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A GARDENER'S PROGRESS

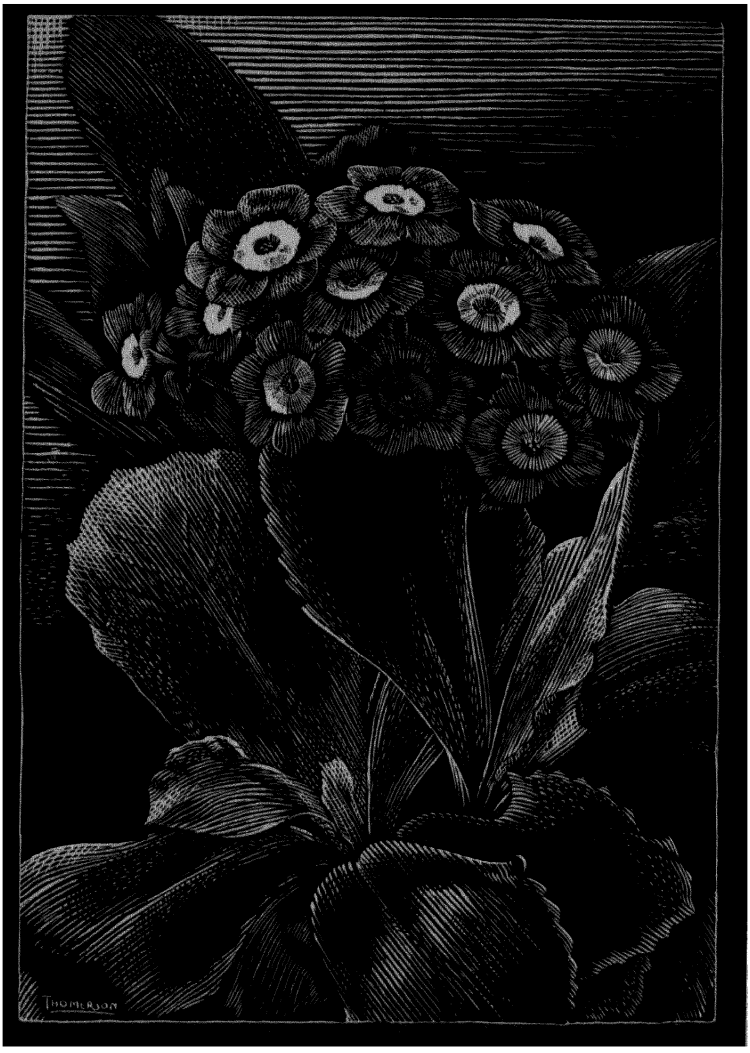

Plate I Frontispiece

AURICULA "HENRY WILSON"

A GARDENER'S PROGRESS

by

FRED STOKER

M.B., F.R.C.S. (EDIN.), F.L.S., V.M.H.

Illustrated with Drawings of Plants
in the Author's Garden by
H. A. THOMERSON

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FOR
MARY

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Introduction

NO QUALIFICATION is necessary to become a gardener other than the possession of a garden. Even that requirement is often dispensed with. A telescope is essential to an astronomer, clubs to a golfer, a horse to a huntsman, but for many a gardener who brightens current literature a pen and paper are enough. This is not to say that the pen is mightier than the spade; it is, in fact, parasitic on that useful article. Nevertheless, neither spade nor any other tool is capable of solving every gardening problem. The faculty of observation, and some facility in interpreting observation, is the very framework of horticulture.

No gardener can possibly see for himself all the phenomena which may occur, even in his own garden. Unless he is on the lookout for them many will probably be missed; none but the elect notice a thing they are not looking for. Thus a great part of our gardening follows the recorded experiences of others, and not necessarily their successful experiences though these, it is true, more often enjoy the light of publicity than the failures.

The history of gardening is a chronicle of trial and error, and its practice an attempt to take advantage of the lessons learnt from that oldest of educational systems. The lessons still go on. They will never be concluded, inasmuch as our knowledge of life can never be complete.

Personal experience, though often only of personal value, may have a more general application. Although an article headed "How to grow Periwinkles"

really describes how Tom, Dick or Harry grows them, it may contain a grain of such transcendent truth that all gardeners are in its debt. It is such grains which build the hill of knowledge, and the achievement of him or her who gives but one to the already massive pile is as solid as the pyramids.

Modesty, my friends assure me, has never been my outstanding characteristic. When I say, therefore, that it is doubtful if any pearl of original wisdom is nestling within the covers of this book, the statement is not prompted by any self-abasement. Some reader may, however, discern in the account of an event what the writer was too blind to see. Did not the day of antiseptic surgery dawn when Joseph Lister saw carbolic-powder thrown into the Glasgow sewers? The sewermen knew it kept their charges sweet. Lister supplied the reason.

F.S.

The Summit,
Loughton.
April, 1938.

Part I

INITIATION

Chapter One

TO PRETEND that I was driven into gardening by hereditary urge would be the merest nonsense. The truth is that I am a convert, not a congenital gardener. Before coming to the south of England I had what a poetical land-agent would describe as a forecourt; a few square yards of worn grass encompassed by the house wall on one side and a Privet hedge on the other. A decent, quiet, Privet hedge about four feet high which could be trimmed with pocket-scissors on a summer evening There was really no reason why I should not have had a house with sufficient garden to accommodate a fashionable border of Geraniums, Calceolarias and Lobelias; its rent would have been no more; possibly less. But I suffered from the common delusion that diffuseness of interest was fatal to success in the practice of medicine. The austerity of the house gave me a feeling of virtue. No pandering to the artistic or the softer graces there; not a bow-window nor unexpected gable; not even a single chimney-pot out of the common run. The environment was admirably suited to encourage the belief that life was real, life was earnest, and its importance in narrowing interest could scarcely be over-estimated.

My wife has since confessed that when she, an unblushing bride, arrived upon the scene, she at once decided to have me out of it. She had her way. Ever as wax in her skilful hands, she actually persuaded me that I was sick of that atmosphere of unremitting earnestness. The die was cast; a'hunting we would go. But where to? That was the question. Mary—

for the remainder of this narrative I will, with your permission, speak of my wife by her real name; she was not christened Wife, whatever her opinion—Mary, then, perceiving the aptness of the moment, further instilled into my willing ear that a house without a garden was, seriously speaking, not a house at all. A sort of shed, apparently, or even crypt, wherein one must inevitably become the sport of Spiders or of fungi. A garden was a place where peace and pleasure were to be had by merely going into it. Where the mind was refreshed and the cares of the world faded into thin air. The busy haunt of bees, the home of birds, a place of flowers in unimaginable mass. I thought her reference to peace a little unfortunate, but otherwise found the picture attractive. But had she once referred to fringed pools or fern grots, the course of two lives might have been entirely altered.

There were gardens, I had heard, in Devon and Hampshire and with the help of *The Medical Directory* considered the possibilities of Exeter and Winchester as towns where a livelihood might be earned. You may think such a problem impossible of solution without experiment, but so far is that from being the case that a doctor's prospects in any given place may almost be expressed mathematically. Success is in ratio to the number of doctors already on the spot. Paradoxical? No; the most sober of sombre facts. The fewer the doctors the less the need for them is another way of expressing it. The medical profession is not slow in supplying a demand.

As it turned out, my calculations were so much waste of time. The matter had been settled by, as you guess, the controller of the household. London offered both gardens and practices, to say nothing of other advantages. Her decision took my breath away.

London! But by the time respiration had resumed its normal rhythm the word did not appear so startling. Mary had satisfied herself there were gardens, even in Park Lane. *The Medical Directory* confirmed her views so far as practice was concerned. Then why not London? If reports were true, it welcomed northern strangers like prodigal sons. London it should be, or if not exactly London then one of its ring of suburbs. And what lovely names these suburbs had, if suburbs indeed they were. Forest Hill, Shepherd's Bush, Wood Green, Kentish Town and Camberwell where, presumably, the Beauties came from. Who would have dreamed that woods and village greens existed in, or adjoined, the Capital of Empire? Still, there they were in *The Medical Directory*.

I set out to explore the land of promise with Mary's parting words ringing in my ears: "Remember the garden, and keep your feet dry." Quite the Napoleonic touch, you observe.

London was certainly big, but not in the least standoffish. Everyone I met was kindness itself and, on learning my business (which I saw no point in keeping to myself) most anxious to render assistance. I sought assurance about Camberwell and the other places with pretty names, but was told that their rurality was a thing of the past, their names its only echo. No longer did shepherds gather round a favourite bush anywhere near London; no more did Beauties flit in Camberwell. It was necessary to go further afield if bushes and butterflies were my desire.

Gazing upon the scene from my hotel in Bloomsbury—all northerners of modest means select hotels in Bloomsbury—I could well believe it. By a remarkable coincidence, one of my informants thought he knew of just the thing for me if, that was, I did not object to living south of the River. I asked what there

was to object to; there were means of crossing it, were there not? and, at the worst, the Thames was not the Amazon. My kindly disposed acquaintance explained that that was not his meaning, told me I knew what he meant and asked "What about it?" But the peculiar idiom of London is not always comprehensible to a stranger so, apologizing for my stupidity, I asked for fuller information.

Now, except in examination halls and Courts of Law, a confession of mental incapacity is one of the surest roads to popularity, and within a few minutes I had precise details of the position in which my well-wisher's cousin found herself. The recent widow of a doctor, she was left with a large house (and garden) and her late husband's practice on her hands; south of the River. It appeared that the only significance of that apparently ominous phrase was that residents in the area were some distance from the larger shops, famous theatres and Buckingham Palace. That meant little to me. It was rather to my advantage than otherwise, the earning of an income being of more importance than the spending of it, or so I thought. Armed with a letter of introduction to the widow, I journeyed to a southern suburb, found the house and the lady, presented my credentials and awaited her pleasure.

I was led into the garden feeling like a lamb but trying to assume the appearance of the dour, shrewd and confident north-countryman one reads about. Flowering shrubs were pointed out, a few Chrysanthemums, tuberous Begonias, an old red-brick wall, a concrete bird-bath and, impressive sight, a Peach tree bearing one ripe fruit. We had tea in the garden. I learnt of its extraordinary fertility and of its beauty throughout the year except, of course, between seasons. What a pity it was that my visit occurred in the very middle of one of the inter-

seasonal periods; but I, as a gardener, would of course quite understand.

The uncharitable thought possessed me for a moment that my introducer had taken my admission

fig. 1 p. 159

EUCRYPHIA GLUTINOSA [× ⅔]

of simplicity a little too seriously; even simplicity has its limit. I dismissed the idea, for here, in fact, was everything I asked. A large garden and a certain amount of established practice; not large perhaps, but a nucleus or, at the smallest estimate, a nucleolus. And the garden, even to my unaccustomed eye, had possibilities. I took the house as read. It contained, so I gathered, fourteen rooms, a semi-basement and a built-in safe; the drawing-room chimney

might smoke when the wind was easterly and the dustman called on Thursdays. Ashpits, I was informed, were no longer fashionable in the environs of London.

After tea, a long-lipped Hibernian appeared upon the scene. A friend of the family it appeared. I knew in a second he would never be one of mine. He had come to discuss business. The discussion was one-sided. He talked, I listened, and was pressed for a decision. The stiffness of his upper lip had a hypnotizing effect; it did not move the thousandth of a millimetre. There was something pre-historic about it. "The dinosaur's unwinking lip"—had I read that somewhere, or did it only represent my half-mesmerized condition? Something should have occurred to break the spell; the ringing of a bell, the pattering of rain on the window, but no; everything was as still as the lip itself. Relief, however, was at hand. His flow of insistent rhetoric was checked by what must have seemed my impassivity. A man, especially an Irishman, cannot talk for ever to a lump of unresponsiveness. He halted, drivelled incoherently, faded out and wiped his forehead. I thanked him for his exposition; his lip actually twitched.

Hurrying back to my hotel, I sent a full report of my activities to Mary; or very nearly a full report. There was no point in telling her how poor a figure I had cut at the business interview. To compensate for that omission I gave a full description of the garden and wrote lyrically of the Peach tree and its solitary fruit. As quickly as the resources of the General Post Office admitted I received her telegraphed reply: "Try again, Whittington" or something like that. The Peach tree had fallen flat. My investigation, she wrote in a following letter, had been too casual, if not indeed haphazard. What did we want with fourteen rooms? And a semi-base-

ment? Basements of all descriptions had gone out with Queen Anne or, if still in existence here and there, they were anachronisms and, so far as she was concerned, unthinkable. The Peach tree was neither here nor there; in any case, as the single peach was ripe at the time of my visit, we could not hope to enjoy it. In future I must be more practical when house-hunting; some system should be followed. Quite true, I thought, system is the thing.

Having obtained a list of suburbs, conveniently arranged in alphabetical order, their methodical exploration was set about. Ackling headed the list. On my arrival there I was greeted by the open door of an estate agent's office; the welcome, if silent, appeared sincere enough. There was no tinkling of typewriters, no crowd of bright young men within that single room. Only a perfect replica of the Ancient Mariner brooding, silently brooding, on the ill-fated albatross; so I judged from his expression. He held me with his glittering eye, pointed to a chair and muttered that Mr. Leaseling would be back in a moment; he was only buying a box of matches.

Almost before the words were out of his mouth Mr. Leaseling entered dashingly. A breezy and a cheery man, he invited confidence. I had arrived at a fortunate moment. He had the very thing for me. Demanding the keys from the Ancient, he suggested I might like to see the house before taking it. He, too, was a man of system. Chatting pleasantly of bimetallism and Senegalese folk-lore, we reached what a notice-board described as a highly desirable residence. And it really was a pleasant and convenient house. No basement, ten rooms including kitchen, large scullery and usual offices.

What, I asked, were the usual offices? Offices in a house, were, to the best of my knowledge, quite un-

usual. It was easier, Mr. Leaseling explained, to say what was not an office than exactly what was. "And even then," he continued, "where are you going to put kitchens and bathrooms?"

"Where indeed?" I echoed.

"In a manner of speaking a kitchen is a dwelling room, and, if you put a bed in a bathroom, there you are again", he commented quietly.

We let it go at that.

Smoky chimneys?

The point did not occur. Ackling was so placed that a smoky chimney would be as strange to the inhabitants as the sudden appearance of a Great Auk in the High Street. The house, I thought, would do.

And the garden?.

That, Mr. Leaseling pointed out, was not large but extremely compact. A number of plants were already there but he had no reason to think that the owner would object to the planting of more. One thing, however, must not be done. Under no circumstances would he, the owner, permit the Oak tree to be cut down. The prohibition, I agreed, was reasonable.

I asked about the soil (more for the sake of appearances than for anything I knew about it) and was given to understand that it might be a little on the clayey side, but excellent for Roses. He put it mildly. I subsequently found that the soil had been dumped in Ackling before the house was built and that it represented that portion of the earth's crust now partly replaced by a section of the Central London Railway, once known as the twopenny tube. London clay. The real Mackay; that ancient deposit with a history of some fifty million years. The theory that it was good for Roses I had heard before. Did the statement contain the hidden truth that it was good for nothing else? Even I knew that Roses were extremely accommodating.

Mr. Leaseling thought, on the whole, that clay was not so clayey as it was painted; he, for one, would not be surprised if more than Roses thoroughly enjoyed it. "And after all," he murmured philosophically, "we can at least give them the chance."

A despatch to headquarters brought Mary herself upon the scene.

Again Mr. Leaseling's time was encroached upon, but on this occasion the house was not merely looked at, but scrutinized. No traces of mice or beetles were discovered, nor were there any signs of damp. The coals were carried in through the garden gate. No, the owner did not provide a dust-bin. Touching that matter, the Urban District Council had shown themselves rather fussy as to what dust might comprise. Old razor-blades and broken bottles were sternly excluded under the terms of reference, the best dinner service was eyed askance, waste paper was not approved and better ways were available for the disposal of tea-leaves. On the other hand, unnecessary table-silver, useless jewellery and half-worn leather goods were admissible. That, said Mr. Leaseling, was all in accordance with modern usage.

We took it for granted.

"But have you thought about practice?" Mary asked me.

I was obliged to confess I had not gone deeply into the matter but as there were houses, plenty of them, round about, and people in the houses, there *must* be practice to be had. Particularly as the ratio of doctors to the population was high. A pessimistic outlook had never burdened me and, though unable to regard the world entirely as my oyster, it had always seemed a friendly sort of place.

The house was taken, and very soon a brass-plate on the door intimated to the inhabitants of Ackling that I was prepared to relieve them of the ills w hic

flesh is heir to, or at any rate attempt something in that direction. The inhabitants, however, were curiously indifferent to their opportunity. My plate might have indicated the dwelling of a statistician for all the notice they took of it.

But it was not entirely overlooked.

After being in residence about a month, I was summoned to attend a gentleman in the vicinity. He was suffering from what his wife called one of his queer turns. These alternated, as I discovered, with intermissions during which he studied the career of St. Paul with considerable interest, apparently finding in it a close correspondence with his own. On a Monday he would greet me with a badly-aimed frying pan and by Thursday brightly direct my attention to 2 Corinthians vii, 16: "I rejoice that in all things I have confidence in you."

Whenever I was sent for, the betting was even as to whether he had "broken out again" or was merely anxious to explain a passage in the Epistle to the Galatians which, as he put it, might have eluded me. He was my only patient for three months and then, in response to a gentle intimation that my fees amounted to so-and-so, he referred me to 1 Corinthians xiii, 13, where I found the far from cheering words "But the greatest of these is charity". The incident finished our association. But do not think, sympathetic reader, that those first few months were as empty of employment as they may appear; and do not sympathize too much.

Gardening for the Beginner was bought and, by happy chance, a nurseryman announced in the press at much the same time that beginners were his special care. He begged them to send for his catalogue, an invitation which we at once accepted. The sum at the moment available for furnishing the garden was nine shillings and twopence, and

from that some deduction must needs be made for packing and postage.

Thirty years ago one could purchase a good many plants for nine shillings and twopence or, say, eight shillings net, but their selection was immensely difficult. Every plant was indispensable, essential or an absolute necessity to the beginner. An Aubrietia there must be. Mary knew all about Aubrietia. It grew very quickly and it was within the bounds of possibility that we should have quite a mat of it by the following spring. That, she said, would be a great acquisition. She would not admit to getting that word from the catalogue, where it occurred seven times, but I was certain she had; and still am. A certain Delphinium was put upon the list; the name has escaped me, but it was indispensable. No garden, we read, was complete without the yellow Day-Lily; incompleteness being a thing abhorrent, a yellow Day-Lily was ordered. Then a Monkshood, a Viola, a Golden Rod for the back of the border and, for a corner, *Bocconia cordata* because it sounded a full-stomached, easy-going, Falstaffian kind of plant; two Michaelmas Daisies, one Helenium, a perennial Sunflower and a Phlox, "Coquelicot" it was, completed the order.

Now whilst some may wish to congratulate me on having an excellent memory, others may question its accuracy after so long a period. And they, the others, would be justified in their scepticism if memory retained and reproduced all events with an accuracy proportional to the recency of their occurrence. But this is not so. A learned judge remarked a little time ago that we all possess a general memory, concerned with general things, and of notorious unreliability; but we have also a special memory identified with our closest interests, and the feats of which it is capable often appear extraordinary. An artist can tell

you exactly what he perpetrated on his first canvas, a barrister the details of his first brief and a bookmaker how Spinalong won the Chestnuts in 1899, but it is doubtful if any one of them has a clearer recollection of the introduction of vacuum cleaners than the King of Canoodledum. Thus may the excellence of gardeners' memories be explained, an excellence so remarkable that their friends' failures are brought to mind as easily as their own successes.

After a week or two the plants arrived. Packed in a cardboard box which might, under other circumstances, have held two hundred and fifty envelopes, they had not the substantial appearance we had looked for; particularly careful search was necessary to discover the Aubrietia; its mat-forming propensity was not as yet in evidence. The dining-room table was covered with brown-paper and the items—for the contents of the box looked far more like items than plants—laid out at one end and the book of words, *Gardening for the Beginner*, at the other.

The day was wet, but the book, open at Herbaceous Plants and How to Plant Them, said nothing against planting in wet weather, and although gardening appeared to be an art largely governed by traditional precepts having little relation to common sense, who were we to question the written word? Besides, the catalogue instructed us to plant the plants on arrival if the weather permitted. It did permit, but only just. Directions were obeyed. Lifting twenty-eight pounds of clay in order to insert a fragment of Viola seemed, to a man of system, a great waste of energy, but there you are; clay will not be tinkered with; you must lift it or leave it. Its leaden unconcern made me furious; I cursed the Eocene Period for all I was worth. Thanks, however, to the illustrations in the book, our zeal did not weaken. On elephantine feet

we journeyed to the dining-room and back again, each time with a morsel of vegetation in clay-emplastered hands. The last Michaelmas Daisy was stuck in; stuck is the very word. One more reference to the standard work in case any detail of technique remained undone. Spacing? The necessity did not arise. Firm planting? An under-statement. Labelling? Left to another day. But it still remained to water-in the plants. The rain was still falling steadily, but perhaps not heavily enough to really do what was necessary. Moreover, the written word was in front of us; it should not be disobeyed. We took no risks.

The garden still had an empty look. Allowing for the fullest magnificence of our herbaceous plants the general effect must still be meagre. Even *Bocconia cordata* could not be expected to give an air of genial amplitude to the whole. Something of more obvious permanence than Viola and Phlox was needed. Trees, of course, and shrubs. They seemed to do well enough. Was there not within the iron railing a hedge of Privet and Euonymus? And on one wall a Virginian Creeper which ramped victoriously? Nor was that all. On another wall the Japanese Quince,* familiarly and affectionately known as Japonica, had its will, while in an angle flourished a tangled mass of Jew's-Mallow.

If we were to plant trees, why not combine the useful with the ornamental and have fruit-trees? It was possible, for we were a little richer. (A few pounds had come from the north; not by way of unearned increment, but in tardy recognition of services rendered.) Fruit-trees it should be. Were there not full instructions for their cultivation in the book, lists of the best sorts and, most important, illustrations showing their usual behaviour in the matter of cropping? But a fruit-tree is not a simple child of nature;

* Now called *Chœnomeles lagenaria.*

it has nothing of the artlessness of a Day-Lily. So sapped is its self-reliance by ultra-civilization that, in order to fulfil its function, it must have a foster-mother to find, prepare and put nourishment into its very mouth. That the foster-mother is known by the ungrateful name of stock does not disguise the deplorable situation, nor can the beneficiary hide its dependence under the name of scion. And its pampering does not end here. It demands one stock if billed to appear as a standard, but another if cordon, bush or espalier is to be its rôle; the credit of the performance, if any, goes invariably to the scion. The foster-mother is kept in the background. So long as she confines herself to the dull round of her thankless task she is unmolested, but let her, in a moment of girlish enthusiasm, send forth but a single shoot of her own, that one ewe lamb is at once condemned as a sucker and rudely ravaged by the watchful gardener.

Accustomed to compare happenings in other departments of life to human affairs, we are not surprised to find that the scion never partakes of the nature of the stock to which it is connected. A white baby, we tell ourselves, remains white, whatever the tint of its foster-mother; so does the apple "Irish Peach" retain its peachiness however crabbed the stock it is grafted on.

But things are not ever thus. In the year 1825, for instance, a nurseryman of Vitry, never dreaming he was about to agitate the whole horticultural world, inserted a graft of the Purple Broom into a Common Laburnum in the ordinary way of practice. Such was, and is, the method used to procure standards of any Broom suitable for the purpose. In the fulness of time the plant shot forth Broom-like growths, Laburnum-like growths and leaves which showed a relationship with both Broom and Laburnum. It is very

unlikely that M. Adam kept a special look-out on this one of perhaps a hundred plants, and it is not difficult to picture his amazement when the prodigy caught his questing eye. There would cross his mind a French condensation of Bret Harte's question:

"Do I sleep, do I dream,
"Do I wonder and doubt,
"Are things what they seem,
"Or is visions about?"

No. There are no visions. The good Jean Louis all of a heap is struck. "Mon Dieu!" he exclaims, "Mon Dieu!" He scuttles to his little house, pondering the while a telling advertisement for the *Revue Horticole* if, by good fortune, the plant can be propagated. He sees fame before him and francs strewn on the path. "Parbleu!" he gasps, "Il marche!" Madame, at his first words, stiffens perceptibly and hurries to the wine-cask. Yes, the tap has been turned off. She relaxes and is rushed to see the miracle with her own eyes. Hold, then, she tells herself; is it not a bait of the evil one, set to enmesh them? Is not that growth a Witch's Broom of the most veritable? It is necessary to cross oneself. And to cross the plant also. It is well, the plant remains.

But this discursiveness will undo me. Mary tells me I am a chatterbox. I had not realized it. Nevertheless, it is true. Besides, no graft hybrids have so far appeared in fruit-trees so far as I know. Being as inexperienced in the whimsies of fruit-trees as we were in other branches of gardening, and particularly as they involved a heavier inroad on the privy purse than Aubrietias, we felt that expert advice was called for. The book was of course thoroughly reliable, but perhaps its author had not our particular situation in mind when he expounded on cultivation. Mr. Bilpole was therefore asked to call. A charming man; his

rosy face, bunch of white whiskers and deliberate utterances would, except for his devotion to horticulture, have secured him Cabinet rank, or at least a steady income as a consulting physician. He came, as he put it, to view the land, and described it as a

fig. 2 p. 359

PRIMULA CLARKEI [× ½]

bit rough. But so gently was the pronouncement made, and with such an undercurrent of to-know-everything-is-to-forgive-everything running through it, that he appeared loath to blame the soil for its unpromising appearance.

Mary and I looked at each other. Mr. Bilpole looked at both of us. Nothing was said, but we felt that we had blundered somewhere. He was waiting for some confession, but as we did not know what to confess he waited in vain. "Well," he announced at

last, "what can't be endured must be cured, as the fishmonger said on Monday morning. What do you want me to do?"

We explained. Fruit-trees? Yes, he could supply and plant them. Did we fancy anything particular like? As it happened, we did, and had already made out a provisional list. Three standard Plums on Mussel stock, three bush Apples on Paradise and one Pear on Quince. The selection of varieties had been made from pictures in the book and samples from the greengrocer. Mr. Bilpole was inclined to query the Mussel and other stocks. He didn't hold with them fandanglements, but, he admitted, as there were Crab stocks there might be Mussel 'uns too, aye, and likely Oyster as well, if all was known. When did we wish him to start?

Now if budding gardeners have a common characteristic it is impatience. Everything must be done straight away. It took ten years and the stolidity of several Bilpoles to convince me that nature was not in so great a hurry as I was. On this occasion, as other beginners will understand, I wanted the job begun immediately.

"Ar," said Mr. Bilpole smoothly, "wantin's one thing and gettin's another. Clay's clay, especially at this time o' year. I'll start as soon as she dries up a bit. You cannot plant in wet ground."

So we *had* blundered with the herbaceous plants? A look of mild reproach passed over his benign countenance. "I saw them", he replied, "and wondered; just wondered." Professional etiquette had apparently restrained him from making any adverse comment. "If plants be just clagged in the wet clay they'll be as the beasts that perish in the Slosh of Despond. Rootses cannot be properly spread and the soil cannot come proper on them if she's just pug," he explained, "but afore the night cometh when no

man can work we'll have the bits of things out again, and heel them into a bit of nice loose soil until the ground is just right."

His reference to the constituents of our herbaceous border as "bits of things" struck me as being tactless, and as indicative of that occupational jealousy which now and then escapes from the most carefully guarded statements of all expert craftsmen, from barbers to jobbing gardeners.

Mr. Bilpole continued my first lesson in practical horticulture. Set down in an axiomatic form to embrace the meaning of his facial expressions and soil manipulations as well as his wise words, it would run something like this: Soil is in perfect condition for planting when it is just sufficiently moist to be compressed by the hand into a ball which, on finger and thumb pressure, will disintegrate. Never plant deeply. The upper layer of roots should be just beneath the surface of the soil. During the operation itself, after the bottom of the hole has been flattened and firmed and the plant placed in position, the roots must be spread out horizontally, each layer covered with soil before the next is dealt with and the soil firmed as the work proceeds. A final compression with the heel completes the business, unless, as was necessary with the standards, staking is required. He supposed no piece of horticultural technique was more frequently neglected or so inefficiently and clumsily carried out as staking, even in the largest gardens. Intended to preserve a plant from injury, it was not to be carried out in any casual, hope-for-the-best fashion, but with care and understanding.

At eight o'clock on a fine November morning Mr. Bilpole eventually arrived, accompanied by his assistant, Mr. Bilpole junior. To George had been assigned the honour of pushing a truck containing our fruit-trees and the implements of his trade but, his father

explained, the great use of George lay in the size of his "beetle-scrushers". For the levelling of cinder paths and the firming in of large trees he looked upon them as invaluable. No roller nor rammer had, in fact, been required in his business since George's eighteenth birthday. George himself, far from being self-conscious, was proud of his natural equipment, and pushed a foot forward for closer inspection. One wondered how he carried them about, and if they were responsible for his evident and constant fatigue. He did not walk, as walking is commonly understood. His method of progression was to lift a foot slowly from the ground, an action he assisted by throwing his body to the opposite side, then, by leaning forward he so shifted his centre of gravity that the foot automatically advanced to preserve his balance. Had George been advised to first raise the heel and then spring off the ball of the toe, he would have considered the counsel a feeble joke. Apart from the rigidity of his feet, the structure of his boots placed any such gambols beyond the realm of possibility. George's machinery was, however, admirably suited to his trade. A *première danseuse* can ask no more.

His labours completed, Mr. Bilpole gave the Apples, Plums and Pear his benediction but, with the nearest approach to sternness I had seen in him, reminded them of the fate of the barren Fig tree and mentioned he would look in again in a few months.

Winter was approaching. It was the time when all gardeners make plans for the spring; so we read in the gardening columns of the daily press. Fired by coloured pictures of borders which showed not an inch of soil, scarcely a green leaf, nothing, indeed, but a luminous mosaic of the flowers of annuals, we prepared to compete with their creators, and even go one better. Annuals, according to *The Daily Guide*,

could be grown by anyone anywhere. We sent for catalogues, and soon had quite a library of those delightfully optimistic works.

Has the indebtedness of gardeners in general to the great nurserymen and seedsmen ever been acknowledged? In any event, it can never be repaid. Who is there amongst us who has not, at one time or another, forgotten his cares and timid imaginings in the contemplation of their catalogues, those wonderful compilations which enthral us from the cradle to the grave? In my infancy, before I knew one letter of the alphabet from another, my favourite picture-book was "Sutton's Seeds". And at this very moment the current issue is within a yard of my right hand. No longer, however, does it hold undisputed sway, but shares a shelf with others of its kind.

It is a pretty point whether gardeners owe more to catalogues or catalogues to gardeners. Taking it by and large, I think catalogues must show the credit balance. Their reach is wide. They do not deal in gloom nor ill forebodings. A little subtle flattery is sprinkled on the reader, or, if you like, encouragement. A plant is never allowed to be difficult, and that is as it should be.

Nothing is more likely to discourage all but those god-like beings who enjoy opposition for the sake of overcoming it than the label DIFFICULT, whether it be applied to mathematics or a plant. For us of more common clay it does, however, provide an excuse for incompetence and permits confession of it without loss of self-esteem.

Our plans advanced. Mary, ever the artistic member of the firm, busied herself with squared paper, ruler and compasses. Designs were taken from catalogues, improved upon, set down. Borders were, on paper, patterned like patchwork quilts. Pink next to heliotrope, then pale yellow, then bright blue; violet

contrasted with yellow, orange blended with brown; and white always interposed where the juxtaposition of two other colours might be risky.

My part was to find annuals of a given colour which attained a certain height and to note their foliage; whether it was ferny, massive, flat, upstanding, green, grey or reddish. We had the completed picture in our minds, or to speak with greater accuracy, Mary said she had. I often found her in the garden, peering with half-closed eyes at something which was not there, and silently stole away. A picture was in process of creation.

We revised our plans carefully. Now was the time, said Mary, to spot and correct mistakes; not afterwards. We had, as it happened, included five greenhouse subjects and seven only fitted for a stove-house. This was trying, but, thanks to our foresight, easily remediable at this stage.

Winter was now upon us. There was little active work to do apart from hoeing the beds. "Keep the hoe going", enjoined the pundits, "whenever the condition of the ground permits it." Gardening injunctions are always couched in a language which strives to soften the asperity of colloquialisms by an introduction of the dignified.

We had time and opportunity to observe things which, while not actually a part of gardening, impinged upon it. Cats, for example. The singular preference shown by these animals for a neighbour's garden has never been satisfactorily explained, but it is certain that for tournaments, love episodes and the hunt they seek a country apart from that associated with the humdrum routine of their lives. Their own domestic hearth is reserved for rest and meditation; it must not be disturbed by noise of battle or impassioned serenade. It happened then that the Sir Lancelots of the vicinity engaged in combat beneath

my bedroom window, and kept their assignations within the garden's lilac groves. That was bad enough, but not so damaging as the steeplechases in which the knights competed once a week.

Although reluctant to prohibit their national sports, I felt that something must be done. Something must be found which would frustrate their intentions without inflicting any injury more serious than disappointment. If you are interested in the ways of cats you will have noticed that they look before they leap. Unless they know what lies on the further side of an obstruction they will not clear it, even in moments of great urgency, but first jump or scramble to its summit, survey the beyond, and make a safe landing. Their trespass could be prevented by making the surveying point impracticable. This was accomplished by fixing on the top of the walls two-foot metal supports, bent outwards, and threaded at intervals of three inches with copper wire left fairly slack. The barricade acted perfectly. It also delighted the spiders. With customary perception, they saw its advantages immediately, stretched their nets across the wires and harvested such plenty that none went empty away.

That I might have an inner guard against the cats, a friend gave me a bulldog. A handsome fellow was Billy; fawn and white in colour, he had a chest like a barrel-organ and wore a constant smile. Rather a crocodilian smile. He felt no animosity for cats; at the most a mild inquisitiveness. I gathered from his demeanour that he had lived long in their company. Other contacts of his childhood had also left a lasting impression. He idolized dustmen, gravely shook hands with passing mendicants but showed himself suspicious of polite society. For his master's property he had no concern. He was the laziest dog I ever knew, but the way he had of starting a wriggle at his

nose and passing it to the tip of his comma-like tail disarmed one utterly and, more to the purpose, provided him with luxury. Not so wonderful, after all. There have been others than Billy who have escaped the burdens of the world by the exercise of a personal charm.

Chapter Two

THE DAY-LILY was the first of our perennials to announce that spring might be expected soon. Indifferent to wet clay, frozen clay or any other vicissitude the gallant plant came into view with spears erect. No parvenu here. Famous in medicine before Rome was burned by Nero, it not improbably alleviated the sufferings of the injured on that terrible occasion.

Famous in medicine, truly, but its fairness, like that of other plants, then went disregarded. Only for the last few hundred years has there been in Europe anything like a collective appreciation of the beauty of flowers. Utilitarianism dimmed the eye. If a plant provided food, raiment, drink or medicine it deserved cultivation. The splendour of the Rose and radiance of the Lily were only secondary qualities except to the enlightened vision of a poet. The essential oil of one and alleged therapeutic value of the other represented their real importance.

Floriculture is a pursuit of peace. Possibly that is the reason of its past neglect. When conquest or defeat is in the air, men do not think of flowers. There must be some smoothness in life before its elegancies can appear. The Chinese and Japanese, living in a settled civilization long before the Christian era, had a great advantage over the peoples of a turbulent Europe. The fine arts, gardening among them, blossomed in the Far East under the warmth of culture while we benighted Westerns used what spare time we had in sharpening battle-axes.

Curious though it is, Day-Lilies have never approached the peak of popularity. Their invariable good temper, invincible determination to make the best of the worst conditions and boundless generosity with flowers of every shade from white to fuscous red have struck the horticultural blind-spot. There *are* gardeners whose admiration for the genus is as strong as it was half-a-century ago but they are few in number. I am no agitator; otherwise I would instruct *Hemerocallis* thus: Be not so liberal of thy bounty nor hesitate to disdain the soil about thee if thou wouldst earn esteem.

In the north of England, Good Friday, if it fell in April, was deemed the best omened day in the year for sowing seed in the open. We would introduce the custom to the south. We had read of germinating seed in boxes, of pricking out and planting the seedlings at a favourable moment. We asked ourselves if nature fiddled about like that? She did not. Neither would we. Straight into its proper place the seed should go. Some little preparation of the ground was said to be necessary; the soil must be in a fine state of sub-division and firm, very firm. These two qualities were not easy to procure in clay at one and the same time according to our understanding of fineness and firmness. Compromise was called for. The top three inches should be fine and the remainder firm enough to support a train of elephants. No effort whatever was required to secure firmness; it already amounted to a disease. Fineness was a different matter and called for the purchase of a quarter-inch sieve. But what of it? Surely the riddling of some three tons of soil was a trifling matter in comparison with the certain reward? So it seemed until our soil made it plain that running through a quarter-inch sieve was a game unsuited to its quality. To perform acrobatics through wire squares was scarcely in

keeping with the dignity of the early Tertiary Period. It had, in short, to be forced through, leaving the stones behind. From what mysterious source had come the stones? They had increased ten-fold in the past five months. Countrymen insist that soil breeds stones; ridiculous, of course, but . . . ?

How did one deal with a superfluity of stones? The garden paths were of asphalt. No concrete was in demand. We had not heard of artificial screes. The dust-bin? Stones did not appear on the list of prohibited articles, and a hundredweight or so might be got rid of weekly, carefully hidden under the Crown Derby. The dustman's nonchalant heave might suffer a check ere well begun, but dustmen must be accustomed to disappointment. Still, was it wise to part with the stones? They would almost certainly become desirable when once beyond our reach. We would store them for the present. They could always be given to the roadmenders in exchange for something or another; a wheelbarrow, for example.

All authorities insist that seed must be sown thinly; its size bears no relation to its spacing. Everyone knows what a grain of Mustard seed can do, given the opportunity. A Broad Bean's effort is insignificant in comparison. Even if it were possible to say how much space should be allotted to each seed, the allowance would be almost impossible to apportion by human hand and eye. We accept the direction "sow thinly" but few of us carry it out. It is an extremely painful business to throw away the best part of a packet of seed, and only those of the sternest fibre can carry out the sacrifice. Those who, like myself, are incapable of such rigid virtue, seek comfort in the assumption that germination will be poor.

There is a well-thumbed trump to be played whenever the crop of seedlings is too thick; thinning out. A young plant signs its death warrant the moment

it touches a neighbour. An adult is permitted that liberty, but no more. There is a tacit understanding between plant and grower that ell-taking is against the rules. Though the merits of thinning-out cannot be gainsaid, it is a brutal practice. A little too akin to Pharaoh's liquidation (blessed word!) of the innocents; worse, for Pharaoh did not encourage the increase in population he found it necessary to limit. Apart from that, in annihilating the mass for the benefit of individuals, thinning-out sets at naught a cherished political thesis. One of these days a plant-loving Karl Marx will arise in his wrath, denounce the expedient, and in a ponderous work (*Die Pflanzen*) give to gardeners a theoretical alternative. Until that day arrives we shall be obliged to continue in iniquity.

We followed the directions for seed sowing to the best of our power; they left a good deal to the intelligence of the sower but set forth the essentials clearly enough. Labels were stuck in at an angle to protect their lettering from the rain and the job was done. We were as pleased with it as gardeners are with anything; pleased, but with qualifications in the background. Not apparent to ourselves, a certain gloom over the beds struck others. "Pets?" asked one friend with Mr. Jingle's terseness. "Pets?" I echoed, "What do you mean?" "Just pets," he replied, "Canaries; white mice. Headstones. What?"

How intensely we admired our annuals before ever a cotyledon showed! How wonderfully the rose and pale blue Larkspurs blended; what a singularly beautiful flower was Love-in-a-mist, and so useful for cutting, added Mary. Cats, it is said, are partial to Nemophila; not as an article of diet but because it appeals to their æstheticism. Æstheticism? In cats? Assuredly. The rapture with which a cat will gaze at a picture of still-life, say of a transected salmon, a pheasant and two heads of lettuce is as genuine as that of the hanging

committee of the Royal Academy. Rolling on Nemophila is one of their most sensuous delights.

The gentle rains of springtime and the sun's increasing warmth worked their usual spell; seed germinated and tiny plants appeared in labelled positions. One knew the pleasure of telling visitors that here there was Godetia and there Clarkia; that the Night-scented Stock was really a Stock, to wit, *Matthiola tristis*. The casual introduction of a scientific name impressed the ingenuous enormously. "How wonderful to know those dreadful Latin names," a modest maiden would remark, "But then all doctors know Latin and botany!"

I did not deny it. Why should I tumble her idols in the dust? Why tear away the cloak of fancy by telling her that a penny stamp could comfortably accommodate my knowledge of the Latin tongue, and that what I knew of botany would not overcrowd a ha'penny one? Doctors are not alone in being credited with this dual knowledge by an indulgent public. Pharmaceutical chemists share the distinction, and I subsequently found that within a more limited realm distinguished gardeners comprise a third class of latinists. One deduced their talent. They bought botanical books written in the language of the Romans and sympathized with my ignorance of it. What further proof of erudition could be asked? It is true that certain of the intelligentsia gave Latin a wider sphere than it is usually allowed. An occasion occurred when one of them handed me a book. "Do you know it?" he asked, then added apologetically (for he knew my weakness), "Latin, I'm afraid; every word." I opened it, as we all open any book; the words "Fleurs jaunes, en grappes courtes . . ." met my eye.

As some facility in giving a plant a Latin name redounded to a horticultural reputation, it was

necessary to have a few on the tip of the tongue. Some, such as *Digitalis purpurea* (or was it *punctata*?) and *Aconitum Napellus*, I had met in my medical curriculum but the majority were new to me and, I thought, might also be new to the Romans had they the opportunity of hearing them; *Aster Thomsoni*, for instance. Even to one whose classical attainments were extremely limited, it seemed more than doubtful whether any Mr. Thomson had got nearer to the toga than the kilt.

The dozen or so Latin names which I acquired did not, of course, cover the entire vegetable kingdom, but if delivered in various combinations were amply sufficient for immediate needs. If I forgot my entire repertoire at an urgent moment, it was not difficult to supply a few substitutes from my recollections of *Gray's Anatomy*. (This reference, by the way, is not so intimate as it sounds; *Gray's Anatomy* is a book.) The enjoyment of the modest maiden was not diminished by my calling the Virginian Stock *orbicularis palpebrarum* instead of *Malcolmia maritima*. She might, indeed, have expressed a mild doubt at the authenticity of *Malcolmia*, possessing, as it happened, a cousin named Malcolm.

Some circumspection is required in using these *noms-de-convenance* in front of a pukka horticulturist. You must be certain that his knowledge of Latin is as sketchy as your own, and that he really does not know the plant of which he professes ignorance. Under these handicaps he may look a little self-conscious on learning that a shrub is the true *corrugator supercilii*, or merely remark that he did not know any of the corrugators was named in honour of Supercilius.

In spite of our efforts to be niggardly when sowing seeds, an inherent dislike of waste had paralysed intention. Even without this automatic check it was far from easy to avoid an over-dose. Seeds no larger

than full-stops do not lend themselves to accurate placing and although various appliances are recommended to simplify the operation, not one of them has secured universal approbation. We still persist in shaking the seed from a packet or folded paper with as regular and sustained a tremor of the hand as we can command, or simply sprinkle it on the soil after the fashion in which salt is used in wayside inns.

A well-grown plant of *Clarkia elegans* can easily cover an area of four square feet, but to allow only one, or two, or even four seeds to that space demands a degree of self-control and ant-like precision of which few are capable.

Our thinning-out was murderous, but not murderous enough. We did not adhere strictly to the "touching" rule already mentioned, and in consequence were not rewarded with a conglomerate of colours, but with a jungle, unkempt and dissolute.

We had shared the popular misconception that annuals will grow anywhere, under any treatment. A realization of their place in nature corrected this. For the greater part they are native to lands which exhibit a short, or comparatively short, period favourable to plant growth and a long unfavourable period. As we shall find later, the principal factor determining the favourableness or unfavourableness of an environment is the presence or absence of available moisture. Our proposition may therefore be restated by saying that an annual is adapted to a country in which there is a short wet season and a long dry one. Thus they form the dominant vegetation of steppes and deserts. How are they saved from the annihilation such habitats engender? How are they carried from one favourable period over to the next? In annuals, hard-coated and drought resistant seeds provide the means. Deserts and steppes are not entirely devoid of ameliorations. Plant com-

petition is reduced to a minimum. With privilege in their very blood, annual plants look upon some degree of privacy as a prescriptive right. Even Chickweed and Groundsel avoid the rough and tumble of competition and seek cultivated ground. They and their like are unable to complete their life-cycle if obliged to battle for a meagre sustenance. Their energies are concentrated upon one thing, the perpetuation of their species. They cannot wrestle with everyday materialisms; food and drink must be ready to their hands; sunshine and air theirs for the taking.

The good cultivator tempts a plant to do its best; he panders to its likes and dislikes and, so far as he can, anticipates its least cause for complaint. He sows annuals in deeply dug, well manured soil and makes certain that not only every plant, but every part of every plant receives its meed of light and air. Thus he aids their headlong march towards maturity.

The straggly mass of verdure raised by our uninformed technique might, at a pinch, serve as a background. The resources of the local greengrocer were immense, and against that depressing spread of green which represented our annuals we planted Salvias, Heliotrope, Lantana, Ageratum, Lobelia and Geraniums, or, more correctly, Pelargoniums.

It is fashionable to decry Pelargoniums, to speak of them with a superior smile, to regard their use in a border as touching on vulgarity and indicative of horticultural ignorance. "What sort of garden is it?" asks one; "Oh, Geraniums and Calceolarias", answers another. It is sufficient; the garden is condemned.

Why this disparagement? Is there anything in the plants to justify it? Pelargoniums are too red? Nonsense. The reddest of them is no redder than *Anemone fulgens*. Too stiff? Less so than Kniphofias. Come now, my friend, confess that you are swayed by popular prejudice (a poor thing at the best) and, while

you are at the confessional, admit that, for yourself, you rather like Pelargoniums. Their worst fault is friendliness. A snob might say they play to the gallery; that they make themselves too cheap. Shakespeare, Napoleon, aye, even the Founder of Christianity himself were accused of a similar weakness. Their reputations have survived.

Democracy is of two kinds. The follower of one sort is prepared to look upon everyone as a friend. A disciple of the second regards humanity as a mass of potential enemies. Pelargoniums come under the first category. When next you plant one in your garden, remember that by doing so you are forging a link with the thousands who possess no garden but a slum window-sill and also with the nobleman who has a mind of his own.

It was in the first complete summer of our gardening that we bought a plant for its own sake. Perennials and annuals had been for the garden, and the fruit-trees for ourselves; besides, they were components of groups rather than individuals. The stranger was a personage: "The most lovely plant which has ever reached our shores from the treasure-house of China"; so ran the advertisement; it added that the plant might be obtained at the ridiculous price of tenpence, or three for half-a-crown. Naturally, we ordered three. Its name, *Incarvillea Delavayi*, should be one to conjure with. How had it come by so impressive a title? Most appropriately; honour had been bestowed where it should go.

Since the day of Ignatius de Loyola his followers, the Jesuits, have led the van of Christianity into the lands of heathendom. Long ago, when cruelty to the flesh was thought to benefit the spirit, their missionary methods did not escape criticism, but of their devotion there was no shadow of a doubt. Procedure has changed but devotion is steadfast. On being

chosen for a foreign mission, a Jesuit is now instructed in the language and dialects of the country of his future work, in the treatment of diseases likely to be encountered there and in its natural history. The spreading of his faith, arduous medical work and resolving feuds by tactful arbitration would keep any ordinary man fully occupied, but these extraordinary missionaries find time to explore the botany, zoology and geology of their allotted and very perilous regions. Their contributions to those sciences have given them fame in a world which views their proper labours with no more than the nonchalant regard it bestows on those of a chimney-sweep.

Of these great ones were Incarville and Delavay.

Incarvillea Delavayi appeared above the soil, grew and flowered. Reality scarcely approached the vision called up by the advertisement; the ferny leaves were there; so were the rosy trumpets, but their rosiness had a hint of chalk in it. They were not, in fact, rosy at all, but blotting-paper pink.

Speculation appeared to be as risky with plants as in other quarters. One had to be in the know to make a success of it. For the present, then, our cue was to make the garden as beautiful as possible with the minimum of risk. This, we learnt later, was the wrong attitude. Beauty should be a very secondary matter in a garden. It might be there accidentally but should on no account be aimed at. The horticultural *haut-monde* cared little or nothing about general effect; it was the individual plant which claimed attention. If we had known that concentrating on items and neglecting totality was a habit of gardeners, it might have modified our intentions; but I doubt it.

We were, you understand, in the "Garden Beautiful" stage of evolution, though uncertain of our steps. Dr. Alan Ryte determined their direction. I met him over some professional matter but before our ac-

quaintance was an hour old we were deep in gardening. There is something which the art, like freemasonry, confers that makes its followers known to each other with the first handshake. I know of no other pursuit so characterized except, of course, that of health and that is of such engrossing interest that no handshake is necessary before affairs of the greatest intimacy are freely discussed. Ryte invited me to see his Roses. He lived at Pinner. "They do well on clay", he explained. A very brief glance convinced me that they did better on Pinner than on Ackling clay. I have not mentioned that we had a few Roses, an unavoidable legacy from a previous tenant, but they were so scraggy, so stunted in appearance that compared with Ryte's plants they were not Roses at all. They represented good intentions; that is the best one can say.

Ryte's Roses were magnificent. I knew little more of Roses than of Orchids, but the eye of an ignoramus is as discriminative as that of a specialist in a general survey. The skill of Sir Timothy Wimpole is not required to discover that an Olympian wrestler is in reasonably good health, nor is profound forensic knowledge necessary in order to know that the law of the land has been tampered with when a man is knocked down and robbed. A man of ordinary perception is pleased by the normal, impressed by the super-normal and comfortable in the proximity of the physically right, whether it be a healthy plant or an even keel. He is not concerned as to why a thing falls below his standard of rightness; the fact that it does so is sufficient.

In this wise, then, I knew that the Roses were at least normal and probably something more. Who could have mistaken those clean-run stems, lustrous leaves and solid-petalled flowers as belonging to anything less? All of the bush form, budded on Briar,

Plate II

p. 355

ERYTHRONIUM OREGONUM *var.* LEUCANDRUM [× ½]

Plate III p. 315

IRIS REICHENBACHII [× ½]

they were planted two feet apart in blocks of six. The soil was broken with a border-fork once a week to a depth of two or three inches and the surface left rough; the plants were mulched with stable manure in the autumn and pruned hard in the spring. That comprised the beginning and the end of their cultivation, so far as Ryte was concerned. Nature, I thought, might also have a finger in the pie. The air, for example, was invigorating and unpolluted; a natural slope secured drainage, and the clay itself had a quality of grittiness painfully absent from the Ackling product though, as it was of the same vintage (50,000,000 B.C.), the possibility existed that the grittiness was artificial.

We discussed the cultivation of Roses and cultivation generally on a highly impersonal plane. None are more gifted than gardeners in keeping to the impersonal. If our own plants are doing badly, it is the soil, the drought, the hard winter or the wet summer which must bear the responsibility. Similarly, when in a neighbour's garden the same plants are growing riotously, it is the excellent soil, the sunshine, frost coming at the right time or the summer moisture to which must be given the credit.

Too impersonal an attitude to one's own plants is sometimes a mistake. It may be taken too seriously. After carefully preparing the way, as I think, by honestly and rather pathetically confessing failure with a dozen easy plants, I mention how curious it is that a notoriously difficult one enjoys my garden. "Ah," some solemn gowk exclaims, "You have a wonderful position." A remark like that, showing a complete impercipience of the situation, would have ensured its maker's being hurled from the Tarpeian Rock in a more virile age.

My experience of garden psychology had not yet reached the stage you might suspect from these

reflections, but the first faint glimmerings were struggling into shape. Ryte, skilled professional psychologist as he was, no doubt had the peculiarities of gardeners already classified into obsessions, complexes and repressions. He might, for all I knew, have my

fig. 3 p. 410

CAMELLIA SALUENENSIS [× ½]

own idiosyncrasies neatly docketed under one of those headings. It was safer to keep the conversation to Roses. He ridiculed the idea of there being any difficulty in growing them in Ackling. "Roses", he said, "will grow anywhere with half a chance." I felt a trifle sceptical, but subsequently found his sweeping assertion to be true. There are probably no garden plants more amenable to a variety of con-

ditions or which will give a better performance with moderate attention. Ryte was richly endowed with sweet reasonableness and this, together with a deliberate diction, gave his pronouncements an oracular quality. He commended Roses to me. I became a rosarian on the spot. Had he advised Bananas, then Bananas I should have attempted. Looking back over a span of nearly thirty years to that pleasant Sunday afternoon, I realize that it represented my entrance into the honourable guild of gardeners. Vague fumblings for a grip, a starting point, were things of the past. My steps, though feeble and hesitant, were henceforth determinate.

Of all Ryte's collection, no Rose attracted me so strongly as "Chateau de Clos Vougeot," and never since have I seen that Hybrid Tea grown to such perfection. Its name reminds you of something else? "The true, the blushful hippocrene", that wine of Burgundy which shares it? Wine and Rose have more than name in common; a touch of velvet, a hue of crimson dimly sparkling; the aroma of the Rose is in the wine, the titillation of the wine creeps from the Rose.

Our ambition did not soar to a Rose garden, nor did we intend to remove a plant of any sort which was already calmly comfortable.

Suburban gardens are not tolerant of violent revolutions; what they manage to support it is wisdom to respect. A pergola for climbers, then, and a brand-new bed for dwarfs were to be the limits of our preparations. The pergola was made of pine, *au naturel*; of the lean-to variety, its side of trellis faced the garden, and the pine riblets which formed what roof it had found a posterior support on the scullery wall. The one important thing in putting up an erection of this kind, apart from making it stand up, is to preserve those portions of the supporting posts

which must be sunk in the ground. Tar, creosote and the refinements of creosote are commonly used but, though thoroughly satisfactory for telegraph or gate posts, their use is not to be recommended near plants. Such preservatives throw off volatile compounds into the soil, and continue to throw them off much longer than you might think; these compounds are as poisonous to plants as creosote is to you. It is, one might almost say, their deadly effect on vegetation which gives to tar and creosote their preservative property. Decay is caused by bacteria, moulds and fungi, organisms which are at least closely related to ordinary plants.

A much better way to keep the buried wood intact is by means of a surface layer of charcoal, or, more plainly, by charring it in a slow fire or with a painter's blow-lamp. This simple method has the testimony of time behind it. Some years ago a number of oak stakes were recovered from the bed of the Thames where, according to Tacitus, the Britons had placed a barrier to obstruct the passage of a Roman army. The wood had been surface charred and was perfectly sound within. Dr. J. C. Philip, who records the fact in the fourteenth edition of the *Encyclopædia Britannica* under the article CHARCOAL, also reminds us that the piles on which much of old Venice was built owe their endurance to the same agency.

The making of the bed, right across the lawn, was going to be no joke. We had bought a book on Roses; hot from the oven. By a famous rosarian, its counsels we bowed down to as commandments, and found them as difficult to observe. A Rose bed, we gathered, should be dug out to a depth of three feet. That was the first step. The learned author did not state whether he referred to standard or to horticultural measurement. There is a difference. A real three feet is to a gardener's estimate of that depth as the

Roman pace* is to the normal one. If you are tired of popularity, measure the depth of a few beds with a graduated stick in the gardens of your friends. The soil can be easily penetrated for many years after digging. You will find that a presumed two feet amounts to fifteen inches, and a hypothetical three feet to a little less than two. Few people can make anything like an accurate guess at vertical distance. A cricket pitch is sixty-six feet long, and looks it. Imagine it standing on end, and that you are at the top, looking downwards. How far do you appear to be from the ground? At least a hundred feet, unless your eye is trained by custom.

Incapacity to judge depth is not the only cause of shallow digging. There is among both amateur and professional gardeners a fixed determination to call a spade a foot, or, if you like, to look upon a spit (the depth of a spade thrust) as equivalent to twelve inches and any suggestion from an outsider that a spade is not insensitive to wear and tear is looked upon as splitting hairs.

In the absence of precise definition, it was judicious to assume that the correct depth of a bed was a standard yard. We were next directed to "slope the bottom to six inches deeper in the centre of the bed" if the soil was not naturally porous, then to "lay two-inch drain-pipes down the middle of the bed and connect them with an outfall". Now it is easy enough to read these counsels of perfection; it is not impossible to tolerate their being spouted from a platform, but to carry them into force is another pair of shoes. And what was the author's test for natural porosity? London clay is esteemed for puddling ponds but, in its natural state, is not imporous. It would probably be considered so, however, by an

* From the heel of one foot to the heel of the same foot when it next touches the ground; about 5 feet.

authoritative rosarian. Outfalls were therefore necessary in Ackling, but how were they to be obtained? Ratepayers were not allowed the right of outfall. The main sewers could alone be regarded as coming under the term, and they were jealously guarded against horticultural enterprise. So far as we were concerned, the author might as well have advised that the drainpipes should lead to the Dead Sea.

Hope springs eternal in the gardener's breast, and we told each other that beneath three feet of clay there was quite possibly a layer of gravel, for was not the surface soil an adventitious layer, dumped on an uncomplaining Ackling by the makers of the Central London Railway? It might well be that three feet of clay, rightfully the property of Notting Hill Gate, was obscuring as pretty a bed of gravel as one could wish to see.

Mr. Bilpole on being consulted shook his head. He did not hold with disturbing the soil for more than two spits. (Did I mention that his favourite spade had a blade showing signs of faithful service?) It wasn't natural, not in gardens, and he didn't care who said it was. Them and their societies and Lifebuoy Saturdays and suchlike! Off he marched in high dudgeon, deaf to soft words. His defection compelled us to seek other assistance.

John Broom came forward; a big, hulking fellow whose expression would in a moment change from one of intense anxiety to merry roguishness. He described himself as a Berkshire man; that, it appeared, was a guarantee of respectability. Digging? He revelled in it. Three feet? Tut! a mere nothing; besides, you never knew what you might find. Had I any tools? Spade, shovel, fork, pick and wheelbarrow? Never mind, he would bring them. Sixpence an hour; that was his rate. That digging was a skilled art had not entered my head before I saw

John at work. His easy movements, each of them timed and executed to give the greatest result with the least exertion, appeared as natural as breathing and as untiring, while the neat precision of the result bore the stamp of craftsmanship. I complimented him.

"Yes," he admitted modestly, "I can use a spade, but I never takes no liquor. Many's the good digger that's ditched hisself with the drink. A drop of cold tea, that's the stuff to keep me going. No, I never smokes neither. A nice stalk of young grass, now, or a bit of straw between me teeth helps the thinking power, but that's different." Incidentally, I cannot remember seeing him without one of those aids to reflection in his mouth.

The bed having been excavated, it remained to fill it up with soil likely to be appreciated by the most epicurean of Roses. The ingredients of this compost, and their correct disposition, were set down with great particularity in the book. We had not lost faith in that sanguine work; though strangely heedless to the aspirations of town-dwellers, it nevertheless embodied the wisdom and experience of a renowned gardener who, perhaps, in his abandon to the cause, had overlooked the existence of suburbanites.

Over the bottom of the cavity a nine-inch layer of brick-bats, broken bottles and the remainder of the Crown Derby was distributed in such a manner as to leave the maximum of air-space between the fragments. This stratum was to drain the bed, no natural layer of gravel having been uncovered. But how, you ask, without an outfall? The idea was this: London clay is slowly permeable by water; if, then, *in a district of low rainfall,* such as Ackling, provision was made to accommodate a temporary excess where it would be harmless, and from where it could gradually soak away, no outfall should be necessary. The air-

space in the rubble, we surmised, was sufficient to contain any surplus likely to occur.

The conception, I suppose, was theoretically unsound, as no allowance was made for seepage into the bed from the surrounding soil. In spite of this, the system worked. To prevent its being clogged by soil, turves were laid over the rubble, grass side down.

Following directions, we next put in alternate layers of top-spit and stable manure, with a dash of road-sweepings now and then, while John, with constant stamping to and fro, firmed down the whole. The upper nine inches of the hole was charged with soil of surpassing excellence; compounded of leaf-mould, sand and fibrous loam, it was designed to give incoming Roses a good first impression of their future home. Plants, believe me, are just as sensitive to surroundings as we are ourselves.

That we had put ourselves to unnecessary trouble and expense did not occur to us until some years later, when I had become a little more familiar with the ways of plants and properties of soil. It then became clear that we had used a steam-hammer to drive a tin-tack. It is just possible, however, that these words may catch the eye of one as credulous as we in time to deflect him from the path we had ourselves pursued.

There is not the slightest need to make special provision for drainage in soil which is not waterlogged nor, if the soil *is* soil and not sand, gravel or the memorial of an ancient rubbish-tip, is its replacement by top-spit called for. Double trenching to a depth of eighteen inches is all that Roses ask in the way of digging; during its progress stable manure, decayed lawn-mowings or other bulky organic material should be *mixed* with the soil, not added in layers, especially in soils deficient in lime. In these the decay

of vegetable and animal residues is slow; if applied in layers they are apt to form pans and thus impair the physical condition of the soil they were intended to improve.

The Rose bed was completed in July. The delightful task of selecting its occupants was before us. We visited Kew and took abundant notes. We wasted the time of nurserymen and took more. Friends were held up in the highway and compelled to deliver up their knowledge. We came to speak of Hybrid Perpetuals, Teas and Hybrid Teas as to the manner born. Briar stocks, Rugosa stocks and Manetti stocks became familiar words, and the distinction between ramblers and climbers no longer held a mystery.

We confined our purchases to Teas, their hybrids, and a few ramblers. The Tea Rose is said to owe its name to its aroma. Personally, I have never smelt a Rose which so much as hinted at tea, nor tea which smelt of anything but tea. One presumes that in the eighteenth century everything which came from China *had* to smell of tea. So impressed was Gaetano Savi, a learned professor of Pisa, with the belief that he renamed *Rosa odorata* (of Smith) *Rosa Thea*. However it may be, the English version of the name has stuck and now embraces the varieties of *Rosa odorata*, hybrids between them, and also between varieties of *Rosa chinensis* Jacq. (*Rosa indica* Lindl.) and those of *Rosa odorata*. Consanguinity, however, does not stop here. Hybrid Perpetuals are said to owe three-fourths of their blood to the Tea Rose and the remainder to *Rosa gallica* while Hybrid Teas represent the progeny of Hybrid Perpetuals crossed with varieties of *Rosa odorata*. Such is the enormous and complicated part played by the Tea Rose in the development of the most important groups of decorative Roses.

We had not yet reached the degree of nice perception marked by a preference for species, nor were

we prompted to plant Sweet Briar because it grew in grandmother's garden. There was one little Rose I had known in boyhood on Northumbrian links, *Rosa spinossisima* var. *pusilla,* I should have liked, but it came under that awful interdiction: "Not known to the trade." Time and distance may have added to its fascination, but if it is as memory's picture would have me think, then many a belauded species from China would etiolate with envy in its company.

At a moderate estimate, 2,750,000 words have already been written on How to Plant Roses. I do not intend to add to their number, nor to enrich the literature on Useful Garden Labels. Sufficient to say that the suspended metal-cum-glass contraptions we adopted quickly raised me to that state of mental exaltation experienced by Edgar Allan Poe when he wrote *The Bells,* though the labels, when agitated by the slightest breeze, gave forth not so much a tintinabulation as the swishy tinkle of those bead curtains met with now and then in the vestibules of otherwise comfortable homes.

Now the curious may wonder how my practice was faring all this time. If they expect a pathetic tale of a struggle bravely borne disappointment awaits them. After the first few months I was favoured by a patronage discouraged by other doctors in the neighbourhood. Whatever their reputation for altruism, medical men have as great a dislike for bad debts as millionaires. At the same time, debtors are not entirely callous. Though unwilling to balance their indebtedness directly, I found that they often did it by proxy; by, in fact, introducing patients of unblemished rectitude.

At the opening of the winter session of medical schools erudite professors not uncommonly lay down the essentials for success. One leaves the ceremony elevated in feeling but depressed in spirit. It is little

less difficult, apparently, for a man to make a practice than for a camel to pass through the eye of a needle. Some contact with one's fellow creatures fortunately modifies the comparison and demonstrates that it is little more difficult to make a practice than to become a successful chimney sweep providing, always providing, that an effort is made to become the very doctor whom one would choose oneself.

This is not a book about doctoring. References to it may now and then occur, but you will not be harrowed, saddened nor excited by lurid details of adventures with lunatics, tales of pathos or excursions into medical jurisprudence.

If I say, and with perfect truth, that my practice made gardening possible, do not misunderstand me and imagine for a moment that it was a secondary interest, and only a means to an end. Nothing could be further from the truth. The profession of which I am a humble, but no longer active, member is to me the greatest of all vocations, and little less than godlike in its aspirations and endeavours. She brooks no rival but casts an indulgent eye on gardening, for does it not contribute to her worship by improving the health, mentality and philosophy of the worshipper?

Many an anxious glance had we cast at the Roses during the winter, but they took frosts, at least London frosts, as nothing out of the way. We anticipated the serious business of pruning with awed confusion. Everything depended upon it, according to the local experts; one false cut and a bush was ruined. No wonder that various schools of thought had cropped up on a matter of such importance and complexity. Methods, when all was said and done, were much the same, but the explanations of their effects differed, as, indeed, speculations on the working of all empirical practices must differ. What did

explanations matter to the rough forefathers of civilization? Results were their objectives. We want grapes, they would have said, philosophy is neither meat nor drink.

In the absence of clear-cut scientific rationale, it is the habit of gardeners to seek justification for their doings in those of nature, forgetful, maybe, that her activities are seldom so obvious as they seem. This unswerving faith in her mentorship, nay, her benevolence, is not altogether warranted. She is just as responsible for bark-splitting as for spreading a leafy mulch, and for throwing a plant out of the ground by means of frost as for breaking up clay with the same instrument. It may savour of impiety, but the truth is that the art of gardening is as much concerned with combating nature's handiwork as in its emulation. For *our* estimate of good and evil she cares nothing, and is as ready to throw her weight on the side of a disease bacterium as on that of the greatest plant alive.

For all that, gardeners looked for the prototype of their pruning amongst her works. The search did not take long. A tree was found bearing a dead branch. The branches, in a body, had placed too heavy a strain on the root and its resources. One had to be sacrificed to ensure the survival of the others. That was how they read the evidence and concluded, as they had already made up their minds to conclude, that nature's pruning was a preservative measure. A more judicial attitude might have required other signs of starvation and some assurance that the destruction of the branch could not possibly be due to any other cause, but when gardeners seek a natural confirmation of their work they are in no mood to question. There are, however, other explanations of branch degeneration than root inadequacy. Uselessness, to mention one. If a branch is so shaded by

other and higher branches, as in a Pine wood, that it cannot bear its part towards the welfare of the tree, then its decay is inevitable. Disuse atrophy, or deterioration from unemployment, is one of the commonest natural phenomena, and respects neither man nor plant.

Pre-occupation with the dependence of branch on root has led to the enunciation of the well-known axiom, "The bigger the root, the bigger the top". The truth of this, species for species, under constant environment, cannot be gainsaid, but it is not the pure truth. It contains an implication that, while the top owes its size to the root, the root controls its own magnitude. In actual fact, it is as much beholden to the leaf area as is the leaf area to it. Root and top are, in short, inter-dependent. This is well shown by grafting* or budding on briar stocks a Hybrid Perpetual Rose and a Tea, and keeping both plants under the same conditions. The first will exhibit, after two or three years, an abundant top growth and root development. The second, a small branch system attached to a very mediocre root. Yet the original root was the same in each case. This experiment also demonstrates that the influence of the leaf area may be transmitted to the root of a grafted plant almost as if no artificial union existed.

The oft-quoted dictum, "The weaker the top, the harder it must be pruned", also encourages too narrow an interpretation of the root-branch relationship. It is another way of saying, "As a small root can only produce a small branch-system, its energies must not be squandered if a typical branch-system is expected".

Furthermore, a too literal acceptation of the large root—large top hypothesis has fostered the assumption that from a root of a certain size there passes

* Budding is a morphologically equivalent operation to grafting.

upwards a volume of nutrient solution sufficient to supply a branch-system commensurate in size with the root, whether that branch-system is present in its entirety or not. That is to say, the amount of sap distributed among the branches previous to pruning is concentrated upon what is left of them after that operation. We know that this cannot be. A plant is not merely a mechanical system of water-pipes connected with a supply under pressure at the root. Water, indeed, is not forced up from below in the mechanical sense, but really *sucked* up by all the living cells of a plant. The fewer of these cells there are, the less is the water drawn up. (See p. 271 *et seq.*)

How, then, are we to account for acceleration of growth in branches left intact after shortening or removal of the remainder? By the fact that, although the same *amount* of liquid nourishment does not pass into the tree, the same *means* of procuring it remain. If water supply to a plant remained constant and sufficient, cutting out a proportion of the branches would not affect the growth of what are left, but this uniformity never exists. In the normal cycle of events there occur periods of diminished supply and increased loss of water which distress the intact plant. If, however, its complete collecting system is only asked to cope with the curtailed expenditure represented by a fraction of its previous top, then the growth of that fraction will be continuous, except under most exceptional circumstances.

Whatever may be the precise relations between root and branch, and they are not yet fully elucidated, so-called natural pruning cannot bear more than a superficial resemblance to the horticultural operation, even to the most broad-minded analogist. Nature presumably prunes for the benefit of the plant; we for our own. Nature allows a normal progress towards maturity; we endeavour to hasten it. Nature does

nothing to retard old age; our measures are calculated to preserve a lusty productiveness.

The methods employed to bring about our objects and how they operate; why root-pruning induces an artificial adolescence and how removal of wood brings about rejuvenation cannot be gone into here. This is not a text-book on pruning. Besides, it is quite on the cards that you are more conversant with its details than I. There is but one item of which I will remind you: protection of the cut surfaces against disease. White-lead, painter's knotting and grafting wax are recommended for the purpose; they are all fairly expensive, two are awkward to apply, and not one is so effective as coal-tar.

You are not to think that these cogitations were brought into being by my first experience of pruning. I was never in the least precocious. The Roses, therefore, were pruned according to the code, and with never a doubt as to the infallibility of the directions.

The Lyon Rose, my one *Pernetiana*,* showed a thorough disapproval of the bed, of the pruning, or possibly of Ackling and all that pertained thereto. Three out of an original six died a lingering death; the other three hung on, but with one foot in a better world. We subsequently found that it and all its tribe prefer a stiffish clay to the most refined confections, but I doubt if even that would have reconciled it to the smokes and fogs of our distinguished suburb.

One brilliant summer's day, whilst gazing on those very Lyon Roses, and wondering why there need be sorrow in the world, there came the heavy news of revolution in Mexico. The hitherto immovable Porfirio Diaz was in flight; so were my paltry savings. I could bear the misfortunes of others as a Christian

* A garden race produced by crossing the "Austrian Briar" (*R. foetida* var. *bicolor*) with Hybrid Teas.

should and had on the tip of my tongue a score of sayings to comfort the heavy-laden. That providence had given me the part of consoler, philosopher and friend I had no doubt. What, then, was my incredulous indignation to find her capable of putting me in the position of consolee? The possibility that I was being tested in the fire was too ridiculous for consideration.

To be fair, what Mexico (under providence) did to me was nothing in comparison to my effect on Mexico. Now that the fell influence I yield has been made clear, guilt lies oppressive on my soul. It is, let me confess, only necessary to invest a few pounds in a country for me to disrupt it from top to bottom, particularly if they are entrusted to the government. Russia, Austria, China and South American countries suffered in turn. (Be not perturbed, gentle reader, a stern sense of patriotism kept my fatal touch from Britain.) A complete list of once peaceful lands thrown into confusion immediately I took a hand in their affairs could be given had I at hand my Register of Investments. A thing of vanity to me, but to the historian a document of the highest importance, being, in effect, an exact record of revolutionary activity in the early decades of the twentieth century.

It is a tremendous thing to hold the spark of insurrection in one's hands, and it is with some apprehension that I publish the news of my unnatural gift. As sure as fate, I'll be besieged by hordes of effervescing reformers, bearing rich gifts (post-dated) or offers of power in their re-modelled nations. To save their time and mine, let me make it clear, once for all, that I am a man of peace, and timid withal.

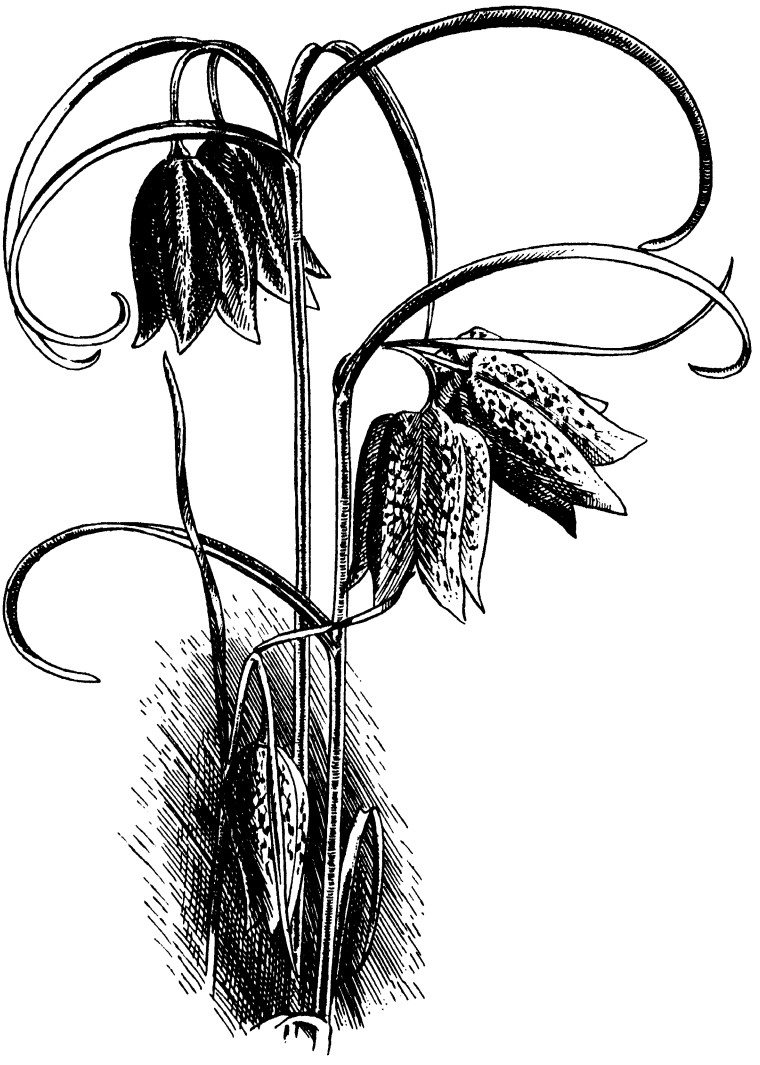

Plate IV p. 317

FRITILLARIA GRACILIS (left) [× ⅔]
F. MELEAGRIS (right) [× ⅔]

Plate V

p. 432

NOMOCHARIS MAIREI [× ½]

Chapter Three

I HAD BEEN in Ackling four years when, while on my round one morning in July, I was pulled up by a notice-board which was leaning over a garden fence.

It would be truer to say that my well-trained bicycle stopped of its own accord; (doctors rode bicycles in those days); the fates were busy. I read the notice deliberately. It announced that here was a commodious residence—the avoidance of "desirable" marked the owner an original fellow—with half-an-acre of garden. The words IMMEDIATE POSSESSION took a line to themselves. NO AGENTS, in slightly smaller type, took another. Prospective buyers were asked to inquire within.

In the trance-like state which characterizes a pawn of destiny I accepted the invitation and found the owner a sedate gentleman with quiet voice, determined expression and gold-rimmed spectacles. The duties of sidesman at the parish church were possibly more in his line than prancing through a minuet. His clothing was sober; his watch-guard of severe design. Here was no man to trifle or to chaffer with; a man, I judged, to whom a hundred pounds was neither here nor there, but one who, having once decided upon a selling price, would calmly and without argument insist upon it to a penny. I knew the type, and liked it. Victorian, some might say. Very well. Victorian business standards were good enough for me. I am, by the way, almost semi-Victorian myself.

Mr. X and I discussed terms, or rather he stated

them while I listened and learnt with some relief that, in the event of my buying the property (the property, mark you, not the house) with immediate possession I would not be compelled to move in the same day.

The house, if not a mansion, was roomy enough. It had two and a half storeys, the half not being a storey's height from the second and only consisting of a bedroom and linen cupboard. It was detached. One wall presented tempting possibilities to a neighbour fond of wall-plants, but it had not been taken advantage of to date. The garden was the real attraction. I was not quite frank in putting the onus of responsibility on the uncomplaining fates. For some time a small but persistent voice had dinned into my ear that my garden was too small; that it gave me insufficient scope; that I would never be a gardener if cooped up in its insignificant niceness. It was the voice of the siren of the soil who, sooner or later, whispers the same words into the receptive ear of every gardener.

