that the mind is not merely left free for all the valuable reflections which may occur to it, but that the attention necessary for the job takes up and keeps employed and quiet some subordinate activities of the understanding which in times of repose are often decidedly troublesome.”

I should like to quote a passage, too, from Ruskin’s “Sesame and Lilies,” which seems to me very applicable to the case in point. In showing us the power of woman, he says: “The first of our duties to her—no thoughtful

persons now doubt this—is to secure for her such physical training and exercise as may confirm her health, and perfect her beauty, the highest refinement of that beauty being unattainable without splendour of activity and of delicate strength. To perfect her beauty, I say, and increase its power, it cannot be too powerful, nor shed its sacred light too far; only remember that all physical freedom is vain to produce beauty without a corresponding freedom of heart.” Then follows the quotation which we all know so well, and which shows us the “vital feeling of delight” which true love of nature, and all the lovely things in nature, give us—“Thus, then, you have first to mould her physical frame, and then, as the strength she gains will permit you, to fill and temper her mind with all knowledge and thoughts which tend to confirm its natural instincts of justice, and refine its natural taste of love.”

I ask what can more readily lead to the fulfilment of this ideal than a life of quiet, peaceful interests in the company of the pure and lovable companionship of flowers? What can bring healthier happiness than watching for those harbingers of the new flower year, the little green heads of Winter Aconite that come pushing so determinedly through the brown earth, and are followed later by little golden heads of flower? What can give greater intellectual and artistic pleasure and scope for imagination than planning the herbaceous border which is to be bright with colour all the year? Careful study and much reading are needed, but happy evenings fly speedily by, as you gaze into the fire and plan a lovely summer dream garden. Then, too, there is the interest of arranging work for others, marshalling the men at your command and apportioning the work to their different characters and temperaments. It is indeed no monotonous, unintellectual life.

A report has been received from one of our modern university colleges where lectures are provided upon various subjects. It tells us that women students are occasionally absent owing to indisposition from lectures and demonstrations upon history and classics, but that they attend with regularity those upon gardening. This is a flattering statement as regards the interest of horticulture.

Several of the reports of foreign schools which I am able to give, through the kindness of their directors, show that other nations are in advance of us in two points, at least, connected with this branch of study.



THE RUINS GARDENS, SLOUGHAM PLACE, SUSSEX.

LAI D OUT BY THE HON. MRS. CHARLES SERGISSON.

Photograph by Pictorial Agency.

In Germany, Holland, and Italy, great stress is laid upon the ultimate use of horticultural courses. They are intended especially to fit young women to be useful in their own homes, either while living with their parents, or later when they marry or have homes of their own. This applies to women with means who are not obliged to earn a living. They are considered, with a knowledge of fruit culture, flower and vegetable gardening, jam making and fruit preserving, to become valuable adjuncts to the household. The word "Hausfrau" nowadays includes these garden matters, and we in England might profitably follow this example. If a young woman marries well and has servants who do all these things for her, she will still never regret having herself mastered difficulties, and probably she will be better served by being able with experience to criticise the work of others. Then,

too, we notice in the foreign syllabuses that a doctor's certificate of health is required before a young girl thinks of studying gardening.

It is certainly advisable that the family doctor should give advice before any decision is made as to the vocations of young women. This should be all the more insisted upon, when the would-be student suffers from some malady, whether it appears to be but a trifling one or not. It is a practical certainty that many minor maladies and symptoms are entirely removed when a suitable life is led. On the other hand, others apparently equally insignificant are harbingers of grave illness. It is possible that these remain dormant, or are not accentuated in the ordinary quiet routine life at home, but assume grave proportions as the result of the greater physical requirements of work in a garden. Therefore, parents should ask advice of a doctor before encouraging their daughters to take up gardening. It probably will be found by those who are able to adopt it as a profession, that there will be fewer aimless and useless existences, and that there will be many more happy, long-lived people.

CHAPTER XI

WOMEN GARDENERS FOR SOUTH AFRICA

There is small doubt that the subject of emigration to South Africa appeals to young Englishwomen, buoyant with youth and hopefulness, ambitious for adventure. A singular fascination exists about that virgin soil, clear air, brilliant sunlight. We know that nurses, teachers, mothers' helps, servants are needed there. Unhesitatingly we recommend young women who belong to these professions to go to South Africa. They must thoroughly weigh beforehand the hardship of leaving home, and fully realise the obstacles they will have to overcome in a new country. Having faced these difficulties, they can, however, be confident of success, for the refining influence of women is fully appreciated in what are still somewhat uncivilised surroundings.

“Is this so with lady gardeners, are they likely to prove useful in South Africa?” This is a question often asked, and still somewhat difficult to answer. Experience of the subject is meagre, and the idea of sending ladies as gardeners to our colonies is a new one. We have had brilliant examples of success, and at the present moment a lady gardener at Bloemfontein is doing good work. Miss Hewetson's report to the South African Colonisation Society, on Cape Colony Fruit-farming, tells us, perhaps, most about the subject, and we feel that her views can guide us, as her supervision of the work of Kaffirs for a year and a half gave her personal experience in the matter. We know that there are vast possibilities of fruitful cultivation if only there existed more skilled, directing heads. What a change might be made in the production of the soil, if educated guides superintended the merely mechanical work of Kaffirs!

It is intelligence and enlightenment that are needed, brains that are wanted more than hands. We are told that it takes three busy months to prune fruit trees on a large Cape Colony farm. These fruit trees make only moderate growth, as in England, but in Natal growth is tropically luxuriant, and in pruning much wood has to be left for shade, otherwise the fruit becomes sunbaked. To carry out properly such operations intelligence is necessary. Then, again, we know that fruit packing and grading are large

undertakings on many farms. We read of a farm with 30,000 fruit trees and several vineyards, and can readily understand, not only the number of hands needed to sort and pack fruit, but the necessity of having clever overseers to speed on such work. Old inhabitants assure us that large profits could be made in dairying, poultry-rearing, bee-keeping, or flower-growing by English ladies who were earnest and adaptable, and possessed of capital as well as brains. The climate does not allow a white woman to dig or to undertake heavy work, but her services should be valuable to organise work for the natives. Until we have more definite examples of success, it is unwise to urge ladies to go to South Africa as gardeners. The safest course is, perhaps, to relate the steps that have up to now been taken, and leave all decision to the good judgment of those who contemplate taking up a profession which holds out decidedly good prospects to ladies who can face some degree of adventure. Much depends upon the natural taste and ambition of a woman. With good health, energy, and intelligence, people usually succeed in any country.

The most important matter that has so far been undertaken is the organisation of a colonial branch of training at Swanley College for lady gardeners. Here, students are put through a course, intended to fit them, to a certain degree, for posts on fruit farms, dairy farms, and private gardens in South Africa. This training at home, excellent as it is, must, however, be supplemented by apprenticeship in the colony itself. The difficulties of a foreign land cannot be grasped in England. A college for lady gardeners in South Africa itself is what is really needed, and no doubt in time it will be started. Meanwhile, until it is in existence, it is necessary for those who contemplate going as gardeners to the colonies to learn as much as possible at home. A two years' course should be taken in fruit-growing, packing, jam-making, bee-keeping, etc. These subjects, if thoroughly understood in our climate, will present fewer difficulties, and will be easier to deal with in new surroundings. An application to Mrs. Hopkinson, chairwoman of the South African Colonisation Society's Agricultural Committee, and of the colonial branch of the Horticultural College, Swanley, will secure all necessary information. The South African Colonisation Society offers advice as to climate conditions. It is also constantly looking out for possible openings in South Africa, where experience of soil, climate and cultivation can be acquired.



THE YEWS AT HUTTON JOHN, CUMBERLAND.

WHICH THE SPEAKER AND MRS. LOWTHER HAVE RENTED. THE ARTISTIC ARRANGEMENT OF THE BORDERS IS MRS. LOWTHER'S SPECIAL CARE.

However successful one may be in out-of-door pursuits in England, the knowledge will still be inadequate in the colonies. The chance of success will lie in undertaking work with a spirit of pure humility. Only after a thorough course of instruction in the country itself can the management of a post of any degree of responsibility be attempted.

One considerable source of difficulty is the question of a white woman as overseer being left unprotected among Kaffirs. In small gardens, with only one "boy," this danger is reduced, but in large ones it is almost a necessity that two ladies should protect each other. The proportion of men to women is about seven to one, and, therefore, some may consider that South Africa will not be, as regards lady gardeners, a woman's country for another fifty years. That it will be so then, we who are anxious to see the better cultivation of our great colony, upon lines indicated for us by Cecil Rhodes, venture to hope. When Englishwomen have firmly established a

good reputation as landscape gardeners, directing experts and teachers in the mother country, they will doubtless be welcomed with enthusiasm in our colonies.

To those who are not deterred from making an attempt at gardening in South Africa by these few difficulties, I venture to give the following practical hints, which I am allowed to publish by the kindness of the South African Colonisation Society:—

BOARD AND LODGING

In Cape Colony	from £5	to	£8	per month
In Natal	„ £4 10s.	„	£8	„
In Rhodesia	„ £9	„	£11	„
In the Transvaal	„ £7	„	£10	„
In Orange River Colony	„ £6	„	£8	„

Laundry in Cape Colony costs from 8s. to 10s. per month.

In the other colonies it is generally from 2s. to 8s. per doz. articles, irrespective of size.

OUTFIT

The same clothes are needed in South Africa as in England, except that furs are not necessary, and a larger supply of washing dresses, etc., are needed for the longer summers. Wool of some sort must always be worn next the skin, even if it is only a cholera belt in the hottest weather, on account of the sudden falls in the temperature. In the Transvaal and Orange River Colony the winters are bitterly cold, and warm underwear is there very necessary.

Warm wraps are essential, as the nights seem bitterly cold by contrast to the hot, sunny days. Washing fabrics should be chosen of fast colours; white linen, holland and Tussock silk wear the best. Light unwashable materials are unwise, as the dust is terrible all over the country, and there are no good cleaners. Black and dark-coloured materials are inadvisable, as also most kinds of grey, as they become stained with red dust. Rough mixture tweeds in greens, browns and reds are most useful, or any other warm, light, dust-proof material.

Brown shoes and stockings are better than black ones, and a good supply should be taken, as the wear is harder than at home. Gauze and chiffon veils

are a great comfort in a dust storm, and it is wise to have a cushion for travelling.

A thick mackintosh, overshoes, and a warm rug are essential.

It is economical to provide a really serviceable outfit, calculated to last for some time, as clothes obtained in the colony are both more expensive and less satisfactory than in England.

FARES

(2nd Class Union-Castle Intermediate Steamers)

To Cape Town	£20 15s.	to	£21 13s.
To Algoa Bay	£21 13s.	„	£23 9s.
To East London	£22 11s.	„	£24 7s.
To Durban	£24 11s. 6d.	„	£26 9s.

N.B.—At least £1 10s. should be allowed for landing expenses, and about £1 for tips on board ship (the stewardess expects from 5s. to 10s., according to the amount of attention required on the voyage, and the cabin steward and table steward will expect 5s. each. Subscriptions to games and other tips are optional). An Emergency Fund of a few pounds should also be kept in hand. Passengers are met at the various ports by South African Colonisation Society agents, and they can stay at the Hostels of the South African Colonisation Society, where board and lodging are provided for from 3s. 6d. per day.

A girl with a long railway journey before her would do well to provide herself with food at the port of landing; tea and coffee can always be obtained *en route*.

Besides the regulation cabin trunk (this must not exceed 14 inches in height, 2 feet in breadth, or 3 feet in length), it is wise to have two smaller boxes in preference to one big one, as they are more convenient for transit in South Africa, and are less likely to get damaged in loading and unloading on board ship. Second-class passengers are allowed 25 cubic feet of baggage free on the ship; any excess is charged 1s. 6d. per cubic foot. On the South African Railways 75 lbs. only of luggage is allowed free to second-class passengers; all excess is charged according to scale.

Girls going to towns, who possess bicycles in good condition, are advised to take them, but they will have to pay duty on them—as much as 15s. in all probability; also the train freightage is heavy. On the boat they are shipped as luggage without extra charge if the 25 cubic feet of baggage be not exceeded.

Introductions to residents in South Africa are given to everyone going out under the auspices of the S.A.C.S., so that all may find friends on arriving in the new country.

CHAPTER XII

ITALIAN POT GARDENS: A SUGGESTION

A well-known French horticulturist, director of many parks, once gave most flattering praise to an English garden. He called it "*un jardin intime.*" These three words sum up what most of us wish our gardens to be.

We bring to them, from other countries, plants that recall pleasant memories. As we watch these growing happily in our herbaceous borders, thoughts come to us of those who gave them, of happy meetings, and unforgotten scenes. In England we make real friends of our gardens; we confide many secrets to their safe keeping. Owing to a temperate climate, we have long in which to mark the slow development of bud and blossom. The time of flowering is late, and it remains all the longer for our enjoyment. When spring flowers are over, there are lovelier ones to look forward to. We have not to combat the heat and drought which so speedily bring summer beauty to an end in Italian gardens. It is, no doubt, on account of climate that abroad the bedding-out system has been adopted, and thus much of that intimacy with herbaceous plants, which we have, is there unknown. Our English gardens are tended carefully and steadily all the year round; a feeling of rest and peace pervades them.

In Italy a garden is neglected during the winter, whilst the Signoria are away. Beds and paths are left unweeded, all vegetation appears to be dead, and the gardener occupies himself only with vines, vegetables and plants growing in pots, which later will be the chief means of dressing-up the grounds. Most Tuscan villas in winter have the appearance of a Palace of Sleep. We wonder how it will be possible, when the Fairy Prince arrives, to transform disorder into a well-kept, beautiful place. We realise as we see so wonderful a change occur, how valuable a touch of this surprise would be to our old-fashioned English homes. It would improve not only the appearance of our gardens, but enhance the architectural beauty of our houses.

This sudden transformation is brought about upon the first really warm spring day, as if by the stroke of a fairy's wand. Then the doors of the orangery are flung open, and ornamental pots of all sizes and shapes are brought out by means of rollers and stood in striking positions in the

pleasure grounds. During the last few years we have been shown in England, through the good taste and skill of Mrs. Watts and others, what can be done in the way of terra-cotta work for the adornment of gardens. There is nothing new to us in the lovely boxes, sundials, fountains, vases and pots that we see designed, but we have not all, perhaps, succeeded in mastering the art of the Italian in placing these objects, with striking effect, in masses.

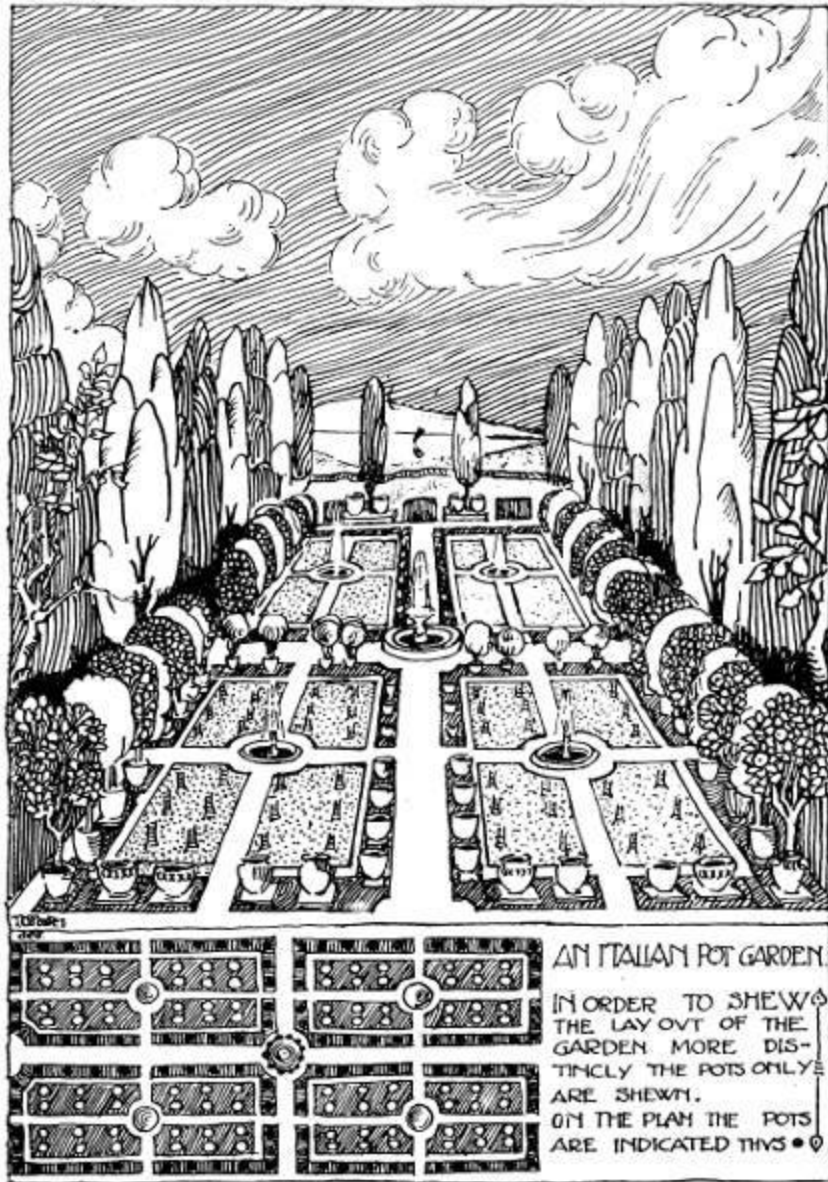
With a view to studying this we wandered round many gardens in Tuscany. We were shown lovely loggias overhung with climbing roses; masses of tall graceful arums and many coloured carnations in pots, stood beneath them in cool shade. Flowering bushes outside were carpeted with sweet-smelling violets, walls and arbours were hidden under lavender wistaria, white and pink camellias lit up the borders of shrubberies. Nothing, of all this luxuriant vegetation, was arranged quite in accordance with our English taste. We were dissatisfied, until one day we chanced upon a garden which seemed to combine successful herbaceous arrangement with ornamental pot decoration.

A narrow country lane, hedged in on either side by cypresses, led to the front of the villa. The terrace, with old-fashioned stone seats built into the corners of the wall, invited the passer-by to rest beneath the shade of an overhanging sycamore and look down upon a lovely stretch of country below. Near by, dense box hedges sheltered some plantations of fruit trees, all pink and white with blossom, while beneath grew delicious scented narcissus. The shadows played upon the grey and green of the olive gardens, and deep blue in the distance were the hills round Fiesole. Florence itself was hidden, but close to us the stately Certosa crowned her dome-shaped hill. To the left, an opening in the hills showed us the misty plain of Prato, looking like a still lake in dreamland dotted with small white ships. The villa door stood temptingly open, and ascending a flight of stone steps we entered the small, cool, paved court.

It was different from most courtyards. In the place of orange trees in pots there were flower beds amidst the paving. Each was round in shape and contained a graceful lilac bush carpeted with mauve violas. In the centre of the court was a well with ornamental ironwork railings, against which stood handsome Amaryllis lilies in pots. The walls of the house had roses climbing up them; so robust were they that their stems had twined around

the iron window gratings, making, with their thorns, a double security against attack. The whole effect was cool and quiet—a good preparation for the blaze of colour which met us, as we passed under the dark archway into the garden itself.

What struck us most, when first we saw it, was the height above the ground to which colour had been raised, by planting shrubs in large ornamental terra-cotta pots. It will be seen upon the plan, that these not only stand upon the paths and walls, but are arranged at intervals, in the very midst of the herbaceous borders. Large grey stones, about a foot above the level of the flower bed, are placed for the pots to stand upon. A groove, in the form of a cross, is cut in the stone, to allow the drainage from the pot to run off easily. These stones and the lower portion of the pots are partially hidden by groups of irises, pæonies, aquilegias and roses, growing in the border. Just a touch of the terra-cotta flowerpot with its handsome ornamentation of wreaths, is seen above the blue and white of the irises or the many-coloured ranunculuses, and then, above, high up, we get the foliage and colour of the shrub which is planted in the pot. It is certainly a most effective way of giving height and variety to a flat, rather uninteresting piece of ground.



AN ITALIAN POT GARDEN

IN ORDER TO SHEW THE LAY OVT OF THE GARDEN MORE DISTINTCLY THE POTS ONLY ARE SHEWEN.

ON THE PLAN THE POTS ARE INDICATED THVS

DRAWN FROM PLANS MADE BY MISS MARY CAMPION.

Most of the pots had lemons or oranges growing in them. In our country it is possible to have these only in the more sheltered parts, but laurustinus, box trees, bays, lilacs, hydrangeas or roses could be used instead. Even should the pots occasionally have to stand empty, they are so exceedingly

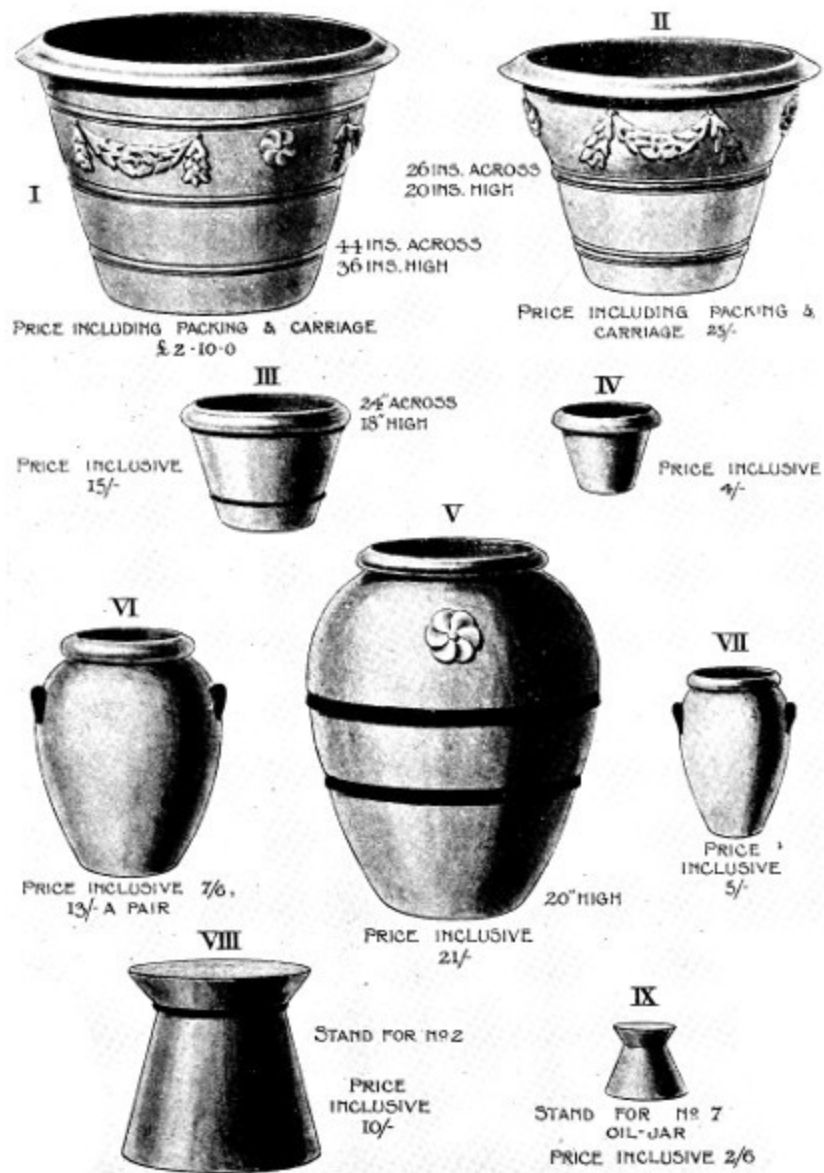
handsome and decorative in themselves, that they only improve the general appearance of the garden. They are made in different shapes and sizes. Some are very elaborately ornamented, but the kind of which a sketch is given are the simplest and most dignified.

No one who has seen an Italian garden, so arranged, can dispute the beauty of it. It may be suggested that in England it would be difficult to protect the terra-cotta from cracking in frosty weather. Experience in southern counties has been favourable, and should it not be so in colder places, they can be put under cover for the winter months.

The plan which is given is from drawings made by the kindness of Miss M. G. Champion. Although it is rather elaborate, it could easily be modified for a small garden. It represents about an acre of land, which is cleverly arranged to allow of the combined cultivation of fruit trees, flowers and vegetables. It is closed in upon every side. The house shelters it from the east wind, the long orangery casts a shadow upon the south side and makes it possible to have a lovely bed of lilies of the valley near by. On the north, besides the trees, is a high wall. The west is the most exposed, as it has a hornbeam hedge through which small openings are cut, to show the hills with vineyards outside the grounds. Against the hedges stand large, empty oil jars, in terra-cotta, their graceful shapes showing well against the dark green. Round the central fountain is a 3-ft. wall, wide enough to have pink Bourbon roses, in pots, standing upon it. Each of the four smaller fountains forms the centre of a little plot of ground. These plots are divided into four beds. Each bed is large enough to have several pink and white blossomed fruit trees and some gooseberry bushes. Amongst them are planted spring-flowering bulbs such as narcissus, tulips, etc., for cutting. Other beds have smaller fruit trees, or currant bushes and roses alternate. The dark red-green foliage of the rose bushes contrasts with the fresh green of other plants. A few plots are reserved for vegetables, but, as a rule, these are close to a border of flowers; therefore, the garden, although small, is ornamental as well as useful. From below the windows of the house comes a delicious scent of freesias, and as we look more closely, we see orange-red tulips planted amongst them, the deeper notes of orange in the freesias corresponding with the colour of the tulips.

The plan, if carefully studied, will give a good idea, therefore, of a successful combination of permanent herbaceous borders, improved,

dressed up, and heightened by the addition of ornamental terra-cotta pot decoration.



ITALIAN ORANGE POTS AND OIL JARS.

DRAWN FROM SKETCHES BY MISS MARY CAMPION. TO BE OBTAINED FROM THE SCHOOL OF LADY GARDENERS, GLYNDE, SUSSEX.

CHAPTER XIII

FOR THOSE WHO HESITATE TO EMPLOY LADY GARDENERS

Many ladies who own large gardens take personal interest in the arrangement of the grounds. Not only do they wish to have beautiful, sweet smelling flowers in glasses and bowls to adorn their rooms; they also aspire to have plants grouped harmoniously in herbaceous borders and in formal beds. There has arisen a kind of competition to have as good a garden, if not a better one, than our neighbour. In the case of some specially gifted and energetic ladies, lovely gardens have been created, through their directions being carefully followed by the head gardener. Some illustrations of such are given in this volume. Possessed of complete knowledge about the flowers best suited to the soil and position, having carefully studied the height, time of flowering, and prettiest combinations of colour for beds, they are competent to direct themselves. It sometimes occurs, however, that the lady of the house is willing to devote a small amount of time to planning garden effects, but family and social duties call her away. She can only give general directions to the clever gardener, and leave him to carry them out. Although many men are skilled in growing fine specimen plants, few are sufficiently well educated, or possessed of the natural taste requisite to execute their employer's wishes.

I hope no one will suppose that, because this book is intended to be a guide to lady gardeners, I am narrow-minded enough to think in a depreciative way of men gardeners. Some of them are personal friends whom I respect, esteem, and who, I am aware, have done infinitely better work than any lady has so far achieved. Many are not only gardeners, they are artists as well. I have the highest opinion of them and their profession. I do feel strongly, however, that there is a large field open to young gentlewomen anxious to take up this work. There are many gardens, too, where a change has necessarily to be made, and the owners will benefit by substituting a lady in the place of a man, as head gardener.

I should like to draw the attention of employers to two important points connected with this subject:

1. A lady must be selected; not a “would-be” one. Only if she is this at heart, will she have authority over men working for her.

2. She should have the same salary as a man. A lady gardener must not be considered an economy. Many people without consciences think they can exact the same amount of manual work from a young woman that they would expect from a man. They also imagine, because she is a woman, they can pay her lower wages. Pay her well, and treat her well. Her honesty and intelligence will save expense in the end, but do not economise upon her salary. The advantages to be gained by the employer, should he appoint a lady as head gardener, are these:

(1) *Scientific knowledge and true artistic taste.*

Owing to a college training, and first-rate general education, she should have better scientific knowledge than the ordinary labouring man who has worked his way up from village schooldays, through the different grades of a gardener’s life, to be head over others of his own class. She will possess a good grounding in botany and the science of soils. In short, she can reason scientifically. Instead of saying, “Oh, so-and-so won’t ever grow here, the soil does not suit it,” she will be able to ascertain what quality is lacking in the ground, and by adding an ingredient secure proper growth. Thus, an end will be made to the often erroneous ideas of a foreman, who, because he does not know the requirements of a plant, gives up the idea of growing it, or continues absolutely satisfied with the weedy specimen under his care.

A lady gardener, too, owing to her early surroundings, the study of pictures, gardens, and beautiful objects, should possess greater capacity for appreciating fully the requirements of the lady of the house. Plans for the arrangements of flower beds, shrubbery, borders, surprises of all sorts, are more speedily, more satisfactorily decided upon when two people meet upon the ground of similarity of education.

(2) *Taste in colour.*

This is more developed with the majority of women than with men. We have so many opportunities, at the fortnightly exhibitions of the Royal Horticultural Society, of seeing the latest productions of beautiful flowers. Then, too, there are books, such as Robinson’s “English Flower Garden,” Kelway’s Manual, Wright’s “Beautiful Gardens,” to guide us. They show us

plans for grouping colours harmoniously in herbaceous borders. Nowadays we all know what we want to achieve, but we often fail to find the right one to fulfil our imaginings. It hurts the eye to see scarlet geraniums growing near mauve asters, or the delicate pink of the Dorothy Perkins rose killed by being placed near a glaring red brick wall. The lady gardener should, by her natural taste and good judgment, avoid such mistakes of arrangement both in the ordering of plants for flower borders, and in the decoration of flowers in rooms. A dinner-table should be an easy matter for her to plan. Lightness of touch will enable her to succeed in mixing graceful, soft foliage with suitable flowers. She will accomplish this in less time than the average man gardener.

Week-end parties are a favoured form of entertaining, and often the lady of the house is busy in London during the week, only arriving at her country house just before her guests. It will give her a pleasant sensation of ease if she has someone at home to whom she can absolutely entrust the decoration of her rooms and dinner-table. Then, too, another important matter is the selection, gathering, and packing up of suitable flowers to send away. My experience has always been that men gardeners do not study this sufficiently. They gather beautiful carnations, pentstemon, irises, or whatever their speciality may be, but forget that suitable green or coloured foliage must be mixed with them to show off the blossom. Knowing the very great difficulties of arranging flowers in glasses, a lady will be more careful about this than a man.

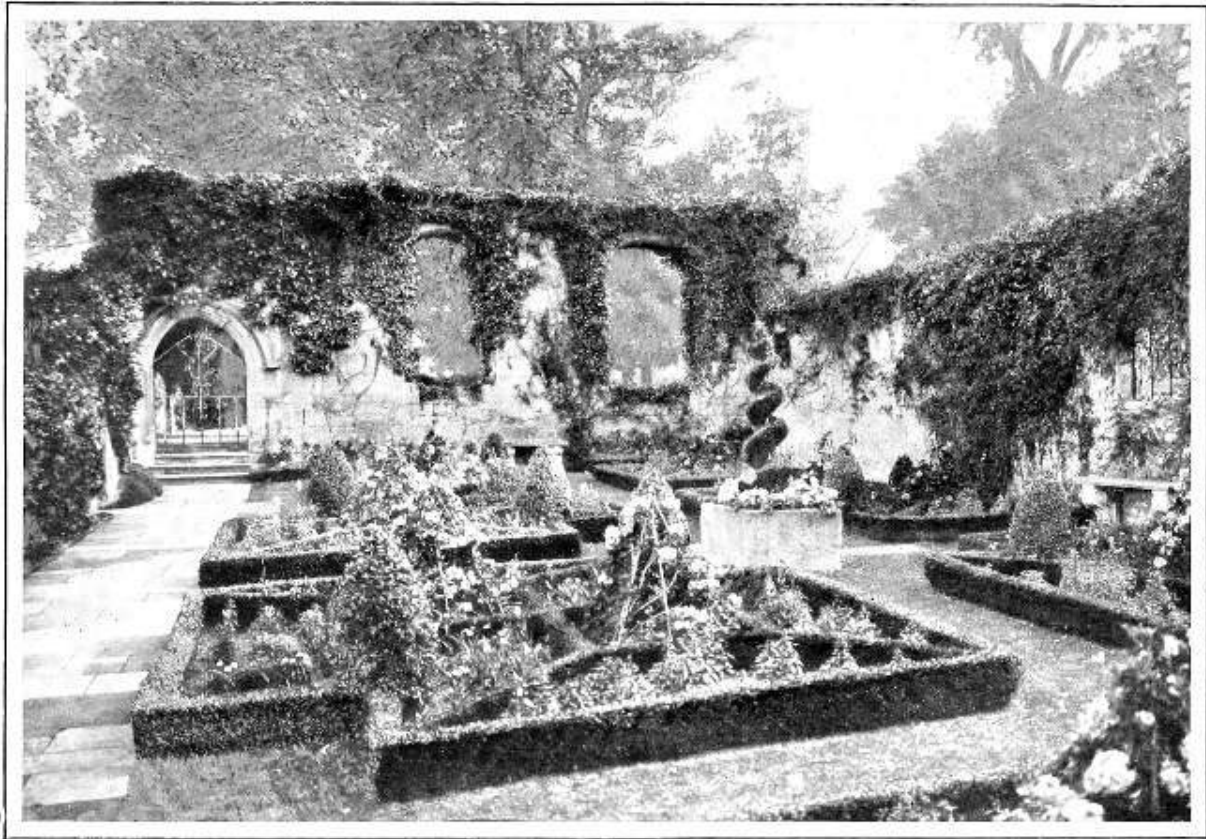
(3) *Honesty and trustworthiness.*

The lady gardener is a gentlewoman, and, therefore, we presume she possesses these qualities. I do not mean to cast the faintest aspersion upon the honesty of men gardeners! There have been instances of dishonesty and drunkenness amongst them, and as a class they are certainly open to greater temptations than a lady. Many owners of moderately large places, where perhaps no agent or bailiff is kept, are forced to be absent for some months each year; others fill high positions in diplomacy, and are obliged to spend some years away from home. To such, it will be a satisfaction to feel that they leave a capable lady at the head of affairs. Someone is at home who can be trusted, and will report to them if things are not going on as they would wish.