There was another voice which clamoured to be heard. It repeated the depressing theme "You may bite off, my friend, more than you can chew". Uncomfortable words, and of doleful portent, but I, enraptured by sirenic song, did not listen to it.

I stood within the garden of The Brambles. And what a garden it was to my apprentice eye! The lawn, though browned by summer's heat, was green as emerald to me. The shade of gracious trees, violet in the noon-day sun; pears and apples thick upon the branch; withal an air of peace and kindliness.

That was how I saw the garden first. It was enough but, checked by past experience, I did not commit myself to its purchase. Mary's approval must be sought, responsibility be shared. An hour later she listened to my rhapsodies and, knowing my tendency to see a swan where there stood a goose, or even duck,

responded with restraint. Nothing downcast, I haled her to The Brambles, content to let it speak its own persuasive language.

Mr. X was engaged; with Morpheus, we suspected;

fig. 4 p. 426

PHYLLOTHAMNUS ERECTUS [×$\frac{3}{5}$]
(upper portion of plant)

in good Victorian fashion, smoking-cap over one eye and hands crossed over paunch. Would we care to look at the garden, where he would join us in half an hour? Mary looked, was conquered and signalized the occasion by eating two unripe apples. She said they were excellent, and had the effrontery to offer me a bite. Remembering the disaster that befell after a man had given way to a similar temptation, I passed the offer by. Though no serpent was visible, one never knew.

Mr. X appeared and looked refreshed. Would we care to look over the house? We looked it over, the influence of the garden strong upon us. There were a few things we should have preferred otherwise, but whoever found a house completely to his taste? The owner left us pretty much to ourselves after pointing out the capacious coal cellar, the pride, apparently, of his heart. We told each other how one thing could be altered, another improved. A wall could be knocked down and two smallish rooms thereby made into a large one. One fireplace might be bricked up and the other replaced by an altogether more magnificent erection. The conservatory roof and floor would serve as a veranda; the surplus glass would be useful in the garden. We had decided, you will understand, to buy, and that at once; delay was risky.

Mr. X appeared surprised at such precipitation and kindly said that he hoped we would not regret it. The wish, though it conveyed benevolence, might have been differently expressed.

How could I afford such an establishment? (Establishment sounds a trifle turgescent, but let it pass.) And after the Mexican débacle too? The truth was I couldn't afford it, at any rate not in the northern sense which predicates that an outlay, to be afforded, must make no appreciable difference to one's bank balance. An inherent and incautious disposition not to anticipate the future with anything but optimism enabled me, however, to sustain my new position of property owner without the loss of any sleep. The people of Ackling had been kind, and prompt in balancing their obligations; much more punctilious in that regard than I had found many of my patients in the north. No, the latter did not lack in punctilio; that is not the word. One cannot say that a man's inability to pay a doctor out of a wage of less than a pound a

week is anything more than a matter of mathematics.

As proud as Alexander, I had a stake in the country. Not a large one as stakes go, but sufficient. My politics, hitherto vague, became strongly conservative. Then they resumed their previous nebulosity. I found that the path of a man of property was not without its thorns. No longer could I go to a patient landlord with piteous tale of rattling windows or rain penetrating the roof. If an act of God bore the moral responsibility for a chimney pot dropping on the garden path, I bore the cost of its replacement.

Then, as Mr. X explained, the road in front of the house had to be paid for. He had done so; now it was my turn. The fact that it was a second-hand road did not lessen its value. Its value to whom? You may well ask. The idea of paying for a road appeared to me outrageous. Did I use it more than the milkman, or inflict upon it the wear and tear wrought by the butcher's cart? Had I any privilege in connection with the road beyond the reach of a Spanish onion vendor? Not I. My resentment knew no bounds. Forced to pay for a thing I was not allowed to possess, nor even allowed to decorate! If a branch of my Lime tree overhung the path I was liable to severe admonishment and made to mutilate the tree in case the errant branch disturbed the bonnet and equanimity of a local Mrs. Gamp.

Could equity, that jewel of English law, defend such extortion? Or did the device represent a ray of that refulgent beam thrown by the illuminated slogan "One for all and all for one"?

I also learnt with dismay that the rental value of my house was looked upon by a paternal government as part of my income, and subject to tax. I was required, in short, to pay a rent for the rent. You will recognize this as a further expression of the "One for

all" rule, and may conclude that, while its first clause is enforced, the second is largely academic. Nothing, it appeared, was actually one's own except a penknife and fountain pen. Everything else was borrowed at a high rate of interest. I considered the Lilies of the field from a new standpoint. The reason for Solomon's poverty of apparel was made clear. Obliged to clothe others in gorgeous raiment, a suit of reach-me-downs had to serve himself.

No description of moving into the new house is necessary. Most of you have experienced it, and doubtless wondered why the discrimination of furniture removers leads them to place frying-pans on the dining-room mantelpiece and your best Chippendale in the scullery. Let me enlighten you; it is the Custom of the Trade.

The house was just a house separated from the main road by the usual forecourt. To the left of the latter, a paired wooden gate opened on a made path, some eight feet wide, which led to a one-car, timbered garage. On the right of the path ran a Hawthorn hedge, an agricultural residue, and at its foot a shallow ditch. The hedge divided the garden proper from a miniature orchard of Apple trees and a single Victoria Plum. Beyond, against the boundary fence, was an impressive line of poultry-houses, all To Let. To the left of the path a fine Wild Cherry stood ready to introduce you with a sweep of branch to the rest of the garden; a spread of lawn over which two noble trees held sway, an Oak and Common Maple. A fairly large vegetable garden, at a slightly lower level than the lawn, was separated from it by a narrow footpath and, corresponding to the fall in level, a narrow rockery in the early English mode; that is to say, a clinker escarpment favoured by slugs, snails, mice and other representatives of the British fauna. Only visible from the vegetable plot, we decided it added

little to the beauty of the place. Though beauty is discernible in everything to the eye which searches for it, ours had never been able to see much in the refuse from a blast-furnace. The clinkery was condemned to demolition. The slugs and their companions would be given due notice.

The vegetable garden was chiefly notable for a row of three magnificent Pear trees. I never knew their names. Pomologists informed me they were old varieties. This expert knowledge confirmed the hint given by the thickness of the trunks. Whatever they were, their fruit was delicious, but placed a heavy strain on the digestion during the two months they lasted after picking. One's friends, after staggering away with laden baskets, did not return for more. Pears, delectable though they are, are apt to cloy if eaten at the rate of more than six a day over a period of weeks. Of fruits, it is the apple which never palls. It is as wheat among grains and potatoes among vegetables. Peaches, plums, grapes are all delightful but could you endure any of them for breakfast, lunch and dinner from January till December? Apples, on the other hand, are not only enjoyed three times a day, but the lack of them causes a feeling of deprivation in the apple-eater.

Mr. X had been an addict to the fruit, fortunately for me. Not content with the produce of the tiny orchard, he had planted several standards in the vegetable garden, in which there also stood what must have been one of the original trees of Blenheim Orange. Gnarled, mossy and bent with age, it yet excited envy rather than sympathy. Could we face the world under the weight of so many years, nay, bear our full part in it, as did the tree? Of all the plants in that old garden, those that were there and those which we put there, none has so stamped itself upon my memory as the patriarch. I believe it claimed

us from the first. Did it not tempt Mary with two of its fruits, and did she not succumb?

Many gardeners, I among them, on coming to a new garden are constrained by some as yet unanalysed force to take up a hypercritical attitude on anything which bears criticism, and unfortunately to a good many which do not. We have misgivings that things may not be what they seem; the work is not our work and we not only suspect it but put each item under the microscope. That useful instrument can very easily convert a molehill into a mountain. Our mood marches hand in hand with an urge to change the existing state, a compulsion so strong that it seems inherent. It probably is, and common to all endowed with mental consciousness. Alteration is a reflection of ourselves. By so much as we alter a thing, by that much does it become our very own. Not according to the law of property, perhaps, but in the sense that part of ourselves is in it.

Certain birds, content with the abandoned nests of others, must tamper with a twig or two before they settle down. A dog on being introduced to a strange kennel turns over the straw before he lies on it and we, in a hotel bedroom, attempt some little disposition of the furniture to make us, as we term it, more at home.

There are degrees of alteration. It may be revolutionary or tinctured with conservatism. When young in the art of gardening, radicalism has us by the throat. We seek, not for what we can preserve but for what we may destroy; but not for long. There comes a day, usually sooner than later, when we are stunned by the havoc we have worked. Our mad career is checked, and the often terrific task of reconstruction stares us in the face.

Those older in the craft are wiser. They give the old order a chance to show what it is capable of before

setting it aside, and do not hurry the period of probation. Knowing that bare ground may contain many a precious plant, they await the burgeoning. A shrub that the tiro might condemn for the shadow it cast they preserve for the same reason, for natural shade is not always easily procured. The gardener of experience, in a word, credits his predecessor with a modicum of intelligence. If an old, decrepit looking tree is in the garden, there is, he argues, probably a reason for it; in any case, no harm can come from leaving it for a year or two.

I have told you that in the garden of The Brambles there was a spreading Maple. A record of the time, no doubt, when Ackling was a place of woods and fields. It had survived the tide of circumstance until the sorry day when I, thoughtless fool that I was, ordained its death; and for no better reason than that I *thought* it *might* be impoverishing the soil. The recollection sickens me. I would not relate it here but that I may save others from the remorse I suffer still.

A trench was dug round the tree, roots severed where encountered until at last it was only supported by its massive central tap. A rope was fastened high on its trunk and pulled on by six or seven workmen and myself. The tree swayed, recovered itself, swayed again, once more recovered. Had I been other than a vile wretch, its valiant fight would have stirred my pity. But no, the lust of the chase, or its precise equivalent, paralysed any gentleness I might possess. The tree must die. With a last desperate shriek of rending root it fell. We, the sportsmen, had achieved a splendid feat, and could not have been more pleased with ourselves if we had shot a standing stag.

We had killed a tree; a harmless, gracious tree exulting in the fulness of its life. Had it not as much a right to a span of existence as I myself? Of course it had!

You may gather that I detest blood-sports as much as I do the witless destruction of plants? You understand me perfectly.

A friend advised me to commit the further crime of felling the Oak. It was, he said, too big a tree for the garden; the spread of its branches took up more room than could be spared; its situation was the very place for an Orchid-house. He did not move me. The massacre of the Maple was enough. Not for all the Orchids of Ind and the Americas would the Oak lose a single bough. The orchid-house must be built in another place.

For I had decided to grow Orchids. A neighbour who, without special training or ordination by providence, grew them in the type of greenhouse known as a tenant's fixture, assured me that, on the whole, no plants were easier to cultivate. A rare propagandist was Charles. To make my adherence complete he took me to Orchid nurseries, to private collections and proposed a visit to the Sale Rooms of Protheroe & Morris. "You'll see something there", he prophesied.

From a door in Cheapside we entered a large room, or really a hall, capable as it was of accommodating a horticultural exhibition. Round the sides, on the floor, everywhere but in an improvised gangway were plants of all descriptions. Lilies from Japan, Roses from Germany, Clematis from France, and boxes, crates and baskets filled with the products of English nurseries. The smell of the place was in itself intoxicating; flowers, peat, damp earth, wet moss, straw and sawdust all took a part in its compounding. Could it be that Protheroe's arranged things thus to drug their clients? I didn't care if they did.

Guided by Charles to what, from his hushed voice, he apparently regarded as the inner shrine, I saw a forum and running from it partly across the hall two parallel rows of chairs with a table between. I was in

the Orchid Sale Room. No walls separated it from the remainder of the hall; its exclusive atmosphere was sufficient. In the forum sat Mr. Morris, engaged in easy talk with his friends at the table, standing behind the chairs or moving without constraint about the floor. It took a little time to realize that he was auctioneering, so quiet and conversational was his method. No table thumping, no vociferation, no imploration for another shilling. A subtle compliment, that. It implied that we, an audience of orchidologists, were more familiar with the wares than the auctioneer; that any prompting on his part would be an impertinence. His was the privilege of assisting the transference of a plant from one owner to another in such a fashion that both would be pleased.

The air was sweet with friendliness. Everyone knew everyone else. Christian names flew from lip to lip. "A fine Cypripedium, Tommy", one would say, indicating the lot of the moment, upright in its wooden sarcophagus. "It is so", Tommy could be heard to rumble, "But more Sidney's plant than mine." Sidney, his attention dragged from a series of calculations he was making on the back of an envelope, screwed his hat still firmer on his head and blithely entered the lists.

"Ten pounds", came a bid for a golden Cattleya. "Guineas", came another. Now fifteen and in a moment twenty.

"Charles," I faltered, "did you hear that?"

"Pooh! Nothing!" he jerked back.

"Yes, but . . . " I began.

"Wait", he interrupted. "Cheaper lots last."

Sure enough, Cypripediums, Dendrobiums, Cymbidiums within my reach soon had their turn. I bought a tiny plant of *Sophronitis grandiflora* (which Charles offered to house until my orchid-house was built) and had the honour of being bid against by

Tommy. He glanced at me as he might at an oyster climbing up a Cheapside lamp-post. I risked a smile, a self-introductory little smile. He, the hero of a thousand fights, took the cigar from his mouth, scrutinized the burning end, smoothed down the other, very deliberately replaced it between his teeth, looked at me again and nodded. He had acknowledged my existence.

Friday was the day of the week on which the orchid auctions were held. By happy coincidence Friday was also one of the days when I attended a hospital not very far from Cheapside. Leaving Ackling an hour or two earlier than was necessary for the performance of my duties was a safe and simple way of playing truant, and delightful were the stolen hours spent at Protheroe & Morris's. Though I seldom resisted the temptation of the plants, it was as much the pleasure of lounging about, one of the accepted fellowship, chatting to this one and to that, as the hope of picking up a bargain that drew me there. Protheroe's was a sort of club. Orchids were the cocktails; conversation and camaraderie the solid fare.

The rooms are still there. Visit them yourself.

Building an Orchid-house is no trifling thing. I consulted a celebrated firm. Their Mr. White listened to my ideas with grave courtesy and suggested improvements with a tactfulness which made them mine. Blue prints, plans, elevations, specifications and estimates followed. Soon we were in the thick of it, a local firm of builders doing the brick-work and Mr. White's men the remainder. We talked of the importance of anti-drip bars, the life of staging, the virtue of white lead and other technicalities. One loses nothing by learning what a good workman is always ready to impart.

The Orchid-house, span-roofed, when constructed

was forty feet long, eleven wide, eight high (to the inner edge of the ridge) and divided into cool, intermediate and stove divisions. There were no sidelights. The brick sides were four feet in height, ventilators were in the roof and beneath the staging, really beneath the damp staging which was situated eighteen inches below the slats. A five-hundred gallon cement rain-water tank, the top level with the floor, was in each division as was also a tap supplying company's water for damping down. Lath-roller blinds and a sectional boiler with complement of pipes pretty well completes the description. I assure you that the Orchid-house, if moderate in dimensions, was quite a distinguished erection. The only blemish was that it did not run from north to south. Charles was inclined to shake his head over its position, and there was no doubt that a serious departure from orthodoxy had been committed. The north side would get no sunlight worth speaking of; the south would get too much; theoretically this was true. As, however, the blinds were lowered immediately the sun was too strong for the eye to tolerate, the importance of position was minimized. In any case the low pitch of the roof almost equalized the illumination of its two sides.

The stoke-hole—a more modest term than boiler-house and better conveying a notion of the place—the stoke-hole was in the nature of an annex to the warmest division of the house. Its floor was five feet beneath ground level and reached by an iron ladder. There is something very workmanlike about a deep stoke-hole and iron ladder. I always left the door slightly open when visitors were about.

For more than a year, nothing could have been more perfect than the behaviour of the stoke-hole. During the second winter, which was a wet one, its weakness was declared. Water came through the

walls, faced with cement though they were, threatened the fire, the life of the plants and the existence of the boiler. Trying days, and particularly trying nights. Mary and I, clad in oil-skins and gum-boots, manned the solitary rotary pump in turns. There was nothing else to be done. We gradually assumed the look of hardy mariners taking thirty days to round the Horn and, curiously enough, their very vocabulary became our own.

The case seemed hopeless when, one evening, a patient called and commented on my strained appearance. He inquired its cause very sympathetically. I poured out the sorry tale. His eye lit up. He wriggled on his chair with eagerness. "Why, how remarkable!" he cried. "It's my job to cure things like that. Perfectly easy. A layer of bitumen will do it. No doubt about it." When he explained that it should be applied to the outside and laid beneath the floor of a building to render it watertight the proposition did not appear so rosy. Still, an internal application was worth trying. The floor and walls up to the ground level were therefore coated with half-an-inch of bitumen and, to keep it in position, a three-inch layer of reinforced concrete was superimposed. The arrangement was entirely effective. The stoke-hole became and remained as dry as a chip.

I had read, though not in gardening books, the most terrifying tales of Orchids. How some, with tentacles like cuttle-fish, dragged men to a horrid death. Others merely gassed their victims and left them to the jackals. There were tales, too, of savage tribes who worshipped Orchids and, ever on the look-out for unwary collectors, sought to sacrifice them on the altar of the goddess.

Now stories, no matter how fantastic, invest their subjects with a certain aura which persists in some

dim corner of the mind. So in spite of Charles's matter-of-factness, in spite of the absence of ceremony in the Auction Rooms, I approached the cultivation of Orchids with a sense of high adventure.

No Orchid, it appears, can live alone; its chosen associate is not a green plant, but a fungus very like a *Rhizoctonia*, the species depending upon the Orchid it inhabits. Inhabits, for it lives in the root and often in the rhizome of the host, forming with the plant what is known as a mycorrhiza, a symbiotic relationship established, possibly, for the benefit of both. If this is the true interpretation of their connection, then the fungus, in the terms of everyday life, is a paying guest and one of such importance that, without its contributions, the Orchid must immediately file a petition of bankruptcy and then quietly fade out.

The precise terms of the agreement between the contracting parties have, however, never been disclosed to the outside public. This does not imply that there is anything shady about them, but is a simple statement of the fact that neither Orchid nor fungus perceives the necessity of laying bare its private affairs to the first inquisitive botanist who comes along. Surmise, of course, busy as ever, is responsible for the usual variety of rumours. The fungus, it has been suggested, transfers salts and water to the Orchid and also, in the case of saprophytic species such as Coral-root and the Bird's-nest Orchis (which are devoid of chlorophyll), more substantial nutriment in the way of complex organic compounds. This implies contact between the hyphae of the fungus and the soil which, in fact, has been observed in *Neottia*. For this ceaseless labour it demands a little more than lodging and takes back, report has it, a proportion of the food it has already brought the Orchid. This hypothesis of giving and taking has puzzled scientists. Had they been men of

the world they would have known that the arrangements between landlady and paying-guest not uncommonly admit of the lodger bringing to her, say, a pound of fresh herrings on the silent understanding that she will cook one, a smallish one, for his supper.

Fungus infection appears essential to the Orchid from very early life. The early stages of germination take place under, may I say, the Orchid's own steam, but very early in development progress comes to an end unless the embryo becomes infected through the soil. The entrance of the fungus into the tiny plant is a very ticklish affair. It should, one might think, be an occasion for joy, acclamation and pats on the back. Instead, black looks and hidden weapons often go far to mar the event. If the fungus is in sufficient strength it may kill the Orchid, but if inadequately represented may be devoured, the devourer itself subsequently dying as it has killed its purveyor. Strange doings for participants in a partnership, if partnership it is.

However the association may work, its existence is essential to the Orchid so far as present knowledge goes. There we must leave it.

How the epiphytal Orchids, the tree-dwellers, were able to obtain an adequate supply of water mystified me for long. I imagined myself in their position. How would I manage it? The problem was beyond me, but child's play to an Orchid. Its roots arrange for a division of labour, though all are able to assume the work of any. Clasping roots moor the plant to its support. The perforate pocket formed between tree and roots is gradually filled with humus into which dip absorbent roots, snatching what food and drink they can. A third series, called true aerial roots (though all are really aerial roots), hang down into the empty air. On the face of it, this disposition does not suggest efficiency in the collection of water, nor

Plate VI

p. 172

DESFONTAINEA SPINOSA [$\times \frac{9}{16}$]
(above in shade, below in sun)

Plate VII

p. 172

CORNUS NUTTALLII [× ½]

can one believe it would be sufficient but for the intervention of *velamen*.

Not confined to epiphytal Orchids nor, for that matter, to the *Orchidaceae*, velamen is a thin, sponge-like tissue made of dead cells which communicate with each other and with the outside air. When dry it looks like finely crinkled silk but, given the opportunity, it absorbs water greedily, swells, and becomes comparatively transparent. Conceive, then, of a wet compress swathing the root from top to bottom; an Orchid feeding-bottle, so to speak.

Conceding that the possession of velamen can supply an epiphytal Orchid's need of water in the rainy season, how is the plant to be maintained throughout the dry? It must have contrivances to prevent the loss of water, very obviously. Velamen, when dry, itself presents a barrier to evaporation from the root while the leaves, chief avenue of water loss, drop off in certain species and in others are specially built to resist the escape of moisture and, in many cases, to actually store it. Thickenings of the stem, pseudobulbs, occur in several; they serve as reservoirs. So also do the long, substantial stems of such as Dendrobiums.

Xerophytism, the power to resist drought by means of peculiar structure, is, however, not confined amongst Orchids to the epiphytes. The terrestrial species of *Phaius* use pseudobulbs; so do the Bletias, which are all terrestrial. Wherever such machinery is found it indicates that there are recurring periods of either actual or what is known as physiological drought* that operate as a factor of environment.

It is curious that some bright young reporter, seeking a sensational title to cap his account of a horticultural show, should not have hit upon "Orchids which climb Trees", or the more lurid "Tarzans

* A condition in which the water present in a rooting medium is held by forces so strong that they cannot be overcome by the plant.

of the Plants". Besides their news value, such headings would indicate no more than truth. There are species of *Vanda, Aerides* and other genera which, dissatisfied with a position determined by the falling of a seed, seek for an airier, lighter place than the middle plane of a tropical jungle. They grow upwards and, to consolidate each gain in altitude, push out roots from the stems to clasp the trees on which they have their being. A feat of engineering, you say. So it is, and performed by an organism without conscious intention. Progress is not stayed until a suitable situation is reached, even though an ascent to the tree tops is necessary to attain it.

It would be presumptuous and supererogatory to write of the fertilization of Orchids. It has been dealt with by an abler, nobler pen than mine.

The world, in its appreciation of Darwin's work, is apt to forget the labours of Christopher Konrad Sprengel, once rector of the school at Spandau. He, nevertheless, was the first to study the fertilization of Orchids by insects and give his observations publication. His patient researches did not meet with the approbation, even the attention they deserved and he, discouraged and embittered, abandoned science, neither the first nor the last to be vanquished by indifference. A most sorry fate, but one which he might have successfully defied by refusing to take himself so seriously, and by realizing what a precious lot of mugwumps the irresponsives probably were.

A mugwump, by the way, has been defined by H. W. Dodds as a fellow with his mug on one side of the fence and his wump on the other.

Remember that the next time you feel the pangs of disprized office.

However great the interest Orchids create, it does not subordinate their beauty. They have detractors. What lovely thing has not? People who ought to

know better speak of them as weird, uncanny. Parrot cries for the most part. Exotic? Of course many of them are exotic, in the true sense. So is tea.

If by the term something unwholesome and decadent is implied it is a calumny.

Some of them perhaps give a first impression of aloofness. Even a hardened grower would think twice before labelling a Cattleya "Saucy Sally". On the other hand, the frilly friendliness of *Odontoglossum crispum* and the bluff heartiness of *Lycaste Skinneri* win our instant affection, while those honest burghers, the Cypripediums, when once known, command our admiration.

Of all flowers, those of many Orchids are perhaps most entitled to be called magnificent. The word is not used as a synonym for beautiful, gorgeous, handsome, enchanting or other eulogistic adjective, but simply conveys magnificence. A regal, radiant quality; solid, without a hint of meretriciousness.

My collection rapidly increased. How many Laelias, Dendrobiums and Oncidiums I possessed and what species they represented can be of interest to nobody. None were expensive, all had their several attractions; the majority flourished; a few waned. The fogs of the nearer suburbs were enemies against which nature had given them no protection. How could she possibly foresee that an Orchid, intended to live its life in an Amazonian forest, would ever grace an Ackling greenhouse? Ventilators, we were instructed by the experts, should be kept closed in foggy weather. This we now know, thanks to Kew, is a mistake. Sulphur dioxide is the gas contained in fog which injures plants and, incidentally, irritates the nose. It enters a greenhouse between the panes of glass or any other gap and, combining with the moisture in the enclosed air and on the plants to form sulphurous acid, does its deadly work on flowers and tender leaves. It

should be our endeavour to exclude the gas but, as that is not entirely possible, to keep what enters on the move.

Kew tackles the problem by forcing air into the Orchid-houses through filters by means of electric fans. It is passed over the hot-water pipes and, being under a higher pressure than the outside atmosphere, seeks an egress by the very paths through which the fog would enter, thus, in a measure, pushing the fog away.

It is seldom possible, on financial grounds alone, for gardeners to follow the methods of Kew, but we can at least keep the foggy air in motion. A little more heat in the pipes, understaging-ventilators half open and the roof ones for an inch or so will allow of a free circulation.

It goes without saying that no damping-down or spraying is done so long as fog continues, and as little watering as possible.

Yet though a town tainted by the smoke from factory chimneys and liable to fog cannot be, from an Orchid's point of view, a kind and happy haven, it is surprising how well so many bear themselves under the circumstances, and even achieve renown. More than one famous nursery has been within the ring of London and many have thriven on its fringe. And the success of amateurs within the environs has been every bit as remarkable. I once saw a collection of Dendrobiums in a greenhouse leaning against a wall in the area known as the Laundry of London. I had seen happier Dendrobiums, but that they managed to exist at all in that fog-prevalent and smoky atmosphere, in which blinds were quite unnecessary, speaks volumes for their endurance.

Now though gardeners enjoy a tilt with fortune, and value a triumph in ratio to the struggle to obtain it, their investments in Orchids are none the worse for a basis of trustee stocks; plants which may be

relied upon to stand a strain that would depress speculative items beyond hope of recovery. Of these there are many and, in contrast to a notorious property of other gilt-edged securities, they pay a generous rate of interest.

My own small experience went to show that Cypripediums and Cymbidiums were more tolerant of a town than the other popular genera. Another important attribute they possess is the long persistence of their flowers. Those of Cymbidiums remain fresh for at least two months. As they appear in winter this is a valuable accomplishment. It is all very well to say that their duration is due to the extreme rarity of natural fertilization, but how many other flowers can resist decay under the same condition for so long a period? Some credit must be allowed the material from which the flowers are made.

One of the minor pleasures of Orchid cultivation is the potting of them. Nice work with a potting-stick, titivating the surface of the compost with scissors—for no self-respecting Orchid can tolerate strands of sphagnum moss or osmunda fibre sticking into the air—and craftily hiding stakes where stakes are necessary; these are its joys. There is always satisfaction in turning out a neat job.

Does an Orchid require such finicky care? It is doubtful. Then is it deserving of more homage than another plant? Of its deserts I cannot speak. I write of what it gets.

A Pelargonium or Cineraria may be potted on the kitchen table and think nothing of it. An Orchid apparently demands more privacy. They have, it is reported, allowed themselves to be dealt with on the end of a greenhouse staging, screened off, but only as an emergency measure. A potting shed, comfortable and furnished with everything likely to be required, appears to be as desirable to the plant as to the potter.

To him it is as the shop to the carpenter, the studio to an artist, an operating theatre to a surgeon.

The timber garage, useless to me as a garage, made a perfect building for the purpose. We took it down, re-erected it near one end of the orchid-house and along one side put in a bench three inches thick; three inches, for I was a mighty chopper of osmunda and breaker of crocks. Beneath the bench were partitions for pots and potting materials. On the walls hung sieves, billhooks, aprons, raffia and in drawers beneath the bench were a mallet, hammer, secateurs, scissors and the thousand and one objects that potting-shed drawers collect. A horticultural pharmacy presented fumigating compounds, insecticides, coal-tar, sulphur, charcoal and a good many other medicines on a wide shelf, while battens across the span-roof supported stakes and nets. A very proper potting-shed, and standing firmly on a high, wooden floor. Also, it had a lock which functioned.

With such a place to work (or play) in, it is possible that plants were potted oftener than was absolutely necessary, and it is certain that the local tennis club lost two energetic members because of it.

Chapter Four

I CANNOT make this book a consecutive narrative. To record events in their chronological order would introduce a jerkiness which would be nearly as irksome to set down as to peruse. A Garden Calendar of Operations is useful to the gardener who compiles it but a stale document to anyone else. When, therefore, we are talking of Orchids or potting-sheds, cabbages or caterpillars, let us have something of a connected story uninterrupted by Iris or Delphinium intermezzos. This is not to say that after a subject has been once discussed its mention is thereafter barred. After it has left the centre of the stage its part need not be ended. Thus, although Roses have already had a good share of limelight, their brief reappearance is necessary to an account of the garden of The Brambles.

My late landlord allowed me to remove what I wanted from my old garden, and at any time I liked. Before removing them, beds had to be prepared; but not of the three-feet-deep kind. Those, I gathered, were looked upon as high ideals rather than actualities. Professionals paid them lip-service while reverently raising their venerable hats or, on other occasions, found them a reason for derisive mirth. The new beds were merely double-trenched with a middle-aged spade, and farmyard manure mixed with the bottom spit.

The Roses grew better than in their previous luxurious quarters and their foliage, hard and lustrous, no longer suggested the snows of winter from the degree

of their mildew infection. I put down their improvement to the more open situation, though the simpler soil may also have had an influence.

Herbaceous borders were still basking in their prolonged popularity. Taking the plaudits of the crowd as a measure of their merit, I, too, would have one. Herbaceous is an attractive word. It hints at a fresh, robust lushness, that happy lustiness beloved by beef-eating Englishmen. Coloured pictures in catalogues of borders filled to the last inch with blooming plants, and bearing the title "*You* may have a border like this", demonstrated clearly that not only did all herbaceous plants flower at the same time, but that they remained in that condition the spring and summer through. It was, to be sure, with some astonishment that one noticed St. Brigid Anemones and perennial Sunflowers flowering simultaneously, but no doubt the former represented a continuously blooming variety. There was a kind of Lettuce called "Continuity", why not an Anemone?

I had, you may remember, already trifled with herbaceous plants. There would not be any trifling this time. I would prepare a border forty feet long and ten wide by trenching and manuring; not when the soil was as unmanageable as mortar, but when it was friable and pleasant to deal with. The garden, like the last, was on London clay, but London clay so long under cultivation that it was no longer clayey.

I could, I believe, still name the plants which furnished that herbaceous border, but to what purpose? They grew well, even luxuriantly. I cultivated them assiduously with a Caxton cultivator, one of the most useful tools ever invented, staked them carefully and honestly tried to whip up an enthusiasm. It was no use. I would never be a herbaceous borderer. Mary, too, was a little less than luke-warm, though she did profess a liking for *Echinacea purpurea* and Golden Rod.

There must, we felt, be something seriously the matter with us, for everyone else appeared passionately devoted to Asters, Centaureas, Artemisias and the rest. Could it be that we had chosen an uninteresting lot? If we had, then catalogues gave a very different value

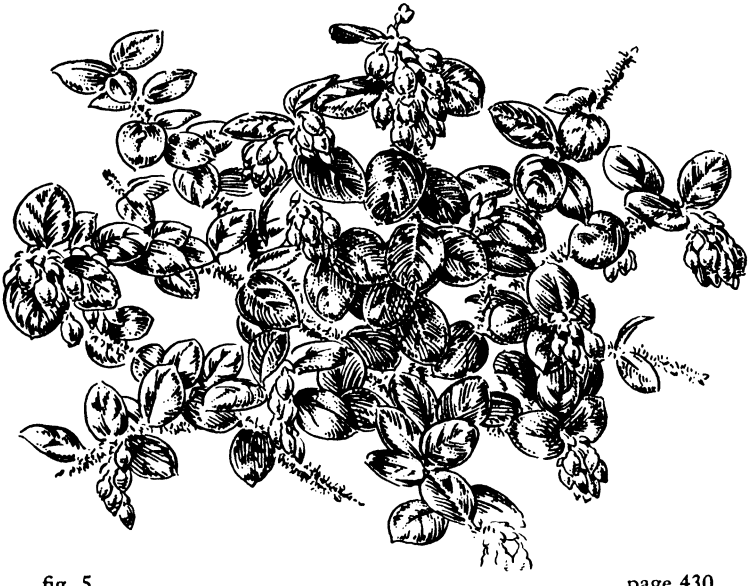

fig. 5 page 430

VACCINIUM NUMMULARIA [× $\frac{1}{5}$]

to ordinary English adjectives than that usually accepted. Surely beautiful could not mean dowdy, handsome blowzy and superb gawky? The border bore no resemblance whatever to the picture which had charmed me. Its profile view was passable but, full face, it had little to commend it. Further, when put to the test, herbaceous plants did not all flower at the same time (silly to expect it) and in the majority the period of blooming was short. Taking them as a whole, they gave too loud a shout for an insignificant performance.

We wanted to be fair, however. There were borders near London which had a national, nay, an international reputation. We would visit them before finally damning herbaceous borders. Our visits did nothing to support catalogue delineations. Tuberous Begonias, Bermuda Lilies, Cannas and other half-hardy plants occupied respectable areas. Annuals were dotted in here and there or grouped, while ornamental foliage plants, definitely on the tender side, filled up any gaps. Handsome the borders were, but honest-to-goodness perennials had only a small share in making them so. I spoke of their splendour to a passing gardener.

"Um," he muttered, "they take a deal of keepin' up."

This illuminating remark referred, I found, to a constant system of refurnishing. A large reserve of plants was kept in the background. As soon as an occupant of the border was past its best, it was quietly removed (perhaps under cover of night), bundled behind the scenes and replaced by a new tenant just opening its flowers. Seldom, indeed, did the borders hold the same plants for two consecutive days. I could not explore the area necessary for extras; a door marked STRICTLY PRIVATE (and locked) prevented entrance into that secluded emporium, but it must have been many times larger than the borders it was intended to supply.

My mild criticisms might be rebutted by pointing out that there was nothing in the term herbaceous border which expressly prohibited its constant alteration, provided that it contained none other than herbaceous plants. The standard authorities agree that herbaceous means "pertaining to, or having the characters of a herb" and that a herb is definable as a seed plant in which the flower stem persists only sufficiently long to allow of the development of seeds.

Herbs, therefore, may be annual, biennial or perennial. That is the strict letter of the law. It does not however control horticultural classification. In garden practice, a herbaceous plant is always deemed perennial. Further, the term is almost invariably confined to those stalwart individualists prepared to take pot-luck in sun or shade. To speak of choice perennial Primulas or Gentians which are unable to ruffle it with Heleniums and Michaelmas Daisies as herbaceous, though accurate, is to commit a horticultural solecism, and one not quickly forgotten. Gardening conventions are not to be lightly disregarded.

The proper place for plants, generally spoken as herbaceous, is not, I suggest, in a border designed to contain nothing else, but in beds primarily devoted to shrubs. A little foresight can arrange for the juxtaposition of shrubs and herbs which bloom at different times; masses of unrelieved greenery are brightened up; ungainly forms of certain perennials pass unnoticed and the barren bleakness of a herbaceous border in winter no longer frets the eye.

More than a few herbaceous plants have damaged their reputations by insistent demands for support. They appear quite unable to stand on their feet without a stake. Now a stake is only useful when firmly implanted in the soil. I mention this apparently obvious truth in order to combat any impression you may have gained from seeing one firmly tied to a plant but only occasionally making contact with the ground, the rotting off of its lower end being evidently regarded as a matter of little consequence.

From a severely utilitarian point of view, any rigid rod serves as a stake. A bass broom, for example, worn to the bone, may still subscribe its serviceable handle. Gas-pipes have been used, and portions of bedsteads. Props such as these are employed in the single-stake technique; gathering the branches to the

support and tying them to it in a bulging bundle to form a herbaceous shaving-brush in which the purity of line is marred by the prominence of the stake and now and then by the tying material which, at the choice of the operator, may be a length of clothes-line or a yard or two of electric cable. More ambitious practitioners, conscious of discord in a staky landscape, devote a bamboo cane to each growth, inclining them outwards from the base. This, the inverted-umbrella effect, is an improvement upon the first but, as the canes are often four times thicker than the stems, an unaccustomed eye may be affronted by what appears to be a mass of Michaelmas Daisies sprouting from dead Bamboo. Possibly the most artistic arrangement is obtained by using pea-sticks of suitable length. They are inserted round a plant before it actually needs support, are quickly hidden by foliage and render ties unnecessary.

A reader given to the odd habit of reading between the lines rather than the lines themselves may have discerned what he takes to be a caustic tendency in my comments on catalogues a page or two back. Let me assure him that his impression is erroneous. In the first chapter I spoke of them with admiration but, to convince all doubters that I was in earnest, I'll say another word.

Nurserymen's catalogues provide the favourite literature of a numberless public. Not only do they justify their claim to be mines of information, but show the very path to El Dorado. How convincingly they promise to gratify our unfulfilled, often unconscious desires! Is there anyone in the whole world of gardening who can truly say he is catalogue proof? We read of Mallows "standing eight feet high, bedecked in shimmering salvers of silvered pink", of *Gentiana Farreri* "a scintillating mass of glacial blue". The Gentian, we learn, is an easy plant in Scotland.

How much easier must it therefore be, we argue, in the milder air of England. Already we see the north border, erstwhile stronghold of Sorrel, moss and Daisies, throwing a coruscation almost more than eye can bear.

This, we feel, is life. Why do we fret under such temporary trials as the value of the pound in Vladivostock when such permanent joys are within our grasp? Lovingly we turn the pages.

"*Bocconia cordata*, the Plume Poppy, a robust and handsome leaved perennial from China, running up to eight feet high and surmounted by its plumes of soft yellow flowers." Could anything be better for the party fence if, that is, the people next door are of that ungrudging disposition which allows a constant admiration of their neighbour's garden while your own retiring nature is not averse to privacy?

The cheery optimism which informs each sentence must cast a glow of warmth over the dreariest life, and this spirit is not forced or artificial. Though nursery men have their troubles, even as you and I, some inborn power enables them to place common vexations in proper perspective, both in their catalogues and in their daily lives. The prospect of financial loss does not blot out their sun, nor the onset of bodily infirmity turn life's sweetness sour.

If there is anything in a catalogue which may interfere with one's enjoyment, it is the inclusion of human figures in the illustrations. They serve, possibly, as comparisons of height but, as the stature of the human is never indicated, a graduated rod would serve the purpose more effectively and less gratingly. The expression and attitude of these innocent people is often quite upsetting. Here, for instance, is a matronly lady gazing on a Lily with palsied admiration. From now on, for ever and for ever, will *Lilium giganteum* appear to me not as the thing it is, but as

the cause of a metamorphosis nearly as tragic as that which befell the wife of Lot.

No comparison in size, however, can have been intended between this enormous Rhododendron and the crouched and bearded ancient peering at it with stunned astonishment through a clump of Bamboo. The picture, above the title "Breaking Cover", would not have been out of place in a travel book.

And how is one to interpret the appearance of this formidable figure, knife between his teeth, stooping over a harmless briar?

O nurserymen, let me implore you to avoid such awful incongruities. Are not plants themselves worthy of portrayal without the encumbrance of less beautiful creations?

Almost contemporaneously with setting up house at The Brambles I came to know James Hudson. As the older generation of gardeners do not need reminding, he was one of the most renowned of Victorian gardeners and took his place among the first sixty recipients of the Victorian Medal of Honour. He used to speak of all flowering and ornamental plants as his children but had, nevertheless, his Josephs and his Benjamins. Whether Bamboos came under the first or second category I cannot say, but it is certain they held an assured place in his affections. I think I remember his telling me that, though only four years old when von Siebold ushered into England their forerunner, *Arundinaria japonica*, in 1850, he remembered the event. It is not unlikely, for his father was also a well-known gardener, and his own memory was extraordinary. He it was who led me to their culture.

Our first introduction to a Bamboo, a purely social event, had taken place during our honeymoon in Cornwall. We met it, a small potted plant, one afternoon in an artist's studio. An odd place to find a

Bamboo? Yes, and the artist himself was just as unexpected. A big, merry blade, he laughed at himself, his pictures, his clients, the Bamboo, at everything except the cost of frames. There was no affectation in his laughter, nor did it under-run a vein of disillusion. The sort of stuff that Ben Jonson might have roared after a good day at "The Alchemist". Other men make companions of dogs, cats or birds. He had his plant and quoted in support of his humour a Chinese proverb to the effect that a Bamboo is of more comfort to a man than a wife and herd of oxen.

His studio was stepped like the gallery of a theatre. On the topmost tier, in a shady corner, lived the Bamboo. "And you have no idea", said our host, "what a business it was to find a syringe capable of spraying him from ground-level. But this one does it. Watch." The operation was efficiently performed. "I do that several times a day this hot weather", the artist added. "He seems to like it." True enough, the plant *did* seem to like it from the way it sparkled at him.

Alfred Russell Wallace spoke of the Bamboo as being "one of nature's most valuable gifts to uncivilized man". What the Chinese think of this pronouncement it is better not to ask. They probably tuck their hands a little further into their sleeves, smile gently, and recollect that theirs was an advanced civilization before Rome came into history.

It is, indeed, not too much to say that the Far-Eastern peoples owed the arts of civilization and therefore, in large part, civilization itself to the Bamboo. Did it not, and does it not, provide them with food, clothing, habitations? With weapons of warfare and the chase? With tools, implements of the artist, paper, furniture, musical instruments, medicine? What necessary to their welfare does it not supply? So integral a part of eastern life it is that one

wonders what would happen to the inhabitants of those distant lands were they, by some unthinkable misfortune, suddenly deprived of the plant.

Its fame had reached beyond its native countries long before the era of Christianity. The learned but not very reliable Ctesias of Cnidus in Caria, who, about 400 B.C., was physician to Artaxerxes Mnemon, king of Persia, wrote of Indian canes large enough to be used as boats. Col. Yule expressed incredulity at this statement, Lord Redesdale tells us, but it should be remembered that a "boat" may be almost anything capable of keeping a man's head above water.

Many are familiar with the story of how the Chinese silk-worm came to Europe, and how a tube of bamboo played a humble but indispensable part in that momentous advent. A full account may be found in *The Decline and Fall* under the reign of Justinian the Law Giver. Gibbon tells how the Emperor, exasperated by the extortions of the Persians, the middle-men of the silk trade, cast about for a means to circumvent them. His efforts seemed likely to be unsuccessful when, providentially, two Christian monks presented themselves at his court in Constantinople. They had been resident in China, possibly in Nanking itself, and, being familiar with the life history of the silk-worm, conceived the idea that a few hundred purloined eggs might be smuggled into Europe. Justinian embraced the project eagerly and the monks, encouraged with rich gifts, "again entered China, deceived a jealous people by concealing the eggs of the silk-worm in a hollow cane, and returned in triumph with the spoils of the East".

Pretty work for missionaries, but we have no word of its being cavilled at. And the moral consideration, I confess, interests me less than what their adventures must have been. There is no record of their journey other than "they again entered China and returned

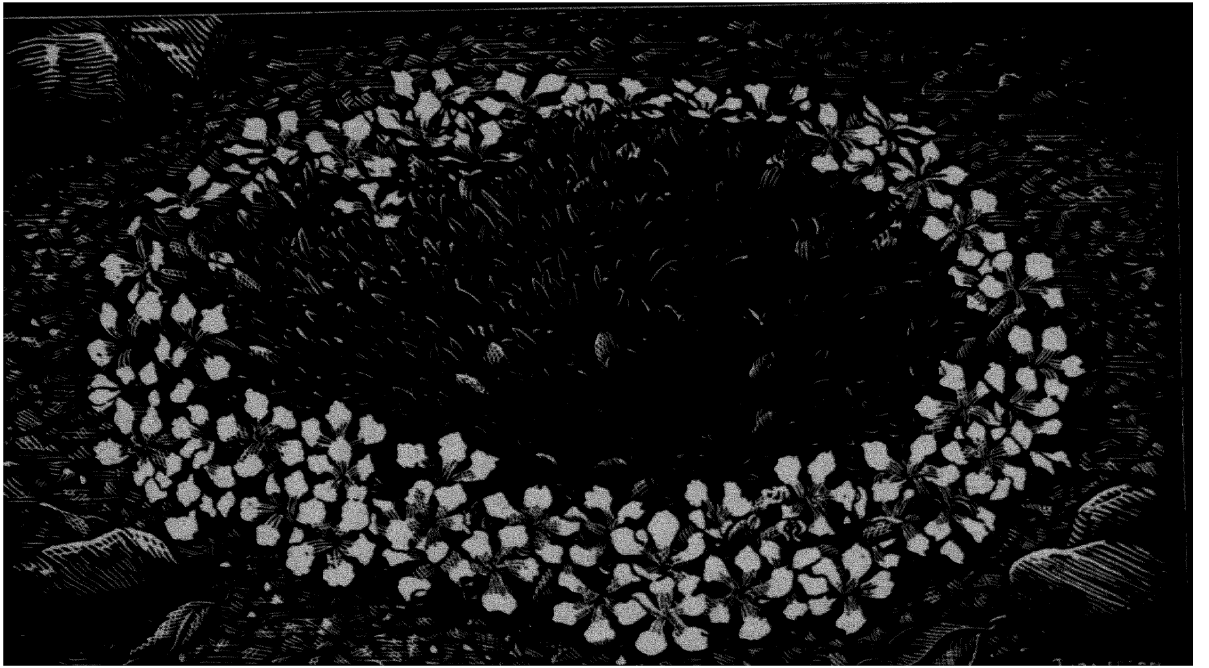

Plate VIII

p. 308

SAPONARIA PUMILA [×⅔]

Plate IX

p. 323

SOPHORA MICROPHYLLA *var.* [× ⅓]

in triumph". The terseness is overwhelming. Here were two monks who set out to traverse the continent of Asia in the sixth century, seven hundred and odd years before the memorable venture of Marco Polo. The one-way journey must have taken nine months by caravan. Gibbon's figure of two hundred and forty-three days denoted the time necessary to reach Syria from the silk marts of China, and took no account of the distance between Syria and Constantinople.

One gathers that in the year 552 A.D. the journey was merely an incidental part of the year's work. An account of a similar undertaking in 1937 would make a best-seller. Its physical perils were no less then than now, and there existed fewer expedients to meet them. Danger to life and property from robber bands and irregular soldiery was probably more acute, and the nature of the traveller's reception after reaching his destination was always to be anticipated with doubt.

You may possibly denounce these excursions into a plant's history and historical associations as so many frills. "What have such matters to do with gardening?" you ask. I might ask in my turn, after the manner of Kipling, "What can they know of plants who only know their form?"

Unless your interest is purely technical or limited to the beauty of a plant, it must be enhanced by background. No true idea of anything may be gained when it is viewed by itself, nor can we begin to apprehend its relation to life as a whole by regarding it as a solitary object in a field of nothingness. Whether a physical or mental background is of more consequence depends upon predisposition and, to some extent, on training. If your conceptions are bounded by what the eye can see, then the first will satisfy. Should you be a naturalist of the Humboldt

type, both are requisite, while a mentality swayed by poetry, history or metaphysics will find the second sufficient for its needs.

Thus, beyond the fact that the annals of plants spur a gardener's progress, they open many a magic casement through which we see, not the foam of perilous seas, but scenes that were acted long ago.

Let us return to Bamboos. The name itself is a popular term used to embrace all those woody, twitch-like grasses botanists include in the family *Bambusaceae.* Its members are found in North and South America, Africa, Madagascar, the small island of Réunion, but principally in Asia from India eastwards. Their wide distribution should indicate, under Willis's rule, a considerable age, but, curiously enough, no fossil of a single species has yet been found. This, however, does not mean that one never will be found. The hardy garden species are from the Himalaya, China, and particularly Japan and, with one or two problematical exceptions they are all of the genera *Arundinaria* and *Phyllostachys.*

A simple way of distinguishing these from each other is by the arrangement of the branches. In *Arundinaria* they leave the main stem in whorls, in *Phyllostachys* from one side of a node, a vertical groove marking their position before extension. Further, in *Arundinaria* the branches appear simultaneously; in *Phyllostachys* they develop from below upwards.

I believe the greatest height attained by any hardy species in cultivation is twenty-four feet, the record of *Arundinaria Falconeri* in Cornwall; a dismal contrast to the one hundred and twenty feet attained by the larger Bamboos in nature, but impressive enough in an English garden. From that they occur in a diminishing series until the tiny *A. pygmaea* is reached. Tiny must not be taken to imply any frail

hesitancy on its part. Though it may be only six inches high, and never more than eighteen, nothing can repress its energy. It can be safely backed to oust any native weed, but how its own peregrinations are to be checked every gardener must decide for himself.

Perhaps you already grow Bamboos, and need no telling of their attractions? Of their soft swish-swish in the gentlest breeze, their stately grace and constant look of happiness. At Ackling I planted in a border by the western fence the delicately beautiful *A. anceps* and the no less elegant *A. nitida.* The never squeamish *A. japonica* (*Bambusa Médaké*) was there, of course, and also the handsomely foliaged but rampant *A. palmata* which thinks nothing of pushing through a gravel path, and very little of tackling a flagged one.

Apart from their decorative value, Bamboos have many uses in the garden. Nowadays I bring *A. japonica* and the handsome *A. fastuosa* into play as windbreaks, despite the warning that, of all things, Bamboos most dislike wind. The same species conceal the garden crematorium from public view; surely no other plants could tolerate the heat and sparks with such indifference? As screens for any purpose they are invaluable, and, not least, they are ready to provide a stake at a moment's notice.

With these eulogiums I may have conveyed that a Bamboo is that exceptional thing, a plant without a snag? Alas, a shadow hangs over every one of them; the possibility of flowering. It means a holocaust. Every member of a species blooms at the same time over enormous areas and, according to many authorities, dies forthwith. Perhaps, however, things are not quite so bad. Other men of learning believe that, though the plants are badly shaken, life remains in their rhizomes and gradually reasserts itself. This may be so in some, but surely not in all, at all events

in cultivation. A few years ago the lovely *Phyllostachys nigra* flowered in this country, and I doubt if, at the present moment, a single plant is to be obtained for love, money, or other medium of exchange.

My first real contact with what are known as alpines, plants used to furnish a rock-garden, was due entirely to chance. None of my friends were rock-gardeners. So far as I knew, no such thing as a rock-garden existed in Ackling. I had seen one at Kew, but after making a mental calculation of the weight of rock in it (being rather given to parlour arithmetic), I had passed it by.

One day, while meandering in a bookshop—or should I say browsing?—a volume bound in dark green cloth caught my eye. *In a Yorkshire Garden* was its title and one Reginald Farrer the author. So deeply was I steeped in darkness that I had never heard of him. Of Dean Farrar, and his "Eric, or Little by Little", yes; but of Reginald and his Yorkshire garden, no. I had seen, even read, books with similar titles before. Books about the Picotee that grandmamma brought from Paisley in the year Queen Victoria ascended the throne, and full of detail about the slip of Marjoram, so generously presented by Lord Nimblefoot, which had grown into a fine bush. They had not thrilled me, nor, I gathered, anyone else. Yet here I was, deliberately taking down another apparently of the same type.

Feeling a little superior I murmured "One more unfortunate", but changed my tune abruptly. The book opened itself, as books do. Page 128 met my unexpectant gaze. I read, "But among Britain's the most important (and the last she will lose) is her power of grumbling; nor is it good form for an English gentleman or an English farmer, or an Englishman of any sort, ever to admit with anything of enthusiasm that he is pleased about anything".

Good, I thought; excellent. The implied distinction between an English gentleman and an English farmer brought the blood to my ears, having sprung from farming stock myself, but it was clear that this was not in the usual run of gardening books. I looked in the index for Marjoram; no sign of it. The omen was good and I bought the volume.

To say that I recognized half the generic names it contained would be an exaggeration. And few specific ones came within my ken. From anyone else than Farrer such a revelation of my ignorance might have been discouraging, but so entertaining, exciting and stimulating was his writing that he compelled me to seek some acquaintance with his subject.

This, I think, was Farrer's great achievement; the provocation of enthusiasm. His accuracy of detail had been questioned, his ideas of cultivation regarded with caution, but what of that? Many are ready to give the particulars which Farrer maybe missed. Many? Their host is legion. They come and go like hoar-frost on the winter grass, but Farrer lives for ever.

I, intent upon his plants, missed the importance of their frame. Providing it was of limestone or sandstone nothing else, I thought, much mattered.

It happened that a builder of my acquaintance had recently pulled down a chapel. Dressed York stone, a softish sandstone, had made the pillars, arches, lintels, transoms and mullions and now, disarticulated, was offered for disposal. If it was partially undressed with a coal-hammer then, to my ingenuous mind, a rock-gardener's honour would be satisfied. I had several loads delivered and tumbled out as roughly as possible; if some of the undressing could be done in a more or less natural manner, so much the better.

The next thing was to dig over the site and then, a more difficult undertaking, to conjure up a heap of

soil. All the soil in the garden was already in use. None of it asked for translocation. There was soil everywhere, but not a grain too much. Nothing was to be done except excavate it and trust to the luck of gardeners that the hole would be filled up.

Mary being on holiday, we began the transportation of land from the lawn to the future rock-garden. Mary, I felt, might not like the business. It was kinder to get it over during her absence. Besides, she might have vetoed the very idea. I put aside the thought of her possible reaction to the *fait accompli.* Sufficient unto the day are the complications thereof.

The rock-garden in embryo gradually increased in size and began to assume the shape of a stranded whale. That would never do. We tacked on a scree to the junction of the body and the tail; it was sufficient to indicate that whale modelling was no part of my intentions.

The scree was none of your usual beds of limestone or granite fragments. My builder friend did not purvey such trifles, nor was it possible in those days to borrow a few pailfuls of grit from the side of a road; the era of macadam had not waned.

One of my patients, however, a monumental mason, on learning my needs suggested that as marble was indubitably limestone, chippings of that stone might serve my turn. He also very sensibly pointed out that some form of shuttering would be required to prevent the surrounding soil from mingling with the scree, for the latter, you understand, was to be eighteen inches in depth. He thought that spoilt two-and-a-halfs would be the very thing. This technicality referred to thin slabs of marble, thirty inches long, which, on account of some defect, were not fitted for their proper use. I was shown a few samples. Their appearance was depressing and their inscriptions, all commencing HERE LIES, did more than prophesy

disaster; they announced it. Still, if the words of doom were turned soilwards the plants in the scree would probably never notice them. I decided to risk it.

The slabs were arranged to line the walls of a rhomboidal cavity into which the chips, mixed with a little earth and peat, were tipped. The effect was joyless, if not lowering. One had not realized how very conspicuous marble is, nor how intimately the mind associates it with other environments. No great aptness in quotation was needed to murmur, "of comfort no man speak . . . write sorrow on the bosom of the earth".

A surfacing of fragments of York stone cheered up the scree considerably, but unfortunately restored the whaliness; and this time the creature was complete with ambergris. It was still possible to alter the shape of the mound but, owing to the nature of the site, only into that of a leg of mutton with a thickish shank. As more people were familiar with mutton than with stranded whales such a change had nothing to commend it. At this juncture, very fortunately, a memory of something I had once read presented itself to my consciousness. In building a rock-garden, one should take a piece of mountain scenery as a model. Very well, the heap of soil should be remoulded into a bit of Wastdale. A little transposition would be required, but do not all artists find this necessary? Great Gable would be built at the Wastwater end and, nestling in the hollow beneath it, the hotel, represented by a garden tap. Piers Ghyll must be brought from one side of the valley to the other and Sty Head Pass placed at right angles to its usual position.

The soil was disposed to correspond with the scheme and the real building, the placing of the stone, begun. It quickly became evident that, if the

completed work was to be an erection of distinction, extreme circumspection would be called for. Too much repetition was the danger. Though broken mullions lend themselves admirably to the construction of the Pillar Rock (which happens to be in Enner-

fig. 6 pp. 91, 263, 431
PRIMULA × PUBESCENS *var.* "MRS. H. J. WILSON" [× ⅔]

dale but, as you know, too strict a reproduction of Wastdale was not contemplated) three replicas of that majestic monument, or at most four, were enough for any rock-garden. Miniatures of Scawfell Pinnacle and the Napes Needle could also readily be fashioned but, like the Pillar, they can be overdone. Steps were the only other things capable of construction from the chapel ruins.

The rock-garden, completed, brought to mind the state of Carthage after the third Punic War. It was planted, nevertheless. Aubrietias did remarkably well, and, in the shadowed spots behind the Pillar rocks, Mossy Saxifrages excelled themselves. Two hybrid Primulas, the celebrated "Mrs. Wilson" and what I bought for *P. pubescens alba* hung on like grim death; what is more, they are still in my service and have in the course of years provided hundreds of cuttings. The more easy going Campanulas, *pusilla*, *pulloides*, *Portenschlagiana*, "G. F. Wilson", *carpatica* and *turbinata* appeared to like the faint odour of sanctity still emanating from the residua; the Prophet Flower, *Macrotomia echioides*, not unnaturally perhaps, found the fragments of an arch congenial company, while Encrusted Saxifrages, Helianthemums, Thrifts and other complaisant plants did what they could to hide the desolation. It was not enough. After eighteen months, indeed, the scene was no longer endurable but before I tell of what we did to give it some similitude of nature, let me relate what happened to the hole in the lawn.

When Mary returned she looked at it, then looked at me. I steadied myself.

"A pond?" she asked. (The luck of gardeners had befriended me.)

I replied, not quite honestly, "I thought you would like one", and in half-an-hour firmly believed that a pond had been in the back of my mind the whole time, the rock-garden being only a means of using the by-product. This I explained and, with a fine assumption of nonchalance, indicated that curious structure.

"It reminds me of something", Mary mused. So it had me. What was to be done, and done quickly, to side-track her reminiscences? If she thought of whales I would never hear the last of it.

"Naturally," I boldly began, "it is Wastdale *in parvo*."

No response; not the flutter of an eyelid.

I continued, "Not an exact likeness; to tell the truth, intentionally inexact. I always thought Piers Ghyll was thrown away in nature. There it is where it ought to be. The Sty Head Pass, there being no Borrowdale in this picture, has been given another, more picturesque direction."

"I see", said Mary.

Dash it, she was still wondering what the mound reminded her of.

"The tap is the Wastwater Hotel", I announced. That riveted her attention.

"That tap? The hotel? But . . ." she could not continue. Horror was in her face. I understood her feelings, for we dearly loved that mountain inn. And who could be kinder in the thoughtful, unfussy, Cumbrian way than John Whiting and his jolly wife? I therefore pointed out that if an analogy must be drawn between the hotel and the garden tap, it could only be topographical; and not very accurate at that.

Of the making of ponds I had only the vaguest idea. They must be watertight; that was certain. A layer of hardcore, three inches of concrete and a finish of cement should do the trick. The bottom presented no difficulty, but how were the sloping sides to be dealt with? Wooden shuttering I knew nothing of. Gravity alone must keep the layers in position. The sides therefore took on a beach-like gradualness. The area of the pond increased while the bottom almost disappeared; there was only sufficient flatness to accommodate three Water-Lilies, but they were of the nobility. Their names, James Brydon, Escarboucle and *Marliacea var. chromatella*, may not indicate proud lineage to the general reader, but from gardeners they claim a certain homage.

The edge of the pool was planted with Siberian

Irises, an *Astilbe* or two, *Astrantia major*, a *Rodgersia*, which showed no appreciation, and a few Day-Lilies, which did. The Monarch of the Edge was a dwarf-standard *Wistaria floribunda var. macrobotrys*, then known by the less resounding name of *W. multijuga*. Fearing the alien surroundings might make it pine for home, we gave it the company of three Japanese Maples, all within easy talking distance. The grand old plant is with me still, the monarch of another edge. Still no more than four feet high, it has a trunk twenty inches in girth.

Everything in the pond and round its edge flourished except, as you have read, the *Rodgersia*. It did not die, but continually reproached me with a I'm-trying-to-be-brave look, which of all looks is the most trying to put up with. The position was too dry to suit it. Proximity to a concrete pond does not necessarily imply moist soil.

The rock-garden, you will remember, was under sentence of alteration. Mary stigmatized it as a monstrosity, while I, of a more melancholy disposition, was reminded of "old, unhappy, far-off things, and battles long ago". It could not go on.

To avoid further mischance I sought the help of the late Mr. Stansfield of Southport. Not only was he an acknowledged authority on alpines, but also thoroughly familiar with Wastdale. It may be that, although you are familiar with *Campanula Stansfieldii*, you did not know the man whose name the plant keeps green? Let me try to give you his picture.

Short, broad, carrying no spare flesh, his appearance yet belied his extraordinary powers of endurance. A certain pallor of complexion and flabby facial muscles suggested precarious health, a suggestion emphasized by suits, invariably of nondescript brown, baggy at knees and gaping at the pockets. The appearance was deceptive; he had an iron con-

stitution. Not one of your sober-sides, his fund of conversation was abundant, his anecdotage rich, his wit pungent but never unkind.

Of those choice spirits, the natural naturalists, Stansfield was immersed in nature's works. Steeped in reverent wonder one moment, consumed with curiosity the next, any self-consciousness he had once possessed had long ago been crowded out. Thus you found him at once the most modest and happiest of men. Although he practised as a nurseryman, I am convinced it was because of his love of plants rather than from a hope of pecuniary gain. Never even comfortably off financially, he was almost totally indifferent to money. "Be you prince or peasant," he would say, "you can but eat one grain of corn in a given time." And so with personal comfort. It is doubtful if he ever thought about it. I have known him set off to explore the Pyrenees with his luggage in two pockets.

His knowledge owed nothing to schools of learning and little to books. His five senses were his teachers and the lessons gathered from them were correlated and systematized by an orderly but not unimaginative mind. Dried specimens meant nothing to him. To fully apprehend his quality it was necessary to accompany him in the field. Over sixty when he came to build my rock-garden, he had the spirit of a boy. The true interpretation of "Those whom the gods love die young" was rendered clear. It means, of course, that the beloved never grow old.

You will understand how, when I explained that there was about to be a Wastdale in Ackling, he thoroughly entered into the idea. A pity we should have to leave out the Wastdale screes, that mighty bank of broken rock which slopes down to the lake. Why had we placed the lake, as he called it, so far away? It could not possibly be Wastwater at that distance

nor, taking the nature of the intervening country into account, could it be Derwentwater. What, then, was it? Had it any meaning whatever? Or was it merely a Lily pool? That, I admitted, was all it was. There was no purpose in detailing its origin. The story might get about, and I am no fonder than the next man of being taken in deceit.

Weathered limestone had been procured from Westmoreland and, for the sake of lime-hating plants, a few tons of Millstone Grit, a coarse sandstone conglomerate which underlies the Coal Measures.

On a fine August morning we commenced the work of reconstruction. August, according to Stansfield, was the very month to build a rock-garden. Plants moved well, the soil was friable and the rainfall considerable, but not enough to make putty of the soil. The growing alpines were carefully lifted and heeled-in under shade, and the remnants of York stone incorporated with the body-work of soil. They would give it substance, said Stansfield, and assist the retention of moisture. The limestone was gradually placed, each piece being given its full value, and, as the building proceeded, the plants were put in their positions. It was a simple matter to furnish what was to be a vertical crevice at this stage of the proceedings but a difficult task after the stone was laid. The work, completed, pleased us well. That, indeed, is a happy attribute of rock-work. It always delights its builder.

The real Wastdale is not scooped out of limestone. Neither were the alpines we planted to be found in Wastdale. On these accounts a purist might accuse us of misrepresentation, but only if we told him of our model. It would not be likely to occur to him.

Stansfield, after long consideration, decided that the bed of marble chips might be left undisturbed. No doubt the happiness of *Gentiana verna, Draba*

pyrenaica, *D. imbricata* and *Armeria caespitosa* influenced his judgment.

A week had passed since his coming, and now he was required elsewhere. We parted with a mutual promise to meet the following spring in Teesdale.

A good deal of unoccupied space in the rock-garden was left to my discretion. The arranging of the sandstone was also deputed to that dawning sense. It is difficult to give a natural look to sandstone rockwork. The material presents no lines of stratification, no little runnels where water once had coursed, no attractive irregularities of surface. Millstone Grit is particularly uncompromising. It is as bald as a doorstep. A gap between two pieces of water-worn limestone may very easily simulate a vertical fissure; in sandstone it always looks precisely what it is—a bad joint. Much can be done with a hammer and cold chisel to bring the contours of two adjoining rocks into some sort of symmetry, but, try as we may to soften its harshness, an unplanted sandstone rock-garden has a barren nakedness never displayed by limestone.

As a medium of cultivation, however, it excels. The rock stores up water rapidly against the future needs of neighbouring soil; it absorbs and loses heat less rapidly than does limestone; it does not militate against the well-being of lime-hating plants.

There are, of course, sandstones and sandstones. I speak of those without an appreciable content of calcium carbonate,* a salt commonly spoken of as lime and which demonstrates its presence by effervescing on contact with hydrochloric or other mineral acid. A sandstone rock-garden, built on so-called lime-free soil, is therefore able to support any ordinary land plant for, while there are irreconcilable lime-

* The separate grains of sand in sandstone are often bound together with salts of lime.

haters, there are no plants for which a lime soil is a necessity.

This talk of lime and lime-free soils may, to readers as unconversant with the matter as I was in my Ackling days, require further explanation and, at the risk of being blamed for once more going off at a tangent, I propose to offer it.

Strictly, the word lime refers to calcium oxide, in common parlance quicklime, a highly caustic substance prepared by roasting limestone, chalk, coral or other rock consisting principally of calcium carbonate. On contact with water it forms calcium hydroxide, the powder we know as slaked lime. This, if exposed to the atmosphere, combines with the carbon dioxide therein to form calcium carbonate, a reconversion, in effect, to the raw material.

Calcium, it will be noted, is the metal in the case. At one time in the remote past it was thought that salts of calcium were compounds of lime with acid oxides. A simple formula will illustrate this belief:

CaO	$+$	CO_2	$=$	$CaCO_3$
Calcium oxide (true lime)		Carbon dioxide		Calcium carbonate (often called carbonate of lime)

Acceptance of the idea led to salts of calcium being called salts of lime; the word lime, in fact, was practically synonymous with calcium and, in non-chemical circles, still is. We speak of chloride, oxalate, sulphate, superphosphate of lime instead of correctly describing such salts as chloride, etc., of calcium.

Now consider for a moment the unnecessary confusion this misapplication of a word has led to. As every plant in existence contains one or more salts of calcium, and as their only source is soil, it is evident that all soils capable of supporting vegetation must contain calcium salts. The term "lime soils", however, is reserved for those containing calcium carbonate;

they react with mineral acids. "Lime-free", on the other hand applies to the horticultural conception of a soil which, on the addition of the same acids, exhibits no indication of the presence of calcium carbonate; the mixture of soil and acid does not even emit bubbles, much less effervesce.*

Soil chemists are wary of the terms. The latter are too embracing and imply a permanent quality where there may be only a seasonal condition.

If, for instance, an acid soil overlies chalk, it is devoid of "lime" in the rainy season. In the dry, soil-water holding the salt in solution (as the bicarbonate) is drawn to the surface, there evaporates and leaves calcium carbonate behind. The liminess or limelessness of such a soil therefore depends upon the amount of precipitation and is not a constant property. This fact has a practical significance in British gardens. It explains the impossibility of keeping a lime-free bed limeless when it is made on a calcareous subsoil.

The Millstone Grit was arranged in an unobtrusive fashion on a border my predecessor had used for Raspberries. Not too unobtrusively; just sufficiently to suggest that the boulders had, long ago, rolled into position from a neighbouring mountain which had disappeared in the meantime. We gave up our first notion of building a sandstone hill; the way in which Millstone Grit sticks to its angularity is astonishing, and prohibitive of any imitation of the face of nature.

Peat and leaf-mould were mixed with the already limeless soil and, when it had settled down, many dwarf ericaceous shrubs were planted. *Kalmia latifolia, Pernettya mucronata, Ledum latifolium, Daboecia cantabrica, Rhododendron racemosum* and various

* Throughout this book the terms "limy" and "lime-free" (or limeless) as applied to soil are used in their horticultural acceptation.

Heaths I can remember. Nothing elaborate, nothing difficult. Here and there we studded Anemones, *appenina*, *blanda* and *nemerosa* in variety, and risked *Shortia galacifolia* (Pl. xii, p. 178) in the shadow of a rock. *Viola gracilis* spread itself generously wherever it had the chance, and nothing in the garden gave us greater pleasure.

Every gardener appears to inspire loyalty in some particular plants, and these often not the least intractable. No matter how often he may change his garden, they stick to him through thick and thin. My own adherents are *Viola gracilis* and *Primula pubescens* var. "Mrs. Wilson". Need I say that their regard is not one-sided? You may think that our partnership of over a quarter of a century has only been held together by a great deal of cosseting and persuasion on my part, but you would be wrong. (Even if you were right, I wouldn't admit it.) Wherever I stick in a bit of the Viola or the Primula, be it in wall, bed or pot; in sun or in shade, it will grow with energy.

The *Ericaceae* that we planted showed no marked approval of their sandstone home. They lived, looked healthy but grew slowly, very slowly. To say they were at a standstill would not be libellous. Suburban air was probably the objectionable factor. Had I not one day seen a *Pernettya* look uncomfortable on my approach as though it had been confiding to a near-by *Ledum* that, although the climate of its native Tierra del Fuego might be bleak, the air at least was air?

This was my first introduction to the great Heath family, apart from a nodding acquaintance with a few of the older Rhododendron hybrids. I cannot say why they originally attracted me, although perhaps descriptions in catalogues under the title AMERICAN PLANTS were more or less responsible. That geographical heading had apparently been in vogue since

fig. 7

ANEMONE NEMOROSA *var.* ALLENII [× ⅔]

p. 358

Bartram and Michaux exported American plants to this country and France in the eighteenth century. The list naturally included non-ericaceous subjects, but not so naturally contained others which know not America unto this day.

I think, however, that my devotion to the family must have a deeper origin. Possibly the love of Heather, deep in my bones, has by some kind of abstract evolution developed into a deep regard for all its many relatives. You may, if you wish, read more about them later. At the moment, the story of the limestone rock-garden awaits completion.

Though Farrer appeared to idolize them, Androsaces fell flat on my fancy. The elect were evidently kittle cattle at the best of times and, from what I read, the return they gave was inadequate for the endless worry and countless shifts their cultivation entailed. This confession is rank heresy and I fully expect the penalty of excommunication at the hands of that strict upholder of the true faith, the Alpine Garden Society, unless the dwarf *Ericaceae* say a word in my defence.

Some years ago, but long after I had left Ackling, I felt I was losing something by neglecting Androsaces. Many of my friends talked of little else, and always with lowered voice, serious eyes and other signs of veneration. I developed a mild attack of pseudo-enthusiasm. While it lasted, I acquired quite a respectable collection of the Aretia group; *ciliata, cylindrica, glacialis, Hausmannii, helvetica, imbricata* and others and once actually won a first prize for six pans of distinct species. It was no use; I could not keep up the pressure. Androsaces and I were not in tune. We both felt it, and decided we would be better apart. They went with joy to other alpine-houses and, bearing them no grudge, I hope they're happier now.

Saxifrages, the rock-breakers, appealed to me at

once. Their name, indicative of a certain roughness in behaviour, a downrightness of method, a coarseness of fibre, possessed a strong attraction. Here were plants which, if not misnamed, I could understand. We should get on well together. And so we did, on the whole. From time to time there have been trifling disagreements. Their conduct was not always what might have been expected, but I daresay my own did not invariably reach the intelligence they hoped for. Among the rather sulky species was, and is, *Saxifraga Grisebachii*. Everyone, I suppose, who has ever seen its picture, plain or coloured, has wished to grow it, and, if he had the opportunity, has tried. Its hard rosette of silvery green leaves from which arises a flower stalk clothed in tiny green-tipped leaves of crimson velvet and terminated by a drooping inflorescence of the same colour sets one all aglow and, whatever its faults, avid to possess it.

I planted it in a high position between two rocks, mindful of drainage. One morning, six months afterwards, we found it lifeless. No definite cause of death could be ascertained. Maybe its rape from Macedonian hills was unendurable.

There are cunning gardeners who induce it to grow in the open; many make it happy in an alpine-house, but I have never had a plant which attracted an envious look.

In the light of Ackling experience, I should say that Saxifrages of the Mossy and Encrusted groups suffer the atmosphere of towns most gladly. Forgive my constant insistence upon atmosphere, but it is an element so often overlooked. We blame soil, drought, bad drainage for mysterious deaths, while the often principal transgressor escapes a word of criticism. Or is it that, as we cannot change it, we shut our eyes to its maleficence? A line of inaction which has landed many an ostrich in a pretty plight.

Another Saxifrage did well, and that the very flower of the flock, *S. oppositifolia.* Its prostrate, creeping habit, its multitudinous, dark green, diminutive leaves and its surprisingly large, bright, reddish purple flowers combine in making it not only the pride of its genus, but one of the best twelve alpines. It will not tolerate, however, the rough and tumble life which many of the Encrusted species regard as play. Shade it demands, and moisture and good drainage. Assured, in sensible moments, that it is better policy to encourage willing plants than to pander to the fancied needs of passive resisters, and usually in vain, I should have been rigidly faithful to Saxifrages that were faithful to me. But no; I must dally with Englerias and with fair Kabschias. And did I learn discretion from their proud disdain? Not I; hope still beguiled me.

Even now, with thousands of set-backs, failures and disappointments behind me, I cannot for my life resist the beckoning finger of an alluring stranger, nor rest content in the company of the leal. Yet, if put to the test, not I, nor any gardener would discard the proven for the new, no matter how attractive.

The fascination of the strange is not entirely on account of either beauty or novelty. There is a sense of vicarious adventure in growing a plant new to cultivation. We share, in imagination, the perils of a journey in, say, unexplored Tibet and feel the thrill of the discoverer on his finding a plant never before encountered by white man. And is it a less excitement to watch the germination of that plant's seed, to follow the development from stage to stage until at last its flowers gaze on a land far alien from its own?

The rock-garden accommodated species of some fifty genera, but to enumerate them all, even to recite the generic names, would be unprofitable. The gem of the collection might have been *Daphne petraea,*

but a specimen an inch and a half in height by one in breadth is not imposing. It grew slowly but flowered regularly. Recollect that no alpine-house sheltered its expensive charms. Gritty soil and good drainage were the essentials of its nurture, and I still grow the species under the same conditions.

Neither *Ramondia* nor *Haberlea* showed the appreciation of vertical crevices, shade and frequent spraying I expected. None the less, I hankered for *Jankaea Heldreichii*. It was perhaps as well that wild doings in the Balkans prevented my obtaining it. Subsequent semi-familiarity with that exacting plant is shadowed with a heavy gloom. "Plant it in the open," experts advised, "and shield it from rain in winter." I have carried out directions to the letter, and with what result? It lives, but steadily shrinks in size. At the present rate of decrement, plants which were of normal dimensions five years ago will, in another five, be no larger than a sixpence. I am prepared, however; the label *Jankaea Heldreichii var. minutissima* is as good as written.

I have, in my present garden, one specimen which is inclined towards better ways. If it has not increased, it has not lost in size. Nestling beneath the branches of a dwarf and drooping Yew, it leads a hermit-like existence. I believe the plant shuns the glare of publicity, though there are a few tactful gardeners who manage to overcome its prejudice.

Of Gentians, only two species graced our Wastdale. *G. verna*, in the scree, did as well as it usually does in cultivation, and exactly the same judgment might be passed on *G. acaulis*; it grew prodigiously but remained as barren as a stone wall. Perhaps the most glorious of them all, *Gentiana acaulis* has badly sullied its reputation by this ridiculous habit, the cause of which has yet to be discovered. For it is of a locational order. The same individual

will bloom profusely in one place and be absolutely flowerless in another unless an occasional empty calyx may be called a flower.

Some authorities assert that, in order to flower, the Gentian requires "something" in the soil, a something which is absent from the most of gardens. A few theorists rashly assume that the mysterious element is a fungus which lives in mycorrhizal relationship with the plant. They overlook the fact that such an association is not concerned with flowering, but influences or even controls the very life of the host. As the plant *grows* quite well in situations where it has never been known to flower, it is clear that a mycorrhiza does not affect the question. Others hold that the magic lies in the chemical composition of the soil; its nature has so far defied discovery. Be that as it may, supposedly potent loam, in truck-loads, is sent from where the Gentian blooms to gardens yet unblest; with what upshot I cannot tell, but scepticism nudges me.