I am often questioned as to whether a lady can possibly exert authority and influence over a working man. I am certain, if she is the right kind of woman, she can. Let her, without hesitation, dismiss the first drunken under-gardener she meets with, and the others will respect her, and not try to take advantage of her because she is a woman.

(4) *As companions.*

The above remarks apply chiefly to a large flower and vegetable garden. I think women are equally suited to small posts. We often hear of a maiden lady living in the country who needs company. She would be pleased if a nice, cheerful, bright girl lived with her to share her pleasure in the garden. The strength and vigour of the young girl would compass things which the elderly lady could not attempt unassisted. Thus companionship would be added to the joy of gardening.



THE RUINS, RATTON PARK, SUSSEX.

WHICH THE HON. MRS. FREEMAN-THOMAS HAS ENLIVENED WITH CHARMING BOX-EDGED BEDS OF BRIGHT FLOWERS.

Photograph by Pictorial Agency.

Then, also, we know of many a young married woman with a large family of children, whose limited means necessitate a country life. The children are sent to school, and return home only in holiday time, or they have daily teachers who leave them after lessons. Surely an arrangement might be made by which some of their free time could be turned to profitable, and yet pleasant account, by their working a little in the garden under the direction of the lady gardener. Children love planting and digging. If encouraged, they will take the greatest interest in beautifying a garden. Some lessons in nature study, too, could be given occasionally to increase their love for a country life.

This comparatively new idea of having someone to talk over garden arrangements with, in a friendly and more or less companionable way,

usually smiles upon the woman of the house. She, at last, sees within her reach the possibility of achieving artistic effects which she has long thought of in her day dreams, but has failed to get carried out. Against the dark green yew hedge, how lovely will be the group of tall, stately pink hollyhocks, with pale rose-coloured annual larkspurs, Japanese anemones, and silver-foliaged plants intermingled with them! What lovely combinations of plants bearing similar coloured foliage she can arrange to plant together! There will be irises, German and Spanish ones, then the white drooping bells of hyacinth candicans, followed by scarlet tritomas and montbretias, bringing their brightness to cheer dull autumn days. How satisfactorily she now will be able to maintain a constant succession of colour in herbaceous borders throughout the year!

In short, the advent of a lady gardener is pleasing to her. Her husband will probably not approve the innovation. "If I see the poor thing out working in a heavy downpour of rain, I shall feel a brute not to go and help her," he will say as he smokes his pipe reflectively, and meditates over the follies of womenkind. But, I ask, what man head gardener need work in rain? If he does, he will probably do more harm than good, by making a mess of the ground. Need he, wet or fine, do much manual labour? No! his duties lie chiefly in directing the men under his charge; in executing the lighter, but more intricate work of pruning, thinning out grapes, and secretarial duties. Above all, he must plan the succession of crops. All these matters can be done equally well, if not more speedily, by an educated woman.

As this book aims at introducing lady gardeners to employers, I should like to ask for these gentlewomen the good treatment, absolute trust, gentle handling, which their position entitles them to receive. Without the entire confidence of their masters, no ladies would wish to take up a post, but with their support, and the power to dismiss those under their authority who they find are dishonest or undeserving, lady gardeners should be absolutely successful. No longer need there be that frequent termination to all pleasure in a large garden, when the head gardener grows only what he likes, and not what his master requires. How often, when shown round a large place, one is struck by the remark, "Oh, Dibber never lets us have violets or carnations, all his interest is centred in vegetable growing"; or "Truman gives all his time to preparing plants for exhibition; he is certainly very

successful in winning prizes, but we come off badly, as all the best things are sent to exhibitions!" Instead, therefore, of having someone to contend with, or a man whose obstinacy has to be circumvented before a bunch of sweet peas can be brought into the house, you will have a friend who will endeavour to give you all she can successfully grow, and whose taste and judgment can be relied upon.

Every year the number of women students at horticultural colleges increases. The profession appeals to many, and there are now a large number who, having completed their education, are seeking posts. Up to the present time, the supply is in excess of the demand. This is, I believe, the case with all professions until they have become firmly established. Employers still hesitate to try a lady gardener. Then, too, the ladies who up to now have desired to have women head gardeners, have usually possessed large gardens, needing many hands to work them. It is natural that the young woman who but lately was a student, superintended and guided in all her undertakings by a teacher, hesitates about managing a large garden. There are many such who still hold back in diffidence, hoping to obtain a small post first.

I sincerely trust, when this is fully realised by those interested in the success of women horticulturalists, that many owners of medium sized or small gardens will come forward and offer posts to women. A garden of one or two acres, with a small greenhouse, and only one or two labourers for rough work, will be best suited to a newly fledged lady gardener. She should be able to manage this, and two or three years spent in it will be a good preparation for a post entailing larger responsibilities. I do not think that anyone who is generous spirited enough to offer such posts to ladies will repent the act.

Part II

CHAPTER XIV

COLLEGES AND SCHOOLS FOR LADY GARDENERS IN GREAT BRITAIN

The following syllabuses of British colleges and schools are submitted for the use of ladies interested in gardening. It is hoped that they may assist all those who, in England or abroad, have the management of such training centres. By means of them it will be easy to compare notes as to the various methods of imparting practical information the form in which foreign syllabuses are staged may inspire fresh ideas. I should like to add that I do not, of course, consider what I am able to give of these particulars as in any way comprehensive; but it has been my endeavour to insert only details of colleges and schools that have been in existence some time. I have received the syllabuses and many interesting notes through the kindness of those who have at heart the wish that ladies should succeed in the profession of horticulture.

THE THATCHAM FRUIT AND FLOWER FARM SCHOOL OF GARDENING, HENWICK,
NEAR NEWBURY

Principals: LILY HUGHES JONES, F.R.H.S.; MARY PEERS, F.R.H.S.

(1st Class Certificates and Bee Experts)

The farm is situated on high ground in the Kennet Valley, facing south, one and three-quarter miles from Newbury, two miles from Thatcham Station, about twelve miles from Reading, and one-quarter mile from the Bath Road.

The residence is a roomy old farm-house, facing south. Its position is thoroughly healthy, 400 feet above sea level.

An old-fashioned garden lies to one side of the house, and four acres of land on the other side, on which the main crops are grown, consisting of hardy fruits, perennials, and other crops.

The farm is conducted as a market garden for business purposes. Students will thus see practical work—the object being to provide outdoor work of the healthiest kind, and at the same time to give a thoroughly practical knowledge of country life—knowledge that may be used as a

means of livelihood or in superintending a garden, and will, in any case, be of unflinching interest and use in after life. It is not intended to take a large number of students, so that each student will have individual attention, and her capacity be carefully studied.

The greatest care is taken with regard to the food of the students, and their health carefully guarded.

PRACTICAL WORK

Horticulture.—Instruction in all branches of outdoor gardening; specialities being made of herbaceous plants, violets, and fruit.

Bee-Keeping.—Instruction in the management of bees, including lectures and coaching for the B. B. K. A. Experts' Examinations. Practical work and manipulation is carried on in the farm apiary.

Carpentering.—Students are instructed in the workshop in the making of various gardening and bee-keeping appliances.

Jam Factory.—Jam making is taught in the small factory which was instituted for the production of homemade preserves.

A French garden has now been added, and a competent Frenchman teaches this branch only. It is worked upon the lines of the famous "Maraîche" system, and differs in every detail from an English garden. All vegetables and fruits are brought on out of season. At present we have 400 frames, all made, glazed, painted, by the students, and 1,000 *cloches*.

Two other French gardens have been started in England, and have proved successful.



THE COTTAGE, SCHOOL OF LADY GARDENERS, GLYNDE, SUSSEX.

Photograph by Pictorial Agency.

THEORETICAL WORK

Horticulture.—Complete courses of instruction are given in the various branches of horticulture, including Entomology, Soils and Manures.

[2] *Botany*, for R. H. S. Examinations. Lectures on the elements of morphology and physiology of flowering plants, with practical work, can be attended.

[2] These lectures are optional.

Students also get a thorough insight into packing, purchasing, and marketing produce.

Floral Work.—Demonstrations are given in bouquet-making and floral arrangements.

Session.—The year is divided into three terms of about thirteen weeks each.

Fees.—For the full course, including everything with the exception of botany lectures, £55 per annum. Botany, 30s. per term, in addition.

Extras.—A small fee of 5s. per annum is charged for the use of all tools in various departments. All fees payable in advance at the beginning of each term. A term's notice of removal of any student must be given, in writing, to the principal, otherwise a term's fees will be charged. Application for forms of entrance and further details to be addressed to the principals. It is advisable to train for a period not shorter than two years, as experience necessary for success in an after career cannot be gained in less time. Short courses of instruction are arranged when desired.

INSTRUCTION IN PRACTICAL GARDENING FOR LADIES, GLYNDE, NEAR LEWES,
SUSSEX

Principal: THE HON. FRANCES WOLSELEY

Patrons: THE LADY ARDILAUN, MISS G. JEKYLL, MISS WHITE, E. O. GREENING, ESQ.,
W. ROBINSON, ESQ., MRS. CHARLES EARLE, MISS WILLMOTT

The school was founded in 1901–2, and is supervised by the Hon. Frances Wolseley. The number of students is limited, and great care is taken as to their selection. A personal interview and the highest references are required before admission. The following arrangements for the course of work are a development upon specialised lines of the scheme which has up to now existed. The chief objects of the course are:—

To give a thorough foundation in the management of all the more hardy garden plants.

To improve taste in the laying out and arrangement of gardens. To teach the daily routine work of a private garden, so essential to those who, later, wish to become private head gardeners.

To give students responsibility and thus enable them more easily to be competent to undertake posts when their course of training is completed.

A competent, practical superintendent gives instruction in flower, fruit and vegetable growing. In addition to this well-known advisory experts visit the school from time to time and give lectures upon the theory and special branches of horticulture. H. Edmonds, Esq., B.Sc., of the Municipal School at Brighton, lectures upon Botany and the Chemistry of the Soil.

Mr. Back gives demonstrations upon fruit culture. Mr. Paris lectures upon Bee-keeping. Mr. Edmund D. Foster, Head of the Engineering Department of the Brighton Technical College, has undertaken to lecture upon Land Surveying.

A special feature of the garden is the arrangement of Italian Oil Jars and Lemon Pots.



GATHERING ROSES FOR POT POURRI, SCHOOL OF LADY GARDENERS GLYNDE,
SUSSEX

Photograph by Pictorial Agency.

Students are encouraged to take personal interest in all alterations and improvements made in the gardens.

Attention is given to the every-day work of a garden, comprising:—The care of grass, paths and beds; mowing, sweeping and general tidiness; digging, trenching and other ground operations, raising plants from seeds and cuttings, their subsequent treatment; culture of herbaceous alpine plants

and roses; forcing violets, Dutch bulbs, richardias, etc.; watering, ventilation and other points of glass-house management. Gathering and packing flowers and general varieties of vegetables for market is carried out. Fruit is grown, including bush, standards, espaliers and strawberries.

Arrangements are made by which students can visit local gardens. They are required to keep notes of these visits and to answer in writing questions upon them. The advantages thus gained to students, in comparing their own work with that of those having life-long experience, will be a special feature of the school.

Students are encouraged to stay two years if it is found that their special needs can be provided for. In any case they should not stay less than one year. Advice is given as to their future.

A half-holiday is given once a week when the necessary work allows. This implies that quiet times alternate with busy ones, and it is necessary that a high standard in the appearance of a garden should be maintained.

Fees for practical instruction, £10 per annum, payable after a week's mutual trial. Should the student, owing to any serious breach of discipline, be asked to leave at Miss Wolseley's wish, this sum is refunded.

The lectures of experts are £2 per annum extra.

Preparation for Royal Horticultural Society's Examination, £1 extra, but only two-year students go in for this.

Lodgings, conveniently near the gardens, where several students board together, can be secured at 17s. per week, for board and lodging. Each student defrays these expenses.

UNIVERSITY COLLEGE, READING

Principal: W. M. CHILDS, M.A., Keble College, Oxford (Professor of Modern History).

Director of the Department of Agriculture and Horticulture: Professor JOHN PERCIVAL, M.A., St. John's College, Cambridge.

Assistant Directors: EDWARD BROWN, F.L.S. (Agriculture); CHARLES FOSTER, F.R.H.S. (Horticulture).

Registrar: FRANCIS H. WRIGHT.

The day classes of the college are open to men and women students over the age of sixteen. Students who do not live at their own homes are required to reside in the college hostels or in lodgings licensed by the college. Women students in residence for not less than one session (three terms) are required to reside in the college hostels, unless they have received the principal's permission to reside elsewhere.

COURSES IN HORTICULTURE

The Department of Agriculture and Horticulture was founded in 1893. Its work is carried on under the inspection of the Board of Agriculture. Courses in Horticulture consist of lectures and laboratory work in the college and of practical work in the college garden and fruit station.

The college garden, four acres in extent, adjoins the main college buildings in London Road, Reading. It consists of vegetable and flower gardens and orchard, and is provided with horticultural buildings. The houses, greenhouses, vineries (early and late), peach house, etc., are used for plant and fern growing, general florist work, market work, and the culture of grapes, pot fruit trees, etc. Students spend upwards of twenty hours per week in the garden, and, in addition, pay frequent visits to neighbouring private gardens, as well as to Messrs. Sutton and Sons' Trial Grounds, the exhibitions of the Royal Horticultural Society, and the Royal Gardens, Kew.

Besides instruction and practice in the routine operations of the garden, students are placed in charge of sections of both indoor and outdoor work. In their second year they may specialise in market and florists' work, or in fruit growing, in preparation for work at home or in the Colonies. In all cases they pay special attention to the business side of horticulture and assist in the work of marketing and book-keeping.

During their two sessions' course, students may take advantage of the workshop, and of the instruction in carpentry, etc., provided, to learn how to make up boxes, staging, and how to repair, glaze, and paint.

In addition to preparing for the college diploma or certificate, students may also prepare for the examinations of the Royal Horticultural Society or of the Board of Education, South Kensington.

During the session 1905–6, eleven acres of the college farm at Shinfield, two and a half miles from Reading, were planted as a fruit station. On this station students will be able to study modern methods of fruit and vegetable cultivation on a commercial scale.

Courses of instruction have been arranged as follows:—

The diploma in horticulture is awarded at the end of a two years' course in the science and practice of horticulture. The course is designed for students who intend to take up horticulture as a career. It provides training in the sciences on which the practice of horticulture is based, in market and florist work, and in fruit-growing.

Each session of the course extends over forty weeks, including the thirty weeks of the ordinary college session, together with ten weeks of practical work only, arranged to suit the convenience of individual students.

The diploma with distinction in special subjects is awarded to students who, having gained the diploma, spend a third year at the college pursuing special studies, and who pass the examination prescribed. The course is adapted to the requirements of those who may become teachers of horticulture or specialists in some particular branch of horticulture.

Note.—The above diplomas are granted by the Oxford and Reading Joint Committee, on which are represented the college, the University of Oxford, the Royal Agricultural Society, and the Royal Horticultural Society.

The certificate in horticulture (granted by the college) is awarded to students who have followed a one-year course at the college (forty weeks) and have satisfied the examiners in the subjects of the first year examination for the diploma.

The subjects of examination for the diploma and certificate are as follows:—

Diploma (First Year) and Certificate

1. Theory and practice of horticulture (including composition of soils, cultivation, the use of tools and manures; the vegetable garden, flower garden, rose garden, rock garden; orchard, lawn, shrubbery; aquatic and bog plants).
2. Botany (theoretical and practical).
3. General chemistry and physics (theoretical and practical).
4. Book-keeping.

Diploma (Second Year)

1. Theory and practice of horticulture (including more advanced study of soils and manures, cultivation under glass, forcing, methods of dealing with fungoid diseases and insect pests, improvement of plants by budding, hybridisation, etc., packing and marketing, florists' work, storage of fruit).
2. Botany (theoretical and practical).
3. Entomology (theoretical and practical).

The fees for the above full courses are as follows:—

For students who have resided for not less than a year in the County Borough of Reading or the administrative Counties of Berkshire, Oxfordshire, or Buckinghamshire, £18 the session of forty weeks; for other students, £24 the session.

Students may, however, enter for shorter periods than one year, and may take courses of practical work, together with such lectures as may suit their requirements. The fees are:—For five weeks, £7 7s., for ten weeks, £10 10s. In addition to the above fees, all students pay the registration fee of one shilling per session, and there are entrance fees for examinations. The cost of board and lodging at the college hostels is 21s. per week (for a cubicle), or 25s. to 30s. (for a study bedroom).

Diplomas are not awarded to candidates under the age of twenty-one.

Scholarships tenable at the college are awarded from time to time by the County Councils of Berkshire, Buckinghamshire, Oxfordshire, Dorset, Hampshire, Somersetshire, and Gloucestershire. Application should be made to the Education Secretaries of these counties.

Courses in Agriculture, Dairying, and Poultry-keeping are held at the college. Practical instruction is given at the College Farm, Shinfield, the British Dairy Institute, Reading, and the College Poultry Farm, Theale.

LIST OF WOMEN STUDENTS WHO HAVE PASSED THE EXAMINATIONS FOR THE DIPLOMA IN HORTICULTURE

1904.—Ellen C. Wallace. 1906.—Caroline Pellow, Lilian S. Tuckett, Brenda M. Young. 1907.—Dorothy M. Cayley, Dorothy A. E. Dyson, Adelaide M. Taylor, Henrietta C. Tuke.



“POTTING”: STUDENTS AT WORK, READING UNIVERSITY.

THE HORTICULTURAL COLLEGE, SWANLEY

Principal: MISS F. R. WILKINSON

Vice-Principal and Secretary: MISS M. KEKEWICH

Lady Superintendent: MRS. WATSON, South Bank, Swanley

LECTURERS

Bee-keeping, W. HERROD, F. E. S. *Book-keeping*, H. W. KERSEY (Lecturer on Book-keeping, Wye College). *Botany, Vegetable Pathology*, R. J. TABOR, F. L. S. *Dairy*, MISS DAWSON, N. D. D. (Certificate Midland Dairy Institute). [3]*Entomology*, F. V. THEOBALD, M. A., F. L. S. (Lecturer on Entomology, Wye College). *Gardening*, MISS VILLIERS-STUART. [3]*Greenhouse Construction*, F. A. FAWKES. *Horticultural Science and Rural*

Economy, F. J. BAKER, A.R.C.Sc. LOND. *Manual Training*, W. HERROD.
Poultry, MISS DAWSON.

[3] Courses in these subjects are given once in two years.

Head Gardener: MR. J. LAWSON

There is also a staff of under-gardeners and labourers.

The college is situated seventeen and a half miles from London, and one and a half miles from Swanley Junction Station on the South Eastern and Chatham Railway.

Women were admitted in 1892, the college being the first place to open its doors to women students who wished to obtain a thorough training in horticulture.

It stands in forty-three acres of freehold land, allotted to flower, kitchen, market gardens, fruit plantations, playing fields, also conservatories and glass-houses for market work.

Lecture rooms and laboratories form part of the college, while adjoining are a workshop, farm buildings, apiary, dairy, poultry runs, etc.

It aims at giving a thorough training to fit women to become market growers, gardeners in private places, teachers of nature-study and colonists, or to enable them to manage their own property.

COURSES OF INSTRUCTION

The full horticultural course lasts two years, and consists of practical work out of doors and under glass, with lectures on scientific principles. Diplomas or certificates are awarded to students who have qualified.

COLONIAL BRANCH

Courses are specially arranged for intending colonists, which, in addition to gardening, include a simple training in cooking, housework, laundry, needlework, and hygiene.

NATURE-STUDY COURSE

A course for training Garden and Nature-Study mistresses in botany, zoology, geology, meteorology, and simple gardening, extends over one year.

A holiday course for school teachers is held in August, and affords special opportunities for field work, gardening, dairying, etc.

SHORT COURSES

In the spring and summer terms, courses are arranged, lasting six weeks. These include the following subjects:—gardening, dairying, poultry-keeping, bee-keeping, and fruit preserving.

ADMISSION AND FEES

The fees, which, include all expenses except medical attendance, fire in bedroom, laundress, books, and small charge for loan of microscope and tools, and the extras stated below, are, for a cubicle, from £80 a year of three terms, study-bedroom from £96 a year of three terms, out-students from £40 a year of three terms, colonial students from £16 5s. per term.

At the examination held in April, 1907, by the Royal Horticultural Society, sixteen students from the college competed, and secured places among 142 competitors:—

First class, 8; second class, 6; third class, 2.

SCHOLARSHIPS

The County Councils of Kent, London, Norfolk, and Staffordshire offer scholarships at the college to residents in their own counties. As the regulations are not identical, intending competitors should apply to the secretaries of the respective Education Committees for particulars.

Kent.—F. W. CROOK, Esq., Kent Education Office, Caxton House, Westminster, S.W.

London.—The Executive Officer, Education Office, Victoria Embankment.

Staffordshire.—GRAHAM BALFOUR, Esq., County Council Offices, Stafford.

Norfolk.—The SECRETARY, County Council Education Offices, Norwich.

Since 1892, 410 students have attended the college courses.

Through the kindness of Miss F. R. Wilkinson, I am able to quote the following interesting statistics:—

AFTER-CAREERS OF STUDENTS

Landscape gardeners, 3; market gardeners, 25; head gardeners, 26; under gardeners, 13; working in home garden, 49; “jobbing” gardeners, 9; teaching, 23; working at science, 5; poultry-keeping, 2; manageress milk depôt, 1; principals in gardening schools, 2; apiarist, 1; at Royal Botanic Gardens, Glasnevin, 2.

AVERAGE SALARIES

Landscape gardeners, two guineas a week to two guineas a day head gardeners, highest, £100 a year with rooms, light and vegetables lowest, £20 a year resident; under gardeners, highest, £80 non-resident; lowest, 18s. a week, cottage and coals; schools, highest, £65 resident; lowest, £30 resident; institution, highest, £75 resident; lowest, £20 resident; jobbing, 4s. to 7s. a day; companion gardener, highest, £100; resident lowest, £30 resident.

NATURE STUDY

The following syllabus may be of interest, although the course has already taken place (July, 1907). It will show what an important place Nature Study takes in the education of women.

A course for helping those who are desirous of extending their knowledge of Nature Study will be held at the Horticultural College, Swanley.

Most of the instruction will be given (weather permitting) out of doors, rambles in the country under the guidance of experienced teachers being the chief feature.

Miss Hibbert-Ware (Science Mistress, Queen Margaret’s School, Scarborough) and Mr. Tabor (Resident Science Lecturer) will lead combined excursions for studying birds, pond life, insects, wild flowers, trees, grasses, etc., in their different environments.

The college gardens, greenhouses, orchards, farm, and fruit-preserving appliances will be in working order, and students will be able to obtain an insight into the work carried on in each department. Miss M. Agar will give demonstrations and instructions in simple gardening, and on the care of school gardens. Demonstrations in dairying and poultry-keeping will be given by Miss M. Dawson (N.D.D. and Certificate Midland Dairy Institute), who will explain the chief points of farm operations during the year.

As far as possible the open-air studies will take place within easy distance of the college, but excursions will be arranged to districts with varying soils and climate, and the accompanying variety of natural objects. Students having bicycles are advised to bring them.

It is hoped to combine the natural history excursions with points of antiquarian, artistic, and other interest in outlying districts, and endeavour will be made to render the course useful, both for home life and school work.

FEES

(Payable in advance or on arrival)

For teachers and those training to be teachers, including tuition, board, and lodging, and expenses of excursions, £5 5s.; single room; extra, 10s. 6d.; to those not engaged in teaching an extra fee will be charged of £1 1s.

STUDIES IN PLANT LIFE AND PLANT GEOGRAPHY

By R. J. TABOR, F.L.S. (Resident Science Lecturer), and M. WILSON, B.Sc.
LOND.

The work of this course will be arranged on the assumption that most of the students will have had some previous training in elementary botany.

Its objects will be to extend their knowledge of plants in the field, and especially of the various plant associations and their adaptation to their surroundings. For this purpose excursions will be arranged to study the flora of woods, ponds and streams, moors and heaths, fresh and salt water marshes.

An explanatory lecture, illustrated with lantern slides, will be given on the eve of each excursion, in which the special features to be noted in the next day's work will be described.

The special subject for this year's course will be "Common British Trees and Shrubs," and on alternate days laboratory work will be provided, in order that students may become familiar with the distinguishing characters of their leaves, twigs, buds, etc., to enable them to identify these plants in summer and winter.

Facilities will be provided for making collections of common plants for subsequent reference. Students are recommended to bring a flora and a vasculum.

If time permits, a demonstration will be given towards the end of the course on the arrangement and carrying out of simple experiments in plant physiology.

STUDIES IN POND LIFE, INSECTS AND BIRDS, GEOLOGY AND ASTRONOMY

By MISS HIBBERT-WARE (Science Mistress at Queen Margaret's School,
Scarborough)

Pond Life.—The management of aquaria. The life-history, breathing, adaptations, etc., of the various aquatic creatures obtained on the excursions.

Insect Life.—Some garden friends and foes (*e.g.*, ladybird, cockchafer).

Birds.—The habits and call notes of common British birds so far as they can be studied during August. Opportunity will be given to students of learning to identify the birds from museum specimens, and also of preparing the skins of birds and small mammals for class use.

Geology.—The origin, composition, and history of some common rocks and fossils, especially those observed and collected on the excursions.

Astronomy.—The subjects of four of the evening lectures will be: 1. The solar system; 2 and 3. The starry heavens; 4. The earth as a member of the solar system.

A part of these lectures will be held out-of-doors.

N.B.—Students are recommended to bring note-books containing both blank and lined pages and paint boxes.

GARDEN LECTURES AND DEMONSTRATIONS

By MISS M. AGAR (College Diploma, Landscape Gardener to the
Metropolitan Public Gardens Association)

Sowing Seeds.—Seed-bed, temperature, moisture, depth of sowing, vitality of seed, pricking out seedlings—potting on.

Propagation by Cuttings.—Nodes, internodes, growing points, callus, formation of roots—potting on.

(*Supplementary:* Propagation by leaves, roots, “ringing stems.”)

Budding.—Scion, stocks, time for budding.

Pruning.—Fruit trees, bush fruits, roses.

Demonstrations will be given in the grounds with the exception of pruning, for which the time of the year is unsuitable.

The last published report of the Swanley College will be found of interest.

REPORT: DECEMBER 31ST, 1906

During the past year gratifying progress can be reported in each department of the college work. The value to women of systematic training in the various branches of horticulture is becoming more and more widely recognised from both the utilitarian and educational standpoints. It opens the door to attractive and remunerative employment in many directions, while it serves as an admirable complement to the mental training of the High School or the University. No one doubts that healthy occupation in the open air for a couple of years or so goes far towards counteracting the morbid tendencies which occasionally result from exclusive attention to literary studies, and promotes moral no less than physical development. That the advantages offered by Swanley in this respect are appreciated is

evidenced by the number of students who attend solely to cultivate those faculties for which the ordinary school or college makes no provision, and to acquire a knowledge of natural and physical phenomena that will prove of increasing interest throughout their lives.

For those destined for a professional career, whether as teachers or gardeners, the opportunities are daily increasing. The growth of gardens, as instruments of education, in connection with elementary and secondary schools within the past two or three years has been remarkable. The number of elementary school gardens has risen from 379 in 1903 to 570 in 1905 according to the last report of the Board of Education. In 1906 there was a very considerable advance, but the exact figures have not yet been issued, nor are any statistics available in regard to secondary schools. The great difficulty in every county is the scarcity of teachers qualified to undertake gardening and general nature-study. For these duties the training at Swanley affords an excellent preparation. Lord Onslow, when, as President of the Board of Agriculture, he distributed the prizes in July, 1904, particularly emphasised this point. A student who has followed the complete course may obtain a position as gardening or nature-study mistress at a secondary school, or as a peripatetic teacher of those subjects for a group of elementary day schools. With the object of assisting those already engaged in such tuition as well as those who contemplate a similar appointment, the college now provides a Special Third-year Course in natural history.

The demand for well-trained gardeners, capable of acting as the head and assuming the responsibility for a large private garden, exceeds the supply. Applications have again and again to be refused. These posts are desirable in themselves, and furnish infinite scope for the exercise of individual taste and skill. We are glad to note that the salaries offered are somewhat higher than formerly, but they are still often insufficient to attract the best and most promising students.

STUDLEY HORTICULTURAL COLLEGE, STUDLEY, WARWICKSHIRE

Founder: THE COUNTESS OF WARWICK

Warden: MISS MABEL C. FAITHFUL

STAFF OF INSTRUCTORS

Horticulture, MR. W. IGGULDEN, F.R.H.S., and MR. W. SARSONS; *Botany*, MR. W. B. GROVES, M.A. (CANTAB); *Poultry*, MR. GEORGE A. PALMER; *Dairy Farming and Agriculture*, *Dairy Instructress*, MISS K. A. BAYNES, N.D.D., B.D.F.A., Diploma; *Book-keeping and Business Training*, MR. A. E. M. LONG (Chartered Accountant); *Apiculture*, MR. W. HERROD, F.E.S.; *Fruit Bottling and Jam Making*, MISS CRAN; *Cooking Lessons*, MISS FAITHFULL.

Studley Castle is situated about two and a half miles from Studley Station (Midland Railway) on a branch line between Birmingham and Evesham.



AT WORK IN THE VINERY, STUDLEY COLLEGE FOR LADY GARDENERS.

Students may enter for a course of instruction in any of the following groups:—

- (a) *Horticulture and Bee-keeping*.—Certificate course two years; diploma course three years.

(b) *Dairy Work, Poultry and Bee-keeping*.—Certificate course one year; diploma course two years.

The *Session* (year) is of 40 weeks' duration, and consists of three terms of about thirteen weeks each, beginning respectively in September, January, and May. Students are advised to enter at the commencement of the session, in September, although they can be admitted at any time.

An *examination* in each group is held at the end of every term. A final examination is held at the end of the session (July), and Studley College certificates and diplomas are awarded to successful candidates who have completed their full course.

Short courses of instruction lasting either six or ten weeks are held at the college, the subjects taught being in accordance with the work done in each department at the particular time of year.

Studley College grants diplomas and certificates to those students who have completed their training, and who have passed the necessary examinations. It is believed that these diplomas and certificates will have a distinct value in the educational and business world, as being the distinctions awarded to skilled and practical workers.

The arrangements for the horticultural sections are as follow:—

Certificate in horticulture, both practical and theoretical, will be granted after two years' training; it will include horticulture, botany, soils and manures, entomology, and book-keeping. The diploma in horticulture will only be granted after three years' training.

SCHEME OF WORK

1.—Students may prepare for either or both the examinations of the Royal Horticultural Society and Studley College certificate and diploma.

(a) The Royal Horticultural Society.—This examination is held in April or May, and includes:—

The Elementary Principles on which Horticultural practice is based: (1) Soils; (2) Requirements of growth—water, heat, air; (3) Seeds; (4) Roots; (5) Stems and Branches; (6) Leaves; (7) Tubers and Bulbs; (8) Growth and Development; (9) Flowers; (10) Fruit; (11) Seed; (12) Variation and Selection; (13) Names and Orders of Common Garden Plants, Trees, etc.

Horticultural Operations and Practice.—(1) Elements of Surveying and Landscape Gardening; (2) Choice of Site for Garden; (3) Description and use of Implements; (4) Operations connected with the Cultivation of the Land; (5) Propagation; (6) Fruit Culture; (7) Vegetable Culture; (8) Flower Culture; (9) Manures; (10) Hybridisation and Selection; (11) Arboriculture; (12) Insect and Fungus Pests.

Practical Work.—This includes the care of lawns (mowing and rolling), paths and beds; weeding, potting; planting and propagating flowers and vegetables; mixing soils; seed sowing. Work in kitchen and flower gardens, shrubberies, greenhouses, frames, and hot beds. Budding, grafting, pruning, and planting. Rotation of crops. Orchard work. Cultivation of tomatoes, cucumbers, and melons. Planting of herbaceous borders. Classification of plants, fertilisation. Diseases of plants. Labelling plants and seeds. Table decorations, wreath and bouquet making.

Bee-keeping.—Students are prepared for the 1st, 2nd, and 3rd Class Experts' Examination of the British Bee-keepers' Association and are fully instructed in apiculture, both in theory and practice.

Fruit bottling and preserving.—Course of instruction in fruit bottling and preserving, jam making, etc., will be held during the fruit season (June to October). Students can join for two weeks at a time or longer. Fee, including board and residence, £5 5s. for two weeks.

Marketing department and business training.—Students, on the completion of their full course, may take a course for three months in the marketing department, at the usual fees. This will enable them to obtain a knowledge of this important branch, which it is impossible for them to get during their regular period of training. Students may enter for this branch alone if desired.

The course includes:—Business methods; the markets, and methods of buying and selling goods; packing; railway rates, etc.

Manual training.—Instruction in manual training and woodwork is given by the college carpenter, and includes:—Tools, their names and uses, proper methods of using and sharpening; simple joints, etc. Construction of portable poultry-house and appliances; beehives and appliances, garden appliances, and various articles of general utility.

All fees are required to be paid terminally in advance, *i.e.*, on or before the first day of each term. A full term's notice in writing must be given to the Warden before the removal of any student from the college in default of which notice payment of the term's fees will be required. Notice of removal received after a term has begun will take effect at the end of the term next ensuing.

Short courses:—Students may enter for these at any time when they are arranged.

All fees must be paid in advance. In no cases can fees be returned.

RESIDENT STUDENTS

Full training, with board and residence at the college, in horticulture, or dairy and poultry work: cubicle, £80 a year; study-bedroom, £100 and £120 a year. Short courses for ten weeks: cubicle, £25; study-bedroom, £30. Short courses for six weeks: cubicle, £15; study-bedroom, £18. Bee-keeping is optional, and may be combined with either of the above courses, an additional fee of £5 5s. a year, or £2 2s. a term, being charged. Fruit bottling and preserving:—Two weeks' course, including board and residence, £5 5s. Manual training and carpentering, £3 3s. a year, or £1 10s. a term. Cooking lessons, £1 5s. a term. Extra charges: Use of microscopes, 5s. a year; use of gardening tools, 5s. a year; use of carpentering tools, 5s. a year.



PREPARING THE FRAMES AT STUDLEY COLLEGE FOR LADY GARDENERS.

NON-RESIDENT STUDENTS

Non-resident students can be received at the college under certain conditions. Fees for instruction in each department, 25s. a week, or £13 6s. 8d. per term.

Candidates for admission to the college are requested to write to the Warden for full particulars and admission form, which must be filled in with the name, age, and experience of the intending student, the particular course of study which she wishes to follow, and her ultimate object in seeking instruction. (These admission forms will be regarded as strictly confidential. After receiving notification that her application has been accepted, the intending student will be liable for a term's fees.)

The Warden of the college prefers to interview intending students previous to admission whenever possible.

The college is open to visitors, but they are asked to make an appointment beforehand. The best route is from Euston, 9.20, reaching Birmingham 11.30; train for Studley, 12 o'clock, from same station; returning from Studley, 4.38, and Birmingham, 7 o'clock. Studley can also be reached from Paddington, G.W.R., *viâ* Evesham. Students must be in residence at the college on the day previous to the commencement of a term.

ROYAL BOTANIC SOCIETY OF LONDON PRACTICAL GARDENING SCHOOL FOR LADIES

Held in the SOCIETY'S GARDENS, REGENT'S PARK, and officially recognised by the Technical Education Board of the London County Council.

The course of instruction extends over three years, and commences on October 1st.

SUBJECTS: FIRST YEAR

Outdoor Work.—Ground operations, implements used; levelling with borning rods; draining; formation of paths, beds, and lawns; trenching, digging and hoeing; preparation for planting, etc.; care of lawns—mowing with machine, sweeping, weeding, and rolling; flower gardening—herbaceous borders, pricking off, planting; staking, tying and watering; vegetable and fruit garden—double digging, manuring; preparation of seed beds; aërating the soil.

Indoor Work.—Cleaning and crocking pots; materials required for composts; potting, watering, cleaning, staking, tying and top-dressing plants; propagation by cuttings, as geraniums, etc.; pricking off seedlings.

SECOND YEAR

Outdoor Work.—Preparing and storing manure, methods of application; care of lawns, flower and kitchen garden, shrubbery, fernery, etc.; sowing vegetable and flower seeds, and planting tubers; growing vegetables, flowers and fruits; outdoor tomato culture.

Indoor Work.—Horticultural buildings, repairing, painting and glazing; propagation by division of roots, stems, and tubers; forcing and retarding;

insects and fungoid pests; methods of extermination; melon, cucumber and tomato culture.

Theoretical Work.—Suitable manures for various soils; principles of hot-water heating.

THIRD YEAR

Pruning trees and shrubs; mowing with scythe; special classes of plants; hybridisation and selection; care of conservatory, plant houses, frames and pits; spraying plants; mushroom culture; vine and fig culture; budding and grafting; labelling.

Theoretical Work.—Keeping garden accounts, stock books, stores, etc.; purchase of pots, gravel, sand, peat, manure, etc.; elementary meteorology; theory of landscape gardening; plant parasites; sprays and washes for insect pests; classes and laboratory work in botany and horticultural chemistry.

The society undertakes that each pupil shall be given opportunities for studying and practising each of the above subjects, but it cannot guarantee that in every case the order of the above list will be adhered to.

FEES FOR THE ABOVE COURSE

First year, £20; second year, £15; third year, £10. Floral decoration is £1. 1s. per annum.

A year's course in gardening is given to ladies who possess gardens in the country. Early application should be made to the superintendent, Mrs. J. Bryant Sowerby, Botanic Gardens, Regent's Park.

Amongst the rules I see that pupils must attend at the gardens at 9.30 a.m. in summer, and 10 a.m. in winter, and are allowed an interval of one hour and a half (12.30 to 2) in the middle of the day.

Six students having passed out of the Royal Botanic Gardens are working their own gardens. Two have started as market gardeners. Several are working as jobbing gardeners and companion gardeners.

THE EDINBURGH SCHOOL OF GARDENING FOR WOMEN, CORSTORPHINE,
EDINBURGH

MISS BARKER AND MISS MORISON,

*Diplômées of Swanley Horticultural College; Certificated Gardeners, Royal
Botanic Garden, Edinburgh*

The objects of this school are to prepare women for the various branches of practical professional gardening—to fit them for managing a market garden, or for taking charge of private gardens—and to give instruction to those who wish to devote themselves with intelligence to gardening as a private interest.

Situation.—The gardens are situated on the south slope of Corstorphine Hill, in a charming district just beyond the suburbs of Edinburgh. They are within two miles of the west end of the city, within three minutes' walk of the 'bus service, and within seven minutes' walk of Corstorphine railway station. The position is eminently suitable both for gardening and for residence.

Grounds.—Part of the garden is devoted to growing for market, and students are taught how to work a market garden through all its stages—from the preparation of the ground and sowing the seeds to the packing of the produce for the market. In this department is included the growing of stuff under glass, such as tomatoes, cucumbers, flowers, etc. Another department deals with the requirements of good private gardens, and includes a vinery, peach-house, mushroom-house, rose garden, herbaceous border, and kitchen garden.

Practical Instruction.—The practical instruction includes all the details of actual work, such as hoeing, digging, care of glass-houses, propagation of plants by seeds, cuttings, etc.; planting-out, thinning, potting, pruning, gathering, and packing. Demonstrations, in which the students take a practical part, are given by experts in bee-keeping and floral decoration, including bouquet-making, sprays and button-holes, table decoration, and wreaths.

Theoretical Instruction.—All intelligent practical work must include a certain amount of theoretical instruction in order to explain the reasons for the various operations necessary. At the same time a more formal and exact

study of the sciences underlying the practice of gardening is necessary, and in order to obtain this the students attend certain classes at the Edinburgh and East of Scotland College of Agriculture. Students are prepared for the Royal Horticultural Society's Examination.

The Curriculum.—The full curriculum extends over two years. Shorter courses may be arranged for those who wish to study with a view to private instruction only, and do not propose to follow gardening as a profession.

The Diploma.—Every care is taken in the arrangements for practical instruction, lectures and examinations, to ensure that the diploma shall be a reliable guarantee of thorough efficiency in the theory and practice of gardening. It will be granted only to students who have taken part in the regular practical work of the school for two years, and have passed satisfactorily examinations in the following subjects:—

Horticulture (Royal Horticultural Society's Examination), practical horticulture, botany, agricultural chemistry, book-keeping.

Boarding arrangements.—Both resident and non-resident students are received. Resident students live with the principals, Miss Barker and Miss Morison. Two references are required from each student.

Terms.—The session is divided into three terms, beginning respectively in May, October, and January. Students are advised to begin either in May or in October.

Fees.—Resident students, £70 a year; resident students, with separate bedroom, £86; non-resident students, with dinner and tea, £40. Fees are payable at the beginning of each term. A term's notice is required before a student leaves, otherwise the fee for the term will be charged.

Examiner in Practical Horticulture—MR. BERRY, East of Scotland College of Agriculture.

CLASSES TAKEN AT THE EDINBURGH AND EAST OF SCOTLAND COLLEGE OF
AGRICULTURE

Horticulture, MR. G. P. BERRY. *Agricultural Chemistry*, A. LAUDER, D.Sc. *Agricultural Natural History*, R. S. MACDOUGALL, M.A., D.Sc., F.R.S.E.

CLASS TAKEN AT THE HERIOT-WATT COLLEGE

Botany (Advanced and Elementary), R. S. MACDOUGALL, M.A., D.Sc., F.R.S.E.

THE YEAR'S WORK

The following sketch calendar of the actual work shared in by the students month by month may be of service to those who have little practical acquaintance with gardening. No sketch of this kind can show all the details of daily work, and the separation into months is merely for convenience, as in almost every case the work of one month overlaps with that of another. Certain operations, such as hoeing and weeding, extend throughout the greater part of the year; plants under glass require daily attention, and, in addition, there is the specialised culture required by special classes of plants—vines, peaches, tomatoes, etc.—which is not indicated in this calendar:—

January.—In this month there is much important work to be done under glass and in the forcing-houses. Seeds are sown almost daily—flower seeds, such as annual carnations, petunias, antirrhinums, etc.; and vegetables, such as lettuce, leeks, onions, cauliflowers, cucumbers, tomatoes, etc. There are also the gathering and packing of forced flowers and rhubarb, and the forcing of these and other plants. When possible, seed-beds are prepared in the open.

February.—Much of January's work is continued this month. Seed-sowing goes on, some of it in the open. Plants sown in January have to be potted and pricked out in pans and boxes. Watering, heating, and ventilation in the various glass-houses require great attention. The taking of chrysanthemum cuttings is continued from last month.

March.—This is perhaps the busiest month of the garden year. The preparation of seed-beds and the cleaning of the ground must be completed, as well as the sowing of almost every vegetable that is in the garden, of hardy annual flowers in the open, and of half-hardy annuals in frames. Strawberries are planted, young tomatoes potted on, cucumbers attended to, and more seed sown for late crops. Rooted chrysanthemum cuttings have to be potted on.

April.—Much time this month must be devoted to seedlings to prevent overcrowding and weakening. Cauliflowers are planted out, and vegetable

marrows sown in pots for planting out later. More sowings of vegetables and of hardy annuals are made, and half-hardy annuals are hardened-off previous to planting in the open.

May.—In this month sowings are repeated of all vegetables required for succession. Celery plants are pricked out and trenches prepared. Cabbages are planted; out runner beans are sown; weeding and hoeing go on constantly.

June.—The gathering, bunching, and packing of cut flowers form an important part of this month's work. Celery is put in trenches; mushroom-beds are prepared. Much attention is required by tomatoes and cucumbers.

July.—Flowers for cutting are now more plentiful, and, in addition, the smaller fruits have to be gathered and packed for market. Carnations have to be layered, and strawberry runners pegged down. Broccoli and cabbage are planted out; biennial and perennial flowers may still be sown.

August and September.—These months are the school holidays. The chief work in the garden is the continued gathering and packing of fruit and flowers, and keeping the ground clean.

October.—Bulbs are potted to be forced when well rooted; wallflower is transplanted to its blooming quarters; chrysanthemums are brought in, and celery is earthed up. Vacant plots of ground can be made ready for winter by digging and manuring.

November.—Some bulbs can be planted out in the open; plants ready for forcing are brought in. Cucumbers for an early crop are sown now, and mustard and cress are sown weekly. The glass and brickwork of the houses are thoroughly cleaned. When weather permits, the pruning of fruit-trees and bushes is carried on in this and the other winter months. Chrysanthemums are bunched and packed for market.

December.—Rhubarb is brought in for forcing; vines are pruned, and peach-trees trained.

In bad weather, work is carried on in the glass-houses or the potting-shed, or the time is allowed for study.

F. W. Moore, Esq., Director of the above gardens, is kind enough to admit two ladies as students in horticulture. No fees are charged, and there is no remuneration of any sort given. There is no syllabus, as the students work under the immediate direction of Mr. Moore. They obtain a thorough knowledge of general garden practice. Cross pollination, collecting seeds, fruit pruning, and all kinds of work, both indoors and out-of-doors, is taught. It is not possible to obtain a more general gardening experience than is given here. All lectures are free. The places are usually taken some years in advance. The first two ladies came on July 1, 1898, and eighteen in all have passed through up to 1907. Of these, the following are at present actively employed as follows:—

Lucy Douglas, County Council Instructor in Horticulture, Co. Cavan; Jane Langley, gardening, laying out gardens, giving advice, good employment in Co. Waterford; Katherine Kinnear, market and nursery gardening in Scotland; Rose Pollock, private secretary and assistant to F. W. Moore, Esq., Botanic Gardens, Dublin; Jean Rogers, working as head gardener; Christina Carlyon, instructor in horticultural college in South Africa; Jane Garner, working her own garden, and botanical and horticultural teacher in Dublin; Emmeline Crocker, head gardener over a large garden in Cornwall; May Crosbie, working her own garden. The students can obtain comfortable and cheap rooms in Dublin, in order to attend daily at the gardens.

The London County Council has organised classes for gardeners, which ladies may attend at

THE LONDON COUNTY COUNCIL NORWOOD TECHNICAL INSTITUTE, KNIGHT'S HILL,
WEST NORWOOD

The following are the syllabuses:

BOTANY (THEORETICAL AND PRACTICAL), 5s. PER COURSE

Stage I.—(Elementary): Fridays, 9–10; Practical Class, 7.30–9. Stage II. (Advanced): Fridays, 6.30–7.30; Practical Class, 7.30–9

Lecturer: MISS EVA WHITLEY, B.Sc.

STAGE I. (Covering the London Matriculation Syllabus)

Elementary.—The study of the typical flowering plant; the form and function of the plant organs and the variations which adapt them to special conditions; the inflorescence; the pollination and fertilisation of flowers, fruits and seeds; germination; the nutrition, respiration and growth of plants; the movements exhibited by plants; the outlines of the cellular structure of plants; elements of plant classification, with special reference to some of the more important British natural orders.

STAGE II. (Covering the Inter-Science Syllabus)

Advanced.—More advanced work in the subjects taken in the elementary course. Study of typical members of the larger sub-divisions of the plant world (pinus, picra, selaginella, aspidium, funaria, peltia, fucus, spirogyra, hæmatococcus, agaricus, eurotium, puccinia, parmelia, collema, pythium, mucor, saccharomyces), and of additional natural orders to those taken in Stage I.; plant œcology.

In the practical class specimens are examined and described, microscopic preparations made, and a few of the simpler experiments illustrative of physiological processes are carried out.

Two or three museum visits are arranged during the session. These classes should prove useful and interesting to those engaged in horticulture and the allied callings.

GARDENING, 2s. 6d. PER COURSE

Lecturer: CHAS. H. CURTIS, F.R.H.S.

Tuesdays, 7.45–9.15

SYLLABUS

Introduction.—Need for better methods. How to plant.

Soils.—Kinds and values. Cultivation and improvement. Manures and their value for certain crops and soils. Propagation. Seeds and seedlings. Cuttings and layers. Budding and grafting. Spring-flowering bulbs. Selections.

Planting and potting.—Chrysanthemums for garden and greenhouses.

Small fruits.—Varieties for town and suburban gardens. Pruning and training. Choice fruits; peaches, nectarines, figs, grapes and melons.

Beautiful trees and shrubs.—Flowering, deciduous and evergreen. Rock, wall, and water gardening.

Lawns and walks. Fences and screens. Edgings. Window, balcony, and home gardening. Garden design and improvement. The use and abuse of garden tools. Herbaceous borders. Selections and times of flowering. Summer bedding plants and flowers. Autumn flowers. Conservatory and greenhouse. Annual and biennial plants. Roses for summer and autumn.

Vegetable culture.—Root crops. Onions, leeks, and shallots. Cauliflowers, winter greenstuffs. Salads. Peas for small gardens, beans, marrows, tomatoes. Asparagus, seakale, mushrooms. Forcing.

The syllabus is subject to alteration to meet the needs of the class. Each lecture will be illustrated by specimens, demonstration, blackboard diagrams, etc. Several outings and daylight demonstrations will be arranged during the session.

Ladies may attend the following courses arranged by the London County Council at

BROWNHILL ROAD EVENING SCIENCE, ART, ETC., COMMERCIAL CENTRE, CATFORD,
S.E.

Five shillings the session is charged to students over sixteen, and 2s. 6d. to those under sixteen, for one or more subjects, including science and art.

BIOLOGY AND NATURE STUDY

Instructor: MR. G. ALFORD

In the first stage, students will investigate the external features, general structure, mode of life, surroundings, life-history, and habits of flowering plants, yeast, frog, amœba, etc.

In the second stage the subjects of the elementary class will be studied more fully, together with the earthworm, crayfish, dogfish, pine, fern, selaginella.

The practical work will deal with nutrition, respiration, etc., including dissection and the microscopic examination of the smaller organisms.

HORTICULTURE

Instructor: MR. E. H. SMITH

This course of lectures is arranged specially for those who take an interest in gardening.

The syllabus of instruction deals with: the cultivation of vegetables, hardy fruit, etc.; the management of the orchard house, flower garden, flowers under glass, seed growing, propagation, etc.

Ladies may attend the courses offered by the London County Council at

BLOOMFIELD ROAD EVENING COMMERCIAL AND SCIENCE AND ART CENTRE,
PLUMSTEAD

Five shillings the session for one or more subjects, including science and art, for students over sixteen. For those under sixteen, 2s. 6d. per session for one or more subjects.

BOTANY—STAGES I. AND II.

Instructor: MR. W. P. BOLAS

The lectures will cover but not be confined to the syllabus of the Board of Education. Every assistance will be given to those engaged in the teaching of Nature study. Practical work with experiments forms a special feature of the course. Formation of collections of dried specimens of leaves, fruits, seeds, etc. Special study of British wild flowers. Occasional botanical rambles and visits to places of botanical interest.

Text Books:—Stage I.—Oliver's "Elementary Botany."

Stage II.—Lowson's "Second Stage Botany."

HORTICULTURE

STAGE I.—This stage provides an elementary course on the science of plant life and soil, and will be taught chiefly by experiment and observation.

Plant life.—Seeds. Roots. Leaves structure, transpiration, formation of starch. Stems. Buds. Flowers. Fruits. Seeds. Annuals, biennials, bulbs, tubers, perennials.

The soil.—Plant food. Origin and composition of soils. How plants appropriate food from the soil.

STAGE II.—*Soil and situation.*—Conditions which render land suitable to particular forms of horticulture. Market gardening. Hardy fruit growing. Nursery stock. Cultivation under glass. Proximity to markets or stations. Cost of labour and manure. Conditions of tenure.

Arrangements.—Design of a garden to suit particular purposes. Shelter hedges and wind breaks. Water supply. Roadways and paths.

Tillage.—The various operations and tools required. Drainage. The amelioration of the soil by liming, claying, the incorporation of lightening materials on clay soils.

Composts and manures.—Loam, peat, leaf mould, farmyard manure, liquid manure, artificial manures.

Vegetables.—The cultivation of the standard vegetables in the open air (1) for show, (2) for private consumption, (3) for market work. Preparation of land, time of sowing, manures, management, insect pests, harvesting and storing of each crop. The character of the leading varieties of the cabbage, kale, broccoli, cauliflower, lettuce, spinach, etc., celery, turnips, beet, carrots, parsnips, potatoes, onions, peas and beans, asparagus and seakale, tomatoes in the open air. Succession of crops. Forcing. Growth of tomatoes, beans, cucumbers, etc., under glass. Mushrooms under glass and in sheds.

Hardy fruit.—Preparation of the land, planting, pruning and root management, manures. Spraying. Leading varieties of strawberries,

gooseberries, raspberries, currants, apples, plums, pears and cherries, filberts and other nuts. Renovation of old fruit trees.

Orchard house.—Peaches, nectarines, figs, apricots, cherries, etc. Insect pests, etc.

The flower garden.—Hardy and half-hardy annuals. Bedding out. The herbaceous border. The rock garden and hardy fernery. Management of roses, etc., for show.

Flowers under glass.—Azaleas, ericas, etc., lily of the valley, etc., rose, chrysanthemums, etc.

Shrubs and trees.—Flowering shrubs, etc.

Seed growing.—Saving and storing seed. Cross fertilisation and hybridising. Selection and fixation of new varieties.

Propagation.—Division, offsets. Bulbous plants. Soft and hard wooded cuttings. Layering. Stocks for fruit trees, etc. Grafting and budding.

Ladies may attend the course of instruction offered by the London County Council at

KILMORIE ROAD EVENING COMMERCIAL AND ART CENTRE, FOREST HILL, S.E.

Five shillings fee per session is charged to students over sixteen, and 2s. 6d. per session to those under sixteen.

HORTICULTURE

The syllabus of the Royal Horticultural Society will be taken

Elementary principles on which horticultural practice is based.—Soils, good and bad; their mineral composition; chemical nature of fertilisers and their respective values. The physiological values of water, heat, and air in plant growth. The structure of seeds and their modes of germination; the chemical phenomena of germination; the movements of seedlings and the uses of them. The functions of roots; their anatomical structure; hindrances to healthy root-action and their remedies. The uses of stems and branches;

the anatomical structure of ordinary dicotyledonous and of a monocotyledonous stem. The physiological functions of leaves, and the action of light upon them. The structure of tubers and other subterranean stems; the structure of bulbs and buds; the general phenomena of vegetative multiplication. The physiological processes undergone in growth and development; the structure of an active cell, and the process of cell-division and the formation of tissues. The structure of flower-buds and of flowers; the methods of pollination, natural and artificial. The process of impregnation of the ovule, and the formation of embryo and endosperm. The classification and description of fruits; the changes and development during ripening. The general characters of the commoner families of plants in cultivation. The origin of species.

Horticultural operations and practice.—Elements of surveying and landscape gardening. Choice of site for garden. Description and use of implements under each head. Operations connected with the cultivation of the land, with explanations and illustrations of good and bad methods; digging and trenching; draining, hoeing, stirring the soil, and weeding; watering; preparation of seed beds; rolling and raking, sowing, transplanting and thinning; potting, planting; aspects, positions, and shelter; staking; earthing and blanching, etc. Propagation, elementary principles; cuttings, buddings and grafting, stocks used, layering, division, branch pruning, root pruning; old and young trees and bushes. Training. Fruit culture: Open air and under glass; small fruits; apples and pears; stone fruits; gathering and storing; packing and marketing. General knowledge of fruits, and selection of varieties. Vegetable culture: tubers and roots; green vegetables; fruit and seeds; rotation of crops, and selection of varieties. Flower culture, outside and under glass. Manures and their application. Improvement of plants by cross-breeding, hybridisation and selection. Arboriculture: trees and shrubs and their culture. Insect and Fungus pests; prevention and treatment.

Examination.—Royal Horticultural Society in April.

PARTICULARS REGARDING SCHOOL GARDENS AT SCHOOLS MAINTAINED BY THE
LONDON COUNTY COUNCIL

There are at present a number of schools maintained by the Council where gardens exist. As a rule these gardens are kept in condition by the

caretaker or by the teachers and pupils. In such cases it is the practice to allow an annual expenditure in respect of the garden, the amount varying from 10s. to £2. In one case, namely, Bailey's Lane Mixed School, South Tottenham, an annual expenditure of £3 3s. is allowed, but at this school cottage gardening is taken as a grant-earning subject, the Head Master being recognised as a qualified teacher by the Board of Education.

With this exception the gardens are used for the purposes of instruction in botany and nature study.

Special teachers are not engaged for the purpose of giving instruction in gardening.

The Council has at present under consideration the general question of the formation and maintenance of gardens in certain schools, and it is proposed that all work in connection therewith shall be carried out by a staff of gardeners employed by the Council, and that the gardens shall be utilised for the purpose of instruction of the pupils in nature study by the teachers on the staff.

CHAPTER XV

CONTINENTAL SCHOOLS AND COLLEGES

BELGIUM

I am told upon good authority that although up to the present moment no schools of horticulture have been founded for ladies, the Government is contemplating the institution of one. In 1907 six young ladies joined the classes of the Government School of Horticulture at Ghent. At the Vilvorde Government School of Horticulture three young women (foreigners) followed the school training, and one of them received a diploma. Quite recently a horticultural section has been opened in the Pensionnat d'Hiverlé, and three young ladies have joined it. Belgium possesses many *écoles ménagères agricoles* for women, but these are more for agricultural or farming supervision.

At the Horticultural Congress held in 1907 at St. Crond (in the province of Lunbourg), M. de Vuyst read an interesting paper in favour of gardening instruction for ladies.

Mademoiselle Rossignon in her admirable private school for girls at 86, Rue Gachard, Avenue Louise, Brussels, has organised classes where gardening is taught. Here, each girl has the management of a plot of ground, and elementary landscape gardening from simple designs is shown. Besides being taught the use to which land can be put for the cultivation of vegetables, fruit and flowers, students can learn preserving and cooking fruits and vegetables.

DENMARK

I have received the following report from the National Council of Women of Denmark, Copenhagen. There are in Denmark no horticultural colleges for women only. But the colleges and schools admit women, and usually on the same conditions as men.

I.—DEN KONGELIGE VETERINOR AND LAND BOHOJSKOLE

(The Royal Veterinary and Agricultural College),

COPENHAGEN

(Public State Institution), has also a division for horticulture. The training is chiefly theoretical, and does not include practical gardening, which must be learned elsewhere. The course lasts for two years (of two terms each), and leads up to a state examination; the candidate who successfully passes this has the title of “havebrugskandidat.”

Certain entrance qualifications are required. The entrance fee is 10 kr.,^[4] the fee per term (two terms a year), about 50 kr.; the examination fees, Part I., 15 kr.; Part II., 25 kr. Scholarships may be obtained. The college is not residential, and the students are not subject to any rules out of school hours. Women are admitted on exactly the same terms as men, but very few have hitherto graduated—only one before 1894, and six after that time.

[4] One krone = 1s. 1½d.

The instruction is partly oral, partly in writing, partly work in the laboratories. Botanical excursions are held nearly every week in the spring and autumn. Practical training in surveying and levelling is given in July of the first year’s course.

SYLLABUS: LECTURES, CLASSES, PRACTICAL WORK, AND DEMONSTRATION

First Year’s Course

	<i>Lessons per week.</i>	
	<i>First term.</i>	<i>Second term.</i>
Mechanical physics and optics	3	2
Chemical physics	2	2
Meteorology	2	1
Chemistry	4	4
Geology and knowledge of soils	4	4
Botany	4	4
General horticulture	2	2
Laying out of gardens and cultivation of ornamental plants	2	1
Horticultural zoology	1	1
Practical chemistry	9	9
Surveying (Oct. 1st to May 15th)	4	2
Drawing	6	6

Second Year’s Course

General horticulture	3	2
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Cultivation of vegetables	2	2
Orchard and nursery gardening	5	2
Laying out of gardens and cultivation of ornamental plants	2	3
Forcing of useful plants	2	3
Horticultural botany	4	4
Pathology of plants	2	2
Horticultural zoology	1	
Agricultural chemistry	1	6
Comparing of garden plans	6	6
Practical horticulture	2	2

THE EXAMINATIONS COMPRISE:—

Part I. (after the first year's course)

Physics and meteorology, oral; chemistry, oral, practical and written; knowledge of soils, oral; botany, oral; surveying and levelling, practical drawing.

Part II. (after the second year's course)

(No one is admitted to Part II. who has not passed satisfactorily in Part I.)

General horticulture, oral and written; cultivation of vegetables, oral and written; orchard and nursery gardening, oral and written; laying out of gardens, etc., oral and written; forcing of useful plants, oral; horticultural botany, oral; pathology of plants, oral; horticultural zoology, oral; agricultural chemistry, practical and written; composing of garden plans.

II.—HAVEBRUGSHOJSKOLEN "VILVORDE" PR. CHARLOTTENLUND, NEAR COPENHAGEN

This is a residential school for gardeners, both men and women. A full course is of two or two-and-a-half years, comprising both practical and theoretical training. The preferable age for students is from eighteen to twenty. To be admitted the student must have been occupied with gardening for two years. If there is room students without this qualification may be admitted, but these must stay three years at the school.

In the summer theory is studied from 6 till 10 a.m., practical work, 10.30 a.m. till 5.30 p.m.; in the winter, theory is from 2 till 6 p.m., practical work, 7.30 a.m. till 1 p.m.

The examinations are controlled by the Education Department. They are both theoretical and practical.

Eight women have been trained during the three years since this examination was instituted. The school itself is more than twenty-five years old.

The fees for board, lodging, and instruction are on an average 35 kroner per month for the first year, and 32 kroner per month for the second year.

III.—THE ROYAL GARDENS AT ROSENBORG CASTLE, COPENHAGEN

Both men and women pupils are received, for a two years' course. The training is chiefly practical. Theoretical instruction is given during winter in two lessons of two hours each a week in the mornings, and three lessons of two hour each in the afternoons. In summer there are some lessons in botany. During their training men get 10 kr. a month the first year, 24 kr. the second. Women get nothing the first year, 10 kr. a month the second, but then they have not exactly the same work.

A practical examination can be entered for after five years' practical gardening: sometimes old students come back after some years to go in for this examination. Not many women have been trained at Rosenborg, and only one has had an appointment there—for a short time after her training.

Several estates and market gardens take women as pupils, but the training is only practical. Very few women earn an independent living as gardeners; market gardening is usually considered rather hard work for women, and, besides, requires capital, and no woman has hitherto obtained a superior situation in any of the larger gardens, public or private. When they obtain a post they are usually paid less than the men for the same work.

Upon the whole, gardening in Denmark does not seem at present to be a very recommendable career for women who have to earn their living by it. On the other hand, many women now study it for use in their own homes. Thus there are State-aided courses for cottagers' wives and daughters both

at Kjarhave and at a few other schools. Teachers go through a course of gardening in order to be able to teach in the school gardens.