A third group insists that success turns on the firmness of the earth, and advises the consolidating of a planted bed with garden roller, labourer's boots or other heavy instrument, it being taken for granted that the plants themselves are indifferent to such measures.

Soil, always soil, is given the credit or discredit for the Gentian's blossoming. The idea is too narrow. *G. acaulis* flowers in a great variety of garden soils; in clay, loam, sandy loam and scree; in soil rich in humus and soil devoid of it; in calcareous ground and non-calcareous. Is such catholicity not sufficient to show that soil is not the beginning and the end of the matter?

Popular conception takes no account of the other factors of environment, and the possible effect of one or more of them. Stansfield used to say that flowering

was controlled by altitude, and put the minimum reliable height at 500 feet above sea-level. So far as I know, he stood alone in rejecting the thesis of soil responsibility. Though the figure of 500 feet is too high, his concept appears at least in the direction of the truth. As evidence I offer this: The altitude of my Ackling garden was, I suppose, much under 100 feet. On leaving it, I took a few pieces of *Gentiana acaulis*, hitherto flowerless. After sundry adventures *en route*, they were planted in my present garden, 314 feet above sea-level. They grew and flowered. Divided and placed in various parts of the garden the Gentian bloomed profusely, only overcrowding or shade limiting, but not stopping, floriferousness.

That such a trifling difference in altitude can operate through effects of air rarefaction (increased insolation, decreased humidity, quicker evaporation and more rapid radiation), it is hard to believe, but that a relatively pure, unsullied atmosphere, through which the sun can penetrate, may be demanded by the plant before it will give of its best seems probable. Probable; that is all. I cannot prove that it is anything more.

In horticulture, we are still a long way from being able to predict a result from given circumstances, or to affirm that an effect has followed certain causes, but the state of our ignorance need not deter us from recording our observations. Such records are, indeed, the raw material from which natural science is built, and may be fraught with a significance as profound as the fall of Newton's apple.

Part II

APPRENTICESHIP

Chapter Five

AFTER spending some fourteen years in general practice, ten of them in Ackling, the fancy took me to try a venture in Harley Street. It wasn't actually that street of a myriad door-plates, but as near to it as does not matter. I use the term as it is employed by the general public; in that sense it alludes to a neighbourhood, not a single thoroughfare. The area which was spoken of by a past generation of its professional habitués as the Magic Square, bounded by Portland Place on the east, Marylebone High Street on the west, Oxford Street towards the south and Marylebone Road to the north. Wherein lay its magical properties I was unable to discover; perhaps they had evaporated before my time and left the present atmosphere of rigid, not to say depressing respectability behind.

Others had invaded those more or less forbidding precincts, so why not I? Fortune had hitherto smiled; why should she now withdraw her favour?

My change of base, however, did not come about so casually as these light words might lead you to suppose. I had had a speculative eye on the West End since coming to London; perhaps before that, in a dim, subconscious kind of way. Had not Mary and I, passing through London on our honeymoon, reverently paced the streets once trod by Hunter and still, at that time, by Lister, but never a thought was whispered that my feet might one day add the feeblest sound to the sonorous echo of theirs.

Had I been furnished with a name of the double-barrelled, alliterative variety, Staveley-Stoker for

instance, no other introduction to Harley Street would have been necessary than the formality of putting up a plate. As it was, my own modest cognomen required, I thought, a little backing up before it would appear as a token and a sign to suffering humanity. Moreover, sordid consideration, my pocket must contain more than a bunch of keys to keep door and plate in apposition until the rush came.

A door-plate, by the way, is seldom magnetic until the name on it is almost obliterated. A new plate imposes a serious handicap. Something might be arranged. Sandpaper and pumice-stone can work wonders.

In the early Ackling days I conceived two things to be necessary before I could descend on the West End with any confidence. The first, some facility in a special branch of surgery—my training had led in a surgical direction—and sufficient accumulated funds to keep us going for a time on dry bread, the classical diet, you will recollect, for those with aspirations.

There were hospitals in London which held evening clinics. In very early Ackling days, I had become attached to one of them in the humble capacity of clinical assistant. My attendance was required, or tolerated, one evening a week from 5 to 8 or 9 and one morning from 9 to 10. I used to hope that my then single private patient would not "come over queer" during hospital hours, but if he did, a telephone message might save the situation. In any case, surely he would not begrudge me one evening a week, the recognized privilege of the sorriest menial? The morning hour might require explanation, but doubtless occasion would supply it.

To describe the next ten years of my professional life is no part of my intention. I practised in Ackling

and prepared for Harley Street. My seniors at hospital were kindness personified and gave me every opportunity of becoming familiar with my chosen line of special work. Let me say, though, that their indulgence would have been largely thrown away but for my past association, as student and house-surgeon, with Rutherford Morison, master of surgery and of common sense, once of Newcastle-on-Tyne, whose originality, breadth of view and outstanding faculty of reducing the apparently complex to the simple brought international fame and whose teaching will influence the making of surgeons yet unborn.

Neither is it part of the present story to tell how my hospital attendances increased, a state of affairs made possible by the assistance of a partner, nor how the time came when I had to abandon general practice in order to be eligible for hospital staff appointments.

Enough to say that I gave up my practice in Ackling, sold my house, took a consulting room (and share of waiting room) in Town, lived during the week in a flat and spent week-ends at a farm I bought in Sussex.

That short paragraph reads as if I took future success for granted. In truth, I never wondered how my irons would fare in the fire. The magnificent words "Be not therefore solicitous for to-morrow for the morrow will be solicitous for itself. Sufficient for the day is the evil thereof" had found a ready ear in mine. So that despite the head-shakings of elderly friends and their comparing me to a rolling stone, I followed what I took to be the indications, moss or no moss.

We could not tolerate more than a year of flat-dwelling. The towny air, the nightly rumble of the tumbrels of the G.P.O., the church clocks chiming every quarter, the amorousness and pugnacity of

West End cats, the rattle of the milk carts before the winter's dawn were too much. Not for a Harley Street freehold and £20,000 a year would we support such trials, much less for a hired consulting-room and, well, less than £20,000 a year.

The flat was given up, the farm in Sussex sold and a house bought in Essex just outside the suburban area, but within easy reach of Town. More head-shakings, more warnings of a threatened shortage of moss. A surgical consulting practice could neither be made nor maintained without being on the spot. I was admonished in those exact words, and also cautioned that to appear on the Harley Street stage with a soft collar, lounge suit and bowler hat was simply asking for disaster. If my movements were to be circumscribed and clothing governed, then to the devil with West End practice. One passes through this world but once.

The ill forebodings did not materialize. They had been built on custom, not on fact. After all, I could reach a night emergency in Town forty minutes after the tinkle of the telephone; or maybe less. No traffic lights interfered with progress, and I had acquired some celerity in dressing during fourteen years.

My new abode, only separated from Epping Forest by a narrow, sandy road, was contained in an acre of garden. Smallish, perhaps, after seventy acres of Sussex fields and woodland, but I had the hope that a five-acre plot of undulating land which abutted on my north-eastern boundary was purchasable. A one-time lord of the manor had, some seventy years before, planted a double avenue of Elms across the northern part of the five acres in order that, I presume, it might appear to stretch from his gates, for between them and the trees there was but a sunken and, at a short distance, invisible road.

The owner of the land when I came on the scene was a charming lady with the particular kind of of blue eyes which ever held me fascinated. Some fourteen years before, misliking the house I had just bought popping into the landscape and punctuating the view of Epping Forest from her windows, she had planted a belt of Conifers by our common boundary to screen the excrescence from sight. I sympathized with her motive and blessed her for the trees, a mixture of Scotch, Weymouth, Corsican and Mountain Pines, with a sprinkling of Black Spruce. A single specimen of the Maidenhair Tree, *Ginkgo biloba*, was there too, looking very much a stranger in a strange land. It found its environment, no doubt, very different from that it craved, the garden of a Chinese temple. There it finds the atmosphere suitable to its antiquity and there it is held sacred. For the Maidenhair Tree has a direct lineage stretching back three million centuries. It lingers on, the last descendant of a numerous race which flourished in humid Carboniferous woodlands alive with the whirr of wings of Palæozoic Dragon-flies and, not so pleasant, the home of wood-eating Millipedes.

You suspect me of trespass. Otherwise, how could I have distinguished the trees mentioned? The truth is that I didn't distinguish them until later, but, at the same time, I cannot rebut the accusation of unlawfully wandering beyond my boundary. Not without an excuse, however, at any rate for the first few times. Our semi-Persian cat was a great explorer but wanting in the courage necessary to extricate himself from positions he had, with considerable ingenuity, got himself into. One day he would find difficulty in descending from the house roof; on another, a swaying branch might defy his efforts to regain the trunk from which it sprang. On

these occasions he would call for us most piteously. I picked up his S.O.S. one autumn evening and found him hanging on by the skin of his claws to the drooping extremity of an Ash branch, some eight feet from the ground. Similar situations had occurred before. We knew the technique of rescue. It was my part to stand below and Dinkie's to let go the branch when it was nearest my shoulders; according to routine, he dropped with a r-r-r-t of satisfaction.

Once on the desired land, I looked about me. Dinkie, with an air of proprietorship, showed me round. It was evident he had been there before, and thoroughly approved the place. He told me so, indeed, for we had long ago invented a sort of language, which, though we spoke it in different syllables, was perfectly intelligible to both.

Returning to the house, we called a committee meeting at which it was unanimously resolved that the ground already surveyed by Dinkie should be acquired by hook or crook.

To cut a long story short, I bought it a year later.

Nature had anticipated me in making a garden of it. Ancient Hollies, Crabs and Hawthorns were there in groups and as single specimens. Clumps of Gorse, thickets of Sloe, tangles of Bramble and agglomerations of these defied penetration by any animals save Rabbits, Badgers and a varied avifauna. Surface vegetation was of various meadow grasses plentifully mixed with Harebells, Thyme, Sorrel, Hawkweed and other native herbs. A single large patch of Wood Anemone beautified a shady spot. It is there still. Bracken naturally had a place beneath the Pines, but had not shown any aggressive tendency, while Horsetails made free with the moister ground.

The land is undulating, as has been mentioned, but in addition it rises from north, south, east and west to a high central plateau. It actually represents

an outlying part of the East Anglian ridge and reaches, at its highest point, about 325 feet above sea-level; at the lowest, some twenty feet less.

You will realize that from the outset we had the great advantage of only having to alter a few of the natural dispositions. No bare, flat field awaited transformation. The garden to be was already interesting, animated, inspiring.

It had been a happy hunting-ground for rabbiters, seekers of blackberries and gatherers of Holly. Their activities, more discreetly carried on, continued after our occupation until the occurrence of an incident which discouraged further enterprise.

Mary, looking over the domain one December morning through an upstairs window, observed a suspicious movement in the branches of a Holly seventy yards away. Was it possible that some cateran could be reiving her Holly? Scotch blood grew hot, suffused the retina, drummed in the ear. With the speed of the gazelle she rushed towards the tree, but it was not of the gazelle that the marauder was reminded when he saw her coming. He dropped from the tree, dashed for the fence, but was nabbed as he topped it by the pursuing Mary.

Accused and accuser next faced each other across the well of a local police-court. There the former commenced an atonement sufficient to remind him that Scotland's motto, *Nemo me impune lacessit*, is still regarded literally by her children.

It is convenient at this stage to say something of the soil. Forty or fifty million years ago that inlet of the Northern Sea which occupied the place of the greater part of present day Essex began to collect a fine sediment destined in the course of ages to become the London clay. As the phase drew towards a close the deposit became coarser, approaching sand; it was distributed unevenly and, though actu-

ally an upper layer of the London clay, is conveniently known as the Claygate beds. Still later a yet more granular and even pebbly layer, the Bagshot sand, was laid down here and there. Consequently, the London clay may be represented in any one area by only the clay layer, or by the clay layer covered with the Claygate beds and may, or may not, have a superimposition of Bagshot sand.

The soil of our particular bit of the county is principally of the Claygate beds, which, from a thickness of some fifteen or twenty feet in the highest parts runs out to nothing at the lowest where the fundamental clay appears at the surface. On one small area of our southern slope there is a patch of Bagshot sand.

Just beneath the surface of the high central plateau is a thin layer of pebble gravel, a bequest of post-Pliocene, but pre-glacial times. The piece of ground which is our garden thus owes its being, for the most part, to the Eocene period. Its beginnings synchronized with the coming of mammals into power and ante-dated by over a score of million years the upraising of the Alps and Himalaya. Slowly it issued from the womb of the waters and gradually assumed its present physiognomy but with never a thought, if soil thinks, that one day a stranger might disturb the disposings of the Eocenean tides.

It may appear that I speak with as little reticence of the ages of rocks, and at times of plants, as I would of that of a favourite cousin; indeed, as it is not incumbent upon me to make chivalrous reductions, with less.

The calculation of the age of the earth and of the strata composing its crust is perhaps one of the most impressive physico-geological achievements that has come within the ken of the outside public. It depends upon the rate of disintegration of radio-active ele-

ments in the rocks and may be explained by taking a concrete example.

The ubiquitous metallic element uranium is radio-active and therefore unstable. Helium and lead are the products of its decay, but lead of a special kind; lead which, although identical with the ordinary element in chemical properties, has a different atomic weight and is thus easily distinguishable.

The rate of disintegration is known. One gram of uranium is completely split up in 7,400,000,000 years and leaves one gram of lead as residue. Therefore:

$$\frac{\text{Weight of its (uranium) lead}}{\text{Weight of its original* uranium}} \times \text{7,400 million years}$$

will equal the age of a uranium bearing mineral, that is, the time which has elapsed since its crystallization from a molten state.

That is putting the matter at its simplest. It usually happens that both uranium and thorium (another radio-active element which decays more slowly into a lead of a third atomic weight) are present in radio-active minerals. Further, the small adventitious wastages from exposure of the minerals to air and water necessitate corrections to the above formula which, however, indicates the essentials.

Now, while it is readily comprehensible how the age of an igneous rock, basalt for example, may be arrived at in this manner, how may that of a sedimentary rock be estimated? Obviously, if a uranium bearing mineral formed part of the sediment, the age of that mineral would represent that of the igneous rock from which it came and not that of its eventual resting place. During or after the period of deposition of a stratum, however, in some part of the world where it took place, eruptions of lava flowed over the sediment. The lava would contain freshly made uranium, so

* Arrived at by adding together the weights of lead and residual uranium. The helium given off during decomposition of the uranium may be neglected for practical purposes.

to speak, and it is from the age of the intruder that that of its bed may be known.*

From the gardening standpoint, the soil is, in the main, a sandy, "lime-free" silt; in dry weather it appears to be fine sand; in wet, it looks and feels like medium clay. Freedom from calcium carbonate does not depend upon its origin, but upon the leaching that high ground must suffer in the course of æons. About five-sixths is just on the acid side of neutral; the remainder, of a more humous type, has a reaction indicated by the symbol pH 4.5 which, being interpreted, means definitely acid.

Drainage of the ground in mass is assured by its standing higher than the surroundings.

Our average rainfall is around twenty-three inches. A dry year, such as that of 1935, will lower it to seventeen, and as wet a year as 1937 raises it to almost thirty. Nothing extravagant, you will agree, at the best of times. These figures, however, do not indicate the atmospheric humidity engendered by the proximity of the forest ponds and trees. Even in the driest years we suffer few casualties from drought.

To give the monthly average of night and day temperatures, or even the daily temperatures of this situation, would serve small purpose. It is more to the point to mention that its elevation allows the colder, heavier air to drain into the valley below, its place being taken by warmer air. Thus we escape the full severity of frosts suffered by the lower lands.

Our first summer in Loughton was hot and dry; like all hot summers, it was the hottest within living memory. Careful editors were constrained to search century old records to find its counterpart. They do this every fourteen years or so.

* If further enlightenment on this subject is desired, it may be gathered from Professor Arthur Holmes's *The Age of the Earth* (Benn's Sixpenny Library).

My gardener gave it as his considered opinion that the new ground wouldn't grow a Berberis. His tone implied that Groundsel would reject it. I pointed to the Hollies and the Crabs, the neighbouring forest, the lushness of the grass beneath the Elms, but could not convince him that what was acceptable to the geese might not be refused by the ganders.

He left me shortly afterwards.

His successor, a gentle, elderly man, never seen outside his family circle without a smooth baize apron cut to the masonic pattern, looked at the ground and sighed, gave a little cough and sighed again. Not a word of criticism he uttered but, after a few weeks, packed up his traps and fled.

Then came the great Ensis. His curious name, or rather nickname, was conferred upon him here. It was actually the genitive singular ending of his own latinized, and seemed appropriate to his alertness, agility and physical stature; he measured five feet two inches, a bouncing lump of muscle. Life in the Australian bush had taught him a thing or two, he assured me, and the more I saw of him the greater was my certainty that life in the Australian bush must be a liberal education. In common with others who owe more to hard experience than to modern education, he had a prodigious memory, a great faculty for contriving, indomitable optimism and an utter disregard for gnats, camels or anything else which is commonly strained at.

"Hard? Dry?" questioned Ensis, apropos of the baked and virgin land. "It's putty to Australia!"

Crash went the mattock—and rebounded from the ground.

"Not man enough for the job", he apostrophized the tool and vanished to reappear a moment later with crowbars and sledge-hammer.

"These'll shift it", said Ensis. I moved away.

Trenching with crow-bars was beyond my experience.

I quote that early incident to show the stuff he was made of. Many a bonny tree stands as a monument to his six years' work, years in which he had an enormous share in converting untamed country into a garden.

He had, as we all have, moments of distress. There was the evening for instance when, on my return from Town, he came to me with the news that the Dennis Motor Mower, while being employed in its proper duties, had taken the bit between its teeth and run into the pond. His suggestion that I could pull it out was, however, made cheerfully. Only the tips of the handles remained above the surface. Ensis dived into the pond very prettily, fixed a thick rope round the mower and directed manoeuvres while I operated from the bank—and needed the support of stout strapping for three weeks afterwards. It says much for the machine that, after it had been emptied of water, dried and oiled, it functioned as well as ever.

Between my Sussex farm-house and the turnpike road there was, during my occupation, a paddock surrounded by a deep shrub border. There I had seen what shrubs could do in the way of garden decoration. I had thought to use them as a framework for my garden, but an ardent (though ignorant) perusal of Mr. W. J. Bean's "Trees and Shrubs Hardy in the British Isles" showed me that not only could they form the framework but occupy it.

If there was one tree more than another I wished to grow, it was *Arbutus Menziesii*. An unusual choice, you may think, for such a tiro as I. Fancy had been inflamed by a picture in a well-known catalogue and set me seeking into the history of the plant. That completed my enthralment. I could not wait until proper beds were dug, so eager was I to really own a specimen. It was reported as rare at the time

of ordering and proportionately costly. What did I care about cost where *Arbutus Menziesii* was concerned? I spent eighteen shillings on it like a millionaire.

The plant arrived at lunch time one Saturday in early May, packed like the Crown Jewels. It was, I remember, a hot day, and a pint of lager seemed indicated as a preliminary to clearing away the virgin scrub and preparing a habitation for the first tree, and Menzies's Arbutus at that, to be planted in the garden to be.

The hole I dug was perhaps neither deep enough nor wide enough. The day, as I have said, was hot, and lager does not add greatly to one's staying power. Anyhow, the plant was planted and surrounded with wire-netting to keep at bay any rabbits looking for new gustatory experience. Having learned that newly planted evergreens should be sprayed morning and evening in sunny weather, I attended to this rite religiously. In spite of it, the Arbutus looked seedy. More, it had a temperature. I am not joking; very far from it. If there is one thing I am sure of it is that perhaps the first sign of failing health in an evergreen tree or shrub is that the normal coldness of its foliage to the touch is appreciably lessened, an occurrence due to interference with the sap current.

Things went from bad to worse. Leaf after leaf fell off until, to all appearances, nought but a stick remained. Hope, however, was not abandoned. All but the tip of the stem retained its colour. Knowing that a human being seemingly at the point of dissolution can often recover by an effort of the will, I abjured the plant to pull itself together and endeavoured to voice with conviction that a long, happy and useful life lay before it. By autumn, a distinct swelling of the upper axillary buds was evident; in the following spring they developed into

shoots. The danger was past. *Arbutus Menziesii* had settled down.

Now I am not a man of sentiment in the usual meaning of the term. I've had my moments, but on the whole I see myself as unemotional; of the earth, earthy. But you can scarcely wonder that a certain attachment sprang up between the tree and myself. For plants are very grateful patients, and humans have a deep regard for those they have rescued from some dire peril, or think they have. Nor, I hope, will you think me mawkish if I tell you that every day the Arbutus and I greet each other. I pat his trunk, he strokes my cheek with a waving branch. For nowadays he is a great fellow; twenty feet high and with a girth of three feet and a half six inches from the ground. Trivial dimensions in comparison with those recorded from western North America, the natural home of the tree. There you may see it attaining a proud hundred feet, and enjoying honour in its own country.

Even now I have not said what the tree is like; what it was that so attracted me. It is evergreen; the oval leaves, up to six inches in length, are smooth and shining, green on the upper surface, glaucous beneath. A slight breeze is sufficient to cause their semi-rotation, so to speak, and thus to give the whole tree a bluish look. In April or May, the large Lily-of-the-valley-like flowers, borne in massive, terminal, pyramidal panicles, never fail to strike the unaccustomed visitor with surprise. He does not expect to see Lilies-of-the-valley growing on a tree. The slow-ripening fruit is rounded, slightly flattened and of a dull, reddish orange colour.

Possibly the great glory of the tree is in its bark. Except on wood over twelve years old, when age writes wrinkles on its rufous face, it is smooth and of a beautiful terra-cotta hue. Imagine, then, the

contrast between red trunk and foliage of bluish-green.

There is a pretty story of an Indian lover, who, on his departure for a distant land, bade farewell to his lass on the Pacific shore. Many a promise they made that there, on the very spot, they would meet on his return. She kept vigil through the years, ever leaning towards the western sea, but never back came he. The ocean, jealous of his love, had claimed him.

To guard her from sorrow when revelation came, the fairies changed the maid into an Arbutus and dowered her each year with a new gown of russet red in which to fittingly greet the shade of her beloved when he made land once more.

In cultivation, by the way, the tree sheds its bark two or even three times a year.

To set out a garden with compasses and set square was beyond my ability and against my inclination. Such a method, it seemed to us, could not but introduce a certain formalism, however one might strive to hide it. A landscape architect, reading this, will mutter "Nonsense" in his beard, but then whatever the amateur does is absurd to the professional.

The existing trees formed a skeleton on which to build, and Mary rubbed in how important it was not to deform that groundwork. For I was set on growing as many plants as could be accommodated. No, said she, a garden is not a museum. Its proper function was to bring refreshment to the spirit as sleep does to the body. We must therefore aim at establishing an atmosphere of peace or, at least, to leave the peace prevailing undisturbed. At the same time she agreed that the thickets of native wildings might well give way to beautiful and interesting plants from other climes. Natives should have a place, but not the whole place.

I cannot say how old the standing trees were and, regard being a stronger passion than curiosity, I did not cut one down to count the annual rings. A Birch there is with a trunk circumference of ten-and-a-half feet; a very alderman. Near to it a Crab has reached no less than thirty-five feet high. Hollies of noble girth, or of many noble girths (for it is the way of Hollies to branch almost vertically from nearly the ground level) are here, there and everywhere.

How to add new beds of shrubs and isolated specimen trees to the picture already made by the ancients without breaking up the harmony was the problem.

There are sheep runs in Northumberland in which large masses of Gorse are separated by broad stretches of closely cropped grass. Here and there the general level is interrupted by a clump of dwarfish trees while, not seldom, a few acres of Heather break into the scene. Those natural lay-outs had always delighted me. The smell of honey, the golden cushions on the emerald ground perhaps linger in your memory too? You remember the infectious happiness of the place, its spaciousness and look of solid permanence, the busyness of birds and bees under the blue sky of a bright May morning? Then you will not wonder that sheep runs were in our mind on plotting out the garden. Their banks of Gorse did not appear suddenly. There was nothing of the according-to-plan order about the picture and Nature, careful not to offend the asymmetrical symmetry, kept an attentive eye upon what was already there when adding to it. We would try to copy her methods and design. Our beds were therefore made a few at a time, each in relation to its immediate surroundings, each melting into the general prospect.

Clearing and digging operations went on continuously for six years. A long time? True, but each bed was dug to a depth of two measured feet (and

the next six inches turned over), holes had to be filled, sheer banks given a more gradual slope, walks converted from switch-backs into easier paths, declivities shored up with rough stone walls and the hundred and one other things incident to the making of a garden dealt with.

The great bulk of our planting was done in the autumn. According to the best authorities, the end of September and beginning of October were the times of election for the planting of the general run of evergreen shrubs and trees, while deciduous kinds should be planted after their leaves had withered, but before they fell.

We followed these directions as nearly as the convenience of nurserymen permitted. It took us some time to become accustomed to the fact that we were not alone in ordering a few shrubs; that there were others writing indignant post cards to long-suffering members of the trade demanding to know the reason why goods ordered a fortnight before had not been delivered by return. In the early days one does not realize that in the busy seasons of spring and autumn a nurseryman receives hundreds of orders daily, nor that a basket of Rhododendrons requires longer and more expert packing than a stick of shaving soap.

The ground was contained by four sides, but only the forest boundary had a hedge, and that of scraggy, untrimmed Thorn mixed here and there with Holly. The other frontiers were theoretically guarded from invaders by almost effaced and decrepit notices (which had at one time threatened trespassers with unnamed penalties) and by what had been a chestnut fence. Seekers of firewood had left a few sticks of the latter, but no more than served as a reminder of the sanctity of private property to the more law-abiding.

The longest boundary, that against the main road, we protected with barbed wire; still a popular commodity in the early 'twenties, and cheap. It was adequate, but unbeautiful. Some disguise of its severity had to be attempted, a glove of verdure over hooks of iron; a hedge, in fact, was called for. And not only there, but also on the south and west confines.

We asked, as others have asked, and will ask so long as property is owned by private individuals, with what a quick-growing, efficient and evergreen hedge might be made. So far as I know the question has only been answered negatively. Many plants have two of the essential qualities but none, apparently, the complete triad. The gardener of experience therefore contents himself with efficiency and evergreenness, and plants Holly or Yew. We, impatient for our hedges, considered those slow-and-sures without enthusiasm and cast about for something capable of a yearly increment of at least two feet.

A distinguished nurseryman thought that *Cupressus macrocarpa* might satisfy our needs, but unfortunately did not mention that a young hedge of it must be trimmed as severely and as often as will ensure a heavy bottom growth. Only after that foundation is secured can growth in height be countenanced. He thought, no doubt, that so obvious a procedure would occur to anyone with a grain of horticultural sense. It did not occur to us. Delighted with their energetic growth, we never laid shears to the plants until they were eight feet tall. A bad mistake. The hedges have gradually got thinner at the base, and now, fifteen years after their planting, a fair-sized calf could walk between the individual stems without attending too closely to direction.

We have reinforced them with a variety of the

Cherry Laurel, *Prunus Laurocerasus var. rotundifolia.* Experts are inclined to condemn the use of this shrub for hedges. It is coarse, they say; rampant, and a sorry sight after pruning. I have not noticed those defects. Indeed, had I again to plant an evergreen hedge, and could not wait on the deliberateness of Holly or Yew, the Cheery Laurel I should use. (Yes, I noticed the misprint; the e and r keys are next each other on my typewriter; but the adjective fits the plant so well that I will leave it.)

Parts of the hedge in which it has taken the place of the Monterey Cypress are eight feet high, flat topped, and over six feet through. That is what it can do in ten years. That the Cherry Laurel must, to prevent disfigurement, be trimmed with knife or secateurs in such a way that the cuts are hidden by foliage is, after all, a trifling thing. What is the expenditure of a little extra time when weighed against the plant's sterling characteristics of durability and solidity?

Chapter Six

THE SKETCH-PLAN within the cover of this book will show the position of any part of the garden more clearly than it can be described. In the western corner is an area labelled Bog. On that unpromising spot we commenced the job of garden making. Not that it looked particularly depressing at first glance; the summer had been hot and the ground was dry. That its vegetation consisted of Horsetail, Rushes and two decaying Willows should have warned us what to expect; so should the level of the ground; it was at least two feet lower than the road beyond the hedge; lower, indeed, than the ditch against the hedge. Was it not obvious that drainage must be at a discount? Of course it was, but if we thought of drainage at all our cogitations were purely academic. So the ground was well dug; it was yellow, friable and lime-free. Neighbouring pines gave shade from the south and east. We talked of Camellias, *Meconopsis*, and the Cypripediums of Japan; of tender Rhododendrons and the magnificent Magnolia Campbellii which, so we read in Bean, grew to 150 feet.

The rains of winter put an end to these pleasant dreams. The soil became pug of the puggiest, then boggy and eventually the bottom of a temporary pond.

It was useless to waste regrets on Rhododendrons and Camellias. Best to forget about them and seek for plants of an amphibious nature. Bamboos? I had a recollection of reading that they flourished on the flood-plagued plains of Hindustan. They, then,

should be able to play the necessary part. We planted many species in the following May, the ground being once more visible. Indian floods, however, appeared to be one thing and Loughton floods another. Bamboos, in fact, did not enjoy the bog. *Arundinaria fastuosa* did its best; let us leave it at that. *Arundinaria japonica*, the ever faithful Médaké, planted on the extreme edge, grew well and retains its position to this day, when the Bog is no longer a bog but only keeps the name. Its past is green, very green, in one's memory.

The anticipation of unbogging the Bog was worse than the actual performance. A series of drain-pipes leading to the outside ditch, a few hundred cartloads of soil, sufficient to raise the area above the level of the road, and the trick was done. The Bog now contains several of my choicest plants, but its development properly belongs to a later stage of this history.

Have you ever wondered why, on entering a restaurant or some such place, we make for a table against the wall? And regret that the days are gone when every table was shut off from others by high partitions? Is it only a desire for privacy which prompts us or something deeper? An inherited trait which has come down from times when man sought to defend from sudden attack at least one surface of his body by an obstacle not easily put aside?

Much the same impulse constrained us to continue progress under cover of the hedge, or anyhow to keep it within easy reach. It offered security against unknown dangers.

Now that I think of it, the whole garden was made from without inwards. Each adcentric area brought into civilization gave a base from which the next was attacked.

A real architect might possibly have drawn diagonals across the ground on which to base his vistas—

a vista, I take it, being a tree- or shrub-lined path leading the eye to a view beyond. But views and vistas never entered into our calculations. Nowadays, I am ready at a moment to assume the part of aphorist and gravely say to earnest inquirers: "Take care with your paths and vistas will take care of themselves." Our paths, however, merely occurred as spaces between beds, though Mary insisted upon many being of considerable width. I am now thankful for her resolute stand though rebellious, not to say sulky, at the time.

We continued, then, in line with and close to the hedge, only leaving a four-foot path between it and the next area of operations. This was roughly the shape of a right-angled triangle, the slightly wavy concave hypotenuse being directed towards the Elm avenue and the perpendicular running by the hedge. A large plot in proportion to the size of the garden, it has had an eventful history. For convenience, you can consider it as being originally divided into a wide, reasonably level part standing on the base of the triangle which, I should have said, was separated from the Bog by what originally had been a cart-way, and a further, narrower part, lying in a hollow and looking, as Ensis aptly remarked, inclined to bogify.

The first portion, after being gleaned of patches of turf (garnered to repair blemishes), cleaned of Elm suckers and dug, was planted with dwarf fruit-trees. (It was, you understand, to be the orchard.) Two flowerless years made me reconsider their position. Patience is not my most pronounced characteristic, and not, in any case, to be expended on fruit-trees. Reluctant to admit the real reason, I cast about for others to rid me of the plants. To one of Machiavellian cunning they were not hard to find. I pointed out that when the trees came into bearing,

if they ever did, the temptation to the local boys would be more than they could stand; then, apart from the loss of fruit and broken branches, how would the hedge fare? Could the prospect of a battered and perforated hedge, I bitterly asked, be annually endured? Might we not as well go to Africa at once? Even supposing that the Loughton youth was more observant of the niceties of *meum* and *tuum* than was normal, were there not armies of Jays and other herbivorous birds of prey? What chance for us to snatch an apple against such agile and insatiable competitors? Would it not be wiser, I sweetly reasoned, to replace the fruit-trees with vegetables? Sonsy Cabbage, succulent Asparagus, Peas sweet as nectar? A Strawberry bed might even be managed, though its netting-in would be imperative.

And so it came about. A good home was found for the eighteen fruit-trees. Their recipient, full of gratitude, sent me two Delphiniums and a Dahlia.

The forest birds, it appeared, were not exclusively fruitarians. Many could extract broad beans from the pod with the expertness of a cook-general. Peas were eaten entire. Cabbage? I had no conception of the prolificity of the Cabbage White butterfly before I grew the food designed by nature for its larvæ. One of my Cabbages, cooked as taken from the garden, was capable of providing for the most omnivorous. A suggestion to that effect was coldly received. The Savoy, Drumhead, Tender-and-true, even the Brussels Sprouts had to be interred, complete with caterpillars.

The Strawberry bed took more time than could be afforded. Although covered with a span-roofed erection of netting, Blackbirds and Thrushes effected entry, the latter with their families. Each one had to be separately ushered out, perhaps six times a day. How they consumed so much fruit without

internal commotion was amazing. A man who has eaten two bushels of Strawberries is not an entertaining companion for some hours. A Thrush will swallow an equivalent amount for its weight and then plaintively ask where the Strawberries are.

We decided that the advantages of a vegetable garden were grossly exaggerated. One constantly hears those who feel incapable of throwing off its load bolstering themselves up with the idea that only by growing them may one have fresh vegetables. As well say that to obtain an eatable egg one must keep hens. Salads, no doubt, are pleasantest straight from the garden, but after a leisurely gathering, and still more leisurely progress to the kitchen, they are no longer fresh. And a few hours rest on the kitchen floor does not add to their tenderness.

The mention of Cabbage makes me impatient. Have I not sat, perseveringly sawing at what pertained to be that vegetable, while my host declaimed that a Cabbage, to be a Cabbage, must be grown on the premises?

We are living in the twentieth century, not in the tenth. Immersion in water followed by an hour or two in a refrigerator will revivify the most downcast head of Lettuce, while cooking controls the comestibility of Cabbage.

Even supposing that home-grown produce fully justified its reputation, does it also justify the space it occupies? Were the Walrus and the carpenter to visit the kitchen department, acres of it, in a large private garden, the former might well ask if three times seven maids and their sisters, their cousins and their aunts could eat it off, as it stood, in half a year. And the carpenter, weeping bitterly, would doubt it.

For our part, then, the cultivation of vegetables went by the board, or nearly so. There are still about

five rods devoted to Lettuce, French and Runner Beans, and those useful herbs Mint and Parsley. The resources of the local greengrocer manage to stand the strain of other vegetable requirements.

A new use was found for the ground; it became a frame-yard, and so it still remains. Greenhouses stand where once the Badger nightly walked and frames, home-made, ready-made, and made-to-order, are thick upon the land.

A cartway has been mentioned as being between the Bog and what became the frame-yard. Its entrance through the hedge was technically guarded by a timbered gate, a period piece, frail and so dilapidated that it fell to pieces on being opened. We replaced it, having in mind that the beginning of the cartway might be made into a useful yard for the reception of plants, gravel, sand, ash and other odd materials used in gardening. Besides, if solidly floored, it could be used for burning rubbish, mixing soil, making concrete and so forth.

We therefore removed a foot's depth of soil from an area measuring about thirty-six feet from the gate backwards and eighteen feet across. An eight inch layer of hardcore was rammed into the hole which then only required to be filled up with concrete to complete the job. Ensis undertook the task and promised to put such a finish on the work as was seldom seen. He and his assistant laboured through a Saturday. At half-past four in the afternoon he appeared before me, plastered with cement from top to toe, and announced the perpetration of a bloomer. Encouraged by the amount of raw material at hand, and deeming it a pity to waste any of it, he had not only filled up the hole with concrete but made a mighty camber. And now the gate wouldn't open. It sounded like perversity on the gate's part and Ensis, his ingenuity unquenched, suggested cutting

the gate to fit the camber. We discussed that method of meeting the difficulty but decided that, on the whole, it would be easier to scrape away the obstructing concrete while it was still wet. It did not amount to more than half-a-ton.

Noticing that he still looked glum after the gates were freed, I asked the reason.

"Shape", he said. "It's the look of the thing. What will people think?" The form was certainly a little out of the ordinary. A modern sculptor might have entitled the work, if he had been the artist, "Defeat of the Assyrians".

Ensis, however, was not interested in sculpture. His concern was how strangers might look upon his handiwork. Visitors must be told that the acutely sloping ramp (yes, ramp; we had got that far already) was intended to prevent lorries over-running the yard. Less credible tales had been swallowed without a gulp. Our explanation, when tested, appeared watertight. Ensis, indeed, was complimented upon his originality and the excellence of his idea.

Fortunately, the war was over. Had the concrete yard been made during its continuance, awkward questions might have been asked in the House. Was the responsible minister aware of sinister reports relative to the existence of a gun emplacement in south-western Essex within shelling distance of the Houses of Parliament?

The yard is still called the gun emplacement.

More a thing of utility than beauty, we desired to screen it from the public view; the view, at any rate, of the incurious. (No means has yet been found to hide anything from the eyes of those research students who, eager for the truth, peer round every corner and open every door marked PRIVATE.)

You may remember that where the Bog marched with the garden *Arundinaria japonica* (more popu-

larly, *Bambusa Metake**) had found a congenial home and was prepared to conceal the yard from the west. *Arundinaria fastuosa*, taken from the Bog, was planted along the eastern edge. Hedge and gate provided protection from the road while on the south we set a double row of Hazels and Filberts. The nut-trees were not confined to that one position. The bushes ran down, with grassy path between, to the near end of the Elm avenue and then continued in a single line to border the then-orchard. Three Filberts, three Hazels, three Purple-leaved Filberts, then again three common Filberts and so on. That was the order of their going. The pollen of Hazels, by the way, assists the fertilization of Filberts.

Very ordinary plants for a garden? True, but then we are ordinary people, and pleased with simple things. So, I believe, is everybody when stripped of the bark of fashion. In any case, who would not be attracted by yellow catkins dancing in a February breeze?

It is long since I competed with Red Squirrels and Nuthatches in gathering the nut crop. Sensitive to ridicule, I retired with dignity from the unequal contest. The Squirrels followed up what they took to be a victory, and, with a semblance of proprietary right, entered the dining-room and carried off Brazils from under our very noses.

The Nuthatch, on the other hand, is satisfied with driving an intruder from his own domain. He stops short at petty larceny; more, to judge from his attitude to other birds aspiring to rob him of a nut, he is ready to put it down with a beak of iron. If you doubt the fitness of this metaphor, watch him crack a nut. You may know his anvil, a tree with creviced bark, by the heap of nutshells at its foot. As the bird will give no public exhibition knowingly,

* The name given by Siebold, and more generally used than the original *Médaké*.

you must hide and keep as still as your breathing will allow. Sooner or later, a sturdy little fellow, with back of bluish grey and short, squared tail, will enter the scene, carrying a nut. This he will fix in a chink in the bark of, say, a Scotch Pine and moor himself, with strong toes, just above it, head downwards. Choosing a point of impact with some care, he strikes the nut with tremendous force. More than one blow may be required to split the nut, but split it is and the kernel chipped out in fragments.

A strict methodologist, one less prone than I to be led as the spirit suggests, would have told of the gun emplacement after describing the Bog, then followed with the orchard and finished the section with some account of the narrow end of the right-angled-triangular area. I have arrived at it in a circuitous way.

Did I say that this narrow end was in a dip? Not a depression so pronounced as that in which the Bog had its origin, but still a dip; lower than the near-by road but higher than the bottom of the outside ditch. By it stood sentinel an ancient Crab Apple, gnarled, inarched, with rounded, spreading head. It stands where it did.

I had once seen a picture of German Irises in narrow winding beds in just such a place, though whether it showed a dip I could not remember. So strongly had the picture attracted me that I then decided, if ever the opportunity came my way, to reproduce that Iris garden. Here was the chance.

To segregate it, and give it background, shrubs were planted at the end of the orchard and continued in a line parallel to the hedge. Then we set out to prepare the beds, narrow, sinuous and raised above the level of the intervening grassy paths.

All authorities emphatically stressed that soil intended for Irises must be rich in lime. (Lime, let

me repeat, in horticultural conception is calcium carbonate; refer to p. 97.) They gave no reason, but left it to be inferred that it is a necessary article of diet for the plants. Although a little doubtful, who was I to argue against accepted opinion? or even prejudice? The most extraordinary traditions are often founded on fact. Lime was added to the soil.

Irises, dozens of them, were planted in the following February, that being, it was said, the second best time for the operation. The period of election is immediately after their flowering; when new growth is at its most vigorous. Impatient to see the Iris garden in being, I could not wait five months. Had I done so, time would have been saved and tribulation of the spirit lessened. A wet spring converted the limed soil into mortar which, under the heat of June and July, became a realistic imitation of concrete. That is what lime made of my silty soil.

The experts did not particularize. "Irises must have lime" was their watchword, whatever the soil.

It was evident, even to my amateurish eye, that no plant could do its part in the demoralized mixture to which the soil had been reduced, and the Irises were removed to the orchard for the meantime and the offending soil removed. Never from that day to this has a grain of lime been applied to any part of the garden, yet our Irises and other reputed lime addicts are not much worse than other people's, to put it in the Scotch manner. We have, it is true, a rock-garden built of Westmoreland limestone, but the dissolution of the stone by rain proceeds so slowly as to have no appreciable effect on the soil.

The reign of the Iris garden had been short. Before making another we asked ourselves if Irises really deserved a special area all to themselves. Their

period of blooming is short and the flowers themselves, though exquisitely lovely on close view, have a curious habit of fading into the background at a little distance. Much has been made of their foliage. A little of it is all very fine, but a forest of green swords is apt to pall.

I am speaking all this time of what are rather loosely called German Irises; hybrids which, for the most part, flower in June. The pundits, I believe, entertain grave doubts as to whether they possess any blood of *Iris germanica* whatever, and hold that *Iris variegata* and *Iris pallida* take a large share in their parentage.

After taking all the *pros* and *cons* into consideration and balancing one against the other, we decided that the *cons* had it. In future, Irises would be planted in shrub beds in groups or as dot plants.

Should these lines meet the eye of a keen iridologist, he will probably close the book and never read another line; set me down a Philistine, a man to beware of, one with no music in his soul and fit for plots and stratagems and spoils. Let him reflect that but for the wicked his own shining virtues would pass unnoticed.

The late Iris garden, after being replenished with soil, became a Rose garden; no; that exaggerates its rôle. Rose plot describes it better, and Rose plot it remains. The Roses we planted were, without exception, Hybrid Teas. I had still not reached that fine discrimination only satisfied by the simple grace of species.

Hybrids come, are surpassed and disappear from catalogues. Few of our Irises and Roses are remembered to-day. It would be useless, then, to give their names. In any case those were not informative, taken as they apparently were from books of romance, Burke's Peerage and the London Telephone Directory.

Some twenty pages back I mentioned a double avenue of Elms that crossed the northern part of the garden. Passing from Golding's Hill to Baldwin's Hill, it cut off a triangle, nearly isosceles, having its base on Golding's Hill. The avenue no longer stands. The fifty-five trees composing it became the victims of Dutch Elm disease and had to be removed; its once-position, however, is indicated by the portion shown in the plan. Reference to the latter will show distinctly how the distance between the avenue and Baldwin's Hill increases towards the north-east. Between the Rose plot and the Elms there was room for a large oval bed and ample space to spare for lawn around it.

The very place for Scarlet Oak; and in its best variety, *Quercus coccinea var. splendens*. The name is not extravagant. A friend grew the tree magnificently and I, fascinated by the leatheriness and brilliant scarlet of its autumn foliage, must grow it too. Unlike the majority of deciduous trees which colour well, it does not shed its leaves on the attainment of their greatest beauty. They gradually pass from red to brown, from sappiness to sereness and stick to the tree far into the winter.

The measure of my admiration was expressed by buying five. Only a single specimen remains. Two were blown out of the ground when nine feet high, carrying their stakes with them. Two more, also gale-racked, snapped off at the junction of stock and scion. (Grafting or other means of vegetative propagation must nearly always be used to multiply a *variety* or *form* of a species.)

The bed, however, has no look of bereavement. Two Pin Oaks (*Quercus palustris*) bravely support one end with autumn foliage of bronzy red, less gorgeously, perhaps, than *Quercus coccinea* would have done, but very competently. *Acer Davidii*, with white-lined bark, red-stalked glossy leaves and

dangling keys, does its part; *Acer pennsylvanicum*, with nothing but striped bark to help it, not so efficiently. *Liquidambar styracifolia*, though, strikes a showy note in autumn while *Xanthoceras sorbifolia*, a close but small-sized ally of the Horse-Chestnut, brightens up the bed in spring with panicles of white blossom.

Immediately beyond, and roughly at right angles to the then complete group of Scarlet Oaks was a compact complexity of Gorse, Blackthorn, Hawthorn, and Bramble, described by Ensis as a proper bit of scrub. Unassailable by any other means, it was burnt off.

Into whose imagination it entered that water lay beneath I cannot remember, but soon the impression was strong in all our minds. How could certainty be established without boring?

I had read that the faculty of water-divining was commoner than generally supposed. Maybe one among us had the talent; unsuspected, but ready to function at a moment's notice. It is well known that some instrument is necessary to detect the force of attraction of buried water and, according to Pliny and several lesser authorities, nothing better exists for the purpose than a forked twig of Hazel. Special occasions are specified for the cutting of these twigs and technical directions, very difficult to carry out, are given. What, for example, was one to make of this: "The rod is to be taken after the setting of the sun and, at thy peril, before its rising. A knife, free from rust and blemish, held ready in the hand, thine eye against the fork and gazing to the east, thou wilt sever the rod with one sure stroke when the first rays of the sun do catch thy vision"?

As it was impossible to be certain in our forest-bounded area just when the orb itself appeared

over the eastern horizon, and as no allowance was made for trees in the ritual, we decided to risk twigs cut in the ordinary manner at an ordinary time of day, and to use them in the usual way.

Mary and I got no response, Ensis thought he felt a twitter in his funny-bone but the twig held by Nobby, Ensis's assistant, gave a positive reaction. It appeared to resist his every effort to hold it horizontally by the legs, so strongly was the end pulled towards the ground. It was Nobby's first essay in the practice of witchcraft. At first alarmed to find himself so apt a novice, he soon cheered up at the prospect of a brilliant and remunerative future. Already he felt the mantle of fame about him and, after again demonstrating his ability, gave it as his professional opinion that water was within six feet of the surface; mostlike a spring, he added.

This was a discovery of the highest importance. Nothing can add more to the beauty of a garden than a stream of running water. We would direct it in part of its course between rocky, fern-clad walls o'erhung with Birch and Willow. Then, through flowery mead, the haunt of Orchid, Primrose and Fritillary, it would run to a clear and gracious pool in which Scotch Pines were mirrored. We saw it all and hastened to reach the water.

We dug. A six foot depth was reached, an eight, a ten, but of water not a drop. Exploration with a crowbar of the next three feet gave not the slightest encouragement. It was enough.

Our disappointment was bitter. Nobby, I fancy, suffered acutely. The pleasant picture of a brass plate in Holborn, Kensington or wherever water-diviners most do congregate had vanished. Or had it? Who could say what would have been disclosed had we gone down a little further? He admitted to having been a bit too sudden like in coming out with water

being just under the sod, in a manner of speaking. It must be there, nevertheless. How else, he demanded, could we account for the movement of the twig? Explanation of that phenomonen was left to the future.

In the meantime we buried things which had become a burden in the lower four feet of the hole, amongst them a bottle of cyanide of potassium. We had intended to destroy wasps with the salt by putting it in their nests. Saner counsels prevailed on learning that wasps acted as scavengers and carried on remorseless war against flies and other noxious insects. They may well be numbered with man's guardian angels, though he is slow to realize the fact.

The remaining six feet of cavity formed the starting point of a pond. A poor substitute for a rippling stream, but something in the way of water.

The excavated soil, a fine, crunchy silt, was of the greatest service in filling up hollows on the Golding's Hill escarpment and to smooth out niggling irregularities elsewhere.

We began, I say, the digging of a pond.

Strangers, archæologically inclined, inquired guardedly whether Boadicea had buried treasure in the neighbourhood before her final defeat by the Romans. Others, less learned, thought we might strike oil; one never knew, they said.

To us the hole was a toy. We played at quarrying. Sloping planks, navvy barrows, duck-boards and other pieces essential to the game were arranged, used and moved according to the rules. At length it was of such a size that we dared not continue its extension. It seemed incredible that rain could ever fill it with a niggardly annual supply of twenty-three inches. Allowing for the direct fall being supplemented by surface drainage (for the pond was low

lying) on the one hand, there were evaporation and soakage to be reckoned with on the other.

Ensis, stalwart of purpose, undertook that there wasn't going to be no soakage. Puddling, that was the thing. As good as cement and twice as natural.

Perhaps we were not good puddlers, or perhaps silt does not lend itself to the puddler's art. At any rate, the pond was never watertight. Full to overflowing every winter, it dried out every summer and reeked of the rotten fens.

Every first of January we resolved to cement it, and year after year we left it as it was. Ten or more years passed before its unsightliness could no longer be tolerated and the pond became, as you shall afterwards hear, our present Lily Pool.

To have described the original pond at this juncture is a chronological inexactitude, though the incident of our excursion into experimental magic is true in time. To tell the truth, after Nobby's diagnosis had proved faulty, the pond area of the garden was painful in our sight. We got away from it for a time and began work on what came to be known as the Allotment Beds.

They ran, six in number, more or less parallel to the south-western boundary. This abuts on a field of allotment gardens assigned to suitable applicants by a body of trustees appointed to administer the ground for the benefit of those unable to privately acquire a garden. The allotments have little in common with the plots one usually associates with the word. No ramshackle sheds are scattered about the field, nor is it used as a depository for domestic articles no longer in commission. And the holders themselves are excellent fellows. Many a summer evening I waste their precious time with talk of cabbages and kings across the boundary hedge.

The first three Allotment Beds, numbering them

from the Pines southwards, were styled Peat Beds from their inception. Not because they contained any peat (which they didn't) but because their inhabitants, for the most part, were what are described as peat loving plants. The latter term is misleading. It implies more than it expresses but, in fact, means less. I know of no plant that prefers peat to lime-free, crumbly soil, but of a good many reputed peat lovers intolerant of undiluted peat.

The idiosyncrasies of supposed peat addicts may be summarized thus: To none of them is peat essential, but to the most lime, carbonate of lime, is deadly.

To translate "peat lover" as "lime hater" is scarcely scientifically accurate, but it is a very safe interpretation from the horticultural standpoint.

Peat (or one of its proprietary forms), leaf-mould and similar substances find their *principal* use in assisting the water retentiveness of soils. That, I believe, is the point to keep in mind. Such, however, is the reputed virtue of peat, that many have attempted to grow certain inflexible lime haters in limy gardens. They have dug out large holes, possibly lined the sides with concrete, and filled them up with peaty, limeless soil. In vain. The lime in the soil beneath rises to the surface not, like cream and talent, by some quality in itself, but in the way described on p. 98.

I was speaking of the plants in the by-courtesy-peat-beds. Amongst them, added by way of variety, are subjects quite catholic in their tastes but the majority are irreconcilable to lime and of this majority the greater part consists of *Ericaceae*.

My regard for the family has been spoken of as reverence. It may, for all I know, have been set down as sheer idolatry. Admiration and affection possibly merge into worship and bowing down. Be that as it

may, there's no denying that ericaceous plants were the first for which I conceived *une grande passion*; it continues unabated, but not to the utter exclusion of other plants. Never handicapped by an inability to entertain more than one *grande passion* at a time, I have other loves than *Ericaceae*. Still, if by some decree of material or immaterial powers my gardening was limited to one group of plants, that of the *Ericaceae* it would be if I had a voice in the matter.

It is impossible within the compass of this book to mention, much less describe, every plant in the garden. Nor does the title indicate that anything of the sort will be attempted. So I'll crave permission to drift on in the way to which you are now accustomed, stirred here by a memory, there by an interest, the ambit of the drift only controlled by time relationships, and not entirely by them.

I have sung the fame of *Arbutus Menziesii* on another page, but, disliking to chill ardour with the frost of criticism, said nothing of its one demerit, a curious finickiness as to surroundings. I must, however, make some allusion to the matter. A deep, crumbly, lime-free soil, a fairly open situation and a less than moderate rainfall together make up a not unfavourable environment, so far as my own experience goes. I cannot be more specific, nor can I say that precisely opposite conditions to those mentioned would act more favourably or less. This Arbutus is, in short, a plant of uncertain temperament and of prejudices as changeable as the moods of kings.

When trying to establish such a subject, I do not, if I can avoid it, rely upon a single plant. Two will, more than double the chances of success and so on in ascending ratio. You too have no doubt noticed on a hundred occasions that multiplicity has a mysterious power of reducing risks?

If you buy a single individual of a tricky species, it

will probably die. If three or, better, five are purchased, the betting is that every one will live.

I make no attempt to explain this phenomonen. My belief in its potency was demonstrated by planting, two years after the placing of the first, two more specimens of *Arbutus Menziesii*. One of them still adorns a corner of the first peat bed.

Although the noblest of them all, Menzies's Arbutus does not appropriate all the merits of the genus. *A. Andrachne* certainly rivals it in beauty of bark if not in flower. Common in the Near East, the latter should, one would imagine, be easily procurable. This is far from being the case. I spent fourteen years in energetic search before being rewarded by a midget of four inches. Its scarcity may be due to a degree of tenderness or, more likely, to the difficulty of securing seed untainted by *Arbutus Unedo*, for the two are often found in company in the wild.

Again and again have I bought what purported to be *A. Andrachne* and on every occasion received the natural hybrid, *A. andrachnoides*. A notable tree, however, is this compound of *A. Andrachne* and *A. Unedo*. For general use, indeed, perhaps the best of the lot. Less particular in environment than *A. Menziesii*, hardier than *A. Andrachne*, infinitely more beautiful in bark than *A. Unedo* but (let us be just) less impressive than the first, rougher in bark than the second and bearing fruit less plentifully than the third, and that of a smaller size.

The question is often asked how *A. Andrachne* may be distinguished from the hybrid. The former, in the adult stage, is said to possess entire leaves. As those of *A. andrachnoides* are toothed, the separation of the plants would be a simple matter if the foliage of *A. Andrachne* possessed its reputed character. But it doesn't. Some of the leaves are entire, others as toothed as they are in the hybrid. Still, as the latter

possesses *no* entire leaves, it may be thus distinguished. In this connection, however, it should be kept in mind that *A. Andrachne* is credited with a variety *serrulata.*

Another point of difference between the plants, but only useful when they can be compared, is that *A. Andrachne* sheds its bark in larger flakes and leaves a smoother surface beneath than does *A. andrachnoides.*

In case confusion should arise between *A. Menziesii* and *A. Andrachne* (as it may, for both possess a smooth and reddish bark, and both throw it off in large pieces), it may be at once resolved. In the first, the underside of the leaves is bluish and the young growths quite smooth. In *A. Andrachne,* the lower leaf-surface is light green, and the young growths are hairy.

The story is told how, after the wicked Set had murdered his brother Osiris and cast the body, encased in the coffer which was the instrument of death, into the Nile, the gruesome bark drifted ashore at Bylos, the modern Jebail or Djebail, on the coast of Syria, about twenty miles north of Beirut. There it was enclosed by an "Erica-tree".

Now the only *Erica* in that neighbourhood is *E. verticillata,* the stem of which is incapable of enclosing anything larger than a pocket knife. Beirut, however, is a station for *A. Andrachne,* a tree more able to envelop a coffer and quite likely to be called an Erica in days before nomenclature became tyrannical.

The best known member of the genus, at all events in the Old World, is *A. Unedo.* Report has it that Pliny, after one taste of the fruit, exclaimed "Un edo!" as you or I might say "Never again!" Our pronunciation of the specific name, perhaps, is scarcely that of Pliny. But probably if he himself suddenly materialized and spoke the word in the Roman way, we, hackles erect, would ask him not to

be pedantic. Pedantic! Useful word. By throwing it out with an air of righteousness we at times succeed in both cloaking our own ignorance and bringing down contumely upon the learned.

References to the tree abound in classical and more modern literature, some of them quite homely. Take this from Parkinson. He is writing of the fruits. "Clusius likewise setteth down that at Lisbon and other places in Portingal, where they are frequent, they are chiefly eaten, but of the poorer sort, women and boys". The gentlemen were no doubt restrained by the ethical hint, "Women and children first".

The fruit, large and well likened to a Strawberry in appearance, is disappointing to the taste. It is said to make a pleasant sweetmeat when soaked in syrup for a year or two. Vegetable Marrow has a similar reputation.

There are several varieties of *Arbutus Unedo* of which the most celebrated is the pink-flowered *rubra*, so named by Aiton; a more appropriate title than "var. *Croomei*" given to it later.

It is the fashion to graft forms of *A. Unedo* on Unedo stock but there is actually no necessity for this unsatisfactory shift; tip-cuttings root fairly readily in July.

Anxious to get together a fairly representative collection of the genus, I once risked *Arbutus canariensis*. Its name suggested less than half-hardiness; so did its rapid growth and soft, hairy leaves. Suggestions from plants, however, often never reach the fact stage, and need not limit enterprise. *A. canariensis* actually flourished for several years, until, indeed, the great frost of 1928–29 ended its career.

The Chilean shrub spoken of by many authors as *Arbutus furiens* (or *furens*) and by others as *Gaultheria furiens* is actually a *Pernettya* and will receive a share of attention when the time comes.

Chapter Seven

IT SEEMS more than possible that a reader, unfamiliar with the ins-and-outs of botanical nomenclature, but possessing a keen eye for orthographic irregularities, may wonder why some specific names begin with capitals while others are more commonplace. The accepted procedure under the International Rules of Botanical Nomenclature is to begin *all* specific names with small letters *except* those derived from the names of persons or borrowed from names of genera. The genus *Arbutus*—generic names, by the way, *always* begin with capitals—the genus *Arbutus* gives us illustrations of the working of the rule: The specific name of *Arbutus Menziesii* is derived from that of Archibald Menzies and is therefore spelt with a capital. Those of *A. Andrachne* and *A. Unedo* are borrowed from the generic names Andrachne and Unedo (that the latter is no longer in circulation does not affect the rule) and consequently must also begin with capitals. In *A. canariensis* the specific name is not derived from that of a person or borrowed from a genus and hence only requires a small c.

By an odd mischance, the English translation of the International Rules (1906) renders the original "*qui sont empruntés à des noms de genre*" as "which are taken from generic names" instead of "which are borrowed. . ." Now although the modern usage of society is to consider "taken from" and "borrowed" as equivalent terms, the precise nomenclaturist exercises more discrimination. "To borrow" a name

is to take it as it stands. "To take from" a name allows of derivation. For example, the specific name *andrachnoides*, being derived from *Andrachne*, would commence with a capital if the English translation was followed.

The moral of all this is that the English translation should be checked from the French original, advice given me by the High Priest of Nomenclature, Dr. T. A. Sprague.

American botanists, it should be mentioned, do not all observe the rules in their entirety. With some it has become a common practice to discontinue the use of capitals in specific names. Whether a species is named after a genus or after Tom, Dick, Jane or Old Harry himself it must be content with a small-lettered designation. *Fritillaria purdyi* looks strange to European eyes—perhaps stranger still to those of Mr. Purdy—but the practice has the great advantage of preventing nomenclatural solecisms apt to be committed by even the most scrupulous.

While we are on the subject, a word on how plants are named may not be out of place.

No one may christen a species quite according to his whim. He must submit to the Laws of Nomenclature, compared to which those of the Medes and Persians were as thistle-down.

He finds a new *Campanula*; new, that is, to him. A plant of the most striking appearance, he wishes to dub it *insignis*, but before that name can receive general recognition certain rigid preliminaries must be complied with.

Is the plant really new to science, or has the report of it only been overlooked? Was it not discovered by some almost forgotten explorer perhaps a century ago, recognized as a *Campanula*, described and given a new name by a botanist of the time and actually reposes as a dried specimen in a herbarium

that you and I have never heard of? If so, its original name must be retained however strange or inappropriate it may be.

Let us assume that no record of the species can be found after the most diligent search. What of the name *insignis*? Has it already been applied to a *Campanula*? That, of course, would prohibit its further employment in the genus. Should it, on the other hand, be free for disposal the path is clear for its bestowal on the plant. The christening ceremony is not the simple affair with which humans must content themselves. It involves exact observance of a prescribed formula known as publication. This amounts to issuing, in a permanent and accessible form, a Latin description of the plant under the chosen name and that of the bestower of the latter.

The name is not yet quite safe. A learned doctor of Trebizond, let us say, may announce to the world that he, Zar Din, described the very plant (in Latin too) under the name *Campanula Fatimae* in *Plants of the Pontus* a week before the publication of *C. insignis*.

No compromise is possible. No association of the names, though easily and pleasantly arranged, is permitted by nomenclature. *Campanula Fatimae* wins. On the sacred ground of priority the plant must be known by that designation to this and future generations unless . . . (nay, do not sigh, patient reader; the end draws near) . . . unless, I say, the name *Campanula Fatimae* has been already given to another species. In that event, *insignis* regains its prominence and the good Zar Din, after explaining matters to his Fatima, must make the best of it.

I must have written near four hundred words on the naming of a species. Be thankful, however. Had I been expert in the subject that number could not have expressed what must have found expression. To round the subject off, let me add that the reason

botanical names are printed in italics is simply that they belong to a foreign tongue.

"Elementary, my dear Stoker."

"True, reader, but a particular use of italicization may not be so apparent to others as to your perceptive self. On some future occasion, perhaps, you will favour us with an exposition upon its employment in the Scriptures?"

Let me drag you back to *Arbutus* for a moment. I forgot to mention *A. Milleri*, an occupant of the third peat bed. Rather an impostor, this. Its name leads you to expect a species, and perhaps Robert Sweet so reckoned the plant when naming it in honour of Philip Miller. No more than a second-rate form of the hybrid, its bark is little more attractive than that of *A. Unedo*, even after a scrubbing with soap and water, and as for fruit, why, I have not known it bear a single berry in fifteen years.

Near the Arbutus clan in the Peat Beds are members of the closely related genus *Arctostaphylos*, so closely that their kinship is comparable to that existing between *Gaultheria* and *Pernettya*. So closely, I nearly said, that it requires a gardener to distinguish an *Arbutus* from an *Arctostaphylos* in a British garden. His advantage over a botanist lies in the fact that he has a personal acquaintance with every *Arbutus* in cultivation. (It is a small genus.) If the subject of inquiry is not one of these, then it must be an *Arctostaphylos*. Perfectly simple, really.

Their principal botanical distinction is in the fruit. That of *Arbutus* is a berry, a pulpy structure in which are immersed the seeds. In *Arctostaphylos* it is a drupe which, in some species, holds a central conglomerate mass of nutlets, in others their more discreet disposition. This little variation from the usual drupe-form, that, for example, of a plum, has caused the too precise to describe the fruit of *Arctostaphylos*

fig. 8 p. 156

ARCTOSTAPHYLOS MANZANITA [× ⅔]

as drupaceous, and thereby confuse the issue. For "drupaceous" can lend itself to many interpretations by the imaginative mind. It is enough for most of us to know that the essential of a drupe is its content of a seed or seeds enclosed in stony envelopes which are themselves buried in succulent or mealy flesh.

In *Arctostaphylos* the flesh is dry or mealy except in the juicy-fruited *A. alpina.* This departure from rule, together with the deciduousness of that species, led Niedenzu and his followers to give it a genus to itself, the genus *Arctous.* They therefore call the plant *Arctous alpina.* Unconvinced at the moment that there exists sufficient reason for the change, I propose to adhere to Sprengel's placing and continue to speak of it as *Arctostaphylos alpina.* This, I know, is very presumptuous in a mere gardener, but even gardeners cannot be swayed by every passing wind.

The genus *Arctostaphylos* as a whole is worth more than a passing glance. Note, for example, its distribution. Carried by two of its humblest members, *AA. Uva-ursi* and *alpina,* completely round the northern part of the world, arctic zone, sub-arctic zone and montane regions of lower latitude all being occupied, the genus really finds its fulfilment in western North America. Physiographical rather than geographical western North America be it said.

To describe the narrow isthmus between Mexico and Colombia as Central America is rather an artificial distinction. It more truly represents the southern continuation of geographical western North America, that region bounded on the east by the Rockies and their offshoots and on the west by the Pacific, and here it is included under that term. This visualizes, of course, only a northern and southern division of the continent separated from each other by the Panana-Colombian boundary.

The extreme north of America is no more rich in *Arctostaphylos* than other parts of the Northern Hemisphere, but in southern British Columbia the genus, having left *A. alpina* behind, begins to show its potentialities. From thence southwards one is added to another until in California, the real Arctostaphylos country, there are no less than fifty-three species according to Miss Alice Eastwood, the author of a revision of the genus. These gradually disappear from the flora as Mexico is approached and in that country itself only a few of the more northern species remain though a number of new ones appear. These, however, have but a limited range for the genus fades out in Guatemala.

Although so nearly allied to *Arbutus*, *Arctostaphylos* falls short of the sister genus in the size and magnificence of its members, but, by their greater variety in aspect, makes up on the swings what it loses on the roundabouts. Some are fitted for existence in open woods, some to withstand competition in a chaparral thicket, others to gain existence from sand-dunes by the Pacific shore and others still to struggle successfully against nine or ten thousand feet of altitude and all that that implies.

Procumbent, dwarf, bushy, spreading, erect, tree-like; these adjectives, used to describe various species, are sufficient to indicate the ascending scale they exhibit between the prostrate *A. Uva-ursi* and the fifteen to twenty feet of *A. glauca*.

Their attractiveness lies in form, bark, foliage and flower. Here in the Peat Beds are a few examples. Nearly everyone is familiar with that grand little plant, *A. Uva-ursi*; with its leathery leaves, urn-shaped, pinky-white flowers, bright red fruit and prostrate branches, rooting as they run. Like others of its genus, it demands a share of the sun and will not provide anything like the ground-cover under

trees that its appearance suggests. On the other hand, no shrub will more cheerfully drape a slope or clothe a face of rock.

I was given *Arctostaphylos Manzanita* (fig. 8, p. 153) in 1924. A youngster it was, twelve inches high. In thirteen years it has grown ten feet, a trifle lankily, maybe, but that is natural to the species and takes nothing from its eighteen-caratry. The smooth, chocolate-red bark is always beautiful and coolly pleasant to the touch while thick, matt-surfaced, grey-green leaves form just the right background for the panicles of clear pink, waxy, bell-shaped little flowers puckered at the mouth. Fortunately, the shrub blooms in February and March; fortunately, because at that time its tender beauty is safe from contrast with Rhododendrons and Magnolias.

It is tempting to describe every *Arctostaphylos* I possess, but as I'm not sure whether the accounts would have either interest or value, and also because their full descriptions may be found in *Floras* of western North America and in monographs devoted to the genus, I'll hold my pen and only tell a little of what they have contributed, or tried to contribute, to my education.

Although acquainted with them theoretically, I did not fully realize that a plant's automatic checks on transpiration (loss of water through the leaves) were as matter-of-fact as Cheshire cheese before seeing the dodge used by *Arctostaphylos Manzanita*. If its leaf stalk be examined it will be seen to have made almost a quarter turn on its own axis. This places the plane of the leaf blade nearly in the vertical meridian with the object, apparently, of presenting rather an edge than a surface of leaf to the glare of the sun. A clever expedient, and one found in most of the taller species of *Arctostaphylos*.

A. nummularia (fig. 36, p. 396) has a dainty beauty of a kind one does not look for in the genus. A plant of the Californian lowlands, it exists in two forms; one a loose, open bush up to fifteen inches or more in height, and the other quite prostrate. Both are excellent plants for a lime-free rock-garden.

It has been urged against *Arctostaphylos* that seed is difficult to germinate. As each germ is enclosed by a hard shell the reason of this is evident, and evident also is the way to overcome it. The point of a knife blade, or a hammer used by careful hand, though not indispensable aids to germination—for the stoniest shell must rot in time—may save many weary months.

There is no more trouble in growing *Arctostaphylos* in this country than the more ordinary Gaultherias or Vacciniums yet, other than the Common Red Bearberry (*A. Uva-ursi*), they are very seldom met with. It may be that British gardeners have no particular fancy for the shrubs. This I cannot believe. Anything in the shape of a plant which a little exceeds cold porridge in interest and beauty is pretty sure of a warm welcome at their hands if, that is, it is introduced in the proper way and at the proper moment. When American *Arctostaphylos* first reached us, or anyhow when the news of them first came, the horticultural mind was occupied with Pelargoniums, Auriculas and carpet bedding. Hardy shrubs received scant notice. Many good plants besides the Bearberries were allowed to pass, almost unseen, unhonoured and uncatalogued.

Now to bring into popularity a plant or anything else which strutted its little hour upon the stage when no one was looking is a gigantic, almost an impossible task. Thus *Arctostaphylos* remains in the shadows.

Next to *Arctostaphylos Manzanita* in the second

peat bed is a large specimen of *Oxydendron arboreum*, large, that is, for *Oxydendron arboreum*. The nurseryman from whom I bought it gave the cautious opinion that one day the plant *might* reach ten feet. That mark was passed some years ago.

From July to September, small white campanulate flowers are borne on long terminal racemes, but, comely though they are, the plant's great beauty is in its autumn foliage, a harlequinade in green, yellow, red and orange. *Oxydendron* (there is only one species) inhabits Appalachian woodlands and ranges from Pennsylvania westwards to Indiana, southwards to Florida and Louisiana. Now although a plant found wild in woods does not necessarily require woodland conditions in cultivation, it is safer in such surroundings, at any rate until its more general tolerance is established. *Oxydendron*, as it happens, is not a very compliant subject, and given to bark-splitting if in too exposed a position. My own plant suffered badly on one occasion before its neighbours were sufficiently grown to give protection. The accident is serious and is caused by frost in very much the same manner as a burst water pipe. A "split" is a mild description of the damage. Usually, not only is a longitudinal split in painful evidence but also a circumferential separation of the bark, a condition which entails the death of that part of the plant above the injury.

Oxydendron, together with many other ericaceous plants, is still referred to as an *Andromeda*. To mention its accepted name is often sufficient to bring forth the enquiry "Do you mean *Andromeda arborea*?" with a strong accent on *Andromeda*. That is, of course, precisely what I mean, expressed in archaic terminology. It is as though I had said "Look at that girl on horseback" and been brought to order by the question, "Dost speak of yonder damosel astride a palfrey?"

That very handsome Chilean tree, *Eucryphia glutinosa* (*pinnatifolia*) rubs leaves with *Oxydendron arboreum*. Possibly in quiet chat they contrast Andean and Appalachian air with what may be had in Essex and nod in agreement over the curious fact that they find the latter tolerable.

The beauties of *Eucryphia glutinosa* (fig. 1, p. 5) have been extolled a thousand times. Is it not, then, remarkable on the face of it that the plant is still uncommon in gardens, even in lime-free gardens? Wherein lies the explanation? Possibly its popularity is limited by its pronounced (but generally unrecognised) dislike of sun-baked soil. Bean recommends that it be planted in beds of Heaths. I have followed his advice in effect, the only difference being that *Daboecia cantabrica* was brought to the *Eucryphia* instead of the latter being taken to the Heath—St. Dabeoc's Heath in this case—and can vouch for its excellence. The plan also works, let me add, with other shrubs of the Chilean woodland, *Desfontainea*, for example, and Tricuspidarias; with woodland plants, indeed, from any part of the world when they are planted in open positions.

None of the Eucryphias tolerate root disturbance with equanimity. *Young* pot grown plants (not pot-bound cripples) should be used for planting out. Small they may be, but that is of no importance. Two specimens of mine, now fifteen feet high and eight feet through, were planted as mere infants from three-inch pots in 1924. As a contrast to this performance, a two-and-a-half foot specimen from the open ground and planted at the same time as the others has not grown more than eighteen inches, though it looks like picking up now, thirteen years later.

Picea Omorika, the Serbian spruce, is a fairly close neighbour of *Eucryphia glutinosa* in the second Peat Bed. It is there for the sake of variety.

I daresay mixing tall-growing Conifers with deciduous shrubs is a practice open to criticism; criticism, however, based, on custom more than on any stronger reason. Why should Pines, Spruce, Silver Firs and the rest be either obliged to associate with their kind, and only their kind in pinetums, or be condemned to a lonely existence as isolated specimens? Except to the specialist, few garden departments can be more sombrely dreary than a pinetum. Conifers are magnificent plants, but best in small doses. This, of course, is the justification for the isolated specimen. Further, it can be seen; or so its planter fondly thinks. To the majority, however, it will remain as invisible as a lamp-standard in Oxford Street.

A shop-window is the place in which to attract attention, providing there is some variety in its display, and to a shop-window may be compared a garden bed of varied occupants.

There are Conifers for which beds of anything less than quarter-of-an-acre would look disproportionately small; Cedars and Sequoias, for example. On the other hand, a very great number are easily accommodated in more limited areas; *Athrotaxis* species, fastigiate Yews and Junipers, many Cypresses and the smaller Pines. There is a Pine, too, not so small that, wasted in a pinetum and too sociable to like solitary splendour, should have assorted company. I refer to the Scotch Pine.

I suspect myself of a bias towards *Pinus sylvestris*. Best to admit it. I have it in Heath beds, at one end of a Lily Pool, at the top of banks, on their slopes and associated with plants as different from itself as Rhododendrons, Epimediums, *Cornus canadensis* and *Pyrola incarnata*. Nowhere (to me) does it look out of place or in wrong proportion. The trees are young and none much over twenty-five feet,

but I do not fear that my esteem will lessen as their stems grow in height and beauty.

The Scotch Pine holds a remarkable position. I doubt if it has a single hostile critic. But what a host of friends! Gardeners and woodsmen, barons and squires, rich owners of ten thousand trees and proud possessors of one; these are its vassals. It holds them by its reddened stems, scarlet in the sunset glow as the lion of Scotland itself, its friendliness and most of all by its quiet endurance of all that may betide.

I constantly urge my friends to plant it. "Alas," they say, "I am too old ever to see it grown up." Was there ever a more ridiculous reason? (I used to give it myself ten years ago, before a man of eighty laughed at me.) Grown up? What do we mean by that? Arrival at full maturity? Why, then Methuselah in his boyhood might have voiced the same objection, for there are conifers, still hundreds of years from full development, that attained the full age of the son of Enoch long ago.

What matters the age of a tree, or its size? Is there not the beauty and the joy of youth as well as the grandeur and the majesty of age? Though ten years older than I was ten years ago, I now grow trees from seed.

But I drift, I drift. What I intended to say was that *Pinus sylvestris* will grow twenty-five feet in eighteen years after germination of the seed.

Those tall, spiring, narrow Conifers so useful for breaking a flat outline may be planted, any one of them, at the narrow end of a pointed bed. None, I suppose, is more useful than *Libocedrus decurrens*, the Incense Cedar of western North America. A perfectly hardy, solid looking tree, in its young stage it grows about fifteen inches a year in height and as an adult confines its spread to five or six

times the diameter of the lower part of the trunk. *Cupressus sempervirens var. stricta*, another steeple, holds a corner of the third Peat Bed. Magnificent in the Italian peninsula, its solemn stateliness is just a shade oppressive for everyday life. It belongs, in fact, rather to the grandeur which was Rome than to the breathless energy which is Italy.

Nothing like so useful a tree as *Libocedrus decurrens* in this part of the country, the Italian Cypress is only doubtfully hardy and, in any case, its branches are apt to be spread by snow. Its timber, however, must be as durable as brass. Veitch (*Manual of Coniferæ*, 1881) states that the gates of Constantinople were made of it and had stood eleven hundred years before being destroyed by the Turks in 1553.

Before leaving the Peat Beds, some mention of the plants which have been used therein as ground-cover, and their fitness for the purpose, may be made. There is no lack of dwarf and prostrate shrubs which enjoy lime-free soil but the number ready to grow, and grow well, under taller subjects is limited. Shade, I believe, is the disabling influence rather than dryness or poverty of the soil. There is no reason, for instance, to think that *Vaccinium Vitis-Idæa* is more tolerant of drought than the Sand Myrtle (*Leiophyllum buxifolium*), yet while the former shows no objection to the immediate neighbourhood of shade-giving shrubs and trees, the latter will not face it.

As useful as *Vaccinium Vitis-Idaea* (the so-called Cowberry) for covering ground in shady places is the Creeping Wintergreen, *Gaultheria procumbens*. This testimonial must not be taken to imply that these two shrubs are good for nothing else. They are, in fact, most excellent plants for almost any position in lime-free soil. Evergreen, rich in red fruit, perfectly hardy and of rapid spread; frugal in their

Plate X

p. 341

EPIGAEA ASIATICA [×½]

Plate XI

p. 349

EPIMEDIUM WARLEYENSE [× ⅔]

wants, never coarse in growth; beautiful in themselves, good companions for others. What more do you want?

The delightful little pink-flowered, linear-leaved *Bruckenthalia spiculifolia*, a heathery-looking plant, will clothe the edge of a shrub bed, but will not penetrate far within it. Kurume Azaleas, on the other hand, will not only grace the edge but run beneath taller shrubs in a fashion one does not look for in Azaleas, for, once spoke tradition's voice, they are not plants of rough-and-tumbledom.

Ten years ago I was given half-a-dozen of what were described as Kirishima Azaleas. They had that name, I learnt, from Mount Kirishima, their native habitat, a mountain of 5,576 feet in southern Kiushui, the southernmost of the four larger islands of Japan proper. Their flowers were on the small side and, in the majority of the plants, of a pale, purplish cast, though one or maybe two pinks were among the batch. I gathered, too, that the nurserymen of Kurume, a town some eighty miles north of Kirishima, collect the better forms of the shrub from the mountain, propagate them and distribute them as Kurume Azaleas under such names as Hatsu-giri, Hine-mayo, Hinode-giri and other (one presumes) word-poems.

Now according to Wilson, the Kirishima Azalea is none other than *Rhododendron obtusum* of Planchon (*Azalea obtusa of Lindley*) . . . but wait; can you bear a little taxonomy at the moment? It may save you from a confusion that for years enmeshed me. Assuming your consent, here goes: There are three species of Asiatic Rhododendrons which are commonly grown as Indian Azaleas, *RR. Simsii, indicum* and *obtusum*. *R. Simsii*, from temperate China and Formosa, is the Indian Azalea of greenhouses and, not generally hardy, is seldom grown in the open in

Great Britain except in the south-west. Its flowers are of red shades, open in May, and embrace from eight to ten stamens. It is the last attribute, the possession of at least eight stamens, which infallibly separates *R. Simsii* from *RR. indicum* and *obtusum*, both of which have five. But how are *RR. indicum* and *obtusum* to be distinguished from each other? That is not so easy. Up to comparatively recently, indeed, botanists followed Maximowicz in classifying *obtusum* as a variety of *indicum*. Both are native to southern Japan and in nearly all ways bear more of resemblance to each other than they do of contrast. E. H. Wilson, who attacked the view of their conspecificness, found himself obliged to rely on not very definite leaf differences in order to restore *R. obtusum* to the specific rank originally given it by Planchon [Fl. des Serres IX; 80 (1853–4)]. Had Wilson been more of a horticulturalist, he would probably have used the fact of *R. obtusum* blooming two or three weeks earlier than *R. indicum* as a point of differential diagnosis.

Both *R. indicum* and *R. obtusum* are rich in colour forms, those of the former circling round red, those of *obtusum* having the wider range of white to crimson and on to purplish hues.

Under *R. indicum* are placed the popular *Azalea rosaeflora* as *Rhododendron indicum var. balsaminaeflorum* and a very lovely salmon-pink form known to the trade as *Azalea macrantha*, a name, as it happens, synonymous with *R. indicum* itself, and wrongly employed to designate a form.

We have already seen that Kurume Azaleas are merely colour forms of *R. obtusum*. As distinct varieties of that species are now classed the brilliant *Rhododendron* (*Azalea*) *Kaempferi* and the magentous *Rhododendron amoenum* (*Azalea amoena*), both of them graded as good species a little while ago. And

the magnificent white *Azalea ramentacea* of Lindley, introduced by Fortune nearly a century ago and the recipient of a dozen flattering titles is now no more than *R. obtusum var. album.*

I am at this point forced to digress for a little. A certain phenomenon insists on having a share of notice. As it is an interesting phenomenon, and the present a proper moment for its appearance, let me set it down. That the doubling of a flower represents the conversion of stamens into petals is, by the most of us, taken for granted. However strange it seems that such a thin, delicate structure as a stamen should become a wide and differently coloured petal—fleshy, too, as likely as not—we are prepared to accept the statements of others on the matter. It is reassuring, nevertheless, to receive first hand confirmation of the occurrence. From no source can more convincing evidence be obtained than from a flower, almost any flower, of *Rhododendron indicum* (fig. 9, p. 166).

A stamen is made up of a lower part, the filament or stalk of the anther, and an upper part, the anther itself. Doubling commences by a lateral outgrowth from one or both sides of the filament, from the anther itself, or by a combination of these. The overgrowth may continue until a perfect supernumerary petal is formed, stop at any stage short of that, or advance to allow of coalescing of the petals.

Though all stages of transition from stamen to petal may be seen very easily in *Rhododendron indicum,* they may also be observed in the innermost petals of such well established doubles as occur in Roses. The metamorphosed filament may be represented by the thickened edge of a semi-petal or by a narrow central ridge in a complete one. The anther may disappear, but not infrequently is present in reduced form on the inner surface of a perfect or imperfect petal and, in some cases, even contains pollen.

We are told that the conversion of stamens, or both stamens and pistils, into petals is due to unsuitable soil, but of the real explanation of the event we are ignorant.

The change from a single to a double form, from relative fertility to relative sterility, must, in the

fig. 9 p. 165

DOUBLING OF RHODODENDRON INDICUM [reduced]

(*a*) Normal flower.

(*b*) Flower in which two new complete petals have been developed below by overgrowth of stamens (remains of which are still seen in the centre of the petals). From two of the upper stamens unilateral overgrowth is evident. Only one normal stamen remains.

(*c*) A "deformed" flower split open to show coalescence of three mal-developed petals, a condition due to continued overgrowth.

opinion of those who consider reproduction as the principal, if not the highest, function of an organism, be regarded as degenerative. They are not necessarily right, of course. It has yet to be shown that the supreme development of any organism is in direct proportion to its fecundity.

The digression is over. We return to *Rhododendron obtusum*. Bean mentions that the varieties of this shrub are not hardy at Kew, but I do not take him to mean that the *latitude* of Kew is the hostile factor.

Kew, as it happens, has a most trying environment. An altitude not much higher than sea-level, the proximity of a tidal river, an atmosphere permeated with the fogs and fumes of London and a rainfall round about twenty-four inches do not make a combination attractive to many plants. That Kew remains the most important botanical garden in the world is to be attributed to the devotion of its personnel rather than to any generosity on the part of nature.

The word "hardy", as used in horticulture, is very ambiguous. To one it means tolerance of low temperatures, to another it implies a more general capability of endurance. The first will say that *Bougainvillea* is not hardy while the second so stigmatizes, for example, *Androsace helvetica*, a plant which on a bare rock face in nature thinks nothing of an average winter temperature of 20° F.

The more general meaning of the term "hardy" should, I think, be taken as "locally tolerant". An incapacity noted at Kew need not necessarily be evident in Essex, nor, so far as that goes, in the north of Perthshire; it is not, in short, necessarily related to temperature.

Thus to render information on a plant's tolerance of environment of value, mention should be made of where that tolerance, or the reverse, is evident.

Not only are *R. obtusum* and *R. indicum* perfectly hardy here, but they spread with extraordinary enterprise. The latter has engaged in a trial of strength with the rampant *Daboecia cantabrica* while *R. obtusum*, in the person of Hatsu-giri, has carpeted the ground beneath *Myrica Gale* though to my eye there appeared little reason for such munificence.

Myrica Gale, the Sweet Gale, Sweet Willow, Bog Myrtle or Golden Osier, is a dioecious native shrub, or, rather, it includes Britain in its circumboreal distribution. I daresay there are better garden plants,

but its leafless catkined branches are beautiful in spring and give a touch of living brown to a bed of evergreens. Leaves and wood give off a pleasant, aromatic odour when crushed and it is odd that this has not given the shrub a more exalted reputation than it actually enjoys. As a safeguard against jail fever, perhaps, or even plague? Nothing of the sort. Its nearest approach to utility appears to be as a mild insectifuge in wardrobes: "The whole shrub, fruit and all, being laied among clothes, keepeth them from moths and worms" saith Gerarde.

Drooping over the Sweet Gale is *Pieris japonica*, possibly the most beautiful of the more hardy species of the genus. Terminal, pendulous, crowded racemes of white, urn-shaped flowers pour from the lustrous evergreen foliage in March; even a fall of snow fails to impair their purity. *Pieris formosa*, immediately behind *Pieris japonica*, is a nobler-seeming but, in my hands, a disappointing shrub. It flowers with reluctance here, and then sparsely, but the bronzy redness of the new foliage, the luxuriance of the old, and the well-supported eight to ten feet height of the shrub go a long way to make up for any lack in floral magnificence.

Carelessness, ignorance, or what you will, allowed me for many years to connect the specific name of the plant with the island of Formosa from whence, I supposed, it originally came. All wrong. The Latin *formosus* (fem. *formosa*) means "beautifully formed", and the habitat of the shrub is the eastern Himalaya. Had it actually been native to Formosa, and its describer anxious to keep that fact in the foreground, he would have named it *Pieris formosensis*.

Chapter Eight

AT A CORNER of the fourth Allotment Bed, that is the next in series after the third Peat Bed, there is a cluster of Lilies. Not of aristocratic lineage nor of sensational beauty, they belong to the group still popularly known as *Lilium umbellatum.* I imply that there is something wrong with the name? Well, there is. It is not definitive. It covers too much. J. G. Baker, who first gave the name valid publication, understood by it a luxuriant form of *L. dauricum.* Nowadays, however, forms of *dauricum,* hybrids of *dauricum* and its forms with *bulbiferum* and *its* forms, and hybrids of already hybrid *elegans* with bulbiferums of all sorts and sizes, these are all called *L. umbellatum.*

My own particular brand was bought as *L. dauricum,* but if it contains more than fifty per cent. of that species I am a Dutchman. Twenty-five is the more probable proportion. Whatever it be, and whatever the parents, immediate and remote, the Lily itself is one of the most valuable in the garden. It increases rapidly in spread, is remarkably immune from disease, is as hardy as a Birch, and will stand up to a hurricane. These are great qualities in a Lily.

Men there are, and true men at that, to whom a Lily with upright flowers is not rightly a Lily at all. Others condemn the heavy, reddish brown coloration indicative of *dauricum* and *bulbiferum* blood; still others consider the squat sturdiness of "L. umbellatum" most unlilylike. None of these think anything of my plant as, at any rate, a Lily. As a mere flower,

unclassified and nondescript, they concede that it is well enough. With that verdict both the Lily and I are quite content.

We are not so pleased with one or two wide and flattened stems apparent in the group. Fasciated stems they are called; each one appears an agglutination of two or more. A common deformity in more plants than Lilies, it is often put down to a too-generous diet. Neither plants nor men, however, lay on flesh in a lateral direction only.

The real cause of fasciation is unknown. The theory that it was an overgrowth of tissue secondary to a plant's invasion by a gall-mite or other parasite held the field for long, but is now thought insufficient to explain the facts. The increased rate of cell division and growth may possibly be akin to that unrestrained proliferation which, in animals, we call cancer. If so, fasciation belongs to a group of pathological phenomena possessing as their characteristic a useless, often malignant, overgrowth of cells brought into being by an unknown cause and spoken of as a tumour.

How very prone are doctors to be interested in disease, even when off duty! If they were only interested, you say, it wouldn't be so bad, but to be eager to discuss it, to commit the ultimate tactlessness of associating Lilies and tumours in a book which may get into anyone's hands! It is too much. So it is, my susceptible reader; here is something more agreeable.

The position of the Lily in winter shows more than just a patch of bare ground. If you look carefully you will see tiny bulbils lying on the surface. They have become detached from the lower portion of the stem which, beneath the surface during spring and summer, has been exposed by autumn rains. The temptation to pick them up and plant them is strong, but curiosity as to how they will pursue what appears

a natural course is stronger. We are about to witness, perhaps, a representation of a part of the Daurian Lily's life as lived in those grim lands beyond the Amur River. (Let us regard it thus, anyhow; even twenty-five per cent. heredity is enough to transmit such a dominant characteristic as the bearing of bulbils on that portion of the stem below the surface; a characteristic possessed by *L. dauricum*, though Wilson does not mention it.)

While the bulbils were covered with soil they were white in colour; now they are of a reddish-purple hue due to the development of the soluble pigment anthocyanin in the sap of the outer layers of cells. The colour of the exposed bulbils, though not protective in itself, is a sign of protection. For anthocyanin contains sugar, and sugar protects a cell both from the freezing and the evaporation of its contents. We see the bulbils, then, as self-contained little worlds protected by coloured envelopes from the great climatic dangers and each containing a sufficient store of starch in the tiny scales to keep it from starvation during the time spent on the surface.

In early spring, or maybe just before it, roots issue from the bases of the bulbils and, as likely as not, project into the surrounding air. They lengthen, bend towards the ground, eventually grasp it; next, with the purchase so obtained, they pull their respective bulbils into the erect position, then drag them beneath the surface.

One does not look for the power of movement in a highly organized plant, particularly against such a resisting medium as soil. Here it is, nevertheless, without the assistance of human finger or the wand of Mr. Maskelyne. Why the bulb must descend and how the root pulls it down is a long story but, if you are interested, you can find it in *The Lily Year-Book* (Royal Horticultural Society) for 1936.

Within whispering distance of the Lily you have heard so much about is a specimen of the beautiful and curious *Desfontainea spinosa* (Pl. vi, p. 66). That, at any rate, is the name the shrub grown in British gardens goes by, though whether our plant is actually that originally given the name by Ruiz and Pavon is a little uncertain. Their plant was found in Peru; ours, the plant in British cultivation, came from southern Chile. As, however, the species has been reported from the extreme north of South America to Staten Island in the south, an equivalent range to that from the Belgian Congo to the Caledonian Canal, it would not be surprising to find the impress of different environments upon it. Even in this one garden, individuals in shade have larger flowers (though fewer of them), bigger leaves, longer internodes than others growing in sun (Pl. vi). Whatever its habitat, it is an extremely lovely plant. The glistening, holly-like leaves are evergreen, and the tubular, waxy flowers, two inches long in shade, are scarlet externally, golden yellow within and sometimes yellow tipped; they are borne continuously from July until autumn.

Said not to be hardy near London, our altitude apparently saves it from the effects of frost. The long cold spell in the winter '28–'29 and that month of evil memory, May, '36, scarcely touched our plants. They flower regularly and fruit occasionally, but I have not yet noticed in their neighbourhood the ultimate expression of their approval of a Loughton environment, a crop of self-sown seedlings.

Next to *Desfontainea spinosa* (or, possibly, *D. Hookeri*) grows the even more celebrated *Cornus Nuttallii* (Pl. vii, p. 67). Its larger fame rests, I fancy, upon its being more widely known in nature to more appreciative and not inarticulate fellow-countrymen rather than to greater intrinsic excellence.

Native to western North America from British Columbia to Southern California, Nuttall's Dogwood reaches its acme of magnificence in the States of Washington and Oregon where there are trees upwards of eighty feet. My own specimen of sixteen feet or so is a paltry thing in comparison; but only in comparison. Taking it as it stands, and forgetting the wonders of the west, it is a very beautiful plant.

Although a deciduous tree, *Cornus Nuttallii* can show some feature of interest or beauty throughout the year. The dense heads of tiny flowers, supported by, at that time, insignificant bracts, are formed in late summer. In the early months of the following year the bracts, at first bright green, gradually increase in size and, reaching their full development in May, give to the tree a most striking appearance. From four to eight in number, creamy white, petal-like, they form a whorl often five inches in diameter, its centre occupied by the flower head. After their disappearance the flower cluster swells into a blunt, segmented, cushion-shaped structure (fig. 10, p. 174) and takes on a rich red colour. In each cushion is found one or more fruits; elongated, more or less prismatic drupes, half-an-inch in length, containing a stone of two cells in each of which is a seed. The successful fertilizations are packed about with enlarged but unfertilized ovules which form the remainder of the cushion.

Coincident with the maturing of the fruit, the foliage turns colour from its original green to tints of red and gold. No tree, I suppose, has greater autumnal magnificence.

In spite of its qualities, gardeners fight shy of *Cornus Nuttallii*. They are under the impression that it is not adaptable to the generality of English soils. I can assure them that it takes to a deep, lime-free, finely-gritty soil as readily as Sorrel.

We are all a little too easily discouraged by what

fig. 10

CORNUS NUTTALLII IN FRUIT [× ⅔]

p. 172

may *seem* an unfavourable environment for some particular plant, and forego the pleasure of its possession on that account. Apart from the idiosyncrasy of undoubted lime-haters and the intolerance of low temperatures exhibited by certain subjects, it is almost impossible to forecast what a plant will put up with, nay, enjoy, in the way of soil and other elements of environment. It assesses surroundings in its own fashion, not in ours. The acid test of a plant's adaptability is applied by planting it. When dealing with a subject of whose future success one is less assured than hopeful, it is not a bad plan to place it, as far as possible, in a neutral environment. Let it have a north exposure; surround its roots with a neutral soil of turfy loam and sand; in a word, introduce it to its new surroundings gradually; allow time for the forces of adaptation to come into play. If all goes well, then seedlings or cuttings from the pioneer plant may be sent on bolder adventures.

In the fourth Allotment Bed a few roots of *Alstroemeria aurantiaca* were planted some years ago. A pleasant plant in June and July, and useful for indoor decoration. That is one side of the picture. The reverse tells a different tale; a tale to make the victim of its charms pause before giving it garden room. I have said we planted a few roots some years ago. Now there is scarcely a bed in the garden, not an unconsidered corner into which the orange Peruvian Lily (which comes from Chile) has not penetrated. I have not seen it yet in the lawns, but rock-gardens, shrub beds, screes, frames and ash paths between frames, even seed pans are infested. How the seed gets about is remarkable. It is not winged nor yet of airy buoyancy, but of a shotty quality, comparatively large and heavy. One might believe that, like mercy, it droppeth as the gentle dew from Heaven.

For the less poetical, more practical gardener there

is another explanation; on a quiet autumn afternoon the ear is conscious of mysterious and sharp cracks, as though a sniper was at work eight hundred yards away. The *Alstroemeria* is the sniper; its capsules are splitting and the seed thrown with explosive force for some distance. It is clear that the plant will, in a very few years, cover a considerable area if unmolested. And though the hand of the weeder is busy in the land a good many plants escape. Hidden in the herbage of, perhaps, a group of Lupins they only declare their identity at a well considered moment; the moment when the Lupins wane and the intruders are about to flower. We are rather pleased. How nice, we think, to have a catch-crop of Alstroemerias between the first and second flowering of the Lupins. It can do no harm to leave the plants, we say, until after they have flowered. Besides, would it not be really outrageous to destroy them at this moment, the high point of their lives? The battle is to the *Alstroemeria*. It has worked its will.

We determine to remove it immediately on the fall of the flowers but do we? Not at all. Out of flower, out of mind. Again on a quiet autumn afternoon we hear the busy snipers. *Alstroemeria* is advancing its front.

I think it is Farrer who mentions that it is only necessary to tap *Campanula lactiflora* when in seed in order to distribute a crop. The plant requires no tapping. Not such a disseminator as *Alstroemeria aurantiaca*, it is still a very competent performer, particularly in partial shade. Originally planted in the same bed as *Alstroemeria* there was many a skirmish as to rights of way and pasture before a compromise was reached, *Alstroemeria* holding the balance of power. Possibly the latter saw advantage in keeping the *Campanula* in its company, the panicles of large, pale blue or white flowers held on

four to six foot stems being an agreeable contrast to its own warm bronziness.

It is a bold thing to say, but I believe *C. lactiflora* is the best tall, really perennial Bellflower. It has an elegance unapproached by the popular *CC. pyramidalis, persicifolia* and *latifolia* and an irrepressible good nature. Marschall von Bieberstein, who discovered it in the Caucasus, was apparently influenced by the "white or very dilute blue colour" of the flowers when giving it the name it bears.

There are two trees growing from out the tangled masses of *Alstroemeria* and *Campanula* which owe their horticultural eminence to autumnal coloration; *Rhus cotonoides* and *Acer Ginnala.* The first, known in its native Tennesse and bordering States by the inexplicable name of Chittam Wood, is as uncommon in nature as it is in gardens. Like other members of its genus it is dioecious; the sexes of the individuals are distinct. My plant, now nearly twenty feet in height, is a spinster, and likely to remain so. Her annual flower signal in a maleless garden is completely thrown away. And it is not alluring. When in full bloom the tree appears to have donned a home-made wig, straggly and sparse of hair, for the long panicles in their terminal parts carry only thready, flowerless stalks.

One who buys a young plant and sets it in good virgin soil, as I did, is almost certain to conclude there is a mistake somewhere unless he has been warned. The youngster will grow rapidly and develop large foliage, but the fading leaves of wrinkled, dingy brown are not what were expected. The gardener need not worry. The stripling (or wench) is merely having its fling among the fleshpots and taking no thought of the autumn. It is when the tree has depleted the soil about its roots and growth is more sedate that the leaves become smaller but splendid in their passing.

The recommendation is often made to plant *Rhus cotonoides* in a poor medium in order that it may assume good autumn colouring at an early stage of life. This object would be no doubt attained, but to take a vigorous youngling from a nursery and feed it on little more than gravel is, I submit, a mistake. The tree can never be anything of a specimen without adequate nourishment. Let its physique be first attended to and, in the natural course of events, the foliage coloration will take care of itself.

Rhus cotonoides is not easily propagated from cuttings and seed is ill to procure, but its early vigour may be taken advantage of by layering a branch or two. To have a few plants in reserve is a wise precaution, for a gale may blow a large specimen out of the ground. Such a fate ended the career of one of mine.

Acer Ginnala, a tidy little Maple from Eastern Asia, is one of the most outstanding of the genus so far as autumn colour is concerned. A softened scarlet describes the hue; brilliant, not blatant. And that is not its only asset. The reddish-brown young shoots; the bright green, crimson petioled leaves each of three fringed lobes; the sweet but faintly scented flowers in May and the parallel-winged fruits; all these are to its credit.

Seeking a closer intimacy with the Maple than the Maple encourages is no less a shrub than *Caesalpina japonica* which, officially, should not be hardy in these parts without wall protection. The generic name commemorates Andrea Caesalpino (1519–1603), the great Italian who first applied the philosophy of Aristotle to the morphology and physiology of plants, and whose doctrines had so large a share in moulding the ideas of Linnaeus more than a century later.

Caesalpina japonica is usually met with as a straggling shrub six to eight feet high. It dislikes pruning;

Plate XII

p. 354

SHORTIA GALACIFOLIA [×⅛]

Plate XIII

p. 351

SANGUINARIA CANADENSIS *var.* PLENA [×$\frac{3}{5}$]

a shortened branch often dies back a considerable distance. It is, however, seldom necessary to warn even the most enthusiastic knifeman; the plant has its own way of discouraging the operation. The branches, the twigs, the very leaves are armed with sharp thorns all curved towards the centre of the shrub. The pruner, venturing an arm among the branches, is hooked. To release himself, he must further insert his arm. His shoulder is caught, then his body. Clothes in tatters, head bloody (and not unbowed), he is eventually extricated, swearing an impotent vengeance. That of active defence, however, is only an incidental function of the recurved thorns. Their real purpose is to make it possible for the plant to gain the sunlight when accident, including man, has placed it in too shady a position.

Knowing practically nothing of its likes twelve years ago I placed one on a shaded bank. A Holly of some twenty feet was within four yards. The *Caesalpina* made a bee-line for the Holly, reached it and is now within a yard or so of the top of the tree, and actually sending out a feeler for a still higher support.

Nothing could be in greater contrast to the ferocity of the thorns than the appearance of the flowers; soft yellow butterflies fluttering round an upright or slightly pendulous central stem up to a foot in length. Although the shrub is of the *Leguminosae*, surely no flowers could be more unlike those of a legume than these. They are rounded, and about an inch and a half in diameter; the five petals are almost equal in size and similar in shape; the calyx is tubular and the ten stamens prominent. Is not such a composition strangely at variance with our general conception of flowers of the Pea tribe?

Berberis Fremontii (fig. 39, p. 416), grafted on Mahonia, drags out a not too happy existence on the sunny side of *Caesalpina japonica*. The latter plant

is not to blame; the cause of the Barberry's debility must be laid at the door of an indifferent foster-mother who, with the ambition of its species, sends out shoot after shoot of its own in attempts to force the illustrious scion off the throne.

B. Fremontii is one of the most beautiful and distinct of a very large genus. Its charm lies in the silvery-blue pinnate leaves, each made up of from five to seven leaflets armed with spines at tip and sides. It, together with its close relatives *BB. trifoliata* and *haematocarpa*, is native to the hot, dry lands of the southern part of western North America. Not considered generally hardy, and often grown under the protection of a wall, it is much more tolerant of weather conditions in this country when on its own roots. The difficulty is to procure it all of a piece, so to speak. I, at all events, was unable to find other than grafted plants, and even they were not in general trade circulation. There was nothing for it but to attempt to strike a cutting or two. After many failures we eventually succeeded in this by using slivers from year-old shoots, each sliver being about three quarters of an inch long, sufficiently thick to include a shaving of hard wood, and supporting at its centre a young growth; a carefully cut heel-cutting, in other words.

Within a short distance of the last is another Barberry, a stout, vigorous individual with no affectation of tenderness nor other nonsense about it. I bought it under the name of *Berberis macrophylla* Hort., a name of no particular significance inasmuch as there are many species with larger leaves, and a misleading title, too, as it is also given in gardens to *B. xanthoxylon*.

In parenthesis, the abbreviation Hort. (*Hortorum*= of gardens, or, if you choose, *Hortensis*=of garden origin) attached to a name without other authority invites scepticism as to the name's validity.

The shrub (fig. 11, below) is, I believe, *Berberis aristata* of de Candolle. Closely allied to *B. Chitria*, it is distinguished from that species horticulturally by blooming three or four weeks earlier, by its second year wood being of a general grey colour and by its bright yellow flowers being carried in simple racemes

fig. 11

BERBERIS ARISTATA [× ⅔]

(fig. 11), not in panicles as in *B. Chitria*. Both species reach ten feet in height and are happy in sun or shade; both, in a word, are very noble members of their genus.

To-day is the eighth of June and just outside my window a group of Lupins and clumps of Irises are reproaching me. They ask if I repent the hard things I have said about herbaceous border plants. Contrition has me by the throat. But wait. Was it not herbaceous borders rather than the plants that drew my criticisms? At any rate, being prepared to take back anything, whether I said it or not, at this moment of acute penitence, I withdraw all strictures on the plants, whatever may be my opinion of the borders.

The bed of Lupins, in which young ornamental Cherries are planted—that sentence alone indicates

my change of heart; before, I would have said "a bed of Cherries with undergrowth of Lupins"—the bed of Lupins, then, is backed by a spreading Mimosa and contains hybrids of *Lupinus polyphyllus*, florists' Lupins, of every available shade of colour; dark red, rose, light pink; yellow, buff and isabelline; blue in a dozen shades; white and parti-coloured. The spikes, from two to over four feet high, are crowded and kept erect by branched twigs which were stuck round about the plants before they flowered and are now hidden by leaves. The bed is radiant; softly radiant; the cut-up ribbon of a rainbow set in patchwork. Some plants are most effective when arranged in colour blocks, but Lupins are not of their number. The polychromatic pattern is the only one for them. The many augment the beauty of the individual; the individual completes the glory of the mass.

And Irises. My previous remarks on the subject were not charged with enthusiasm, so far as I recollect, but never until now have I seen their beauty with a seeing eye. Worse than that, I was under the firm impression that, on a distant view, their flowers faded into the background. Fully expecting to have my opinion confirmed, I took friends by the arm and led them fifteen, twenty, thirty yards away. They found the Irises clearly visible. So did I, to my great astonishment. Could it be some curious effect of the light? It wasn't; I viewed them morning, noon and night. Their colours were always easily distinguishable except, and this I think must have been what originally misled me, except, I say, in the case of those of smoky shades; grey-yellows, brown-pinks and so forth, a great number of which were in cultivation some years ago. "Quaker Lady", if you remember it, might be a tangle of yarn at twenty yards.

Nineteen hundred and thirty-seven may be a

particularly good year for Irises. Mine, at any rate, have never been so magnificent. Stems of an average height of four and a half feet, firm and upstanding. Leaves thirty-three inches long by two and a half in breadth and flowers with a spread of over six inches. All this in plants growing in soil that has never had a scrap of lime nor any description of manure. Will this record of the indifference of "German" Irises to lime cause a gentle flutter in iridological dovecotes, or will the limers tell me, rather testily, that the plants would have been twice as large and three times as beautiful had they been treated to a helping of calcium carbonate in some form or other?

In this connection there is another thing I should like to mention, but only mention, for the lot of the preacher of strange doctrines is often painful. It is that I have never observed that serious disease of Irises called Rhizome Rot in this lime-free garden.

Beautiful though they are, I am still unconvinced that Irises deserve a garden area all to themselves. Their period of blooming is too short. An out-and-out enthusiast will tell you that the *genus* can provide a succession of flowers throughout most of the year. So it may, but what of that? The average gardener is not concerned with the capabilities of a genus. He points to a group of Irises that in return for twelve months board and lodging gives him three weeks of flower and he does not believe that the habit of growth of this species and of that will occupy his interest during the long flowerless period. An interest, he will tell you, which demands blocks of barren, monotonously similar greenery, or even bare ground for over ninety per cent. of the year is an interest to be avoided.

Is the habit of looking for trouble common in gardeners, or is it peculiar to myself? An outcome, maybe, of a medical training acting upon an anxious

disposition? With an ever vigilant eye for defects, failures and mistakes I take the normal, or the extra-normal so far as that goes, as a matter of course. The fly in the gingerbread of this perfect June morning is the moulting of the Hollies. They are shedding leaves at such a rate that the new ones cannot cover the trees quickly enough to prevent their looking bedraggled slatterns. They must feel it as acutely as I do.

In a perfectly organized, fully staffed garden, Hollies are no doubt trimmed in May or early June so that all their troubles may be got over at once. For it is rather hard, when you think of it, to allow a tree to make a new dress in June when we fully intend to trim it into our idea of shape a month or two later. Why do it, then? you ask. Because there are only twenty-four hours in each day and those in early summer are fully occupied.

Taking it all in all, the Common Holly is perhaps the most useful evergreen tree we have. The lustrous foliage, the generous show of red, orange or yellow berries at the dullest period of the year, its sturdy self-reliance and talent of keeping leafy to the ground combine in making it both a valuable ornament and a stout protection. The trunk, too, has a quality that is apparent after the removal of the lower branches. Grey and roughish, its beauty is of that unobtrusive kind which, disregarded in the months of splendour, gives pleasure to the winter-weary eye.

Our Hollies are old. How old, I cannot say. Do a height and breadth of thirty feet as average dimensions tell you anything?

Opposite the lower Allotment Beds on the garden side is a large group of the trees. They have arranged themselves into a *cul-de-sac* with a wide open mouth and narrow end. It might have been made with the object of sheltering half-hardy shrubs, for the mouth opens towards the west.

Our ideas in 1923 of what was hardy and what was not in this particular garden were very largely theoretical, and our planting of the *cul-de-sac* was marked more by variety than by knowledge. To begin with, let me say, we trimmed the Holly into a vertical wall for some ten feet, then dug beds in the line of it. In the first portion of these, that almost opposite to the lower end of the fourth Allotment Bed, we planted East Asian Witch-hazels. The common American member of the genus, *Hamamelis virginica*, spoken of as interesting, was given a place in a less obvious position; its virtues are more of a therapeutical order than a horticultural. The Essex Witch-hazel, however, hearing there were others about, insinuated itself by a seed into the bed, and exactly in continuity with the high and mighty of the tribe. It is not really a Witch-hazel, nothing more than the Common Hornbeam in fact, but since before the days of Gerarde it has been told it *is* a Witch-hazel, in this county at least. So serious and so prideful is our young Hornbeam's assumption of the rôle that, very wrongly, we have left it in the place of its choice for the time being.

All the Asiatic Witch-hazels flower in the depth of winter. Careless of frost, snow or other inclemencies, the fragrant blooms open on the leafless twigs; each small in itself, they make a brave picture in their stalkless, crowded clusters. *Hamamelis mollis*, the Chinese species, is the most popular of the genus and often in flower on Christmas Day. The other oriental Witch-hazels in cultivation are forms of *Hamamelis japonica*. The robust var. *arborea* becomes a small tree. Its deep yellow flowers, with petals like unevenly shrunk ribbon, are scarcely less beautiful than those of *H. mollis*, though a shade smaller. Var. *Zuccariniana*, also a tall plant, has spidery blooms of too pale a yellow, and is not to be mentioned in the same breath with either of the

previous. Var. *flavo-purpurascens* (once *H. japonica* var. *rubra*) comes almost into the list of the elect with its purple calyx showing through between its red-hued petals. That, anyhow, is my opinion; you may not like such a colour combination. Though the Holly wall is, I believe now, quite unnecessary to the Witch-hazels as a protection, it supplies the requisite background, a thing, I confess, I never as much as thought of at the time of planting.

I entirely rely on Mary for the finer touches of the art. No doubt she had considered the nature of the screen against which yellow flowers on bare branches would best show up and, finding they were to be backed by Holly, let it go at that.

Like other amateurish amateurs, we committed the sin of overcrowding our plants. The explanation of this common vice is, I believe, to be found in the modesty of gardeners. We read that such and such a shrub may attain so many feet in height and breadth in favoured gardens, but we cannot believe that our own domain can possibly come under that exclusive category. Did I say modesty? That is not strong enough. (Modesty, though the most paralysing of the virtues, does not entirely blind its possessor to possibilities, even remote possibilities.) If an inferiority complex embraces the objective, then it is that abominable affliction which is responsible. We consequently assume that a plant said to have a spread of fifteen feet in Canaanitish gardens, cannot, at the best, cover more than nine in ours.

It often happens, however, that either the plant's or the garden's capacities are under-estimated. Not nine, nor fifteen, but twenty feet are gradually appropriated, much to the discomfort of less aggressive neighbours. We turn away from the scene. What else is there to do? The encroacher, a noble specimen, ***must*** remain where it is, and an attmept to move the

encroachees will probably meet disaster. Even if successful, years must pass before the deported can pull themselves together; young plants, indeed, will more quickly reach a respectable size than the miserable subjects of eviction.

Be wary, then, in judging the capability of a garden before it has given a demonstration of what it can do; further, if any doubt exists as to the growth potentiality of a plant, allow it sufficient room to reach its advertised dimensions, and then a little more. Beds will look spotty under this practice for some years if nothing but trees and shrubs are planted, but there is no reason to be so conservative. The occasion is one for the employment of herbaceous plants; Irises, Mallows, Asters, Lilies and others of that mighty host are waiting to fill the gaps.

My philosophy, however, did not reason thus when the Holly beds were planted. Though I had scouted the warning that the garden would not maintain a *Berberis*, and in spite of that having been a false prophecy, the memory of it lingered. It had seared my soul, if I may borrow one of the most cherished expressions of the romantic school.

Of an average pleasantness the garden might in time become, but favoured? It seemed impossible. How was I to suppose that *Colletia cruciata*, the Anchor Plant, could ever be more than an octodecimo in our environment? Was it conceivable that that child of Uruguay, born to the expectation of an average winter temperature of 55° F., would make, in Loughton, a macrocephalic specimen of ten feet in twelve years, and sow itself into the bargain? Yet that is its performance and, alas, immediately in front of *Hamamelis mollis*.

We fondly suppose that the gentle nature of a plant is quite incompatible with jealousy and the base desire to suppress a rival. Circumstantial

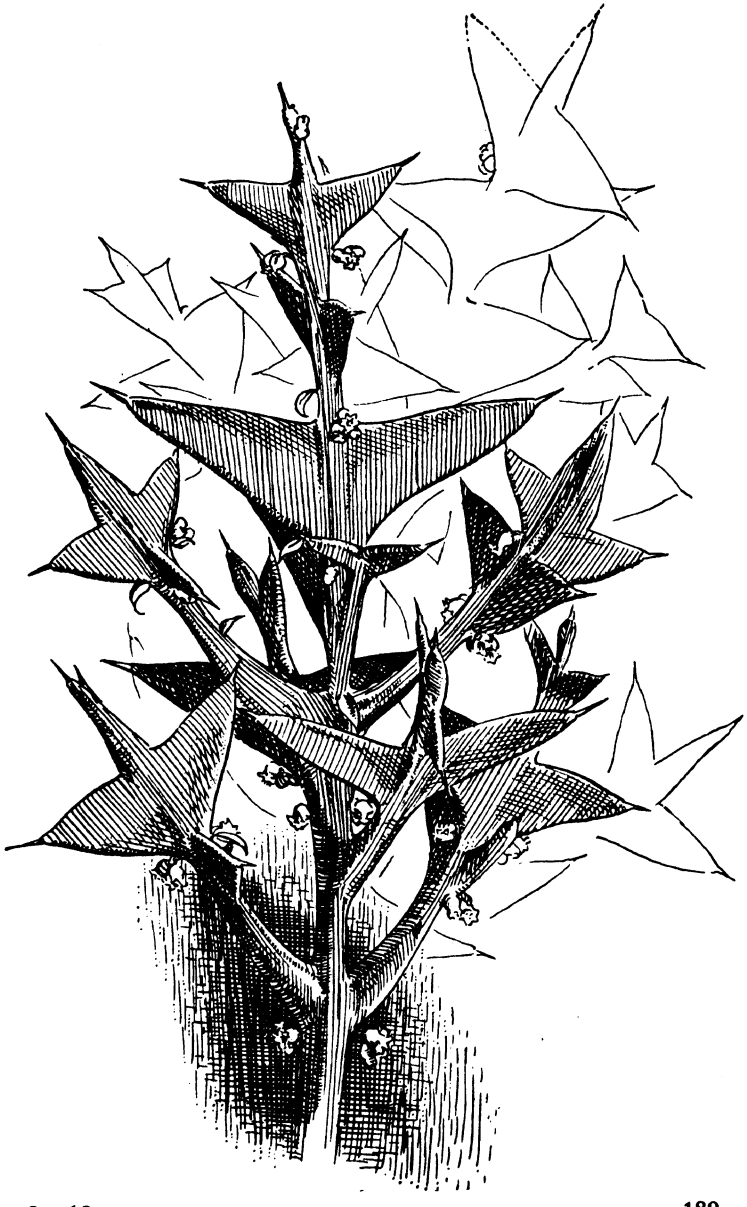

fig. 12 p. 189

COLLETIA CRUCIATA [× ⅓]

evidence does little to support this pretty notion. Had the *Colletia* been next to a Privet, it would have deemed four feet sufficient to advertise itself.

Here it is, at all events, squaring up to a timid *Hamamelis*, and here, apparently, it must remain. Top-heaviness may bring it to the ground, of course, and a difficult situation be resolved. In such an event I should congratulate the *Hamamelis* but mourn the fallen *Colletia*. Not that it is a pretty tree nor possessed of endearing ways. Its attraction is in its interest. The drawing (fig. 12, p. 188) hints at the hardness of the anchor flukes, or spines, and also that chastisement with scorpions can be but a mild irritation in comparison with scourging with *Colletia*. The spines actually serve the purposes of branchlets and leaves and their structure is intended to resist loss of water from the plant. From just beneath each spine a pair of minute, quickly-fugitive leaves is seen in June, and from the same position, in late autumn, appear the apetalous, white sepalled flowers either singly or in fasicles of two, three or four. So freely are they borne and so strong is their perfume that the air for twenty yards around is drenched with fragrance.

Near to the Anchor Plant, and half hiding *Hamamelis japonica* var. *Zuccariniana* from view, is the Chilean *Colletia armata* (fig. 26, p. 348). More refined than its Uruguayan brother in the way than a stiletto is more refined than a battle-axe, it is also a faster grower and flowers earlier in the year.

While the Colletias were still small, we added to the bed's occupants *Photinia villosa*, a shrub principally renowned for the brilliant red of its autumnal foliage. It has grown heartily in height and breadth and, having already half concealed *Hamamelis japonica* var. *flavo-purpurascens*, has commenced the obscuration of *H. japonica* var. *arborea*, an undertaking in which it is receiving whole-hearted assist-

ance from *Jasminum officinale*. The latter plant was intended to run up the Holly, but the Witch-hazel appears a more tempting support.

Still sceptical (in 1923) of the completeness of the bed's furnishing, we planted deciduous Azaleas between the taller plants, and amongst them we tucked in Lilies and Spanish Iris.

"Deciduous Azaleas" is as loose an expression as "evergreen Rhododendrons", yet it carries a very definite idea. There was a time, not so long ago, when the word deciduous in this connection would have been considered redundant, for deciduousness was regarded as the peculiar feature of Azaleas as apart from Rhododendrons. That simple means of distinction is no longer recognized; there are species of "true" Rhododendrons which shed their leaves, while the evergreen habit is no longer thought to be incompatible with Azaleas. Nor is there any other certain means that enables us to say "this is an Azalea" or "that is a Rhododendron". Azaleas are, therefore, now included in Rhododendrons. The name, however, remains in common use. It can scarcely be expected that after having been in currency for some two hundred years it will quickly be abandoned.

As there are so many of them, it is just possible that you may wonder what particular deciduous Azaleas I refer to above? They are those known as "*mollis* hybrids", "Ghent hybrids" and *Azalea pontica*. As the first term is ambiguous, the second arbitrary and the third obsolete, a clearer exposition is perhaps called for. To give it, I must venture into the maze of Rhododendron nomenclature, but, as Rehder's *Manual of Cultivated Trees and Shrubs* has me by one hand and The Rhododendron Society's *Species of Rhododendron* by the other, I feel reasonably comfortable.

Rhododendron luteum Sweet is the common yellow

species native to Asia Minor and the Caucasus. Fragrant, hardy, and very lovely, it is a first-class garden plant and not least among its qualities is its brilliant autumn colouring.

Its synonyms are *Rhododendron flavum* Don and *Azalea pontica* Linn. Hybrids of this species with certain Americans, for example *RR. calendulaceum* and *nudiflorum*, are those spoken of as Ghent hybrids, the description apparently relating to their place of origin.

R. japonicum Suringar, from central and northern Japan, passes in colour from orange, through salmon, to brick-red. Quite hardy and a fine plant in itself, it transmits its beauty to the progeny resulting from hybridization with *R. molle* Don (see below). A species rich in synonyms, it is still spoken of as *R. sinense* Maxim. (not Sweet); *R. molle* Siebold and Zuccarini (not Don); *R. molle* var. *glabrior* Miquel; *R. glabrius* Nakai; and *Azalea japonica* Gray.

R. molle Don, found in east and central China, is in colour one or other shade of yellow and sometimes spotted green. Uncommon in cultivation, its hybrids with *R. japonicum* carry on its fame. They are the famously beautiful "mollis hybrids".

Its synonyms require attention if confusion with the previous species is to be avoided. They are: *R. sinense* Sweet; *Azalea mollis* Blume; *Azalea sinensis* Loddiges.

To give, then, the Rhododendrons in the Holly bed their modern names, I must call them hybrids of *RR. molle* and *japonicum*, of *luteum* with American species, and *R. luteum* itself, instead of *mollis* hybrids, Ghent hybrids and *Azalea pontica* respectively.

In the course of years, the first group wilted under the Colletias' callously expressed indifference to their territorial rights, but the Ghent hybrids, infected with the spirit of the Netherlands, refuse to be browbeaten. One of them, indeed, doubtful whether mere

resistance sufficiently demonstrated its defiance, has taken a neighbouring *Rubus deliciosus* under its protection and allows the protége to clamber through its sustaining branches. *R. deliciosus*, that most beautiful of the Brambles, should always be placed in such apposition to an erect shrub that it may be, so to speak, supported naturally. Its name, by the way, refers to its appearance; more flavourless fruit it is impossible to imagine.

Separated from the collection of *Hamamelis* and their associates by a narrow path, the next portion of the *cul-de-sac*, on the north side, presents two small trees of the Mallow family.

A proud lot, the *Malvaceae*. Imbued with that stern pride which compels its owner to undertake any job suitable to his capacity and which requires doing, we find them clothing the peoples of the world by means of the Cotton Plant, providing food through *Hibiscus esculentus*, timber by the agency of *Plagianthus betulinus*, and demulcents and confectionery through *Hibiscus Sabdariffa*. The common Marshmallow itself has contributed a considerable share to family fame. Made into an ointment, it was used to smear the hands of those about to be tried by the ordeal of hot iron and, so it is said, with protective effect. As a specific for indigestion, a consumer of tumours, a cure for hæmorrhage and a dressing under which "green" wounds rapidly healed its value to the herbalist must have been, maybe still is, immense.

Apart from the more material employments of the Mallows, where would the tellers of tales of the South Seas be without the Scarlet Hibiscus? And what would we, as gardeners, do without *Malvastrum*, *Lavatera*, *Malva*, *Sidalcea*, to name but four genera? I should have included *Hibiscus syriacus*, the Shrubby Mallow; a species which, except in cultivation, knows not Syria. Native to India and China, its medicinal repu-

tation carried its culture to more western lands, including Syria, and its possible introduction to Europe from that country caused Linnaeus, when naming the shrub, to think that the land of its adoption was that of its origin.

Further, the Mallows provide us with plants as different in habit and character as can be well imagined; from that small, flat-rosetted herb of the Peruvian Andes, *Malvastrum Bakerianum*, and the scarcely taller *Modiola caroliana*, a curious monotype with the unusual distribution of North, Central and South America and South Africa, the genus takes us to that handsome tree of sixty feet, *Plagianthus betulinus*.

The foregoing essayette, inspired by two small trees, is intended to give the Mallows a little of the importance they deserve. So many of us, when told that a plant is a Mallow, reply "Oh, a Mallow" (just like that), that a very noble family is in danger of daily insult.

One of the trees is *Abutilon vitifolium*. A rapid grower, free flowerer, and delicately lovely, it is, like so many pithy-wooded, very fertile subjects, apt to die early; completely, suddenly, mysteriously, but not before leaving ample means of its replacement in the shape of seeds.

The other, *Hoheria Lyallii*, a native of New Zealand, is not so frequently met with in gardens as its neighbour and when it is as likely as not it will bear the label *Plagianthus Lyallii*, or perhaps *Gaya Lyallii*. Poor plant, it has been chevied from genus to genus. First introduced in 1853 to the world at large as a *Hoheria* by Hooker the younger, that great botanist, apparently dissatisfied with its bona-fides, brought it forward again two years later as *Plagianthus Lyallii* and confirmed that name in 1871. The title remained unchallenged until 1892 when J. E. Baker

contested it and placed the plant under *Gaya*. Baker's move never enjoyed more than a limited popularity and dissentients to the transference, and to the previous one, gathered their forces, rebelled, and succeeded in restoring *Hoheria Lyallii* to its original allegiance and there, for the moment, it remains.

Gaya, it may be said, is an exclusively South American genus and, so one gathers, not a particularly striking one at that. No genus, anyhow, for such an extraordinarily beautiful plant as *Hoheria Lyallii*. A shrub of rapid growth, my original specimen, sent through the post in a disintegrating boot box on 22nd December, 1930, is now a well branched specimen of twelve feet. From its fourth year here, the sixth, perhaps, of its age, it has regularly borne in July clusters of shallowly-cupped, white, yellow-stamened flowers from the axils of the new shoots, each bloom about an inch and a half in diameter. The abundant leaves, of a fresh, delicate green above and paler beneath, are heart-shaped, jagged, acutely pointed, up to six inches long and held on two to three inch petioles. This description applies to that form of *H. Lyallii* known as var. *glabrata*. I do not know on what authority the varietal name rests. It is true that the type species has a more downy, softer leaf (and is, moreover, a softer, less permanent plant), but to distinguish it from the variety by describing the latter as glabrate is to encourage confusion. The word *glabrescens* might be more suitably applied to the variety, for the difference in downiness between it and the type is only a matter of degree.

Part III

FEELING THE WAY

Chapter Nine

Heoheria Lyallii arrived, as has been told in the last chapter, in a broken boot box. I wish I dare be more specific. I wish, indeed, that I might in this book mention by name all who have so kindly sent me plants and tell them how grateful I am. Many donors I have never seen, but that has not interfered with their generosity. Why, you ask, do I withhold the names of those who have done me honour? I'll tell you.

On a certain occasion, about five years ago, I widely voiced my appreciation of a gift from a friend in Canada. Distance did not protect him from a siege of a hundred days. He cabled me in desperation; could I do nothing to check the incursion of requests, appeals, demands and offers of barter that an exhausted post-office was pouring into his letter-box? Everyone, he said, had heard my clarion cry and was seized with a sudden and uncontrollable desire for *Sanguinaria canadensis* var. *plena*. A truthful man, he rejected my suggestion of endorsing incoming letters "Gone. No address" and returning them to the post-office. He also pointed out that he might endorse those which ought not to be endorsed. His only course was to lie doggo, and relieve the tedium of that position by cursing me.

The experience has made me cautious. A closed mouth, the Spaniards say, catches no flies.

An inhibition in ourselves makes us acutely conscious of its existence in others. I used to wonder why some of my friends were so curiously secretive

as to the immediate source of their plants. One would reply "Aha" on being asked, another "The East", while a third found it necessary to assume a childish innocence and a falsetto voice. Their discretion had also been at fault; they had also suffered censure.

At the outer corner of this part of the Holly beds, *Aegle sepiaria* stands on guard, with bayonets at the ready. Belonging to the sub-family of the Oranges, its white, sweet scented flowers do the clan justice; its fruits do not. Pretty enough in their way, yellow spheres as large as the aniseed balls we sucked in childhood (and took from the mouth every minute to see what colour they had turned), their texture is puffy and their taste unpleasant. Grown as a hedge, *Aegle sepiaria* is magnificent. To see it so, you must beg for a glance in Mrs. Rivis's garden at Saxmundham during May.

As an ordinary, protective hedge, it would be thoroughly efficient against the marauders hedges are intended to resist, but I am not sure how the law of England would regard it. Our kindly justiciaries, inclined to look upon trespassers as more sinned against than sinning, might find the hedge's owner guilty of intent to do grievous bodily harm, or at the least denounce his hedge as an intolerable nuisance to the neighbourhood.

The narrow portion of the *cul-de-sac* has, at the foot of the Holly walls, parallel beds six feet in width separated by a nine-foot wide grass path. *Grevillea sulphurea*, standing on the north side, fuses wide and narrow parts. It has supported the tests applied by the weather for twelve years and is now ten or more feet through. Like other proteaceous shrubs, it appears strange to European eyes. The small, narrow, scentless, pale yellow flowers are held in clusters at the ends of lateral twigs. Each presents a tubular calyx with its

four segments recurving at the tips, two of them being shorter than the others. The longer segments are seperated from each other almost to the base of the tube and from between them protrudes the long style, carrying a bright green stigma. Before the flower is fully open, the stigma is clasped between the then-congregated sepal tips, each of which carries a stalkless anther in its curve. On full expansion of the bloom, the stigma is freed and, although at that time unreceptive, is seen to be charged with pollen from the anthers with which it has been in contact. This distribution of pollen seems gratutious; it is easily blown off the stigma and actual fertilization takes place by insect agency when the stigma is ready for the act; that is, when it becomes sticky. Yet one cannot suppose that the placing of pollen on a dry stigma is a purposeless act. May it not be in the nature of a second, or rather a first string to the bow of fecundity? A positioning of pollen in prospect of the rapid maturation of the stigmatic surface in the sun of New South Wales? The same occurrence takes place in other plants of the *Proteaceae*.

The narrow part of the *cul-de-sac* has, in its time, held many plants. Thinking that within its sheltering walls many half-hardy, or less than half-hardy, subjects would be suited, I planted shrubs which caused my friends to look at one another, raise their brows, then look inquiringly at me. I daresay you know the kind of look. You have seen it directed at others? Quite so.

Amongst those plants was *Clethra arborea*; a ship that passed in the night or, at the most, in nine months. I speak of the incident lightly, but be not deluded.

" I am not merry, but I do beguile
The thing I am by seeming otherwise."

The loss of *Clethra arborea*, the most glorious of its

genus, was a bitter disappointment and one, I may add, that has recurred three times. *Fremontia mexicana* gave us a glimpse of its lovely yellow flowers and then flitted on a frosty night. The sister and

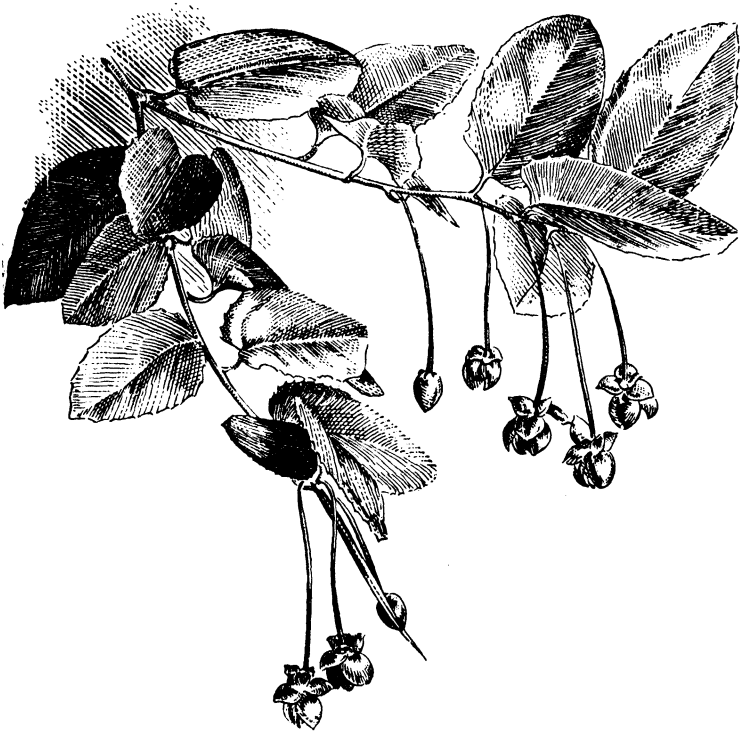

fig. 13 p. 201

BERBERIDOPSIS CORALLINA [× ½]

closely similar species, *Fremontia californica*, maintained its ground for four years but fell a victim to the winter of '28–'29.

Such tragedies as these were perhaps to be expected but the decease of *Tricuspidaria lanceolata* was

another matter, for it continued to flourish in other parts of the garden. Something was wrong with the *cul-de-sac*. It was behaving worse than the open ground. I had hoped it would prove relatively frost-proof. The wretched thing positively collected frost, if one may so express it. The frigid air could not flow away; it was trapped as in the bottom of a valley.

Near the end of the blind alley I planted *Berberidopsis corallina* and there it still thrives. But let me say the wall is broken there and always has been; once made by scraggy Hawthorn, now by Yews, it permits of ventilation. Besides, the *Berberidopsis* occupies the higher side (I should have said that the *cul-de-sac* has a sloping floor) and therefore, from this cause and that is reasonably safe from stagnant, frosty air.

Berberidopsis corallina (fig. 13, p. 200), a woodland plant from the Chilean province of Valdivia, is often described as a climbing shrub. In this garden it shows no particular fancy for the upper air. It *will* push up and through a Holly but undoubtedly prefers to crawl about the ground. I am not aware that there is a variety *humilis*, but if there is I've got it. Now the ground is no place for such a plant, whatever it prefers. Wandering about beneath a thick planting of Azaleas the long shoots cannot be ripened by the sun, nor, if they flowered by any chance, could the flowers be seen. I suggested a compromise to the plant. "Would it not," I asked, taking the shoots in my hands, "would it not be pleasanter to ramble over the tops of Azaleas", thereupon placing them in the appropriate position, "than to shuffle, objectless, along the ground?" The experiment, apparently, has been approved by *Berberidopsis*. It now wantons over the Azaleas and flowers every year.

They, the flowers, are borne singly on long red stalks at, and near, the ends of the growths from July

until September. The segments of the perianth show no clear differentiation into petals and sepals; they are in total number as many as fifteen, of a rich, deep red and arranged into a rounded, compact blossom.

I expect you have noticed how common is the colour red in the flowers of Chilean shrubs? None of your washy or magenta reds, but genuine reds, though, naturally, not all of the same shade. Consider these few, set down at random: *Philesia buxifolia, Desfontainea spinosa, Mitraria coccinea, Asteranthera ovata, Lapageria rosea* and *Tricuspidaria lanceolata.* All have flowers which, if not entirely red, have red as their prevailing colour. So striking is the peculiarity that, were I asked to guess the habitat of a reasonably hardy evergreen shrub with red flowers, especially if they were fleshy in texture and tubular in shape, Chile would be my first shot.

While reading of happenings in the *cul-de-sac,* it has occurred to you that the competition of tree-like Hollies must have seriously interfered with the nutrition of less vigorous plants? Although the roots were cut off sheer with the walls of foliage when the beds were made, the soil must have become again netted with roots long before now, for Holly is not a sulky tree. How, you ask, could Azaleas be expected to contend against such a rival, particularly in a district of small rainfall?

I'm afraid the question of competition never crossed my mind when the *cul-de-sac* was planted. As things have turned out, I am glad it didn't. Even our simplest projects may be wrecked by too meek an acceptance of theoretical knowledge. The Azaleas, at any rate, behaved, and continue to behave, as if they were unconscious of any struggle for existence. This does not mean, of course, that competition does not exist, but that Azaleas are able to thrive in spite of it. This fact Linnaeus had observed; the name he

gave the genus is derived from the Greek *azaleos*=dry; it referred to environment.

All Rhododendrons are relatively xerophytic; that is, they possess means of limiting loss of water from their leaves and are, therefore, able to endure considerable drought. This characteristic is particularly marked in deciduous species and in those which inhabit the alpine zone.

In the present instance, the influence of the Holly is not entirely adverse. It compensates in some degree for its constant abstraction of water from the soil by protecting the plants within its walls from wind, the most powerful evaporating agent, and from at least half of the direct solar radiation, the other great water waster. The relation of the Holly to the Azaleas is, in fact, comparable to that existing between a devoted henchman and his lord. His own appropriations are in the natural order of things but any attempt on the part of an outsider to rob the lordly pantry he strenuously resists.

Lilies, as already has been mentioned, were planted among the Azaleas. *LL. pardalinum, Henryi, canadense, speciosum, longiflorum* and a robust form of *elegans*, which I believe Wilson would have put down as the typical *L. Thunbergianum*, were put in the soil with all the ceremony and observances advised by the best authorities. On the whole, they were a failure. Even the ubiquitous *L. Henryi* disliked the situation, not, I believe, on account of acid soil and partial shade, for in another part of the garden it is happy in more acid soil under Corsican Pines, but because moisture was at a premium the Lily was unable to pay.

L. pardalinum, which normally seeds itself about the garden and grows seven or eight feet high, liked the beds no better. *L. canadense* departed thence, not solemnly, but with precipitation. We did not

expect *L. longiflorum* to be a permanent adornment, nor were we out in our reckoning. *L. speciosum* var. Melpomene, however, has not only endured the position for twelve years, but also increased in number and become more massive in growth. *L. elegans*, too, has thriven in a fairly open spot, but not where it was overhung by a spreading *Ceanothus Veitchianus* at the south-western corner of the *cul-de-sac*. It did not die there, but waited for better times and in the meantime threw only dwarfed, thin stems. Last winter it so happened that the Ceanothus, having pretty well lived its life, lost about three-quarters of its spread. No sooner was more light admitted to the Lilies than they took advantage of it. Some of them actually flowered in June, and their brood is increasing rapidly. And this, mark you, after their being practically buried under foliage for at least ten years.

We were speaking of the association of Lilies with Azaleas. (One should say of Lilies and Rhododendrons, but custom dies hard.) This subject is so inviting that few horticultural writers can resist it. Plant such and such Lilies, they repeat in happy unanimity, amongst Rhododendrons. No doubt these authors have Rhododendrons of a modest size in mind, but their fine, broad statement, plainly put, suggests no such thing. Now to the man-in-the-street gardener, a Rhododendron is a Laurel-like evergreen that flowers once a year. What does he know or care about the *Lapponicum, Virgatum* or other series? "Pink Pearl", "Doncaster" and "Gomer Waterer" are Rhododendrons to him, and within their crowded ranks he plants his Asiatic Lilies in the full belief that, having followed the authorities, only success awaits him. The Lilies, unprotesting victims, are given the responsibility of their own destruction. They *should* have been happy to push spikes through five

or more feet of cimmerian shade and shine as the children of light. What else could be inferred from the instructions?

Lilies are planted among Rhododendrons or other appropriate shrubs in order that their soil may be protected from the sun and the soil water thus preserved. In other words, the Lilies are in a great measure shielded from drought in so far as that state depends upon evaporation of water from the soil. Rhododendrons are especially useful as protectors, and the lime-free soil upon which they, as a genus, insist is harmless to all Lilies and preferable to most. "A Rhododendron", however, is a term that is no more descriptive of magnitude than "a piece of string". One may be two inches in height and another eighty feet. Now a five-foot Lily spearing through a tiny, prostrate Rhododendron offends the rudest sense of fitness and, we may depend, does not add to the comfort of the shrub. The Rhododendron is not asking to be overhung by foliage nor, xerophyte though it is, does it view with indifference the absorption of water by the Lily's stem roots.

Discrimination must therefore be used in arranging a Rhododendron-Lily association, and not alone in respect to height. There are pleasanter sights, for instance, than the colour effect produced by *L. dauricum* and *R. indicum* flowering in company. To these very ordinary suggestions may I add that, as in nine cases out of ten the shrub is the more valuable plant of the two, no tampering with its comfort in order to advance a Lily's welfare is justifiable. In this, the hey-day of Lilies' popularity, such concern for a shrub is, I daresay, little less than primitive. Yet consider the Lilies; uncertain, coy and squeamish and, for the most part, with no more idea of permanence than a five-pound note.

They have been given many opportunities in the

past to establish themselves as garden ornaments, but with what result? You know as well as I. There are exceptions to their general untrustworthiness, but how many? Seedlings, too, raised by ourselves, from which we hoped so much, come under that tragic category of things which grow and grow and then do rot and rot.

Reverting for a moment to the subject of planting Lilies among shrubs, I once read that *Azara microphylla* was a proper companion for the dwarfer species. That, with a struggle, might be swallowed for, although *Azara microphylla* thinks nothing of growing up to twenty feet, perhaps the writer was thinking of the value of its shade. But what are we to say of his advice to protect Lilies with *Epigaea repens* and *Cassiope fastigiata*? Would any gardener on earth ever dream of putting shrubs so choice, so dwarf and difficult to such a secondary use? It would be on all-fours with using a two-guinea umbrella to keep a sou'wester dry.

I doubted, a moment ago, whether such precepts would be followed but, on second thoughts, withdraw the doubt. Gardeners are no less credulous than other men; more so, if anything. Our engaging faith in the printed word is a thing to wonder at; a thing to look back upon in our declining years with a slow, reflective smile.

Some time ago, a note appeared in the gardening press on *Mitchella repens*. The writer laid down the law with all the authority of a horticultural Solomon. *Mitchella repens* liked this, preferred that and abhorred the other. Much, so he told us, was to be learnt from the appearance of the plant. The smooth, shining leaves (which do not shine particularly) indicated its need of sun, its prostrate habit of rock-garden culture and so on. A friend of mine read the note, and, heedless of expostulation, followed its directions. Within a week the plant was dead.

The moral of all this is not to believe all you read. Do not accept it with that hungry credulity reserved, by other men, for patent medicine advertisements. Scrutinize it, criticize it as you do the Budget. Refer it to the verbal and written opinion of recognized authorities. Above all, put all opinions, even your own, to the crucial test of trial before regarding them as knowledge.

These parenthetical utterances of mine would, I suppose, come under the denomination of wise-cracks. I have always been a wise-cracker; always ready with unsought advice, aye, and determined to give it. Some of my friends are indulgent to the frailty, some show impatience while others, in self-protection, take the floor themselves.

Advice, it appears, when it is expressed with conviction, becomes dictation and more than once, though you may not believe it, I have been called too dictatorial. *Too* dictatorial. A little dictatorialism was apparently permitted me, much as a dog is allowed a daily bone. It was when I exceeded the ration that censure began. If, however, I am dictatorial, which on a card vote I believe would be agreed on, then it follows I am in a position to say exactly how a dictator regards himself.

Certainly not as an oppressor. He will admit, though, to a deeper knowledge of the affairs of another than that other himself possesses and may take into his own hands their administration. That, I believe, is about the measure of dictatorship.

At one end of the fifth Allotment Bed which, you may see from the plan, is practically opposite the Holly *cul-de-sac*, *Parrotia persica* has grown into a fine shrub of fifteen feet. A shrub, because of its three stems rising from the ground. As a tree it would have but one, and as a tree it should be grown but, as a shrub form suits its position and pleases both the

plant and us, is there any good reason why it should not remain a shrub? Someone may reply that it is found in nature as a tree. For him we have a specimen, kept severely to one trunk, in another part of the garden.

I should be the last to deny that the plant's great asset is in its glorious autumn colour of scarlet and gold, but among the first to maintain that it has other beauties. The foliage in summer is of a lucent green, firm in texture, flatly disposed like that of a Beech, shows no flagging in the driest weather, and, holding some principle distasteful to beetle and caterpillar, remains undisfigured from its burgeoning till its fall. And then the flowers. Small, it is true, and rather rich than showy, they appear in small clusters upon the leafless branches in late winter. Brown-red silky bracts, Nile-green within, support a pale green calyx from the cup of which spring from five to seven stamens, tipped with scarlet anthers. I would not mislead you with exaggeration; in dull weather, anyone not very much on the look out will miss the flowers, but on one of those light happy days we occasionally get in early March, when cirrus clouds float high in a cobalt sky, the sparkling points of ruby will surely catch the eye.

Styrax japonicum, a small tree of about fourteen feet, commands the other end of the bed. There are other Styraxes, but none more gracefully beautiful than this. It is esteemed in its own country and, as that country is Japan, this fact alone guarantees the decorative value of the tree to anyone who has not seen it in bloom. To those who have, it needs no recommending. The perky, yet somehow modest, drooping flowers of purest white which clothe the tree in early summer are enough. Between the *Parrotia* and the *Styrax* is *Decaisnea Fargesii*. A gaunt looking shrub in its leafless condition, its erect

stems massed closely together carry a suggestion of immemorial antiquity. Prehistoric? Yes, but more than is usually inferred from that comprehensive word. Any occurrence which ante-dates records is prehistoric, but in proportion to the time that has passed since trees appeared upon the earth, historical time only began, we might say, last week.

The garden value of *Decaisnea Fargesii* lies in its Wedgwood blue, pod-like fruits and in its long, pinnate leaves. I do not grow it as an ornament, but as a memorial of the two great Frenchmen in honour of whom genus and species are respectively named. Joseph Decaisne, one-time professor in the Jardin des Plantes, was of those remarkable men in whom the nineteenth century was so rich. All was fish that came to his net. As prepared to write a Flora as to undertake research into potato disease, to classify *Algae* as to give instruction in practical horticulture, his like is not often met with in these days of specialization; more's the pity. The Abbé Farges, every bit as illustrious in his way, was one of the gallant group of Roman Catholic missionaries already referred to (p. 32) who carry on their wonderful work in a difficult land and in the midst of an uncertain and often hostile people. His botanical labours, like those of Delavay, Dubernard, David and many another, immense though they were, represented relaxation.

In the same bed is *Betula utilis* D. Don. From its western limit of distribution in Afghanistan it passes to Kashmir and, reaching the Himalaya, runs along that range to Bhutan. According to Collett, it is also found in Japan. I understand that it reaches a higher altitude than any other deciduous tree throughout its range. The specific name probably refers to its use for making twig bridges in the Himalaya, and to the employment of its bark as a substitute

for writing paper and in the manufacture of umbrellas. Not a very successful tree in English gardens, it grows slowly (as Birches go), begins to shed its leaves in August and is not celebrated for longevity. A white and peeling bark is the most outstanding feature of the tree, but even in this particular, there are other Birches that can give it points.

The shadow cast by *Betula utilis* just touches the rare and curious *Berberis ilicifolia*. This is a very different plant from *Berberis ilicifolia* Hort. which is actually a hybrid between *B. Aquifolium* and *B. vulgaris* that appeared, according to Bean, "in Baumann's once famous nursery at Bodwiller, in Alsace, about 1850" and was named *Berberis Neubertii* by Baumann himself and more recently *x Mahoberberis Neubertii* by Schneider in order to indicate its hybrid origin.

The true *Berberis ilicifolia* was named and described by Forster the younger in 1789, and its history is interwoven with events of interest and importance.

In the Introduction to his *Second Voyage round the World*, Captain James Cook, of famous and tragic memory, remarks: " . . . it being thought of public utility that some persons skilled in natural history should be engaged to accompany me in this voyage, the parliament granted an ample sum for that purpose, and Mr. John Reinhold Forster, with his son, were pitched upon for this employment."

Allowing for the fact that captains in His Majesty's Navy were not given to extravagant eulogy in the eighteenth century, Cook seems to have missed the measure of the men who were "pitched upon". At the time of the appointment, their circumstances in London were undoubtedly precarious, but the father, Johann Reinhold Forster, afterwards became Professor of Natural History in the University of Halle, while his son, Johann Georg Adam, was not

only elected a Fellow of the Royal Society at the unusually early age of twenty-three, less than eighteen months after his return from the voyage, but, a year later, was appointed to the Chair of Natural History at Cassel. He collaborated with Cook in writing an account of the *Second Voyage*, and among his friends he numbered Sömmerring and Humboldt.

On Christmas Day in 1774, Cook's ship, the *Resolution*, was moored in Christmas Sound, a narrow passage of the sea against Hosta Island, in the south-west of the Tierra del Fuegan group, and given its name by Cook in honour of the festival. The captain described the neighbouring country as barren, but abounding "with a variety of unknown plants" which, on the face of it, seems paradoxical. He goes on to say, "The tree which produceth the Winter's bark is found here in the woods, as is the holly-leaved berberry . . .". The familiar way in which the latter plant is spoken of indicates that it was not unknown. It had, indeed, been collected on Tierra del Fuego itself by Banks and Solander when, a few years before, they had accompanied Cook on his first voyage round the world. Solander had given the shrub the name *Berberis sempervirens* in his manuscript notes which now repose, together with the type specimen, in the British Museum. As Solander died before giving the name proper publication, the task fell upon Georg Forster who, thinking the designation *Berberis ilicifolia* more appropriate, so named the plant.

A flowering branch of the species is figured under t.4308 in the *Botanical Magazine* of 1847. Either *B. ilicifolia* is capable of considerable variation, or the artist was strongly influenced by the specific name. The leaves of my own specimen, while they do vary, never go the length of really simulating those of the Common Holly. Some are obovate and

entire, some oblong and spiny-dentate, others have spines only towards the distal end while others again are slightly undulate. Of none would one say: "This is a Holly leaf." They all, however, have certain characteristics in common: a spine at the tip; a short (one-eighth to three-sixteenths of an inch) channelled petiole; an upper surface of dark, shining green and a lower of lighter colour. I have not seen the flowers. They are reported to be orange-yellow in colour and crowded on short racemes. Mr. Clarence Elliott, who saw the shrub in Patagonia, tells me its berries are as large as sloes, of the same colour, but less rich in bloom. The seeds, large for a *Berberis*, are roughly Brazil-nut shaped, very hard, and slow to germinate.

A paragraph or two back, I mentioned the visit of Banks and Solander to Tierra del Fuego. Now the name of Sir Joseph Banks, his support of scientific institutions and scientific men, his energy, learning and resolution are known to most. That he was President of the Royal Society for forty-one years is common knowledge, but the essential virtues of the man are not so generally realized. An account of their exercise is to be found in Cook's *First Voyage round the World*. Storm-bound in Tierra del Fuego, almost paralysed by intense cold, without food or protection, Banks's party would probably have been totally lost but for his own initiative, courage, endurance and generosity. By some of his contemporaries he was considered domineering. We may take it that his companions on the occasion just referred to thanked Heaven that he was.

The two Sequoias, *gigantea* and *sempervirens*, grow peacefully between the Holly *cul-de-sac* and the fifth Allotment Bed. A hundred million years ago their prototypes, not so very dissimilar in appearance, sheltered the giant lizards and, long after, witnessed

the birth of man. Yet man has actually the impertinence to cut down their representatives in order to make his trivial toys.

We are a remarkable genus, and in our vanity superb. Not only is the idea firmly ingrained in us that the world and all that therein is exists solely for our delight and comfort, but we manage to convince ourselves that this convenient arrangement will continue for time without end. We, a few conglomerate masses of protoplasmic cells, with no more control of the greater forces than grains of sand, esteem ourselves the lords of creation and remain inattentive to the probability that, in the same way as Conifers saw both the advent and extermination of the Dinosaurs, they will endure long after the human race has passed.

The two species of *Sequoia*, and there are no more, are said to hold the records for longevity. *S. gigantea*, which your grandfather called the Wellingtonia, is reputed to live for at least two thousand years, and *S. sempervirens* for the respectable span of seventeen hundred and fifty. Even if we are conservative, and reduce these figures by a quarter, we are left with the staggering realization that a *S. gigantea* in its native California, which has attained its full age, was a youngster of some thirty feet when Hengist and Horsa landed on the coast of Thanet. The whole of English history* has unrolled during the life of this one tree. What are the claims of long descent in comparison?

Although the tree has ample time to reach its full height without hurrying, it does not waste the earlier years. My specimen, planted eleven years ago when thirty inches tall, is now about twenty-seven feet high with a trunk diameter of over eighteen inches a foot from the ground. In nature, a height of three

* As distinct from that of Britain.

hundred feet with a trunk thickness of thirty feet is now and then encountered. You have, of course, seen pictures of carriage-roads cut through the tree, an excellent illustration of the working of the road or town-planning mentality.

Fortunately, road-planners are not always cursed with a lust for destruction. Napoleon, for instance, deflected his great road over the Simplon in order to avoid the Cypress of Somma. Had that mighty tree stood within fifty feet of the road to Washout-on-the-Wish, a road which accommodates three vehicles per hour on August Bank Holiday, an Act of Parliament would have been necessary to secure its safety.

Sequoia sempervirens, in my garden anyhow, is less resistant to wind than *S. gigantea*. Every year the leading shoot is guillotined immediately it rises above the protection of a Holly to the south-west of it. Known as the Redwood in California, its bark is really red and so corkily soft that you may punch it with impunity. To see the bark, though, it is necessary to remove the lower branches, if you can summon the audacity to perform that act of vandalism. Guilty of it myself, I seek the usual subterfuges; that they will drop off in any case as the tree grows older; that the outside fringe is constantly being wounded by the lawn-mower; that a path is obstructed and so on. In a few more years, if the tree shows no resentment at my interference, I'll take off a few more lower branches and plant beneath the Redwood some of the plants that in nature seek its company: Vancouverias, Erythroniums and Clintonias.

Before leaving *Sequoia* we must not omit to notice the significance of the name. Sir J. W. Dawson, in his *Geological History of Plants*, records that Sequo Yah, an Indian of the Cherokee tribe, invented an alphabet and taught it to his people by writing the characters on leaves. So practical and convenient

was his system that in 1828 we find missionaries to the Indians using it in a periodical.

Sequo Yah and his tribe were banished from their native Alabama, and the maker of the alphabet died in exile in New Mexico in 1843. But he was not forgotten. When the great Endlicher was engaged on his *Synopsis Coniferarum* (pub. 1847) his friend, Dr. Jacbon Tschudi, told him the story of Sequo Yah and begged that the genus of the Redwood be dedicated to that able and ill-treated man. Endlicher, nothing loath, did so by taking the native name, substituting *i* for *y* and leaving out the *h*.

The sixth Allotment Bed, more familiarly spoken of as the Magnolia Bed, holds, in justification of the latter description, four Magnolias. Of these the most impressive is *M. grandiflora var. lanceolata* (*exoniensis*). Planted because of its reputation for flowering at an earlier age than the type, it has withstood the temptation so far. At twelve feet high and ten through it should, at any rate, be thinking about it. Perhaps its immediate proximity to *Acer palmatum*, grown beyond all expectation, has delayed matters, for the Maple is between the Magnolia and the sun. Flowers or no flowers, the handsome foliage, rusty tomentose beneath in youth, gives it ample title to its place.

I bought *M. acuminata* after seeing it fruiting at Kew. It was a passing fancy. The fruit, nobbly dark red candles, three inches or so high, are nothing much to look forward to for twelve months. The tree itself is handsome; symmetrically pyramidal, large-leaved and a rapid grower; but I would not buy it again, nor take it as a gift. As it *is* here, however, and happy in its life, here it shall remain so far as I am concerned.

Magnolia Sargentiae is a young plant scarcely recovered from its move two years ago. It, together with *M. Campbellii* are the joys of the genus to those dismal souls who find it their duty to sound the

Jeremiah note at every opportunity. *"Magnolia Sargentiae,"* they creak, "ah, you'll be lucky if you live to see it flower."

Acer palmatum and *Crategus prunifolia* have, between them, almost smothered *Magnolia glauca* (to give *M. virginiana* its familiar synonym), but it still manages to produce its pale yellow, almost globular and fragrant flowers from July until September. Native to the swampy woods of the eastern United States, it has apparently learnt the trick of balancing an excess of nitrogen with a minimum of carbohydrate.