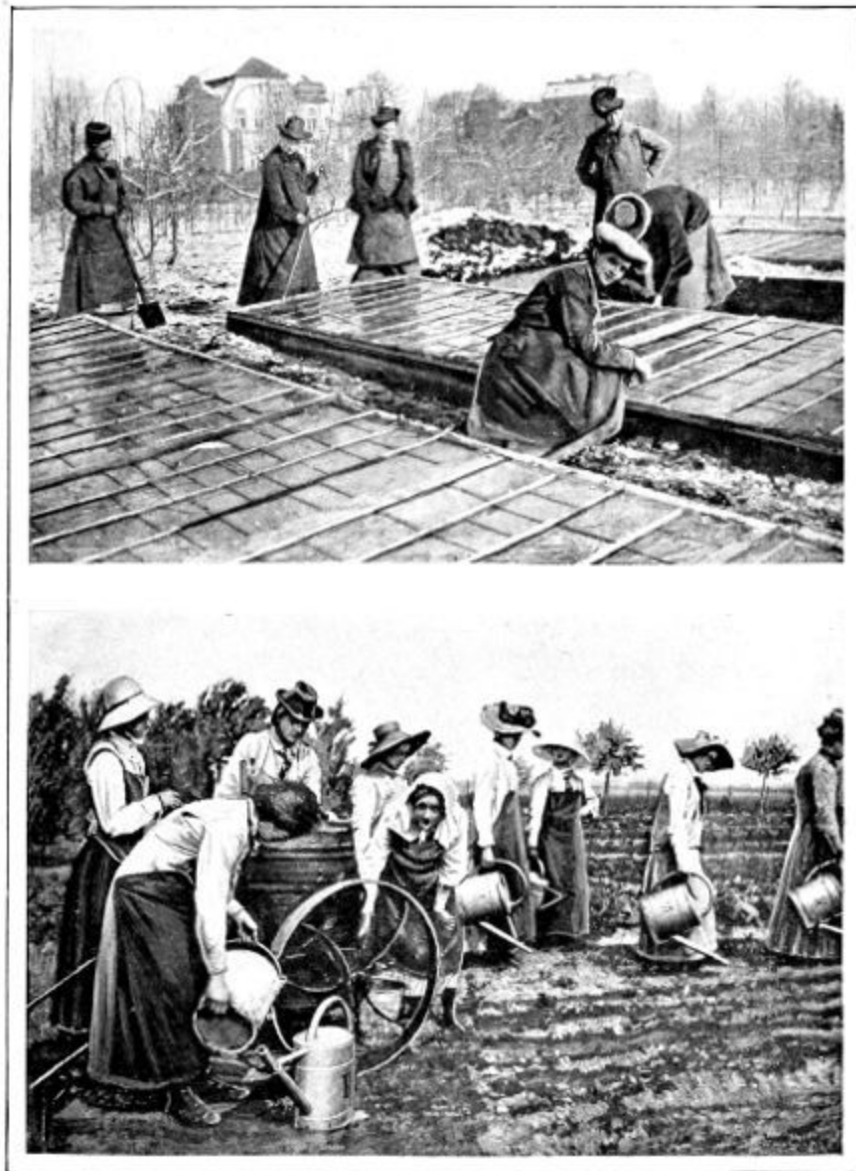
GERMANY

I am permitted to publish the following extracts, and they have been kindly put into English for me by a friend. They give an interesting description of the commencement of a school which is now one of the most famous in Germany. I am told, upon good authority, that posts for lady gardeners are easily obtained; in fact, that the demand is greater than the supply. The salaries vary from 400 marks to 2,000 marks and free living. The posts are chiefly in private gardens, sanatoria, and house-keeping schools.

DR. ELVIRA CASTNER'S SCHOOL OF POMOLOGY AND HORTICULTURE, MARIENFELDE

By MARIE C. VORWERK

In 1877 a German lady-student was living in the American seaport of Baltimore. She loved in her leisure hours to seek the harbour and watch the ships come and go. One day in autumn she saw with astonishment, from a train of perhaps fifteen to twenty coaches, an immense quantity of small square boxes unloaded and brought to a ship. On inquiry as to their contents, where they came from, and whither bound, she was told they were apples from California, destined for Germany, and that this fruit was sent every year in increasing numbers to Germany and other European countries.



STUDENTS AT THE SCHOOL OF POMOLOGY AND
HORTICULTURE MARIENFELDE, NEAR BERLIN.

Why should Germany import foreign fruit? Has she not in all her provinces tracts of land with conditions and climate suitable for fruit and vegetable growing, and why should not German women earn a livelihood by horticulture? From these questions, which the student asked herself in the harbour of Baltimore, has arisen the Horticultural School of Marienfelde. In the meantime the lady was naturally inclined to continue her chosen career of dentistry, to finish her studies, and begin to earn her

living. But the idea would not rest! Whoever comes to Marienfelde to-day and sees there the stately building in its large garden, or has met a lady-gardener, trained at Marienfelde, in her thoroughly satisfying calling, must acknowledge what splendid results have sprung from this idea of the German student in the distant American commercial town.

A bee-hive with the inscription, "No reward without diligence," is carved over one of the entrance-doors of the school a suitable escutcheon as warning and incentive to the entering students, and not less as a reminder of the origin of the school and the busy life of its foundress.

Elvira Castner was a chemist's daughter, born in 1844 in a small town of western Prussia, and was a very lively, clever child. That she might not have to go from home for her education, her parents sent her to a boys' school, kept by a very scholarly pastor; there she eagerly studied every subject up till then reserved for boys. After two years at a seminary in Posen, she passed her teacher's examination. She liked her calling as teacher, but owing to throat trouble had to give up this profession. She went to Berlin for five years, and her health being re-established, her long-restrained love for medicine woke to new life. Liberal Berlin granted her what had been unattainable in the provinces.

She returned from Baltimore in 1878, with her degree as dental-surgeon, set up as a dentist in Berlin, and soon gained an extensive practice. Her mother and sisters came to reside with her, and one of her sisters, after taking her dental degree in America, became her assistant. Having attained her object, there came a time of comparative rest, in which the idea of German Horticulture stepped again into the foreground. Leisure hours were utilised for botanical study, holiday tours to visit various horticultural schools, pomological institutions and model-gardens in Reutlingen, Stuttgart, Switzerland, etc.

In the year 1889 an opportunity occurred to purchase in the neighbourhood of Berlin a small piece of ground where her acquired theoretical knowledge might be put into practice. Dr. Elvira Castner, with her family, occupied part of the double house built on the ground, while the remainder was let. A market garden was laid out—the rougher work being done by the porter's wife. The sisters took charge of the remainder, aided by the counsel of their mother, an experienced farmer.

The first practical trial of a School of Horticulture for women was made at this time by the wife of the Counsellor of Commerce for Charlottenburg. Dr. Elvira Castner thought herself fortunate to see her idea so soon realised, and gave the school her warmest interest. As vice-president of the Berlin society for the benefit of women, she had opportunity to know it well. The society protected the school, and appointed a commission for the promotion of pomology and horticulture, of which Miss Castner was chairman. Accompanied by this committee she visited the Charlottenburger school, and came back quite disillusioned. That school of horticulture was not to her mind; the tending of flowers was undertaken, but without any solid instruction, and fruit and vegetable cultivation were never mentioned.

At the first sitting of the commission, she gave her ideas on the subject of a School for Horticulture, and was requested to embody them in a report, so as to reach a larger public. In complying with this desire she answered clearly and convincingly the three questions:

1. Should more be done in our Fatherland for pomology and horticulture?
2. Is it possible for women to follow a gardener's calling, and to earn a living by it?
3. How would an educated woman, after sufficient training, find opportunity to practise this calling?

The report was published in several papers, and Dr. Castner received letters from all parts, asking where the school of horticulture was to be found, carried out on these principles. A determined little lady, Frau Rackau, from Jena, came to Berlin to present herself at this school. It seemed the propitious moment to start the school; friends thronged round, circumstances were favourable. An attempt by the formation of a company to interest a larger public failed miserably, and courageous Dr. Castner, inspired by the need of giving to German women the new calling of practical gardening, opened on the 1st October, 1894, the first German female School of Horticulture, with seven scholars. The other part of the Friedenauer house happened to be free; it was turned into living-and classrooms for the future scholars. The necessary tools were obtained, and so the work began, though differently from Miss Castner's first intentions. As it had not been possible to rouse the active interest of educated German women, particularly those living in the country, the school could not be limited to their own country-women, as had been the original plan. Our statistical tables plainly show how largely foreigners are in the majority.

The difficulties of the beginning were successfully overcome; the garden, now three acres, attracted students in growing numbers. In April, 1895, ten new scholars joined the original seven, and in the next year seventeen were added. From that time a regular increase went on.

Yet many hindrances remained. If women were indifferent, gardeners showed the liveliest, though not friendly, interest in the scheme, and it took years to convince them they would not be harmed by the new ideas.

Prominent men like Professors Wittenack, Herren, Ascherson, Sorauer, Garden-Inspector Lindemint, and others, whose judgment carried great weight, were most sceptical. They feared, not without cause, that the training for women, as was too common, would be imperfect. Some examinations, at which they were present on the invitation of Dr. Elvira Castner, convinced them of the thoroughness of our work, and with just pride we count them now amongst our truest friends.

The establishment soon won general respect. House and garden at Friedenau became too small, and a move was made in October, 1899, to Marienfelde, where the garden of ten acres and the large house promised to be sufficient for years to come. Miss Castner gave up her dental practice and devoted herself entirely to the school. The interest of German women was at last awakened, and what was impossible ten years previously was now imitated in Godesberg and other places. Schools of horticulture, on the Marienfelde model, were started.

Next comes the question of the training and the after career of the students. The prospectus and plan of studies of the institution abundantly answer the first question. I believe I can rightly say one seldom finds such an excellent organisation, with so harmonious an intermingling of theory and practice. The gardener's calling is thoroughly practical, but theoretical instruction cannot be left in the background. In our school only the afternoon hours belong to scientific exposition, the whole morning is devoted to practical work. This is more necessary, as most ladies come to us without the slightest preliminary knowledge, and an obligatory previous apprenticeship was part of our ideal scheme. It is no slight task for a head-gardener to overlook and occupy in the garden fifty to sixty ladies, many without former training. A suitable organisation, formed in the course of years, considerably lightens this task, and the number of students in the

gardens might be doubled without causing Herr Cornelius (our present head-gardener) much more trouble. Each lady learns to begin and finish her task without help; second year students are allowed partly to arrange their own work for each season, and are responsible for their management of it.

The ten-acre garden is not sufficient to employ the many students, although all the work is done by the ladies; more ground has been added, and, in addition, each class undertakes to keep in order one or two private gardens in the colony.

What becomes of all the students after training? Do they find really satisfactory posts? Up till now the situations offered cannot be filled, there not being sufficient candidates. The great varieties in the exercise of this calling, which in my opinion are not nearly exhausted, promise to all women, giving themselves to it, a suitable and pleasant occupation.

All nerve and lung sanatoria, as well as Nature Cure establishments, on whose patients garden work exercises such a beneficial effect, all house-keeping schools, kindergarten, benevolent institutions and orphanages will, it is to be hoped, in a few years, consider the appointment of a trained lady gardener a matter of course. Then come posts in private gardens, in town or country, nursery gardens, soon it is to be hoped school gardens, and all new schools of horticulture.

A glance at our statistics shows that proportionately few scholars of the two years' course undergo the examination, and later take situations. This is explained by the different scholars who come here, and who may be divided into three classes:—

1. Those who actually prepare for a profession.
2. So-called "hospitantinnen," mostly ailing ladies, ordered by a doctor work in the open air.
3. Young girls between sixteen and eighteen years of age, who in healthy open-air work seek relaxation after school time, and a substitute for the usual year in a boarding-school. This state of affairs is not likely to last much longer. New institutions will branch off; some, perhaps, only for delicate women, others reserved for young girls.

The school was from October 1, 1894, to April 1, 1904, attended by

Two years' scholars	114
One year scholars	31
Scholars less than a year	33
Special students	54
Total	232
April 1, 1904. Scholars received	13
April 1, 1904. Special scholars received	7
May, 1904. Special scholars received	2
	254

Till April 1, 1904, course completed by 77 scholars. Of those

In situations	38
Occupied at home	18
Self-supporting on their own account	9
Married	4
Studying botany and chemistry	2
Occupation and residence unknown	6
Total	77
In the school	37
Total	114

There remain in the school 37 scholars + 13 = 50 + 9 special students.

NATIONALITIES

German	218
Dutch	8
Norwegian	4
Italian	1
Bulgarian	1
Russian	14
Austrian	5
American	1
Swiss	1
Roumanian	1
Total	254

For five years our horticultural school has given a course for teachers, which is held in two divisions of fourteen days, one in spring, the other in August. A quite special programme is sketched out for it, and everything

necessary for regulating a school garden is taught to teachers in the shortest possible way. Teachers must carry out all the tasks given, by themselves. Twenty-five teachers have taken advantage of this course, four of these from Königsberg, in East Prussia.

THE FOLLOWING EXTRACTS FROM THE PROSPECTUS OF THE MARIENFELDE SCHOOL
SHOW ITS PRESENT DEVELOPMENT

(Formerly Friedenau, near Berlin)

OBJECT OF THE INSTITUTION

The intention of the School of Pomology and Horticulture is, by theoretical instruction and practical work, to fit women and girls of good education to take posts as professional gardeners, or to turn their acquired knowledge into money by the cultivation of their own ground. Above all, they learn that intelligent cultivation of the soil brings better crops and produce, and with better sale a higher value to the ground, and that all the necessary work can be carried on with success by women. Those scholars who wish to qualify as gardeners must go through a two years' course. At the expiry of this an examination is held, which confers a leaving certificate on the successful candidates. Those who have not attended the course regularly or have not accomplished the desired quantity of practical or theoretical work, or who do not wish to undergo the examination, as well as those who, after a one year's course, leave the institution, receive, if they wish it, a certificate of attendance at the school.

A.—COURSE FOR SCHOLARS

The course is for two years, and pupils are admitted at the beginning of April and October of each year. The theoretical instruction embraces these branches:—

1. *Pomology*.—Planting, cultivation, care of fruit-trees and berry bushes, improvement, pruning, knowledge of species, preservation and sale of fruit, forcing under glass, pot fruit culture.

2. *Viticulture*.—Planting and training of the vine.

3. *Cultivation of vegetables* on waste land, sale and preserving, hot-beds.

4. *Flower culture*.—Special attention given to the rose (propagation and improvement).

5. *Arboriculture*.—Cultivation, increase and description of the chief kinds of woods with information of their decorative value for landscape gardening.

6. *Landscape gardening and design*.—Sketches and plans of gardens and pleasure-grounds.

7. *Land surveying and levelling*.

8. *Lessons in soils and manures*.

9. *Botany, anatomy, physiology*.—Systems, morphology and geography of plants, diseases of plants.

10. *Chemistry*.—The most important constituents of organic and inorganic chemistry, and the most important minerals for plants.

11. *Zoology*.—Animals hurtful or beneficial to pomology and horticulture.

12. *Geometry*.

13. *Binding, tying*.

14. *Bee-rearing*.

15. The most important and practical legal knowledge.

16. *Book-keeping* and correspondence.

17. *Instruction* in management.

The practical work is carried on under the guidance and supervision of a head-gardener, which work must be done unconditionally according to the arrangement of the head or his substitute: Work begins in summer at seven o'clock, in winter at eight.

The plan of work, containing all details, is settled at the beginning of every session. Holidays of three weeks at Christmas, and of fourteen days in summer. The students must leave the institution during the Christmas holidays, owing to the necessary yearly repairs. Permission to remain is only given in urgent cases. Irregular attendance at the institution is a cause

of dismissal before the end of the course. The course ends with the examination.

Bee-rearing is practically undertaken. Those ladies interested in poultry-breeding get the opportunity to acquire the rudiments of this knowledge.

CONDITIONS OF ADMISSION

Necessary conditions of admission are a healthy body fit for the work, and education in the first class of a secondary girls' school. To this must be added a short account of one's life. Minors must have the written consent of their father, whose agreement to bear all the expenses of attending the school must be given.

DRESS

For practical work a special dress is prescribed: reform-dress of coarse woollen stuff (linen in summer) and an apron. In the wet season of the year wooden shoes must be worn. Students provide at their own cost: garden knife, grafting and fertilising knife, stock shears, tree saws and pocket scissors. Instruments and the suitable clothing can be purchased after entry into the institution, as there is no variation in the dress (stuff, colour, and cut). Those scholars received as boarders must bring with them mattress and feather-bed (bedsteads with spiral spring-mattresses are provided) as well as bed-linen, towels, serviettes, spoons, knives and forks. Bedsteads and other large pieces of furniture may not be brought or procured.

Scholars are not accepted under sixteen years.

B.—COURSE FOR SPECIAL STUDENTS

1. For those who, on account of ill-health, want to occupy themselves for a time in the open air. These have only practical work, and do not take part in the theoretical instruction. Admission from April to October, or for a longer or shorter time.

2. Those who wish to take theoretical instruction along with the other. Admission April and October.

C.—SPECIAL COURSE

1. Course for teachers of fourteen days' duration in spring, and the same in autumn.

2. Course for owners of gardens (February-March), lasting four weeks. Care of fruit-trees and pruning.

FEES

Scholars (Course A) whose parents do not reside in the near neighbourhood of Marienfelde must live in the institution, so far as there is room. If all places are filled, other boarding-houses will be recommended. Board in the school (without laundry) amounts to £4 per month, instruction 25s., and are both paid quarterly, the first term beforehand.

The cost of board in other pensions is from £4 10s. to £5 per month, according to size of room.

Monthly fee for Course A (first quarter in advance), £1 5s.; monthly fee for Course B1 (one month payable in advance), £1 15s. monthly fee for Course B2 (a quarter payable in advance), £1 15s.; monthly fee for Course C1 (each division in advance), 10s.; monthly fee for Course C2 (payable in advance), £2.

Scholars who wish to leave the institution before the end of the course must give three months' notice; this can only be done in January and June.

Should a pupil leave for any cause whatever in the middle of a quarter no reduction is made, and board and fees must be paid for the *next* term.

For the six winter months (October to April) 3s. per month for heating, and each session 3s. for use of garden utensils, are levied from each scholar.

It is expected and supposed that each scholar will conduct herself as a lady, in and out of the institution. Unladylike behaviour, as well as contravention of the rules of the house, necessary to the maintenance of discipline, may be punished by dismissal from the school.

Principal and Owner: ELVIRA CASTNER.

Dr. D. S.

POMOLOGICAL AND HORTICULTURAL SCHOOL FOR WOMEN, AT WOLFENBÜTTEL

Conducted by MARTHA BREYMANN

OBJECTS AND INSTRUCTION

The object of the two-years' course is to give the most comprehensive instruction in horticulture, so as to afford ladies the opportunity of fitting themselves for an independent career in husbandry; or by a one year's course to be able to occupy their time usefully and happily in cultivating their own ground. Besides the correct working of the ground, the aim is to teach the pupils to know for themselves the most necessary work and its proper execution, and to turn them out practical gardeners and capable, observant characters.

The forenoon, till the pause for breakfast, is kept exclusively for practical work, which daily amounts to five or six hours. The field of activity is the nine-acre garden of the "Breymann Educational Institute for Young Girls," with pleasure-grounds, greenhouses, forcing-beds, vegetable-fields, nursery, etc. The opportunity to learn bee-culture is also given.

The theoretical instruction serves to explain and so to support the practical work. It comprises:

1. *Botany*.—Plant life.
2. *Elementary chemistry*, for the better understanding of the transformations of matter, instruction in manures, analysis of soils.
3. *Fruit and vegetable culture*.
4. *Flower growing*.
5. *Arboriculture*.
6. *Forcing*.
7. *Zoology* (the foes of plants and their destruction).
8. *Garden design*.

Theoretical instruction is given every afternoon from one to two hours. Thursday afternoons are at the students' disposal. Holidays are in winter from the 15th of December till the 15th of January. During this time the institution is closed. As an exception, if specially desired, leave is granted for a fortnight at whichever date suits best, viz., 1st to 15th April, July, or October; in those weeks theoretical instruction is not given.

Stipulations.—1, Good education; 2, excellent health; 3, obedience to the regulations of the house. Order and punctuality are expected. Notice must be given of absence from a meal, or after ten o'clock at night. There are three principal meals, and early and afternoon coffee. The food is simple, but carefully prepared.

The fees amount to 250 marks per quarter, to be paid quarterly in advance. The institution can only be left after a quarter's notice. For heating and lighting the bedroom (if desired) an extra charge is made. Exceptional use, such as a fire the whole day, or light after ten p.m., is naturally more. A heated general room for study is at every one's disposal. On leaving and at Christmas 3s. for attendance is added to the account.

Each student must bring: Feather-bed (not bedstead or mattress), bed-cover, sheets, towels, serviettes, and table-cover. An exception is made for foreigners, to whom these articles are lent for a fee. Any further information will be readily given. Letters of recommendation can be shown.

THE MARIENBURG SCHOOL FOR LADY GARDENERS

Station: LEUTESDORF

Pier: ANDERNACH (with ferry connection to Leutesdorf)

COURSE FOR EDUCATED WOMEN IN HORTICULTURE AND FORCING

Marienburg lies close to the Rhine, in Leutesdorf. The larger agricultural property, with ornamental park, fruit and vegetable garden, greenhouses, hot-beds belonging to Neuwied, a neighbouring country residence, serve as the practical field of work for the school. All the labour needed is done by the students. The school is in two buildings, with single- and double-bedded rooms for the reception of twenty ladies. Hot and cold water is laid on, with bath-rooms and central heating. Comfortably furnished sitting-rooms give the opportunity for social intercourse during off-time. This school gives educated girls and women the chance to acquire the requisite practice and knowledge to work a garden correctly and independently.

Practical and theoretical instruction are both given, but the *greater value* is placed on thoroughly comprehensive *practical knowledge*.

I.—TWO YEARS' COURSE

For those ladies who wish to fit themselves for a gardener's calling, and later take posts as gardeners on estates, in villa gardens, sanatoria, house-keeping schools, educational institutions, etc. (2,000 have taken situations with salary, six without).

A.—PRACTICAL INSTRUCTION

Pomology: Hybridisation, care, forcing, sale. Vegetable culture: Open-air and forcing, sale. Floriculture: Hardy and hot-house flowers, balcony and room decoration, arranging, making wreaths. Commercial gardening: Sale and despatch, with practical book-keeping. Landscape gardening: Designing, laying out and care of gardens. Basket weaving, joinery, glazing.

B.—THEORETICAL INSTRUCTION

Pomology: Breeding, pruning, forcing, knowledge of species. Vegetable culture and forcing. Flower propagation and hot-houses, forcing. Forestry: Description and crossing of the most important trees for landscape gardening. Landscape gardening. Legal knowledge. Book-keeping and correspondence. Botany: Morphology, anatomy, physiology, systems, geography of plants, plant diseases. Zoology: Animals useful and hurtful to horticulture. Chemistry: Soils and manures. Geometry and surveying.

Theoretical instruction is given by a head-gardener, a highly-educated scientific master, and by the principal herself. The head-gardener instructs in the practical department with the help of a basket-maker and joiner for those branches. Admission to the course is in the beginning of April and October.

As a means of judging the proficiency of our scholars a small exhibition of garden products, and sketches and designs of gardens, is held yearly in the institution, about the end of September or beginning of October. An inspection of the exhibition, and also of the garden, is willingly permitted to anyone interested.

At the close of the second year the scholars receive a certificate after examination.

CONDITIONS OF ADMISSION

Scholars must have passed through the first class in a secondary girls' school, and have a healthy, robust constitution. Age not over thirty. A medical certificate and a short autobiography must be added to the report.

A special dress is required for practical work. This, as well as garden shears and saws, is provided at the student's cost; all other implements belong to the school, and are used without payment. From 1st to 15th every quarter there is no theoretical instruction. Extra leave, if wanted, should be asked for then. Classes are stopped for four weeks at Christmas, and scholars can only remain in the institution at this time by special permission.

FEES

For board and lodging, exclusive of heating and laundry, in double-bedded room, £4 10s.; single-bedded room, £5 monthly. For instruction £1 monthly is charged. Fees are to be paid quarterly in advance (from £16 10s. to £18.) In the two winter quarters 15s. extra for heating are charged. Arrears are not allowed. Anyone wishing to leave before the end of the course must give three months' notice, or pay a quarter's fees; such notice will only be received at the beginning of each quarter.

The following articles are to be brought:—Table silver and cutlery, fruit-knife, serviette-ring (all plainly marked), serviettes, towels, pillows, sheets, and soiled linen-bag. Bedstead and mattress are supplied.

II.—ONE YEAR'S COURSE

For those ladies who wish to work their own gardens, and for young girls who, after the strain of school life, seek re-invigoration in healthy, refreshing activity for body and mind. These receive the same instruction as for the first year of the regular course, but no certificate. In other respects the conditions of the full course hold good. Ladies who already have elementary knowledge, and only wish to take the second year's course, must undergo a preliminary examination.

III.—SPECIAL STUDENTS

Can enter for a shorter time, to try if the calling of gardener suits them, so that later they can take a course of one or two years. This class, as well

as those who want to improve their health by occupation in the open air, only take part in practical instruction. They will find near the Leutesdorf school a good boarding-house, where the charge is 30s. monthly. Entry on the 1st or 15th of every month.

Scholars under eighteen years of age are in the special charge of the principal, and without her permission may not leave the institution. Practical instruction is divided into four hours in the morning and two in the afternoon. Theoretical instruction is given from one to two hours daily in the afternoon. Scholars are free on Saturday afternoon and Sunday. From time to time excursions with the students are undertaken to inspect the surrounding country, gardens and pleasure-grounds, and nurseries.

Punctuality and order are required of every student. The rules of the school and house must be rigidly observed.

MARIE C. VORWERK, ELSBETH VON ZIBZEVIK (*Owners and Principals*)

RULES FOR THE HOUSE

1. Scholars must appear punctually at meals; exceptions are to be notified to the housekeeper. In case of illness only will meals be served in the bedroom. Dress must be changed for dinner and supper.

2. Before first breakfast scholars must put away anything lying about their rooms, make beds, and open the windows.

3. Paper, flowers, hair, or other insoluble articles may not be put in the basin.

4. The scholars must clean clothes and shoes, except their working boots.

5. Servants and assistants are not to be asked for any extra service tips and presents are forbidden; at Christmas and on leaving every scholar puts something into a money-box for the servants.

6. Rooms and passages may not be entered with garden boots.

7. Boxes and soiled linen are to be kept on the ground floor.

8. After dinner till 2 o'clock and after 10 p.m. perfect quiet must prevail. Lamps in the school-and business-rooms, as well as in the corridor, are put out at 10 p.m.

9. Nails may not be knocked in the walls of the rooms without permission; it is also forbidden to fasten articles on the walls with ordinary or drawing-pins.

10. Any damage to the house or furniture must be pointed out at once to the principals, and made good.

11. All complaints are to be made to the principals.

SCHOOL REGULATIONS

1. The scholars must attend theoretical and practical instruction regularly; leave of absence only from the principals. Whoever misses more than six weeks' instruction in one session cannot be admitted to the examination.

2. Practical work occupies six hours, theoretical from one to two hours daily. Work begins in summer at 7 o'clock, in winter at 8 o'clock in the morning. Saturday afternoon and Sunday are holidays.

3. Scholars whose week it is to be in management, or at work in the hot-houses, must remain in the establishment, even in their free time, and look after their departments.

4. Only half of the scholars at most can get leave in the first fortnight of a quarter. Permission should therefore be sought in good time. Those employed in the hot-houses or as overseers can obtain leave in case of urgency only, and must put in a substitute during their absence.

5. Permission for a week's leave is to be obtained at latest eight days in advance, for one or several days the day before. Only urgent cases permit an exception.

To be provided:—1 reform winter dress with bloomers; 2 reform summer dresses with 2 bloomers; 2 blue linen aprons; 1 cap, and 2 linen hats; 1 pair strong boots and gaiters; some books, drawing materials, grafting-saw, tree-shears, garden-knife, grafting and fertilising knives, yard-stick, materials for basket-making.

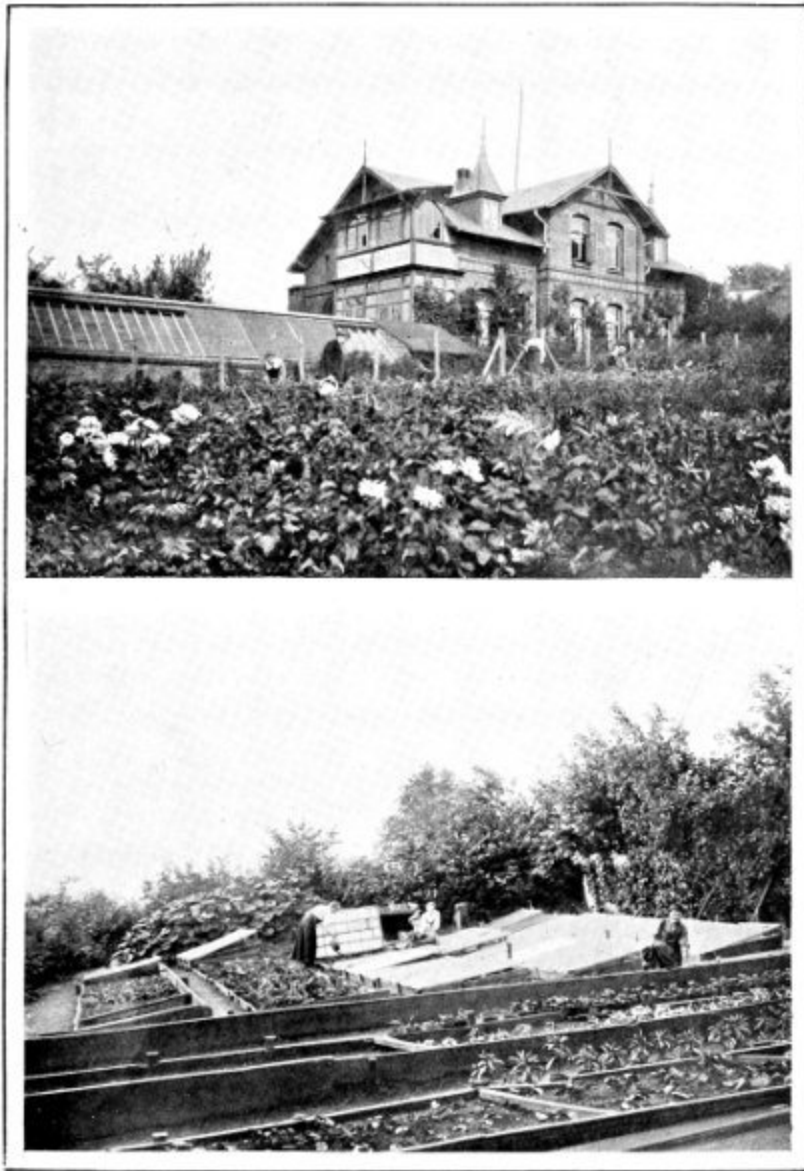
Anyone maliciously violating the regulations of the house or school is dismissed.

“I willingly comply with the request to contribute a short report of my work in connection with the above institution, which I founded in 1901.

“It is beautifully situated on an elevation gently sloping south towards Kiel Harbour, near the Kaiser Wilhelm Canal. It contains two hot-houses, eighty forcing frames, about 500 fruit trees of all sorts and kinds, a grand assortment of shrubs, ornamental trees and conifers. Two alleys of high-grown pear trees (interlaced) in the shape of a large cross form the centre of the garden.

“I opened the school with five pupils; at present there are seventeen. The course of training is two years for those who wish to take up gardening as a profession, and one year for amateurs.

“The study is twofold: Practical and theoretical. Our practical course comprises:—
Fruit growing: How to grow best dessert fruit on large and small farm trees. Harvesting the fruit. Storing and packing it. There are about forty different kinds of apples, thirty-five pear and fifteen plum trees. Preserving various fruits in various ways. Then there is the annual grafting of wild trees, the culture of farm trees, of high standard and half-high standards. We also grow apples, pears, and peaches in pots and tubs. Vegetable growing includes forcing in the hot-house and frames, as well as cultivation of all suitable kinds in the open field. I teach preserving and wintering of vegetables. In flower growing we specially take those pot plants that sell well, as: *Chrysanthemum indicum*, *Primula obconica* and *chinensis*, cyclamen, begonias, amaryllis, hyacinths, tulips, cineraria, etc. But of course we also cultivate exotics.



SCHOOL FOR LADY GARDENERS, HOLTENAU, NEAR KIEL
SCHLESWIG-HOLSTEIN.

“In the open we cultivate the favourite spring and summer flowers, annual and perennial roses, etc. Thus we obtain abundant material for cut flowers, which serve for teaching the pupils to make up bouquets, table decorations, etc. We use the garden stuff first of all for our own household, but the remainder—by far the larger part—is sold in Kiel, thus teaching the pupils the actual market value of their materials.