There is nothing obscure in the last observation if we recollect that flowering and fruiting are largely controlled by a nice proportion being maintained between the nitrogen absorbed from the soil and the carbohydrate formed by the leaves. Moist vegetable soil holds a large amount of available nitrogen which, being absorbed in excess, is with difficulty equated by the manufactured carbohydrate, and with particular difficulty by the limited amount of the latter manufactured in shade unless a plant is trained in the knack of it.

A moment ago, *Crategus prunifolia* was nearly given an aggressive reputation. Do not mistake me; not the Thorn, but my former ignorance of its dimensions is to blame. Anxious to acknowledge indebtedness whenever it is diplomatically expedient, I take this excellent opportunity to thank the directors of the London and North Eastern Railway for my introduction to the tree. These gentlemen are, or used to be, considerate enough to run local trains at a speed permitting of easy conversation. The 8.42 a.m. from Loughton, for example, was scheduled to reach Liverpool Street at 9.20. The distance is under twelve miles. Talk during the journey was of cures for biliousness, likely starters in the 3.30, the iniqui-

tous way in which local rates were going up and other matters of interest and importance.

On a crisp autumn morning in 1920, a member of our company, after entering the carriage, laid carefully on the hat-rack a bunch of branches bearing large, red berries and tough-looking leaves, brilliant in scarlet and gold. He told us that the tree from which they had been taken was *Crategus prunifolia*, and that he had bought it when the stock of Veitch's famous nursery at Coombe Wood was sold by auction. There was a doubt, a considerable doubt, in his mind as to whether the plant could be obtained. Coombe Wood, he said, was Coombe Wood. Never would we look upon its like again.

I had no idea that the Thorns included a member so magnificent and, finding the difficulty of getting it much less than was anticipated, ordered it at once. There may be better species of *Crategus*, but I have not seen them; scarcely, indeed, can I imagine them. Always chary of recommending plants to others, for tastes differ as widely as their possessors, I can prescribe *C. prunifolia* without a flicker of anxiety but, to save you from my own present embarrassment, suggest that you allow for a twenty-foot spread of its rounded head.

It had not struck me before this moment that the sixth Allotment Bed holds plants from every continent but, I daresay, such pan-continental aggregations are so common in British gardens that the present instance is hardly worth mentioning. Two *Eucalyptus, Gunnii* and *coccifera*, represent Australasia. Perhaps the redundance of their xerophytic machinery in this country interferes with their proportionate development. At any rate, the root growth of a young plant, especially in moist soil, is not commensurate with that of the top and not sufficient to support the latter. Consequently, the taller growing

species, such as *E. Gunnii*, are apt to be blown down by little more than a puff of wind. A stake is useful for young plants of not more than fifteen feet high, but beyond that a telegraph pole would be necessary, for not only is the height of the tree to be reckoned with, but also its top-heaviness.

The behaviour of *Eucalyptus*, incidentally, reminds us that a plant does not always recognize the constantly quoted axiom that a function of the root is to hold its possessor in position, and the less so when the possessor happens to be in an alien environment. Contemplate the fate of *Eucalyptus diversicolor*. Four years ago an eighteen-inch seedling was planted in as sheltered a position as there is in the garden. It outgrew stakes with the thoughtlessness of a schoolboy and at eighteen feet was banded with a piece of motor car tyre (to protect the bark from injury) at six feet from the ground and braced from the band with thick galvanized wire to three oak posts, four inches square on section, driven three-and-a-half feet into the ground at a angle to it of forty-five degrees, and sloping away from the tree. The posts were equidistant from the tree and contained an equilateral triangle; from the tree trunk to any post was a distance of about eight feet. The arrangement would have held an elephant, but a young Eucalyptus with a breeze behind made nothing of it. It pulled out two of the posts as if they were radishes and laid its length against the third. The root was dragged from the soil. It would scarcely have sufficed a Hollyhock.

Eucalyptus Gunnii, a beautiful and slender young tree of almost thirty feet, probably owes its life to inadequate staking. More than once the wind has snapped its stake and its stem low down. Quickly springing up again from the base, it had, so to speak, a reserve of root behind it. Each subsequent

fracture (there were three in all) corresponded to an increase of reserve. And here it is, at last defiant of the dreaded south-west wind; no, not defiant; it bends before the wind in the most graceful way you can imagine.

E. Gunnii happens to be planted behind a foreground of the dark green *Stranvesia Davidiana var. undulata*, the large silver-margined leaves of *Aralia elata var. variegata*, the dusty green of *Cotoneaster Francheti* and, between the *Stranvesia* and *Aralia*, and at their feet, a white-flowered form of *Hydrangea Hortensia*. These, with the beautiful grey-blue of the foliage of the Eucalyptus and its grey-green bark behind, compose a very satisfactory grouping and, let me add, an entirely accidental one. That, of course, is generally the way.

Eucalyptus coccifera, striving hard to maintain a manly port nearby, causes no anxiety from excess of growth. Winter attends to that. The tree's gallant struggle against the odds of a dampish soil and Essex climate encourage the hope, however, that it may one day be victorious.

Whether acclimatization of any plant without a change of form does, or does not occur, whether, that is, an individual can adapt itself to climatic conditions which, normally, it is unused to is not an easy question. On the whole, evidence indicates that even in a species, much less an individual, the phenomonen is so rare as to be of little importance. If anything could bring it about, then the element of time, which resolves most difficulties, should operate effectively. Nature has tried it, but even her infinite patience is unavailing, and that despite her being able to bring the mountain to Mahomet or, precisely, the climate to the plant. In the Cretaceous Period, the climate of western Europe was almost tropical. One might have journeyed from the latitude of Ber-

wick to that of Bombay and noticed but little difference in the vegetation. As the temperature gradually, very gradually, dropped as æon succeeded æon and humid conditions were replaced by drier ones, first the tropical, then the sub-tropical and next the warm temperate type of plants vanished until, in the Pliocene age, some seventy million years later, the plants of Europe were very much as they are to-day. There was not, it is true, a complete change of vegetation in our northern land. Lineal descendants of species of Birch, Maple, Oak, Alder, and other trees which flourished here in Cretaceous times are with us to this day. They, like the Vicar of Bray, are of that rare plasticity which allows of easy adaptation. Why certain plants should be so versatile and others not at all, we do not know. It is tempting to speculate on the problem, but we are not sitting in the market-place of Athens in the golden age. However logical an argument may be, if it is unsupported by evidence, checked and corroborated evidence, it is useless in natural science.

I am fully aware that I lay myself open to the charge of illogicality. First I express a hope that *Eucalyptus coccifera* may become acclimatized and then bring evidence to show that real acclimatization cannot be brought about. But you, reader, knowing what mortals are, understand that hope may exist in spite of logic.

Hard by the Magnolia bed is an isolated *Betula Lyalliana*, a species native to British Columbia and Washington. Its rapid growth, peeling bark of pinkish-buff, luxuriant foliage and happy temperament unite in making it one of the best of the genus. One November I removed a lower branch and was horrified to find sap still oozing from the wound the following February. It was evident that the tree had no natural means of checking the bleeding. A case

for the surgeon, obviously. But how was a surgeon to proceed? Pressure was useless, a tourniquet out of the question; there were no vessels capable of being crushed or tied or even plugged. There was a means, however, that might succeed; a measure as old as the art of surgery itself; *the* measure, indeed, for stopping hæmorrhage up to the day of Ambroise Paré; application of the actual cautery. Wood, of course, is not animal tissue; it does not contain that excess of albumen which, on being coagulated by heat, arrests bleeding in a human. Still, the matter being urgent and the time not one for theoretical considerations, we seared the wound with a soldering iron brought to a dull red heat. The oozing was controlled. What complex physico-chemical action took place I cannot tell, nor is this the place to describe it if I could.

This experience taught me the danger of removing branches from a tree during the so-called dormant period, a period really employed by the plant in developing buds for the next season's growth and in which, therefore, sap is flowing. The inference to be drawn was that pruning should be done either when a tree is about to burst into leaf or actually is in leaf. The sap is flowing more strongly than before but, as the leaves will draw it more powerfully than a wound, only a very little can be lost and, in a short time, none. In the active stage of growth, in other words, a plant quickly ceases to throw sap into the empty air.

Chapter Ten

CONIFERS have always had a great fascination for us, and we have managed to tuck over a hundred species and varieties into the garden. Their mention at this moment is prompted by there being a few well-known representatives just past the Magnolia Bed, amongst them *Sciadopitys verticillata.* The name is rather a mouthful, but there's meaning in it. The popular name of the tree in Japan is Parasol Pine; that, done into Greek, becomes *Sciadopitys.* Umbrellas being more familiar to inhabitants of this country than parasols, as the Umbrella Pine we know it. Not that the tree itself is anything like an umbrella, but the double whorls of slightly upward spreading leaves suggest the ribs of that useful article if, that is, you are ready to grant it three dozen of them.

Sciadopitys is of striking appearance; handsome rather than beautiful, compact, symmetrical and broadly pyramidal. Not only is it the only member of its genus, but it has no close affinity with any other Conifer. If a compound of Pine and Yew can be imagined, then the Umbrella Pine might picture it. Now confined in distribution to a limited area in Japan, that country only represents the last stronghold of a once widely spread race.

The bold front displayed by *Sciadopitys* is, one regrets to say, largely bluff. A wind can twist the branches as it listeth. You and I, understanding this little weakness, plant the tree in a sheltered spot and are rewarded by as much as eight inches of new

growth a year and by the tree's trimness of deportment.

Picea Smithiana (*Morinda*) has grown from four to eighteen feet high in eleven years in a position shaded from the early morning sun. Pyramidal in shape and with drooping branchlets clothed with short leaves directed forwards, it is one of the most beautiful of all Conifers, particularly in the delicate green of young foliage. I am told that this tree and *Abies Webbiana* reach a higher altitude in Kashmir than any other of the *Pinales*, and that they grow in association. Veitch gives the distribution of both as from Bhutan westwards to Afghanistan up to an elevation of 12,000 feet.

The two species are within fifty yards of one another in the garden, yet, while *P. Smithiana* is making a success of its life, *A. Webbiana* has always been inclined to mope. The only possible difference in their respective positions is that that of the first may be slightly moister.

This points the lesson that plants living under the same conditions in nature need not necessarily thrive equally when given situations in a garden which are, to all appearances, very much of a muchness. There is nothing really paradoxical in this. The tolerance or, if you like, the resistance, of one plant is not inevitably equal to that of others living in the same natural environment. The fact is recognized by all gardeners, but if an illustration is needed we have it in this; *Cassiope lycopodioides, Diapensia lapponica var. obovata* and *Vaccinium Vitis-Idaea* live in close association in north-eastern Asia, yet, while the last will flourish in any lime-free British garden and the first, with care, in many, *Diapensia* is remarkably averse to cultivation in the open, and not easy in an alpine-house. (See also p. 369.)

Another beautiful Spruce, growing within fifty

yards of its Himalayan cousin, is *Picea Breweriana*, native to the Siskiyou Mountains of southern Oregon and northern California. At eleven feet high, it is beginning to exhibit its most beautiful characteristic, the pendulous habit of its branchlets. Not yet do they hang perpendicularly, but they have at least

fig. 14 p. 370

CASSIOPE LYCOPODIOIDES [× ⅔]

reached the span-roof stage. In the wild, according to Rehder, it reaches a height of 130 feet. At its present rate of progress, my specimen will attain full development by the year 2115, always assuming that the width of a neighbouring by-pass has not been increased to more than three hundred feet in that time, a far from inconceivable prospect.

(Although statisticians tell us that long before 2115, or 2015 for that matter, the population of this island will be at a mere fraction of its present level, the road-widener is not concerned. To give every "disproportioned thought his act" is the essence of his policy. He will tell you that it is no small thing to gain the esteem of speeding motorists and motor manufacturers, and that the curses of future generations will not affect him. That, in short, to

scar the fair face of England is his job. And one must admit that, with the able co-operation of the jerry-builder, he is succeeding admirably; and deplorably. The powers that be appear curiously oblivious of the fact that Ribbon Development is often synonymous with Slum Extension.)

Here is *Cedrus atlantica*, bought as *var. glauca*, but not so glaucous as another specimen not far away. Perhaps the latter is *var. argentea*.

Whether the three existing Cedars are distinct species or whether they represent different forms of one apparently provides a popular exercise for botanical minds. Sir Joseph Dalton Hooker, in lumping mood, swept the other two into *C. Libani* and gave them varietal rank under their current names. Thus they became *C. Libani var. atlantica* and *C. Libani var. Deodara*. The choice of *C. Libani* as the type was possibly determined more by historical priority, may I say, than for any other reason. Hooker, however, was unable to dominate botanists who came after him, and at the moment *CC. Libani, atlantica* and *Deodara*, by a majority though not an unanimous vote, live in the pride of each being a good species.

I tried to grow them all, but for some reason failed with that of Lebanon and, without giving it another chance, filled its place with another Atlantic Cedar; or perhaps I should say another Atlas Cedar. All the species have nobility stamped upon their every lineament, and appearances do not belie their character. There's nothing petty about them nor do they look sourly upon the wine when it is red or, less metaphorically, upon the soil when it is deep and loamy. That invaluable asset to animal and plant, good healing flesh, they enjoy to a remarkable degree. This implies resistance to both microbic and fungous infection, and there seems little doubt that it is their resinous secretions which endow Cedars with immunity.

Their indifference to a man-handling that would make another plant wince encouraged me to train an Atlas Cedar in the way it should go by a method far from gentle. No less than five lateral branches competed with its lead. To remove or shorten them would have been to deform the tree. They were arranged at equal intervals around the trunk and, as ordinary, spreading branches were perfectly positioned. I did not know how they could be given a correct direction but, a vague memory of certain Japanese tricks coming to my rescue, I decided to try the depressing effect of lumps of lead, each weighing four or five pounds. These were slung on the more or less vertical laterals in such a fashion as to over-correct their position and left there for six months. The treatment was entirely effective and has not required repeating.

Magnificent though they are, the quality in Cedars most esteemed by the greatest number of people is the endurance of their timber. It has been appreciated for at least three thousand years. Every schoolboy knows how Solomon (circa 960 B.C.) traded with Hiram, King of Tyre, for Cedar wood with which to build the temple wherein "all was cedar; there was no stone seen".

The Deodar, too, throughout its natural distribution, provides the wood for purposes demanding durability as the first essential. Thus from Afghanistan to Nepal bridges, houses, palaces and temples are made of Deodar timber. Chests and coffers show a less impressive use of it, but one in which we share the advantage. The wood, from its resinous content, is insectifugal; an invaluable attribute in insect-ridden lands and not without utility in this.

You possibly cherish, as we do, a Cedar wood chest or two? And therein store your most precious raiment to keep it from the moth? These chests of ours,

Plate XIV

p. 353

SHORTIA UNIFLORA *var.* GRANDIFLORA [×$\frac{2}{3}$]

Plate XV

p. 355

SCHIZOCODON SOLDANELLOIDES [×⅔]

brass bound and ponderous, belonged to an uncle who sailed the China seas in the 'seventies of last century; fevers, typhoons and pirates were normal factors of their surroundings; particularly, I used to hope, pirates. My uncle, a quiet, reflective man, unfortunately took little interest in the subject, and beyond a few strong comments on the foulness of a Chinese stinkpot as a weapon of offence, spoke of encounters with pirates in the language of ordinary conversation, and in the same tone as if discoursing on rats or weevils. One was able to gather, however, that the correct tactics to pursue in resisting pirates was to put their steersman out of action with the first discharge from a double-barrelled gun at a range of twenty or thirty yards, and then to encourage his substitute with the other. The gun, by the way, was a muzzle-loading fowling-piece; I knew it well in after years.

You may have read in Robert Fortune's *Tea Countries of China* how he beat off, single-handed, not a single junk but a small fleet by similar strategy and an identical weapon, though he had, by way of reserve, "put a pistol in each side pocket". A pistol in each side pocket! Not a modern automatic, mind you, nor a revolver, but an old-fashioned single-barrelled pistol much like those used to give the starting signal of a foot-race.

What intrepid, matter-of-fact fellows the Victorians were! In their day the Marco Polo spirit—"We commended ourselves to God and then set forth"—still influenced conduct. A job was to be done. It was done. No need to make a song about it.

But into what a by-path the quality of Cedar-wood has led me! The slightest attraction, you will be saying, and off he goes. I cannot deny it. The undeviating way is not for me.

If the parts of the garden were always described in the order of their position the limestone rock-

garden would now demand attention, but as this narrative is rather a chronicle than a topographical sketch, I'll tell you first of the making of the Bank. The plan shows a stretch of rising ground adjacent to the Golding's Hill boundary and running almost its entire length. The width of the bank varies from eleven to fifty-five feet, its height from three to sixteen. Or to put it another way: a right-angled triangle, of which the base was fifty-five feet and the perpendicular sixteen, would contain the bank at its widest and highest part. Again we had to grapple with tangles of Gorse and Bramble, Briar, Thorn and Bracken, but their extirpation was child's play compared with smoothing out the gullies into which the bank had been gashed from end to end.

Ensis, as ever, rose to the occasion. We learnt that Australia consisted of practically nothing else but scrubs, cracks, gorgets and suchlike. The thing, he assured us, was to start the job properly. No good to tinker with it. The quickest way round was the shortest way home. Every time, sir. He would want more and thicker planks, a new mattock or two, pickaxe heads (the old ones had worn too short to "shift it"), while, as for spades and shovels, he doubted the work would be hard on them. It sounded as if Ensis's normal ration of two spades per annum would require supplementing. There are men who use the same spade all their working life and then bequeath it to a favourite grandchild. Ensis was not one of them. I doubt if such another glutton for spades ever lived. He explained that he liked them sharp, real sharp; sharp enough to shave you and, he added, a grindstone is apt to be wearing in the course of time. His view was that a spade to a gardener was as an axe to the woodman; both tools, to be effective, must have cutting edges. He was, of course, perfectly right. Expenditure on spades was certainly higher;

say by thirteen shillings a year, but the saving in time, the most expensive of all garden commodities, was colossal.

The taming of the bank was actually commenced by advancing a broad path along its foot. Simultaneously, the slope was cleared, trenched and brought into contour. Surplus soil from the extending path was thrown on to the bank; its gulchs and valleys had appeared capable of easily swallowing up the excess but, so greatly does virgin soil increase in bulk on being disturbed, that the slope could not hold it. Dry walls were therefore built where the bank joined the path and at such other levels where, without support, the slope would be unstable.

We talked of the Hanging Gardens of Babylon and contemplated terracing the bank, but not for long. The amount of stone that would be required forbade translating such fancies into practice. As things stood at least a hundred tons would be wanted, so we judged. The estimate was conservative.

You have no desire, I feel sure, to know the details of the undertaking, nor have I any wish to go over those weary months again. It is sufficient to say that after a year and a half the bank was spelt with a capital B, and, except for the plants which now adorn it, was pretty much in its present condition. Eighteen months may seem a long time in these days, when a house can be erected in one, but it must be remembered that operations were largely controlled by weather, and that Ensis, with his one assistant, had also the remainder of the garden to look after.

Nature had graciously planted a long length of the upper margin of the bank (while it was still a bank) with Crabs, Hollies, Hawthorns and, in one place, a few Oaks. We tried to complete the line with Scotch Pines, Yew, Cherries, Rhododendrons and a great variety of other trees and shrubs ranging from

Magnolia to *Arbutus* and from *Griselinia* to *Bamboo*. In spite of adjurations to hold our hands we placed a Beech, a common Beech, at the southern extremity. "Beech?" exclaimed the learned on a note of horrified expostulation. "But don't you know how terrible a robber it is? Nothing else will grow near it."

It is certainly a fact that in the Beechy parts of Epping Forest very few other plants *do* grow. Here and there you'll find a Holly or perhaps a Butcher's Broom, both of them plants tolerant of deep shade and drought, but not much else. It is clear, anyway, that a Beech forest discourages interlopers, but to explain their exclusion the word robber must be allowed a wider meaning than usual. A stray seedling of a stranger plant would be robbed of light and air, so deep is the permanent carpet of leaves on the forest floor; permanent in that before last year's fall has reached the mould stage this year's crop has fallen. In the unlikely event of the youngster surviving suffocation, its future is overcast with the prospect of constant gloom. Even in the winter, the uncertain light is broken to pieces by the interlacing spread of branches. Then, in addition to these concomitants of a Beech association, there is the fight for water. The amount required by a Beech may be surmised from its quantity of foliage, and that it gets that amount may be gathered from the freshness of the leaves.

A Beech forest is one thing but, we argued, a single tree another. Surely some compromise could be arrived at by which not-too-thirsty plants could find sustenance within a Beech's sphere of influence? Always providing, of course, that the weaker vessel had a share of light. *Cistus*, perhaps, or dwarf Brooms we thought would face the situation, and so they do. One or two sturdy Rhodendrons, too, strong in their xerophytism, grow almost as well near the

Beech as they do elsewhere. A Sallow, however, has made a poor show. Its performance is indicated by the name *Salix caprea pseudo-nana*, only used, let me say, in the strictest privacy.

In another garden, I have seen *Cyclamen*, *Erythronium* and *Anemone appenina* thriving under the spread of a Beech with no other assistance than the annual mulch of leaves provided by the tree.

If we allowed ourselves to be unduly influenced by the possibly prejudicial effect of one plant upon another in its neighbourhood, a garden would be an affair of ejaculations; an incoherent place, restless and irritating. I am very much tempted to say that one should plant first and think of competition afterwards, but shall refrain and substitute the milder statement that the evils of competition, in a garden at all events, are usually exaggerated. So, however doughty a competitor Beech may be reputed, we should still give it a prominent position. Not as a gage to convention, but because we deem it one of the finest of native trees; perhaps *the* finest, with the exception of the Scotch Pine.

Have you ever met a man or woman who was without affection for these two trees and, let us quickly add, the Birch? The Oak, Ash and Elm, fine though they are, advance no rivalry. What is the secret power of the first three? I believe it is their unaffected friendliness. Friendliness; a quality not be confused with that evidence of a good digestion, the hail-fellow-well-met attitude. Beeches do not roar in your ear, slap you on the back and find the claims of conversation satisfied by asking how you are three times, emphasizing a different word on each occasion. Beeches, indeed, and not Beeches alone, would cheerfully allow all well-metters to pump each others' arms, clap each others' backs and wring each others' necks on an island in the South Pacific.

On the Bank we continued our usual practice of leaving all native trees of reasonable size. At the lower end, the southern end of the Bank, and half-way down its slope, there is an ancient Hawthorn. It had been blown down many years before; sometime in the 'seventies, I thought. Its main trunk lay prone and lateral branches, having been brought upright when the tree fell, continued the growth in height. The head of the Hawthorn is therefore almost at a right angle to the trunk, and the trunk at a similar but opposite angle to as much of the root as remains *in situ*. The tree, in spite of its accident, is, if not the tallest, certainly one of the largest of its kind in the garden. The branch spread is over thirty feet and the diameter of the prostrate trunk twenty-four inches some five feet from its base.

Apart from its curious appearance, the Hawthorn stimulates our interest in another direction. Why, we ask, did it regain an upright direction? Why was the more or less prostrate position, acceptable enough to many plants, repugnant to it? And why, we wonder, should sap apparently find no more difficulty in resisting gravity than in obeying it?

It is all very well to say that it is *natural* for a plant to grow in a certain direction, but by what means does it accomplish its design? What is the machinery employed, and how does it work?

Concentration of plant hormone (growth substance manufactured by the plant) in this or that position by such external agencies as light and gravity supplies part of the answer but not the whole. We must still seek refuge in the broad truth that, in order to endure, a plant must be able to adapt itself to the circumstances in which it is placed. If, then, environment enforces a prostrate habit, the plant must assume it or perish. The necessity of prostration has never been forced upon the

common Hawthorn by its surroundings and nothing else could influence its character. (And see p. 271 *et seq.*)

It has not been easy to persuade much to grow under the Hawthorn's spread. Light is at a premium and the soil, at this bottom corner, touches the London clay and, thanks in great measure to the tree, is in summer as dry as a Bath-brick. That useful section of catalogues entitled "Plants for Shade" was consulted and selections made from the list so enticingly set forth. Every one of them easy on paper, they quickly made it clear that, on volunteering for shade service, they had no thought of Hawthorn, much less of Hawthorn combined with dried-out clay. Of the first contingent chosen, only *Anemone nemorosa var. Allenii* stayed the course.

Perhaps you, too, have just such another discouraging spot in your garden, and also inflict upon it plants which are too rampant elsewhere? Yes? Then you will understand how *Acaena microphylla* (but mighty hearted) found a home beneath the tree; how Periwinkle came to stay and why *Epilobium angustifolium* brightens the scene. *Mimulus luteus*, an American species naturalized in Britain, was nothing loath to start a colony there, and the Lesser Celandine, in a larger form than common, finds nothing wrong with the situation. The last, my conscience bids me say, is not what its popular name declares. It is, in fact, *Ranunculus Ficaria*, and nothing like the veritable Celandine, but although I hold no brief for popular names, from both historical and poetical considerations am inclined to cleave to this one.

The lesser Celandine, or *Chelidonium minus* as the old herbalists called it, was one of the earliest nostrums used for nasal catarrh. Juice from the roots mixed with honey was drawn into the nose. Speaking professionally, I do not recommend the treatment

and warn quacksalvers (who, no doubt, will eagerly search this book for just such hints) that, to say nothing of the nasal catarrh market being already well catered for, the medicinal use of *Ranunculus Ficaria* root will blister their reputations even more than it will a patient's nose.

Close to, but not beneath the Hawthorn, is one of my first Rhododendron species. An easy victim to a Special Offer of Specimen Rhododendrons, I bought *RR. Hodgsoni, calophytum, Thomsoni* and *campylocarpum* in the early 'twenties at what I should now consider extravagant prices. I had never seen the plants in the flesh, but their catalogue descriptions had carried me far beyond the reach of commonsense. Magnificent plants they were; large, perfectly balanced and glowing with health. With the exception of *R. Thomsoni*, nevertheless, all were inferior forms. That fact did not disturb me, for I knew it not. Not until later did I find that the same name might easily cover plants of breath-taking magnificence and at the same time others which would not attract a second glance on Hampstead Heath.

The Bank was not the first position given *R. calophytum*. There was no Bank, indeed, until three years after its arrival. Its original site was too windy. The eight to twelve-inch leaves were torn to rags every winter. The Bank, as soon as it was ready, struck us as being the very place for the plant. For the soil, in its early days of cultivation, did not appear "that owdacious puggy", in local terminology. Immediately after we moved the tree, the Bank became a hillside in Western China. With fancy's eye we saw the Rhododendron, up to thirty feet or more, starred with its white or rosy trusses, and beneath its shade *Meconopsis, Primula* and *Codonopsis*. A wonderful, if insubstantial, spectacle.

The new position, so the Rhododendron told us,

was but little more protected than the old. Still the shredding of its leaves went on. What we were unable to guard against, however, the plant prevented. As year followed year, the leaves became smaller and thicker, and eventually reached a size and substance that made a tear from wind an exceptional event rather than the rule. *R. calophytum*, in order to survive, was adapting itself to circumstances.

In this corner of the garden are more Magnolias and amongst them the handsome *M. liliiflora* of Desrousseaux. Not the same plant as *M. obovata* Thunberg, a tree up to 100 feet and with white flowers, *M. liliiflora* is a shrub of some ten feet and synonymous with *M. obovata* Willdenow. The goblet-shaped flowers, purple-pink outside and white within, continue to open from April until June; not in ones and twos, but in sufficient numbers to make the plant one of the most valuable of its genus for garden decoration. If left to its own devices, none the less, it will waste energy on low, horizontal branches. The removal of these at stem level urges a more upright carriage of the shrub, but it never quite abandons the spreading habit.

Screened by the Hawthorn from the early morning sun, *Rhododendron lutescens* adorns its bit of Bank throughout the year. I think that is a fair statement. In early March pale but clear yellow flowers, trumpet-shaped and an inch across the mouth, almost cover the shrub. In summer bright red young wood and bronzy foliage take the stage while winter finds the plant as pretty an evergreen as any in the garden. In character low and spreading, not compacted or in the least lumpy, it hides its allotted ground and engages softly with whatever may be its neighbour. Taken all in all, *R. lutescens* is among the elect of its kind, and not likely to be displaced by any parvenu.

Next to it is *Hibiscus syriacus*. Something of the

history of this shrub was mentioned on p. 192 but its value only hinted at. Of charming personality, never finicky about soil conditions, always ready to smile on him who plants it, it never fails to brighten August and September. The particular variety in front of us is rather handicapped by the name *grandiflorus superbus*. There is no harm in it; neither is there in the village postman having his son christened Augustus Cæsar, but one is apt to expect a good deal from the holders of such grandiosities. I think, though, that if any *Hibiscus* can justify the description *grandiflorus superbus*, this is it. For the flowers *are* large and reach, perhaps, superbness of the third class.

Why *Hibiscus syriacus*, in one or more of its many varieties, is not more often grown is one of the minor mysteries of gardening. How many other hardy shrubs give such a display in late summer? How many will take pot-luck in the same cheerful way and tolerate, nay, disregard an annual trimming into shape, however severe? It is, to be sure, an old plant, but is age so overwhelming a disadvantage as to obliterate any good in its possessor? Or is there any other explanation why the old is cast aside in favour of the new? There is, I think, one. The majority of us are inclined to miss a step in reasoning and believe that because the untried *may* be of greater virtue than the tried, it must, *de facto*, be of greater virtue. The conception, mischievous in theory, exerts deplorable effects in practice in other spheres than gardening.

The Bank in July and August appears a bank of blue Hydrangeas. Not that they monopolize the area, but their brilliance and abandon put everything else in temporary shade. Now blue Hydrangeas may be the colour of wintry milk, of slate, the atmosphere or the deep sea. These have the blueness of a summer sky.

"What do you put in the soil?" asks the visitor, as though demanding a pass-word.

I answer, with some smugness, "Nothing".

Precisely why Hydrangeas are pink in some soils and blue in others is still largely problematical. We know, empirically, that blueness is usually associated with an acid soil and pinkness with a limy one and also that the best "blueing" soils are charged with absorbable aluminium or, as E. M. Chenery terms it, "ionic" aluminium, those containing soluble iron only producing blues of an inferior order.

Presumably, then, our Hydrangeas owe their colour to an aluminium-containing, acid soil.

Had the soil been limy, the flowers pink and I wishful to turn them blue, then treating them with crystals of aluminium sulphate would have worked the change. A dose at the rate of four ounces per stem for old, established plants is recommended by Chenery, whose paper on *The Problem of the Blue Hydrangea* (Royal Horticultural Society's Journal, LXII, 7, p. 304, July, 1937) should be read by those interested in the subject.

Chromium and uranium sulphates are said to act similarly to that of aluminium. Most of us will be content to take their potency for granted, for whereas aluminium sulphate is sold at sevenpence a pound, the chromium salt is priced at five shillings and sulphate of uranium at thirty-five shillings a pound.

This *Hydrangea* has been described by almost as many names as the Income Tax Commissioners. That indefatigable traveller and naturalist, Dr. Engelbrecht Kaempfer who, I suspect, practised medicine in order to procure the wherewithal for more congenial pursuits, met the plant in Japan and set it down an Elder. Loureiro, who found it in Cochin China, termed it *Primula mutabilis*; the specific name, at least, was to the point. Thunberg, deceived by the

sterile flowers, thought it a *Viburnum*. Not finding any genus to quite fit the plant, Commerson, nothing dismayed, founded one upon it and, for no doubt excellent reasons (of which there is no record), called that genus *Hortensia*. For some little time after, the botanical world was edified by accounts of *Hortensia rosea*, *H. japonica*, *H. opuloides*, and others; nay, not others; they were all the same under different names.

In 1790, Sir James Edward Smith, first President of the Linnean Society, recognized the plant for what it was and transferred it to the Linnaean genus *Hydrangea* under the name *Hydrangea hortensis*. The error he made over the specific name reveals Sir James as no Sir Lancelot. What, indeed, was Hortensia to him? Less than a thought, apparently. The crabbed writing which suggested "hortensis" to his serious eye, never hinted at Hortensia to his imagination. Siebold, however, and independently de Candolle, neither of them altogether strange to paths of gentle dalliance (so I imagine), restored Hortensia's memory and renamed the plant *Hydrangea Hortensia*; a chivalrous act and, moreover, one in accordance with modern usage. And there the name remains, if, that is, the shrub is a good species and not, as Rehder makes it, a variety of *Hydrangea macrophylla*.

If more interested in plants themselves than in their histories, you will have turned the page before this. I venture the hope, however, that you, too, from a few words can conjure up pictures of the past; of a strange plant coming into the hands of past-and-gone botanists, who, with the means at their command, tried their best to place it.

When even now the advent of a new species is exciting, what must have been Commerson's sensations in the middle of the eighteenth century when,

after its perilous journey from far Cathay to France, his Hortensia lay within his hand?

The shrub is raised from cuttings with the greatest ease; fortunately, for on account of the sterility of its flowers there is no other way of propagating it apart from layering, and that at best is a troublesome business. Many years ago, Mary brought a slip from her childhood's home in the north. It grew into a mighty plant and, in its turn, gave us cuttings.

There was a time, when, believing what we heard about its tenderness, we protected outdoor specimens with hurdles arranged triangularly and covered every winter evening with Archangel mats. Part of the garden was like a Cherokee encampment after nightfall. The wigwams were useless; worse than useless. They appeared to collect frost rather than repel it. The mats, perhaps, were occasionally forgotten and the plants left open to the sky but, however it was, the Hydrangeas were mere caricatures of their former selves when spring returned. We gave up our efforts at protection, much to the improvement of the scene and the advantage of the plants. Whatever it may be elsewhere, *H. Hortensia* is quite hardy here. Neither the cold winter of '28–'29 nor the great May frost in '35 prevented plants in the open from flowering as freely as usual.

With cottagers, particularly those who can boast a "bit of glass", the shrub is as popular as those other easterns, *Aspidistra lurida* and *Primula sinensis*. Many a time in the early 'nineties I saw proud owners trundling in wheelbarrows their plants to local flower-shows, and, truth to tell, envied the tubs in which they grew more than I did the plants themselves. And the tubs were of no small importance; other things being equal, the tub and the tubbing would determine the direction of the prize. There were round tubs, square tubs, triangular and octag-

onal tubs and tubs like inverted pyramids. Tubs of polished oak with brass and highly burnished hoops, tubs painted green or black or in a striped design and bearing their owner's initials in elaborate monogram. And what specimens they held! Four or more feet in height, as much in width and pompomed with enormous heads of flower. They bore no such labels as *Hydrangea Hortensia* var. *Mariesii*. Labels were unnecessary; so too was any indication of an exhibitor's name. Tom's, Dick's or Harry's "Hyderange" was known throughout the neighbourhood.

You will understand, then, that

> "When to the sessions of sweet silent thought
> I summon up remembrance of things past"

Hydrangeas claim a share of recollection and, apart from their intrinsic worth, have another tie to my affection.

Chapter Eleven

MANY PAGES back I referred to a Birch of noble girth, a very grandfather of Birches. Its brood must be enormous to judge from the seedlings we pick out from one year's end to another. Extermination, however, is not their inevitable fate. If one should plant itself in an appropriate position, and one often does, there it remains.

Epping Forest has the rather unusual distinction of harbouring the two species of Birch, *Betula pubescens* and *B. verrucosa*, which Linnaeus embraced under the name *Betula alba*. Both have found their way into the garden; you know how these things happen. To the casual eye, both are Silver Birches and, to the critical, there is not much to choose between them in point of beauty. *B. verrucosa* scores, perhaps, with its drooping branchlets; if, that is, you like a genteel droopiness.

Although the Birch of the Bank is actually *B. pubescens*, it shows some tendency to hang the ends of its lateral branches. A kind of half-apology, I take it, for the dryness of the soil within its sphere. Yet, though the umbrella effect of its massive head and the industry of its spreading roots are largely responsible for the aridity, there are contributory causes. The slope of this particular part of the Bank is very steep and, moreover, it supports two lesser robbers who live in the shadow of the greater.

A Crab of five-and-thirty feet and a Holly of considerable size enclose, with the assistance of the Birch, an angle of bank, and this angle, what with drought and shade, has not been easy to populate.

Until, indeed, a wandering seed of Gorse, with wonted courage, germinated and grew in the driest spot, the prospect of inducing anything to grow beneath the Birch seemed bleak. The Gorse demonstrated that the situation was not quite impossible and I, encouraged, planted therein *Cotoneaster adpressa*. As is the way of Cotoneasters, it made the best of a bad business and still perseveres to do credit to its clan after ten years of bitter privation. A few corms of *Cyclamen neapolitanum* also manage to make bricks without straw and each succeeding year flower more freely. Epimediums, too, having become established, are gradually increasing their hold. Now an *Epimedium* does not look a xerophyte but, if not, its roots are capable of exerting a terrific suction pressure. Here they are at any rate; *E. macranthum* in its varieties *niveum* and *violaceum*, and *E. pinnatum var. sulphureum*. The Barrenwort indeed, though in a sense different to that understood by Master Gerarde.

The common name of the plant suggests the question that, if in response to the querulous requests from the devotees of plain English, "popular" names came to be used instead of botanical ones, how much better off would the ostentatiously unostentatious be? Does Barrenwort mean more to them than Epimedium? And what do they make of Crawcrooks, Priest's Crown and Noutberry?

There are indications that, if the Bank went native, Bracken would spread beneath the Birch. There we have the value of Bracken. It will gladly grow in a place so dark and dry as to be insupportable t› any ordinary garden plant but, being welcomed by us there, cannot understand why it is not equally acceptable elsewhere. Yet, should it transgress the bounds set by you or me, it is easily kept in check by removing the young fronds; rhizomes cannot extend without supporting foliage.

Plate XVI

p. 379

CYPRIPEDIUM REGINAE [×⅛]

Plate XVII

p. 378

CYPRIPEDIUM MACRANTHON *var.* ALBIDUM [×⅓]

Now that Bracken has shown itself in the angle of desolation, I see that it is the very plant to suit the place; to be appropriate to it; in the usual phrase, to look natural in it.

Visitors to the wonderful exhibitions of The Royal Photographic Society invariably admire the charming pictures of Birch and Bracken, but how often do they, even when gardeners, make any effort to produce a living picture of the same plants? Seldom; very seldom. And why? Because Birch is a trifle gluttonous and Bracken a marauder. Why, the reason itself suggests why they should be associated, for Birch would find it as difficult to deprive Bracken of sustenance as Bracken Birch. Together, however, they give no impression of taking the bite from one another's mouth. No plants look happier in companionship, and few more beautiful; aye, more than that. There are things which, in some indefinable way, put us in tune with the universe; a snow-capped mountain, a Heather-clad moor, a Silver Birch rising from ruffled, withering Bracken under the pale blue of an autumn sky.

Speaking of Birch and Bracken reminds me that I have unintentionally passed by without a mention another of our native plants, and no less a one than *Iris foetidissima*, the Gladwyn, Gladdon or Glader to the Name Reform League. A plant of spotty distribution, it is native to Afghanistan, Algeria, Central and Southern Europe as well as Britain. An Iris with a history. Theophrastus knew it. Dioscorides used it in medicine and his successors for nineteen centuries have employed it for almost everything from scrofula to the drawing out of arrow-heads. The Latin name must not be interpreted too literally. The crushed leaves are certainly not stinking in the common acceptation of the term. Their smell would not cause comment in a restaurant; an inquiry whether venison

(at the second stage) was on the menu might be elicited, but nothing more. It seems more than likely that the Stinking Gladdon derives its qualification from the Anglo-Saxon *stincan*=to have a smell (either good or bad). The flower is insignificant and commonly of a weary blue, but the fruit makes up for it. On the splitting of the large capsule there are seen in its grey suède interior six rows of orange beads, smooth and glistening, and sufficiently firmly fixed to remain attached for many months after the fruiting stems have been cut and dried for indoor ornament.

The Iris grows in that damp and shaded corner where the Golding's Hill boundary joins our southern limit. A hopeless spot it was before the plant took it in hand. Any attempt to dig it, at any time, amounts to the turning over, each with a popping squelch, of clods of dripping clay which time could not dry nor frost reduce. I must record, too, that the Blue Elderberry, *Sambucus glauca*, makes no more fuss about the position than the Iris itself. The blueness refers to the colour of the fruit under its white bloom.

After this retracement of our steps, we will pass to just beyond the territory of the Birch. Here we planted *Tricuspidaria lanceolata*, fig. 15, p. 245, halfway up the Bank where, exposed to the north and north-east, it is protected from other points of the compass by the combined effect of Holly, Crab and Hawthorn. The tree, I believe, is hardier than generally supposed, and blooms here with reasonable regularity. June is the month of its greatest magnificence, though scattered flowers may be found until the middle of October. This year, 1937, the Bank plant has been unusually fine, clothed for the whole eight feet of its youthful height with the hanging, cone-shaped, ridged, soft-scarlet flowers, each over

fig. 15

p. 244

TRICUSPIDARIA LANCEOLATA [× $\frac{2}{3}$]

an inch long. By the middle of August the five-ridged, globular, velvety, pale-green capsules (fig. 16, p. 247) were ripe and discharging their quarter-inch seeds, like de-cupped acorns, each of them enveloped in a translucent, loosely fitting tunic. (Sown at this stage, they germinate in three weeks in a cold frame.) Before the plant has finished one year's work, it is well started on the next. By the end of July the long-stalked buds of next season's flowers are in plain evidence.

Just below the *Tricuspidaria* is that interesting and autumnally-beautiful shrub, *Fothergilla major*. Planted ten years ago at what a bookseller would call a convenient size for the pocket, it is now six and a half feet high and as much through. Upright, cylindrical panicles of sweet-scented flowers blossom forth in May, but are too much like over-charged pin-cushions to attract any but a botanical eye; the flowers, in short, are sheaves of stamens and have not a petal amongst them. The glory of the shrub is in the brilliant colour of its dying foliage. Sometimes rich gold, more often reddish-orange, tinted yellow, it is occasionally, at any rate on parts of the plant, almost as rich a scarlet as the autumn leaves of the sister species, *Fothergilla monticola*.

There frequently exists a doubt as to which species an individual plant belongs. This is not surprising. Differentiation is attempted by the character of the leaves. That of *F. major* is described as broadly oval, inclined to be obovate, coarsely and irregularly toothed beyond the middle and usually terminating in a tapering point. The upper surface is defined as dull and sparsely scattered with stellate hairs, the lower as glaucous, and fairly richly furnished with hairs of the same type, especially on the principal veins. (To anybody unfamiliar with the term, a stellate hair must indicate an extraordinary structure.

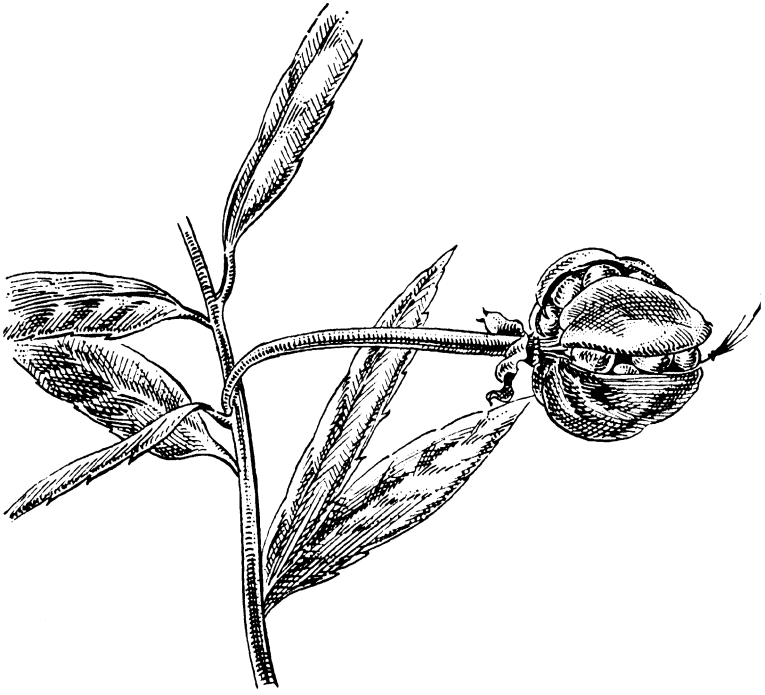

fig. 16

p. 246

FRUIT OF TRICUSPIDARIA LANCEOLATA [× ⅔]

It is nothing more than a multi-cellular epidermal outgrowth in which hair-like processes radiate from a common centre.)

The leaf of *F. monticola*, on the other hand, is specified as roundish, shallowly or scarcely dentate and ending abruptly in a point; the upper surface as smooth, the lower light green, and only slightly provided with stellate hairs which, in themselves have fewer processes than those in *F. major*. If these leaf characters were constant then on them the separation of the reputed species might be made, but so much do they vary in both plants, even in individuals, and so often does a leaf of *F. major* resemble one of *F. monticola* that they, the leaf characters, are unreliable clues. The only stable differences between one plant and the other are in their manner of growth. *F. major* forms a shrub that is more upright than spreading; *F. monticola* one that is open *and* spreading. Whether this peculiarity sufficiently entitles *F. monticola* to specific rank seems doubtful. One inclines to set it down as a form of *F. major* which, incidentally, owes its seniority to having been described by Loddiges very many years before the description of *F. monticola* was published by Ashe.

The other species of the genus, *FF. Gardeni* (*alnifolia*) and the closely allied *parvifolia* are scarcely worth growing.

How many living to-day would know of Dr. John Fothergill but for *Fothergilla*? A member of that famous coterie that gathered about Sir Joseph Banks, and which included Herschel, Horace Walpole, Everard Home, Solander and Henry Cavendish, he owed his fame rather to horticultural enthusiasm and to his encouragement of botanists and botanical collectors than to any outstanding achievement in natural history of his own. But who shall say that the scientist is more important than the provider of

his strength? Is man greater than the grain of corn in the scheme of things? Yet do not think that Fothergill was only a passive personality. His *Account of the Sore Throat associated with Ulcers*, written when he was thirty-six, gave to medicine one of the earliest descriptions of diptheria in the English tongue, and one that gained him international repute. His garden at Stratford-le-Bow, more familiarly Stratford, E.15, still existing as West Ham Park, held perhaps the largest collection of American plants in Europe, and it is most gratifying to know that trees of Fothergill's planting still remain.

American plants appear to have held a special interest for him, and it was largely Peter Collinson's, Sir Hans Sloane's and his own support that made it possible for that extraordinary man, John Bartram, described by Linnaeus as the greatest natural botanist in the world, to explore the flora of eastern North America.

The garden once owned by Fothergill is within eight miles of mine to which, if you are so inclined, we will now return.

Within a few yards of *Fothergilla major* there is a reasonable specimen of *Rhododendron fictolacteum*. I admire everything about the plant except its name, and that, I consider, is an outrage. *Paralacteum* or *lacteoides* would have been bad enough, but they only argue a certain exhaustion of imagination on the namer's part and would not have cast the stigma of the second-rate upon a first-rate plant on its début in civilization. And what is there of such excelling virtue in, so to speak, its prototype? (I have not got *R. lacteum*, but strive to avoid the sour-grapes complex). Its flowers are certainly yellow, always a scoring point with Rhododendrons, but too many are crowded into each truss. The leaves are no larger than those of *R. fictolacteum* and less densely tomen-

tose beneath and, so far as vigour goes, the species cannot bear comparison with the so-called sham. If a simple plant-lover, unswayed by the canons of rhododendrology, were asked to choose between them, he would, I think, pick on *R. fictolacteum*. And after all, its flowers, creamy-white or rose-tinted with a crimson blotch at the base, are quite as attractive as those of *R. lacteum* to those who see beauty in other colours than yellow.

Growing in chinks in the retaining walls are two Hypericums. Neither is held in horticultural esteem, but they are plants of great renown in wider fields than gardening. One is the veritable St. John's Wort, *Hypericum perforatum*. The latter name exaggerates the penetration of the minute, pellucid dots on the leaf though, at first glance, they *do* appear holes and not mere translucencies. This is the plant that has been used from misty antiquity for a myriad physical ills and not a few of the graver, incorporeal evils. Thus for wounds, simple, foul or envenomed, for burns, pains in the joints and internal disorders by the dozen, St. John's Wort was, and in certain quarters still is, the matchless panacea. Nor had it any equal in the treatment of bewitchment, nor, worn as a charm or taken internally, could anything compare with it as a guard against curses, bogles, and things that go bump in the night. Take heed of the learned Dr. Thornton, writing in 1810: "Formerly it was supposed, and not without reason, that madmen were possessed of the devil, and this plant was found so successful in that disorder, that it had the title *Fuga daemonum*, as curing dæmoniacs." The "not without reason" suggests that if Dr. Thornton had not actually used St. John's Wort in "that disorder", he had at least a mind to.

Now 1810 was not in the dark ages. Abernethy was then at the height of his fame, John Hunter had

been dead seventeen years. Jenner's first vaccination had been performed fourteen years before and, less notable event, my grandfather celebrated his tenth birthday in the year Thornton's *Herbal* was published. Yet here was *Hypericum perforatum* with the official recognition that had been bestowed upon it eighteen hundred years previously.

How many of our modern -ins and -ones and -ides, one wonders, will possess as much as a record a thousand years from now?

Generously distributed throughout the northern hemisphere the *Hypericum* is, of course, a "weed", but one has known of less attractive, though rarer, plants being proudly displayed in those places where plants are set before the multitude so that the people may marvel and say, "Lo, it is rare and more desirable than rubies; beyond price is the rareness thereof".

However potent a plant it is, *Hypericum perforatum* does not take to itself all the active qualities of its genus. The second species that was mentioned as growing in the retaining walls is almost as celebrated. It is *H. Androsaemum*, the Tutsan or really *la Toutesaine*; the Cure-all, no less. Not so wide a traveller as *H. perforatum*, which takes the northern hemisphere as its pasture, Tutsan spreads from Britain far into Central Asia. It, too, is called a weed; by reason, no doubt, of its taking root where not invited. A noble plant, nevertheless, with its two or three feet of bushiness, large, ovate and stalkless leaves, its yellow flowers as large as sixpences and big, rounded fruits, turning from green to red and finally to black and standing boldly above the slightly reflexed and bright green calyces in August and September.

Another *Hypericum* grows near the last, not in the wall, but on a dry and darkly shadowed spot above it. It is *Hypericum calycinum*, commonly called the

Rose of Sharon. I first met the plant on a fine summer morning in 1899. We had walked north-east from Alnwick for about two miles, and came upon the ruins of Hulne Abbey. My companion, familiar with the place as an Alnwick man should be, and also acquainted with my leaning towards the romantic side of history, had, without foremention, led me to the scene. He told me that a Northumbrian knight, Ralph Fresborn by name and himself a monk, had founded a Carmelite monastery there and ruled as the first abbot. Sir Ralph had been long in the Holy Land and, impressed with the medicinal value of St. John's Wort (so my friend termed it), had brought back roots to his native land and planted them in the abbey garden.

And here they were, grown into a mass of *Hypericum calycinum*. We gazed on it with awed respect. This, we were persuaded, was the very plant used by the crusaders to heal their wounds. Had not Sir Ralph himself been one of those gallant men? We reconstructed his departure for the East, imagined his exploits there and saw his safe return.

Now as it was *H. perforatum* and not *H. calycinum* which had repute in medicine, and as the title of *H. calycinum* to the description Rose of Sharon is of the most shadowy nature, the fabric of our vision was based on wrong premises. But what of that? A fig for it! Here was the stuff of romance. We were ourselves crusaders for the time.

Had we known the name *Hypericum*, the music of it would have set imagination on another road; a sunny sound we would have thought it, and, the idea no sooner voiced than believed (you know what boys are) would have made the flower an emblem of sun-worship more quickly than this line is written. This, at all events, is certain; had one learned in such matters told us that the word was modified from

Hypereicon, "under heath", and indicative of the plant's abode, we should have been bitterly disappointed and then, recovering, incredulous. Nor can I yet believe that to be the origin of "*Hypericum*".

For all its fabled association with Sharon, *H. calycinum* is not native to that territory nor to other parts of Palestine. Loudon (*Hortus Britannicus*, 1830), makes no bones about putting down Ireland as its country of origin. Nyman, in classic humour, favours Byzantium but, I daresay, would have allowed a free interpretation of that location. More modern writers give the Orient; others, more precise, describe its distribution as south-eastern Europe and Asia Minor, and with that we are content.

Few gardeners, if caught off their guard, would hesitate to say that *H. calycinum* was one of the most beautiful and useful of the lesser shrubs. It will grow in the most desperate places; under trees, in the driest soil, in sun or shade; it asks no top-dressing nor other attention; once established, and establishment is easy, it is a friend for life. And not a friend with tender corns.

Over the bank's moist and shadowed walls *Arenaria balearica* spreads as willingly as moss. Moss, indeed, retires from the field when *Arenaria* means business. Some despise it as a weed or condemn it as a nuisance. Others cannot induce it to grow, no matter how they try. For those who suffer under its domain I feel no sympathy, or no more than for those who profess injury if Nightingales disturb their slumber. To the hitherto disappointed I offer a word of hope. Let them plant it in cool, moist places, near sandstone if possible. I have a notion, but only a notion, that limestone and limy soils are hostile to the plant, probably more on account of their physical properties than from any chemical effect.

Another of the tiny ones (called carpeters by serious

gardeners) that spreads rapidly, not on the wall but on the soil just beneath it, is *Mentha Requieni*, a native of Corsica and Sardinia. Requien himself, if you are curious, was a French botanist who flourished during the first half of last century and died in Corsica in 1851.

The plant has the fragrance of thrice refined mint; the smell of the taste of *Crême de menthe*, if you take me. I can find no mention of its use in cookery nor whether, in common with other species, it "stayeth the hicket", but think it scarcely possible that an aromatic with such essence can have escaped the hand of the herbalist.

There have already been references to the drought-resisting capabilities of Rhododendrons; there may be others before the last page is written, but at this point I would tell of the behaviour of *R. racemosum*. On a sharp slope of the Bank where the soil is sucked by Holly, Crab and Thorn are three bushes of the species; real bushes, not spectres. Planted more than ten years ago, they increase slowly in size but none in the garden bloom more lavishly. And there is actually a self-sown seedling in the wall beneath. The plants are certainly in three-quarters shade, but even then. . . If I tell you that *Polygonum baldshuanicum* has a never-ending, harrowing struggle to live at all on the same bit of Bank you will understand what the place is like.

Quite as sensational as the Rhododendron's performance on this dried out spot was that of *Philesia buxifolia* (Pl. xx, p. 306), one of the greatest beauties from that home of beauties, the province of Valdivia in southern Chile. It was silly to plant it in such a situation but, so intent was I to find sufficient shade (an essential element, I gathered, for its cultivation) that I forgot about the dryness which must ensue after the effect of the preliminary digging of the soil

had worn off, and the roots of the Holly and its companions were again exhibiting their usual enterprise.

As it happened, there was no occasion for anxiety. *Philesia* knew how to take care of itself. Drought, which shrivelled up that capable xerophyte, *Lithospermum prostratum*, left *Philesia* cool and undisturbed. It merely extended its holding and, curiously enough, the underground stems with which it achieved that end ran upwards to what, presumably, was the driest part of the inhospitable area. But, though the plant increased in size it would not flower. I waited seven years and, as the magic number did not elicit a response, moved *Philesia* to a moister and sunnier, though not too sunny, spot. It flowered the following year and has done so regularly ever since.

When next you have the opportunity, examine separate individuals of *Philesia buxifolia*, all taken from the same stock, but planted in different situations. In sunny or dry sites the leaves are smaller, more recurved and arranged more closely than when moist soil and shade are factors of environment. Moreover, the shrub itself, exposed to drought or sun, is dwarfer and more compact than when under contrary conditions. These changes of form illustrate how *Philesia* adapts itself to environment. Where little water is to be obtained, or where it may be easily lost by transpiration, the plant diminishes its evaporating surface and also shields it from the evaporating agent, sun or wind, by its closer, dwarfer habit.

No influence tempers the elements to a plant. If it is to live, then it must temper itself to the elements and, in horticulture, to the blundering ways of man. It needs no costly furs, no assistance from Jaeger, Burberry or the Water Company. Compare your own endowments with those of an adaptable xerophyte, and be modest.

In nature *Philesia* is found growing on trees. On the strength of this, well-meaning, sober men (a trifle too sober, perhaps) have recommended that pieces of decayed wood should be put in the soil when planting it. It is not the wood of a tree, dead or living, that the plant is after in the Valdivian woods but the leaf-soil collected in cracks and pockets of the trees. Not because its desire for leaf-mould is so compelling that the shrub will go any length to get it; if, by some curious provision of nature, a tree collected lime-free loam in its irregularities, *Philesia* would use that as an anchorage and nutrient medium. And here we touch the root of the matter. It is an epiphyte, a tree-dweller, by compulsion, not by choice. To get anything like a share of light and food it *must* climb beyond the hunting grounds of stronger competitors thickly crowded on the forest floor.

Gaultheria Shallon has a share of the dry bank and, with its usual facility in colonization, is rapidly increasing it. A sprig of the plant in the bonnet, in fact, would be a proper badge for the out-and-out imperialist. Every method of land appropriation is known to it; peaceful penetration, aggression, underground insinuation and propaganda—for what else is seed dissemination than propaganda? It is not surprising, then, that Shallon has its critics. According to them it is a land-grabber, a bandit, an unscrupulous interloper and other things which, nevertheless, are considered by the same critics to be essential components of the higher civilizations. There is this to be said for the *Gaultheria*, however; it is as ready, or almost as ready, to colonize a desert as a land of milk and honey, and to the task it will bring the same energy and apparent insouciance. For it no situation is, within horticultural limits, too dark, too dry, too barren (so long as it is free from lime) to be converted into a pleasant lushness.

If this shrub were as difficult as, say, *Gaultheria Forrestii*, we would approach it with uncovered heads. The firm, leathery leaves, the pink-bracted racemes carrying their white or pinkish flowers and the large, purple and edible fruits make up no ordinary plant. But so eager is its growth, so anxious is it to please, that its very generosity defeats its aim. We are inclined to pass it by with scarce a glance and to answer an inquiry with "That? It ramps all over the place."

Never devoted to system for its own sake, I have not attempted to arrange plants in genera, families or natural orders. Ours, therefore, is no botanical garden. It is not hard to find in it hardy Cypripediums associated with Primulas and Berberis with Conifers. Our Magnolias are scattered far and wide and, after you had become accustomed to my inherent lack of orderliness, you would meet without surprise two of them only separated from *Gaultheria Shallon* by two specimens of *Styrax Obassia* and one of *Cornus capitata*. Both the Magnolias are hybrid progeny of *M. denudata* (*conspicua*) crossed with *M. liliiflora*, and both are very lovely trees. *x M. Alexandrina* has flowers which, a faint blush of pink mantling their whiteness, are really more virginal than the pure white blooms of *M. denudata*. That parent has happily corrected the horizontal tendency of the other; more than corrected it indeed, for *M. Alexandrina* is more erect than *M. denudata* itself. The other Magnolia hybrid, *x M. Brozzoni*, has to some extent inherited the ungainly habit of *M. liliiflora* but makes handsome compensation by bearing the largest flowers of any *denudata* hybrid and, by being later than the most in flowering, generally saves them from disfigurement by frost.

The diversity of hybrid children of the same progenitors is often thought remarkable. Their resem-

blance would be infinitely stranger, even if raised from seeds in the same fruit. A likeness between twins does not escape comment; their difference is taken as normal. Why should it be otherwise in plants?

The wonder is that individuals of a species remain so true to type. Think of the potentialities stored in a pollen grain and in an ovule; the attributes of an ancestry going back to the beginnings of life, any one of them liable to crop up in a seedling. And, as well as the impress of the past, the sperm and egg cells hold, so to speak, the plans for at least the immediate future, plans put into execution during the building of the plant. If we did not know that species were sufficiently stable as to be recognizably described, would we not think such consistency incredible?

At the same time, departures from type may be commoner than we suppose. Departures separated from the arbitrary norm by, to us, imperceptible differences. Our discriminating faculties, when exercised on any other organism than man, are not distinguished by exceptional discernment. How many of us, for instance, can see any difference between one sheep and another in a flock? Yet the differences are there; the shepherd knows them; so do the sheep.

To pass from sheep to Heather is a less abrupt transition than some we have attempted, reader, you and I. Heather, indeed, forms the principal part of winter pasture on upland farms in Wales and in the north. From the economic standpoint, its use in gardening cannot compare with its agricultural importance, but is, nevertheless, considerable.

I am brought to speak of it at this point because certain parts of the bank are becoming gradually and spontaneously populated with *Calluna vulgaris* and *Vaccinium Vitis-Idaea*. The Heather will defeat the Cowberry, except in the wetter parts, but

will make amends for that by suppressing Docks, Sorrel, Groundsel, Plantain and other undesirables which have ever found the Bank a pleasant home. Further than that, it is a living mulch for trees and the taller shrubs, saving them from physical drought in summer and physiological drought in winter; the latter by protecting the soil from frost. Apart from all this, a ground-cover of Calluna is beautiful in bloom and not unattractive out of it.

It is, however, as an economizer of time that the shrub makes the greatest appeal to me so far as the Bank is concerned. The latter is an acre in area and requires weeding six times a year, at a minimum. When I say weeding, I mean picking, or pulling, as the case may be, every weed out by hand, and then going over the ground with hand cultivators. The one-operation technique, tickling the surface with a Dutch hoe, whilst conducive to philosophic reflection, bears the same relation to weeding as sweeping dust under the piano bears to cleanliness. Very well then; cleaning an acre thoroughly six times a year is a very different pair of shoes from clipping over that extent of Heather once in the same period.

The Douglas Fir, *Pseudotsuga Douglasii* (*taxifolia*) has not been one of our successes. A short stretch of it occupies a length of Bank, but its vigour and rapidity of growth have not been such as one was led to expect. Perhaps the rainfall is too scanty and the slope too steep to suit its moisture requirements. So miserably were the trees behaving a few years ago that the Scotch Pine and *Buddleia variabilis*, unable to bear the painful sight any longer, sent a few seeds amongst them. The seedlings put animation into the scene and, believe it or not, their appearance has stimulated the Douglas Firs. They have pulled themselves together to the tune of putting on a foot or two of new growth annually. Such is the power of example.

Merely a coincidence, you think, or a demonstration of the roots having reached a moister layer in the soil? Well, you may be right. I only record the sequence of events.

Passing northwards along the base of the bank (as a guide-book would put it) we next reach the flagged path which passes from the entrance gate to the house. The rise is about eighteen feet and the path consists of alternating flights of steps and flatnesses. The steps themselves were designed with an eye to the comfort of the stout and scant of breath; broad and shallow they are, and easy withal.

On the Douglas Fir side, that portion of the path corresponding to the bank is edged with *Berberis Aquifolium*, the well-beloved Mahonia. So well is it known and so highly prized by all who have grown it that no further description is needed here. Bean mentions that for some time after the shrub's introduction in 1823 it brought as much as ten pounds a plant but that now the price has dropped to thirty shillings a thousand. Three a penny! And nice plants at that! Such a depreciation might, in any other walk than gardening, be disastrous for the article and unfortunate for the buyer. Who could be expected to cherish a thing to be bought so cheaply? To the plant lover, however, worth is not assessed by pounds or pence but by beauty and good-nature. If, though, it should happen that these words meet the eye of one who is inclined, just inclined, to esteem a plant according to its price, let him at least pretend that his Mahonia cost ten pounds.

On the opposite side of the path to the Douglas Firs are sundry "dwarf" Conifers. Like others, we had been deluded into planting such subnormalities in the rock-gardens and, again like others, had regretted it. They grew at a rate unheard of in the kingdom of the dwarfs and having become, in a sense, neither

one thing nor another, have been transplanted to a situation where their behaviour will be less likely to cause comment, pursed lips, raised eyebrows and embarrassed coughs.

Many of my friends have quite a passion for these plants. I have done what I could to get one up in myself, but the effort has failed. Nothing more than a forced keenness could I generate, and although that kept me going for a number of years, a natural prejudice has gradually ousted it. My profession, to say nothing of Christian charity, should have instilled in me, if not a liking, at all events a tolerance for dwarf and giant forms, but nothing of the kind has happened. A psychologist would possibly ascribe this defect in character to a too credulous absorption of fairy tales in childhood. At that period a dwarf means more than a being of diminished stature. A little man, a little anything indeed, attracts a child. Are there not fairies of eighteen inches? But a dwarf, to be the genuine article, must be deformed, short-legged, large-headed, hump-shouldered, have a leering and malignant expression and be capable of any wickedness. Does not the sound of gnome or hobgoblin suggest these things?

Let me make it clear, though, that species which are in their type forms prostrate receive no askant glance from me. *Juniperus conferta*, for example, that emerald-foliaged, procumbent shrub under a foot high, is a prime favourite of mine. It is the vars. *nana, pumila, compacta, minima, globosa* of Pines, Spruce and Cypress from which I shrink, but cannot for the life of me destroy. Here they are then; more or less out of sight and to the same degree out of mind.

Beyond the approach to the house, the Bank becomes the American Bank. The title was casually bestowed one day by my gardener on account of the strip containing a number of American Lilies; species

from east and west were at that happy time growing side by side. *L. canadense* smiled at *L.Humboldtii*; *L. Kelloggii* swopped pollen with *L. columbianum*, though neither appeared to benefit from the exchange.

We were rather proud of our American Lilies and absorbed compliments on their cultivation with a pleasant feeling of conscious merit. We gave advice on the subject; stroked a chin over *L. philadelphicum*, frowned at the mention of *L. Catesbaei* and could not understand anyone having the slightest trouble with *L. maritimum*. This past season has modified our views. What before were the most straightforward of plants we now suspect of treachery. The seemingly robust are mimpish after all. The apparently most assured have disappeared for ever. Of them all, only *LL. Grayi* and *pardalinum* have put up anything like a stand. And they do little to ornament a length of one hundred feet of Bank. Why the others should have treated us so badly is beyond my comprehension. Explanation is probably to be found in those profound words of a horticultural philosopher; "Lilies are Lilies." Their ways are unpredictable. It is easy to blame a wet winter, a dry summer; too little drainage or too much; too rich a soil or an impoverished one. These are but conjectures as to what shapes a Lily's fate; guesses based on the assumption that what precedes most probably is causative.

Having had previous experience of Lilies and their ways, we did not entirely rely upon their honesty of purpose, whatever their promises of the previous year. This portion of the Bank was not dependent on their uncertain favour, but held a permanent population of Rhododendrons long before the advent of American Lilies. The Rhododendrons are widely spaced, however, and leave ample room for other plants. The Lilies were in the spaces but, in reserve,

are Lupins. Ordinary Lupins in their now usual but far from ordinary colours. Do not sniff. This year they saved their position from floral dearth after the Rhododendrons had done their part.

The Lupin, we may suppose, takes itself and its duties very seriously. Its contribution to the beauty of the earth is obvious; not so its underground activities. The nodules on the more superficial roots, as in other leguminous plants, turn out nitrogen compounds at a great rate and these the plant does not entirely retain to itself but, unselfishly, bestows a large proportion on the neighbouring soil so that both surrounding and succeeding plants may benefit.

Its roots penetrate the ground to a considerable depth. Whether to thirty feet, as has been stated, or not, it is certain that their borings materially improve drainage.

Then, if planted fairly thickly, Lupins conserve moisture in the soil by protecting it from evaporation, a quality invaluable to plants in their vicinity.

And one more word; the very plants of which I wrote in June are again in bloom outside my window, and it is now September.

The three-feet-high dry wall that prevents the American Bank from slipping into the road is clothed from end to end with my faithful Mrs. Wilson (fig. 6, p. 92). She has Christian names or at any rate initials, but what they are I have forgotten. As there is no other Mrs. Wilson consorting with the Primulas, they do not matter. Such a name, nevertheless, would set the teeth of a nomenclaturist on edge. The plant, we would learn after the tension had relaxed and the specialist's speech become coherent, should be spoken of as *Primula hybrida pubescens var.* Mrs. . . . . Wilson. (Her initials have just come to the surface. They form the not unusual combination J. H.)

The term faithful, as applied to Mrs. Wilson, will,

I fear, be cavilled at by many. They may go further and say that, with them, her conduct has been far from unexceptionable. With me she has been loyalty itself. And this is curious, for I have never laid myself out to capture her regard, highly though I prize it. Perhaps that is the reason of her attachment. Has it not been said by the great masters of such matters that a courteous nonchalance excels in potency the most ardent protestations, however fascinating the suitor? Be the reason what it may, Mrs. Wilson clings to me and, whatever my assumed indifference, I could not bear to lose her.

I bought two plants before the war and planted them in the Ackling garden. Since those remote days she has accompanied me from garden to garden and given hundreds of healthy offspring to admirers. As happy in one soil as another, asking neither sun nor shade but satisfied with either, ready to grace bed, rock-garden or alpine-house and to yearly dress her wall in purple spangles, that is Mrs. Wilson as I know her. I believe I've written something like that before, but let it pass. If any Primula is entitled to two eulogies, Mrs. Wilson is it.

To modern gardeners I may appear as the apologist of ordinary, old-fashioned plants. If what we speak of as old plants needed defence, I should be proud indeed to undertake it. Their very universality, however, proclaims them victors in the struggle for public acclaim, and perennial victors at that. For do not think their horticultural survival is pure accident. It is entirely the consequence of their essential excellence.

Those who have taken up gardening recently and who, infected with the passion of the time, are apt to reject the thing that is not new, are in danger of depriving themselves of the classical plants. Nor is the neglect of old plants confined to new gardeners.

Many of the senior grade possess them, but pass them daily with an absent eye. I have done so myself a thousand times. They have become so familiar as to be, in effect, invisible.

If, in this purblind state, we are shown a new point of view; given some knowledge of the part a plant has played in the world's affairs, our attention drawn to a curious mechanism it displays or to a hitherto unobserved beauty in its form, it regains on us the hold it never should have lost.

My part in the matter is to transmit to you the gatherings from many books, more conversations, and observations not a few and try to pass on the pleasure I myself obtain from plants which, though old in history, are to the mind of constant freshness.

I now propose to re-introduce you to *Rhododendron ponticum*. It runs along the top of the American Bank, separating the latter from a mixed border which, in my understanding of the term, is one where shrubs form the essentials and herbaceous plants the incidentals. No attempt has been made to trim the Rhododendron into a hedge; it grows as it likes and is only checked when it encroaches too much on the territory of weaker neighbours. A very quick growing evergreen, it was originally planted in this position to give a measure of privacy to a part of the garden open to inspection from the top of a passing bus.

At the time I did not fully realize how fine a shrub it is, nor how amply it justifies a place in any garden. One of the most generous of Rhododendrons, its flowering is not conditional on the removal of the seed-vessels immediately after the previous year's display, nor does it impose any other strain upon the gardener. Equally content in sun or shade, almost immune from disease, happy in dry soil or in soil a little more than moist, indifferent to accidental contacts with a lawn-mower it possesses, I think,

every virtue but one; it is impatient of strong winds. To fully appreciate its beauty when in bloom, see it grouped before Scotch Pines some fifty yards away. The flowers have a basal colour of mauve tending, in some plants, towards blue, in others to pink. Mauve is a very lovely colour, the more so when seen through a breadth of atmosphere, and not to be confounded with the patchy magentas so often seen in Penstemons and in the garments of the East End *jeunesse dorée*.

Near the end of the Bank, from between the last few stones of its retaining wall, that pretty Chilian herb, *Ourisia elegans*, throws its long-stalked, cordate, lobed and crenate leaves and stems of scarlet flowers, tubular and open-mouthed. Not the plant for those hopeful ones who "just stick it in anywhere and let it take its chance", *O. elegans* will thrive in a shady place in moist and lime-free soil. Once established, it is immovable by any ordinary cause. Even a mat of Periwinkle cannot smother it.

One of the many plants that impress upon the buyer the truth of the adage that there's safety in numbers, it dislikes to invade a strange garden unsupported. That, anyhow, was my conclusion after losing the last of three, purchased singly. My next essay was with a dozen bought, let me say (to prevent a false impression) at a sale. They cost me four-and-sixpence. I potted some, planted a proportion in a shady place in the sandstone rock-garden, of which you shall hear anon, and put the remainder in the wall. Every one lived and grew amain. Those in the wall have crept along it and up and down it. Presently they will meet Mrs. Wilson who, unless I am deceived, is quite prepared to present *Ourisia* to the curious as her friend from Chile, who, she will no doubt explain, is not so delicate as appearances suggest. And *Ourisia* cer-

tainly does look too tender a plant to endure the rigorous climate of its native Straits of Magellan. No less an authority that Sir Wm. J. Hooker was influenced by its seeming-softness, and that against his reason:

"There can be little doubt of *Ourisia coccinea* proving a hardy plant in our gardens, so far as climate is concerned; *but it is best cultivated in a cold frame*, like alpine plants in general."

Those are his very words, though the italics are mine. Why "alpine plants in general" required a cold frame in 1862, it is now difficult to ascertain. Perhaps our own familiar bogy of winter wetness held a threat of direr menace then than it does even now. You will notice that Hooker spoke of the plant as *O. coccinea*. So did we all until a few years ago when we learned that it was actually *O. elegans*, and that the then supposed *O. elegans* was, in fact, *O. coccinea*.

At the foot of the remaining thirty feet of Bank, too modest now to need a retaining wall, is a patch of *Eomecon chionantha*. Bought at the sale just referred to, also in a dozen lot and at the same price as the *Ourisia*, it looked a tough enough customer to take care of itself in any shady place. We did not think it necessary to plant a few here and a few there, hoping that at least one situation would please it. Nor were we deceived. *Eomecon* has ramped in the bed and run through the bank adjoining. At the moment, it is trying to intimidate a Yew hedge.

It grows, indeed, rather too well but flowers too sparsely. In less shade, perhaps, it would mend its ways. I am sure it would, for a friend, whom I landed with a small armful of plants, never fails to tell me, year by year, how magnificently they are flowering in a fairly sunny place. His object, I feel sure, is to give me the satisfaction of knowing what my plants are capable of. The flowers are white, two inches

across and held on branching scapes a foot or so in height. The plant, sole representative of its genus, has the botanical distinction of forming a connecting link between the genera *Sanguinaria* and *Stylophorum*, and might form the subject of an addendum to that tremendous theme, the distribution of species. For *Eomecon* is native to eastern Asia, *Sanguinaria* to eastern North America and *Stylophorum* to both eastern Asia *and* eastern North America.

Chapter Twelve

AND NOW the Bank has melted into the comparative flatness of the north-eastern corner of the garden. A corner occupied by our small but apparently magnetic nursery, a few frames and a block of buildings ranging in importance from my gardener's cottage to a pot-shed. Just where the path on which we have been walking bends round the end of the Bank there stands an Elm of eighty feet; a full-stop to the garden proper. Local worthies say it is a Wych Elm, but then local worthies always call isolated Elms Wych Elms. The name appears to have a fascination of its own, although it means no more than, according to Prior, the Elm used for making wyches or chests, namely, *Ulmus montana*.

In the present instance the term is misapplied, for the tree is *Ulmus campestris*, the common English Elm. Whether it has an indigenous right to that popular name is one of the many mysteries arborists delight in. They are less doubtful about the alarming habit of aged trees of dropping apparently healthy boughs without warning or visible reason, and are disposed to ascribe the infirmity to a sudden rush of sap to the ends of the branches which, they tell us, distends the cells and increases the branch weight. Why this occurrence is almost confined to the tough-wooded *Ulmus campestris* they do not state. Neither is the responsibility of distended cells made clear. All distensible cells must be turgid in order to function. The hypothesis won't do. Trees do not suffer from rushes of blood to the head; that propensity is confined to a section of the animal kingdom.

To understand their freedom from such a disability it is necessary to survey briefly the means by which water is absorbed from the soil and carried to the leaf.

The question had engaged the minds of philosophers since the distant day when the concrete claimed a share of the attention previously devoted to the abstract, but not until the invention of the microscope and discovery of the cell did the first faint glimpse of its solution appear.

One of the early moderns to attack the subject was Dr. Nehemiah Grew. Born in Coventry, he practised medicine there until 1672 when he moved to London. Still continuing the exercise of his profession he also persisted in the study of the structure and physiology of plants begun in Coventry. He had received the Fellowship of the Royal Society in 1670 in recognition of his work and was elected secretary of that illustrious body in 1677.

His Christian name smacks of the Puritanical leanings of his father, but these do not appear to have descended to the son; in 1682 we find him dedicating his *Anatomy of Plants* to "His Most Sacred Majesty Charles II". It is difficult to imagine that Dr. Grew's discourse entertained that melancholy monarch, considering the nature of his usual relaxations. Yes, melancholy; that is the word I used. Can anyone who looks upon his portraits really think he was a merry man? His distractions, I fancy, were intended to lighten the gloom in which he had his being. Maybe they were the wrong sort to give surcease to care and maybe, too, more attention to such as Grew and less to the like of Rochester would have made the world a happier place for Charles.