“At the Schleswig-Holstein Horticultural Exhibition in 1906 our school gained four first and three second prizes; several diplomas; and the silver State medal for fruit-packing.

“For landscape gardening we have small plantations, where every year we train new trees by means of slips, suckers, shoots, and heaping up. We have had orders to plan and lay out several gardens in Kiel and Holtenau.

“Now and then visits are arranged to the various nurseries, market gardens, private gardens of importance, or the Botanical Gardens at Kiel, so as to give the pupils opportunity of seeing other plants and other ways of arranging and growing.

“Our scientific course comprises:—Botany, chemistry, mineralogy (taught by a University man), drawing (by the municipal head-gardener). Drawing includes: Geometrical problems, drawing plans of small and large gardens, then designs of pupils’ own making; correct calculation of expenses, and working plans in detail.

“Land surveying and levelling are first taught theoretically, then practically. Much importance is attached to a thoroughly accurate drawing of plans, as it is excellent practice for the eye for all things pertaining to gardening. In regard to plan drawing we have had many successes. At the before-mentioned Schleswig-Holstein Horticultural Show in Kiel, September, 1906, five pupils exhibited their own designs in garden plans, with schemes for working them, and bill of costs attached, which gained distinctions; two pupils received the *Ehrenpreis*, given by H.H. Duchess Caroline Mathilde of Schleswig-Holstein-Glücksburg. At the exhibition in Bremen in 1907 two pupils earned honourable mention by the Horticultural Society.

“Then we have lessons on soil, manure, zoology, arboriculture, and how to lay out plantations. Our practical subjects are thoroughly entered into, and treated also from their scientific basis.

“As a test of the work done by the pupils there is an annual exhibition of garden produce of all kinds, and of the pupils’ drawings, in the hall of the Institution. Friends and experts are invited. We have had cheering visits of inspection from the Kieler Horticultural Club and the Frauenverein.

“After the two years’ learning is completed the pupils receive a testimonial as to their qualifications and achievements. But no examination is held, as I hold that not being held by qualified Government examiners they are practically useless. My aim is to give my pupils a thoroughly sound practical education.

“There is a great demand for well trained lady gardeners, and one who is skillful commands a good social position. I have so many offers for trained pupils that the demand far overreaches the supply. Salaries commence with about £30, including food, and treatment as a member of the family. Many of my pupils are filling situations on estates, schools for economy, sanatoria, private gardens, etc. Two former pupils are now teachers of horticulture at the Household School for Women at Reifenstein, near Leinefelde (Prov. Saxony), and at Maidburg, near Kempen (Prov. Posen). One pupil has been gardener-in-chief at the large training home for girls near Berlin; then she went to America, where she is manager of a large private garden in New York. Another pupil occupied the post as paid assistant at an extensive vegetable growing plantation near Kiel, and was able to work as fast and satisfactorily as the male assistants. Other pupils again, including some Danes and Norwegians, cultivate their own gardens or take situations in their own country. Still another pupil founded, about two years ago, a Horticultural School at Wolfenbüttel (Brunswick), following the same principles as taught at my school.

“There is no difficulty in finding really good situations for skilful workers, and gardening has proved a blessing to many of our sex.

“HOLTENAU, *September, 1907.*”

The above account gives such a graphic description that I need only add the terms. A thorough education and good health are required of those applying for vacancies. The terms are:—50 marks per quarter. Pension for students the first year, 75 marks per month; pension for students the second year, 70 marks per month. This must be paid three months in advance.

AUGUSTE-FÖRSTER INSTITUTION, OBERZWEHREN (KREIS CASSEL)

The Kassel Society for the Education of Women has provided in the Auguste-Förster Institute a country school where young girls and women may obtain a thorough training in three different departments: viz., horticulture, domestic economy, and poultry and pig-rearing, etc. The instruction, combining theoretical information and practical work, is given by accomplished female teachers. Six to eight scholars can be taken for each department.

The duration and direction of the course are regulated by the result aimed at. The time of study in each department lasts a year; scholars, who intend to make use of their training in their own home, can take a half-year's course.

Students are not permitted to take the different courses concurrently. Those who successfully pass an examination, held at the end of the year's course, receive a certificate of proficiency. These certificates are of special importance to those who wish to earn their living in the gardener's calling, or as housekeepers. The year's course and certificate are also valuable to those who become teachers of domestic economy in rural house-keeping schools, as the regulation examination for domestic economy does not include such special country subjects as horticulture, poultry-rearing, etc. For those who have already attended similar institutions, and wish further instruction without intending to make money by it, a shorter course of study, under special conditions, is arranged.

The instruction comprises:—Theoretical instruction in the different branches and conditions of plant-culture. Practical work: Fruit and vegetable culture, raising plants in the open air and under glass, care of

plants in hot-houses and in rooms, care of ornamental grounds, decoration of dwelling-rooms and verandahs with plants and cut-flowers. To those students who intend to become professional gardeners a longer attendance at our establishment is recommended, or a continuance of training in a nursery or private garden; a thorough initiation into the high calling of gardener is not possible in a shorter time. Any who have taken the year's course, and desire more advanced training, can attend the State horticultural institutions as out-students.

The Kassel Chamber of Agriculture has granted the Förster Institution the use of the means of instruction provided in the Oberzwehren Pomological Institute, a remarkably well-conducted establishment.

The Auguste-Förster Institution at the same time aims to attract educated women to settle in the country, by affording them practical guidance in social work. For this object, instruction in handicrafts, knitting, sewing, mending, cutting-out, cooking, washing, and ironing is given (chiefly in winter) to the women, young girls, and children of the surrounding villages. Ladies with good preparatory knowledge are admitted as voluntary helpers, if they intend to devote themselves in earnest to social work in the country, and if there is room in the institution.

HOLLAND

The following notes were sent me by a lady in Holland, and have been kindly put into English by a friend. They describe briefly the school recently opened near The Hague (Station of Rijswyk). The name of the school is "Huis te Lande," and it is built in the style of an English country house. It is managed by Mesdames J. KUYST and C. POMPE.

On a medallion over the entrance the following motto is inscribed. "Think great thoughts, do great deeds." The students are all girls of good position and well educated. They must speak at least three modern languages, and have a good knowledge of botany and geography. Otherwise they could not profit by the course; it is therefore preferable if they have been at a high school. They must have taste for gardening.

A medical certificate is required, showing that they are physically fit for the work. The directors of this school do their best to correct the idea, which many doctors have, that gardening is suitable to invalids. The institution is

not intended as a Sanatorium, and only healthy, active girls are wanted, and those who evince a strong inclination for out-of-door life.

The school is especially intended for the daughters of those who inhabit cottages or villas having small gardens attached. As a rule these gardens leave much to be desired in the way of cultivation. They are too small for a gardener, and are worked by a labourer, who knows but little about the cultivation of flowers. It is hoped that the school training will enable these young ladies to manage and cultivate their home gardens. It is considered, in Holland, that the time for ladies to earn a living by gardening has not yet arrived.

Both practical and theoretical work is taught, but the former is considered the most advantageous. If the students know how to do the work themselves, they can show their workmen. At the same time theory will help them to understand the why and wherefore of operations. On three mornings a week, from 9 to 12, theory is taught. The rest of the time is for practical work. A lecture hall is attached to the school; there is also a special laboratory, which students are only allowed to use under the supervision of those who understand chemistry.

A coffee room is provided for students who live too far away to return home for dinner. There is also a dressing-room, and from here a door opens into the one acre of flower garden and arboretum, which is surrounded by frames and glass-houses.

In the middle of the grounds is a spacious workshop, which can be warmed.

Some of the glass-houses are for flowers, and others for fruit. They contain many pots with small fruit trees, in full fruit, and peach trees. The whole is under good and practical management. Only six students are at present admitted at a time. Terms are 300 guelders a year.

GOVERNMENT WINTER SCHOOL FOR GARDENING (HORTICULTURE)

AALSMEER, BOSKOOP, NAALDWIJK, TIEL

Practical experiments are also carried out during the summer at Aalsmeer.

Age of Admission.—16.

Requirements.—Knowledge of the Dutch language, of arithmetic, geography, rudiments of German and English. Some idea of gardening (to be given verbally).

Fees.—Fl. 10, for two winter terms. Pupils without means can receive free admission from the Minister of the Interior. The fee for the summer term at Aalsmeer is fl. 25.

Implements or tools.—Cost fl. 9 or fl. 10.

The theoretical instruction comprises physics, chemistry, botany and zoology, all branches of horticulture, the Dutch language, arithmetic, book-keeping, and, if desired, English and German commercial correspondence.

Drawing for the laying out of gardens.

Practical instruction comprises:—Different kinds of work in the proof gardens, with Government subsidy; experiments in cultivation, manuring and grafting.

During the second year this work is also carried out in the gardens of other horticulturists and gardeners.

Diploma can be obtained after two years.

Course of instruction for pruning.—There is a course of instruction for pruning at Tiel, for a fee of fl. 2.50.

Temporary local winter terms are given by Government teachers in gardening with the aim of preparing the lady teachers of the temporary winter terms.

The course extends over three years, during which time a hundred lessons per year are given.

The diploma obtainable is the Degree of Primary Instruction for Horticulture, and the course is open only to those who hold the degree as teacher of Primary Instruction. There is no fee.

Temporary winter terms are arranged by gardening societies, with Government subsidies. There is no fee, and at the conclusion of the term of instruction a certificate is granted.

Requirements.—Instruction received at the High School, or diploma for Secondary Primary Instruction, knowledge of foreign languages.

Fees.—For the theory lessons, one hour a week, fl. 30 for three months; for the theory lessons, two hours a week, fl. 50 for three months; for the theory lessons, three hours a week, fl. 60 for three months. The course extends over one and a half to two years.

There is also a similar course of study at the Gröningen Academy.

Other Schools of Gardening in Holland are:—

The Sempercrescens at Naarden, Bussum. (Fees, fl. 300, implements and tools, fl. 10.)

Flora Horticultural School at Watergraafsmeer (Middenweg, 89). Age of admission, 14. Fees, fl. 250; implements and tools, fl. 20 knowledge of the Dutch language, writing, arithmetic, geography, are necessary.

A course of study is given by Mr. van der Wissel, Huize Soltane, Epe.

ITALY

WOMEN'S INSTITUTE OF AGRICULTURE AND DOMESTIC ECONOMY,

CASCINE, FLORENCE, 1907

This institute was founded on the initiative of several ladies, with the object of instructing girls in the different branches of agriculture and domestic economy, by giving them theoretical and practical ideas, which will enable them to employ their valuable energy in the domain of agriculture and good house-keeping.

The school opens its classes in November. The training lasts six months.

The classrooms are in the left wing of the grand ducal palace, on the Piazzole del Re, in the public park of the Cascine, very near the station of the electric tramway, which places the school within twenty minutes from the centre of the town.

The close vicinity of the horticultural establishment of the Royal School of Pomology and Horticulture, possessing gardens, hot-houses, orchards, vineyards, and kitchen gardens covering more than 50 acres of ground, together with the splendid position of the institute in the middle of the Cascine Park, combine to offer the best possible conditions for the practical teaching of agriculture, horticulture, dairy work, bee-keeping, etc.

The curriculum includes agriculture, house-keeping, hygiene, chemistry, book-keeping, cooking.

The programme of each class is as follows:—

Agriculture.—Elements of morphology or vegetable physiology. Climatic conditions. Elements of agronomy. Cultivation of herbaceous plants. Fruit culture: starting an orchard, and cultivation of pear, apple, peach, cherry, plum and apricot trees; storing and drying fruit; jam and preserve making. Vine and olive tree culture. Horticulture: laying out a small kitchen garden, and the cultivation of the principal kinds and varieties of vegetables. Gardening: flowers and ornamental foliage plants, trees and shrubs; plants for the house, flower cutting and arranging.

House-keeping.—I merely mention here those points which are connected with horticulture, such as:—

The cellar.—Storage of wine and oil.

Fruit store-room.—Heating and lighting apparatus; how to use and clean them.

Hygiene.—Open air and close air, meteorological factors.

Water.—Its qualities.

Soil.—Its fertilisation and sanitation.

Chemistry.—Bodies, simple and composed. The soil in its relation to plant life—artificial manuring; air, light, heat, water, drink, food, seasonings. Practical experiments.

Book-keeping.—Domestic and patrimonial administrations; compilation of inventories; current accounts; buying and selling; State funds; plain book-keeping and other methods; book-keeping for business on a small

scale; auxiliary books; special accounts and their books; registry and balance account; exercises in domestic and agricultural book-keeping.

Cooking.—The lessons will be as much as possible demonstrative, and accompanied by manual practice of the more important operations of agriculture (grafting, pruning, sowing, etc.), of agricultural industries, and also of house-keeping and cooking. Holiday re-unions will be held under the supervision of the patronesses of the institute, and instructive excursions will be made.

Admission.—For the theoretical and practical classes the girls must be at least sixteen years old.

A formal request on official stamped paper must be presented, together with the legalised birth certificate and documents proving that students have obtained—either at private or public schools—the necessary education in all ordinary knowledge. There must also be a certificate of good health and of vaccination.

The admission fee is 10 lire (8s.), besides the payment of 40 lire (32s.), to attend the lessons. At the end of six months, after a theoretical and practical examination, a certificate of steady attendance and progress will be given.

Non-residents can inquire about good and inexpensive lodgings in Florence from the secretary of the committee of patronesses.

There will also be a few places for non-students who wish to attend some of the lectures. They must address their request to the director of the institute and pay 30 lire (20s.) for each course of lectures they wish to attend.

Arrangements will be made for non-students attending several classes.



STUDENTS AT HASTUM SCHOOL, NORWAY.

NORWAY

The Norwegian agricultural high school has a special class for horticulture, and here ladies are given the highest education. After two years' study they obtain the title of "Cand-horticulture," which means a certificated gardener.

Before being admitted, it is necessary to have done practical work in a garden for two years, and to have passed an examination in a smaller school of horticulture. The three following are the lower schools:—

BERLY school for lady gardeners was established in 1901. It is supported by Government, and has a grant of about 4,000 kroner a year. The principal is Mr. M. NILSEN, and there is a teacher besides. Only ten students are admitted each year, and up to now seventy young ladies have been educated here.

VAARTUM school for lady gardeners, at Stenlyær, is also supported by Government, with a grant of 4,000 kroner a year. The principal is Mr. SOLSTAEL, and there is one teacher besides. Ten students are admitted yearly. Ladies are trained here for work in their own gardens, as well as for other employment.

HASTUM school for lady gardeners, at Kristiania, was established in 1906. This school is inspected by Government, but does not receive a grant. The principals are the Misses FRÖLICH. Sixteen students are admitted yearly.

These schools all have practical and theoretical courses which last seven months. Hastum school also admits students for six-week courses. Instruction is given in the cultivation of fruit, vegetables, and flowers. Fruit-preserving is also taught. Training plants, forcing, frame and hot-bed culture, chemistry, botany, agriculture, and the diseases of plants are taught by lecture. At the same time students have to practise out-of-doors what they have learnt theoretically.

From the Norwegian horticultural high school only one lady has up to now passed out, but about 140 ladies in all have been through the lower schools. Several of these have bought land to work on themselves, others have taken posts in private gardens or in market gardens. They usually receive a salary of 25–30 kr. a month, besides a house and food. Others work in their own home gardens. Vegetables and fruit grow well, the flavour of them being far better than those grown further south.

I am told upon good authority that Norwegian women realise more and more that a great work lies before them out-of-doors, and they begin to prefer contact with Nature to sedentary work in offices.

SWEDEN

Through the kindness of a friend I am able to give a translation of the prospectus of the

GARDENING SCHOOL AT AGDATORP,

a practical school for lady gardeners.

The summer term begins on April 1st. The school, which is helped by the State and “Blekinge hushållningssällskap,” takes students of all classes

of society.



STUDENTS AT WORK AT THE AGDATORP SCHOOL OF GARDENING, SWEDEN.

The chief object of the school is to spread a knowledge of gardening, and interest in it, amongst the daughters of the country population.

There are two different divisions. A student of Division I. has to pay 100 kr. (£5 10s.) at the commencement of the term, and 40 kr. (£2 5s.) at the beginning of each month for board and lodging.

Students of Division II. pay 50 kr. at the beginning of the term, and 2.20 kr. on the 1st of each month for board and lodging.

The hours of instruction in Division I. are fewer, though the fees are higher. The instruction for both is similar. Practical and theoretical instruction is given in the following subjects:—Culture of fruit, vegetables, flowers, hot-house and frame work, raising seeds, treatment of soil and manure, botany.

Special importance is attached to the use of garden produce in the house, preserving, and making fruit wines.

A course of lessons in plain cookery (free of charge) is arranged for those students who wish to take it. From July 1st to Oct. 1st.

The conditions for entering the school are:—Pupils to be at least seventeen years of age, and physically strong. Application for admission should be accompanied by a doctor's certificate. A certificate from the upper class is also needed from those who come from elementary schools.

Students must have their own bedding, linen, napkins, candles, and soap, and must also provide gardening knives and scissors. The latter can best be procured after they enter the school.

Students are taken for part of the course, after the term has begun, for 60 kr. per month. Should a student for some reason be forced to leave, before her time is up, no money is returned.

In 1907 the State gave one place free to daughters of farmers. "Blekinge hushållningssällskap" gave three places to daughters of farmers from Blekinge.

The school is situated at Agdatorp farm, in Nettraby, about 12 km. from Karlskrona. The term commences on April 1st and lasts until October 31st. Applications must be sent in before March 15th to Fr. J. SCHMIDT.

Since the college was founded 79 students have passed out. Of this number only eight have taken posts. The usual salary is from 15 kr. per month, board and lodging being provided. Some of the students have completed their training at other colleges, others pursue the interest of gardening in their own homes. It is clear that the salary mentioned is that of an under gardener, for the salary of a head gardener in Sweden varies from 300 kr. to 800 kr., with board and lodging; it is also usual to give a percentage upon the sales in the garden. Most of the women who study for gardening in Sweden do so in order to direct their own gardens. Many go through a course of training in a market garden, and some have been educated in colleges in other countries.

Postal Address: Lännäs. *Railway Stations:* Kilsmo, Sköllersta, and Wingaker. *Steamboat Pier:* Hampetorp. *Steamer:* "Gustav Lagerbjelde."

Espenäs is beautifully situated close to the Lake "Store Hjälmarén."

The school was founded in 1899. The term commences on April 15th and ends on October 15th. The teaching is both practical and theoretical.

The subjects taught are: General gardening, kitchen gardening, flowers for beds and borders; the care of hot-houses and frames, glazing, painting, making mats, preparation of frames, sowing, watering, etc. The cultivation of delicate vegetables and fruits such as asparagus, tomatoes, artichokes, cucumbers, melons and strawberries; climbing plants, grapes, and roses; fruit trees and berries; preparation of soil and manure; tying up plants; book-keeping as applied to gardening; the Weck method of preserving vegetables, fruit and berries; making fruit syrups, jellies, marmalade, fruit wines and pickles; drying fruit, berries, and vegetables. Optional—looking after poultry.

The conditions for entering the school are, that it is necessary to have passed through an elementary school, or to have had similar education. A testimonial from a clergyman or a doctor is required, as well as a photograph of the proposed student.

Payment in advance upon April 15th, 125 kr. (£7) for the whole term. For board and lodgings, all found, 65 kr. per month, to be paid on April 15th and July 15th. Soap, candles, linen, and bedding are provided by the students. A piano is in the house. There are good roads for cycling, and excellent bathing. Apply to STINA SWARTLING, *née* VON HOFSTEN.

The number of students who have passed out since the school was founded is over 100. Most of the students, upon the termination of their training, return to their homes, others take posts as gardeners, and their salaries amount usually to from 20 kr. to 40 kr. per month, board and lodging being provided for them.

SWITZERLAND

The following account of the only school for lady gardeners in the German-speaking part of Switzerland, has been very kindly sent to me by

Madame Chaponniere, President de l'Alliance Nationale de Sociétés Féminines Suisses. I give the report in her words:—

ÉCOLE PROFESSIONNELLE D'HORTICULTURE POUR LES FEMMES

À NIEDER-LENZ, CANTON D'ARGOVIE, SUISSE

La seule école professionnelle d'horticulture pour les femmes, existant actuellement en Suisse, est celle de Nieder-Lenz fondée en 1906, par la "Société d'Utilité Publique des Femmes Suisses," à Nieder-Lenz, dans un joli domaine, situé sur la ligne de chemin-de-fer du Seethal dans le Canton d'Argovie.

Le programme de l'école comprend différentes catégories de cours:—

1. Des cours de deux années destinés aux femmes désirant faire de l'horticulture leur profession.
2. Des cours d'une année destinés aux maîtresses d'écoles ménagères ou primaires.



STUDENTS AT WORK AT THE ESPENÄS SCHOOL FOR LADY GARDENERS SWEDEN.

3. Des cours d'une année, pour les personnes qui, par raison de santé ou autre, désirent connaître la culture des fruits, et du jardin.

4. Des cours spéciaux, d'une durée de six mois, sur les différentes branches du jardinage ou de la culture des arbres fruitiers. Le cours de deux années est formé de deux parties; une partie pratique et une partie théorique.

La partie pratique comprend:—

(a) La culture des légumes ainsi que leur emploi, leur conservation, et éventuellement la manière de les cuire et de les apprêter.

(b) Culture des fleurs en plein air et en serre, fleurs d'appartement, décoration, préparation de bouquets.

(c) Etablissement de jardins potagers.

(d) Culture des arbres fruitiers, taille, greffe, récolte des fruits, emballage, conserves, etc.

(e) Culture des baies (fraises, framboises, groseilles, myrtilles).

(f) Elevage de la volaille, des lapins, des abeilles.

La partie théorique comprend des leçons de botanique, de pomologie, de zoologie, de chimie agricole, de géométrie, de dessin, la tenue de livres et quelques notions de droit usuel.

L'école d'horticulture s'est ouverte le 1er avril 1906, avec huit élèves pour le cours complet de deux années et sept élèves pour le cours de six mois. Dans le courant de l'année huit autres élèves sont entrées pour un nouveau cours de deux ans. La majorité des élèves viennent de la Suisse, mais l'Autriche, Hongrie et la Russie en ont fourni aussi quelques-unes. Les conditions d'admission sont:—Avoir fréquenté une école secondaire ou une école analogue, être munie d'un certificat médical de bonne santé et d'un acte d'origine, être âgée de dix-sept ans accomplis.

Pour les cours d'une ou de deux années, le prix annuel de la pension et de l'enseignement est de francs 600 (£24) payables par trimestre à l'avance.

Pour les cours d'une année, sans but professionnel, francs 60 par mois, ainsi que pour les cours spéciaux de six mois. Les étrangers paient en outre francs 300 par an pour l'enseignement.

A ces différents cours, il faut ajouter encore des cours de culture de quelques semaines, données au printemps, en été, en automne, et destinées aux jeunes campagnardes des environs.

L'école est sous la surveillance d'une Commission de cinq membres, dont la présidente est Madame Coradi-Stahl (Wiedingstrasse, 56, Zurich), inspectrice fédérale des écoles ménagères, la secrétaire Madame Prof. Stocker-Caviezel (Küsnacht bei Zürich). La directrice de l'école est Madame Prof. Joss-Roser.

Les dons reçus en vue de l'installation ont atteint la somme de francs 18,959.36 et les dépenses pour l'installation se sont élevées à francs 14,298.76. Les recettes régulières pour cette première année se montent à francs 9,897.80, tandis que les dépenses, loger de la propriété, etc., font un total de francs 12,883.28, laissant ainsi un découvert de francs 2,985.48. Il y

a lieu d'espérer qu'avec l'extension prévue de l'école et des sources de revenus nouvelles, ce déficit ne se renouvellera pas.

CHAPTER XVI

SCHOOLS AND COLLEGES IN AMERICA

THE UNITED STATES

The conditions under which women work in America are very unlike those that exist in England. Schools and colleges are founded upon a different basis; therefore work done in America cannot be strictly compared to that done in England.

Each of the forty-five states in the United States has a college of agriculture. These institutions are supported by public funds. They are open to men and women alike, and both work together. That is to say, these institutions are co-educational. These colleges cover the general field of agriculture, and, in some, horticultural work is especially well developed. Women in these institutions may take a variety of subjects, or they may specialise in horticulture, dairying, home economics, Nature-study.

A number of Government research posts in natural history are held by women. They are also admitted to the instructional bodies of several American Co-educational Colleges. A considerable number of the Doctors' theses in botany from the University of Chicago are by women, and can be seen in the *Botanical Gazette*. A notable thesis of late years is that by Mrs. Clements, of the University of Nebraska.

Popular attention is turned increasingly to outdoor life and to living on the land, and the demand for horticultural schools will continue and ensure their establishment.

An expert tells me there is a wide field for women in horticulture in America. Positions as teachers, lecturers, gardeners in private gardens, consulting gardeners in suburban districts, market gardeners, fruit and nut growers, poultry and bee keepers are open. The only difficulty is that the right people are not at hand to fill them. The oversight of school gardens and of vacant lot cultivation in the great cities are openings appealing especially to women. Already there are some successful landscape gardeners. Miss Beatrice Jones, of New York City, and Miss Elizabeth Lee, of Philadelphia, are well known in this branch.

HORTICULTURE

The equipment is divided into two parts—that which is associated with the classroom and laboratories in the second and basement floors of the main agricultural building, and that connected with the forcing-houses and grounds surrounding them.

1. *Class rooms and laboratories.*—The teaching activities are centred mainly in the headquarters of the department, located on the second floor of the main building in the agricultural compound. On this floor are a commodious lecture room with a seating capacity for 100 students, a recitation-room for 35 students, a laboratory for instruction in practical and systematic pomology. The laboratory will accommodate 40 students, and is being fitted with suitable apparatus and appliances for the efficient teaching of the practical and laboratory phases of horticultural work. On the same floor is the laboratory for advanced students. This room has space for 20 students, and those who are working in the graduate department or engaged in research courses are provided with suitable appliances for their special needs. The remainder of this floor is devoted to museum purposes, herbarium, seminary-room, and offices for the instructing staff.

In the basement is a laboratory with adjacent store-room for use in connection with applied work in nursery and orchard practice. The capacity of this laboratory is 50 students, so that a beginning class of 100 may be accommodated in two sections. Students in elementary pomology and greenhouse management pursue work in this laboratory.

Forcing-houses, barn, and fruticetum.—The glass structures for the study of forcing crops such as flowers, vegetables, and fruits cover an area of about 6,000 square feet, and are used in connection with nearly all classes, though more especially associated with floriculture and olericulture. One house is assigned to advanced students for the working out of problems on which they are engaged. Another house is given over to the study of the variation of plants and the technique of plant-breeding.

The barn is headquarters for horticultural implements used in tilling, pruning, and spraying trees and plants. The collection of spray machinery,

including gas engines, traction machines, and the like, is full and complete. Thorough instruction is given in the control of orchard enemies.

Aside from the ordinary equipment, the garden herbarium with more than 12,000 sheets is an important aid in the study of systematic pomology and plant variation. There is also an exceptionally fine collection of nearly 10,000 negatives illustrating all phases of fruit, flower, and vegetable growing. This collection is being added to continually, and furnishes a source for lantern slides to illustrate up-to-date methods in the management of fruit plantations, the construction of forcing-houses, and the growing of crops in field and under glass.

Elementary pomology.—A study of the methods of propagation and early care of bush and tree fruits; the principles and practice of budding and grafting, with special attention to the particular method of propagating each kind of fruit. Must be preceded by Botany 1 and 2. Lectures and recitations with laboratory. The class will participate in a required excursion to Geneva and vicinity.

Another class is held on this subject particularly adapted to the needs of the special student, and not open to those who are required to take Botany 1 and 2. The class will participate in a required excursion to Geneva and vicinity.

Practical pomology.—The study and practice of the planting, fertilising, and care of orchards; picking, grading, packing and marketing of fruits. Prerequisites, Botany and Horticulture, and taking Agricultural Botany. This class will participate in a required excursion to the fruit-growing sections of Geneva and Rochester.

Spraying of fruit trees.—A study of the preparation and application of the different spray mixtures used in orchard and garden practice. Lectures and recitations with laboratory.

Greenhouse construction and management.—A study of the principles of greenhouse construction. Laboratory work will consist of the drawing and erection of sections illustrating the leading types of greenhouses. Throughout the year.

Olericulture.— A study of the principles of vegetable gardening with special reference to trucking, accompanied by field practice in the actual

growing of the plants.

Garden and greenhouse practice.—Practical work in the forcing-houses and gardens, with familiar talks. One or two hours by appointment. Throughout the year. Limited to 12 students first term, 18 second term.

Sub-tropical pomology.—A study of citrus, and other sub-tropical fruits, with special reference to American conditions.

Systematic pomology.—Advanced course in classification and systematic study of fruits. Two hours.

Literature of horticulture and landscape gardening.—An examination of the writings of European and American authors, with special reference to the evolution of horticultural methods. Open to juniors and seniors, and required of graduates.

Plant-breeding, with special reference to the improvement of orchard fruits. Juniors and seniors; required of graduates.

German horticultural reading.—A study of periodical literature relating to horticulture. Each student is required to subscribe for one periodical and make translations from assigned paragraphs.

French of the same character and conducted in the same way.

Investigation incident to previous courses. For graduates and advanced students.

Seminary work for advanced students.—Required of graduates. One hour. F., 2–4.30, every two weeks beginning the first week of each term. On the alternate week students are required to attend the Seminary in Plant Industry.

RURAL ENGINEERING AND ARCHITECTURE

Field engineering.—Lectures, recitations and practice in surveying and plotting the farm; designing farm buildings, roads, fences, and water supply; drainage and irrigation. Second half-year. Lectures and practice.

Farm machinery.—A study of the elements of mechanics and of machine design entering into the construction of all machinery, followed by a special study of:—(a) *Motors*, including steam boilers, gas and steam engines,

windmills, hydraulic rams, water wheels, and a brief discussion of the laws and applications of electricity; (b) *Farm Machinery* for tillage, seeding, harvesting, threshing, cleaning, etc., with a discussion of the cost, life, draft, and special mechanical features of some of the machines now on the market.

Opportunities will be afforded for special work in the second half-year.

RURAL ECONOMY AND SOCIOLOGY

Rural economy.—A study of the economic problems of agriculture.

Rural social conditions.—The social history, status and progress of the rural community.

History of agriculture.—An outline of the development of agriculture in its more important phases.

RURAL ART

This is a two-year course comprising the junior and senior years of the regular course in the College of Agriculture; and for those who have attained a certain degree of proficiency graduate work is offered.

Previous to registering in this work the student must have completed the requirements of the freshman and sophomore years, and the following:—Elementary surveying, Lettering and making of titles, Botany, Organography of ornamental plants, Elementary architecture.

Previous to graduation the student must have completed the following subjects in addition to the regular work:—Dendrology, Economic entomology, Greenhouse construction and management, Field engineering, Municipal engineering, French or German horticultural reading.

Theory and æsthetics of rural art and landscape design.—Deals with the principles of landscape design, their application to specific problems, together with discussions on the theory in all its points of application.

Landscape design.—First course. Work on practical problems in design, paced and measured surveys, sketch plans, finished plans and detailed working drawings with specifications. Short sketch problems for study will be given from time to time. The aim is to familiarise the student with the

various types of plans as applied to different problems. Practical problems in the vicinity will be studied, and reports, both preliminary and final, will be required.

Freehand sketching.—Sketching and rendering in various media of indoor and outdoor subjects, plans, etc., particularly pertaining to landscape design.

History of landscape design.—A study of the chronological development of the art of landscape gardening, its modifications in various countries and the influences which have affected its development. A full study of the three types of gardening—ancient, mediæval and modern, and their relation to each other.

Advanced problems and research in landscape design.—The more complicated problems, such as country estates, parkways and civic centres, are taken up and worked out in detail. Studies, reports, plans of arrangement, rendered studies, detailed drawings, grade designs, planting plans, total estimates of cost and a set of specifications are worked out for two major problems. Minor problems and sketch problems are required from time to time.

Seminary.—A review of current literature and the discussion of live questions relating to various phases of landscape work, and reports on investigations. Required of seniors and graduates.

HOME ECONOMICS

Instruction will be given in home economics in 1907–8. Information about this work may be had from the director of the College of Agriculture, as the courses are not yet ready for scheduling.

DRAWING

Applied drawing.— Personal instruction in the solution of particular problems and in fitting the student to pursue certain lines of study to better advantage, or to enable him to become proficient in a speciality.

WINTER COURSES IN HORTICULTURE

Each year since the establishment of the winter courses the demand for special instruction in fruit-growing and gardening has increased. The opportunities for profitable fruit-and vegetable-growing on the comparatively cheap lands of the east and within easy reach of the great markets, are attracting capital and energy. It is in response to this general demand and these opportune conditions that a winter course in horticulture is offered. The various studies included in this course are intended to help the fruit-grower and gardener to manage his orchards and gardens better than in the past; to fit those who have had some experience for positions of responsibility; to give the beginner the salient principles and acquaint him as far as possible with the best practices of commercial and amateur fruit-growers and gardeners the country over.

The entrance requirements to this course are the same as to the course in general agriculture. Field experience will always enable the student to get a maximum of benefit from a study of this kind.

The course is made up of lectures, recitations and practice, special stress being laid on the last.

SPECIAL EXPENSES

General laboratory fee, \$7.50; books, \$5.00; work suit, \$1.50.

All students in this course, except those who have previously completed satisfactorily the winter course in general agriculture, are required to take the subjects that follow. Those who complete the winter course in general agriculture will not be required to take again subjects that they have already passed. They should consult the professor in charge concerning substitutes for any of the subjects. All students must register with the Secretary of the College.

REQUIRED SUBJECTS

Amateur and commercial fruit-growing.—A survey of the principles and practices of fruit-growing with reference to orchard management, handling, packing, storing, transplanting and marketing of orchard products. Seven hours. Five hours of lectures a week and two afternoons a week for practice.

Vegetable culture.—Lectures and exercises on the growing and marketing of vegetables for special and general market. Two hours.

Farm Botany.—Four hours a week. Two lectures and two laboratory periods.

Fertility of the land.—Two hours.

There are thus fifteen hours a week of required work in this course. Students may elect, with permission of the instructor concerned, three hours a week additional by taking the following courses:—

ELECTIVE SUBJECTS

Economic entomology.—One hour a week.

Plant diseases.—Three hours. One hour lecture and two hours' laboratory practice.

Horticultural reading.—Assignment of topics for abstracts and reports in standard works and current periodicals. One to three hours by appointment.

Floriculture and ornamental gardening.—Lectures and exercises on the growing and marketing of greenhouse crops, and the principles of lawn decoration. Two hours a week.

Greenhouse practice.—In this course the student is assigned specific pieces of work in the greenhouse to be performed under the direction of the gardener. One hour a week.

EQUIPMENT

Practically the same facilities are available to the winter course students as are offered the student in the regular course:—The library, one of the best in the country; the material equipment of the forcing-houses, including plants, work rooms, spray pumps and implements, are all used in conducting the work of instruction.

Those who desire additional information should apply to

JOHN CRAIG, *Professor of Horticulture.*

Women are eligible on equal terms with men in all these courses of instruction—and a good many women are at work in this college. The

students registered in the college of agriculture (not in the College of Arts and Sciences) number over 300.

LOWTHORPE SCHOOL OF LANDSCAPE GARDENING AND HORTICULTURE FOR
WOMEN, AT GROTON, MASSACHUSETTS

Founded by Mrs. EDWARD GILCHRIST LOW

LECTURERS

Landscape architecture.—Mr. J. F. DAWSON, with OLMSTED BROTHERS.
The garden and its accessories.—MR. LORING UNDERWOOD.

INSTRUCTORS

Study of trees and shrubs.—MISS LAURA BLANCHARD DAWSON. *Drawing and garden design.*—MISS GERTRUDE F. SANDERSON. *Surveying and engineering.*—MR. STEPHEN CHILD. *Botany: Greenhouse work and gardening out-of-doors.*—MISS L. L. HETZER.

Study of trees and shrubs.—Lectures with field walks. Study of trees from winter buds, and in leaf. Study of shrubs, foliage, and flowering, with consideration of landscape value. Specimens from the Arnold Arboretum.

Botany.—Study of plant structure, function, and classification. The greater part of the time will be devoted to the flowering plants.



AVENUE LEADING TO "LOWTHORPE," GROTON, MASSACHUSETTS, MRS. LOW'S SCHOOL FOR LADY GARDENERS.

Garden design.—Practice in making preliminary and finished plans. Designing and laying out of gardens.

Drawing.—Freehand in black and white and water colour, with autumn and spring sketching out of doors. Mechanical, simple projections leading up to elementary study of architectural details.

Surveying and engineering.—Such parts as have value to landscape work.

Greenhouse work.—Care of greenhouse. Propagation, by seeds, cuttings, layering, budding, and grafting. Carnation, violet growing, orchids, etc.

EXPENSES

Tuition \$100 a year. One half to be paid on entering, the second half in January.

A limited number of students may be accommodated at Lowthorpe. Single room, \$30.00 per month, and upwards; double room for two, at \$30.00 per month for each. Accommodation for others may be obtained in the village near by. The full course comprises two years' work. School year is from September 15 to June 15. Vacations at Christmas and Easter.

The avenues of work that are available are:—

Designing and planting flower gardens; care and maintenance of rose gardens and flowering shrubs; weekly supervising of greenhouses; planning and laying out small estates; planting small parks for village improvement societies.

All communications should be addressed to

LOWTHORPE SCHOOL, GROTON, MASSACHUSETTS.

Simmons College, Boston, Mass., has, I believe, a horticultural college connected with it, but it has not been in operation long.

Smith College, Northampton, Mass., also offers courses in practical horticulture.

The following letter, written by the director of the principal school of Forestry in America, and very kindly sent to me by Mrs. Low, shows that he is of opinion that there is an opening for women in landscape gardening:

YALE UNIVERSITY FOREST SCHOOL,
NEW HAVEN, CONN.,
May 22, 1907.

MY DEAR MRS. LOW,—

I have for a long time felt that there is an opportunity for useful work by women in landscape gardening. There is, at the present time, no place except the Lowthorpe School, where women can secure an adequate training in landscape gardening. I believe that your institution is needed, and will be appreciated.

I may say from my impressions upon visiting your school that you have chosen an exceedingly favourable location, and that you have made very fine progress in the organisation of your work.

I want to do what I can to assist your school, for I believe in it. If I can be of any service in this or any other way, I hope that you will feel free to call upon me.

Sincerely yours,

H. S. GRAVES (*Director*).



SOUTHERN ENTRANCE TO "LOWTHORPE," GROTON, MASS.
MRS. LOW'S SCHOOL FOR LADY GARDENERS

To Mrs. Low,

Principal of Lowthorpe School for Lady Gardeners.

Mrs. Low asks me to draw attention to the fact that the work of "landscape design" is the most important in her school. Garden and greenhouse work are secondary to this. She tells me that several of her former students have become supervisors of school gardens, in connection

with the Public Schools or Village Improvement Societies. The highest salary is \$60 per month, for five months. One former student has gone to Portland, in Oregon, on the Pacific coast, where she is told she will soon become established as a landscape gardener. Several women have already made a success of landscape gardening. Ten years hence they will be heard of all over the country. At present the largest income is £800, or \$4,000.

The two photographs of Lowthorpe are attractive. Three years ago the site of the present avenue, leading to the house, was a field. The students surveyed the avenue under instruction, and then did the planting. They have to learn to read a surveyor's plan with ease. In the oval in front of the door are *Rhododendron maximum*, which is hardy in Massachusetts, ferns and *Rinus Strabus*. At the entrance on the right are viburnums, cornus, lonicera, roses, etc. The picture of the southern entrance gives the bulb garden, between the greenhouse and verandah, where later on bloom lilies, lilacs and magnolias. On the left is a hedge of white rose rugosa. Through the arch one goes into the garden. The large tree is a "*platanus occidentalis*." The place was an old farm when Mrs. Low bought it in 1900-1, and we can judge by the well-kept grounds what a success she has made of it.

PENNSYLVANIA SCHOOL OF HORTICULTURE FOR WOMEN

The plan of the Pennsylvania School of Horticulture for Women has originated in the desire to offer to women an opportunity to fit themselves for an occupation at once healthful, pleasant, profitable, peculiarly fitted to their gifts, and in which they have ever taken an intelligent interest and active part.

Our purpose is to offer to these earnest-minded women a training in the principles and practice of horticulture and allied subjects, knowing that really skilled labour can always find a market, helping them also to find employment in the work for which they have been thus prepared.

To this end we expect to open in the near future the "Pennsylvania School of Horticulture for Women." A small farm of twenty to forty acres will be obtained (probably rented), having upon it a comfortable dwelling with accommodation for about ten students (at first). Flower and kitchen gardens and orchards will be laid out and planted. Teachers of skill and experience will lecture upon the principles and practice of the courses of study offered, and will oversee all practice work done by students. For the

very heavy work a labourer will be employed, but the students will do all the rest themselves under direct supervision of the teacher. A competent matron or principal will be in charge of the household and will have general oversight of the students.

The full course will occupy two years of twelve months each, but arrangements will be made for suitable holidays, and full students will be advised to live in the house. Short courses on special subjects will also be arranged, and it is hoped will prove attractive and useful to some who may want to specialise along certain lines.

The tuition and board fees will be kept down to as low a figure as possible, and it is hoped that there will be endowed scholarships.

The subjects to be offered at once are:—

Flower and kitchen gardening, care of lawns and shrubbery, orchards, poultry raising, bee-keeping, garden carpentry, marketing of produce.

Later there may be added:—

Forestry, maple sugar growing, preserving of fruits and vegetables, and such other subjects as may be called for.

There is in Pennsylvania no other school of this character. The Pennsylvania State College at State College, Centre County, offers valuable and excellent instruction, but, like the other state colleges, lays most of its stress on agriculture rather than on horticulture, and gives great attention (and necessarily so) to experimental farm work, and to seed and soil tests. Incidentally we hope to profit by these experiments and to help to spread abroad knowledge of the improvements and better methods which their experience may have proved beneficial.

We shall be glad to enter into communication with others interested in the subject, and we look for the interest and support of Pennsylvanians and many others.

MISS JANE B. HAINES, *Secretary and Treasurer*, Cheltenham, Pa.

THE MISSOURI BOTANICAL GARDENS, ST. LOUIS, MO.

The Trustees of the garden offer theoretical and practical instruction in gardening, with a certain number of competitive scholarships. These

scholarships are not open to women. The course of instruction can, however, be taken by women who are ready to bear their own expenses and pay the nominal fee of \$25 per annum.

Only one young woman has so far completed the course. This lady, Miss Eda A. Sutermeister, 1637, Broadway, Kansas City, Missouri, has become an accomplished landscape architect. One other girl went through the greater part of the work. She subsequently took charge of the floriculture at an industrial school for women, after extensive experience in practical floriculture. In addition to these two, a number of ladies have taken various courses of study included in the outline, or have received practical training in gardening at the Botanical Garden, covering short periods of time, and limited parts of the subject.

The following is taken from the last report:—

INSTRUCTION IN GARDENING

The requirement that instruction in gardening and horticulture should receive attention at the Garden, in addition to the provision of a lodging house for pupils, led to the entire renovation of the fruit orchard some years ago, at a cost of \$444.44, and two small vegetable houses have been built for further experimental and educational use. The annual expenditure on the gardening course averages \$930.34.

The Director reports that of the 39 pupils thus far enrolled, of whom 15 completed the course, ten are now successful florists or gardeners, two have become landscape architects, three hold responsible park positions, two are college horticulturists with teaching as well as practical duties, one is a surveyor, one is a government plant experimenter, and one is a forester in the Philippine service.

INSTRUCTION IN BOTANY

Mr. Shaw's provision for a close connection between the School of Botany, which he had endowed in Washington University, and the Garden has been of great assistance to the undergraduate department of the University, and through the Garden opportunities for work have been offered to graduate students, of whom five have received the Master's degree and six the degree of Doctor of Philosophy with botany as a major

study. The Board expect to see a large increase in this utilisation of the Garden facilities commensurate with the very gratifying growth of Washington University. Indirectly the Garden has been of much use to the young men who have served as assistants in its office, library, or herbarium, or as teachers in the school of botany, for with very few exceptions they have gone to college, government or other positions of high responsibility in botany or horticulture, for which their service here gave excellent training.

NEW YORK STATE COLLEGE OF AGRICULTURE AT CORNELL UNIVERSITY, ITHACA,
NEW YORK

Normal Work.—Two-Year Special Course in Nature-Study.—This course is organised to help persons who expect to teach nature-study and country-life subjects in the public schools. Persons actually engaged in teaching, and also all persons in the University who signify their intention to teach, are eligible. A certificate will be given on the completion of 60 hours in the courses prescribed below, together with such other work in the College of Agriculture as may be approved by the director. Designed to prepare students to teach elementary agriculture.

Nature-Study.—Lectures and discussion of methods.

Home Nature-Study Work.—Work in the training classes in the Ithaca schools in which students are also to take part.

Practice Work in Nature-Study in the public schools of Ithaca, comprising schoolroom work, excursions, and other exercises with children.

School Gardens, comprising actual garden-making with children on school grounds and in the University school gardens. In winter the work will be conducted in the forcing houses, where plant-growing subjects will be taken up in such a way as to adapt them to elementary school conditions.

Seminary in Nature-Study and Elementary Agriculture.—Devoted to the study of the methods of teaching nature-study and elementary agriculture, and to the review and criticism of courses now offered in our elementary and secondary schools.

Nature-Study.—Advanced course. Individual work on special problems.

Travel Course in Agriculture.—The aim of this course is to give the students an opportunity, under competent guidance, to see the main agricultural activities and crops not represented in New York. It is open to qualified students of the College of Agriculture and of other colleges.

SPECIAL WORK

Opportunities are provided for persons who desire to pursue special work. Students must be at least eighteen years of age to take advantage of this work.

Special Work in General Agriculture.—This work is designed to meet the needs of young men and young women from the farm who have not the time to give to a four years' course. They must satisfy the director that they are well enough grounded in the secondary school subjects to enable them to pursue the work with credit to themselves and with honour to the University, and also that they desire to take the work because of direct interest in agricultural affairs. They must present an honourable dismissal from the school last attended and certificates of good moral character, and will be required to present such certificates and letters as may be desired. This work is not a definite "course" in the sense of having a programme or a prescribed set of studies. The student chooses any of the agricultural "electives" that he may be able to pursue. Certain courses are to be given by some of the departments for those who lack some of the fundamental work usually required in those subjects. Admission as a special student by the director does not admit to classes. The student is admitted to the various classes by the heads of the departments when he has satisfied such officers that he is able to pursue the work.

Nature-Study Special Course.—This course, of two years, is open to teachers, or to such students in regular University courses as signify their intention to teach, who desire to prepare themselves in nature-study and country-life subjects. In this course the work is largely prescribed. The course comprises two categories of work: the subject-matter studies, and the pedagogical practice. The subject-matter is secured in the regular classes of the University, largely in the biological departments. The pedagogical practice is to be had with children in regular nature-study classes and clubs in the public schools of Ithaca and in school-garden work with children.

EXTENSION WORK

The extension work of the College of Agriculture is designed to help persons directly on their farms, and to aid those who desire definite instruction but cannot take a long or regular course in agriculture in the University. It supplements the teaching and experimenting of the College of Agriculture. It is professedly a popular work. It endeavours to reach the common problems of the people, to quicken the agricultural occupations, and to inspire a greater interest in country life. It is also a bureau of publicity, whereby there is an exchange of all important matters connected with the progress of the agriculture of the State.

ARGENTINA; BUENOS AIRES

The following information is all that I can ascertain. There are no special horticultural colleges for ladies in this country, but they are admitted to all the agricultural colleges. They may take the same degrees as men.

As yet only one lady has received the highest degree accorded, namely Agricultural Engineer, and two others are now studying.

No opening for women in this sphere of activity has presented itself so far, but I am informed that undoubtedly very soon the public will appreciate their efforts and employ them in preference to men.

In all public schools pupils from the fourth to sixth grades of both sexes receive notions of agriculture, and are practically taught the care and cultivation of indoor plants. In some few schools that have the necessary ground, pupils are also instructed in cultivating vegetable and flower plants.

CHAPTER XVII

GARDENING AND NATURE-STUDY IN CANADA AND AUSTRALIA

The question of gardening for women in Canada is admirably dealt with—together with that of “Nature-Study”—in the following communication which I have received from Miss E. Ritchie, of Halifax, Nova Scotia. It will be seen that while “Nature-Study” is taking a prominent position in the curriculum of the public school—the profession of gardening for women has barely entered into consideration:—

I very much regret that the information I can now send is far from complete as regards the whole Dominion. Our committee on education is not really in working order, only two members—both from Ontario cities—having been appointed by “local councils,” so that I have myself had to collect facts from the other provinces without having local knowledge to guide me. In Canada educational matters are subject entirely to provincial control, and the system differs in the various provinces, so there is no Central Bureau of information at Ottawa. The following statements may, I think, be relied upon as correct as far as they go.

1. *Nature-Study* is taught to some extent in the public schools all over Canada (I am not quite sure about Quebec, about which my information is imperfect, but I believe it is probably true of that province also). In Nova Scotia, which is a fairly representative province in such matters, nature-study occupies a part of every day in all the schools, and so far as my own observation goes, it seems to be taught sensibly, and in a way to interest the children; they are made familiar with the growth of plants, the habits of insects, the appearance, songs, and migration of the different kinds of birds, etc., and are encouraged in making simple nature-observation for themselves. In the higher grades this teaching merges into more specifically agricultural and scientific work.

2. *School gardens* are becoming more numerous throughout Canada; Ontario probably takes the lead in this respect. Sir William Macdonald, who is devoting very large sums to the development of the more practical side of education, has inaugurated a number of school gardens in Ontario, Quebec, Nova Scotia, Prince Edward Island, and (I think) British Columbia.

As of possible interest in this connection, I may mention a plan carried out by the Halifax Local Council of Women to encourage a love of

gardening among city children. Seeds of six hardy varieties of flowers are bought wholesale in the spring, and sold through the school teachers to children desiring them at cost price. Each child for six cents (threepence) got a package containing small packages of the six kinds of seed, and simple printed directions for sowing and caring for them. An exhibition of flowers grown from these seeds was held in the month of August, and prizes given for the best bouquets, and also for “compositions” on the raising of flowers. Last year some 6,000 children bought the seeds, and the exhibition of flowers was quite remarkable, even the children from the poorer parts of the city having done remarkably well. I am in hopes other “local councils” will follow us in this work.

3. *In regard to the status and prospects of professional women gardeners in Canada*, I have been unable to get much information. Few, if any women here, have deliberately chosen this calling as their life’s work. It must be remembered that almost every woman *living in the country* in Canada, whether married or not, has to do a large part, often all, of her own housework, servants of any kind being, except in the towns, almost unobtainable—in the North-West Provinces absolutely so; this renders it difficult for her to undertake outdoor work that would occupy a great part of her time. I think all gentlewomen thinking of settling in the rural parts of Canada should fully realise the bearings of that most troublesome enigma, “the servant problem,” which we have in its extremest form in this country. Apart from this I should imagine that gardening, in the neighbourhood of a good market, might be carried on by women with very satisfactory results—some capital and good business ability being supposed.

I do not think there would be at present many openings in Canada for lady teachers of gardening, as such subjects as “nature-study,” etc., are taught in the public schools by teachers of other subjects, and in the private schools (which, though the wealthier parents send their children to them, are generally inferior from a pedagogical point of view to the public or free schools) nature-study is very little attended to.

A career for women that might offer inducements to some is that of “orchardist,” which in Nova Scotia especially pays well, and is in many ways agreeable. I know of many married women who assist their husbands in the apple orchards, and at least one, a widow, I think, who owns and manages a large orchard with great success; and there are probably many

others. Of course, capital is required, and some knowledge of local conditions.

4. *In regard to opportunities for the education of lady gardeners*, I may say that in all agricultural and other colleges supported by public money women are received and taught on precisely the same terms as men. This includes the Agricultural College at Truro, Nova Scotia, Prince of Wales College, Charlottetown, Prince Edward Island (which has agricultural courses), the Agricultural College at Guelph, Ontario, and the Macdonald College at St. Anne, Bellevue, Quebec. The latter is said to be the most advanced and well-equipped institution of its kind in America.

THE MACDONALD SCHOOL GARDENS

The following information relative to the School Garden movement is taken from a paper written by Mr. R. H. Cowley, and originally published in the *Queen's Quarterly*.

In the spring of 1904 a group of school gardens went into operation in each of the provinces of Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island. These school gardens are associated with Sir William C. Macdonald's plans for the improvement of Canadian schools, and they constitute a notable feature of the general scheme devised by Professor James W. Robertson, director of the Macdonald educational movement.

At a meeting of the Massachusetts Horticultural Society, in 1890, a paper on horticultural education for children was read by Mr. Henry Lincoln Clapp, master of George Putnam School, Roxbury, Mass. At this school a garden was established the following year as a result of the interest awakened. This garden, which appears to have been the first of its kind in the United States, was devoted exclusively to native wild plants until 1901, when a vegetable plot was added. Here and there within the past decade, and with various objects in view, the idea has been employed by private citizens, charitable associations, commercial firms, horticultural societies, and a few educational institutions, but as yet the school garden has not become an organic feature of any state system of education.

In Canada the school garden idea has also received some recognition prior to the Macdonald movement. For several years a very successful and quite extensive garden for boys has been conducted at Broadview, Toronto, by Captain Atkinson, of the Boys' Brigade Institute. Here and there

throughout the Dominion, floriculture has been encouraged to some extent in the elementary schools. Under the aggressive advocacy of Dr. A. H. MacKay, Superintendent of Education, whose faith in all branches of nature-study has been fully justified by his works, Nova Scotia has taken a leading place in establishing school gardens. In 1903 there were 52 school gardens in the province. Last July 79 in all were reported. The special courses in agriculture and nature-study, recently provided for teachers, has had a considerable influence in promoting the school garden movement, though outside the Macdonald gardens few are yet more than temporary efforts of the teacher for the time being.

It is apparent that three leading motives underlie the origin and growth of school gardens in Europe:—(1) to provide a convenient means of supplementing the teachers' income, thereby simplifying the problem of maintaining the public school; (2) to promote a practical knowledge of horticulture and agriculture, thereby increasing the national prosperity; (3) to furnish means and material for the practical study of botany as a desirable department of scientific knowledge.

The vast majority of European school gardens look to utility. Of the few that recognise the importance of the educational end, nearly all stop short at the acquisition of a certain amount of scientific information and the habit of careful observation. On the other hand, the Macdonald School Gardens, while designed to encourage the cultivation of the soil as an ideal life-work, are intended to promote above all things else symmetrical education of the individual. They do not aim at education to the exclusion of utility, but they seek education through utility, and utility through education. The garden is the means, the pupil is the end. The Macdonald School Gardens are a factor in an educational movement, and for this reason Professor Robertson sought to have them brought under the Education Department, and not under the Department of Agriculture, in each province. The fact that the various provinces already referred to have passed orders in council incorporating the Macdonald School Gardens into their educational systems at once places these school gardens on a broader educational basis than that occupied by the school gardens of any other state or country.

The Ontario Government has provided special courses at Guelph to train teachers in the practical educational aspects of this new work. An initial grant of one hundred dollars, as well as an annual grant, is offered to any

rural school section establishing a school garden. At Truro, and elsewhere in the Maritime Provinces, suitable courses for teachers are also provided. In New Brunswick, annual grants of thirty dollars to the Board of Trustees are given where a garden is established at an elementary school. In Quebec, extensive preparations for the training of teachers in the new lines of education are under way.

The Macdonald School Gardens not only have a recognised place in the provincial systems of education, but they are attached to the ordinary rural schools, owned by the school corporation and conducted under the authority of the school trustees and the express approval of the ratepayers.

The work of the garden is recognised as a legitimate part of the school programme, and it is already interwoven with a considerable part of the other studies. The garden is becoming the outer classroom of the school, and the plots are its blackboards. The garden is not an innovation, or an excrescence, or an addendum, or a diversion. It is a happy field of expression, an organic part of the school in which the boys and girls work among growing things and grow themselves in body and mind and spiritual outlook.

The true relation of the garden to the school has been in good part established by the travelling instructors whom Professor Robertson appointed to supervise the work in each province. These instructors were chosen as teachers of experience in rural schools, and were sent for special preparation, at the expense of the Macdonald fund, to Chicago, Cornell, Columbia, and Clark universities, and to the Ontario Agricultural College, Guelph.

THE SCHOOL GARDENS OF CARLETON COUNTY, ONTARIO

The county of Carleton was selected by Prof. Robertson for the initiation of school gardens in Ontario, and the work that is being carried on here is typical of what is being done in the other four provinces. In all five gardens have been established under the Macdonald fund in Carleton County. Two of these are placed at Carp and Galetta, points on the Canada Atlantic Railway, distant twenty and thirty-three miles respectively from Ottawa. A third is located at Richmond, a small incorporated village in the heart of the county, distant from the capital about twenty miles by stage. The remaining gardens are situated at North Gower and Bowesville, the former about

twenty-five miles and the latter five miles from the city. As the five schools at which these gardens have been established are from seven to fifteen miles apart, the experiment is being brought fairly under the scrutiny of the entire county. The garden at Richmond is within a short distance of the grounds of the County Agricultural Society, and will annually be open to the inspection of many hundred visitors to the fair. Already the gardens have attracted much local attention, and last autumn the products of the gardens won about a hundred dollars in prizes, given both by the agricultural societies and by private citizens who have taken a generous interest in this educational experiment.

After full discussion with trustees and ratepayers each garden was established under the direct approval and control of the school board concerned, and in harmony with the already existing regulations of the Education Department, which provide in a general way for instruction in agriculture and nature-study, and also for enlarging school grounds. It is worthy of note that while the ratepayers interested were not indifferent to the question of expense involved, they paid special attention to the fact that they were being asked to take up an experiment of a very novel nature which required a marked departure from the beaten path of elementary school work. Thus the educational aspects of school gardens were specially considered, the result being that the people have taken up the enterprise with an open-minded interest that has already carried the experiment far on the way to success.

The size of the gardens, including the usual school grounds, is in each case two acres, excepting the garden at Richmond, which contains three acres. Where additional land had to be acquired, the Macdonald fund bore half the cost, as also the whole cost of fencing and preparing the garden, erecting garden shed and providing the necessary tools, etc. The cost of maintenance of the garden is likewise met by the Macdonald fund for a period of three years. For the same period Sir William Macdonald pays the salary of the travelling instructor, Mr. J. W. Gibson, who visits each garden one day per week to assist the teachers in directing the garden work of the pupils, to give lessons in certain practical aspects of nature-study, and generally to encourage the association of the garden work with the ordinary exercises of the classrooms.

One of the most useful accessories to the school garden is the garden shed, which is used for storing tools and produce, and for carrying on work not suited to the classroom, such as preparing tickets and labels, analysing soils, assorting seeds, arranging plants, etc. The average cost of the garden sheds is about seventy-five dollars. They are of various shapes and sizes, according to the number of pupils to be accommodated. A popular plan is that of a shed, ten feet by twenty feet, with an extension on one side about five feet wide, and finished as a greenhouse. This obviates the necessity of having special hot-beds. The garden tools are disposed along the walls of the shed in places numbered to accord with the numbering of the pupils' plots. Along one side of each shed is a bench or table of plain boards, about eighteen inches wide, running close to the wall, along which are several small windows giving abundant light to pupils engaged in practical work.

The chief tools and implements requisite to the school garden are hoes, rakes, hand weeders, garden lines, one or two spades and shovels, a wheelbarrow, hammer, saw, nails, etc. The pupils, as a rule, require only hoes, rakes and hand weeders. Those pupils who are sufficiently mature to work a plot by themselves, or along with a companion, can get along very well with hoes and rakes of the average size. In one case, where smaller tools were supplied, the pupils abandoned them after a little practice for those of the standard size.

While the plan of laying out the gardens varies according to soil, surface and location, the arrangement of the Bowesville garden suggests the general features that have been kept in view. These include a belt of ornamental native trees and shrubs surrounding the grounds two walks, each about one hundred yards long, between rows of trees a playground about half an acre in area for boys; a lawn of about a quarter of an acre for the girls, bordered with some light and graceful shade, such as the cut-leaf birch; a small orchard, in which are grown a few varieties of the fruit trees most profitable to the district; a forest plot, in which the most important Canadian trees will be grown from seed and by transplanting; a plot for cultivating the wild herbs, vines and shrubs of the district; space for individual plots and special experimental plots; an attractive approach to the school, including open lawn, large flowering plants, foliage, rockery, ornamental shrubs, etc.

The special experimental plots are, as a rule, larger than the individual plots. They are used for such purposes as the special study of rotation of

crops, values of fertilisers, effects of spraying, selection of seeds, merits of soils, productiveness and quality of different varieties of crops, and many other similar subjects. At one school a special study was made of corn, clover, tomatoes, and cabbage at another beans, peas, beets, and potatoes occupied the experimental plots; and at still another, some extra attention was given to plots of pumpkins, squash, cabbage, and cauliflower. At all the gardens special plots will be devoted to small fruits, such as strawberries, raspberries, gooseberries, and currants. The experimental plots vary in area from 200 to 2,000 square feet, but where the extent of ground is restricted the experiments may be successfully carried out on plots of a much smaller average size.

The gardens are managed throughout on the basis of individual ownership, individual effort and individual responsibility on the part of the pupils. At all the gardens the pupils are given plots that are solely their own. According to the age and strength of the pupils, these plots vary in size from 72 square feet to 120 square feet. At some schools each pupil has two plots, one for vegetables, etc., and the other for flowers. In other cases the flowers and vegetables are kept in different parts of the same plot. The former plan presents no inconvenience, and is found to contribute to the general appearance of the garden. At one of the school gardens the pupils' plots were uniformly 10 feet wide by 20 feet in length, each plot being worked in partnership, a junior pupil working with a senior pupil in each case. Though very good results were secured by this method, the instructor considers the individual method preferable, and will pursue it in future.

NOVA SCOTIA

Nature-study is here taken very seriously. The following extracts from a leaflet issued to every teacher in the province by the Educational Department will show how thoroughly and systematically the matter is dealt with.

LOCAL "NATURE" OBSERVATIONS

This sheet is provided for the purpose of aiding teachers to interest their pupils in observing the times of the regular procession of natural phenomena each season. First, it may help the teacher in doing some of the "Nature" lesson work of the Course of Study; secondly, it may aid in procuring valuable information for the locality and province. Two copies are provided for each teacher who wishes to conduct such observations, *one*

to be preserved as the property of the section for reference from year to year; the *other* to be sent in with the return to the inspector, who will transmit it to the superintendent for examination and compilation.

What is desired is to have recorded in these forms the dates of the *first* leafing, flowering and fruiting of plants and trees; the *first* appearance in the locality of birds migrating north in spring or south in autumn, etc. While the objects specified here are given so as to enable comparison to be made between the different sections of the province, it is very desirable that other local phenomena of a similar kind be recorded. Every locality has a *flora*, *fauna*, *climate*, etc., more or less distinctly its own; and the more common trees, shrubs, plants, crops, etc., are those which will be most valuable from a local point of view in comparing the characters of a series of seasons.

Teachers will find it one of the most convenient means for the stimulation of pupils in observing all natural phenomena when going *to* and *from* the school, and some pupils radiate as far as two miles from the schoolroom. The "nature-study" under these conditions would thus be mainly undertaken at the most convenient time, without encroaching on school time; while on the other hand it will tend to break up the monotony of school travel, fill an idle and wearisome hour with interest, and be one of the most valuable forms of educational discipline. The eyes of a whole school daily passing over a whole school section will let very little escape notice, especially if the first observer of each annually recurring phenomenon receives credit as the first observer of it for the year. The observations will be accurate, as the facts must be demonstrated by the most undoubted evidence, such as the bringing of the specimens to the school when possible or necessary.

To all observers the following most important, most essential principles of recording are emphasised: Better *no date*, NO RECORD, than a WRONG ONE or a DOUBTFUL one. Sports out of season due to very local conditions not common to at least a small field, should not be recorded except parenthetically. The date to be recorded for the purposes of compilation with those of other localities should be the *first* of the *many* of its kind following immediately after it. For instance, a butterfly emerging from its chrysalis in a sheltered cranny by a southern window in January would not be an indication of the general climate, but of the peculiarly heated nook in which the chrysalis was sheltered; nor would a flower in a semi-artificial,

warm shelter give the date required. When these sports out of season occur, they might also be recorded, but within a parenthesis to indicate the peculiarity of some of the conditions affecting their early appearance.

These schedules should be sent in to the inspector with the annual school returns in July, containing the observations made during the whole school year and back as far as the preceding July (if possible), when the schedule of the previous school year was necessarily completed and sent in.

A duplicate copy of the schedule of observations should be securely attached to the school register for the year, so that the series of annual observations may be preserved in each locality. The new register has a page for such records.