The explanations of the rise of sap by Grew and his successors were ingenious, and they held sway until nearly the middle of last century, but they involved a mechanical action on the part of the plant; a rhyth-

mic squeezing by which fluid was sent from a lower level to a higher. Until the present day, indeed, the term root pressure denotes to the lay mind that there is something like a force pump in a root. That nothing of the kind exists is immediately evident from the behaviour of sap after a tree is felled. Under the force pump theory a stream of fluid, or rather many small streams uniting into one, would be thrown into the air under the same pressure as was previously employed in driving it to the top of the tree. The display would put the best work of a modern fountain completely in the background if the felled tree was a tall one; a Eucalyptus, for example. And what actually happens? The sap does not spout at all, but merely oozes from the cut surface.

In its ordinary usage, the word pressure means to most of us a propulsive or compressing force, but it is as correctly used to indicate a pulling one. Pressure, for instance, is applied to water both on forcing it out of a container and on sucking it in. The passage of water from soil to root and from root to leaf is brought about by pressure of the second kind.

To illustrate what goes on, let us consider the absorption of water and its ascent in an ordinary tree, in active growth, growing in ordinary soil.

Picture a living but isolated plant cell. Its wall is permeable by water. Its interior is occupied by the cell-cavity containing cell-sap, a watery solution of certain salts. If the cell be suspended in a weaker solution than it itself contains, water from the weak solution will be drawn within the cell. The drawing force is called *osmotic pressure*. It is, of course, proportional to the strength of the solution exerting it. There naturally comes a time when the cell will hold no more water; it becomes distended to capacity and the cell-wall, fully stretched, tends (but only tends) to press the contents out of the cell-cavity. This

squeeze of the cell wall on cell contents is described as *turgor pressure*. In a cell, therefore, osmotic pressure no longer acts after the cell is fully turgid. Consequently, the actual attractive force at *all times* operative in a living cell is the difference between the osmotic pressure and the turgor pressure; this remainder is the *suction pressure* of the cell. Expressed briefly:

Osmotic pressure of cell-sap — Turgor pressure of cell-wall = Suction pressure of cell.

If, then, the suction pressure of a root hair is greater than the osmotic pressure of the soil water (which is also a solution of various salts and therefore capable of exerting osmotic pressure) water will be drawn into the root hair and its suction pressure will fall. It becomes, may we say, as full as an egg. The cell adjoining it and internal to it, which has been losing water to the plant, and hence has a higher suction pressure, now sucks water from its distended neighbour to satisfy its thirst or, to keep to our terminology, to balance its suction pressure. And so with the next cell further in, and the next, and with all the string of cells between the root hair and the conducting vessels in the wood. These are rigid tubes, their elements are dead and they are therefore as incapable of exerting suction pressure as the soil itself. They contain sap; in fact they are kept full of sap; nothing in the way of an air gap is ever present throughout their length. The osmotic pressure of the sap, unrestrained by any turgor pressure, throws its whole weight against the suction pressure of the contiguous living cells, those, that is, in continuity with the string already mentioned. The suction pressure of these cells is low; we have seen how it is kept low by the pulling in of water from the soil.

As the osmotic pressure of the stem sap is considerable (the concentration of its salts being high) water

is drawn within the vessels through the membrane-closed pits which perforate their walls. Corresponding to the gain by the vessels there is its withdrawal by the leaves; a precisely reverse process. The wood vessels end amongst the living cells of the leaf. You have admired their arrangement time and again in leaf skeletons you have picked up. The living cells of the leaf exert a suction pressure. It is kept high by the constant loss of water from the leaf, sufficiently so, in fact, to overcome the osmotic pressure of the stem sap so that the latter loses water to the leaf.

The circumstances governing the passage of water from soil to leaf may therefore be stated thus:

Os. pr. soil water < Suct. pr. root cells < Os. pr. wood sap < Suct. pr. leaf
(the sign < indicates "less than").

There is, in short, a pressure gradient which increases upwards. An essential condition to keep the works going is that the osmotic pressure of the wood sap must be higher than that of the soil solution. In life it always is.

The full-stop Elm, in spite of its height, is a comparatively young tree. Up to date, it has not cast the smallest branch. Nevertheless, I do not entirely trust it; neither can I bring myself to cut it down. Nor would you; it is a magnificent specimen. As a compromise, I have insured against any damage it may inflict. The Elm, to put it bluntly, costs four pounds fifteen shillings per annum.

Some pages back, I spoke of the limestone rock-garden. As you know, if you have read an earlier portion of this book with the attention you give this line, I had a rock-garden in Ackling. Little encouragement was needed for me to build another. This time there were to be no experiments with fragments of demolished chapels. Westmoreland stone was the word from the outset.

On the plan you will find an area of short wriggles lying south of the house. It is the site of the rock-garden, slopes towards the south and occupies, without the near-by outcrops, about one hundred and forty square yards. The rise from bottom to top looks to be at least ten feet. Actually, it is no more than four and a half. Vertical measurement is an extraordinarily difficult thing to judge. It is almost certain to be over-estimated from below, and certain to be from above. We have, I fancy, noticed this before.

While the scheme was still under contemplation, a friend, rather a purist in his way, objected to the term rock-garden. What I had in mind was an alpine-garden, so he said, and added that a rock-garden was a misnomer. Our discussion was long and not devoid of warmth but at length we compromised by agreeing that I was about to erect, at unknown but presumably considerable cost, a misnomer. If the completed work represented nothing worse I would not complain, but what if it turned out to be also a mistake?

Could the reproduction of a Westmoreland fell in a lime-free, rockless garden be other than a blunder? As, indeed, neither the garden nor the neighbourhood boasted a cubic inch of living rock, could any kind of stone be admitted with propriety? To one endowed with an acute sense of the fitness of things a rock-garden, under such circumstances, would be an offence. Few of us, however, suffer any permanent handicap from such sensitive taste. We are wonderfully flexible. If Water-Lilies suddenly replaced seaweed about the shores of Cornwall we would, after a sharp gasp of surprise, so quickly get accustomed to the change that in a few days it would appear a commonplace. Thus we see nothing out of the way in a Magnolia in Mitcham or a rock-garden in Wisbech.

I had passed the prickly stage of horticultural

sensibility long before, and present doubts were rather academic than influential.

On a cold afternoon in the spring of '29 you might have seen me in the company of a great expert on rock-garden construction, both of us gravely regarding the suggested site. The expert looked thoughtful; I felt anxious, but awaited his verdict on the situation with as stiff an upper lip as I could maintain. He looked to the south and looked to the north, glanced at the sky and remarked that it looked like rain. I thought I knew the signs. He was about to break news. (When news is broken it is always bad.) But no, after another pause, he thought the place would do. What did I say the rainfall was? Ah; too much for some things, too little for others; but we must make the best of it.

Subdued in the presence of such authority, and ignorant as well, I agreed with everything he said. My activities were confined to holding one end of a measuring tape and knocking in pegs where instructed. My mentor was getting into his stride. Here, he said, there should be a bold face, there a meadow and on the lower reaches a scree or two. A man of considerable poetic fancy, he painted the past of my rock-garden to be. A mighty glacier had furrowed a course through the natural rock. It had, in the progress of ages, disappeared; so had the turbulent mountain torrent that succeeded it. This was very fortunate as the bed of the torrent might now be made a path. Centuries of weathering and swirling streams had worn crevices in the rock and its every chink and cranny would give harbourage to something choice and rare. A great boulder, broken off a mountain to the north, had come to rest just where we were standing, and presently there would be growing in its shade Primulas, Anemones or Soldanellas, whichever I preferred.

We grow up; some attain a measure of wisdom but none of us can resist the game of make-believe and the less so when it entails the building of anything; a fire on a lonely beach, a hut in the forest, a mountain side in a garden.

The first step in the making of the rock-garden was to prepare the site. A measured two feet of soil was thrown out and, after the next six inches had been turned over, thrown back. This sounds like the exploit of that famous strategist who, after leading his men up a hill, led them down again. The men one presumes, were in the same compact formation on the return journey as on the ascent, but the soil on being returned to its native place, was no longer in almost stony masses but friable and of open mesh To assist in the retention of its crumby state, it was dosed with peat, leaf-mould, lawn-mowings, and any other humus-providing material we could find.

There exists an idea that deep preparation of the soil is not necessary for alpine plants. Its promulgators must be of those lucky folk who have a naturally crumby soil and, with simple assurance, credit everyone else with a like possession. It is a pleasant thought but, more's the pity, one without foundation. Most of us find deep digging almost as necessary as we do the soil, unless, indeed, we are prepared to watch the drowning of our plants in winter and stand over them with a watering-can in summer.

After the ground had settled down, we let it be known that we were waiting for the rock. Possibly we strove to imply, without barefaced lying, that we had been waiting some time, sharing, you observe the widely held belief that a request infused with a shade of peevishness is more likely to receive immediate attention than a more honest, plain communication. Within a week or two the rock arrived. (Never, by the way, if you wish to avoid an indis-

cretion, refer to stone as anything else than rock to a maker of rock-gardens.)

The carman, engrossed in the delicate business of reversing up an incline through a narrow opening, carried away half a gate-post. He naturally blamed the gate-post. It had, one gathered, made a deliberate and underhand attempt to get him the sack. Having converted liability into personal injury (you may have noticed a similar transference after your best china has met the common fate) he had begun to come round when, most unfortunately, his left little finger was crushed between two blocks of limestone during the unloading and, he announced, left hanging by the skin. You must know that we had received express injunctions not to dump the rock; such roughness might kill its character. Each piece was to be lifted from the van tenderly and laid down with care. There being no crane nor other contrivance on the premises, the work had to be done by hand. Accidents were almost certain to happen, but that the first casualty should be the carman was disastrous. That was all that could be said of it, however; it was not, as he was convinced it was, the second episode of a plot against his livelihood and comfort.

I will spare you the tale of crushed toes, barked shins, grazed knuckles and other hurts incidental to the moving of the rock from the place of its unloading to the job. Such things must be before there's built a rockery. Even the precocious little Peterkin would have appreciated that.

Attending to the health of the nation in the comparative calm of Wimpole Street, I had to rely on the accounts of eye-witnesses for information on the events just recorded. To confirm their story there was the evidence of the gate-post, and that was definite enough. If anything more were needed, the carman visited me the same evening, his arm in a

sling and the damaged finger swathed in many wrappings. He allowed me to inspect the injury, "seeing that I happened to be a doctor like". A little swelling was evident and some slight discoloration. A lead lotion was the official treatment but, in the peculiar circumstances, one of silver seemed indicated. After a few mutual expressions of esteem we said Good-night, the carman and I.

There was still sufficient daylight for me to see the rock. That twenty tons of limestone did not look half the weight was my first impression. This was at once corrected by taking up a piece. It was then easy to believe all I had heard of the pulling, pushing, straining, sweating and swearing which had gone to the shifting of the rock. Our vehicles of transport were (1) a coal merchant's sack-barrow, acquired by some occult means in Ackling, and the most useful article imaginable in rock-garden construction; (2) A home-made sled. Both were run along a double line of planks from the yard to the site, a distance of about four hundred and fifty feet through undulating country.

The largest piece of stone, the very boulder, I surmised, that had been assigned the dramatic history of having been split off an imaginary mountain to the north, was no more than three feet long, one deep and eighteen inches wide, but had required the harmonious and most strenuous efforts of my three callants to move it. I mention this in order to deter you, if you contemplate making a rock-garden, from taking the advice of books too literally and buying the biggest lumps of rock obtainable. The largest you can conveniently move should be their qualification.

And now we were ready for the Master Craftsman. No, scarcely. At the last moment he thought that more peat *might* improve the texture of the soil. The soil need not be dug over again. He could work in the

peat during construction. "How much?" I asked. He thought seven tons should see us through. I earnestly hoped so. Seven tons of peat!

I had not previously known who invented the expression "In for a penny, in for a pound"; now, however, it was clear enough. The maximist had been a rock-gardener.

Seven tons of loose peat looks as impressive as twenty tons of limestone appears insignificant. Half of it we hid in a secret place. It would be wrong, we felt, to lead an innocent rock-builder into temptation. He probably still thinks, not without a measure of pride, that he used the whole seven tons. But he didn't; nor half of seven tons for that matter.

The Master arrived. (You must not confuse him, by the way, with the consultant who had viewed the ground some time previously, much in the way of Wellington before Waterloo.) He took lodgings in a neighbouring inn and, in the garden, gradually built up what he had come to build. Splendidly he did it. I do not know whether he or I derived more pleasure from his craftsmanship. If congruity was possible of attainment in associating limestone with a lime-free ground, he was the man to manage it. He taught me many things. Seeing how shallowly he bedded in the rocks, I asked if it was not a common practice to bury about two-thirds of their bulk. He looked at me as if to make sure that nothing but lamb was within lamb's clothing and, reassured, replied indulgently, "Three times the stone would be wanted if two-thirds of it was buried." It was enough. Deep emplacement, it appeared, was one of those little abstractions used in books to give a professional quality to an ordinary task. My friend, for so he had become, was under no delusions. He winked. Whether at me or at the notion I did not care to ask.

"Provided a placed rock is firm when you stand on

it and try to wobble it," he pronounced, "there's nothing to worry about."

Firmness, at the same time, can be overdone. On a gentle, *natural* slope, a banged-down, packed-in ever-trodden-on rock can so interfere with drainage in a heavy soil as to render its vicinity a death trap.* Again and again I have lost plants, such as *Schizocodon soldanelloides* and *Phyllothamnus erectus* from such a cause while others, in the open ground, continued, and continue to flourish.

The completed work was really quite beautiful and "natural" to a degree but a little more like a mountain top, perhaps, than the lower and more floral slopes. The barren look, I was assured, would disappear when, and if, the plants to be planted concealed the rock. Conceal rock at forty-five shillings a ton? It was almost equivalent to covering a Moorish archway with Virginian Creeper.

"It does seem a bit thick to start with," said my friend, "but you soon get sick of the bare stone."

So much for Westmoreland limestone; you soon got sick of it. I felt a little that way already.

"Then why the dickens," I asked (or something to the same effect), "do you allow people to buy limestone when clinker or conglomerated brick-bats would serve the purpose?"

"Well," he answered, "it's like this. You know what it is to wear silk underclothes?"

I didn't, as it happened; ordinary Aertex served my requirements admirably. So I merely nodded to indicate I had heard of them.

"You don't see the underclothes," he went on, "but feel the better for them. It's the same with

* A rock garden, i.e. an artificial structure in which rock forms a surface decoration, is actually a reversal of the natural order for rock is, so to speak, the subsoil of a mountain and soil a superficial layer upon it.

limestone. You would not feel happy with a clinker rockery."

And what is more, I thought, it would be difficult to imagine a glacier cutting a course through brick-bats.

Observing me still sicklied o'er with the pale cast of thought, the builder kindly volunteered the information that the rock need not be shrouded unless I wished it. "There's lots of things that'll never get that length", said he.

Lots of things, indeed, never got any length at all. It had been a mere formality to plant them. I subsequently learnt, however, that the next important thing to having a plant is to have had it. Its disappearance may be accounted for in many ways not derogatory to one's reputation.

I asked about the planting of vertical crevices, those precious chinks that, according to the books, should absolutely bristle with the fairest and rarest. In the work of art just finished, the chinks were more than half hidden from the eye already, so skilfully had the joints been made; they would scarcely admit a knife blade, much less a plant. Were, then, these priceless habitations never to know an inmate of renown? It was explained to me that, if plants are introduced when the rocks are laid, it is impossible to make good joints but, if "you first make your joints", then seedlings may be inserted or seed sown in them. There was sense in it; still, I left the consideration of sowing a crevice with seed of *Primula Allionii* or *Rhodothamnus Chamaecistus* to a future occasion.

We have twice made additions to the original construction and, to gratify the humour of the moment, altered the disposition of a few rocks times without number. And the pleasure of changing the face of artificial nature to what we think a more convincing contour is not to be under-estimated. To the facility with which rock-gardens lend themselves

to this harmless pastime they owe, perhaps, half their popularity; or at any rate a quarter.

As it was prophesied eight years ago, so has it come to pass. I wonder now why the limestone, as we call

fig. 17 p. 425

RHODOTHAMNUS CHAMAECISTUS [× ⅔]

the rock-garden, appeared so splendid a prospect then. Those beetling cliffs, eighteen inches high, no longer hold my eye. Their grandeur has departed. The game of making mountains is fascinating while it lasts, but custom stales the product of our handiwork. Then comes the harrowing thought that a garden of rocks has been made, not a rock-garden. Lumps of stone, essential while we were playing at blocks, are now redundant and look as out of place

as the Albert Memorial. A child, regarding the accumulation with question in his glance, would ask what it was for. Could we give a satisfactory reply? I could not, for one.

As rock work has but a fleeting beauty in itself, its presence in a rockless garden can only be justified by utility. If, that is, it supports a bank, protects a plant from sun or wind, or, by acting as a foil, adds to its beauty. That, anyhow, is what I feel about it, but I would not for the world upset the susceptibilities of those who find their joy in pockets or the narrow road to happiness in a crevice.

As credulous as many another, I swallowed traditions without testing them. Besides, they are easy of belief. That one, for instance, which perpetuates the idea that rocks provide a cool root-run. The very pleasantness of the notion is enough to secure its ready acceptation. Yet there is nothing in it; less than nothing. If a metal spoon and a wooden one of the same weight are plunged into boiling water and, after a moment, removed, the wooden one will be found to be only comfortably warm but the metal unbearably hot. The same amount of heat, therefore, makes one material hotter than another. In other words, one material, metal in this case, can be raised to a certain temperature by a less amount of heat than another; wood, for example. Metal is therefore spoken of as having a lower *specific heat* than wood. In the same way, stone has a lower specific heat than soil. It is clear, then, that if rock and soil be both exposed to the same amount of sun-heat the rock must become hotter than the soil, and also that soil in contact with stone must become hotter, under the given conditions, than soil away from rock. When the source of heat is removed, the sun in this instance, the lowering of the temperature of both materials proceeds at the same proportional rate as

that observed when it was raised. The rock, therefore, and the soil adjacent to it, will cool more quickly than soil away from the rock.

Consider these temperature readings, all taken six inches below the surface in situations exposed to the same amount of sunshine on a fine April day.

Time of observation.	Situation.	Temp. in °Fah.
8.0 a.m.	soil-filled joint between limestone rocks	56°
3.30 p.m.	do.	70°
8.0 a.m.	open ground	56°
3.30 p.m.	do.	57°

A striking point disclosed by these temperatures is the considerable daily fluctuation (its range depending upon the degree of sun heat) in the temperature of the soil in contact with the rock. Similar results, incidentally, were obtained in a sandstone rock-garden though, as the specific heat of sandstone is greater than that of limestone, the fluctuations were not so violent.

It is difficult to think that such temperature variations can be of advantage to a plant, for it is almost as sensitive to change as you and I. I believe, indeed, that these sudden rises and as sudden falls are at least a contributory cause of death in the rock-garden. Circumstantial evidence is all I can offer in support of this opinion at the moment, but that has been sufficiently ample and impressive to prevent my setting a plant with which I am not on familiar terms against rocks until it has been tried elsewhere. And this I can say, on oath if necessary, that plants which continue to thrive in the open ground have long since fled the rocky places.

It is common knowledge that soil round and beneath a rock is moister than that of the open ground. The rock may be said to draw water towards itself,

whether it be of an absorbent nature or not. Again its lower specific heat than that of soil is responsible. The warm soil next to a rock evaporates its moisture quickly. Water from the surrounding area passes to the depleted one in an attempt to balance the loss. This process may go on until the source of supply is deprived of all free water; after that the soil against the rock must dry up too, but to it is always the last drop in the bucket.

On balance, it might be thought that the better water supply near a rock would, to a great extent, off-set the disadvantage of a fluctuating soil temperature. That such is the case is more than doubtful.

Misgivings assail me. It has suddenly struck me that many readers may be weary of this talk of soils and temperatures. Some, it may be, would rather read the story of the Painter and the Pelican. I do not know that such a yarn exists, but it would be easier to invent it than to bear the thought that I am boring you. If, however, you are a gardener, and I hope you are, you will understand me when I say that I believe such matters as we have been discussing are the very essence of our art. That some knowledge of them is of infinitely more importance than the names and descriptions of a few plants; for of what use, what practical use, are names if we cannot grow their bearers?

Do not think, though, that what I have spoken of as knowledge pours from my pen without an effort. Picture me as sitting in the middle of the garden, for the house occupies nearly that position, my table littered with leaves, stems and flowers; with soil, bits of rock, packets of sand, peat and other things I tell you of. Ten times a day or so it is necessary to go into the garden to establish a point or confirm a memory, oftener than that to consult a book or a note, and oftenest of all to ask Mary if she remembers . . .

I am by no means alone in appealing to the last authority. Every person on the establishment, whether they want a rope, a paint-brush, nut, bolt or screw, a lock mended, a method of removing rust from a chain or grime from an oak gate, information on the correct number of bay leaves "to go to" a twelve-pound ham or how to spell "embarrass", applies to the Mistress. She has a busy time.

I have just put the following poser to her myself: "If you read this book, and I cannot see how you can gracefully avoid doing so, what will be your feelings on meeting a discourse on Scree at this point?"

She answers, with the admirable caution characteristic of her race, "First show me the discourse".

So there you are. You, too, shall have the opportunity. If you don't like the sound of it don't read it.

As used in gardening, the word scree denotes a certain rooting medium; preceded by "a" or "the", it indicates a bed or pocket of that medium. How it happens goodness only knows, but up to the moment scree has suffered less criticism than, I suppose, anything in horticulture. If its possessors say anything about it, they are clamant in its praise. Scree has all the virtues. It never fails to please a plant. To be admitted into a scree, one gathers, is the highest ambition of any alpine having sufficient personality to feel the urge.

It has almost become an article of faith, for no ascertainable reason apart from its general irreproachability, that scree is more retentive of water than ordinary soil. There are, of course, screes and screes, but their principal constituent, if they are screes and not merely stony soils, is grit or gravel. Grit, though, in sizeable particles; from a quarter to half-an-inch or more in their longest diameters. Unless I have grossly misunderstood authors and orators it is, in their opinion, due to these particles

of stone that a scree remains moist when other soil is dry. Now the water retaining property of the *mineral* part of a soil is *in inverse ratio to the size* of the particles. The coarser they are, that is to say, the less water is held by the soil. This fact is easily verified by scratching respectively into those heaps of grit and sand which are so generously distributed by the wayside nowadays. After a spell of dry weather, the interior of a grit heap will be found dry; that of sand will show at least a trace of moisture.

Nothing, then, which is capable of providing a rooting medium for flowering plants can well be drier than an honest scree, one which (if it is to bear any resemblance to the natural article) consists of grit or gravel for five-sixths or more of its bulk. A scree, in fact, to retain water, must be deprived of a measure of its screeishness by the addition of peat or soil or a mixture of soil and humus-providing matter.

A great friend of my own, who in other directions is a man of the most transparent honesty, persists in describing as his scree a curious mixture of I know not what. It contains, he says, fifty per cent. of stone chips. If pressed, however, I think he might admit to sixty per cent. of other materials; soil, peat, leaf-mould; possibly a touch of sawdust. I tell him that to call even a fifty-fifty mixture a scree is trifling with the English language. He does not care; worse, he defends the description by saying that sugar mixed with sand is still sugar. The important thing to him about his scree is that plants grow in it.

My first scree (or did I call it a moraine?) was in Ackling, and made of marble chips. My second, at the bottom of the limestone, was a more ambitious attempt. I had to be in the swim, and although more than a little mystified as to what a scree owed its reputed virtue, concluded that the deeper it was the more capable of well-doing it must be. Three

feet was its measured depth and, above nine inches of rough stones used as drainage and a layer of turves to keep that drainage free, its composition was that advised by the best authorities. Five parts of chips to one of more orthodox nutriment, a mixture of top-spit and peat in equal parts. The chips, I confess, were not graded according to their dimensions in millimetres from below upwards. My infatuation drew the line at that.

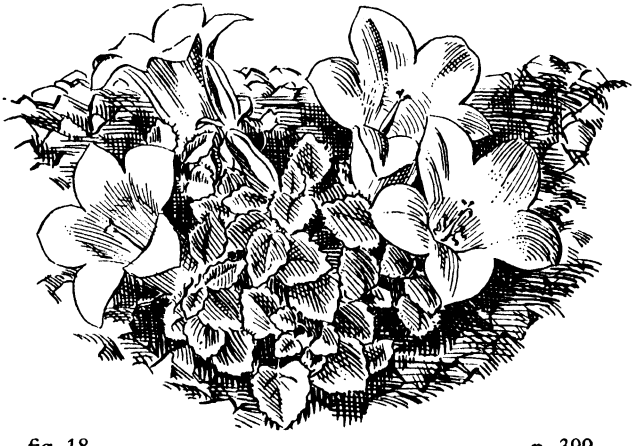

fig. 18 p. 399

CAMPANULA MORETTIANA [× ½]

Subsequent cautious inquiries, though couched in language of provocative depreciation, failed to procure any outside corroboration of the fallibility of screes. Even visual evidence, it appeared, was unreliable, for depths of grit as sterile as my own had, a week or two before my visits, been dreams of beauty. Resting periods and voluntary removals were responsible for the states in being.

But woe to the plants when all men speak well of their rooting medium. While such comparatively easy subjects as *Draba imbricata*, *Omphalodes Luciliae* and *Androsace Halleri* did reasonably well, where

are *Gentiana imbricata, Gentiana bavarica, Primula scotica, Campanula Morettiana* and a hundred others of the rock-gardener's elect? Gone, all gone, to the *Ewigkeit.*

fig. 19 p. 290

RANUNCULUS SEGUIERI [× ⅔]

A ton, perhaps, of limestone chips was left over after the completion of our big effort. It was used to make a shallow scree of the standard composition in what we call a sleeper-bed. This suggestive expression denotes something far different from what you might suppose. A sleeper-bed, in this garden, is one raised some eight inches above the level of the surrounding ground and held up by superannuated railway sleepers. The sleeper-scree, perhaps ten inches thick, and without any intervening layer of drainage, lying on ordinary garden soil, has never

known a failure. *Campanula Allionii* would, if allowed, take possession of the whole area. *Ranunculus Seguieri* (fig. 19, p. 289) and *R. parnassifolius* both seed into it, and the beautiful *Potentilla nitida* has not only formed therein the dwarfest, most compact specimen imaginable, but flowers with extraordinary freedom. Some time ago it was necessary to move the sleeper-scree. Every plant in it had thrown its roots through the scree into the soil beneath.

A few years ago I saw, and was allowed to examine, the scree in the garden of possibly the most renowned grower of alpines in this country. It was from three to four *inches* deep, consisted of fragments of sandstone ranging in size from that of a Barcelona nut to that of a Brazil, and lay on a fairly gritty and lime-free soil. The plants in it were in admirable condition.

We have considered three types of scree and their potentialities. The meaty scree of my friend is successful. My deep and meagre scree is not. Shallow screes are. If the defects in the second can be explained, perhaps the reasons for the merits of the others will be made clear.

From what was said in connection with the specific heat of rock, it must be obvious that the temperature of "meagre" scree will be greater than that of open soil after exposure to the sun, and also be subject to wider fluctuations. The following table, made on a fine spring day, gives temperature readings of these media *six inches* below the surface.

Time of day	Situation	Temp. in °Fah.
8.0 a.m.	Meagre limestone scree	54°
3.30 p.m.	do.	66°
8.0 a.m.	Open ground soil	56°
3.30 p.m.	do.	57°

Not only is there a fluctuation of no less than 11°

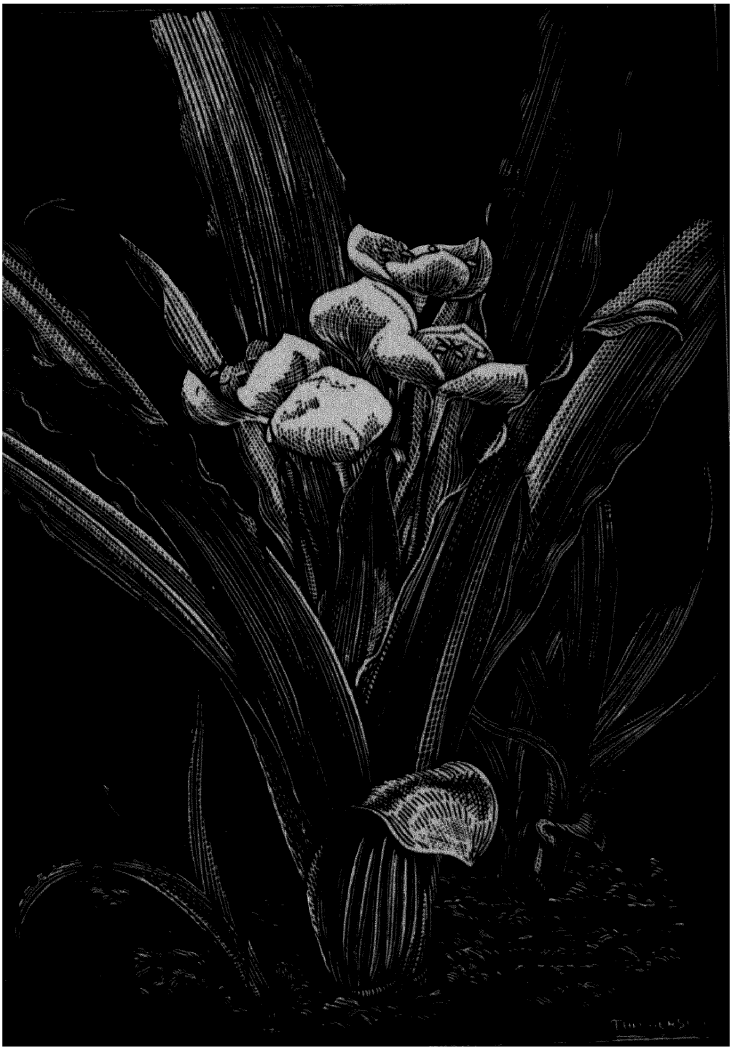

Plate XVIII

p. 391

WELDENIA CANDIDA (*Guatemala form*) [×⅜]

Plate XIX

p. 393

SERAPIAS CORDIGERA [×⅔]

in the scree and that in April, considerably before the sun's rays have attained their maximum power—but the difference between its temperature and that of ordinary soil after some hours exposure to the sun is 9°.

The roots of a plant, then, in the upper six inches of a "meagre" limestone scree, like mine, are exposed to drought (both from the size of the scree particles and the evaporation secondary to raised temperature) and daily variations of temperature of considerable amplitude. One of these conditions the roots might support, but the combination is too much for any but the thrusters, plants which can retain sufficient energy in the superficial and dangerous zone of the scree to send their roots down to the moister part.

(Not that my limestone scree has been allowed to go waterless. The screes, indeed, are the only areas in the open garden that ever see a watering-can, and from it demand a lengthy, to-and-fro visit twice a week in dry weather. Even that is of small avail. Evaporation is too rapid.)

Now my friend's limestone scree, by virtue of its containing at least half its bulk of soil and humus-providing matter, is more retentive of moisture and, as soil is but an indifferent conductor of heat, cooler in the heat of the day and more resistant to sudden fluctuations of temperature than mine.

Similarly, the success of shallow scree is due, I believe, to the roots of its contained plants being able to reach the moist soil beneath, or at least to within drinking distance of it (the lower inch or two of scree being kept moistish by the soil below it) where they are also less exposed to temperature variations.

Why, then, if this is true, use scree at all? The answer, perhaps, is this. Many high alpines have an

unconquerable aversion to any defect in drainage, particularly if that defect operates on the upper portion of their roots. In other words, free aeration is essential to them. It is these plants which grow in scree better than in ordinary soil. If it should happen that the lower portions of their roots, having passed through the scree into the soil beneath, die in a wet winter from suffocation no great harm is done. The dead parts are thrown off and, at the commencement of the growing season, branches shoot off from the upper portions, safe in the scree, and in their turn seek out the nourishment below.

The perfect scree, therefore, is one which will provide the maximum water retentiveness compatible with perfect drainage.

However scree may have served me in other directions, I shall always be grateful to it for allowing me to grow *Cypripedium Calceolus*. A patch of it, less than a square yard in area, shaded from the south by a hybrid *Cistus*, is planted in a mixture of three parts of limestone chips to one of peat; a more substantial compound than is employed elsewhere. The plants grow freely, reach fifteen inches in height, and bloom regularly and profusely. This year, having been told by some little bird or other that this book is being written and being no more averse to fame than other beauties, they have excelled themselves. Ninety-seven blooms, no less, was their contribution to the loveliness of spring.

The clump calls up the memory of a happy but toilsome day in the Dolomites in 1930. One morning, at breakfast time, our host at the Misurina Hotel asked if we knew Scarpa della Madonna. Even my scrappy knowledge of Italian was equal to the occasion. Yes, we knew the Lady's Slipper; did it grow in the neighbourhood? It did; down by the river; just over there. We set out for over there.

Cheered by breakfast, stimulated by the mountain air, elated by the tremendous stroke of luck of having, in effect, *Cypripedium Calceolus* in the rucksack, we paced briskly down the road singing *Ye Banks and Braes* and introducing into that rather mournful air many a trill undreamt of by the composer. At the end of the second verse, Mary turned to me with the question "Winds the road uphill all the way, brother?" As we were steadily descending, the question struck me as curious. Surely the Barolo we had innocently absorbed the night before had not a delayed effect? And on Mary, of all people; Mary, who carries her wine like a gentleman? She answered my anxious inquiry with an irrelevant word, and explained that she had been thinking of the return journey. I expostulated. Why was it necessary to dim the native hue of resolution with such a thought?

We had passed Sorapis with its glacier and were keeping a course parallel to the River Ansiei. Mile after mile we trudged, our eyes skinned for a glimpse of the Lady's Slipper. We asked road menders, farm workers and wayfarers where the orchid might be found, but might as well have inquired of them the nearest road to Ecclefechan.

After four hours walking and searching we came upon a wayside shrine. It was decorated with Cypripedium blooms; they were in tins bearing the words "Mackintosh's Cream Toffee", and our thoughts passed from the sublime to the comestible. And I verily believe that, at the moment, we would have been more grateful for the toffee than the Orchid, though that, of course, could not be admitted. We had not thought it necessary to bring food with us, the territory of the plant being "just over there", and the comfort of breakfast had departed long ago. It was a shocking thing to think of food at such an

instant. Here were flowers of the plant we were looking for. We were getting "warm". Food and Orchid blooms appeared, however, to be in conjunction, for in a few minutes we found an osteria of which the *padrone* (or *padrona*) was presumably the purveyor of one and disposer of the other.

An osteria is one step down from an albergo. This one I fancy had been further reduced in rank, though there was nothing to indicate it on the sign-board. Beer (not of the Burton brew), coffee and biscuits comprised the bill of fare. We indulged in the full course and then approached the subject of the Orchid. The hostess dodged into the back premises and reappeared carrying two buckets literally packed with blooms. As to the whereabouts of the plant, however, she was annoyingly vague. "Over there", she said, or words to that effect, sweeping a horny hand from east to west or, possibly, from north to south. I had no compass in my pocket. Any direction more specific she seemed disinclined to give, and again dived into the beyond.

The business called for some finesse, never one of my strong points. I called for more beer. She served it and vanished again. Confound the woman! But stay; perhaps the Cypripedium was a source of income? Would a suitable solatium induce her to disclose the secret of its situation? Once more I demanded beer (it was very harmless) and received it in the twinkling of an eye; in another twinkle the vanishing lady had again performed her trick. I wondered how much more beer was on the premises, and if it would become necessary to drink it all before getting to the roots of the Orchids.

After travelling for a good four hours and coming to within touching distance of the plant a few bottles of beer should not be allowed to stand in the way. But beer, it appeared, the purchase of beer, was not

the way to the landlady's heart. Was there a way? A word of blandishment with Mary out of sight? I made my way to the rear of the osteria which, let me say, was only a two-roomed cottage. A dog was there on guard, or he should have been on guard, but a word of man-dog Esperanto proved a password to his confidence. No similar word of power, in Esperanto or anything else, had I the chance to deliver to his mistress. On my appearance at the back entrance she rushed past me and sought the protection of a hen-house. The move defeated me. To interview a lady in her own hen-house, and an Italian hen-house at that . . . no, I couldn't do it.

The position was sensibly altered by the arrival of three labourers. If they were locals, and knew the ground, beer might be the open sesame after all. When each of them was persevering with his third bottle, I told what I was after. (Beer fills up the gaps in a broken vocabulary most helpfully.) They understood and hailed me as *Il Professore botanico*. I bowed. Had they addressed me as Carlo Linnaeo I would not have denied it. *Si, si,* they knew the haunt of Scarpo della Madonna, and Cristoforo would lead me to it.

"Cris . . . tof . . . oro" roared the most rubicund of the three, and Cristoforo materialized from, it seemed, the ambient air. He was presented to il Professore who bowed, dropped five lire into a waiting hand and invited the youthlet to lead on.

The Orchids were growing within two furlongs of the cottage.

I had felt it.

In a hedge there were a few, but the main colony shared a stretch of river bank with Hazel and Lily-of-the-Valley. The soil was a fine calcareous silt mixed with the scanty mould derived from nut bushes. Poor stuff; so a British gardener would

describe it, but yielding its treasures easily. We took a few Cypripediums and, to bear them company in a new home, as many Lilies-of-the-Valley.

The most desperate struggle, we had heard, was to be anticipated in tying down the Orchids to a civilized life. They were, therefore, lifted with the greatest care, handled like butterflies and, to anticipate a little, stood up to a garden life without a single loss and with irreproachable behaviour.

We did not return to the osteria. The hostess was possibly still in the hen-house and, even if she was again at the beck and call of customers, I could not demand beer from a defeated adversary. So, after pressing upon Cristoforo another five lire, we started on the return journey. You have walked eight miles uphill with a loaded rucksack on your back? (Ours contained more than Cypripediums.) And rain has drenched you and sun dried you with cyclic regularity? And, within a hundred yards of your hotel, you have rested awhile in order that you might stride in, apparently as brisk as on striding out?

Part IV

PROGRESSION

Chapter Thirteen

AFTER a personal experience of some years and as a result of observing the ups and downs of many rock-gardens, I am convinced that rock-gardening is an art for the specialist; a specialist in the strictest sense; one, that is, who is not only an authority on the subject but confines his horticultural activities to its practice.

No section of gardening demands more unremitting attention or, in fact, so much. We therefore see its best execution in small gardens or in those where the labour of experts is as plentiful as flowers in springtime. Four of the most knowledgeable and certainly the most skilful practitioners I know have quite small gardens. However much of a teaser a plant may be, in their hands it becomes as manageable as London traffic at those of a policeman. *Primula Reidii, Pyxidanthera barbulata, Gentiana Waltonii,* and *Androsace glacialis* are of the throng obedient to the wave of these magicians' wands.

If we more ordinary mortals could remain content with *Aubrietia, Alyssum saxatile, Hypericum rhodopeum* and other indiscriminators ready to put up a show under almost any circumstances, a rock-garden would inflict no more tribulation than any other kind. It is not in the nature of gardeners, however, to grow that which is easy, however beautiful it may be. We advance from Encrusted Saxifrages to Kabschias, from Candelabra Primulus to the section *Soldanelloideae*, from *Lindelofia spectabilis* to *Eritrichium nanum.* As our selectiveness increases, so does

the cost of maintenance. The handful of Sorrel with which a Primrose plays may be the death of *Primula minima*. Whether we pay for labour to remove the Sorrel or buy another Primula, the financial current is against us. The Common Primrose is, therefore, more the plant for the general gardener. Anyhow for him who, like myself, has a moderately large garden (as gardens go) but only a limited staff. He is like a doctor in charge of a large general practice. Much though he wishes to spend more than a few minutes with a single patient, the needs of others hurry him on.

The general gardener need not limit himself to Primroses, Aubrietias and others of that happy company but will nevertheless gain the greatest pleasure, I believe, by populating his rock-garden with plants capable of looking after themselves. And of these, none, as a class, compare with shrubs; dwarf, not dwarfed, shrubs. They are not without the weak and recalcitrant, the miffy brethren and the dull, but taking them all in all they can give a furnishing more complete, more endurable and no less rich in colour and interest than any herbaceous alpines. (The word alpines is used in its common acceptation; plants suitable for the rock-garden.) No suggestion is made that herbaceous subjects should be excluded. Far from it; certain of them are as important as is caper sauce to boiled mutton. They supply a piquancy which, though not essential, vastly improves the article.

Lithospermum prostratum, which, it is fairly safe to prophesy, will remain one of the most popular rock-garden shrubs after others of the genus have passed out of cultivation, is not generally thought adaptable to limestone rock-work. If, however, the soil matrix is sufficiently acid to neutralize the soluble lime carried into it by rain, not only *Lithospermum*

prostratum but other plants that disapprove of lime will flourish there. It is seldom that one cannot find a few flowers on the shrub, but in May and early June they almost hide the luxuriant foliage. Blue, sapphire blue, needs no complementary colour to demonstrate its quality but, in the present instance,

fig. 20

GENISTA DELPHINENSIS [× ⅛]

it does not lose by the proximity of the bright but softly yellow flowers of *Genista glabrescens*. A useful plant this. After seven years in its present position it is still under a foot in height and in spread not more than two.

Genista anglica, near by, is of no particular beauty but rich in historical associations. It was the emblem of the Plantagenets.

Not far away is *Genista pulchella* (*Villarsii*), an excellent species for a sunny ledge. Its flowers are scarcely borne with the prodigality seen in certain other members of the genus but what there are justify the name of the plant. Once considered the pigmy of its race, it has lost any honour to be gained from that singularity to *Genista delphinensis* (fig. 20, above).

There's a shrub for you! A miniature *G. sagittalis* but, as flowers are carried in axillary as well as terminal racemes, it is relatively more floriferous than the larger species. Perfectly hardy and resistant to disease in the open, it is subject to thrips in the alpine-house. Thrips, I daresay you have noticed, possess a very refined taste and never lose an opportunity of gratifying it.

Shaded from the sun by the rock against the southern side of which *Genista Villarsii* grows is the lovely *Gentiana Kurroo*. The reputation of this plant has suffered from its impersonation by certain cluster-headed monstrosities, none of them bearing any more resemblance to the true plant than a rhinoceros to the Queen of Sheba. From a basal rosette arise a few leafy stems which carry at their ends and from their axils stalked and usually solitary flowers which, bright blue and spotted green, campanulate and at least an inch-and-a-half long, bend upwards from the inclined stems and look you in the eye.

The name carries a suggestion of New Zealand, or is it Zululand? As Africa owns no Gentians and New Zealand none that are blue, it seems that ideas initiated by sound memory are not always to be relied upon. The appearance of the plant and flower point to the Himalaya, and from the north-west of that prolific range it comes.

Rhododendron hirsutum, though separated in nature from *Gentiana Kurroo* by as many miles as stretch between the European Alps and Kashmir, is its close neighbour in the limestone. The pretty name of Alpine Rose is given to both *R. hirsutum* and the closely allied and similar species *R. ferrugineum*. Their botanical names indicate their differences. The leaf of *R. hirsutum* is hairy but insufficiently scaly below to appear other than of a general green. Hairs are absent or insignificant on that of *R. ferrugineum*,

but red-brown scales are so thickly disposed on its under side as to give meaning to the designation "iron coloured", albeit rusty iron.

Another difference, ecological in kind, is said to exist between these species. *R. ferrugineum*, according to report, confines itself to silicious formations and *R. hirsutum* to those of limestone. Assuming this to be exactly true in nature, it does not mean that *R. hirsutum* is intolerant of lime-free soil. In this garden, indeed, it shows no special preference for limestone and is just as happy or happier without a sight of it.

On the face of it, it seems strange why, as the great mass of species which together constitute the natural order *Ericales* are calcifugous, there are a few that, while presenting no other obvious peculiarities, are tolerant of lime.

There are, in fact, degrees of calciphobia. How has the natural aversion of the mass become modified in certain instances? Let us suppose the plants we are speaking of had gathered together to determine a point of diet. A report of the proceedings would run something like this:

"A great congress of the Ancient and Honourable Order of *Ericales* was in progress. The various branches (or families, as they are called in this historic body) were ranged under their respective banners. The *Ericaceae* (and with them, on the advice of Engler, the *Vaccinioideae*) occupied the front of the hall and behind them came *Clethraceae, Pyrolaceae, Epicridaceae* and *Diapensiaceae.* In a corner of the gallery, by themselves, sat the *Lennoaceae,* rather a sinister group. Their isolation was officially by reason of their having no voting rights on the question at issue, but rumour has it that their parasitic habits are not entirely approved of.

"The important business of the meeting was to

vote on a proposal 'That, as calcareous soil is an unsuitable medium of nourishment for any member of this congress, it is hereby declared taboo'. Formally moved by *Schizocodon soldanelloides* (Japan), it was seconded by *Epigaea repens* (U.S.A.) amid scenes of the greatest enthusiasm. Mr. *Rhodothamnus Chamaecistus* (E. Alps), however, signified his desire to move an amendment. With his usual charm he pointed out that, although there could be no possible doubt as to where the preference of all *Ericales* lies, "always excepting that of our friends in the gallery", it is not always possible to indulge it. In his own land, any action to secure the carrying out of the proposal would, he feared, be followed by the expatriation of his species; even, he added with a smile, of his genus. (*Rhodothamnus* is a monotypic genus, let us mention.) Mr. *Chamaecistus*, continuing, said that his amendment was not in the nature of a counter-proposal, but only entailed the addition to the motion of the rider: 'Always providing there is lime-free soil available.'

"He was warmly supported by Miss *Erica Carnea* (S. Europe) who, after protesting her embarrassment 'at getting on her feet in front of all the nobs' told the congress that 'what with one thing and another the likes of me hasn't got no time to go trapsin' off to other places after they'd once got settled. Better', she said, 'the slums you know, than the fatted calf you don't.' She begged to second the rider, or whatever it was.

"That veteran hero of many a stout fight, *Rhododendron hirsutum*, followed. With characteristic muffled utterance he supported the amendment 'if', he remarked, 'you can call it an amendment'. He went on to say that it had taken a long time for him and his forbears to pick up the knack of living on limestone, and he didn't see why he should be called

upon to give it up, supposing that he could. He liked a nice bit of lime-free stuff as well as the next one, but could make shift nicely with the other. And you never know (he warned the audience) what might happen. Best to be prepared.

"After the discussion which appears inevitable on these occasions, no matter how clear the issue, the chairman, Mrs. *Gaultheria Shallon* (U.S.A.), put to the meeting, 'That this congress recommends adherence to a lime-free diet, inasmuch as all voting members prefer that diet, but at the same time does not prohibit such nourishment as may be obtained from a calcareous soil when that alone is obtainable'.

"This motion, as put, was carried without dissent."

The resolution expressed, in effect, that a rigid policy endangered survival. A certain elasticity must be allowed.

We have already defined the same idea in the terms that the survival of any organism is proportional to its plasticity, that is, to its adaptability to external conditions; a simple way of saying that survival is governed by natural selection, the hypothesis which, set forth by Darwin, revolutionized scientific thought.

As important as the power of adaptation itself is the time taken by an organism to attune itself to circumstances and, inasmuch as the circumstances are slowly but constantly changing, to keep itself, so to speak, up to date. Its species is most likely to endure if able to face the advance of another Ice Age as easily as it has the recession of the last; if a change from humid to dry conditions or from dry to humid is scarcely worth its comment, much less complaint; if one soil, as far as it is concerned, is much the same as another.

In a plant's efforts to come to terms with a new environment (which may be brought to it or found

by it) submission to a kind of soil of which it has no previous experience is not the least of its difficulties. Calcifuges, in particular those of the *Ericales*, find their translation to a limy soil a trying and a dangerous business. They can only survive it, one conceives, if given sufficient time and at the expense of considerable perseverance.

We can surmise that, as a group, they are descended from lime-hating progenitors or, possibly more correctly, from *a* lime-hating progenitor. A few, a very few, have acquired the art of living in a limy soil. May we speculate on how this tolerance was attained?

Let us imagine *Rhododendron hirsutum* itself in what was, let us suppose, its first environment. It is growing in peaty soil and on its lee are sandstone hills. Obliged for some reason to possess those hills, year after year it sends detachments of soldiers (for seeds in a sense are soldiers) against them. Millions are thrown against the rocks or into the talus at their foot, and millions perish. Many gain a footing and germinate, but victory is not yet. The particles of sand with which the rock is built are cemented together, in this instance, with calcareous salts. This is the plant's first contact with inorganic lime and the seedlings suffer badly. Nothing dismayed, *R. hirsutum* continues the onslaught. Eventually a seed falls on a wad of dead moss or the remains of a few blown leaves which, caught in a crevice, are slowly degenerating into humus. It throws its tiny radicle into the mass and, having brought on, and in, its coat that more or less cooperative fungus without which it cannot live, slowly develops.

The young plant need not suddenly plunge its root into a bowl of limy poison; the humoid material can accommodate that important structure for some time and, when it can do so longer, still assists

Plate XX

p. 254

PHILESIA BUXIFOLIA [×$\frac{2}{3}$]

Plate XXI

p. 408

ALSTROEMERIA PELEGRINA *var.* ALBA [× ⅓]

the plant by generating organic acids which go to neutralize the lime. And by so much as the lime is neutralized, to that degree is the safety of the seedling ensured.

As if the adventurer was perfectly aware of this fact, it begins to trap leaves itself, catches passing seeds to sow about its feet (knowing that the plants resulting from such seeds are not likely to prove serious competitors in its poverty-stricken home) and hoards its own fallen foliage. Everything that can be done to increase the supply of leaf-mould it does, for that is its surest support. Atmospheric moisture, while indispensable, is rather a blundering ally. Soaking through the rock it dissolves the lime and adds to the very solution which the organic acids are doing their best to neutralize. A pretty tangle, to all appearances.

The forces of compensation are, however, equal to the strain. Although the quantity of manufactured lime-water, for it is nothing less, increases in amount proportionally with precipitation, the rate of its dispersal by leaching is also increased. Moreover, the greater the rainfall, the more generous will be the growth of moss and other vegetation and the more rapid the decay of plant residua into humus. The Rhododendron, we may safely say, gains more from prolonged rainfall than it loses.

Gradually, year by year, and century by century, the species is weaned from the fixed and certain loathing of lime characteristic of its race. It becomes sufficiently accustomed to lime to allow of migration to a limestone rock, though that move, we may imagine, is carried out with the same deliberation and by taking advantage of similar extrinsic conditions as allowed the successful completion of the first adventure.

We previously noticed that, although circumstances have urged the course of *Rhododendron*

hirsutum into paths of limestone, it has not forgotten its early predilection for lime-free soil, and requires no coaxing to return to it. The same may be said of all its near and distant relatives which, impelled by anything but choice, now lead limy lives. To describe them as lime-lovers would be to exaggerate; lime-tolerators, yes; but that is as far as we can go.

It is always tempting to credit a plant with a habit suggested by its environment, but often a mistake. That it is calcifuge because it is found in a limeless area or calciphile for the reason that it inhabits a calcareous region is allowing too much weight to circumstantial evidence. An illustration of how deceptive such indications may be is before us in *Saponaria pumila* (*Silene Pumilio*). It is apparently confined in nature to non-calcareous rocks, limestone being within its reach. According to a great authority, its sensitivity to lime is such that a fragment of limestone acts on it with the certainty of a Borgian dram. Yet here it is, growing in a limestone scree, a position it has occupied for six years. We need not cast stones at him who voiced its intolerance of lime. Our own houses are not devoid of glass. He had merely confused appearances with facts, and perhaps not fully appreciated that a plant's distribution is influenced by more than rooting medium.

Saponaria pumila (Pl. viii, p. 82), as a plant, is worth a good deal more to rock-gardening than to demonstrate a point in ecology. The handsome, stalkless flowers carry bright pink corollas and inflated, hairy calyces and appear in a curious order. They first open round the edge of the compact cushion of bright green, fleshy, narrow leaves, giving it the appearance of a richly fringed ballet skirt, and then ornament the remainder.

Just at the edge of the scree, but growing in ordinary soil, is the exquisite *Anemone vernalis*.

Its name, though beautiful enough, was considered insufficiently expressive by some impassioned admirer or another. He termed it, with more unction than is usually given a sub-title, The Lady of the Snows. Bah! And the plant hairy enough to put Esau on his mettle. Names such as these—The Little Children of the Hills is another of them—"so sweetly mawkish and so smoothly dull", spoken in reverent accents and with wrapt expression, invariably produce in me a slight feeling of nausea.

As *Omphalodes Luciliae* succeeded in the limestone scree, there seemed no reason why its cousin, *Mertensia maritima* (fig. 21, p. 310), not a very dissimilar plant, should not also be happy there; particularly as it is often found growing by the sea-shore in sand made limy by fragments of shell-fish skeletons. No, the Oyster Plant (as it is called from the taste of its leaves) would not have it. On the other hand, it remains perfectly content in granite scree in deep shade. Queer, isn't it? I shouldn't wonder if the dryness of the limestone scree had not spoiled it for *M. maritima*. You know the plant? A decumbent perennial, a few inches in height, with almost succulent leaves and stems and covered with a glaucous bloom. The flowers, carried in a loose terminal cyme, are smallish, but a beautiful deep blue in colour. From the Arctic it spreads to the northern coasts of Asia, America and Europe and fifty years ago was to be found on Holy Island, off the Northumberland coast.

My own plant did not come from that hallowed spot. A friend of ours, a doctor by profession, indulged in the curious recreation of taking motor cars on what I believe are called reliability trials. She would start from London about 8.30 p.m., drive to John o' Groats, drink a cup of coffee, collect an Oyster Plant and be in London again before it wilted.

fig. 21

p. 309

MERTENSIA MARITIMA [× ¾]

The particular specimen she brought us, indeed, was vigorous enough to produce a large crop of fertile seed within twelve months of its arrival.

I wonder, reader, if *your* memory ever let's you down? If, when a visitor to your garden asks "What's that?" in the thoughtless way visitors do, you find that even a plant's generic name escapes you? And that one forgetting so puts you off your stroke that you cannot remember anything except, perhaps, the name of *Orphanidesia gaultherioides* which you wouldn't care if you forgot?

So often do I suffer from these lapses that it has become necessary to develop a simple technique to save me from utter confusion. At the first miss I say quite cheerfully, "Ah, one of my bad days". This is intended to give the impression that men such as I, immersed in affairs of the greatest moment, cannot at a moment's notice bring their massive minds to bear on some pettifogging Saxifrage or Sedum.

"How modest of him," I expect the visitor to think, "and how honest."

Having thus guarded myself against further displays of forgetfulness (and ignorance), I feel more comfortable and may even be able to question the visitor's diagnoses of my plants in another half-hour.

I once had a gardener with a musical ear. If he forgot what to call a plant under our eyes he asked for its specific name. "*Depressa*", say, was my reply. "*Nertera*" would come his immediate response. A useful accomplishment, but never one of mine; the specific name lends me no assistance in arriving at the generic one. However, that does not matter. In fact, no more delicate compliment can be bestowed on a visitor than assuming he is perfectly familiar with the genus of every plant in the garden. When I, pointing at a plant, say "*Spinosum*", does he ask "*Spinosum* what?" or "What *spinosum?*" Very

rarely. The usual acknowledgments, in order of frequency, are "Quite so," "Ah", "Ah?" and "*Spinosum*, eh?"

So grievous have been my falls between *Genista* and *Cytisus* that I have almost given up mentioning those generic names in company. With a few exceptions, the shrubs themselves are of scarcely any help in keeping one on a straight course unless they are in fruit. Then, a *Cytisus* may be recognized by the presence of a wart near the hilum of the seed; a Genista's seed is plain. But what use is that item of information to a showman? Visitors are rarely interested in seeding plants; ordinary visitors, that is. If we include under the term the acquistadores, who are interested in anything removable, a plant in seed must be reckoned as superlatively attractive.

I may not have mentioned it, but all this time I picture myself as showing you round the rock-garden. The most of the plants we take as read; the few commented on here are supposed to stir your interest or, without any supposition, do mine.

At this point of our perambulation there is a prostrate shrub, growing on a shelf at about knee-level, that is sufficiently characteristic to preserve even me from the path of error. It is *Cytisus demissus* of Boissier. I have also had it under the description *Cytisus ponticus*, but as that plant is put down as a variety of *Cytisus hirsutus*, and as *C. demissus* was relegated to a similar grading by Halàcsy, there is apparently no serious disagreement. Its relationship to *C. hirsutus* is obvious at a glance; it is virtually a miniature of that species. Still comparatively rare, *C. demissus* has not yet got into the full swing of the popularity which is its due. Prostrate, no more than two or three inches in height, bearing in May large yellow flowers stained variably with reddish-brown, perfectly content on a sunny, well-

drained ledge, it is quite as ready to clamber up one slope of rock as to clamber down another.

Of a number of Penstemons, the two about to be mentioned are among the most beautiful and certainly possess a permanence not always to be found in

fig. 22 p. 314

IRIS PUMILA [× $\frac{3}{5}$]

members of the genus. *P. Menziesii* of Hooker, collected by Menzies himself when he accompanied Vancouver to western North America, is prostrate, creeps rapidly, has tiny evergreen, serrate leaves and large blue-violet flowers. *P. rupicola* Howell (*P. Newberryi var. rupicola* of Piper) is also a creeper and, in this garden, only an inch or two in height. The bluish-green leaves are broadly oval or rounded and

the flowers ruby-red. Both species bloom in June.

A large number of Irises are recommended for the limestone rock-garden and I have tried the most of them. Not, you understand, as an expert iridologist, but as one holding certain prejudices as to what qualities a rock-garden Iris should possess. Resistance to wear and tear is a *sine qua non* and dwarfness no less necessary than beauty and floriferousness. And these without any special cultivation beyond the firm and superficial planting of the rhizomatous kinds. Let me add that by floriferous I mean not only generosity in flowering but some capacity to hold the blooms. How can one truly say a plant is flower-bearing if the bearing only lasts a few hours? As in *Iris nepalensis*, for example.

Within the limits of the qualifications we may place, to begin with, *Iris pumila*. The genuine *Iris pumila* (fig. 22, p. 313) (not the ubiquitous *I. Chamaeiris* which, in cultivation, appears to act as a more or less permanent *locum tenens* for the true plant) has leaves from two to three inches long and stalkless flowers which, by virtue of the length of their green perianth-tubes, equal or just surpass the foliage in height. The blooms are large for so small a plant; important looking describes them. Their colour range is wide; there are yellow forms, slaty-grey forms and forms of every tint from blue to reddish-violet.

Very similar in character to *I. pumila* is *I. rubro-marginata*, so-named from the edges of the young leaves being margined with reddish-purple. The massive flowers, of a rich brown-purple and carrying a touch of blue in the beard, are more sombre than anything *I. pumila* has to offer but, by way of making up for that defect (if it is a defect) the plant not infrequently bears a crop of flowers in summer or autumn in addition to the usual display in spring.

I. rubro-marginata has been spoken of as the Balkan

representative of *I. pumila*. As the latter species does not require a representative there, itself taking the Balkans within its natural range, the significance of the statement has always eluded me. The realization that iridologists enjoy the same simple pleasure from finding resemblances between their darlings as do mothers, aunts and grandmammas does not quite explain it.

But those who practise the art of likeness-finding do not hesitate to stretch a point, or overlook one, in order to balance a promising equation. We have just had an instance of the Iris specialist's skill. Here is another. *Iris Reichenbachii* (Pl. iii, p. 35), he swears, is the Balkan counterpart of *I. Chamaeiris*. I doubt if this would have occurred to many gardeners.

We, keeping to less debatable ground, can agree that the former is very handsome and suggests the Orient. Where else than in the East would you look for a purple-red Iris with a beard of bluish white, or, more exclusively still, for a yellow one, veined purple, and bearded orange? The flowers are stalked and rise from six to ten inches from the ground. The six-inchers are appropriate but the tens a bit overgrown for all but the largest rock-gardens.

Iris innominata, an Oregon species, is fairly new to gardens. To name a plant "The Nameless One" does not, on the face of it, argue great creative ability on the part of the namer. There is, nevertheless, another explanation; that no name, actual or synthetic, could be found worthy of this delightful little species. In appearance much more fragile than those already mentioned it is really as wiry as a bantam. Found in nature both in dry, sunny places and under the shade of Pine trees, it does well in either sun or partial shadow when confined in cultivation. The flowers, remarkably lasting for those of an Iris, carried on stems from an inch

or two to a foot in height, depending on situation, are of a bright yellow streaked with brown or of a general violet colour. These colour forms are known, but if one may analogize from other species containing violet and yellow forms, possibly the colour range of *Iris innominata* is as considerable as theirs.

Iris Chamaeiris has been spoilt for me by its almost invariably turning up after *I. pumila* had been ordered. You remember Eden Phillpott's story told in his *My Garden*? How he had been tempted to buy *Iris cristata* at a penny apiece by a foreign catalogue and received "a mean and uninteresting hybrid of germanica" instead and how, in response to his letter of expostulation, he received . . . another catalogue? My own complaints were usually answered not only by another price-list, but another *Chamaeiris*. There was no attempt to bluff; British nurserymen do not indulge in calculated deception. My particular dealer simply did not know the difference between one species and another. Often enough, I daresay, you have seen in nurserymen's exhibits varieties of *Iris Chamaeiris* labelled *I. pumila*? Before blaming them, consider this. The stock of an average nursery contains hundreds of genera and not unusually thousands of species. Very well. If a gifted botanist became in the course of a lifetime an unassailable authority on a hundred genera we should esteem him as a master spirit. Is it fair, then, to expect a nurseryman to carry in his head a comprehensive knowledge of three or four hundred?

Of all the enormous number of herbs included in the natural order *Liliiflorae*, the common Snake's-head Fritillary most appeals to me. What a confession! you will say. What? To all the splendid Lilies of the East, the wonderful Cushion Irises of Palestine, the proudest Alstroemerias of Peru, the

noble Amaryllis, dazzling Tulips and the rest he prefers the pensive Fritillary? There's something wrong, say you. So there may be; an inhibition or complex or what-not at the bottom of it?

I leave you to your psycho-analytical task and repeat that *Fritillaria Meleagris* is my love. Is she though? Has she been as encouraging, even as courteous as she might? I'm afraid she hasn't. Does her transpiration rate increase to the extent of a single drop at sight of me? I doubt it. Still, after long years, I meet from her the same condescending hauteur, the same confounded indifference; or, anyhow, have done so until recently. I made a mistake in earlier days by showing my devotion. Had I cast her to the earth, ground her in with brutal heel, behaved, in short, as a he-man should, she might have given me the fidelity she is so free with in the happy meads of Oxfordshire where, unhonoured by the callous cow, she nods with satisfaction. I have learned my lesson. No longer do I spread a coverlet of Thyme over her bed nor press upon her dainty meals of leaf-mould, peat and sand. I should have known that a refined appearance need not indicate refinement of taste. I *did* know it, but could not apply the knowledge to Fritillary. In the face of all precedent I kept my eyes respectfully closed to the fact that many a goddess prefers a pint of porter to ambrosia. "Where the bee sucks there suck I"? Tut! Away with such conceits! *Fritillaria Meleagris* (Pl. iv, p. 50)* now shares the common lot and, as though to entirely dissociate herself from the suspicion of arielism, is bringing up a family without outside assistance.

Are any Fritillaries really weaklings? I believe

* *Fritillaria gracilis*, a Balkan species with hanging blooms of red and green, is also figured on Pl. iv to show its sloping shoulder in contrast with the square one of *F. Meleagris*. These shapes are of some importance in *Fritillaria* differentiation.

most would be happier if planted with no more ceremony than Shallots, and find themselves more at home in a rough and tumble existence than they do in the too respectable residences, replete with every modern convenience, we force upon them. Pots and pans (to distinguish these from culinary utensils, let's call them pans and pots) are unlikely to give more joy to Fritillaries than does a cage an eagle. Yet I for one use those very pans and pots for the rarer sorts. I fear to put conviction to the test of experiment. If, for instance, I lost my one specimen of *F. latifolia var. nobilis* from whence could I replace it? From seed? Why, I have never as much as heard of seed of the plant.

The critical times in a Fritillary's life are when it is transplanted. A Lily bulb will stand exposure in a corn-chandler's window for weeks but that of a Fritillary will perish after a few hours neglect on a potting-shed bench. Or less than that; say a few minutes to be on the safe side. More Fritillary deaths are probably due to desiccation than to all other causes put together. Desiccation; so easy to allow, but as easy to prevent. A handful of damp sphagnum moss is worth, exactly, its weight in bulbs as a prophylactic

Thymus Serpyllum, the Wild Thyme, is to the rock-garden what *Erica carnea* is to the garden proper. It spreads rapidly both by seeds and rooting stems but, if too appropriative, is easily kept in check. Mary had the idea of planting the two series of steps which pass from top to bottom of the limestone with the var. *coccinea*, and no more brilliant sight can we show in summer than the ruby waterfalls (to be a little fanciful) of Thyme.

Apart from its beauty, the plant is more than worth growing for the close ground-cover it forms and for the fragrance it gives up under the tread of a passing foot, an injury it doesn't resent in the slightest.

For sheer strength of aroma, though, it cannot compare with *Thymus Herba-barona.* I suppose its name is responsible for the widely held belief that the last-mentioned herb was used to improve the flavour, or assist the digestion, of baron-of-beef, much as mint sauce is used with roast lamb. I have not tasted *T. Herba-barona,* but its smell is that of caraway. Beef and caraway does not sound a palatable combination and neither from books nor the verbal pronouncements of gourmets can I find that it has ever been sampled. Now the original name of the plant was *Herba barona.* The Latin word *baro* means "one of simple mind" (*cf. Scots* "a wee bit simple"). Thyme has been used from earliest times as a remedy for mental disorders by herbalists. Do not these few particulars cast a light upon the origin of the name?

Unless the best form of *Thymus longiflorus,* with almost sable bracts and shining purple flowers, is lurking in some British garden and keeping very quiet about it, *Thymus membranaceous* is our most impressive species and in any circumstances the most strongly and delightfully fragrant. Its long, tubular, white flowers with projecting stigmas arise in clustered heads from the support of papery, often pink-tinted, bracts in June and July. Unreliably hardy, unfortunately, the plant is also intolerant of wet summers. That, at any rate, is what I have found. However rapid the drainage, *T. membranaceous* simply wizens and withers under excessive rain; excessive, that is, for us; say three or four inches in a month. A branch seres here and another there and very soon the Thyme is no longer a plant but only a reproach.

Loud is the praise given to climates thirty miles south of London, and loud is the silence which greets the mention of one twelve miles north.

"Essex", murmur the fortunate southerns, and bow their heads in sorrow. "Still", they add brightly,

after a moment's pause, "The soil is good for Roses".

Good for Roses! The last indignity. Either Essex is grossly libelled or my garden, while being in Essex, is not of it. Whichever way it is, many plants, reputed less than hardy, are happy here and amongst them *Grevillea alpina*. Exposed to north or south it grows as eagerly as Broom and blooms pretty well the whole year through. Its flowers, held in terminal racemes on short branchlets, pouched and bright red below, creamy white at their hooked extremities and also decorated with long projecting pistils themselves give, because of their strangeness, a suggestion of tenderness to the shrub. The unusual always excites suspicion.

Verbascum spinosum, a Cretan by nature, but a fairly close neighbour of *Grevillea alpina* by force of circumstances, is, unlike the latter, one of those trying plants which disguise under a brazen front a certain softness. That is no doubt the reason for its comparative rarity in gardens, for no dwarf shrub looks more in agreement with a block of limestone than this. Informally, one might describe it as dull grey-green, set with half-sovereigns. In case that does not convey much, and especially because a botanical description of the plant is not easy to come by, let me give a little more detail.

Verbascum spinosum, then, is rather spreading than upright and more or less evergreen. The leaves are from one to one and three-quarter inches long, ovate-lanceolate or sinuate, petiolate, thinly tomentose above, more densely so below. Bright yellow flowers, three-quarters of an inch in diameter and of Verbascum form, are held in terminal panicles on stalks which gradually harden until, by the time the bloom has fallen, they function as spines.

I have only had the plant two years; too short a time to allow of an opinion as to its hardiness here. So easily is it raised from cuttings, however, and so

quickly do the cuttings grow, that an occasional loss need not prohibit its cultivation.

In the meantime it is growing in the company of *Hypericum confertum*. The reason of giving it that associate was this. It is well known that if a Scotsman is marooned on an uninhabited island he will pine and die but, if two are cast upon it, they will found a colony in no time. If two Scotsmen can do this, surely, I thought, two Levantines can at least keep each other alive?* Particularly as Scots and Levantines are said to have some traits in common.

Hypericum confertum inhabits open glades in the Syrian desert (which does not appear to be a desert in the Saharan sense) and at a passing glance looks heath-like. A single touch disposes of that suspicion for it is only sub-shrubby, or, if you prefer the word (which I'm sure you don't) suffruticose. From six inches to a foot in height, it spreads fairly rapidly by underground runners. The opposite leaves are closely arranged in four equidistant, vertical rows, and each is from one-sixth to one-third of an inch long, revolute, sessile, truncate, lanceolate and dotted with translucent spots. The flowers I have not seen. They are said to be carried on almost sessile cymes and to possess calyces edged with stalked glands.

A very tiny specimen of *Daphne petraea var. grandiflora* is near by, but if you will allow me to say what I have to say about Daphnes a little later, when we may discuss both dwarf and taller species, two bites at a cherry will be unnecessary.

If you are not a rock-gardener, you have heard sufficient of my limestone; if you are, you will agree that it has had a reasonable innings. There is only

* A succession of frosty nights and sunny days in early March has shown this thesis to be untenable. *V. spinosum* has not suffered appreciably, but emergency measures were necessary to save *H. confertum*. It is, in fact, a more tender species than the type (erect) form of *H. empetrifolium*.

one other plant within its confines I feel compelled to thrust upon your notice and that is *Silene pendula*. An annual, undeniably, but an annual which, once sown, will look after future generations without assistance. The form I have came from the late Miss Willmott's garden, no ordinary distinction in itself. Of tufted growth and dwarf habit, and bearing large flowers of the brightest rose, the plant is prepared to fill up any vacant space and will, indeed, probably anticipate a wish in that direction if given a chance. You may, of course, entirely exclude annuals from your rock-garden. I am sorry if that is so, for few plants receive more admiration than *Silene pendula* in mine.

A mixed border in this garden, as has been said, is to be understood as one in which shrubs are the essentials and herbs the incidentals. It becomes necessary to extend the definition by adding "and trees" after "shrubs". Home-made definitions can always be modified by the maker to suit circumstances. That is one of their many advantages.

The plan shows mixed borders (M.b's) along the top of the bank. In those running from opposite the limestone up to the house there are plants that, if left unmentioned in this book, would never forgive me. And a plant's enmity may be a dreadful thing.

A small tree of *Sophora microphylla* is one of the proud ones, not without reason. It belongs to a far flung genus established in the New World and the Old and in both southern and northern hemispheres. The particular species under our notice is native to both islands of New Zealand and, according to some authorities, also to Chile. If this be so, then it is more than likely that it was one of those adventurers which are supposed to have made the long trek from Australasia to South America in Tertiary times, when a land belt existed between those con-

tinents *via* Antarctica. Skottsberg, however, found no specimen in Chile that quite corresponds to *S. microphylla* though, he says (in reference to the Chilean specimens of "*S. microphylla*" he had seen) "all are very like it in most respects". In the meantime we had best keep an open mind on the matter with, perhaps, a slight bias in favour of the tree's Australasian nationality.

My own plant was bought in 1925 and bore the label *Edwardsia grandiflora*. The assumption, speedily disposed of by the character of the leaves, was quite unnecessary, for it bears far finer flowers than any *Edwardsia grandiflora* (i.e., *Sophora tetraptera*) I, or any of my visitors, have ever seen. Instead of the corolla segments being approximated for almost their entire legnth as is normally the case in *SS. tetraptera* and *microphylla*, they are, in my specimen, separated in their upper thirds, thus allowing the base of flower to be seen. The drawing (Pl. ix, p. 83) makes this clear.

It is quite on the cards that, within forty-eight hours of the appearance of these words in print, I will learn from an eager correspondent that he remembers the very form I describe blooming in the lovely garden of the Rev. Pendleberry-Pim in the year of Queen Victoria's jubilee, and that there the flowers were known as Hungry Henrys. If, on the contrary, I have not been anticipated, I shall be tempted to publish a description of the plant as *Sophora microphylla* var. *aperta*.

Not far from it in the garden, and protected from the east by a Holly buttress is *Erythrina Crista-galli* (fig. 23, p. 325) the Common Coral-tree, in the var. *compacta*. Every spring, flowering branches about three feet long shoot up from its woody base and, though fairly upright to begin with, are gradually weighed down by the heavy flowers; three from each leaf-axil and, as a finishing stroke, a terminal raceme.

The bloom itself appears singularly unlike that which one associates with a papilionaceous plant. With standard petal lowermost, lateral petals (the wings) almost aborted and the remaining two forming a keel almost as long as the standard, it might well suggest to a stranger's eye a curious kind of Arum; one he had seen in a dream perhaps. Each about two inches long, of a rich coral in colour and of firm, thick and waxy substance, the flowers continue to open from August till the end of October.

I first saw the Coral-tree in the Cambridge Botanical Garden in 1920 and, fascinated by its beauty, bought it from many sources during the next fourteen years. My purchases, young, sappy and anæmic things, were unfitted for the battle of life as waged out-of-doors in Essex. Good fortune, however, was waiting round the corner. One day a friend, learning of my frustrated (but not suppressed) desire, asked in his hearty way "You want *Erythrina Crista-galli*? Can you take a plant home with you?" I could. A mighty specimen in a twelve-inch pot. It almost filled the back of the car, and, leaning forward from time to time, kept on reminding me with pricks on the ear that, whatever might be my habit on ordinary occasions, I must drive carefully on this. Its kind donor told me that age was a necessary factor for the regular and generous flowering of the plant, but stated no irreducible minimum of years. My own specimen has just had its thirtieth birthday, but don't let that discourage you. Only last month I saw a youngster of two years (from a cutting) carrying a few blooms.

After the leaves fall, we cut back the stems to the woody base of the plant and that, together with the soil round about it, is covered with a few handfuls of bracken. This winter mulching is a wrinkle that was given me many years ago. Its effect, I believe, is

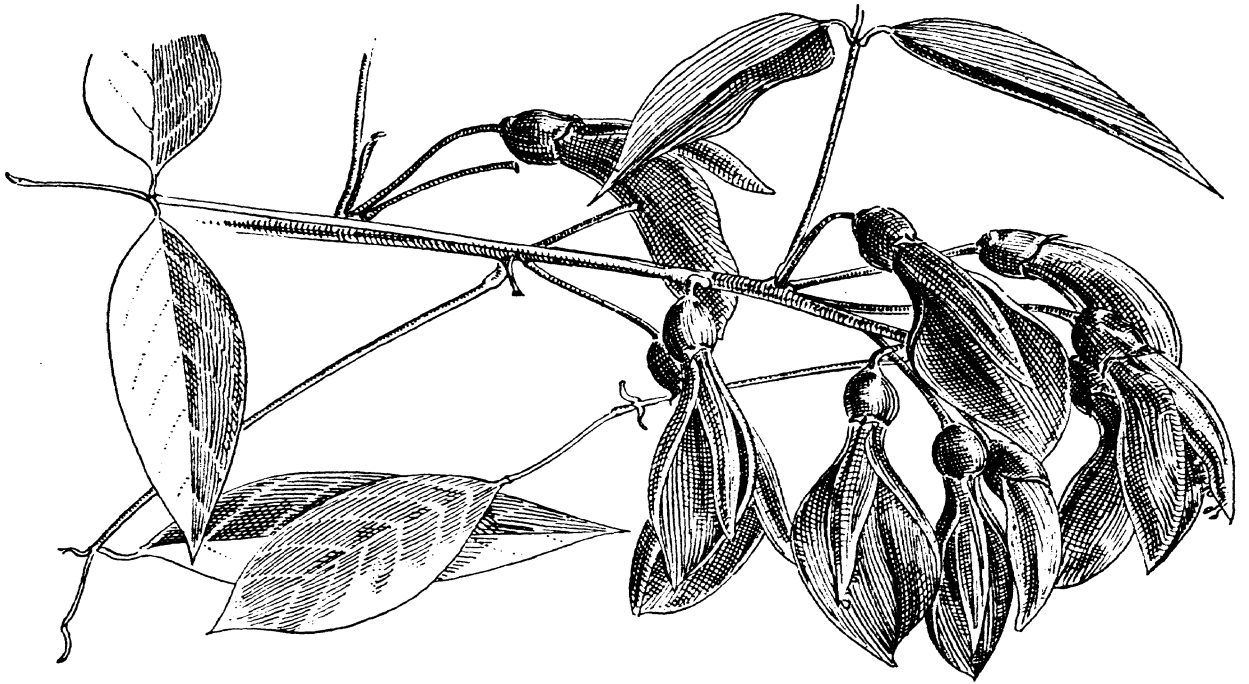

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fig. 23 ERYTHRINA CRISTA-GALLI *var.* COMPACTA [× ⅓]

to prevent a plant perishing from drought in the winter rather than to protect it from direct frost. Every plant has what may be termed a minimum absorption temperature. If that of the soil water falls below this, then no matter how much moisture is present in the soil, the plant must suffer, and may die, from physiological drought.

So impressed have I been by this simple method of protecting relatively tender subjects, that I now use nothing else for plants in the open. No hurdles, wigwams, scrim, netting, nor straw. Flower-buds, however, prepared in summer for the next year's blooming, are not covered by the insurance and it is very disappointing to find how damaging even a mild winter may be to those sensitive to frost. *Pieris Forrestii*, the most lovely of its genus and at the moment under our eyes, brings this unpleasantly to mind. To-day (the first of October) it promises a great show for April, but the promises of this plant are not to be relied upon with winter just ahead. I may be wrong, but I believe that bud tenderness decreases as age increases in this species, as it appears to do in *Pieris formosa*. The latter required a residence of twelve years in the garden before it brought a flower to completion.

Fortunately, the growth buds of *P. Forrestii* possess normal resistance and, in the best form provide young leaves of so brilliant a scarlet as to make up for loss of flowers.

Acacia dealbata labours under an ill-repute for tenderness that it does not deserve. Not so hardy as an Oak, perhaps, it can give points to *Pieris Forrestii*. It is quite probable that the hardiness of individual trees varies with the place of origin of the seed from which they sprang. The highlands of Tasmania, for example, are more likely to confer the quality than South Australia at sea-level. My

own specimen may claim Tasmanian descent. It was planted from a six-inch pot in January, 1929, during a temporary abatement in the frost of that terrific winter, and is now some thirty feet in height and almost as much through. It flowers regularly, sets good seed and, to further demonstrate its ease, sows itself.

The fleeting glance I had of *Acacia Baileyana* did not confirm the common opinion that it is hardier than *A. dealbata*. A year in the garden was enough for it; scarcely long enough, maybe, for its establishment, but the contrast of its behaviour with that of *A. dealbata* deterred me from replacing it; that, together with the dawning of the knowledge that Acacias require more room than Gooseberry bushes.

Limited accommodation cannot explain my neglect of *Daphne odora*, which, planted the same day as *Acacia Baileyana*, quickly followed that poor victim to the funeral pyre. I cannot remember precisely what deflected me from the path of perseverance in the matter of *Daphne odora*, but have a hazy recollection that one of my candid friends (of whom I have a great number) spoke disparagingly of the shrub, of my lime-free soil and of my horticultural capacity. Reluctant acknowledgment of a third of his remarks, the middle third, as touched with truth, chilled my enterprise, and *D. odora* remains without the gates.

By one means or another several of its genus have gained an entrance. To describe them in detail would bore you with a hundred-times-told tale but, as the experiences of another have a certain interest when contrasted with one's own, some account of their predispositions and appetites as here displayed, and, not least, of their contribution to the beauty of a scene may not find you irresponsive.

An article of horticultural faith, almost amounting

to a dogma, declares that Daphnes, at any rate European Daphnes, require limy soil for their successful cultivation. The tenet owes its origin, I fancy, to their occurrence on calcareous formations rather than to cold facts arrived at by experiment. We have already found how risky it is to pick on one element of a plant's environment and, without seeking further evidence, credit that element with vital importance.

It is also said that all Daphnes, to be happy, must have a moist soil. Now although a combination of liminess and moistness can occur, a limeless medium must be moister than a limy one*, other things being equal. One therefore asks oneself which need a European Daphne is likely to feel more keenly, lime or moisture? As inorganic lime does not appear indispensable to any plant, moisture must be considered the essential and lime merely a concomitant. Continental nurserymen have for long, wittingly or unwittingly, acted on this presumption by growing *Daphne Cneorum*, a "lime plant" in nature, in practically pure peat. You have no doubt bought the plant before this, its roots in a loaf of that material? And, incidentally, what happened in your soil, with which "builders' rubble had been well incorporated"? A gradual but steady deterioration of the Daphne? A common occurrence, I assure you, and one for which grafting is commonly held responsible; an unreasonable conclusion, for an exactly similar plant, placed in lime-free soil, will go ahead energetically.

This does not mean that the species has an inherent dislike of lime, but shows that it will thrive in the absence of inorganic lime and, further, that

* The specific heat of a lime-free soil is greater than that of a limy medium. It is therefore cooler in summer and less liable to lose water by evaporation. (Ref. to p. 283 *et seq.*)

a sudden transference to a calcareous soil is prejudicial to an individual previously grown in peat.

There are Daphnes, of which *D. Mezereum* is a prominent example, that cannot endure a definitely acid soil for more than a few years, but I have not found that even they prefer a limy to a limeless medium.

The question "How may Daphnes be grown in an average garden?" does not admit of a prompt and embracing answer, and the fact must be reckoned with that the genus, as a whole, does not include longevity among its virtues. After consorting with a good number of species for many years, I have gained the impression that their prime requirements are a moist, well-drained and humid soil of a reaction as nearly neutral as may be, fresh air and freedom from interference.

D.D. Genkwa and *Blagayana* prefer more shade than the rest, and I am doubtful about the former's tolerance of lime. *D. arbuscula*, though it enjoys sun, has no objection to shade. *DD. Cneorum, petraea* and *Verloti* are addicted to full light. *D. aurantiaca* died at the foot of a limestone rock in a sunny position. When I have gathered the necessary courage to again plant it in the open, half-shade, more peat and no limestone will be its portion. *DD. Dauphini* (*hybrida*), *neapolitana* (*Fioniana*), *acutiloba, retusa* and *Mezereum* will, within the limits first prescribed, grow anywhere, but *D. striata* and *D. Julia* (from southern Russia) just as certainly will not; for me, at all events. I look forward to seeing *D. Bholua*, a Nepalese species, at the moment a rather spindly stripling four feet high, attain twice that height in its sheltered corner and bear heads of purplish flowers with the prodigality of *D. Cneorum*.*

* Jan. 1938. *D. Bholua* is in bloom. The flowers, held in terminal heads, are comparatively large, scented, reddish-mauve externally and creamy-white within.

For sheer, ungrudging beauty I would give the palm to *D. Cneorum.* No rock-garden picture can surpass, and very few approach that of the Garland Flower pinkly foaming over a low rock on a bright May morning. *D. petraea* is magnificent, of course, but lacks in heartiness outside the alpine-house. It is a curious thing, is it not, that every specimen of this plant in cultivation appears to be the var. *grandiflora*?

The delicate purple flowers of *D. Genkwa,* lovely though they are, suggest to me that it is in half-mourning for its native Japan; that resignation to the will of British gardeners is, for it, as difficult as ever. Though there is nothing especially attractive in the washed-out purple blooms of *D. Dauphini,* a shrub of from four to six feet in height, its habit of bearing them almost from year's end to year's end is very admirable. Doubts have been cast upon its hardiness, but, to use a phrase popular with Victorian parents, she has never given me a moment's anxiety. It is a very fragrant species, a quality it shares, in greater or lesser degree, with most of the genus. A rather evil fragrance, that of Daphnes; one that carries a hint of poison in its depths.

I once read an article, or it may have been a book, on "How to choose a Hobby". It struck me as a difficult subject. One may take a horse to the water, tell him how excellent it is, but fail to persuade him that he wants a drink.

That the most possessive hobbies are self-sown, so to speak, admits of little doubt and that they are perennial in the widest sense is undeniable. Mary, for instance, has always been bent on houses. Of the origin of her infatuation she has no idea. There is simply the fact that a house, or the picture of one, still holds her with the interest her doll's house did in childhood.

You can imagine, then, with what intensity of

purpose she set about building one for ourselves. Actual laying of bricks on bricks she left to others, but the part of task-master was hers and faithfully she upheld it. Those who bore the heat and burden of the day would have petitioned Pharaoh, had not she been Pharaoh, for some remission from her constant attention. Such items as nogging, bonds, lagging, "rabbiting-in", dead oil and cove ceilings were her daily food and in her sleep she saw Tudor chimneys gravely walking in through pantry windows. I have always been a disappointment to her in my unhousely attitude. Until this moment, indeed, I had not realized that there's not a single chimney-pot on the house. There will be good reason for their absence. Possibly the starlings applied for an injunction prohibiting their use and Mary granted it. Something of the sort.

The soundness of a house, its convenience and economy in upkeep belong to one category of properties; in another are those more subtle but equally real qualities which together comprise its personality. I am no more psychic than another but do not shut my eyes to the existence of that which I cannot explain, such as the aura of a house, a ship, a garden. Everyone, to a greater or lesser degree, is conscious of this mysterious essence, and speak of the perception as their being sensitive to surroundings.

One house will stimulate, another depress. In that one we are conscious of a feeling of well-being, in this of being comforted, a different thing from being comfortable. One will emanate happiness, another gloom and yet another definite malignity. Not a few, of course, give no impression whatever; neutral houses.

These feelings in ourselves are not produced by well-chosen furnishings, good fires, generous boards, congenial companions or the opposites of these. We

perceive them as acutely in empty houses. Have you not, when house-hunting, felt a house say to you "Please take me. We are in sympathy"? or another hiss "Come here at your peril"?

There are houses, too, which without obtruding a quality or a wish (may I say) of their own, tell how they regard their owners. I know a fine old Georgian mansion, the dwelling of a rich and astute man of business who cannot, for the life of him, sense its essential atmosphere. The house resents him; of that I am certain. More, the man knows there's something wrong, but attributes it to every cause but the right one.

Another house that I know, a trifle bleak perhaps, but kindly to a visitor, dotes upon its master; cherishes him, cannot bear him to leave it for a day. On his return from a necessary absence it sighs with pleasure, though his dog's simultaneous bark of welcome hides the sound from any but the listening ear.

Thus the building of the soul of our house, of greater consequence than its anatomical construction, was a matter of concern. Was there anything we could do to incorporate as many of the friendly qualities as possible and as few of the undesirable? No, not consciously. We could only hope for the best and strongly wish against all else. What the result of our endeavours is to friends and strangers I cannot tell. People, if they say anything, are circumspect. To us, at all events, the house is not a failure.

Contrary to the usual procedure, it was made to match the garden. Below it to the north and west there are Heather beds covering about an acre. To tone with these, the half-timbered walls were bricked in colours ranging from grey, through red, to orange, and the red-tiled roof, though never in its earliest days conspicuous is, under lichen's easy hand, melting into the scene.

Chapter Fourteen

NO PART of the garden is more thoroughly satisfactory than that devoted to Heather. The word is used in the north-country way and embraces both Ericas and *Calluna*. An old shepherd once gave me his own classification thus: "There's three sorts of Heather; White Heather, Bell Heather and Heather itself."

Entirely satisfying to the shepherd, the arrangement is scarcely so to those gardeners who take great pains to label these shrubs according to their kind. The leaves of *Calluna* are opposite, overlapping and arranged in four rows while of the flower the coloured calyx is the showy part and overtops the short corolla. In *Erica* the leaves are in whorls of from three to six, depending on species, and more or less spreading. The rounded or campanulate corolla is the prominent part of the flower, an uncoloured calyx taking a very secondary place. The Heather (or Heath) garden—rather a bombastic description but a convenient one—is undulating, very irregular in outline and intersected by grass paths. It is not entirely devoted to Heather. A few standard Apples of the decorative kinds, "John Downie" and the like, masses of the Double-flowered Gorse—crystallized sunshine in springtime—two Common Junipers gathered from the wayside near Winchester, sundry Vacciniums and an Arbutus or two all help to break the sameness without overpowering the Callunas and Ericas which, several thousand strong, are not easily thrown into subordinacy.

The natural leaning of Heather and the dwarfer

Heaths is towards a short life but a merry. To lengthen it, great abstemiousness in diet is necessary and this, imposed by the gardener, has also the excellent effect of keeping their proportions within the bounds of fashion. We therefore dug the ground only a shallow spit in depth and added nothing. The soil, even at that, was too tempting and the plants let themselves go. I should have shortened them after flowering, but at the time was wavering between the let-alone and clipping schools of thought. Their tenets being more easily followed by one of my habits, I came to follow the let-alones and, at first highly gratified to see the plants so quickly reach massive proportions, became dismayed at their subsequent leggy floppiness and eventual dissolution. The latter event was hastened by a succession of hot summers. In the British species at least, long stems, much branched, made while the going is good, cannot be maintained against repeated droughts. Nowadays, we shorten the dwarfer sorts immediately after flowering, but not, naturally, those known as Tree Heaths, *EE. arborea, stricta* and such like.

Pruning, it is probably unnecessary to say, exerts its preservative effect both by encouraging new growth from the base and diminishing the evaporating surface. The first result, a virtual renewal of youth, can be compared with that following a modern rejuvenation operation. Both depend upon the distribution of hormones and the activity thereof.

I have said that no part of the garden is pleasanter than this given to the Heathers. There is no bare ground, and always a look of quiet opulence. And surely no other group of plants yields such a succession of unstinted bloom. We are in the middle of November. *EE. ciliaris* and *vagans* are still in flower and *Calluna vulgaris* not much the worse for wear. *Erica darleyensis* should begin next month to show its pale

pink blooms and reach its maximum florescence some eight weeks later. Before its course is through, the running is taken up by many others.

Joined in March by *E. carnea* herself, her host of lovely children brighten the garden as few plants can from December to May and the tall, bushy *Erica mediterranea* carries on from March to June. This species is to be had in many colour forms of which my favourites are var. *superba* with flowers of a reddish-purple, and *rubra*, truly named. *Erica lusitanica* (*codonodes*), quite hardy here, throws its almost terminal clusters of white flowers, adorned with pink style and stamens, from January until April in a normal year. The whitish blooms of *E. arborea* and of its more robust variety *alpina* scent the air for yards around in March and April and are ably seconded by those of the hearty *E. Veitchii*, the child of apparently promiscuous union between *EE. arborea* and *lusitanica*. *Erica australis*, by far the most beautiful of the taller species, bears its clusters of bright red-purple flowers from April till June and is much hardier than generally credited. The company of its compatriot, the White Broom, adds, by contrast, to its charm.

The rosy banners of *E. ciliaris*, the Dorset Heath, are in the field from late June until autumn. A pretty plant but a floppy one, it is outshone by many rivals. The var. *Maweana* is less straggly, carries larger and more richly coloured flowers but, with me, is the least hardy of the hardy Heaths. *E. cinerea*, the Scotch Heath and Bell Heather of the shepherd, assisted by its many varieties, continues in bloom from June to September. The dwarf form *coccinea* is almost as untrustworthy as it is lovely but may be kept up to strength by cuttings without difficulty.

Varieties of *Calluna vulgaris*, the Common Ling, form, to my mind, the finest of the Heather assemblage. Collectively, they give an exhibition of full-bodied

magnificence from July to October. The old crimson-flowered var. *Alportii* easily holds it own against a number of recent introductions and the beautiful var. *Hammondii* remains the Queen of the Whites.

Shepherds in Northumberland, if such a detail interests you, still refer to *Calluna* as He Heather to indicate its superiority to *Erica cinerea,* unflatteringly called She Heather, as a fodder plant for sheep.

Erica stricta, the perfectly hardy Corsican Heath, is up to six feet high in the garden and, on account of its pretty, pale pink flowers, would attract more attention were there not so many strong competitors in evidence between July and September, the period of its flowering.

The Cornish Heath, *Erica vagans,* and its forms also come into play in July and continue until November. Almost as good a plant as *Calluna,* its habit of opening the flowers in gradual progression from below upwards, while prolonging its season, is prohibitive of a really brilliant display. Still, I should not like to be deprived of the vars. *kevernensis* and *rubra,* though existence could easily be endured without the pallid var. *grandiflora.*

Erica Tetralix, the Cross-leaved Heath, has a season from August to October. It resembles *E. ciliaris* but may be distinguished from that species, at any time of the year, by bearing its leaves in whorls of four, those of *E. ciliaris* being in threes. The white-flowered var. *mollis,* softly grey in stem and leaf from a covering of fine hairs, is a pretty, but not sensational plant.

The worth of a Heath garden is by no means entirely dependent upon the blooming of its inmates. After the flowers have withered they remain on the plants for many months and, still holding a hint of pink in their russet brown are, at a distance and under a clear sky, more appropriately lovely to the dying year than flares of splendour. *EE. stricta, vagans* and *ciliaris* are

especially pleasing in the subdued colouring, to which their foliage contributes the important part of foil.

But without either fresh or faded flowers, the conglomerate foliage of a variety of Heaths and Heather is comforting to the eye. Bright green, dark green, grey green; yellow-green, not bilious, but of a copper or a golden cast; mossy greens and hard greens, all these and more form a billowy carpet always satisfying, never discordant with surroundings or with your mood.

There are forms of *Calluna* which subscribe to this gentle beauty, vars. *argentea*, *cuprea* and *aurea*. The first is not so silvery as it might be, but a patch of each, carefully bestowed, just supplies the missing notes.

These, then, that I have spoken of are the components of our Heather garden, planted in mass. Other species, not so hardy, dislike the local climate. *Erica umbellata*, a pretty and graceful shrub from Spain, Portugal and Morocco, reaches over two feet but is apt to suffer disfigurement in a hard winter. The lovely *E. multiflora*, ranging in nature from Spain to Dalmatia on the north side of the Mediterranean and from Tunis to Morocco on the south, failed to pass the one test it was given out-of-doors. Next time I'll plant it in a sunny place in sandy soil. (I should have mentioned before that the tall Heaths from southern Europe are unperturbed by an aridity that would shrivel *Calluna* into tinder.) Golden-flowered *E. Pageana*, a South African, is, I believe, established in a few southern gardens but not, I'm sorry to say, in mine.

Abutting on the Heather garden, actually dipping into it (see the plan), is an area we call The Pines. The name is for convenience. It is easier to say a bed is in The Pines than to give its latitude and longitude. Now that I see the words in print, their vanity is

apparent; the woodlet cannot be more than half-an-acre in extent, if as much. And I've added to it since it formed the eastern boundary of my original property. More *PP. Laricio* and *Strobus* have been planted and are now higher than those in position when I bought the land. *PP. excelsa* (too many) and *Laricio* var. *nigricans*, the Austrian Pine, have been introduced as well as single specimens of *Athrotaxis selaginoides, Cryptomeria japonica var. elegans, Juniperus Coxii* and, on the outskirts, *Abies Forrestii* and *Abies bracteata*. Not all Pines, but all in the family *Pinaceae*.

Beds have been dug in The Pines. (Great Heavens! Now I know! For years the name has vaguely reminded me of something. Seeing it for the first time in proof has brought that something to the surface. Theodore Watts-Dunton's house, of course, in Putney, where Swinburne lived the last thirty years of his life. But let me assure you that there is no more resemblance between The Pines at Putney and The Pines in the garden than between Algernon Charles Swinburne and myself.)

Beds, I said, have been dug in The Pines. One lies in the eastern angle and nourishes a few North American plants, the notorious *Epigaea repens* (fig. 24, p. 340) among them. Notorious because of its behaviour. Here to-day and gone to-morrow, it is an embodiment of that doleful reminder, in the midst of Life we are in Death. A plant, apparently healthy at the moment, may in twenty-four hours show a livid browning of the foliage which yet retains moisture. It is doomed. The condition I refer to is very different from the dry brownness beginning at the leaf edge and due either to drought or too rapid loss of water, a merely temporary disability. It, the fatal disease, looks to be a moist gangrene. I do not know the cause, and must confess I've never looked for it;

Plate XXII

p. 432

NOMOCHARIS PARDANTHINA [×⅔]

Plate XXIII

p. 431

PRIMULA SHERRIFFAE [×⅔]

but that has not prevented me from blaming a fungal or a bacterial infection. Gardeners are very expert in recognizing the cause of a disease from the most cursory glance at the victim, or even without it. The description of a few symptoms through the telephone or in the press is often quite sufficient to base a diagnosis upon.

Apart from this trouble, the plant is not difficult to grow in a friable lime-free soil under north exposure. Sufficiently frequent mulching with leaf-mould, peat or pine-needles to keep pace with growth is advisable, not in order to supply nourishment but to check evaporation from the soil.

It is, nevertheless, advisable to start with a good, well-rooted specimen. For years I struggled with small, ill-nourished plants, the best I could then obtain, but could not get them going. At length, in the grip of the extravagance of desperation, I imported a square foot from Canada. It has grown into a circular patch at least a yard in diameter and, what is more, has apparently pronounced a benediction on the garden. For now any sort of plant responds with generosity to what the garden has to give it, and cuttings root to the tune of ninety-five per cent.

None of the ripe adjectives—superb, magnificent or splendid—can be applied to *Epigaea*. Would one call a milkmaid, as poetically conceived, magnificent? Like her, *Epigaea* hides under a pretence of coyness a tendency to flirt, and any philosopher will tell you that a dimpled cheek and smiling eye, half-hidden beneath leaf or bonnet, can often play more havoc than the features of a Juno. That is how I explain the allure of the Mayflower, and why the stern Puritan colonizers of New England came so easily under her sway. For all these rigid ones are romantics at heart.

The flowers, waxy, white or pink, tubular and

p. 338

fig. 24 EPIGAEA REPENS [× ½ approx.]

spread at the mouth are freely produced in terminal clusters in early spring and peep like the milkmaid, but from under large, leathery, dark green leaves.

I have never seen a really poor form of *Epigaea repens* though some, naturally, are better than others. The variety known as *rosea* in gardens can be very charming if the rosiness is sufficiently pronounced. Another, bought at one of the Royal Horticultural Society's shows, has large flowers of the purest white held well away from the unusually large, flat and shining leaves. We call it var. *grandiflora* (gardeners do these things) but the name has no official standing.

Contrary to what many of my friends have found, *Epigaea repens* is with me an easier subject than *E. asiatica* (Pl. x, p. 162), though the latter is settling down as time goes on. As prostrate as its American sister though a less dainty plant, this species from northern Japan will, if vigorous, pile branch on branch. Its foliage is larger, coarser, hairier; bronzed in youth, dark green at maturity. The flowers, so far as I have seen, are always rosy-pink, their depth of colour varying with individuals.

These are the only known Epigaeas. I have seen, however, what may turn out to be a third species. Seen? Glimpsed, to be more exact. Its owner kept me at a safe distance from the plant, crediting me, I'm certain, with a tactile dexterity I unfortunately don't possess. The peep was enough to discern rounded, reticulate and glabrous leaves, smaller than common, and white flowers with unusually spreading corollas. Had the plant come from North America, it would have been put down as a form of *Epigaea repens*. As it was a wilding from Japan that relationship was out of the question unless, indeed, hitherto unobserved by botanists, an errant *E. repens* has strayed into Japan, which seems unlikely. The full story must be left to another day when, by hook or

crook (possibly the latter), I shall come to enjoy its closer acquaintance.

It has been indicated that one of the two species of *Epigaea* is distributed in eastern North America and the other in the Far East. *Mitchella* and *Shortia*, also genera of two species, are similarly dispersed. The usual explanation of these and like occurrences is that we only have before us at the present day a few signposts, or rather memorials, where, millions of years ago, there was a continuous distribution. The gaps represent the results of physiographical cataclysms; ice-ages, submergences and upheavals.

There is a monotypic genus called *Orphanidesia*. Its species, *O. gaultherioides*, closely resembles the Epigaeas, particularly *E. asiatica* in its hairy stems, large, rough and bristly leaves and racemose inflorescence. The racemes hold only one or two flowers as against from three to six in *E. asiatica*, but such trivialities do not prevent one wondering whether the plant is not from the same primeval stock as the Epigaeas themselves; whether in fact, it is not their European cousin.

In 1934, Mr. E. K. Balls sent me seed, of the previous season, he had collected from the very place in Lazistan where Balansa (I think it was) discovered the shrub in 1866. It germinated in August (1937) and, no doubt, in more gardens than mine. To Mr. Balls, then, is the credit of introducing this remarkable plant into, at least, British cultivation.

Incidentally, it is common to find that seeds of ericaceous plants and of their allies germinate quickly if sown as soon as ripe but, when the seed-coat has become thoroughly hardened, years often pass before a cotyledon is visible.

Now let us return to the bed in the angle of The Pines. If Epigaeas are its stars, *Phlox adsurgens* (fig. 25, p. 344) supplies their satellites. When

first sent to this country from its native Oregon and northern California it, according to report, resented the change bitterly. Discussion raged as to its cultivation, nay, on how it might be kept alive. Weird composts were devised, infallible charms prescribed, sacrifices made to Flora; the plant remained as obdurate as ever. Eventually the influence of the goddess—I can think of none other—prevailed, and *Phlox adsurgens* suddenly cast off her sulkiness and became as clay in the gardener's hands, if, that is to say, she was given a lime-free, porous soil. The large flowers of brightest, softest pink are carried in cymes at the ends of almost prostrate growths (which, from the plant's name, should ascend more than they do) and so freely as to endanger their bearer's life. To counteract, not the habit, but its results, we shorten the growths immediately the flowers wither. This Phlox will make a fairly compact cushion in sun, but never shows the luxuriance there that it does in partial shade.

A number of plants of the dwarf *Vaccinium hirsutum* are in the bed. I had read that *Epigaea repens* is often associated in nature with *V. pennsylvanicum*, which, no doubt, gives a measure of shade and wind protection to the more sensitive subject. We, having no stock worth speaking about of that species but a large one of the Hairy Huckleberry, served the latter up instead. As *Epigaea repens* has registered no complaint, I presume that the fraud, which it must have detected by this time, has been forgiven.

The smooth, oval leaves covered with grey-blue bloom and large, glisteningly white, cup-shaped flowers, hanging in clusters from the axils towards the ends of the previous season's growths, its easy nature and tolerance of light or shade would together make *Zenobia pulverulenta* one of the very finest

ericaceous shrubs did not its leggy sprawliness weigh somewhat heavily on the other side of the balance. Every bit as much at ease in Britain as in its south-eastern United States, it winks encouragement to the Epigaeas from its superior stature of five feet or so.

At intervals, when I write of myself and an

fig. 25 p. 342

PHLOX ADSURGENS [× ½]

imaginary you walking from one bed to the next, I feel almost compelled to preface a description with a suitable adaptation of the sentence, "Passing along the road, the towers of the castle come in sight". It appeared in a school examination paper together with several others headed with the peremptory command, "Correct the following". Is it not remarkable how such trifles stick in the mind for a lifetime while really important things, such as how to deal with

the clock on the eve of summer-time, are forgotten in a moment? Perhaps the frenzied attention I focused on the towers, majestically marching along the road, has made the record of their strange behaviour ineffaceable. Now that you know all, if you repeatedly catch me beginning in the strain "Passing along the path . . .", you will, I hope, look on the iteration with indulgence.

Repetition, indeed, in more than this I have the greatest difficulty in avoiding. Not so much of words —that can be evaded by the use of Elegant Variation, deplorable practice though it may be—but of the same ideas and forms of speech. It probably never occurs to even the most self-conscious conversationalist how trying a favourite expression can be until he writes a book. On a first reading of the proofs of this one I found I had credited myself with no less than half-a-dozen ewe lambs. As each of them was a "one ewe lamb" five had to be sacrificed forthwith. It is possible, though, that I have overlooked a seventh. If you find her lurking in some unexpected corner, please look the other way.

And now we feel the influence of The Pines, for even the smallest wood has a positive presence. The grammatical convention that a wood is of neuter gender may pass uncontested in a school-room, but the most rigid grammarian will change his tune when in its midst and, if communicative, confess to being stimulated, solaced, inspired or fearful of he knows not what. My own reaction is one of pleasurable excitement that, like other pleasurable excitements, is not without a hint of trepidation in the background.

On one occasion sensation was of a different order. I was in a Fir plantation that had been destroyed by fire and have never, before or since, felt such an oppression of unutterable gloom as that caused by

the dreadful spectacle of the blackened corpses of ten thousand trees. Fifteen minutes of the desolation was enough, but that memory of over thirty years ago is as poignant as ever, so painful was the contrast between what should have been and was.

The Pines, small though it is, has a cosmopolitan population. There are plants from China and Peru, the Arctic and Cape Horn. In the very middle is a spreading patch of the Shamrock Pea, *Parochetus communis*. It arrived in the garden under cover of *Oxalis oregana*, and is now trying to shoulder its former protector out of the ground. A vain effort. *Oxalis oregana* simply disregards the presence of a viper in its bosom. This is fortunate, for one cannot allow a lawful immigrant to be bullied by a stowaway; at any rate one should not, though I can well believe that the winsome *Parochetus communis* can win a way past any but the most soured of Port Authorities, for does it not gaily spangle the ground with Cambridge blue in October and November? Not usually considered a woodland plant, nor especially addicted to such an environment on its native Himalaya and mountains of tropical Africa, it is one of those excellent herbs which are happy anywhere if given their ration of water.

Vancouverias, elegant berberidaceous herbs from western North America, are in their element on a Pine wood floor. *V. hexandra*, the commonest species in cultivation, sends its rhizomes far and wide—often a little too far and wide. *V. chrysantha*, a rare plant in gardens and almost as scarce, I understand, in nature, is peculiar in the bright, shining yellow of its flowers. The third species, *V. planipetala* (*parviflora*), has been unofficially known as *V. sibirica* in this country for as far back as the memories of the most venerable gardeners reach, but for what reason none can tell; it has not the remotest connection with

that land of harsh repute from which the name apparently derives. This is the only evergreen *Vancouveria* and, all things considered, perhaps the most attractive.

The genus was named in honour of Captain George Vancouver (1758–98). One cannot but think that a more appropriate group of plants than the tenderly graceful Vancouverias might have been chosen to commemorate the name of that grim disciplinarian. Something harder, and swift to impose authority; something, in fact, Araucarian or Colletian. For Vancouver, from all accounts, was a typical sea-dog of his time. His word, naked of wrappings, was more than law. It was fate. Had he commanded *The Bounty* in place of his milder contemporary, Capt. Bligh, there would have been no mutiny. Vancouver would have smelt a rat before the rat was there and, in the crisp phrase of the day, taken order accordingly.

The Admiralty knew his qualities and found him the very man to "take over" from the Spaniards land they had annexed (but subsequently relinquished) in western North America and, in his spare time, to explore the coast from Lower California to Cook's Inlet (Alaska), seek for an eastern passage to the Great Lakes and investigate the nature of the Strait of Juan de Fuca (between the mainland and the south of Vancouver Island). He carried out his commission, circumnavigated the globe, and, by way of giving good measure, explored a part of New Zealand, examined the Galapagos Islands and hoisted the British flag over the Hawaiian Islands—an annexation never ratified—in under four years. Vancouver's master-word was duty, spelt in capitals. The excuses for its evasion, now so lavishly provided by psychology, had not been thought of a hundred and fifty years ago. Complex, to him, might have been the

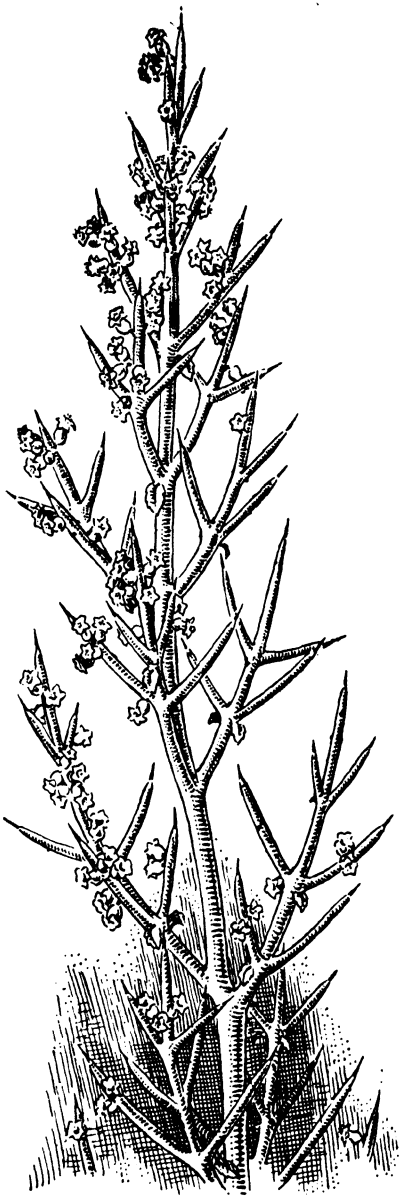

fig. 26 p. 189

COLLETIA ARMATA [×⅛]

name of a sloop-of-war. On the scroll of fame he ranks with Cook, Magellan and de Bougainville and, perhaps more fortunate than they, has his name-plants by his resting place in Petersham churchyard.

Epimediums, also belonging to the *Berberidaceae* and to which allusion was made when speaking of the Bank, though they grow with vigour in the shade of woodland, flower less freely there than in a more open position. The plant figured (Pl. xi, p. 163) grows at the very edge of The Pines and I have rather anticipated events by entitling it *E. warleyense*. Let me explain. It came from the late Miss Ellen Willmott's garden and had existed there for many years as *E. Perralderianum*, supporting as best it could a mistaken identity. Not before Mr. William T. Stearn saw the plant did we know its station and degree. In his monograph of the genus, not yet published, it will be found set forth how he determined the plant to be a hybrid between *EE. alpinum* and *pinnatum* subsp. *colchicum* and gave it the name I use.

An attractive herb in a quiet, epimedioid way, its leaves are built of three, five or nine leaflets, cordate, ovate, bristle-edged. The flowers, carried in loose racemes, are of a bright bronze colour, a hue which might be expected, but not necessarily obtained, from combining the red of *E. alpinum* with the golden yellow of the second parent.

I cannot speak with any pride of that other berberidaceous genus, *Jeffersonia*. Neither the North American *J. diphylla*, with curious two-parted leaves and white flowers nor the more beautiful Manchurian species, *J. dubia*, whose rounded, scalloped foliage, metallic hued in youth, and soft violet flowers both have a look of transience, do more than live beneath the Pines, nor have I been able to suit them better anywhere else. Some day, perhaps, I may happen on the trick of their cultivation, but,

if not, shall seek consolation in persuading myself that the group is effete, and about to quit this worldly scene.

Ranzania, too, a closely allied genus, is almost as callous to my best endeavours. Native to Japan, its one species, *R. japonica*, is rare even there. Yet it cannot be on the down-grade; an acquaintance swears it will grow anywhere in his garden, and can a gardener have perjury upon his soul? Nay, not for *Ranzania* at any rate.

I sowed seed of *Romanzoffia sitchensis* and *R. unalaschcensis* on the strong recommendation of friends in British Columbia. Their enthusiasm was unbounded. They told me I had never seen such exquisite things as their Mist Maidens. The name was good propaganda. Could Hans Andersen have had a hand in making it? Both species germinated quickly and without stint (an occurrence usually regarded with a dubious eye by propagators) and the seedlings grew amain. Before twelve months had passed, both species were flowering in The Pines, but I cannot see much in either to excite superlatives. Apart from *R. unalaschcensis* being a dwarfer, more compact plant, there is not much between them to the gardener's eye. The leaves of both are mainly basal, rounded, cordate and scalloped at the edge. The inflorescence is racemose on branching stems,* three or four inches high in *R. unalaschcensis* and twice as much in *R. sitchensis*, while the flowers themselves are white (though there are said to be colour forms), about half-an-inch in diameter, tubular below and with spreading lobes above.

The taller species ranges from Alaska to California and the other (which I refuse to spell out again) finds its principal station on, naturally, Unalaska and neighbouring islands. Do not trouble to get the

* Not on scapes as generally described.

atlas. I've just done so. They are those at the Asiatic end of the Aleutian chain.

Although perfectly hardy, the Romanzoffias melt away mysteriously. Each year there are fewer plants than showed up the year before. Now although spotty disappearances do not actually prove the guilt of animals they certainly suggest it, and the tubers of Romanzoffias*, lying just beneath the surface, may well tempt a hungry rodent.

The vanishing trick is even more frequently exhibited by the Hesperochirons (Capnoreas), a small group from the western United States and related to the Romanzoffias.† Pretty little herbs, from tufts of narrow or oblong leaves rise scapes, two or three inches long, each bearing a white, solitary flower. In *H. californicus* the corolla is more or less campanulate, in *H. pumilus* it is rounded and pulled below into a hair lined tube. If you like the sound of them, grow these plants in the alpine-house. There they avoid the danger, whatever it may be, that harasses them outside.

It is quite uncommon for a species bearing single flowers to be put in the shade by a double-flowered variety. That, however, is what has happened to *Sanguinaria canadensis*. Without visual evidence, it is difficult to believe that the modestly charming type could be responsible for a child of such surpassing loveliness. As the circumstances of its arrival here and of its eventual establishment in the garden are not without interest, let me relate them to you.

While peeling the invariable breakfast apple one spring morning in 1932, the post arrived. Among the usual bills, circulars offering me gigantic sums "on

* The "root-stock" of *R. sitchensis* is spoken of as tuberiferous. In fact, both species come under Raunkiaer's class of Stem Tuber Geophytes.

† Both genera belong to the family *Hydrophyllaceae*.

note of hand alone" (whatever that may be), invitations from Turf Agents to accept a fortune and the particulars of a means to acquire The Children's Encyclopædia on advantageous terms, there was a long, whitey-brown envelope bearing Canadian stamps and a Vancouver post-mark. It contained a slip of paper inscribed *Sang. canad. pl.*, about six inches of a dry, wrinkled, wood-like substance as thick as a lead pencil and a rumpled piece of tissue paper from which, I surmised, it had escaped.

Anything less like the business end of a plant than that desiccated stick I could not imagine. You've no doubt seen in a chemist's shop blue-and-white jars labelled *Radix tarax.*, *Rad. glycyrrhiz.*, and so on, and, if on a friendly footing with the chemist, asked to look at their contents? Very well, you need no further description of the appearance of my *Sanguinaria* on arrival. It crossed my mind that the donor thought I was running a herbarium, for in those establishments, as is well known, an odd piece of rhizome may find many employments.

Mary, more conservative in her opinions as to what is alive and what isn't, remarked "You never know". Simple words, but those that have preserved the reputations of contemplative philosophers more often than the most learned disquisitions.

She advised planting the rhizome, just as it was, in moist, well-sanded leaf-mould immediately beneath the surface of the ground. I carried out instructions with more obedience than confidence, and now, as gardeners do, point to the result (Pl. xiii, p. 177) with honest pride, often only to be asked by some as yet unstrangled gowk if I have seen the magnificent plant in So-and-so's garden. "A marvellous cultivator, So-and-so", he adds, lighting a cigarette.

Schizocodons and the Asiatic Shortias occupy the

best part of a bed some forty square yards in area. Neither genus requires the shade they get in The Pines, but neither do they find it too much. The tolerance of both to intermediate light is wide. Let me put it thus; if full shade is represented by 1 and full sun by 10, both genera are quite content in light between 3 and 7 inclusively.

fig. 27 p. 355

CORNUS CANADENSIS [× ⅓]

Of late years, these plants have become much better known and *Shortia uniflora var. grandiflora* (Pl. xiv, p. 226) in particular is quite a minor rage; minor, because of its familial insistence on a lime-free soil. Its beautiful flowers, freely borne and carried singly on two-inch scapes, are as much as an inch and three-quarters across, fimbriate, widely funnel-shaped and vary in colour from pale to richest pink.

When well established, it seeds itself (it does so, anyhow, in The Pines), and spreads fairly rapidly by rhizomes. More rapidly indeed than *S. uniflora* itself which, without doing it injustice, is a smaller edition of the variety—an upside down way of putting it, but expressive of my meaning—and often shows a

split petal in the corolla. The leaves of all Shortias* are rounded, wavy at the edges, evergreen and turn to a rich carmine-red in autumn. *Shortia galacifolia* which, although in an adjoining bed, we may as well deal with now, is the American member of the genus, the oldest species in cultivation and was the first known to botanists. There is a story of how, the station of its earliest discovery not having been recorded, the Oconee Bells (from a county in S. Carolina) was looked upon as a mythical plant, so carefully was it hidden in the Carolinas. Rediscovery showed it to be not so much rare as local in distribution, a frequent occurrence with many uncommon plants.

Never so popular as its merits warrant, the advent of the Japanese species has put it at a further discount, most unfairly. The contrast is that between a *Leucojum* and a Snowdrop. Slightly pendant, broadly campanulate flowers, white or sometimes tinged with pink, are borne singly on three- to four-inch scapes. They are smaller than those of *Shortia uniflora* and less assured, the latter attribute being shared by their bearer (Pl. xii, p. 178).

The Schizocodons are entirely Japanese though, not to be entirely out of it, America states, with a fine nationalism, that the genus is the Asiatic representative of its own *Galax*. While *Galax aphylla*, the only species, is quite a nice plant with its large, rounded, shining, evergreen leaves and tall scapes crowded in their upper part with small, white flowers, and although both it and *Schizocodon* belong to the *Diapensiaceae*, no gardener would as much as think of it when speaking of the latter genus.

Schizocodon, like the other genera of its family, is a small one. It contains only two species. *S. macrophyllus*, the larger and more robust, has cor-

* Of all, at least, in cultivation.

Plate XXIV

p. 430

KALMIA POLIFOLIA *var.* MICROPHYLLA [×$\frac{3}{5}$]

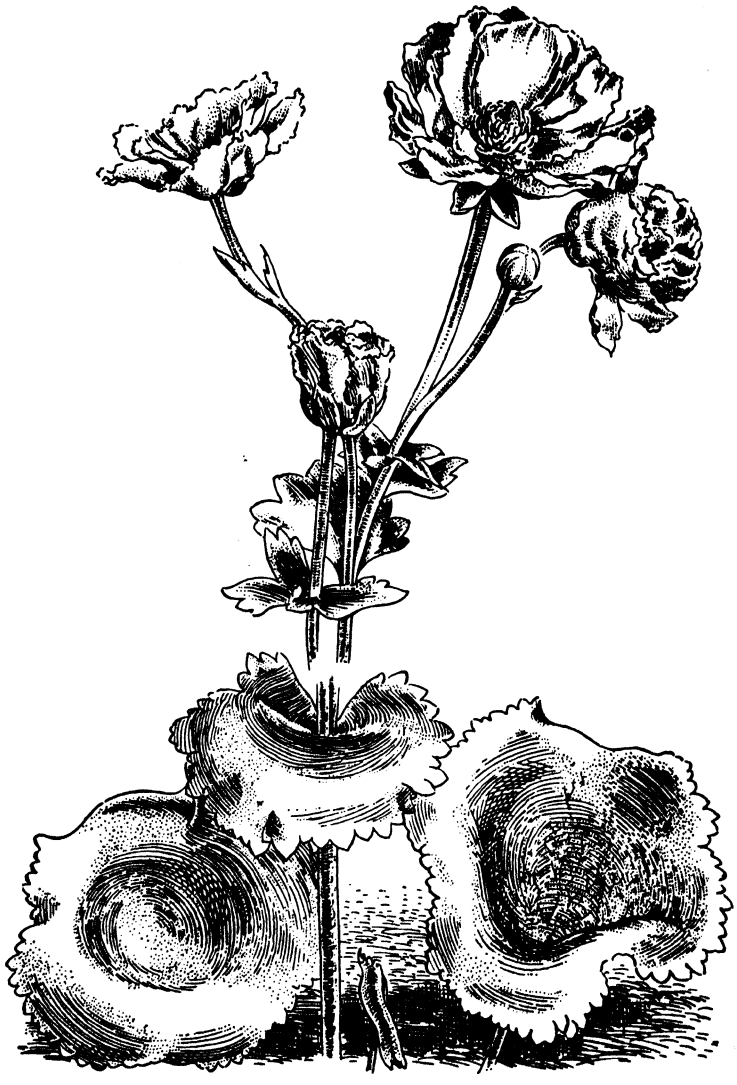

Plate XXV

p. 436

RANUNCULUS LYALLII [× ⅓]

date, usually rounded, persistent leaves about three inches long, reddish-bronze during their growth, green tinged with bronze in the adult stage and bright red in winter. The glowing, rose-coloured flowers, fringed and campanulate, hang almost stalkless from a thick and rather stumpy stem in April.

Less luxuriant but more beautiful is *S. soldanelloides* (Pl. xv, p. 227). Its rather smaller flowers of similar build are of a softer pink and held on unobtrusive stems a few inches high. Belonging to it is the var. *ilicifolius*, occasionally set down as a good species but without much justification. The leaf shape, from which the name is taken, varies very much. All gradations exist between the typical leaf of *S. soldanelloides*, ovate-orbicular or rounded dentate, often cordate, and the prominently serrate, Holly-like foliage of a characteristic *ilicifolius*. White forms, very lovely, exist of both type and variety. *S. soldanelloides var. alpinus*, as the name suggests, is merely an alpine form of the species and gradually loses its smallness in cultivation.

In early spring the Shortia-Schizocodon bed is be-flagged with the cream-coloured, white-anthered flowers of *Erythronium oregonum subspec. leucandrum* (Pl. ii, p. 34) (once lumped with *E. grandiflorum*), and the pink ones of *E. revolutum*, both easy plants, and, especially the former, rapid of increase. They are naturalizing themselves in a near-by bed where that dapper but forceful little herb, *Cornus canadensis* holds considerable sway. There is nothing half-hearted about *Cornus canadensis* (fig. 27, p. 353) (recognizable, no doubt, to the Popular Names League under the title of Bunch-berry); where it loves at all, it loves vehemently. Its travelling rhizomes take everything in their stride, and snatch the drink from the waiting lips of larger neighbours and leave them gasping with astonishment and

thirst. For all that, one never gets cross with it. One glance from its embracted flowers dissipates any festering unkindness, and if more is needed to clinch its hold on our affection, the congregates

fig. 28
CORNUS CANADENSIS IN FRUIT [$\times\frac{5}{12}$]

of scarlet drupes (fig. 28, above) are offered. Look at its pictures. Do they not turn your own steely resolution to water?

In 1898, it occurred to the late Paul Graebner, professor of botany in Berlin (and of the celebrated

team, Ascherson and Graebner), that the woody Dogwoods should be separated from the herbaceous species. Of the latter there are two; that just spoken of and *Cornus suecica*. The second has a more northern distribution in America, though there the two species overlap, and, in addition, is also found in northern parts of Europe and Asia. Very like *C. canadensis*, it differs in its leaves being opposite, not arranged in a whorl at the top of the stem; in having purple flowers, not green, and by its stones being slightly channelled on both sides, not smooth as in the sister species.

Thoughts, when they enter the minds of men like Graebner, do not long remain apart from deeds. In satisfaction of his idea, he parted the two species from their Linnaean placing and made of them a new genus, *Chamaepericlymenum*. The name may well be its undoing. We can't have words like those of German railway stations studded about the garden. *Chamaepericlymenum canadense* and *C. suecicum* as names are all very well in books, where one may take them as read, but for everyday use they are a bit burdensome. I, therefore, risking the reproach of Graebner's followers, stick to the old names. Besides, is there not a proverb, "When in doubt, play Linnaeus"?

In the neighbourhood of the *Cornus*, but far enough away to avoid sudden envelopment, the pretty little *Iris verna* is firmly established. It is one of the few that definitely dislike sun. Spoken of as an anomalous species, it bears itself as a Bearded Iris but cannot grow a beard. The leaves are narrow and about six inches long and the almost stemless flowers are of a deep violet colour save for the yellow claws.

The soil beneath the Pine trees dries out in summer more quickly than we like, but Trilliums put up with it reasonably well. And why shouldn't they? The

species in common cultivation are North American woodlanders, and the woods of North America are not invariably damp. Certain kinds, *TT. sessile, recurvatum* and *erectum* for example, have coloured flowers—a "flower" being reckoned as the three inner perianth segments—but the purples, reds and browns they choose are dull and disappointing. For a *Trillium* to be a *Trillium*, its flowers must be white, and of all white Trilliums the pick is *grandiflorum* (fig. 29, p. 359) with flowers two and a half inches or more across. *T. nivale* is a dainty little plant four or five inches in height, white-flowered and appropriate to the lower planes of a shaded rock-garden.

Many Anemones smile from the woodlet's floor, but none so blithesomely as *A. nemorosa* and its varieties. The common white Wood Anemone itself is exquisite and, moreover, is a very Petulengro of a plant. "Life is sweet, brother", it tells you. "Make the most of it and don't worry over details that no one but a foolish human would think of the least importance." All the forms of *A. nemorosa*, large forms, violet, blue and rose forms are treasures of price. Even the double is not so stuffy as the most of double flowers. They spread quickly; *var. Allenii* (fig. 7, p. 100), perhaps the most beautiful of all, as quickly as the type itself.

The Harebell, *Campanula rotundifolia*, usually found on open ground, will quickly colonize woodland if given a chance. It grows taller there, but blooms as freely and its soft yet pronounced colour is not, like many blues, dulled down in shade. It runs rapidly and seeds profusely and, although there is a present fashion to clear out of the garden plants that show a great propagative facility, it is for us to take advantage of such ways. If we plant quickly spreading subjects in crowded or otherwise unsuitable

places, that is not their fault. For my part, I thank God for rampers.

There is a bit of Woodruff at the edge of The Pines. Visitors say, "Hallo! Woodruff", as if to ask

fig. 29 p. 358

TRILLIUM GRANDIFLORUM [× ½]

what business it has there. I, child of Adam, make reply "Behold, the woman planted it". True, but not entirely true, for I as well as Mary like its faint, sweet odour of hay and am as ready to smell its reminders of days long past.

Here is something to distract the Woodruff's critic, at any rate in March and April; the charming *Primula Clarkei* (fig. 2, p. 16). It makes a baby-size bouquet

of its bright pink flowers, on one to two inch stalks, which almost hides the immature, Violet-like foliage. Though known for over fifty years this Kashmir plant is still uncommon in gardens, its rareness due in measure to its extreme reluctance to set seed in this country. As, however, it is quite hardy and increases rapidly by spreading rhizomes, its more general cultivation is merely a matter of time.

The arctic and alpine habitats of *Viola labradorica* have endowed it with xerophytic properties, or so it appears from an indifference to a degree of drought which would dispirit most of its kind. It spreads as quickly as a rumour through the dual agency of seed and branching rhizome. The clustered, rounded foliage, metallic bronzy-green, is the asset of the plant. Its violet flowers are pretty but not exciting.

Whatever the resistance to drought shown by *Viola labradorica*, it is not so remarkable as that exhibited by *Pyrola asarifolia var. incarnata* (*P. incarnata*). In nature this plant is found in swamps and wet woods from New Brunswick to Yukon Territory and down the Rockies to New Mexico, yet in the garden it spreads rapidly in one of the driest spots beneath the Pines, more rapidly, indeed, than in a damp place. Further, the rosy-purple flowers, half an inch or so across, are more freely produced and on longer scapes in the dry area than in the moist.

Why this *Pyrola* should be called the Liverleaf Wintergreen it is hard to say, nor is explanation simplified by some botanists describing the leaves as kidney-shaped or, another day, as heart-shaped. It is possible to give a rough idea of their form without visceral comparisons. They are, in short, rounded, bluntly pointed and dipped at the junction of stalk and blade.

The comparative novelty of red- and purple-flow-

ered Pyrolas—*rotundifolia var. incarnata* (north-eastern Asia), which is possibly conspecific with the previous species, *uliginosa* (North America), and *incarnata* itself—gives them a position in excess of their worth. If their colours had the brilliance of those of Primulas it would be different, but they haven't. One is tempted to drag in the already over-worked liver to describe them. A *Pyrola*, like a *Trillium* and Lily-of-the-Valley, should be white. How, by the way, does the pink form of the last named strike you? More curious than beautiful? Quite so.

A good many shrubs are recommended for very shady places but few can equal Camellias and Rhododendrons, providing that the soil is free from lime. Not only do they flower as freely as in more open situations, but they grow as normally; in breadth, that is, as well as height. Until comparatively recently, Camellias were ranked as tender except by a few of the bolder, more enterprising spirits but even they admitted *C. reticulata* to be a little uncertain. Now we know that *CC. cuspidata*, *Sasanqua* and *japonica* with its many forms are as hardy as Laurels.

On seeing them arranged in the Hall of the Royal Horticultural Society one says, on the impulse of the moment, "By Jove, I must have more Camellias". Luckily, the attendant is at lunch. Time is given for reflection and nothing, you may have noticed, is so hostile to action as reflection. And, away from the Camellias' glow other flowers of springtime catch the eye; Hellebores, double Primroses, *Iris* species. The attraction of the Camellias is diluted. One can't compare them? Perhaps not, but I speak of facts, not of comparisons.

Another look at the shrubs, though, before deciding to keep their price in our note-cases—for Camellias are not matters of loose change. There is

no doubt about their beauty, but do not the flowers, especially in the double forms, suggest the artificial? Are not the petals a thought too regular, too rigid? And does not the absence of any appreciable flower-stalks add more to trimness than to elegance?

Do not think I am trying to crab Camellias. How could I, growing many in The Pines and elsewhere, be so contradictious? I merely try to find why they don't hold me with the grip of, say, Rhododendrons.

Rhododendrons. A race unto themselves in a broader sense than the botanical one, possessed of such grandeur at one end of the scale and such fairy beauty at the other. The nobler species, those of tree-like proportions and massive foliage, are beyond most of us. If space is available, a suitable environment is not. The mildness and dampness, particularly the dampness, of western Scotland, northern Wales, the west of England, and the New Forest are the climatic factors they require. Essex does not supply them. We recognized the fact but deliberately neglected it. The impulse of desire is rarely controlled by common-sense. And the ways of plants encourage us to gratify our longing.

Every day in his life the gardener witnesses the most paradoxical events, the most unlooked for happenings, and being impressed only by the more favourable of these, comes to expect them as a matter of course. Thus when we say "You never know" we really mean that we anticipate things to turn out as we wish, even when the words are used to support our most incautious deeds.

Mary and I held on to the optimism of the Never Knows for twelve years, but then hauled down the flag. We knew. Rhododendrons *lacteum*, *Falconeri* and *eximium* were not for us. *R. ficto-lacteum*, already extolled, alone of the imperial class bears itself cheerfully in the garden. *Rhododendron sino-grande*

is here, but the tactless and repeated witticism of a bosom friend, that the title *sine grande* would suit it better, indicates its conduct. The foliage, what there is of it, is up to par, but the plant grows by millimetres instead of inches.

Lesser magnificences do fairly well in The Pines. *R. fulvum* which, with an excuse of the slightest breeze, flicks up her leaves to show their tawny underside; *R. mallotum*, whose rigid petioles prevent any such frivolity; *R. Wardii* with shining yellow flowers and *R. Fargesii* with pink ones are all apparently contented with their lot, but not enthusiastic. It is not until the light- and feather-weight classes enter the ring that we, in this part of Essex, have a chance of admiring the capacity of the genus in our own gardens. Of the former, *R. Augustinii* wins on points. It makes a roughly pyramidal bush of from eight to ten feet high and covers itself in spring with unbelievably blue flowers. There are certainly yellow spots on the upper segments, but they affect its general complexion as little as specks of beeswing do an ancient Port. I speak of a good colour form of the species. There are others. One in the garden affects that curious, yellowish-green pallor seen at its best on a rough day between Dover and Calais.

The lovely *R. neriiflorum*, a dangerous challenger of the supremacy of *R. Augustinii*, loses on its rather stumpy growth, partly a result of the plant spending too much energy on producing flowers. The expenditure is not without result. I could not have believed that any Rhododendron could be so floriferous without the evidence of my own eyes. And such flowers! Pendant, open-campanulate, bright orange-red; glowing from a distance, not glaring close at hand. *R. venator*, the Hunter, is appropriately named, for hunting-pink in colour the flowers are. Their boneless droopiness, however, has little other relation

to those gallant gentlemen who delight in the palæolithic pastime of chasing a weaker creature to exhaustion and watching it torn to pieces.

I recently saw blood sports referred to as a controversial subject. Controversial? That word implies that both sides to an argument can advance a case in support of their ideas. Can any case uphold wanton cruelty? One has heard of excuses but never reasons for its practice. Excitement? Thrills? It is incredible that any decent man should seek these through the medium of barbarity. Exercise for horses, dogs and men? Twaddle. Would hunting still be popular if its objective was a mechanical fox, its place a stadium and the uniform of its followers a suit of dungarees?

Let's get back to Rhododendrons. None of the Himalayan species is more at ease in Britain than *R. cinnabarium*, and none is happier in the broken light of The Pines. The flowers are narrowly campanulate, up to two inches long and, in the type, cinnabar in colour. Those of *var. Blandfordiflorum* are not unlike the blooms of *Desfontainea spinosa*,* the red of the outer surface being continued at the edge of the corolla into golden yellow, that hue also colouring the interior. In the var. *Roylei*, esteemed by many as the finest, the flowers are shorter and of a bright rosy-red inside and out, and the leaves more glaucous beneath than those of the others; the foliage of all, however, particularly when it is young, has a bluish cast.

Sir J. D. Hooker records in his *Himalayan Journals* that many of his goats and kids "died foaming at the mouth and grinding their teeth" after eating the foliage of *R. cinnabarinum* and also mentions that when the wood is used as fuel "it causes the face to swell and the eyes to inflame". That the second

* In colour.

effect would follow exposure to smoke, any smoke, is natural enough, but swelling of the face is difficult to explain. As the condition did not appear to arouse Hooker's curiosity (and he was a graduate in medicine), I think we may take it that he referred to the eyelids, not to the face as a whole. Hooker's strictures have, as the most unlikely things do, come down to posterity and cast somewhat of a blight on the fair fame of *R. cinnabarinum*, quite unnecessarily. Goats are not often pastured in Rhododendron gardens, nor do owners of such gardens build their fires with Rhododendron wood as a general rule.

No recent introduction, if one can speak of twenty years ago as recent, caused more sensation, or still excites more admiration, than *R. Griersonianum*. Not a striking plant out of flower, a little dull and floppy to tell the truth, but the geranium-red blossoms are nothing less than staggering, and obliterate, at one stroke, all minor imperfections. Such a colour is best by itself. Associated with others it will either kill or be killed. Green foliage is its best set-off. Doubt has been thrown upon the shrub's hardiness near London and, I daresay, with some justification if "near London" implies a sea-level altitude. At our few hundred feet I have not known it suffer during the six years I have had it, though, maybe, the protection given by the Pine trees has assisted its survival.

Rhododendron kamtschaticum. I think we shall be perfectly safe in keeping to the name given by Pallas to this plant and leaving the generic title *Therorhodion* to those who like it. Native to that corner of the globe where the Old and New World nearly meet and growing, at any rate in Kamtschatka, in high alpine meadows, this dwarf species is still rare in gardens. There is no reason why it should be if, that is, its scarcity is secondary to difficulty found

in cultivating it. Given lime-free soil and a shady position it quickly becomes established, and more, will spread fairly rapidly by stolons. As though to demonstrate its preference for shade, the specimen in The Pines, now nine years old, has crept beneath that fine old Rhododendron, Cunningham's Sulphur, which bears a north-westerly relation to it.

Saucer-shaped, crimson flowers, plentifully given and held well above the foliage, dwarf growth of from six to eight inches and the warm red colour taken on by the foliage before it falls make *R. kamtschaticum* one of the most desirable dwarf members of its genus. By the way, that word Kamtschatka. There is, I take it, one and only one correct spelling, but neither botanists nor travellers appear to take much notice of it. The right name, whatever it is, must have as least six variants. If I have, or do, exceed that number (as is very likely) I hope to be forgiven. The Latin equivalent, it is unnecessary to add, varies with the freedom of the original.

In the same bed as *R. kamtschaticum,* but in slightly deeper shade, is that very interesting shrub *Pernettya furens* (fig. 30, p. 367). At various times in its career it has been known as *Arbutus furiens* and *Gaultheria furens* (or *furiens*) and also confused with the Mexican *Pernettya ciliata* (called *ciliaris* by Don), a species to which it bears no resemblance. The leaves are up to two inches long, ovate, short-stalked, leathery, denticulate and bristly, dark green above, paler beneath. Flowers, white in colour and campanulate in shape, are borne in axillary racemes in May. The calyces, persisting as dry membraneous structures, support reddish-brown, round, dryish fruits an eighth of an inch in diameter. It is one of the Pernettyas which carry perfectly hermaphrodite flowers (*vide* p. 437). The plant is native to Chile and there its fruit has long been known to have

p. 366

fig. 30 PERNETTYA FURENS [× $\frac{4}{5}$]

toxic properties by the native Indians, its ingestion producing violent delirium or, to put it bluntly, acute madness.

In a more open place, at, in fact, the edge of The Pines, the rather forbidding *Pernettya rigida* finds a home. A majestic plant, as Pernettyas go, it has reached over two feet in height. The leaves, carried on short petioles, are an inch or more in length and half as much in width, broadly ovate, narrowed to both ends, strongly veined, minutely bristle-toothed, thick, hard and lustrous. The flowers are small, white and held in clusters from leaf-axils near the ends of the shoots. I have not seen the fruit. *Pernettya rigida* appears to be confined in nature to the Island of Juan Fernandez. Other considerations apart, it is worth growing as a connecting link with our old friend, Robinson Crusoe.

Although other Pernettyas, when given the opportunity, grow freely in The Pines, the shade prevents that ripening of their wood necessary to normal fruiting—and Pernettyas are not plants one grows entirely for their foliage.

A personal idea, when conceived without assistance or stimulation from without, a purely imaginative notion let us say, is extraordinary in its persistence and in its almost invariable wrongness. It becomes the "will" against which there's no convincing. "I took it into my head" says its possessor, and there it usually remains in spite of evidence and reason. Gardeners, I among them, appear remarkably prone to these inspirations for some reason as yet unexplained by the psychologists. For years I was quite certain that *Ericaceae*, as a group, liked half-shade, and looked upon those members which enjoyed sun as few in number and exceptional in taste. It therefore came as a considerable surprise to find that more than half of the commonly grown genera actually

preferred, as genera, sunny (but not isolated) positions. And sun can be very bright in Essex, whatever those who form an opinion of the county from Liverpool Street Station may suppose.

The revelation, though illuminating, did not solve all difficulties. It is not a genus which concerns a cultivator so much as do the individuals comprising it, and there is often a nonconformist lurking in the back benches of the most sun-loving or shade-insistent group.

How, then, is one to deal with a completely strange plant?

A knowledge of the conditions prevailing in its natural environment is interesting, but only of limited value to the gardener. Even in the unlikely event of full details being available of the nature and composition of the soil, the temperature, the constitution of the atmosphere, how are we to reproduce them? How, indeed, do we know if they need be reproduced? Because a plant grows in certain surroundings, that, as we already have seen, is no proof that those are the only ones tolerable to it. Certain of them it will disregard, others it will tolerate; some may be inimical, a number advantageous and a few quite indispensable. But we don't know which is which.

You may, perhaps, one day in Norway, come upon *Cassiope hypnoides* growing in association with *Vaccinium Vitis-Idaea*. On the face of it, conditions which suit one will suit the other. A large, thick turf containing the pair is transferred to your lime-free garden. The *Vaccinium* never turns a hair but, ninety-nine times out of a hundred, *Cassiope hypnoides*, so far as you are concerned, goes back to Norway. Something is missing in your environment or, just as likely, something hostile is in it from the plant's point of view. And it is only the grosser things we can pick out for blame.

Again, how are we to deal with the unknown stranger? A plant we may have heard or read of but certainly have never seen. Perhaps the safest plan is to place it in half-shade, in well-drained, moist and lime-free soil, and watch events. It is not likely to die, if, that is, it can put up with the garden at all. If it thrives, then cuttings, seedlings or "bits" may be tried in other places. If it stagnates, then it may be transferred to a wetter, drier, sunnier or shadier position, it depending upon the appearance of the plant and upon what useful hints (remembering they are only hints) one has gathered of its natural environment which place is chosen. Therein lies, indeed, the value of some knowledge of environment; it can give a hint.

When that tiny evergreen shrub, *Arcterica nana*, arrived here from Kamtschatka, we were perfect strangers to each other. I told her, in English, that I could not provide the precise conditions of a Kamtschatkan alpine moor and offered in its stead half-shade with the usual accompaniments. She has, I imagine, enjoyed herself, if one may judge from increase of growth and a show of fragrant white, urn-shaped blooms thrown twice a year in terminal clusters. Moreover, a cutting has grown in the sandstone rock garden to be almost as large as its parent.

Four of the seven cultivated species of *Cassiope* are found in the lands bordering the north Pacific. *C. Mertensiana* runs up to Alaska from California, the circumpolar *C. tetragona* naturally frequents both American and Asiatic sides, *C. Stelleriana* (*Harrimanella Stelleriana*) ranges from the State of Washington to Alaska and then, *via* the Aleutian and Commander Islands, passes to Kamtschatka, the Kuriles and Japan. *C. lycopodioides* has a similar Asiatic distribution but takes in Saghalin and, on the American side, favours only Alaska.

The last named is not only one of the most accommodating of the genus but perhaps the most beautiful and floriferous. Look at its picture (fig. 14, p. 224), and imagine a glint of sunshine on those comparatively large, white bells. The leaves, closely pressed to the prostrate or nearly prostrate stems, assume in autumn a bright, metallic, coppery hue. In this garden the plant does best in half-shade; over, rather than under.

Cassiopes are not easy. They cannot be treated in the off-hand way to which Hypericums, for instance, make no objection. But the element of uncertainty, the titillation of the gambling instinct by backing an idea to the extent of five shillings or so against unknown odds, goes a long way to keeping any gardening interest alive.

If two and two never made three, or five, but always worked out at exactly four, if, that is to say, gardening was a matter of mathematics, its fascination would go the way of the multiplication table and, worse, our errors could not be blamed on plants, weather, soil or anything other than ourselves.

Apart from its description, I knew nothing of *Menziesia ciliicalyx* (fig. 31, p. 372) when it arrived here from Japan. After establishing the plants in pots, we planted them, according to routine, in half-shade. So vigorous was their growth that in three years it was necessary to transplant a few to prevent over-crowding. That was the opportunity to try them in a fairly sunny position, a trial which has been entirely successful. Rooted cuttings and seedlings of similar species, at present in the nursery, will, when large enough, be given still sunnier places.

The genus was named by Sir J. E. Smith in honour of his contemporary, Archibald Menzies, and founded on *Menziesia ferruginea*, a species discovered by Menzies himself in western North America when

he, as surgeon and naturalist, accompanied Vancouver on his memorable voyage. Neither *M. ferruginea* nor that other American species in cul-

fig. 31 p. 371

MENZIESIA CILIICALYX [× ½]

tivation, *M. pilosa* (*globularis*) native to the eastern States, is comparable in beauty with the Japanese *MM. ciliicalyx* and *purpurea.* The latter, at the moment, I don't possess. Every time I order it,

another *M. ciliicalyx* turns up, and, as floral characters are the most certain means of distinguishing between them, the time for complaint has gone past when proof of the error is at hand. If the point interests you, the calyx of *M. ciliicalyx** is wavy rather than lobed at its free edge; in *M. purpurea* it is divided into definite segments, ovate in shape. *M. ciliicalyx* reaches from two to three feet in height. Fig. 31, p. 372, gives a better idea of the disposition of the foliage and flowers than many words, but none of the floral colour. That ranges from deep cream, pink edged, to deepest rose. The depth of pigment is, to some extent, masked by a layer of wax ("bloom") which, nevertheless, increases rather than lessens the beauty of the flowers.

Breadth without height describes the appearance of *Nertera depressa*. This tiny creeper has a wide and remarkable distribution. Running down the western side of South America from Colombia to Cape Horn, it crosses to the Falkland Islands and passes on to Tristran d'Acunha. From that lonely island in the middle of the South Atlantic it goes to Madagascar and, still travelling eastwards on, apparently, an extended front, it reaches and ranges through New Zealand, takes quarters in Tasmania, extends northwards through Australia, leaves colonies in New Guinea, Celebes, Borneo, Java, Sumatra, limits its northern distribution to the Malay Peninsula, south-eastern Asia and the Philippines, but proceeds eastwards to Hawaii. It thus inhabits four continents, crosses three oceans and to all intents and purposes encircles the globe.

Its dispersal supports nearly every theory of plant distribution ever advanced, and causes gardeners to ask in the words of Pope, slightly modified,

* The name of *Menziesia ciliicalyx* gives only a thin clue to its identity. Both species mentioned have hairy calyces.

"The plant, we know, is neither rich nor rare,
But wonder how the devil it got there?"

It is fruitless to theorize on the matter until we know the age of the plant and that of its immediate ancestors—the time, that is, which has elapsed since their appearance on the earth—and the contemporaneous and subsequent physiography that would affect their spread.

Catholic though the plant's tastes appear to be when it is left to itself, it has only a shaky reputation for hardiness in gardens. That quality in an individual probably bears a relation to the place of origin of the seed from which it was grown. It is difficult to think that a plant raised from Cape Horn or south New Zealand seed would be too delicate for, anyhow, a garden in the south of England.

At all events, in its place beneath the Pines it supports all that the weather sends and that without protection from panes of glass or other gadgets.

The beauty of *Nertera depressa* is in the shining orange beads with which it covers itself from midsummer till late autumn.

Almost touching some of its nearby and self-sown seedlings are the long, trailing shoots of *Mitchella repens*, another member of the *Rubiaceae*, but a somewhat stingy one with its scarlet, double fruits; double, because on a common stalk the terminal, pinkish, tubular flowers are held in pairs and each pair have their ovaries united.

Of the many Lilies we try to grow in this part of the garden, *LL. Martagon album, canadense, speciosum, parvum, rubescens, Duchartrei* and *Wardii* are the most generally successful though *L. auratum* and its varieties make a brave show from time to time. This very year, as it happens, *L. auratum var. virginale* reached eleven feet, decorated the upper

three and proudly showed a stem three and a half inches in circumference at the base.

In its flowering season, every Lily, or nearly every Lily (there are a few with little to commend them) claims admiration in its turn. Admiration, yes; but affection is checked by the stateliness of some and the conscious virtuousness of others. The latter bearing may be a pose; for myself, I am convinced it *is* a pose; none the less, it keeps one at arm's length.

The most lovable Lilies, to my thinking, are those of the *Duchartrei* group, *LL. Duchartrei Wardii, taliense* and *lankongense,* the last, however, being a good way behind the others. Of the four, *L. Wardii* holds me most closely. The shape of the flowers is shown in fig. 32, p. 376; their colour, in the best forms, is crushed-strawberry spotted to a greater or less degree (the less the better) with brown-carmine, and their pungent smell more Hyacinth- than Lily-like.

The lovely *L. canadense,* were its disposition other than petulant, would claim almost as much regard as *L. Wardii* itself but its habit of sulking, even dying, if its wishes are not exactly complied with is very trying to one's patience. It does not try to make the best of things. If given considerable shade, a soil that is moist but well-drained, humousy and lime-free, it behaves beautifully, but not in this garden without those bribes. No wonderful display of gardening instinct on my part was responsible for its position in The Pines. That is entirely fortuitous.

Some years ago, to observe its root-action in various media, I grew the Lily in pots charged with limy soil, acid and neutral soils, gritty and smooth soils, soils plain and soil loaded with leaf-mould.

In July, at the very height of their growth, the plants were turned out of their pots, their roots

fig. 32

LILIUM WARDII [× ½]

p. 375

washed and dried and the complete specimens mounted on a greenhouse door and photographed. After this manhandling their stems were cut short and search made for a quiet nursing-home where the plants might recover before returning to active life. A bed in The Pines was convenient and so restorative and comfortable did the Lilies find it that there they have, very literally, taken root. Stems of six and seven feet crowned with flowers, gramophone-trumpet-shaped and in colour deep yellow or, in the form *rubrum*, orange-red, all spotted chocolate; these are the signs of the Lily's appreciation.

That grand old warrior, *L. Henryi*, happy anywhere, shows a flower colour in shade never seen in sun. Its stem in such surrounding may be attenuated and lacking in rigidity, but what are those defects when weighed against deep orange blooms, almost red-tinged?

Chapter Fifteen

WE HAVE arrived at the Bog; a description unfitted to its present condition and uses, but a name, once given, is difficult to change. Think of St. Martin-in-the-Fields, Chalk Farm and that one-time garden of a monastery, Covent Garden.

This is the land of Cypripediums.* Not that alone, but certain Asiatic and American hardy species of that genus assert a claim on it not seriously contested by the other inhabitants.

My own plants of *Cypripedium macranthon* came from Manchuria, but the species is not entirely Asiatic. If south-western Russia be taken as the handle of a fan and from Formosa to Kamtschatka as the limits of its spread, the area covered represents the distribution of the plant. The fan, it should be mentioned, has more holes in it than surface.

C. macranthon is one of the most tolerant hardy species to British cultivation if given partial shade and lime-free soil. It presents, as the most conspicuous part of the flower, a large pouch, narrowed at the mouth, of a soft carmine colour. The other segments of the perianth are dull white, lined with crimson-purple. I describe the usual colour, but it is subject to considerable variation and moves in one direction to a generally darker hue and in the other to eventually reach the creamy white *var. albidum* shown in Pl. xvii, p. 243. The dorsal sepal

* The modern practice of calling hardy Cypripediums "Cypripedilums" has nothing to support it.

nearly always overhangs the pouch but may be poised in an almost vertical position.

Once, in an article, I referred to the lateral petals of *Cypripedium pubescens* as being curled like the moustache of Mr. Mantalini and was taken seriously to task by an indignant correspondent for "speaking so lightly of that Italian patriot whose red shirt had formerly been found sufficient for vulgar personalities". That shows how careful one must be in speaking of moustaches. If you are ever tempted to do so, refrain, and think of Mr. Mantalini, after the defeat of Custozza, telling his troops that everything had gone "to the demnition bow-wows". Do not, however, allow this incident to affect your liking for the Orchid involved, one of the most beautiful of the open-air group. An American species, it spreads from Ontario to Nova Scotia and reaches as far south as Alabama. It flowers in May and June and frames its bright golden lip in subsidiary segments of greenish-yellow thickly lined vith purple.

Except for a less ample pouch, *C. parviflorum* very closely resembles *C. pubescens*. So closely, that they are reckoned identical by many American botanists who are possibly a little influenced by the similar distributions of the two species and by their contemporaneous flowering periods. Sir William Hooker, however, had no doubt as to their specific distinctness, though admits in his note on the matter (*Bot. Mag. LVII; sub. tab.* 3024) that it may be very difficult to say which is which if examination is confined to dry specimens. A difficulty, one understands, not entirely limited to *Cypripedium* differentiation.

C. Reginae (*spectabile*) is found from Ontario to Newfoundland and southwards to Georgia. "Ah," someone is whispering, "so they've changed the name of *Cypripedium spectabile* now, have they? Funny

why they can't leave these things alone." It was not "they" who changed it but Salisbury, and as long ago as 1791, but from the original and correct *Reginae* (Catesby, 1788) to the more generally used *spectabile.* One does not for a moment suggest that Salisbury tried to upset Catesby's naming. He was probably unaware that Catesby had busied himself in the matter at all. International communication in 1788 was not what it is now.

To obtain the best that this lovely plant can give, one should, I suppose, plant it in slight shade by the side of a flowing stream but sufficiently high above the water to avoid danger of drowning. We have no stream and feebly compromise by keeping a patch of ground moist by repeated mulching, and the plant, seeing that we do our best to please it, is slowly extending its spread and flowers regularly (Pl. xvi, p. 242). The full, rounded lip (or pouch, as I've called it hitherto) is heavily suffused and lined with rosy-pink and the remainder of the flower white.

The Bog is the best place in the garden we can offer *Meconopsis.* Some, it is true, eye it sardonically but others seed themselves therein. Particularly *M. betonicifolia.* Excellent plant! One of the best dozen given to gardens for half a century. What the other eleven may be I leave to you. To be included in the "best" class, a plant must be beautiful, easily raised, cultivated without difficulty and able, in great measure, to look after itself. *M. betonicifolia* fills the requirements. So conspicuous, so renowned is it that without further detail than its generic name the man in the street knows what is meant. If your next door neighbour seeks for a pinch of *Meconopsis* seed, you do not inquire what species he requires. You give him seed of *M. betonicifolia.* He, having the packet between finger and thumb, may ask whether "it is the sky-blue one with golden whats-their-

names inside" and you, with grave courtesy, assure him that from such a plant the seed was taken; that is all you can say, not being a fortune-teller.

For a season we enjoyed the blue form of *M. grandis*, that spoken of by the learned in Meconopsis lore as the Sikkim *grandis*—the type, a Nepal plant, being of a vinous purple—and, encouraged by the report that it was a true perennial, did not attempt its vegetative propagation. And when the "seeds" were seen to be not seeds at all, but only unfertilized ovules, we remained quite unperturbed. What did seed matter? Was not the plant a true perennial? Those were the very words. Our plant repudiated them and died as thoroughly as the most unabashed biennial.