Remember to fill in carefully and distinctly the date, locality, and other blanks at the head of the schedule on the next page; for if either the date or the locality or the name of the responsible compiler should be omitted the whole paper is worthless and cannot be bound up for preservation in the volume of The Phenological Observations.

PHENOLOGICAL OBSERVATIONS, CANADA

(1906 SCHEDULE)

For the *year ending July*, 190.

Province _____ County _____
District _____ locality or School Section
_____ No. _____

[The estimated length and breadth of the locality
within which the following observations were made _____ ×
_____ miles. Estimated distance from the sea-coast
_____ miles. Estimated altitude above the sea level
_____ feet.

Slope or general exposure of the region _____
General character of the soil and surface _____
Proportion of forest and its character _____
Does the region include lowlands or intervalles? _____
and if so name the main river or stream _____ Or
is it all substantially highlands? _____
Any other peculiarity tending to affect vegetation? _____

The most central Post Office of the locality or region

NAME AND ADDRESS OF THE TEACHER OR OTHER COMPILER OF THE OBSERVATIONS RESPONSIBLE FOR THEIR ACCURACY.	When First Seen.	When Becoming Common.
<p>WILD PLANTS, ETC.—NOMENCLATURE as in “Spotton” or “Gray’s Manual.”</p> <p>Alder (<i>Alnus incana</i>), catkins shedding pollen Aspen (<i>Populus tremuloides</i>), „ Mayflower (<i>Epigæa repens</i>), flowering Field Horsetail (<i>Equisetum arvense</i>), shedding spores Blood-root (<i>Sanguinaria Canadensis</i>), flowering White Violet (<i>Viola blanda</i>), flowering Etc., etc., etc.</p> <p>CULTIVATED PLANTS, ETC.</p> <p>Red Currant (<i>Ribes rubrum</i>), flowering „ „ fruit ripe Black Currant (<i>Ribes nigrum</i>), flowering „ „ fruit ripe Cherry (<i>Prunus Cerasus</i>), flowering „ „ fruit ripe Plum (<i>Prunus domestica</i>), flowering Etc., etc., etc.</p> <p>FARMING OPERATIONS, ETC.</p> <p>Ploughing begun Sowing begun Planting of Potatoes begun Shearing of Sheep Hay Cutting Grain Cutting Potato Digging</p> <p>(METEOROLOGICAL PHENOMENA.)</p> <p>Opening of (a) Rivers, (b) Lakes without currents Last Snow (a) to whiten ground, (b) to fly in air Last Spring Frost (a) “hard” (b) “hoar”</p>		

Water in Streams, Rivers, etc., (a) highest, (b) lowest		
First Autumn Frosts (a) "hoar" (b) "hard"		
First Snow (a) to fly in air, (b) to whiten ground		
Closing of (a) Lakes without currents, (b) Rivers		
Number of Thunder-storms (with dates of each)		
Jan _____, Feb _____, Mar _____		
Apr _____, May _____, June _____		
July _____, Aug _____, Sept _____		
Oct _____, Nov _____, Dec _____		
	Going North or coming in Spring.	Going South or leaving in Fall.
MIGRATION OF BIRDS, ETC.		
Wild Duck migrating		
Wild Geese migrating		
Song Sparrow (<i>Melospiza fasciata</i>)		
American Robin (<i>Turdus migratorius</i>)		
Slate-coloured Snow Bird (<i>Junco hiemalis</i>)		
Spotted Sand Piper (<i>Actitis macularia</i>)		
Meadow Lark (<i>Sturnella magna</i>)		
Kingfisher (<i>Ceryle Alcyon</i>)		
Etc., etc., etc.		

AUSTRALIA

VICTORIA

SCHOOL OF HORTICULTURE IN RICHMOND PARK, MELBOURNE

The site covers 33 acres of ground. In 1890 the Government decided to start here an institution for the training of orchardists and small settlers, and during the past eight years much has been done to provide for teaching the regular and casual students, and those visitors calling in search of special information. Classroom instruction is given in horticultural science, vegetable pathology, botany, physical and commercial geography, entomology; measuring, levelling, designing, and plotting of homesteads, orchards, small farm and garden areas, and the most approved methods of raising and managing fruit trees and plants. Practical work includes the propagation and management of orchard trees, citrons, table grapes, bush

fruits; harvesting, storing, packing, marketing, drying and canning fruit; vegetable culture; clearing, grading, and trenching land; management of soils, manures, drainage, and villa gardening.

The principal and his assistant carry out this programme by affording lessons daily in the classroom and field. In 1899 women students were first admitted. They have for the most part devoted their attention to the designing and making of villa gardens, vegetables and herb culture, and the special cultivation of table grapes and lemons—branches of commercial horticulture most suited to women. Previous to 1903 instruction was free, but a fee of £5 per annum is now charged. There is a steady advance in the number of students, and every indication of the school doing generally helpful work in the service of the State.

The school year extends from February to December.

The tabulated return on the following page of persons engaged in agricultural pursuits in 1901 is of interest. Only those subjects bearing reference specially to horticulture are mentioned.

A lady near Melbourne has recently bought a place and laid out a garden. There is about one acre of ground, and a five-roomed cottage with various outhouses, etc. The whole cost about £400, and has since increased in value. A telephone is attached, and a good many people in Melbourne ring up when they want flowers. These are despatched direct to the buyers by train, the station being only ten minutes' walk from the house. All the flowers are hardy ones. The work is done by a gardener, who comes when wanted, and the rest is done by the lady herself. There has not so far been much profit, as it has only been started two years. As the garden is now well-established, it is supposed it will pay well in August, September, October, and November, which are the best months in Melbourne.

<i>Persons following Agricultural Pursuits.</i>	<i>Employers of Labour.</i>		<i>In Business on their own account, but not employing labour.</i>		<i>Receiving Salary or Wages.</i>		<i>Relatives assisting.</i>	
	Males	F'm'es	Males	F'm'es	Males	F'm'es	Males	Females
Market Gardeners	859	19	1,647	32	1,518	9	576	132
Fruit Growers Orchardists	493	44	868	91	700	43	465	172
Hop, Cotton, Tea, Coffee Grower	10	2	7	—	48	48	9	2

Tobacco Grower	10	—	25	—	24	—	1	—
Vine Grower	174	18	72	8	1,131	6	86	39
Vignerons								
Horticulturist	237	7	571	17	2,132	7	107	39

NEW SOUTH WALES

“We are a young community and also a small one, otherwise we should have had at least a small college for lady gardeners ere now,” is the answer that comes to my inquiry on the subject. I am told, however, that there is fine scope for such a thing, and that the women of New South Wales are quite ready for it. Up to now they have chiefly confined themselves to bettering the conditions of labour in those departments voluntarily sought by women, rather than to forming new schemes.

TASMANIA

Accounts which come to us of the possibilities of the successful cultivation of fruits, trees and plants are all favourable. The mildness of the winter and the great amount of sunshine cause very rapid growth and production of fruit. Plants that will not survive an English winter need no protection here. We learn, too, that the acreage of gardens and orchards is steadily on the increase.

There are so far no training schools for lady gardeners, and no posts are held by them either in private gardens or market gardens. The jam factories employ women, but these belong to the working classes. Nothing definite can therefore be held out as to the future for lady gardeners, beyond the certainty that the more directing heads we have, superintending the development of these orchards and gardens, the more successful they will be.



THE MARCHIONESS OF SLIGO'S GARDEN, MOUNT BROWNE, NEAR GUILDFORD.

UNDER THE MANAGEMENT OF A LADY GARDENER.

Photograph by Pictorial Agency.

CHAPTER XVIII

TRAINING GROUNDS FOR MARKET GARDENERS.

Special opportunities are afforded to those who intend to devote their attention to the study of market-garden work. I am enabled, by the courtesy of the principals, to give the following information concerning some successful market gardens which are conducted by ladies, and where pupils are received. This I have supplemented with details of such facilities as are offered by public bodies for courses of instruction in the work.

THE VIOLET NURSERIES AT HENFIELD, SUSSEX.

Proprietors: MISSES A. AND D. ALLEN-BROWN.

The Violet Nurseries, instituted a few years ago in a small garden, now extend over several acres, and are carried forward on practical business lines.

The Misses Allen-Brown, specialist violet growers, do the entire work of the nurseries, with the assistance of a boy and of any pupils who may be with them.

Pupils are received on payment of five guineas premium for a year's tuition. The instruction given is entirely practical. Arrangements are made to obtain rooms for pupils in the village, the charges being (approximately) one guinea for a single room and board, and fifteen shillings each for a room shared.

The work of the year is, in general:—In spring, the taking of cuttings and planting out; in summer, the tending of plants and cutting of runners; in autumn, the lifting into frames, and the selling, packing and despatching of plants and flowers; in winter, the picking of blossoms and the tending of plants in frames. Of the four, spring is the busiest and most instructive season for violet-growers, but it is advisable that pupils should, if possible, remain in the nurseries for the full year.

The work is exceedingly healthy—above all other open-air employments—owing to the fact that the smell of violets has medicinal qualities. The pleasure of the work proves its ample reward, apart from the pecuniary success, to all who give themselves to it, unreservedly, with physical and mental vigour.

Amongst ladies who are supervising, or themselves undertaking, market gardens, are the following. They all write hopefully about their work, but seem of one accord in thinking that it is only by the combination of their brains and the work of a labouring man that success ensues.

MISS DORA GROOME, at Heath Nursery Gardens, Petersfield, has the largest nursery garden in the neighbourhood, but only employs men.

MISS A. CROSS, Cleveland, Bere Alston, Devon, writes that, having been trained at Studley College, she has lately started a nursery garden. At present the garden is only three-quarters of an acre in extent, but it is proposed to add to it each year. It will be eventually a fruit and asparagus market garden, supplemented by poultry and milking goats.

MISS BIRTELL and her sisters have a violet farm at the Cottage, Shripney, near Bognor. They do all the work in connection with the violets themselves, and also make the frames and glaze and paint the lights. A labouring man does the rough digging. Miss Birtell has two acres of land and about half of it is devoted only to the violets.

HOLLY BUSH NURSERY, CHESNUT LANE, AMERSHAM, BUCKS

MISS M. AGAR and MISS M. G. HOLMES, directors of this garden, are willing to take ladies as students in simple land surveying and plan drawing. Terms for tuition are £2 2s. per week; and if students live at the nursery, 30s. a week is charged for board and lodging.

Gardening students will probably be admitted shortly, but the garden has not been started long enough to take these at present. Miss Agar is a garden designer. The following are particulars of her nursery garden:—

The Nursery undertakes the laying out, stocking, and up-keep of gardens, and provides seeds, bulbs, plants, shrubs, and all garden requisites.

Skilled gardening labour is supplied at 4s. a day. Yearly or monthly contracts can be made.

Advisory work is undertaken at a guinea for the first visit, and half-a-guinea for subsequent visits; or two guineas a week with all expenses.

MISS A. BATESON, Bashley Nursery, New Milton, Hants, has a most successful market garden, described on p. 73. She sometimes takes students, and her terms are £40 premium for a year's work without residence; £100 per annum premium with board and residence.

MISS DIXON, F.R.H.S., holding the Horticultural College, Swanley, diploma, and 1st class Horticultural certificate, South Kensington, assisted by MISS EVE, R.H.S., receives students at Elmcroft Nursery, Westergate, Chichester, suitable rooms being provided in the village. The house stands in two acres of ground, four miles from Bognor, and six from Chichester. Both soil and climate are good. There are 300 ft. of glass, in which are grown melons, cucumbers, tomatoes, peaches, strawberries, forced rhubarb and seakale, early vegetables, roses, chrysanthemums, bulbs, etc. Outside are grown roses, sweet peas, violets, and other flowers; vegetables of all sorts, and fruit.

Poultry and ducks are kept, and there is also jam making and fruit bottling.

The produce is chiefly sent to Bognor, Chichester, and Manchester, and private orders are supplied for weekly hampers of vegetables, eggs, and cut flowers.

A man is kept to help with the rough work.



CAPTAIN COLTHURST VESEY'S GARDEN, LUCAN, IRELAND.

FOR MANY YEARS HIS MOTHER, MRS. VESEY, HAS MADE THE GARDEN HER PERSONAL INTEREST.

Photograph by Pictorial Agency.

In 1907 Miss Dixon obtained the R.H.S. Silver Medal for melons, and second prize for fruit, flowers, and jam from the Women's Agricultural and Horticultural International Union.

Although the following is not a school for instruction in horticulture, I should like to mention it, as young ladies are taught floral decoration and other matters, which may prove of great use to them, if they wish to start job gardening or decoration for themselves.

The Women's London Gardening Association, established in 1891, undertakes floral decorations of all kinds. Cut flowers supplied regularly by contract, and arranged if desired. Wreaths, crosses, sprays, bouquets, baskets, dinner-tables, receptions, ballrooms, platforms, weddings, etc. Table decorations are a speciality. Jobbing gardening work is also done. Contracts are taken to keep in order, and furnish, gardens, conservatories, window-boxes, balconies, roof-gardens, etc., by the year or season.

Advice is given on the management of country or suburban gardens at reasonable fees. Lawns are sown and kept in order, gravel is supplied, soils, fibre, sand, flowerpots, retail. Seeds, bulbs, etc.

The above is under the management of Mrs. T. Chamberlain, and all communications should be addressed to her at 107, Pimlico Road, Chelsea, S.W.

The nursery is in St. Ann's Place, Milman Street, Chelsea, and the old wells in it were once in Sir Thomas More's garden.

Mrs. Chamberlain takes one or two young ladies from time to time, as apprentices or improvers to learn jobbing gardening, florist's work, or both if desired. Terms for improvers who have already had some training, 10s. per week to start with. The terms for a course, £30. The ladies find their own board and lodging. After three months, Mrs. Chamberlain pays them 2s. 6d. per week, and after six months 5s. per week. For the last quarter of their training, ladies receive 7s. 6d. per week. Sometimes ladies are taken for four months, upon payment by them of £10 10s.

Should it prove desirable, they can, at the end of this time, pay a further sum and remain a year. Pupils are expected to be ready to do anything required, and are not allowed to pick and choose their work.

The following extracts from the report of the

WOMEN'S INTERNATIONAL AGRICULTURAL CLUB

will serve to show the scope of its object and work. The club has as its premises the Manor House, Bredon's Norton, near Tewkesbury, Worcestershire.

There are few more beautiful spots in rural England than the little village of Bredon's Norton in Worcestershire, nestling as it does at the base of the lofty Bredon Hill and overlooking the fertile valley of the Severn. The club-house stands on a gentle eminence, and from its broad terraces may be viewed some of the most lovely scenery in England. Abruptly behind it rises the Bredon Beacon Hill, of which a great poet wrote:

“Twelve lovely counties saw the blaze
From Bredon's lonely height.”

The hill is crowned by the remains of a Roman encampment, thrown up, it is said, during the wars of the Romans against Boadicea, the Queen of the Icenii.

The hopeless intellectual outlook of agricultural pursuits dissevered from contact with the foremost thought and scientific experiments of to-day has driven the enterprising progressive workers of both sexes from the land to the towns.

Miss Woodhull, of Norton Park, Bredon's Norton, near Tewkesbury, who has gone deeply into the agricultural problem, more especially the great need for the extension of intensive culture, has retained a fine old Elizabethan manor house on her estate, which she has renovated and filled with beautiful old furniture for the club.

Since the lighter branches of agriculture have taken such a prominent place on the list of suitable occupations for women, there has been a great demand for some place where the subjects could be studied for short or long periods. Though short courses are held no college as yet has filled this want.

Where a large number of students are together it is necessary to have a certain number of rules which compel them to lead the ordinary college life. In many cases it is not convenient to do this, and so many a woman who sometimes finds she has a week or two at her disposal and would very much like to come to a place of this sort is debarred from doing so.

It is hoped this club will do much to solve the problem of what is to be done with the healthy, energetic unmarried woman of the present day, who has a little capital, and who wishes to live in the country, instead of leading a narrow and restricted life in towns. In Bredon's Norton in a simple way she can live her own life, have congenial employment, and at the same time add to her income without being cut off from associating with people of her own standing, or debarred from intellectual occupations, which is so often the result if an isolated country life is led devoted entirely to agricultural pursuits.

The result, so far, is satisfactory. The scheme is in its second year, and has earned a right to its recognition by the public. Since January, 1906, several cottages have been secured in the village, and have been made suitable for gentlewomen to reside in. These have all been taken by those who carry on whatever work they are interested in. Some members have taken up half-acre plots, and among other things are growing tomatoes in large quantities.

The club is unique of its kind; while combining opportunities for the higher intellectual pursuits and attracting those who have travelled and read extensively, it enables those who wish to specialise in the lighter branches of agriculture to carry out their work under the following conditions:

1. Members staying at the club will be able to take lessons in gardening, dairy or poultry work, or bee-keeping, for long or short periods.

2. Members who have trained at any of the existing colleges can reside at the club and rent small plots, from half an acre upwards, which will enable them to make a start either in market gardening or otherwise with very little outlay.

3. A horticultural school is carried on in connection with the club. The younger students under the necessary supervision will live in separate houses.

4. Members can attend the higher courses at Cheltenham Ladies' College.

5. Members who reside in the village or immediate neighbourhood can obtain all meals at the club at a very moderate tariff. This is an important item, as gentlewomen are often deterred from settling in the country on account of the great difficulty of getting anyone to do the necessary cooking and housework; by being able to obtain their meals they are more or less independent of the servant question and manage very well with occasional help.

The library contains standard books of reference in the lighter branches of agriculture, besides a wide range of other subjects, together with the principal English and foreign magazines.

An experienced secretary and typist is at the disposal of members. The telephone is attached to the club; the principal houses and cottages in the village are connected by telephone.

The club house is situated 106 miles from London, 16 miles from Gloucester, 14 miles from Worcester, 14 miles from Evesham, 11 miles from Cheltenham, 11 miles from Malvern, 5 miles from Tewkesbury, and 5 miles from Pershore.

TARIFF

Resident members: breakfast, 1s.; dinner (middle day), 1s. 6d.; afternoon tea, 6d. and 9d.; high tea, 1s.; plain late dinner, 2s. 6d.; supper, 1s. 6d.; cocoa and cake, 3d. Rooms from 1s. 6d. per night. Meals for non-resident members, permanently living in cottages, 15s. per week.

LIST OF CHARGES

VISITORS

Terms per week, 2 guineas, to include: Breakfast, 1s.; dinner (middle day), 1s. 6d.; afternoon tea, 6d.; supper, 1s. 6d.; room, 1s. 6d. Rooms from 1s. 6d. per night. Meals for non-resident visitors as per charges on tariff card.

WEEK-END VISITORS

From middle day, Saturday, to middle day, Monday, 17s. 6d. (to include breakfast, mid-day dinner, afternoon tea, and supper, also room).

Arrangements can be made for boarding dogs.

The following scheme is in operation under the Department of Agriculture and Technical Instruction for Ireland. Any woman, of whose qualifications the above department approves, is eligible for the post of instructor under this scheme, which, by permission, I am allowed to reproduce. It will be seen that the actual appointment rests with the local authorities.

Miss Lucy Douglas, in Cavan, is at present the only woman gardener employed under it.



ROSE GARDEN, DANNY, SUSSEX.

THE ROSES ARE PRUNED AND ATTENDED TO BY MISS ALICE CAMPION.

Photograph by Pictorial Agency.

SCHEME OF INSTRUCTION IN HORTICULTURE AND THE MANAGEMENT OF BEES,
1907-8

1. The department are prepared, provided a suitable instructor in horticulture and bee-keeping can be obtained, to approve of the appointment of at least one such person for each county in Ireland. In the case of new appointments no person shall be eligible for the position of instructor in the county of which he is a native, or in which he permanently resides.

2. The department will, as far as possible, assist the county committee in obtaining an instructor, by supplying the names of persons qualified for the post. If a county committee should find it impossible to obtain a person

competent to give instruction in both branches the department may sanction the employment of separate instructors for each subject.

3. The remuneration of the instructor shall not, unless in exceptional circumstances, exceed £2 per week, in addition to expenses of locomotion, which include second or third-class railway fare, as decided by the county committee, car hire when necessary, or a bicycle allowance not exceeding 2d. per mile in lieu thereof.

4. The employment of the instructor under this scheme shall not continue beyond the 30th of September, 1908, and is terminable at any time previous to that date by the giving of four weeks' notice in writing on either side.

5. It will be the duty of the instructor to give demonstrations and, if approved, to deliver lectures on horticultural subjects, such as soils, manures, vegetable, fruit, and flower cultivation, plant diseases, and insect pests—to visit gardens and orchards, and give practical demonstrations on spraying, planting, pruning and grafting of fruit trees—to conduct such experiments and other demonstrations in the spring and summer as may be approved by the department—to select suitable land for this purpose—to supervise the sowing of the seeds and manures, and the keeping of the plots free from weeds—to weigh the produce, tabulate the figures, and prepare a report on the results—to give instruction in the principles and practice of modern bee-keeping—to deal with diseases of bees, plants, and trees—to advise farmers, cottagers, and others interested in land, as to the planting of trees, etc., for shelter and ornament—to reply to letters from those seeking his advice on horticultural and bee-keeping subjects—to report to the department and to the county committee on the progress of his work either weekly or otherwise, as may be required; and generally to give his whole time to the work and to do all in his power to further the interests of horticulture and bee-keeping in the county.

6. The instructor shall report to the county committee on all cases of foul brood which may come under his notice. He may, subject to the consent of the owner of the bees being previously obtained by him, destroy infected stocks by burning them, and shall take all due precautions against the spread of the disease. He must advise in writing the county committee of each case in which stocks are so destroyed, and the county committee may, if they think fit, pay to the owners of such stocks a sum not exceeding 5s.

for each stock destroyed, provided that the amount set aside in the county scheme for compensation under this clause shall not be exceeded.

It will also be his duty to report to the county committee the names and addresses of persons in the possession of gooseberry bushes on which he has detected, or has reasonable grounds for suspecting the existence of, American gooseberry mildew.

7. For the purposes of this scheme the county should be divided into circuits. The instructor should work for three or four weeks in each circuit, and give lectures and demonstrations during that time. In cases, however, where an instructor may be employed to give instruction in bee-keeping only it will not be necessary to divide the county into circuits. In such instances demonstrations can be arranged for at centres from which applications have been made through the secretary of the county committee for his services. The instructor will visit gardens, orchards or apiaries in the district, and give such information on practical subjects as the circumstances of the case may suggest.

The county committee are alone responsible for the selection of centres for lectures and demonstrations. No work of this nature should be undertaken by the instructor, though it is desirable that he should be consulted.

8. It will be the duty of the county committee to select centres at which the lectures and demonstrations will be given, and to appoint at each centre a local committee, with an honorary secretary, who should select the school and arrange for the hiring, lighting, and warming of the room in which the lectures will be delivered.

In selecting centres the county committee should have particular regard to districts in which lectures and demonstrations may not have been given in previous years.

It will also be the duty of the county committee to undertake the responsibility of seeing that the instructor's time is fully and usefully employed.

The county committee shall keep a separate account of all expenditure under this scheme, and shall furnish detailed statements of such expenditure as may from time to time be required by the department.

9. Where it is considered desirable to arrange for lectures, the lectures should be given in schoolrooms or other suitable public rooms in the evenings, and should be held in rural centres. Towns and the larger villages should be avoided, as experience has shown that the greatest success attends those lectures which are given in the rural parts of a county. The local committee at each centre should be responsible for appointing a representative chairman for each lecture as well as for the distribution of the short syllabus of the lectures which will be prepared by the lecturer as soon as he is appointed. The local committee should undertake to have posters and handbills, which will be supplied by the secretary of the county committee, effectively displayed and distributed throughout their district. Copies of these posters and handbills should be forwarded to the department at least a week prior to the commencement of each course of lectures. Each lecture should be followed by a discussion, during which persons interested in horticulture and bee-keeping will be invited to ask questions. Where a course of lectures has already been given a new syllabus should be presented.

10. The county committee may purchase fruit, forest and other trees, shrubs, or plants, in bulk, and resell them at cost price, including carriage, to farmers, cottagers and other residents in the county. As, however, it has come to the knowledge of the department that trees and plants infested with disease have been imported into Ireland, it will be necessary for county committees who intend to put this clause into operation to invite from nurserymen tenders for the supply of trees, etc., to be guaranteed free from disease, and before acceptance to submit the tenders to the department for examination. The department may, if they think it advisable, inspect the trees, etc., that are offered for sale, and satisfy themselves that they are suitable and free from disease.

11. The horticultural demonstrations should commence early in autumn and be continued throughout the whole year.

12. In each circuit one demonstration plot may be provisionally selected for the purpose of growing fruit, vegetables, and flowers, and showing improved methods of cultivation, but no new plots shall be selected in a county if a sufficient number of suitable plots have been established in previous years.

Before sanctioning the establishment of a new plot the department will inspect the site with a view to determining the suitability of the land, etc.

(a) In counties in which a sufficient number of suitable plots already exist the committee shall make provision for the continuance of the plots at a cost not to exceed £1 5s. per plot. (See List A on p. 270.)

All requisite labour must be given gratuitously by the owner of the plot, who will be entitled to the produce.

(b) In cases where it is necessary to establish new plots the department will require compliance with the following regulations:—

(1) Plots must not exceed a quarter of an acre in extent, or be less than one-eighth of an acre (quarter-acre plots are recommended).

(2) No new plot shall be established save at a convenient centre adjacent to a main road.

(3) Plots should be selected on sites which are properly fenced. Should, however, any fencing be necessary, the materials (i.e., a sufficient quantity of wire with wooden posts) may be supplied by the committee, provided funds have been allocated for the purpose in the county scheme; the fencing to be put up by the owner of the plot at his own expense. In no case will the department approve of expensive fencing and gates being supplied by the county committee to a plot owner.

(4) The aspect of each plot and the nature of the soil must be suitable for fruit and vegetable growing. Necessary improvements, such as drainage, must be carried out, and when required farmyard manure must be supplied by the plot owner without expense to the committee.

(5) The owner of the plot must sign an undertaking to continue the plot for three years.

(6) The necessary labour must be given gratuitously by the persons providing the plots—the produce to be their property.

The cost of trees, etc., required for planting a new plot must not exceed £3. (See List B on p. 271.)

13. The department's approval in writing must be obtained before any expense is incurred in connection with the establishment of a plot, and application for such approval must be accompanied in each case by a detailed report from the instructor.

14. No action shall be taken by the county committee towards putting this scheme, or any part thereof, into operation until the sanction of the department has been obtained in writing.

15. In all matters of dispute relating to this scheme the decision of the department shall be final.

LIST A

LIST OF VEGETABLES, ETC., RECOMMENDED FOR A HORTICULTURAL DEMONSTRATION PLOT (NOT EXCEEDING ONE-FOURTH ACRE) ALREADY ESTABLISHED

ESTIMATED COST ABOUT £1 5s. 0d.

Vegetables

<i>Description.</i>	<i>Quantity.</i>
Beans, Broad	1 qt.
Beans, French	½ pt.
Beans, Runner	½ pt.
Brussels Sprouts	½ oz.
Broccoli	½ oz.
Cabbage, Early	3 oz.
Cabbage, Savoy	½ oz.
Cauliflower	½ oz.
Carrot	2 oz.
Celery	100 plants.
Kale, Curly	½ oz.
Leek	1 oz.
Lettuce	1 oz.
Onion	3 oz.
Onion, Potato	1 st.
Parsnip	2 oz.
Parsley	1 oz.
Peas	3 qts.
Potatoes, Early (to be boxed)	4 st.
Potatoes, Late (to be boxed)	4 st.
Turnips	2 oz.
Vegetable Marrow	1 packet.

Flowers

Candituft	1 packet each.
Canterbury Bells	1 „
Larkspur	1 „
Lupin	1 „
Mignonette	1 „
Nasturtium	1 „

Sunflower	1	„
Wallflower	1	„
Sweet Pea	1	pt.

Artificial Manures

Muriate of Potash	3	stone.
Nitrate of Soda	3	„
Superphosphate	4	„

LIST B

LIST OF FRUIT TREES, PLANTS AND SEEDS, ETC., RECOMMENDED FOR A NEW HORTICULTURAL
DEMONSTRATION PLOT OF ONE-FOURTH ACRE IN EXTENT

ESTIMATED COST ABOUT £3

Fruit

<i>Description.</i>	<i>Quantity.</i>
Apples, Bush on Paradise Stock	6 trees.
Pears, Bush on Quince Stock	2 „
Plums, Bush	2 „
Currants, Red	3 bushes.
Currants, White	3 „
Currants, Black	6 „
Gooseberries	12 „
Raspberries	24 canes.
Strawberries	100 plants.

Vegetables

Beans, Broad	1 qt.
Beans, French	½ pt.
Beans, Runner	½ pt.
Brussels Sprouts	½ oz.
Broccoli	½ oz.
Cabbage, Early	3 oz.
Cabbage, Savoy	½ oz.
Cauliflower	½ oz.
Carrot	2 oz.
Celery	100 plants.
Kale, Curly	½ oz.
Leek	1 oz.
Lettuce	1 oz.

Mint	3 plants.
Marjoram	3 „
Onion (Autumn-sown)	100 „
Onion	3 oz.
Onion, Potato	1 stone.
Parsnip	2 oz.
Parsley	1 oz.
Peas	3 qts.
Potatoes, Early (to be boxed)	4 st.
Potatoes, Late (to be boxed)	4 st.
Rhubarb	6 plants.
Sage	3 „
Thyme	3 „
Turnips	2 oz.
Vegetable Marrow	1 packet.

Flowers

Candituft	1 packet.
Canterbury Bells	1 „
Dahlia	2 plants.
Larkspur	1 packet.
Lupin	1 „
Mignonette	1 „
Nasturtium	1 „
Roses	4 plants.
Sunflower	1 packet.
Wallflower	1 „
Sweet Pea	1 pint.

Artificial Manures

Muriate of Potash	3 st.
Nitrate of Soda	3 st.
Superphosphate	4 st.

APPENDIX

USEFUL INFORMATION FOR LADY GARDENERS

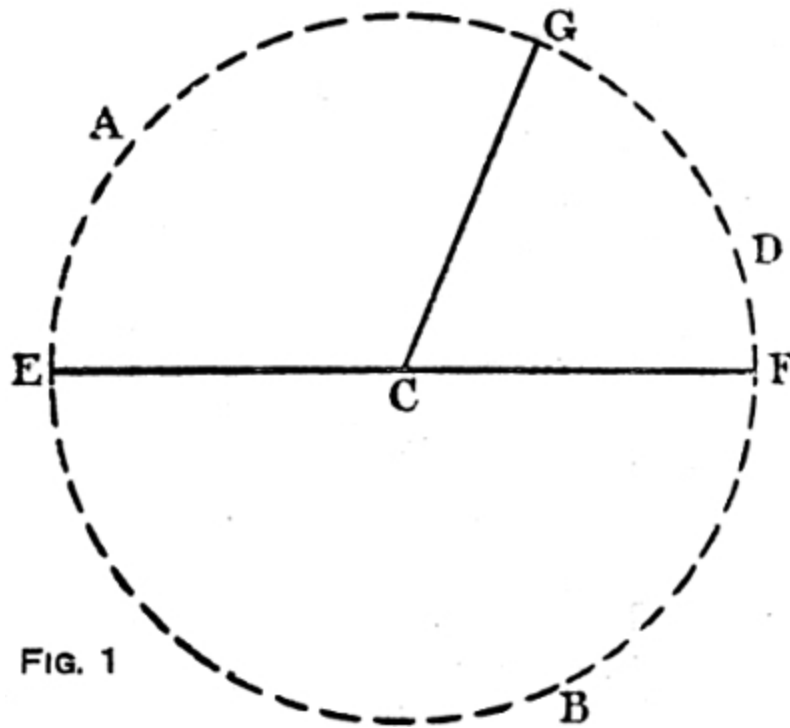
HINTS FOR LAYING OUT FLOWER BEDS

A Lady Gardener may have to arrange new ornamental flower beds, and a few hints about pegging out the shape may be useful. It does not always follow that a design for a formal flower plot works out as well in reality as it does upon paper. In order to gain a good impression of what their effect will be when finished they should be marked out with pegs and *white* tape or string tied round these to show the outline of the future beds. That is, if ground that has already been broken up is being dealt with.

Should, however, a wide stretch of lawn have to be marked out in flower beds, a capital plan is to draw the outline of them with a whitewash brush upon the grass, in the same way that a lawn tennis court is marked. Having ascertained that no improvement or alteration will be necessary, work can then be commenced with the turf cutter.

It is convenient, for drawing circular or other beds, to have a garden *compass*. Should this not be handy, a couple of stout iron pins and a length of rope will answer the purpose.

The compass consists of a stout iron pin and a light, flat rod of wood six to ten feet long, with holes drilled the whole length, one inch apart. One end of the rod has a perfectly round ring, which will turn easily on the pin. A second pin or rod about three feet long is needed as a marker.



In making a circular bed (Fig. 1), the centre is first determined on, and the stout pin is driven in through the ring. The marking pin is then placed in the hole corresponding to the required radius. With it the circle is drawn.

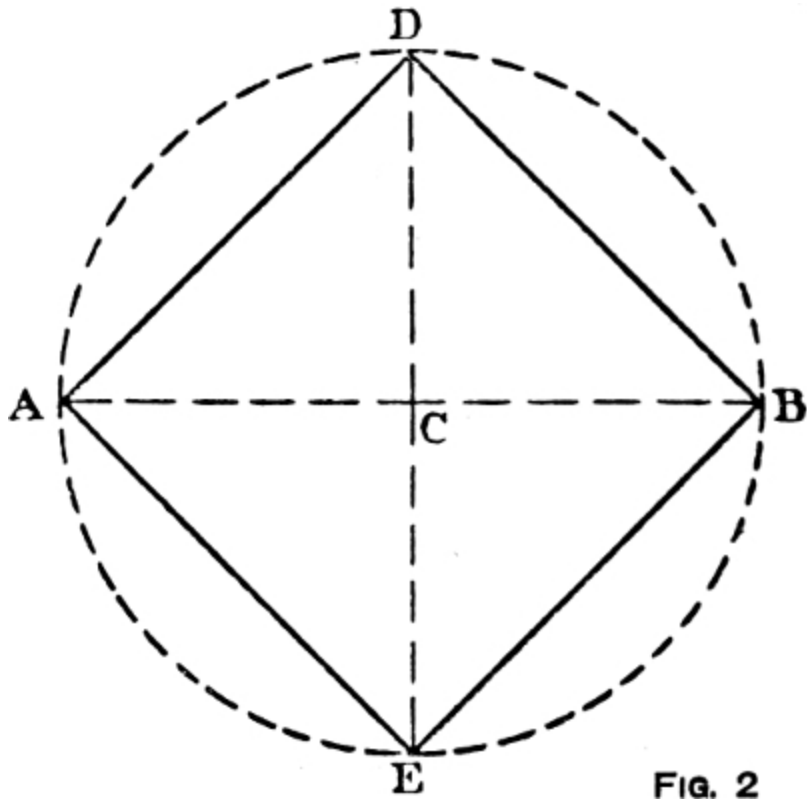


FIG. 2

FIG. 2

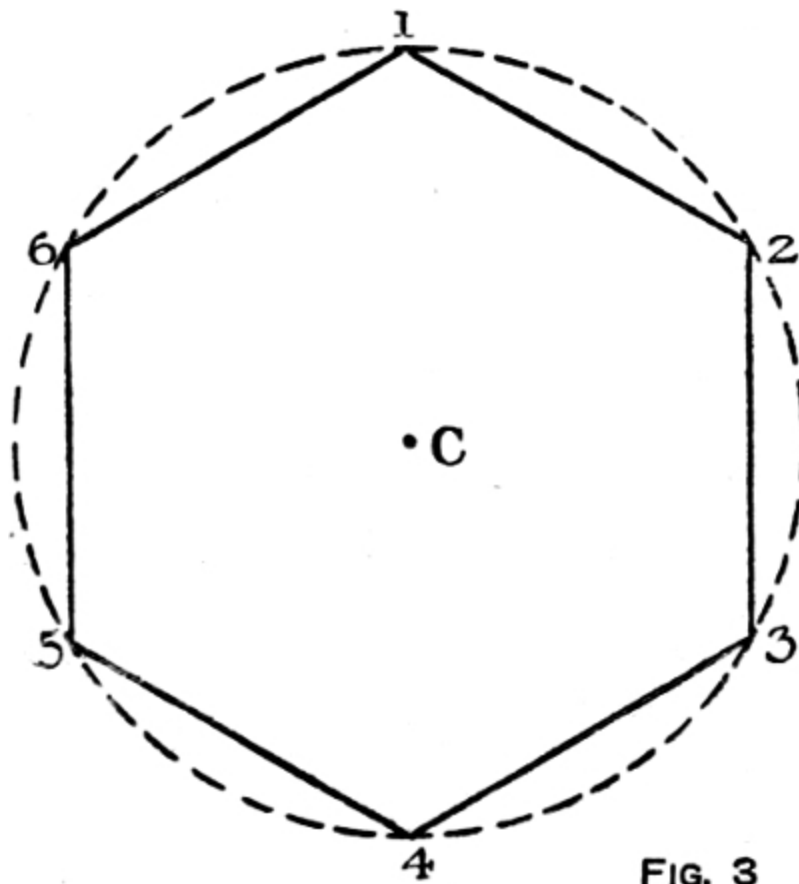


FIG. 3

FIG. 3

When using a cord, instead of the wooden marking pin, it must be stretched tight on the centre pin, and the radius measured along it from the pin. The marker is then passed through the rope and bound in place with a piece of twine or soft wire. Care should be taken, when marking, that the rope rests either on the ground or parallel to it.

A circular bed is the easiest of all to set out, but it is the foundation of several others. The easiest are polygons of four, six, and eight sides. To lay out a four-sided polygon (Fig. 2), equal a square: Lay off the diagonal A B. Lay off C D at right angles to A B, and join A D, D B, B C, C A.

To lay out a six-sided bed (Fig. 3), equal a hexagon: From the centre C draw a circle with radius C 1. Then from 1 with the same radius cut the circle at 2, from 2 cut it at 3, and so on. Then join 1 2, 2 3, 3 4, etc. To lay out an eight-sided bed, equal an octagon (Fig. 4): Draw a circle, lay off the

diameters A B, C D at right angles to each other. Next bisect the four right angles at E F G H, and join A E, E C, C G, G B, etc.

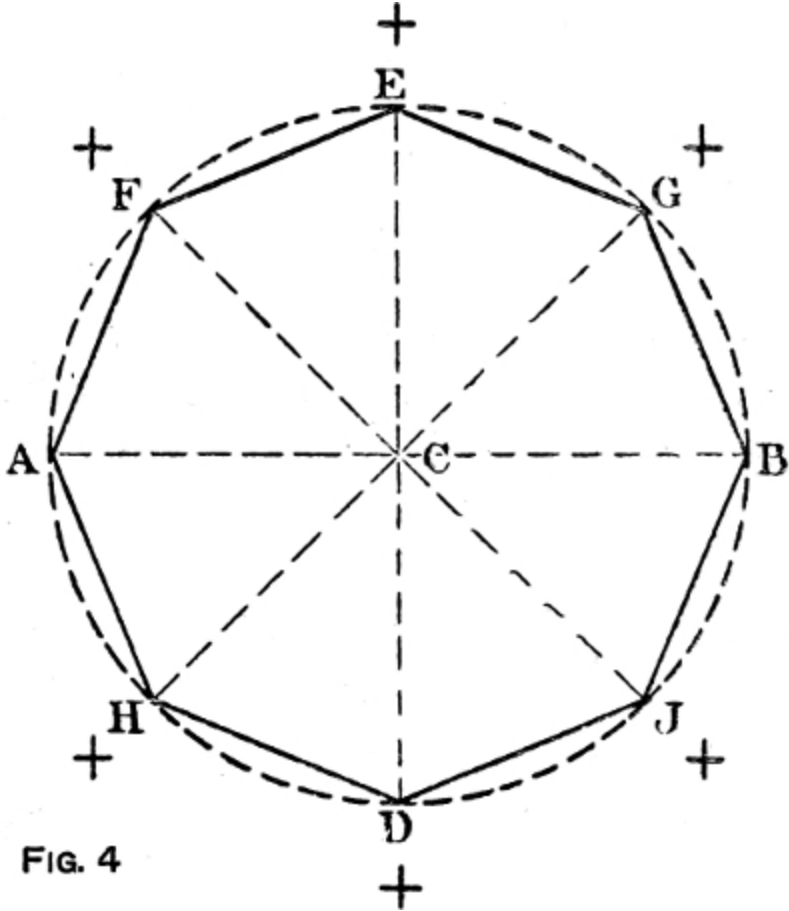


FIG. 4

FIG. 4

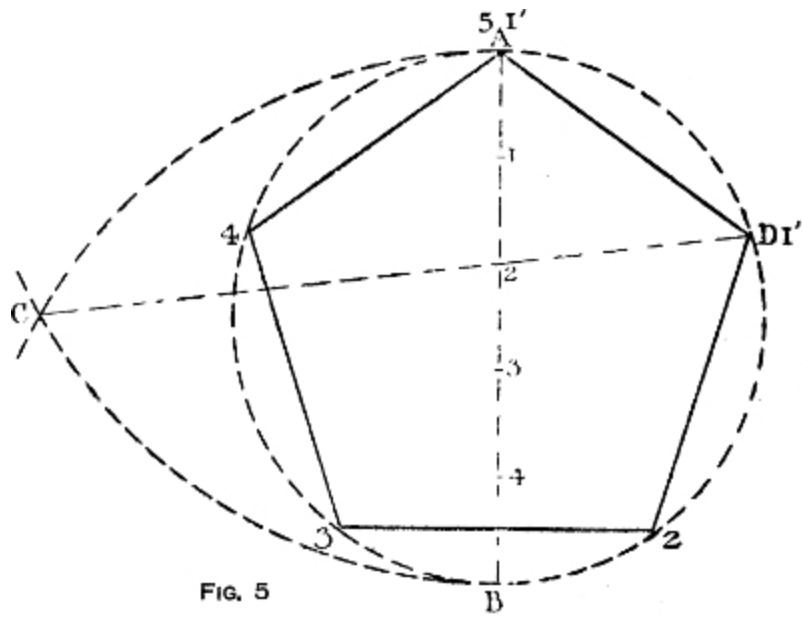


FIG. 5

FIG. 5

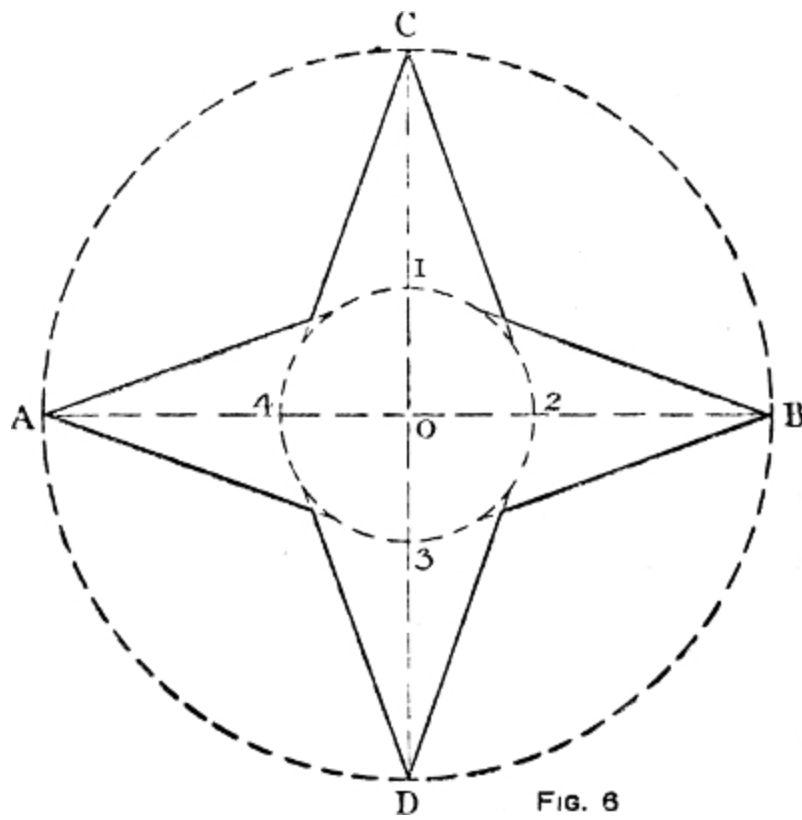


FIG. 6

FIG. 6

These three are the most usual figures, but it is easy to draw any number of sides to your polygon you may require.

First draw a circle, and lay off any diameter A B. Divide A B into as many equal parts as you want sides (in Fig. 5 it is five, as that is the most usual number required, but it may be seven or nine or any other number). From A and B with radius A B describe the arcs cutting each other at C. From C draw a line to figure 2 on the diagonal and produce it till it cuts the circle at D. Then from D with radius A D cut the circle at 2', from 2' cut it at 3', and so on, and join 1' 2', 2' 3', 3' 4', 4' 5'.

With a circle, too, it is easy to lay out a star bed with four, six, or eight points (Fig. 6), or a half moon.

Rectangular beds are also most easily set out by means of a circle.

In a diamond the line should bisect the diagonal.

The only other shape in general use is an oval, and this is not built up on the circle. First determine the length and breadth A B, C D (Fig. 7). Bisect A B and make C D perpendicular to it at the point of bisection O. From C with radius O A, cut A B in E F. These points are the form of the oval.

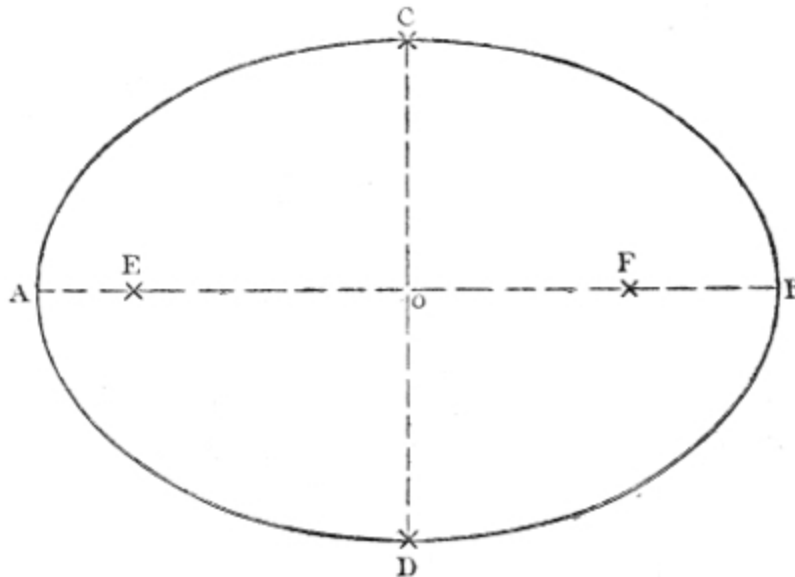


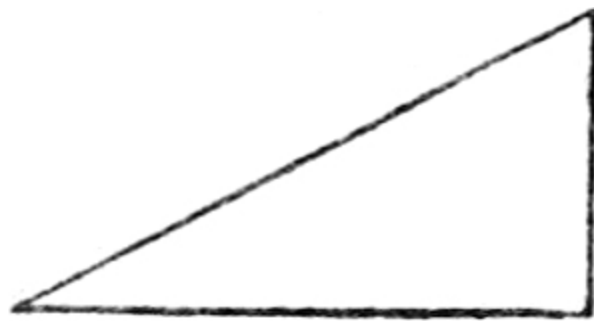
FIG. 7

Drive a stake in at E F and C, and put a cord round the three stakes. Tie the ends together, and take out the stake at C, and keeping the loop of cord

taut, draw C B D A, which will be a perfect oval.

The shape of the flower beds having been decided and cut out, attention will not only have to be given to drainage, soil, and manure, but the proper shape and building up of soil will have to be considered before planting takes place. This is a matter rather insufficiently studied. It varies according to the surrounding position, arrangement of the garden and soil.

In some herbaceous borders where height at the back of the border is an advantage, it is well to build the soil up so:—

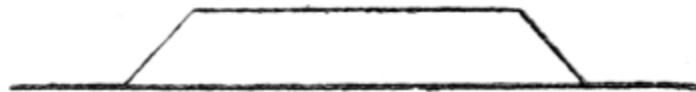


By this means tall flowers like hollyhocks, sunflowers, etc., have additional height given to them.

In formal beds, circular ones or others, the building up of the soil takes place from the sides to the centre—so:—

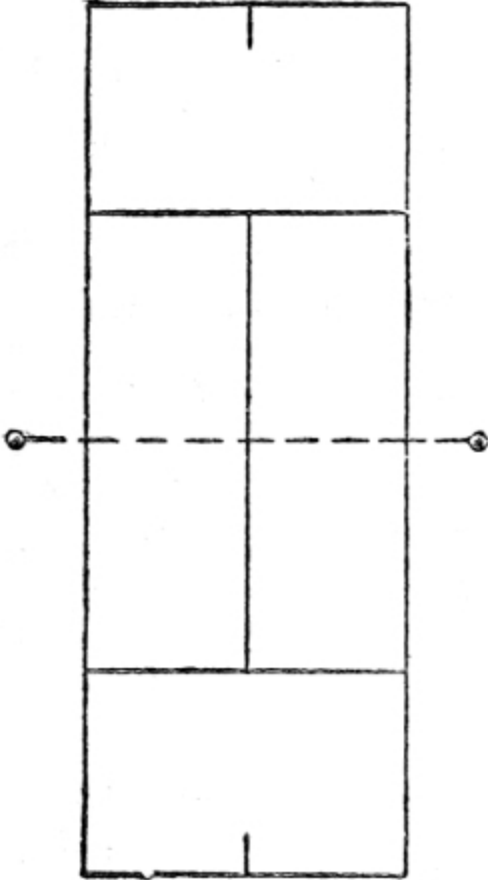


In other long, narrow beds the appearance is so:—

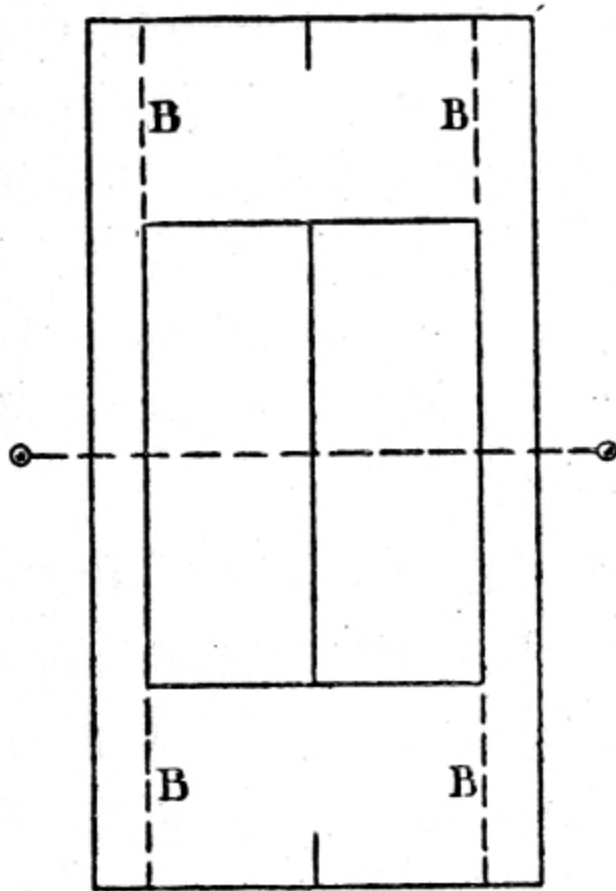


I have to thank Miss J. S. Turner for many of the above notes.

The following are the laws laid down by the Lawn Tennis Association for the year 1907.



SINGLE-HANDED COURT



FULL COURT

For the single-handed game, the court is 27 feet in width, and 78 feet in length. It is divided across the middle by a net, the ends of which are attached to the tops of two posts, which stand 3 feet outside the court on each side. The height of the net is 3 feet 6 inches at the posts, and 3 feet in the centre. At each end of the court, parallel with the net, and at a distance of 39 feet from it, are drawn the Base Lines, the extremities of which are connected by the Side Lines. Half-way between the Side Lines, and parallel with them, is drawn the Half-Court Line, dividing the space on each side of the net into two equal parts, called the Right and Left Courts. On each side of the net, at a distance of 21 feet from it, and parallel with it, are drawn the Service Lines. The marking of the part of the Half-Court Line, between the Service Lines and the Base Line, may be omitted, with the exception of a small portion at the centre of each Base Line, as indicated in the plans.

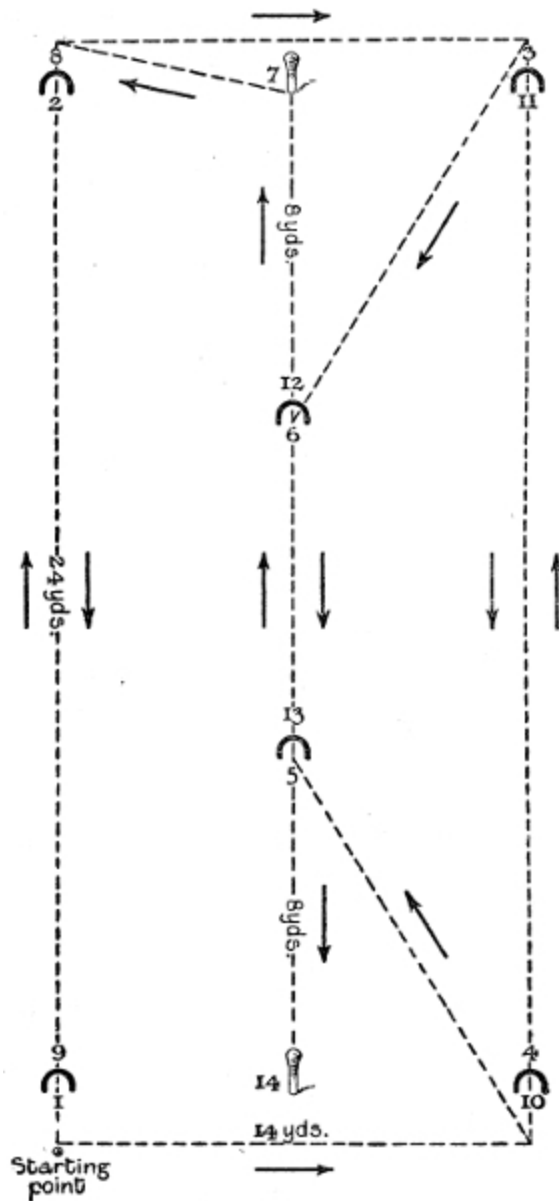
The plan here given is not the most generally used, but it may be the best adapted to the ground or to the requirements of the owner of the garden.

For the three-handed and four handed games, the court is 36 feet in width. Within the Side-Lines, at a distance of $4\frac{1}{4}$ feet from them, and parallel with them, are drawn the Service Side Lines. In other respects, the court is similar to that which is described for a single-handed game (Fig. 1).

Fig. 2 is the plan most generally used in private grounds; it is usual to continue the "Service Side Lines" as far as the Base-Lines, as shown in the dotted line B in the plan.

Keep the net loose from the posts when the ground is not used. For instructions as to the rolling, mowing, and general treatment of lawns, croquet and tennis courts, read Sutton's "Management of Lawns."

The following is the best way of making a mixture for marking boundary lines upon grass courts. Dissolve ordinary lump whitening in water, and use it when it is about the consistency of cream. A tumbler of milk or a small quantity of builders' size, mixed with it, will preserve the lines from being washed out and destroyed by rain. The mixture is made in a pail or watering pot, and the tank of the marking machine is filled from it. After using the washer, the whitening should be emptied, and the tank washed, for if allowed to remain, it hardens and has to be broken up.



PLAN OF CROQUET LAWN

HOW TO LAY OUT A CROQUET GROUND

The following regulations are those laid down in 1907, and are authorised by the Croquet Association.

The ground shall be rectangular, 35 yards in length by 28 yards in width, with a defined boundary. A flag shall be placed at each corner, and corner spots, 3 feet from both boundaries, shall be accurately defined.

Points on the boundary, 3 feet from each corner flag, shall be marked by white pegs, not exceeding $\frac{3}{4}$ inch in diameter, and 3 inches above the ground.

The above is for a full-sized ground, but for smaller ones any multiple of 5×4 is correct.

The *hoops* shall be of round iron, not less than $\frac{1}{2}$ inch, and not more than $\frac{3}{4}$ inch in diameter, and shall stand 12 inches out of the ground, and be firmly fixed. The crown shall be straight, and at right angles to the uprights, which shall be not less than $3\frac{3}{4}$ inches, or more than 4 inches apart (inside measurement) from the ground upwards.

The turning and the winning pegs shall be of wood, a uniform diameter above the ground of $1\frac{1}{2}$ inches. They shall stand 18 inches above the ground.

The setting of the hoops and pegs shall be in accordance with the diagram given. Permission for publishing this has kindly been given by Messrs. John Jaques & Son, 102, Hatton Garden, London.

Measurements:—Pegs in centre line of ground, 7 yards from the nearest boundary; hoops up centre line of ground, 7 yards from peg and 7 yards apart corner hoops, 7 yards from centre line and 7 yards from the nearest boundaries.

It is important in lifting the hoops for rolling and mowing, to fill up the holes with a mixture of fine dry earth and sand before replacing the hoops. By this means they are kept rigid and upright.

When the croquet season is over the hoops are put away and painted during the winter.

The best way to do this is to rub the hoops down well with fine sandpaper, and repaint them with good oil colour. Use it thin, and put on two or three coats. It is preferable to one thick coat.

The following notes may be useful to ladies who are seeking posts:—

THE CENTRAL BUREAU FOR THE EMPLOYMENT OF WOMEN,

9, SOUTHAMPTON STREET, HIGH HOLBORN, W.C.

(2nd Floor)

Two minutes from British Museum, Central London Railway; two minutes from Piccadilly and Brompton Railway, Holborn Station.

Telegrams: "Einheit."

Telephone: 4858 Central.

Chairman: THE MARCHIONESS OF SALISBURY

Vice-Chairman: MRS. W. E. HAITLAND

Hon. Treasurer: H. JOHN FALK, ESQ.

Secretary: MISS M. G. SPENCER

OBJECTS OF THE CENTRAL BUREAU

1. To prevent unemployment, and the evils resulting therefrom.
2. To help women, especially those of good education, to help themselves, by guiding them into suitable permanent work.
3. To promote the training of the unprepared, and thus raise the general standard of efficiency.
4. To maintain records of women desiring employment, and of employers having vacancies.
5. To collect and circulate information as to various occupations.
6. To study and record the fluctuations of demand and supply in various occupations.
7. To publish advertisement lists, newspapers, and other printed matter, by which the purposes of the society may be advanced.
8. To promote and co-operate with other bureaus and societies having objects wholly or partly similar.

Nature of the Work.—The work of the Central Bureau consists largely in counteracting those evils of social prejudice and defective training which have hitherto prevented many women of the educated class from being able to earn their own livelihood. It therefore includes not only what is ordinarily understood to be the work of an employment registry, but also the more

laborious and less immediately remunerative business of investigating possible openings for employment, promoting sound schemes for apprenticeship and training, and so advising and helping women as to enable them to make their services of genuine value to the community. Did space permit, it would be possible to give a long list of those women who have been enabled, through guidance received at the bureau, to fill satisfactorily positions of considerable responsibility and importance. By a carefully considered system of indexing and tabulation, the Central Bureau is able to make the results of its work available for the purposes of the statistician and the economic inquirer. The advantages of this system have been recognised by the committees of other women's employment bureaus, which have now, with few exceptions, adopted the same method of tabulation. But while endeavouring to introduce improvements in method, the council of the Central Bureau are far from losing sight of the individual needs of each employer and applicant for work, realising that upon the full comprehension of individual circumstances the success of the work depends.

REGISTRY FEES FOR APPLICANTS

(Those for employers seem unnecessary for our purpose here)

Registration, covering a period of three months, 1s. 6d; Suiting fees, permanent posts on salaries not exceeding 10s. per week, non-resident, 2s. 6d.; resident, 5s.; not exceeding 15s. per week, non-resident, 3s. 9d.; resident, 7s. 6d.: not exceeding 20s. per week, non-resident, 5s.; resident, 10s.: not exceeding 30s. per week, non-resident, 7s. 6d.; resident, 15s.; not exceeding 40s. per week, non-resident, 10s.; resident, 20s.—being half per cent. on first year's salary, non-resident; and one per cent. on first year's salary, resident. Temporary posts not exceeding three months, one per cent. on salary for the term, but not *less* than 2s. 6d. Temporary post not exceeding one week, 1s. 6d. Suiting fees in every case are payable on engagement. Hours of interviews, 11.30 to 1, and 2.30 to 4.30, excepting Monday mornings and Saturdays. In order to save time, callers are asked to write for appointments. Fees for consultation, 6d. and 1s.

Publications.—The Central Bureau publishes *Women's Employment* (price 1d., post free, 1½d.). The issue of this publication, which appears on the first Friday in the month, contains articles on employment subjects,

written by experts, together with advertisements, and information as to training. Intermediate lists of vacant situations and *workers* disengaged are published fortnightly at the same price. *Women's Employment* (including the intermediate Lists) may also be obtained from the Secretary of the Central Bureau on payment of 3s. per annum. The Central Bureau has also published a pamphlet entitled the *Finger Post* (price 1s. 6d.), containing 70 articles, written by experts, on professions for educated women.

WOMEN'S INSTITUTE,
92, VICTORIA STREET, LONDON, S.W.

Here, information is given of every kind upon social subjects, training for professions, board, education, etc. A member is entitled to have six questions a year answered free; non-members pay a small fee. Recreations of various sorts are also given, and three programmes are issued yearly of lectures, conferences, debates, social and musical afternoons and evenings. The library is well provided with books on subjects of interest to women, and on sociology.

The institute was founded in 1897, in the hope, which has already been fulfilled, that it might be able to provide something of the nature of a central office or "clearing house" of the various departments of woman's work which are now scattered over the whole field of English social life. It is no part of the aim of the institute itself to take up any department of work in competition with existing societies, much less to interfere in any way with their management. Its object is rather to make the work of existing societies better known, through its Information Bureau, through the circulation of literature, through meetings and conferences held within its walls, and lastly, by bringing the workers in one department into touch with those in another, by means of frequent social gatherings.

WHAT THE INSTITUTE OFFERS TO INDIVIDUAL MEMBERS

The social side of the institute has been organised with the double object:

-
1. Of bringing workers into friendly communication.

2. Of offering to isolated workers some of the recreation to which all workers are entitled.

SOME OF THE FEATURES ARE:—

1. A weekly “At Home” held by the executive committee.
2. Lectures and debates.
3. A musical society.
4. An art society.
5. A recreation department.
6. A circulating library of special books.
7. A voluntary workers’ association for philanthropic work.

It is not desired that women should join the institute in the expectation that it should be a direct means of enabling them to obtain work, but a register is kept of members’ requirements, and the institute co-operates with the Central Bureau for the Employment of Women in the interests of its own members.

CONDITIONS OF MEMBERSHIP

Men, as well as women, are eligible for membership.

Agreement to abide by and be subject to the rules and bye-laws of the institute for the time being in force.

Terms for general members (men and women): Annual subscription, £1 1s. Terms for American, Colonial and Foreign members (men and women): Annual subscription, 10s. 6d. Office hours: 10 to 6, except Saturdays, when the institute is open 10 to 1.

The institute is closed on Bank Holidays and for one month at the end of summer.

Those who are strangers in London and are doubtful where to stay while they are seeking for posts may be glad to know of the following:

BRABAZON HOUSE, LTD.

Hopkinson House, 88, Vauxhall Bridge Road, S.W.
Brabazon House, Moreton Street, S.W.

Single rooms, with use of sitting-rooms, piano, and papers, 7s. 6d. to 18s. 6d. a week; double rooms, 12s. to 18s. 6d. a week; cubicles, 5s., 5s. 6d., 6s., 6s. 6d., and 7s.

Ladies are expected to provide their own soap, towels, toilet covers, and serviettes. Each lady is required to give two references. By the night: room, 2s. to 3s.; cubicle, 1s. 6d. By the meal: breakfast, 6d.; lunch, 9d.; tea, 4d.; dinner, 1s. Hours of meals: breakfast, 7.45 to 8.45 a.m.; lunch, 1 p.m.; tea, 4.30 p.m.; dinner, 7.30 p.m. Sundays: breakfast, 8.45 to 9.30 a.m.; dinner, 1.30 p.m.; tea, 5 p.m.; supper, 8.45 p.m. Tariff: breakfast and late dinner with full meals on Sundays, 8s. 6d. per week; lunch and afternoon tea provided if required; full board (by the week), 10s. 6d. A reduction will be made to those unable to be present at all the dinners.

Managing Director and Secretary: MISS LINDSEY.

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1. Obvious printers', punctuation and spelling errors have been corrected silently.
2. Where hyphenation is in doubt, it has been retained as in the original.

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