I have no great experience of Meconopsis but what I have suggests that the only commonly grown species which are perennial, as a Michaelmas Daisy is perennial, are *MM. quintuplinervia, villosa* (*Cathcartia villosa*) and our native *cambrica*. On cross-examination I would admit that *M. betonicifolia* often behaved as one and then shake the hopes of the defence by doubting its inherent right to that description. Regard this paragraph as an aside. Neither *M. quintuplinervia* nor *cambrica* are in the Bog.

One of the most lovely of the genus is *M. integrifolia*, a rather dwarf plant in comparison with such as *MM. grandis* and *paniculata*, but unsurpassed by any in the beauty of its flowers. They are large, shining yellow and of a fairy, crinkly silk-like material.

Tropaeolum speciosum, the Flame Flower, enjoys the proud title of The Glory of the Scottish Highlands. A misleading description in two directions; in the first place, the plant is a native of Chile and in the second, the Highlands have many glories; historic, scenic and traditional. The Flame Flower can then be only an adopted glory but this, in itself, is a

distinction of the highest. Scotland is more given to exporting glories than to adopting them. She knew, as usual, what she was doing in taking *T. speciosum* to her bosom, and judging from its response the plant found, as others have found, that bosom warm. Nowhere does it so eagerly cover the wall of castle and humble but-and-ben. There are English gardens in which it thrives but they are few, far between and chosen for Heaven knows what reason. There's the puzzle, to find what pleases it. In a garden similar to ours in soil and general environment, *T. speciosum* has covered the north wall of the gardener's cottage. The gardener is a Scotchman. Does something of his land accompany the Scot? It does, of course, and with its other qualities that something is sweet to the Flame Flower.

Here it lives a pained existence and can scarcely wreath a walking stick. I have tried it against north walls, in north borders, against fastigiate Conifers, associated with Rhododendrons—even, to tempt it, with the exalted *R. Loderi*—and in other situations which, according to nurserymen and other optimists, could not fail to please it. As has been hinted before, it is only when they are unirritated by constant solicitude, when they are allowed to play at being in the wild that many plants throw off constraint and show their character.

In the Bog, against a line of *Thuja Lobbii* that masks the boundary fence, the Nasturtium is at last showing an interest in its surroundings. A pretence of indifference on my part may trick it into an abandonment sufficient to confront me with a curtain of six-lobed leaves thickly patterned with scarlet flowers.

After being for many years a member of The Rhododendron Association (a collection of people, by the way, not of Rhododendrons), I had it put to

me that if every member was as inert as I there could be no Annual Show. My duty thus made plain, I, at the first opportunity, competed in three classes. One for those who had never shown before, or possibly for those who had never won a prize; in any case a modest, if not humiliating class; a second confined to the Series *Triflorum* where I fully expected to score with *R. Augustinii* but under-estimated the strength of my opponents, and a third described in the Schedule as "Series *Barbatum*: Single Truss." Ah! that was a different story. *Rhododendron habrotrichum*, a rich rose-coloured form, took the call. It seemed to us that it carried a certain poise, a rather majestic insouciance, but we did not know how it might behave in an emergency.

After the judges left the hall, Mary sidled in and by a circuitous route arrived at the exhibit in that careless, accidental way characteristic of competitors' wives. Retaining her poise by an enormous effort, she read the legend FIRST PRIZE on a piece of enchanted cardboard that was leaning against our Rhododendron, and beneath those staggering words the name of her husband who, poor wretch, was all of a twitter at the entrance to the Hall. On learning the glad tidings, signalled by code, he steadied down, entered with quiet triumph and looked about for someone less successful on whom he might vent a little sympathy and advice.

R. habrotrichum, the Softly-Hairy One, having once tasted glory, is eager for further fame and leaves nothing undone to secure it. The only thing that stands in the way, it will tell you, is the laziness of its owner. That may be the term; I call it preoccupation.

Although the Bog is not a bog, its soil is moist and suits *Lilium giganteum* to a nicety. This species and its close affinities, *LL. cordatum* and *cathayanum* are

the most unlilylike of Lilies. Their heart-shaped leaves, hollow stems and monocarpic habit set them in an isolated group which, some time or other, may arrive at the position of a genus. Noble plant though it is, *L. giganteum* falls short of beauty by the stiffness of its carriage. Splendid but not graceful, more of a lifeguardsman than a nymph, it only supports, one feels, its ineluctable severity with unwilling resignation.

Scarcely recognizable as a member of the same genus, the frolicsome *L. Duchartrei* (*Farreri*) winks at its unbending neighbour, a form of salutation *L. giganteum* entirely disregards. But *L. Duchartrei* doesn't care; its nodding white flowers, purple spotted, fragrant, Martagon-shaped, laugh their way through life on gently waving stems.

A few years ago I planted, *en masse*, the contents of a pan of seedlings in the Bog. To extenuate such apparent waste I might urge that in nature such a thick bestrewment is probably more the rule than the exception but, moved by the spirit of truth, confess that the extravagance was due to our being overstocked with seedlings of the species and to the fact that no one could be found to relieve us of the burden. (To find a donee for mature bulbs is comparatively easy, but to land a friend with a grass-like mass of seedlings is a different matter; he tells you, very prettily, that you can grow them on better than he; that, therefore, he will wait.) The bonfire would have solved the difficulty, but to raise seedlings and then burn them reflects little credit on intelligence and less on one's compassion. The younglings, too, agreed that a crowded life was better than no life at all and happily jostled each other's shoulders in about fifty square inches. They had not the slightest intention to confine themselves to that area and now, five years later, are just about to complete the acquisition of the first forty square feet.

L. Duchartrei has Alexander's passion for conquering new worlds and in its stolons an effective means to gratify it. Now a stolon of a tree is a sucker, a shoot apart from the main stem. A Lily stolon *is* the main stem. In *L. Duchartrei* it may run under the surface for six feet before emerging and assuming the appearance of a flowering stem. During its subterranean course it sprouts a bulbil here and there and these, developing, throw off stolons in their turn.

Year after year, and in all kinds of positions I planted *L. Szovitsianum* with no success worth mentioning. The stem might reach eighteen inches and hold, at the most, two of the lovely canary-yellow flowers, or, more usually, did not appear at all. "Give it time", quoth the experts. "*Szovitsianum* often does not show above ground the first year." They did not add that the second, third and succeeding years might be similarly barren, but so they were with me. One evening at Wisley I saw the Lily growing with *L. giganteum* on a piece of rather damp ground under the shade of trees. At the first opportunity we set bulbs of *L. Szovitsianum* in the Bog and there, even in the first year, they did that which they ought to do.

On the northern confines of the Bog there is a small granite scree, heavily shaded. In it *Gentiana ornata* finds a home. Not the happiest imaginable, but the best I have hit on up to date. This, perhaps the most exquisite of the Asiatic Gentians, is by no means the most tractable in the south of England. Compared to *GG. sino-ornata* and *Veitchiorum* it is, without mincing matters, a bit of a miff. Nevertheless one struggles on with it. The erect, rather short, trumpet-shaped flowers, their prevailing colour a bright, scintillating blue, and the neat compactness of the plant command a loyalty which is often ill-requited.

Its neighbour in the scree is *Gentiana depressa*.

Ignorant, when I first obtained it, of what it liked and disliked, I took no risks and placed it in that shadowed bed until given some indication of its desires. For shade and peaty scree are comparable to those benign medicines that, if they don't perform miracles, are at least harmless. The Gentian was, in fact, given "expectant treatment" to borrow one of the many happy phrases used in my profession. It might, perhaps with greater accuracy, be called the Micawber line of treatment. In the present case it acted much as usual. The plant lived, still lives, a gentle invalid, but its very lack of hearty response pointed to the right line of cultivation. Scree and shade would never put it on its legs; that was evident. Very well. "Let us," we said, "put the rooted cutting of the plant (its one and only) in half the amount of shade and give it soil." The cutting is going ahead like wildfire.

G. depressa forms a cushion of dwarf rosettes from which rise solitary, stalkless, broadly campanulate flowers of a pretty greenish-blue banded, on the outer surface, with white or, more exactly, with that useful colour of the decorators, "off-white". An interesting plant as it is, greater floriferousness would raise it to the heights of Gentiandom.

We may as well look in the alpine-house at this stage of our journey; it is close at hand, a glass structure on brick walls.

You have no doubt read elsewhere of what an alpine-house should be; of its correct height, most convenient breadth, the details of its very floor; and possibly concluded that it is nothing more than a cold greenhouse in which a few harmless inventions of the owner have been incorporated.

Alpine-house sounds a self-contradictory term. Why should an alpine require a house? Is it not, of

all plants, most tolerant of exposure? Much against the grain, one is compelled to admit that it is not. What happens, for instance, to the bloom of those which flower early in the year when snow, sleet and blizzards are normal factors of our environment? On their native hills, low temperature prevents such precocity, and when the temperature has risen there sufficiently to allow florescence there is little danger of the sudden return to wintry conditions which we are so accustomed to in Britain.

Out-of-doors, too, it is difficult to compensate for the absence of snow-cover which, I believe, owes its value to the limiting (not stopping) effect it exerts on evaporation from soil and plant. Evaporation from soil, and from an ordinary land plant, is conditioned by the relative humidity of the atmosphere (the drier the air, the greater the evaporation) and is therefore liable to occur at *all* temperatures. Bare soil, exposed to the dry air so often associated with low temperatures, may become as dry as dust if the exposure is prolonged, and particularly when wind, the great evaporator, takes a hand in the game. Snow-cover, we may say, acts as a mulch, and one of such generous proportions that it covers both soil and plant.

"What can it matter", it may be asked, "if the soil *does* dry out during the resting period of a plant?" The toll of death that might be laid at the door of a too liberal interpretation of the deceptive term "resting period" is past all computation. It is, in fact, a time of lessened activity but is no more to be looked upon as a state of suspended animation than is sleep.

Henrici found that many alpines were capable of assimilation, though not of starch formation, at the extraordinarily low temperature of 3.2° F. For assimilation to take place a movement of water in the plant is necessary; this is obviously impossible if no

supply is obtainable. This observation in itself demonstrates the necessity of water to evergreen plants in winter. Further, if the roots of any ordinary land plant are in soil much drier than themselves, they must lose water to the soil, and this cannot go on indefinitely without disaster.

There are of course plants which conserve a sufficiency of water in modified stems such as bulbs, corms and rhizomes to both carry them over a dry period and allow of their activity during that period; there are also succulents whose xerophytic properties enable them to resist, if need be, years of drought. At the moment we are not concerned with these but with plants in which the main functions of root, stem and leaves are, respectively, absorption, conduction and assimilation.

I said it was difficult to compensate for the absence of snow-cover out-of-doors. For the particular effect of it just described substitution is impossible anywhere, but may be more nearly approached in the alpine-house than on the open rock-garden. While, in the latter situation, we may conserve soil moisture by mulching with peat, leaf-mould or bracken, to attempt that procedure in the immediate neighbourhood of tiny evergreens, and thus contribute to their interment under a sodden mass, is equivalent to an attempt at saving a drowning man by holding his feet out of water. With the aid of an alpine-house, however, we can, in some measure, be independent of snow-cover. Drying winds may be excluded by manipulation of ventilators and evaporated soil moisture replaced by the judicious use of a watering-pot.

There is, too, the protection given against winter rains by a house. It is very doubtful whether damage from this cause is either so great as is alleged or due to the circumstance generally blamed. It is supposed

that the lodgement of water about the crowns of certain evergreen alpines, particularly those in which soft, hairy leaves are arranged in rosettes, sets up decay which results in death. The originators of this ancient hypothesis and their uncritical disciples appear to take the view that the subsequent must inevitably be the consequent.

One would think that, if events transpired as surmised, such an alpine as *Meconopsis paniculata* (Himalaya; 10,000–14,500 feet) with its rosettes of densely hairy leaves which, in nature, are under snow-cover in winter, would have a poor chance of surviving that period in this country. In fact, it has no difficulty in doing so, even in the moist climate of south-west Scotland.

Moreover, winter deaths are not confined to evergreen plants. *Campanula Morettiana,* for example, is as likely to perish as a choice *Androsace.* At the same time, one is not prepared to say that winter rain is quite innocent of harm, but the harm may easily result from a temporary defect in drainage. Alpines are extremely and quickly sensitive to a badly aerated soil, and the packing and pounding practised in the construction of a rock-garden, the compacting effect of the rocks themselves and an excess of rainfall can together bring about spasmodic blocks in drainage. (Ref. to p. 280.)

One boon an alpine-house provides about which there can be no controversy; a means by which we may examine plants without having the training of acrobats. With that comfortable thought, let us look at a few the alpine-house has to offer, all plunged to their pot rims in shingle.

A purist would be shocked to see Auriculas within the pale. Yet why? He admits such hybrid Primulas as "Linda Pope" and others of parentage more involved. Hybrid Kabschia Saxifrages of known and

unknown ancestors he welcomes, but Auriculas, NO. They do not look like alpines. Too husky altogether. The fact that they all derive from species of unimpeachable alpinity—*PP. Auricula, hirsuta, marginata, villosa* and *viscosa*—makes no difference. They have battened on the Land of Goshen and become gross.

fig. 33 p. 391

DIAPENSIA LAPPONICA *var.* OBOVATA [× ⅔]

Or is the mark against them one of birth? That they are hybrids of hybrids unto the *n*th power? It may be so. And now, poor things, what are they? Neither Florist's Flowers nor Herbaceous Plants in the conventional acceptance of those terms. A race of outcasts, not ostracized by any inherent demerit but by the improving hand of man.

It is refreshing to see that they feel not the slightest ignominy in their position. No Auricula has ever exhibited the inferiority complex; rather the contrary. One pictures their classification of the Vegetable Kingdom as being: (1) Auriculas. (2) Other plants. Be all this as it may, I like them; especially the green, grey and white edged varieties. How they respond to ordinary cultivation—with a flavour of

Hop Manure in the soil—you may judge from the portrait of "Henry Wilson" that occupies the proud position of frontispiece.

Diapensia lapponica var. obovata represents the type species in north-eastern Asia and the extreme north of western North America and is principally distinguished from it by shorter, broader leaves and, from a gardener's standpoint, by a less reluctant attitude towards the benefits of civilization. Even at that, it is not easy to establish and dislikes disturbance as it should the fiend. A firm, compact, tufted evergreen, slightly woody in stem and root, *D. lapponica var. obovata* bears relatively large, white, tubular flowers with spreading corollas, their charm heightened by five prominent yellow anthers. (Fig. 33, p. 390.) Not the least asset of the plant is its winter colour of burnished bronze.

The tranquil *Weldenia candida* was described by Julius Hermann Schultes as far back as 1829 but is little commoner now than it was then. I suppose it is too quiet a plant to ever make its way in the world, but nevertheless its pure white, three-petalled flowers, each about an inch across, carried on short, erect stalks at the top of a stumpy, more or less buried, stem in the midst of strap-like leaves have a pearl-in-the-oyster kind of beauty.

The type species is a Mexican plant. There is a Guatemala form, first collected by Hartweg in 1840 in the crater of the Volcan de Agua, which is larger, more robust, of greater fertility and easily distinguished by the more or less erect bristles on the upper surface of its younger leaves (Pl. xviii, p. 290).

Fritillaria graeca is a species of infinite variety. The tiny form shown in fig. 34, p. 392, was sent to me as *F. Guicciardii* which is itself a variety of *F. graeca* but not, I understand, identical with mine. Whatever its correct designation, its vinous purple bells,

fig. 34

p. 391

FRITILLARIA GRAECA *var.* [× ⅓]

tessellated with pale green, although maybe a little bilious in colour, have a powerful attraction for the Fritillary Brotherhood.

The monotypic genus *Kalmiopsis* is a very recent conscript in the *Ericaceae*. Its species, *K. Leachiana*, was discovered by Mr. and Mrs. Leach in the Oregon part of the Siskiyou Mountains in 1930 and named by Rehder in 1932. On making the acquaintance of this little shrub you might easily remark "It's not a Rhododendron" and thereby indicate that it at least brought Rhododendrons to your mind. "Nor", you would likely add, "is it a *Kalmia*, for the anthers are free." Though having an affinity with both genera, it can scarcely be said to be a connecting link between them. One might, however, in a moment of inspiration, see the plant as a development of *K. polifolia* in a Rhododendron direction. Look at fig. 35, p. 394, and form your own opinion. The flowers, saucer-shaped, about an inch in diameter and in colour rosy-pink (with a hint of lilac) are borne in terminal racemes on the previous year's growths and also from the upper leaf-axils of the latter. The normal flowering period is said to be from April until June, but the buds on my plants are, in December, already well developed and showing colour. If seen out of flower, the shrub may be at once distinguished from a *Kalmia* by the presence of numerous yellow glands on the underside of the leaves.

"*Decus Floris Mediterraneae*" was how the great Reichenbach described *Serapias Lingua*, and allowing that he was, shall we say, heavily under the influence of Orchids, the plant is certainly one of the high-spots of the Mediterranean flora. Still, to my taste, *Serapias cordigera* (Pl. xix, p. 291) is a finer plant. Its large flowers are crowded on the upper part of a foot-high stem, each of them caped by a long, pink-striated bract and presenting for your admiration

fig. 35 p. 393

KALMIOPSIS LEACHIANA [× $\frac{4}{5}$]

(The shrub is more spreading than the figure indicates.)

a large, velvety, purple-brown lip, the width and tapering of which varies greatly. The sepals are erect and, together with the small lateral petals, form a cowl over the upper end of the flower.

Both species are found throughout the Mediterranean regions with the exception of Egypt.

The name of the genus, derived from that of the Egyptian deity Serapis, was given by Linnaeus. Had its invention been left to our present courteous age it would, more likely than not, have been designed to honour Mr. Whistleberry or other distinguished contemporary.

Serissa is a monotypic genus of the *Rubiaceae* which finds expression through *S. foetida*, native to China and Japan and a dwarf, branching, evergreen shrub with dainty, white, mauve-tinted funnel-shaped flowers borne singly or in little clusters from the leaf-axils and at the end of the twigs. The plant is said to have medicinal properties. What they are, I do not know but, from the smell of the bark and of the still more fœtid root, surmise they resemble those of *Asafoetida*, that time-honoured remedy for those emotional states which render their victims "all strung up like a fiddle". The very thought of a second dose appears to relieve the strain.

This turf, potted intact on its arrival from Kamtschatka, shows a natural association of *Arcterica nana*, *Loiseluria procumbens*, *Cassiope lycopodiodies* and *Bryanthus Gmelini*. The last of the four, according to modern conceptions, is the only known species of *Bryanthus*. Formerly, the Phyllodoces were included under that genus. The distinction between the genera lies in the flower. In *Phyllodoce* the corolla is companulate, urceolate or deep-saucer-shaped and the segments are never separated from each other below the middle of the flower. In *Bryanthus* the corolla is rounded, almost flat, and the segments are separate

fig. 36

ARCTOSTAPHYLOS NUMMULARIA [× ⅔]

p. 397

for almost their whole length. *B. Gmelini* is a dwarf, procumbent, spreading shrub. Its tiny, narrow, evergreen and much recurved leaves are closely and alternately arranged on thin, wiry stems. The flowers are only about an eighth of an inch in diameter, rosy-pink in colour and grouped at the ends of the previous year's growths. An interesting plant but, horticulturally, nothing to make a song about.

A brief reference was made on p. 157 to *Arctostaphylos nummularia* (fig. 36, p. 396). Quite hardy in the open, where it prefers a fairly sunny position, it is also a most appropriate shrub for the alpine-house and there its delicately attached white flowers, hanging in single axillary or in clustered terminal racemes, run no risk of being broken off by a passing shower.

A plant of *Primula scapigera* reminds us that it is one of the easiest species to propagate from what are known as leaf-cuttings; leaves, that is, gently detached from the parent plant. And *P. scapigera* is worth propagating. Not unlike *Primula Winteri* in appearance, its frilled flowers are more intense in colour and over one and a quarter inches in diameter. Perfectly hardy and with no fads nor special requirements beyond a measure of shade, this beautiful plant can always be relied upon for a brave show in March and April, in open ground or alpine-house.

There are Saxifrages, Lewisias and many other representatives of the alpine flora under glass but, if you are a rock-gardener, they are as familiar to you as the colour of a pot; if, on the other hand, alpines and what pass as alpines mean no more to you than any other group of plants, you have probably heard nearly enough about them for the moment. And, to tell the truth, many of the most popular have retired permanently from my preserves; some at their own desire, some at mine, and not a few assisted in their going by our own particular brand of Red Spider.

That pestilent creature can be checked, you say, by keeping the atmosphere moist? Possibly, but it is impossible to retain the necessary degree of humidity in a freely ventilated house. How, then, may the

fig. 37 p. 397

LEWISIA HYBRID (*L. Cotyledon* × *L. columbiana*) [× ⅓]

red terror be resisted? By fumigation? Tut! Any method harmless to the plants is equally innocuous to the mites. Spraying, then? Effective, but to wet both sides of every affected leaf is no quicker than painting them, and twice as messy. And to paint them, and keep on painting them, or to retain a specially trained executive to stand on constant guard with a camel's hair brush in one hand and a

jar of nicotine solution in the other is too much happiness.

Before closing down on the alpine-house, I must give a word to *Campanula Morettiana* (fig. 18, p. 288), one of the very few Bellflowers I continue to grow under glass. Its hairy leaves are relatively distasteful to Red Spider; I cannot manage it in the open; it is one of the most exquisite of its genus and our plants have a history. There are four excellent reasons for its being where it is.

I might never have had the plant to this day but for a visit to a nursery. There, in an inconspicuous position in a greenhouse, stood a specimen in a four-inch pot. It was out of flower but easily recognizable from its frugal growth and its tiny, serrate, heart-shaped leaves greyed with hair. It was, I said, inconspicuously placed. The indication was clear. Not meant to be seen at all, it must only catch the eye accidentally.

With gentle sympathy (for sympathy is a wonderful softener) I commiserated the nurseryman on the condition of four dozen *Eritrichium nanum*, warmly agreed that *Phyllodoce caerulea* was difficult to root from cuttings, asked the price of a pink *Ramondia* and bought a *Sempervivum*. Guiding the conversation to Campanulas, I spoke of *C. Morettiana* in a respectfully familiar way, and learnt that stocks were low. So low, in fact, that they consisted but of a single plant, the plant behind the door. And it held the poor man under such a spell of terror that he was almost afraid to look at, much less divide it. It might, he said, "kick up rough". It was, I gathered, an agony that gold should be within his reach but too hot to handle. That feeling I could understand and offered to take away the plant and leave a nominal recompense behind, although the latter seemed uncalled for. I thought ten shillings; the other side

thought fifty pounds. Pounds. Not francs nor lire, marks nor dollars, but pounds. Fifty pounds, sterling. The *Campanula* was undoubtedly rare in cultivation, yet it could scarcely be considered an Old Master; a plant, that is to say, extinct in the wild. Why, a trip to the Dolomites, where it actually awaited collection, would cost little more. And to the Dolomites we went.

The stark and adamantine walls, the grim fastnesses and unassailable cliffs which, so Farrer tells, the plant inhabits, might not be so terrifying as they sounded. Nor were they, and the cold chisels with which we were armed did their work nobly though it would be inaccurate to term them comfortable or even handy tools when driven with a lump of rock. Amongst the spoil there was a white form which now exists for me but as a photograph. Yet I cherish a hope it is not lost to cultivation. To guard as far as possible against such a tragedy, I distributed propagations to famous growers. Of their fate I know nothing and to ask would be indelicate. The type plant still survives; more than that, it has supplied many admirers with tokens of remembrance. As the figure shows, the flowers are extraordinarily large for so small a plant, and carried with considerable pride. Their colour, it almost goes without saying, is blue; albeit a violet blue.

We leave the alpine-house, and, without noticing more of other houses and frames than that they need a coat of paint, pass along the avenue of Cobs and Filberts (inalienable property of red Squirrels, Great Spotted Woodpeckers and Nuthatches) to reach the best bit of sward in the garden. Sward; that is the word; less committal than lawn; not so criticizable as turf.

On our way to the Lily Pool, a curious excrescence on the dead stem of a Broom catches the eye. It is the fruit-body of the dreaded Silver-leaf Fungus, *Stereum purpureum*. Fig. 38, below, shows its appearance. In consistency a compromise between

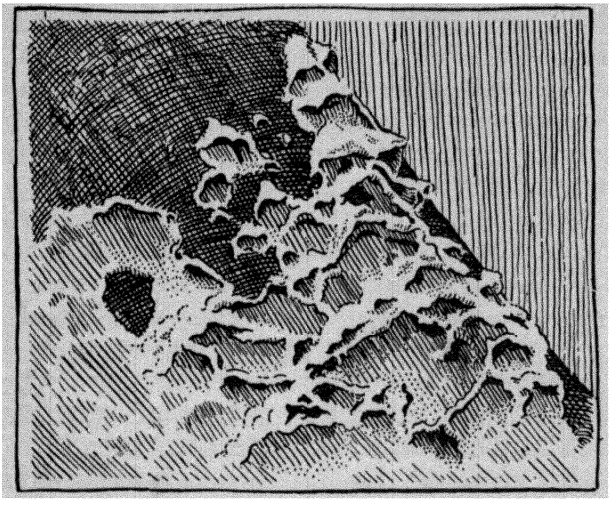

fig. 38 see above

FUNGUS OF SILVER-LEAF [× ½]

leathery wood and woody rubber, the fructification exhibits a series of loosely imbricate, curved projections of which the lower, spore-bearing surfaces are of a dead purple colour that becomes a dirty yellow with age.

Apples, Cotoneasters, Plums — particularly the useful old Victoria — and other Rosaceous trees and shrubs appear the favourite prey of the fungus, but others, living or dead, come not amiss. Infection of a healthy plant takes place through a wound; a wound, maybe, so slight as to be almost unnoticeable. The

affected branch dies and then, but not till then, the enemy comes into the open. Its presence, very fortunately, is usually detectable before that event from the silvery sheen of the victim's foliage. Hence a focus of infection may be eliminated before it has the chance of scattering ban.

The subject of disease is never a popular one with gardeners and my only purpose in illustrating this particular example may be compared to that of a Public Health Authority in placarding an area with the symptoms of an epidemic in its midst.

If ever a garden of Fungi was planted at the instance of Ceres, then surely Epping Forest, and especially that part of it near our garden, was the chosen site. To say nothing of the tiny ones, it harbours at least six hundred of the larger species. As some of these sporulate to the tune of billions, it is not surprising that more than a few visit us from time to time.

The Lily Pool occupies the site of our original home-made pond, and is a concrete structure surfaced with cement. Round the edge are ledges for the accommodation of shallow-water plants while two-thirds of the Pool itself is twenty inches deep and the remainder twelve. Its capacity is 1,150 gallons and its surface area about 650 square feet.

Quite a small pool but sufficient to contain a dozen Water Lilies and a few other aquatics and, quite as important, to show the glint of water from the commanding heights of the sandstone rock-garden, an altitude of at least six feet. Round the northern end are Willows; *Salix Caprea*, *S. daphnoides* and the hybrid *S. Meyeriana*; all very beautiful in catkin-time. Candelabra Primulas do fairly well beneath and about them and the purple-red *Lysimachia Leschenaultii* and Rodgersias bear their part. At the

Pool's edge are *Arenaria balearica*, *Vaccinium Vitis-Idaea*, young plants of the two species of *Lysichitum*, *camtschatcense* and *americanum*, white and yellow respectively, and other odds and ends.

As in popular parlance the word Lily is given such a general application, taking under its wing with the greatest good humour the Lilies of the Field, the Lily of Peru, the Kaffir Lily and the Lily of Laguna, not to mention a host of lesser notabilities, it may be as well to mention that all our Water Lilies, with the exception of *Nuphar advena*, are Nymphaeas; Nymphs of the Water.

Aeration of the soil about their roots being so essential to the well-being of the great mass of flowering green plants, it may be as much a matter of wonder to many as it was to me how Nymphaeas, and such as Nymphaeas, manage to do without it. How do their roots obtain an adequate supply of oxygen? As there is insufficient in the water for their needs they must get it from the air, and if the leaf- and flower-stalks are cut lengthwise they are seen to exhibit vertical channels used for the very purpose of conveying air to the rhizomes and roots from the breathing organs above the surface.

Tradition and superstition have clustered about the Water Lily since the dawn of history. Is it not curious, then, that a genus which attracted such attention and presumably esteem did not call up any particular horticultural enthusiasm until, within living memory, M. Latour-Marliac hybridized *N. alba*, the Common White Water Lily, with varieties of the North American *N. odorata*?

As all hardy Nymphaeas are beautiful, one's choice is controlled by their size, floriferousness and the lastingness of their individual flowers rather than by other qualities. If space is limited, it is unwise to use plants capable of covering the floor of a Victorian

dining-room. A size approaching the table would be too much for many of us. That of a table-napkin would be nearer our requirements and, taking that as a minimum, we may go up to a suitable maximum, for there are as many sizes of Water-Lilies as there are in boots. The white *N. tetragona* and its yellow variety *helvola* represent the napkin-size in the pool, then come delegates from the *Laydeckeri*, the *odorata*, the *caroliniana* and the *Marliacea* groups in orderly progression from the smaller to the larger. We cannot accommodate more than one of the dining-room class and he, James Brydon, does not require Victorian dimensions. That of one of your modern, mass-production rooms, seven feet across, is quite enough.

Black Aphis was troublesome when the plants were young and unestablished. The first season spent by our small collection in the new pool unfortunately coincided with a convention of those creatures. They appeared to be constantly in session and always on the Lily leaves. I am not sufficient of an entomologist to say what species of *Aphis* are normally addicted to *Nymphaea* but on this occasion the sable members of the genus had apparently put personal and dietetic differences to one side in order to discuss affairs of the commonwealth.

"Lime", I was admonished; "spray them with a weak lime-wash." The advice, though no doubt excellent, left me impassive. A whitened leaf could not be much improvement on a blackened one, and there were the fish to be considered. While they might not object to a grain of salt with a snack of aphis, I, putting myself in their position, could not fancy limed black-fly. Biological control was the thing, I told myself. It delegated the work to those better fitted for it than a mere human, however prettily he

might throw a spray of lime. And the next year biological control did the trick. A few *Aphides* were reported (only small ones, I was told), but not one did I see myself. Fish, Ladybirds, possibly Dragonflies and maybe Reed Warblers arrested all trespassers before they knew they were trespassing.

At the edge of the pool, in the shallowest water, I have tried to please the Buckbean, Bog-bean or, in learned company, *Menyanthes trifoliata*. I had first seen it in a Teesdale bog during a boyhood ramble and the memory of its funnel-shaped white flowers, bearded within, has never left me. In the garden it grows indifferently and flowers not at all. This is more than disappointing; it touches one's horticultural *amour-propre*, for within a stone's throw, at the margin of a forest pond, it simply revels. Experiment with the local plant has given no better result. Yet the soils are the same, the climate, everything except the water. The forest supply is drawn from heaven, mine from the Metropolitan Water Board. Now while I have the greatest admiration for that body, it is impossible to say that what we use of its excellent product is quite free from lime. To be fair, though, the Board makes no such claim, nor can I find in my agreement any suggestion that the water is prepared for the particular delight of the Buckbean. Nevertheless, if I have drifted into libel, I am prepared to change my ground and say that the real fault lies in the perverted taste of the plant.

Butomus umbellatus, the Flowering Rush, is another native but not so squeamish as the last. It sends up three-foot stems crowned with umbels of rosy flowers in June and July. The narrow, pointed leaves of the plant, all from the base, are sharp enough to injure the mouths of browsing animals. That may be irrelevant, though I'm not sure. People keep strange pets.

Hydrocleis Commersonii, another member of the *Butomaceae*, is less hardy than one likes yet hardier than a plant distributed from Brazil to Buenos Aires might be expected to be. A pretty little thing, its bright yellow, saucer-shaped, three-petalled flowers over two inches in diameter—single Water-Lilies they might be—continue to appear until late autumn.

The Great Spearwort, *Ranunculus Lingua*, has in full measure the acquisitive habit of many of its genus but need not be avoided on that account; it is easily kept in check. The large, shining, yellow flowers, held in minor panicles on leafy, erect stems two to three feet high from June onwards, have that frank simplicity which gives the Common Buttercup so great a charm. A form with larger flowers is dispensed under the varietal name *grandiflora*.

A depth of eight inches of water is not too much for *Sagittaria sagittifolia* (*japonica*), the Old World or Japanese Arrowhead. A nice plant, but not a patch on its variety *plena*; that comes under the superlative class of aquatics. Less invasive than the type—a point to its advantage—its pure white, double flowers, held in ball-like aggregates on branching scapes, are as lovely as those of the Guelder Rose though, naturally, not so large.

Stratiotes aloides is the only living reminder of a genus common in the early Tertiary and is distributed through Europe, including Britain, and northern Asia. The leaves were thought to be sword-shaped, apparently by someone who had never seen a saw, and by an association of ideas the plant (and hence the genus) was named *Stratiotes*, that is, a soldier. A homely addition has made the species into the Water Soldier, and a fresh water soldier at that, a title almost comparable in dignity to that of horse-marine. Passing more than half its life under water, *Stratiotes* comes in summer to the surface in order to

bear its unisexual,* white, three petalled flowers on short scapes which shoot up from the midst of its clustered, serrate, Aloe-like leaves. It has an exasperating habit of severing its numerous axillary offshoots and sending them, under water, into the wide. If you have ever spent a day or two dragging Water Soldiers away from the Nymphs of a pool, you will agree with this criticism.

* *Stratiotes aloides* is dioecious.

Chapter Sixteen

OPPOSITE to the Lily Pool, but extending beyond its frontage in both directions, there is a long, irregular, mixed border which slopes, for the greater part of its length, to the west. At one end, sheltered by Holly from the north-east, are certain Alstroemerias.

Five and twenty years ago I read Mr. Eden Phillpotts's delightful book, *My Garden*, and time after time I have tried to grow *Alstroemeria Pelegrina var. alba*, of which he speaks so warmly. If the stems showed an inch or two above ground level the spring after planting, that was the limit of my success. They never appeared again. Seized once more with the recurring desire last winter, I obtained tubers from many sources and tried to trick the plant into compliance by giving the impression it was to be grown under glass. Some of the tubers were set in a cold frame and given leafy soil; others were potted, housed until they had made strong growth and then planted in the shelter of the Holly just mentioned.

Everything went according to plan. For the first time I saw *A. Pelegrina var. alba* in the flesh. A memorable occasion. The outer segments are broad and green lined in the centre while the two upper of the inner segments are spotted with the same colour and suffused with it towards the middle. So clear is the green that it rather whitens the general whiteness of the flower than diminishes it. In the plant figured (Pl. xxi, p. 307) the umbels carry fewer flowers than normally. This is owing to its being new to its position. All Alstroemerias take time to settle down.

The type species, *A. Pelegrina*, growing cheek by

jowl with its variety, is of a warmer beauty. On the pale rosy-heliotrope ground colour of the flower segments there is a central patch of carmine and, on the two upper of the inner segments, an additional decoration of red-purple spots.

It is very doubtful whether the lovely but rather tender *Alstroemeria Ligtu* is in British cultivation. The tall, robust species with flowers of a beautiful rosy-pink that is grown under that description is not the plant to which Linnaeus gave the name nor that recognized as it by either Kunth or Baker.

The many forms of that excellent species, *A. chilensis*, embrace every colour possible to Alstroemerias with the exception of white, and even that is closely approached. Moreover, seedlings from any one form can produce the whole colour gamut. While this facility is all to the good from the decorative standpoint, it also tends to be a little confusing. My own plants, for instance, were obtained under three different specific names but not one of the latter happened to be *chilensis*.

As unmistakable as *A. Pelegrina* is the Parrot Alstroemeria, *A. psittacina*, and its deep red, narrow funnel-shaped flowers tipped with green are the last to open of the species generally grown. Continuing along the border, we pass two *Nothofagus* species, *fusca* and *Solanderi*, striplings as yet but doing well; *Calochortus venustus* forms; a patch of *Brodiaea laxa*, whose broadly tubular, purple flowers, carried on one to two feet stems, are very fine; and a few Fritillaries.

Fritillaria pallidiflora is amongst them; two forms of it. One a caricature in dirty yellowish-green, its internal marking washed out by the acid tears of a jealousy provoked by its companion. No wonder, for the companion is *F. pallidiflora* as it ought to be; up to fifteen inches in height, dressed in large, glaucous leaves and bearing up to six nodding, sul-

phur-yellow flowers, their inner surfaces beautifully marked with purple tesselations.

A young plant of *Camellia saluenensis*, about thirty inches high, is just behind and has flowered regularly in that position for the last four years; from, in fact, its infancy. This species escapes the severe formality of *C. japonica* and its forms. The flowers (fig. 3, p. 36) hold seven petals of a delicate salmon-pink and open from February onwards. Too early for a country where a touch of snow or shower of sleet may convert them into what might be fragments of wet tobacco leaf.

Here, too, is a young *Disanthus cercidifolia* some four and a half feet tall. Its flowers I have not seen. They are described as being set back to back in pairs, each half an inch in diameter, purple in colour and containing five tapering petals. A departure, apparently, from those of the *Hamamelidaceae* usually cultivated. It is not for its flowers that *Disanthus* is grown, but because its rounded or broadly ovate leaves assume so glorious a colour in autumn.

Up to this moment I have tried to avoid comparing colours to certain beverages. The use of such standards might give rise to wrong impressions; though not entirely wrong. I would be the last to deny that at times there's more comfort in a glass of wine than in a cartload of philosophy. It breaks the contact between an abstract cause of worry and a too sensitive receptor, complete with amplifier. "Ah," asks the cast-iron prohibitionist, "and what happens when the influence of the alcohol has worn off?" (Yes, that is actually how he puts it.) By then, I answer, the receptor has regained its equilibrium and the worry is measured at its true, and usually insignificant, weight.

After this declaration, circumspection is useless and I am free to say that the dying foliage of *Disanthus cercidifolia* is of the colour of Burgundy.

Many trees and shrubs renowned for autumn colour only distinguish themselves in certain soils or after arriving at a certain age. In some cases, indeed, good colour is an individual property. There is nothing of that grudgingness about *Disanthus*. Any plant at any age in any soil in which it will grow colours as splendidly as another. On the other hand one, or two, weak points should be mentioned. The shrub is just on the tender side and slow in growth in its early years, but before reaching school age casts off these little frailties.

There cannot be many herbaceous plants in a position to scan the credit side of their balance sheets with more satisfaction than Kniphofias. The genus is exclusively African and, although certain species are found on tropical mountains at an altitude where the temperature approximates to that of the southern half of England, quite a number are confined in nature to South Africa and enjoy a winter (July) temperature of between 50° and 60° F. Their behaviour in cultivation, by the way, affords convincing evidence that the hardiness of a plant cannot always be estimated by the temperature of its natural habitat, even when that habitat is relatively limited in area.

With the exception of *K. Snowdenii*, a native of Uganda, no species nor hybrid has given us the slightest trouble. In eastern Scotland, I am told, it is the custom to plant them in fairly sheltered positions, but otherwise to rely upon the protection given by their own foliage.

Kniphofias are best in regiments or at least in companies. An isolated spike in a border looks like a grenadier lost on Hampstead Heath on a fête day. And division of the rapidly growing root-stock makes the obtaining of a company a simple matter. A single plant of *K. corallina* has, for instance, in the

course of six years, given at least a hundred offshoots. Moreover, they are easily raised from seed but, as the genus has a scant regard for common notions of morality, the seedlings, if grown from garden seed, are apt to have a mixed parentage.

If given a choice, they ask for a sunny, sloping border and as great a depth of medium, well-drained loam as can be given but are quite ready to make shift with less suitable environments. Their personality requires no background for its emphasis nor their stems any physical support. Proud plants, sufficient unto themselves; impatient of trivialities and generous of their gifts.

K. Rooperi, from eastern Cape Province, though known in this country for over sixty years, is still a rare plant. Opening in October and November, its orange-red flowers are packed in a compact, ovoid, six- to eight-inch raceme perched on a stem as long as the four-foot leaves. Quite in contrast is *K. rufa*, a native of Natal. A dwarf plant, as Kniphofias go, its leaves are from twelve to eighteen inches long and the flower stalks no higher. Loosely arranged in a four- to six-inch raceme, the yellow flowers (the uppermost tinged red) open in June and July. Not uncommonly there is another, but smaller, burst of bloom in autumn. In July and August that lovely hybrid *K. corallina* (*K. Uvaria x K. Macowanii*) illuminates wherever it is planted. Elongated racemes are held above the two-foot leaves and the flowers open almost simultaneously, not in deliberate upward progression. They last long in beauty, are thrown with prodigality and are really of a rosy-coral colour. Not having seen all Kniphofias, I cannot say whether *K. corallina* is entitled to the laurel crown but cannot imagine any species or hybrid more deserving.

Another might give the prize to the South African

Kniphofia Galpini, the more so because in September, when it blooms, *K. corallina* is not in evidence, or at any rate past its best. The scarlet flowers hold a tincture of orange and are borne in eight-inch racemes held on firm stems well above the foliage.

Almost behind the Kniphofias there is a specimen of *Magnolia Kobus var. borealis*. It has larger leaves than the type and is said to be more robust. That may be but, and in spite of its healthy, shapely growth, it has fallen short of expectation. Reputed to flower much earlier in life than *M. Kobus* itself, it has not done so here.

I have no complaint against its near neighbour, *Drimys Winteri*. Now about sixteen feet high, it was bought as a three-foot youngster in 1923 and originally planted in the sixth Allotment Bed but, in great danger of being crowded out, transplanted to its present position ten years ago.

A singular plant to attract an ignoramus who had never seen it, a line or two in Bean's *Trees and Shrubs* determined its purchase; " . . . known since 1578, in which year its bitter bark was brought home by Capt. Winter (after whom it is named) in one of Drake's ships from the Magellan Straits".

Here, I said to myself, is a link with the intrepid, generous but at times piratical Sir Francis, one of the most stalwart props of Britain's fame. It was not difficult to conjure up the occasion of the plant's collection. It would occur during Winter's return from Drake's 1577 voyage; but let us begin earlier than that. The original fleet of five ships had, when it reached the Straits of Magellan, been reduced to three and these, having rounded the Horn, were driven westwards by a tempest in which another foundered. Drake in his *Golden Hind* and Winter in the *Elizabeth* made back for the Straits but lost touch with each other. Winter set a course for

England. One conjectures that scurvy attacked his men and that a boat's crew was sent ashore on Tierra del Fuego to collect what they could of herbal remedies. With other plants they brought, so one imagines, parts of a tree with bitter bark and leaves which, when crushed, were aromatic and pungent to the palate. The remedy was apparently effective and, carried home by Winter, for long was held in high esteem in European medicine as Winter's Bark and still maintains a considerable repute in South America.

What happened to Drake in the meantime? He, not a whit dismayed and on solitary adventure bent, sailed up the west coast of America seizing Spanish ships, harrying Spanish towns, out-conquistadoring the conquistadors. Failing to find a passage through America to the Atlantic after a long search, he sailed south-westwards, arrived at the West Indies and after spending some months there directed his course to England by way of the Cape of Good Hope. In September, 1580, he reached Plymouth, the first Englishman to have circumnavigated the globe. For his achievement he received a knighthood, and let it be remembered that in the sixteenth century a knighthood was, well, a knighthood. Queen Elizabeth did not bestow honour where no honour was.

All this *Drimys Winteri* calls up. Though Drake's connection with it was only indirect, if his famous voyage had never taken place the plant would almost certainly have borne another name. The present one was given it by Johann R. and Georg Forster, of whom we have heard before.

It is a fine evergreen shrub or small tree but not altogether hardy. Long, shining, narrow leaves, red young wood and clusters of white, fragrant flowers are its possessions. Liable to damage from strong winds it should be planted in a fairly sheltered place.

Nearly in line with it, at the lower edge of the border, is *Veronica elliptica*. Although the shrubs were planted without any thought of natural distribution, their proximity in the garden shows that man can sometimes do in a few minutes what it takes nature æons to accomplish. *Drimys Winteri* and *Veronica elliptica* meet in the Cape Horn territory. The first runs from Mexico through Central America and down the Pacific side of South America to reach the rendezvous; *Veronica elliptica* attained it from New Zealand by, one presumes, the overland route through once-mighty Antarctica.

Why it, and it alone among the shrubby New Zealand Veronicas, should have so extended beyond its native land is a difficult question to answer. It doesn't look an adventurous plant, growing slowly and blooming with reluctance. Said to reach as much as twenty feet in nature, in the garden it is, at the moment, a compact, rounded bush of fifteen inches. Its pale, evergreen, leathery leaves are set on the stem in four vertical rows and margined with a white pubescence. The flowers, what there are, are held in racemes from near the ends of the previous year's growths and are bluish-white in colour, scented, and up to two-thirds of an inch across.

In the same border are many *Berberis* species. A dwarf form of the wonderful *B. Wilsonae*, called *var. globosa* by the firm that issues it, is quaintly attractive though less graceful than the type. The noble *B. Chitria* is resplendent at the moment (December) with bright red young wands which contrast with the dull brown older wood. In June and July it dangles long panicles of bright yellow blooms which almost simulate clusters of Laburnum flowers that had persevered in slimming without disfiguring effect.

Nearby are two Holly-leaved, evergreen species introduced by Kingdon Ward, *Berberis calliantha*

fig. 39 pp. 179 and 417

BERBERIS FREMONTII (left) [× ⅜]
BERBERIS CALLIANTHA (right) [× ⅜]
(The flowers and the 2nd, 4th and 5th leaves, above the lowermost flowers on the right are those of *B. calliantha*.)

(K.W. 6308) and *B. hypokerina* (K.W. 6787), both striking plants to the Berberis fancier's eye. *B. calliantha* (fig. 39, p. 416), perhaps the more attractive of the pair and certainly more tolerant of position, is a spreading shrub about three feet high. The leaves, tapered to both ends, oblong, up to three inches in length (inclusive of the short, channelled petioles) and three-quarters of an inch broad, are wavy, toothed and spiny at the edges, their upper surfaces dark green, deeply veined and shining, their lower almost white. Bright primrose-yellow flowers an inch in diameter nod from slender stalks in groups of from two to four in May.

B. hypokerina, of similar height and habit (though inclined to droop from the centre) is best in half-shade. Its leaves, attached by short, scarcely channelled stalks, are also oblong but an inch or more longer than those of *B. calliantha* and up to one and a quarter inches in width; they further differ from those of the sister species in their more prominent teeth and spines, their lack of venation, and their lustreless dark green upper surfaces, though they are quite as white beneath. The flowers, held as in *B. calliantha*, are slightly smaller and of a deeper yellow.

Less unusual but infinitely more splendid in flower are Comber's introductions from southern South America. Of these *B. linearifolia* commands the greatest fame due, in part, to the very favourable reviews it has received from both those who have seen it and those who haven't. (To admit an ignorance of *Berberis linearifolia* is as condemnatory in gardening coteries as it is, in the village circle, to ask who Shakespeare was after a lecture on English Literature at the local Women's Institute.) The large, richly coloured flowers, deep orange tinged with scarlet, thickly set against shining, evergreen foliage richly entitle it to the warmest praise but by

no means put the *best* forms of its similarly flowered natural hybrid, *B. lologensis*, in the background.

Indeed, after comparing their respective charms for three years, I still cannot tell you which plant attracts me most. Happily, I am not in Captain Macheath's dilemma nor, if I were, could my case be met by adopting his attitude. "How happy could I be with either were t'other dear charmer away" is no song for a gardener. He wants both.

With such a parentage as that of *B. lologensis* (*B. Darwinii x B. linearifolia*) one expects an exceptional child but, as in humans, the merits of the parents are not invariably reproduced in the offspring. There are indifferent forms of the shrub which I doubt if either the father or mother would willingly acknowledge.

A general resemblance between *B. lologensis* and *B. linearifolia* occasionally admits of the former being sent out as the latter though, I believe, without intent to deceive.

The easy unrestraint of *B. linearifolia* encourages the practice. Her attraction for *B. Darwinii* is manifested in more places than in the neighbourhood of Lago Lolog. If the two species are within communicating distance of each other a liaison will be established before you know where you are. Now as *B. Darwinii* is almost certainly in every garden where *B. linearifolia* is also in residence, it must be nearly impossible to raise authentic examples of the latter from garden seed. I have tried, but not two of the resulting seedlings are exactly alike. Certain of them suggest, indeed, that *B. linearifolia* is a very Cleopatra. B. *Darwinii* may be her Mark Antony . . . but let it pass. Some novelist will accuse me of stealing his thunder if I'm not careful. For us, highly respectable gardeners, it is sufficient to know that the true *B. linearifolia* may

be distinguished from its hybrids by the leaf. It is linear-oblong, *never dentate*, dark green above, paler beneath and carries a sharp spine at its tip but not so much as a bristle anywhere else.

Another of Comber's introductions from the Andes, *B. montana*, is one of the best of the deciduous species. Tall and graceful, it bears in May a rich profusion of large, mellow golden blooms. Very like it, but with slightly smaller flowers, is *B. chillanensis*. It and the other Andean species just mentioned all have black fruit.

The sandstone rock-garden is in front of us. Before saying more, let me warn you that it is principally inhabited by dwarf *Ericaceae*. There's nothing in that to justify a warning? So I should have thought. The fact is, nevertheless, that some years ago I was taken seriously to task by a reviewer because I had included accounts of a few lime-hating shrubs in a little book. Readers, he said, "might well be irritated by his descriptions and photographs of plants beyond their powers". Even if one assumes the truth of the qualification, can it be believed that an Odontoglossum, for example, sported in the buttonhole, causes irritation in the beholders? Or that a book of travel engenders nothing more than a constantly mounting annoyance in its reader? Or that a volume of the *Botanical Magazine* of which three-quarters of the contents are given to descriptions and pictures of plants that one may never see, much less grow, induces such an exasperation that only its destruction can relieve?

Descriptions of plants are written for the same purpose as descriptions of anything else, in the hope that they may entertain the reader. There are those, of course, who find virtue in a writer only if he confines himself to the dear, familiar things. "A clever

fellow, this," they say, "he stakes a Hollyhock just as I do it myself." The attitude is as understandable as that of a crossing-sweeper approving the technique of another, but does not mean that a Hollyhock staker would damn the picture of a Jacaranda tree. Still, the reviewer may know the psychology of the reading portion of the horticultural public better than I do, and, out of respect to his opinion, I give notice of what is to come so that you may skip the section if you wish.

The original sandstone rock-garden was built on a steep bank about six feet in height and corresponded in position to that portion of it now continuous with the mixed border just described. It was to be "a great, bold cliff" according to the builder. "Ramondias and *Saxifraga longifolia* must sprout from its precipitous slopes to keep up the Pyrenean effect." Plants from other parts of the world need not be excluded, I was relieved to hear, but the general aspect was to be after the model of the Pyrenees. We, standing beneath it, were in France. Beyond those terrifying walls lay the romantic land of Spain and somewhere between must be the Valley of Roncesvalles, still silent from the hush of Roland's horn.

When finished, the slopes were too abrupt. Two feet of back-to-front depth had been used to make a pass on which one might travel, on a mule, from Gascony to Navarre. The rock-garden, in short, became too dry in summer, despite its facing north. And the advice of the Old Man, "Try not the pass", was religiously observed if the trying involved the transport of water. The one plant which I can conscientously say did well under the circumstances was *Campanula excisa*, and it grew weedishly. It underlined each rock with which it came in contact and carefully emphasized every joint. A label indicating the position of a Kabshia Saxifrage was a mockery.

One part of Saxifrage to seven of Campanula represented nothing but the Campanula dealing with a temporary embarrassment. And now not a runner, not a leaf remains.

Sic transit gloria Campanulae excisae. For, be its rampancy what it may, *C. excisa* is one of the lesser glories. I had been incredulous of its reported unreliability believing, on the contrary, that it had woven itself into the garden as indissolubly as the Harebell itself. Who, with such evidence of wanton growth before them, could have thought otherwise? Could have imagined that the plant harboured a sensitiveness so acute that a word of playful criticism or a trifling disturbance was enough to make it shake our soil from its roots and then depart into the night? I have done five years penance for offending it and, trusting that I am forgiven, will again try to coax its favour. I have hopes, for the disturbance was not directed at it but at the place where it grew. There was no way of avoiding the upset for it was necessary to spread out the rock-garden so that it might catch a share of rain.

Scarcely a year has passed since its erection but that some alteration or addition has not been considered necessary to the sandstone, as we call it, and now it stretches in a curve to the south end of the pool. The Holly-pool portion, incidentally, is larger than shown in the plan, and the pool smaller.

The rock-garden gradually developed into a stronghold of *Ericaceae* in the most natural way. After the debasing of the precipices, shrubs were required to break the relative flatness of the scene. We had Rhododendrons of the *Lapponicum* and *Saluenense* Series waiting for a job and casting longing eyes towards the sandstone. Given a trial, they rendered such a good account of themselves that we took them on permanently, and so pleased were they

themselves with the situation that they had families at the first opportunity and on the spot. More of their genus were planted, then species of other *Ericaceae* and there you have it.

Rhododendron crebreflorum, prostrate, hardy, and neat appears to have as much difficulty in presenting its flowers to the world as a stout philanthropist in extracting a shilling from his trousers pocket, and then, as likely as not, they are pinkish white; a poor colour, say what you like. I once saw the plant as it should be, sparkling with heads of crowded, lucent, real pink blooms and it appeared the very nonpareil of alpine Rhododendrons. The shrub, when in flower, resembles a Daphne as closely as a Rhododendron can. This adds to its fascination for precisely the same reason as would render a Rhododendron-flowered Daphne the most desirable of its genus.

It is remarkable how often we find the most admirable feature of a person or a thing to be the likeness he or it bears to someone or something else. We are impelled, it seems, to seek for the familiar in the strange and are not entirely comfortable till we find it.

Rhododendron impeditum, a very dwarf member of the *Lapponicum* group, unlike the previous species, is a generous giver. And its donation to the rock-garden is no trivial thing. Tiny, grey foliage set with flowers more blue than purple and so compact, so alpine-like a habit give the shrub an impregnable position. Not more so, however, than that held by *R. radicans*, a creeping plant with rooting branches, narrow leaves and large flowers which vary in colour on different plants from pale mauve to violet. It is more prostrate than *R. prostratum* itself, a similar plant with slightly larger foliage and flowers of red-purple. *R. fragariflorum* belongs to the same Series (*Saluenense*) and is a six-inch shrublet with aromatic

leaves. The flowers have not the slightest resemblance to those of a Strawberry, as the name suggests, but are said to be crushed-strawberry in colour. Well, if an over-ripe fruit was trodden on by a grimy boot its colour might approach that of the blooms, but that is as near as the similarity goes.

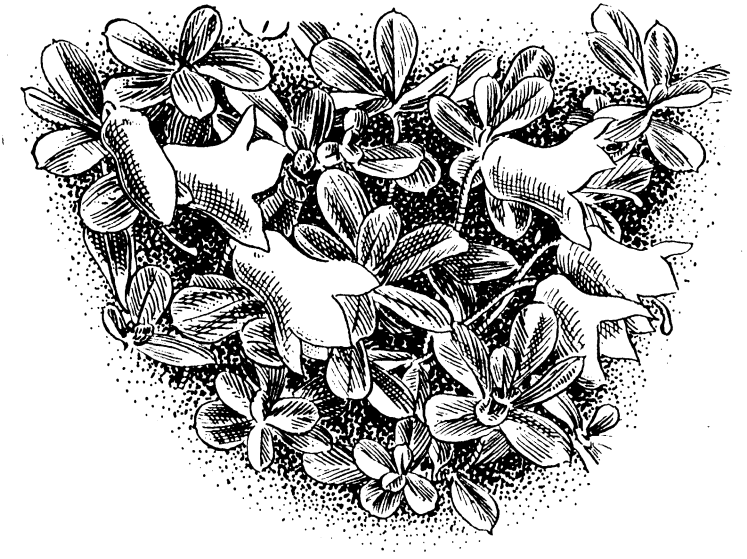

fig. 40

RHODODENDRON MYRTILLOIDES [× ½]

An infinitely better plant is the related *R. keleticum*, semi-prostrate but the reverse of sprawling. Some six inches in height, it bears in May purple-crimson, widely funnel-shaped flowers as large as pennies. *R. calostrotum*, a larger relative, though only a foot or so in height, offers, and seldom in vain, silvery-green, fragrant foliage and bright, rose-purple flowers an inch and a half in diameter.

The *Campylogynum* Series cannot be better represented in the rock-garden than by *R. myrtilloides* (fig. 40, above) (not *R. myrtifolium*, a very different

plant), a compact, rounded shrub from six to eight inches high and carrying in May nodding, campanulate flowers of a colour described as plum. Perhaps brown-pink, softened by a waxen bloom, more closely defines it.

The dwarf habit, stoloniferous spread, great floriferousness and large flowers—though of an indeterminate mauve-pink—of *R. pemakoense* make it a useful species for rock-work. Aptness at carpet making does no less for *R. imperator* and more or less makes up for the lack in its purplish flowers of the true imperial hue. It must not be forgotten that a poetic licence may, on proper representation, be granted to others than rhymesters. Historians, politicians, autobiographers and namers of plants commonly enjoy its privileges. Nor must gardeners be forgotten. None are more expert at finding a chalky blue cerulean, a doubtful pink incarnadine or a washy magenta the purest heliotrope, nor less hesitant in voicing their interpretations. Examples of their facility may be found in any catalogue.

RR. cantabile and *russatum*, both of them free bearers of rich blue-purple flowers, reach three or four feet in height but, like others of the *Lapponicum* group, may be kept down to a desirable size without harm befalling.

As with the taller species, it is in good yellows that alpine Rhododendrons are deficient. *R. megeratum* has, perhaps, the brightest flowers but they are not freely borne nor is the plant itself of easy-going disposition. The slow-growing, hairy-leaved *R. Valentinianum* suffers, in my hands, from the same defects. Both, particularly the latter, may require more exposure than I've given them hitherto. *R. Hanceanum* is too stolid and, for a species with aspirations to alpinity, its leaves are too large; up to three inches long by half as much in width. Further, the flowers

are of too pale a yellow. *RR. chryseum* and *muliense*, both of them hard and hearty Lapponicums, are pleasant, but require group planting to show that their flowers are really yellow. As good as any and better than most is the lemon-yellow *Sargentianum* which, one of the *Cephalanthum* Series, masses its flowers in rounded heads at the ends of the two foot stems.

No Rhododendron, small or large, has more glorious flowers than *R. repens*. They are a pure, shining scarlet in colour, widely tubular in shape and, in this garden, as rare as rubies. Eight years passed before we had a single bloom though often there had been false prophecies; buds appeared, but not a shred of coloured corolla materialized. For some years we grew it in The Pines but there not even an empty calyx broke the monotony of its existence. The moister places at the bottom of the sandstone together with the better lighting of that situation suit the shrub admirably; so one gathers from its growth, but flowers, as I've hinted, remain at a premium.

The glory of the limestone ranges in north-eastern Italy during June is *Rhodothamnus Chamaecistus*. Neither limestone nor other form of lime is necessary to the shrub. It certainly gets nothing of the kind here. In the garden the flowers open in April and are arranged in terminal clusters of from two to four. Rotate when fully expanded and usually over an inch in diameter, their soft, rosy-pink colour is given body by ten prominent, almost black anthers. As age advances, the main branches become prostrate and from them arise, almost at right angles, wiry branchlets thickly clothed with oval, tapered, bristle-edged leaves from a quarter to half an inch long and less than half that much in width. In order to show some detail, we thought it better not to indicate the dense bushiness of the plant in fig. 17, p. 282.

We have found it much easier to raise the plant from fresh seed than propagate it from cuttings. In half-shade, it is no more difficult to grow than a dwarf Rhododendron.

Nearly a century ago, in the nursery of Cunningham & Fraser, Comely Bank, Edinburgh, there appeared a bigeneric hybrid between *Rhodothamnus* and a *Phyllodoce*, probably *P. empetriformis*, but whether accidentally or by design I cannot say. Known for over sixty years as *Bryanthus erectus*, it was not until 1911 that C. K. Schneider gave it the appropriate name of *Phyllothamnus erectus* and thus practically hung its parentage about its neck.

The plant has never been common; I fancy its lease of life is relatively short. For six or seven years it will thrive and do all it ought to do but after that a retrograde movement sets in with defoliation and ends in mummification. Luckily, it is not difficult to raise from cuttings. An evergreen shrub from eight to twelve inches in height, its growth is more erect than spreading. The narrow, finely toothed, slightly recurved leaves, about half an inch long, are crowded on branches which in April bear, mast-high, generous clusters of true pink, cup-shaped flowers half an inch across. (Fig. 4, p. 53.)

If a man was suspended in space a sufficient distance above the North Pole, and had an almost boundless vision, he would see that the cap of the earth was almost surrounded by a polychromatic ribbon. It would represent the genus *Phyllodoce*. By the position of the colours he could tell, roughly, what part of the world he was looking at at any particular moment without reference to geographical outline. The reds, *PP. Breweri* and *empetriformis*, would show him the whereabouts of western North America; the yellows, *PP. glanduliflora* and *aleutica*, the Northern Pacific countries, though the first is

confined to the American side; the whites, *PP. nipponica* and *tsugaefolia*, would indicate Japan quite positively but, if confirmation were needed, the thin sprinkling of the variably mauve *P. alpina*, confined to that country, would supply it.

Running through the circumference of the ribbon,

fig. 41 p. 428

PHYLLODOCE NIPPONICA [× ½]

except for those portions of it in the sea, would pass the pale violet thread of *P. caerulea* which, indeed, alone would occupy the great stretch from Siberia to the Rockies, moving westwards. But for this species, the genus would occupy a comparatively small area of the earth; with it, *Phyllodoce* runs through three continents.

None the less, *P. caerulea* is, with the possible exception of *P. alpina*, the most reluctant to lead a civilized life. Its European, even its British distribution makes it not a whit more susceptible to our cajoleries. I have had as many disappointments with the plant as the next man but now, having had the luck to raise a few seedlings, hope that the dark days are over. By no means the best of the genus,

its confounded obduracy keeps us suppliant. The advice apparently given to the plant on making her début, "Now, my dear, whatever happens, don't make yourself cheap", has been observed with more than usual fidelity. Her linear leaves, less than half an inch in length, are closely set on branchlets springing from twisted, entangled stems. The flowers, carried at the ends of the shoots in meagre umbels, are urn-shaped, a third of an inch long and called, by courtesy, bluish-purple. In plain fact, their colour is pale mauve.

Much more beautiful are the pitcher-shaped, rosy blooms of the accommodating *Phyllodoce empetriformis*, and much more freely given, but even they have difficulty in competing, individually, with the large, saucer-shaped, purplish-pink flowers of *P. Breweri*, carried in terminal racemes.

There are few plants which respond more quickly or more unmistakably to a change of environment than *P. Breweri*. Examples I have had from the Californian Sierra Nevada at 13,000 feet, less than an inch high and densely clothed with tiny leaves have, in the mellower air of Essex, grown to eight inches, expanded their leaves and lengthened their internodes, all in two years. In other words, they have thrown off some of their most striking alpine characteristics and, by doing so, shown the illusiveness of that popular doctrine, "Once an alpine, always an alpine". "No, Betsey," Mrs. Gamp might have said, "Wotever you sez, alpines is as alpines does" and been more in the right of it.*

P. nipponica (fig. 41, p. 427) retains its dwarfness in cultivation and has a natty brilliancy unrivalled in the genus. The comparatively long-stalked, open-

* The term "alpine", applied to a plant, refers to a manner of life and the taking of a form to live that life. It does not denote fixity of character.

campanulate flowers, glistening white, are carried at the ends of thickly foliaged stems. The shrub itself, if not in too much shade, is no more than three inches in height.

It is often sold, and more, exhibited, under the label of the inferior *P. tsugaefolia*, greatly, one feels certain, to its disgust. What would have been Sir Henry Irving's emotions if forced to understudy the part of Antonio? Although if Antonios had been as rare on the stage as *P. tsugaefolia* is in cultivation he might, once in a way, have taken the part of that atonic debtor without protest.

The flowers of both species are white, but that of *P. nipponica* is an open-mouthed bell held on a slightly leaning stalk which is hairy from top to bottom; the bloom of *P. tsugaefolia* is ovoid, narrowed at the mouth, and supported on an erect stalk only hairy in its upper half or third.

After those mentioned, the pallid yellow flowers (in which a tinge of green is not unknown) of *PP. aleutica* and *glanduliflora* fall rather flat and on that account the plants, from a gardening point of view, can only be classed as A3. Occasionally *P. Pallasiana* puts in a public appearance with some flourish of trumpets. It is *P. aleutica* by another, though more illustrious, name.

Certain forms and natural hybrids of Phyllodoces have found their way into cultivation, but as none seem comparable in beauty with the true species we, having acknowledged their existence, need not discuss them further.

Earlier in this chapter I attempted to procure a sort of dispensation for writing on *Ericaceae*. (A dispensation, as I understand it, amounts to absolution for a sin about to be committed.) But now, in spite of that precaution, I am beginning to feel conscious, not of pricks, but of the presence of a conscience. All

this about *Ericaceae* and the most of the genera represented on the sandstone not yet touched upon! It cannot go on. The guillotine must operate. Before the knife falls, I pray you, let me briefly review a few more plants which clamour for attention.

Vaccinium Vitis-Idaea var. minus, from N.E. Asia, is only three or four inches in height and has the excellent habit of carrying its scarlet berries where they can be seen. A grand little plant, and really ten times more useful than *V. Nummularia* whose hardiness is only of the so-so kind. But for that defect, *V. Nummularia* would possibly be the most taking of the dwarf members of its genus. The ovoid, leathery, evergreen leaves are crowded on bristly stems and the flowers, rosy, narrow-mouthed bells and the great asset of the plant, are packed in short racemes from axils near the ends of the yielding branches. (Fig. 5, p. 75.)

One of the most charming shrubs in the rock-garden is *Kalmia polifolia* (*glauca*) *var. microphylla*. Its distribution in Newfoundland, the Hudson Bay territory and down the chain of the Rockies from Alaska to California and Colorado suggests hardiness and its behaviour in cultivation does nothing to controvert the indication. Pl. xxiv, p. 354, represents a portion of a plant in the open and is intended to show its diffuse, branching habit, the shape and opposite arrangement of its leaves and the character of the inflorescence. The latter, often described as terminal and umbellate, is not entirely so. Flowers are also carried on their long stalks from the upper leaf-axils. Of Dresden China daintiness, about half an inch across, pale purplish-rose in colour and shaped like fluted tea-cups they each obtain the finishing touch to their perfection from ten prominent, chocolate anthers. The shrub forms a low, intricately branched mat from four to six inches thick (or high, if you

like) and prefers a moist though not ill-drained position.

I can add nothing to the praises lavished by others on the many dwarf, prostrate and creeping species of *Gaultheria* except to say that they are thoroughly deserved. I am not sure, however, whether the New Zealand *G. depressa* has received the attention from gardeners it merits. A low, dense, more or less prostrate shrub from six to eight inches high, it spreads fairly rapidly by horizontal, rooting branches. The persistent, ovate or oblong leaves are thick, leathery, reticulate, serrate, less than half an inch long and, by taking on a hard, brown, metallic sheen in winter give the plant an appearance of carven bronze. In spring, small, urn-shaped, white flowers are borne singly from the leaf-axils and also in terminal racemes and are followed by rounded, dark red (or occasionally white) fruits, sometimes over half an inch in diameter.

And now, having satisfied the immediate demands of the more clamant *Ericaceae*, we may leave them.

Primula Sherriffae (Pl. xxiii, p. 339) looks a tender plant but, as we have seen more than once, appearances in the plant world are even less dependable than in ours. Anyhow, we have planted her out-of-doors in a sheltered corner of the sandstone. Soft, rugose leaves, pale lilac flowers an inch and a half across and drawn into long tubes which, with the calyces, are powdered with practised skill make of her a great beauty but, and I fear there's no denying it, she has a certain blankness of expression, more pronounced in reality than in the drawing.

Compare it with the alert perkiness shown by "Mrs. Wilson". (Fig. 6, p. 90.)

"What", someone exclaims, "compare *P. Sherriffae* with an old thing like 'Mrs. Wilson'?"

Certainly. Why not? Other modern beauties have

been contrasted with those who held the field many years ago, and not always to their advantage. Disregard the parable, however, and imagine for a moment that you've never seen a Primula before and suddenly find yourself in the presence of these two. Which is it that takes your eye and holds it? The richly coloured little lady, full of "go", or the palely-loitering damsel from Tibet?

Plates v, p. 51, and xxii, p. 338, represent two *Nomocharis* species on the occasion of their first flowering here. Built on the lines of a Lily and chiefly differing from it by the absence of any tubular portion of the flower, the segments spreading almost from the points of their attachment, a *Nomocharis* rather gains than loses by this peculiarity.

The flower of *N. pardanthina* (Pl. xxii) is almost flat, about two and a half inches in diameter and has a ground colour of pale or rosy-pink which may, on the one hand, be suffused with a darker hue or, on the other, give way to white, or almost white. The base of the flower, particularly of its inner segments, is variably mottled, blotched or spotted with dark purple-red while the edges of the segments, again particularly of the inner ones, are more or less "nibbled"; rather less than more.

N. Mairei (Pl. v) is, I think, a finer plant. The foliage is bolder and the flattish blooms have that quality of roundness so much esteemed by orchidologists. Three inches or more across, the flower has a white ground colour, occasionally flushed with pink; its broad, fringed, inner segments are copiously spotted or blotched with purplish-red; the outer less so.

Our cultivation of *Nomocharis* does not err on the side of elaborateness and may, very likely, be frowned on by the authorities. A few seeds are sown in a small pot, the pot placed in a cold, close frame until the seed-leaves are above the soil and then freely exposed

to the air. When in the following season the young plants are in full swing, they are planted in their permanent positions by the potful. That is all, it being my view that the less a seedling is disturbed, and the earlier it becomes accustomed to the conditions of its future environment, the more likely is it to thrive.

It is not so long ago that any successful grower of *Nomocharis* was jealously regarded as a favourite of the gods. He, feeling his position, cultivated the starry gaze of him whose right hand is unaware of what the left is doing. For of all virtues that of modesty is most esteemed by gardeners.

In the more distant past, say in 1920, Lewisias held much the same reputation for intolerance that now we fasten on *Nomocharis*. To-day Lewisias, if not back numbers—that they can never be—are in the category of the easy and there, if my prophetic soul does not mislead me, *Nomocharis* will follow them.*

Your flourishing colony of last year has melted away? Gone, as though it never was? You have blamed a wet winter, bad drainage, too heavy or maybe too light a soil, a sharp frost in spring, the drought a little later, but has the fact that *Nomocharis* bulbs are of the choicest delicacies known to mice and other rodents appeared in its full significance? And have you wondered how the seed capsules, when they approach maturity, disappear so mysteriously? Nipped off as cleanly as though by the specially trained finger-nail of an expert? Nay, do not suspect your taloned friend; mice are again the culprits. I've watched them at it; a pretty but disturbing spectacle.

They have the industry of beavers. To get the measure of it, see them dealing with, say, the twelve-

* To the extent of becoming as tractable, say, as the *Duchartrei* group of Lilies.

to fifteen-inch leafy stems of *Anemone alpina* on a summer evening. A mouse boldly approaches what, to him, must appear a forest. He selects his stem and gets down to work without that preliminary looking to the right and left and repeated lubrication of the hands found so necessary by the human. In a few seconds he has gnawed through the stalk at about ground level and, not pausing to take breath, hauls it off over his shoulder.

What he does with all the plunder, goodness knows. One cannot very well intrude upon his fastness. Besides, it is usually under a Holly foliaged to the ground or similarly uncomfortable spot.

Mice, to tell the truth, have been somewhat of a trial these past few years. Their natural controllers, weasels and carnivorous birds, are shot at sight by any murderous moron who is permitted by an incogitative legislature to carry a gun on the payment of ten shillings a year. And the amount of damage and cruelty that can be perpetrated for ten shillings is astonishing; and abominable.

The popularity of *Viola pedata* never wanes. Its two dark purple upper petals and three lower ones of lilac form a pretty combination. I speak of the type plant; that usually known by its synonym, *var. bicolor*. The only authentic variety of the species is the uniformly lilac-coloured *V. pedata var. linearilobа*.

V. pedata never bears seed with us (except in the case of a cleistogenous * form which bears nothing else and by it transmits the peculiarity to its offspring) but so easily is it propagated by means of offshoots from the almost vertical root-stock in July that there need be no lack of plants.

Rhodohypoxis Baurii and its white or, according to Nelson, rosy-white, variety *platypetala* increase their

* Bearing flowers which never open and are self-pollinating.

holdings by sending off daughters from their small, roughly globular rhizomes and also by seeding into the surrounding soil. It must be said, though, that *R. Baurii* is distinctly mingy in the matter of reproduction. The variety, on the other hand, increases with the greatest freedom and those of her children which are pink may not all, as we suppose, be hybrids between the type and herself but often her own colour forms. *R. Baurii* and its immediate relatives appear perfectly hardy in the southern half of England and in a few years will probably be as common as on their native Drakensberg, or commoner.

All gardeners who venerate the name of Linnaeus —and who is there among them who does not?— should try to grow his favourite flower and memorial, *Linnaea borealis*. Circumpolar in its distribution it is commonly, but not invariably, found spreading over the floors of fir-woods. In this garden it prefers a more open, and possibly moister position; on the sandstone it creeps exuberantly.

So far as I have seen, the *var. americana* is commoner in commerce than the type. Both carry two pink, tubular flowers on separate stalks at the end of a common stem but those of *L. borealis* itself, being open trumpet-shaped, are easily distinguished from the narrow funnel-like blooms of the variety, fig. 43, p. 440.

Another energetic ground-coverer whether the surface is rock, soil, gravel or, one hesitates to say, a prostrate plant, is a tiny *Cotoneaster* species from Bhutan. Tiny, that is to say, in leaf and height but amplitudinous in spread. But it is easily kept in check and, if you wish, not without acquiring merit. For the shrub is always admired and a rooting branch—which ought, in any case, to be removed— is always accepted with embarrassing gratitude by a visitor. Its evergreen foliage and glove-like fit over

anything in its path are its attractions. This valuable little plant has not, so far as I know, yet attained the dignity of a specific name and is known to those who grow it only as *Cotoneaster spec. Bhutan.*

I was never able to raise from New Zealand seed a single plant of *Ranunculus Lyallii.* Its long journey, and possible storage before the journey, appeared to have robbed it of vitality. Fresh seed, however, germinates readily and I was fortunate enough to be given a pinch four years ago. Part of its produce is in the rock-garden and one of the plants is shown in Pl. xxv, p. 355.

My acquaintance with it, then a purely academic one, began many years ago in circumstances far removed from gardening. One afternoon at hospital, during an interval for tea, my strapping New Zealand house-surgeon freshened the atmosphere with talk of the wild flowers of his country. He became quite lyrical over the glories of the Mountain Lily, a name that arrested my mastication of a coldish piece of buttered toast. For even at that early period of my gardening I knew there were no Lilies in the Southern Hemisphere. Asked to describe the shape and colour of the flower, my New Zealander thought that the first was round and the second probably white. It was not much to go upon, but inquiries from other sources brought to light that The Mountain Lily was no other than *Ranunculus Lyallii.*

It is, by common consent, the most magnificent of its genus and in nature is said to reach the imposing height of four feet. I have not seen it over two in cultivation. The basal leaves are buckler-shaped, scalloped, round and attached to stout stalks by their under, convex surfaces. The few stem-leaves there are are round kidney-shaped below and smaller, toothed and lobed higher up. As may be seen from the drawing, the stem branches to form a paniculate

inflorescence the individual flowers of which are, in the plant figured, white, semi-double, upwards of two inches across and contain eyes of yellow anthers. I understand that cream-coloured, yellow and, to crown all, pink forms have been described, but I have seen none of them.

On the slope above the sandstone, three of the lesser Rhododendrons sparkle in spring. A block of the lovely, yellow *R. lutescens* is on the left, one of *R. racemosum* on the right and between them a wedge of the pretty pink *R. Davidsonianum*. A small Birch plantation, a little larger than shown in the plan, forms their background. Just ordinary Silver Birches rising from a floor of *Pernettya mucronata*, an incongruous association, maybe, from a phytogeographical standpoint, but not unattractive from a horticultural.

P. mucronata is, I suppose, one of the most valuable berrying shrubs of the dwarf class ever introduced. Complaints are now and then heard in the land and, moreover, published with perennial regularity in the gardening press, concerning the plant's frequent sterility.

"Why", demands a correspondent with puzzled acrimony, "will my Pernettya not fruit? It looks healthy and flowers regularly, bees visit it and I have given it Berriquik twice a week. What's the matter?"

The matter is this. Certain individuals possess perfect pistils but aborted stamens; the others, in which the stamens are normal, have mal-developed pistils. Thus one plant functions as a female, another as a male. The only way to tell one from the other is to examine them in flower with a pocket lens.

P. mucronata is not the only species handicapped with this defect. *PP. leucocarpa, pumila* and *rupicola* also suffer.

In *PP. furens, nana, macrostigma, prostrata* and

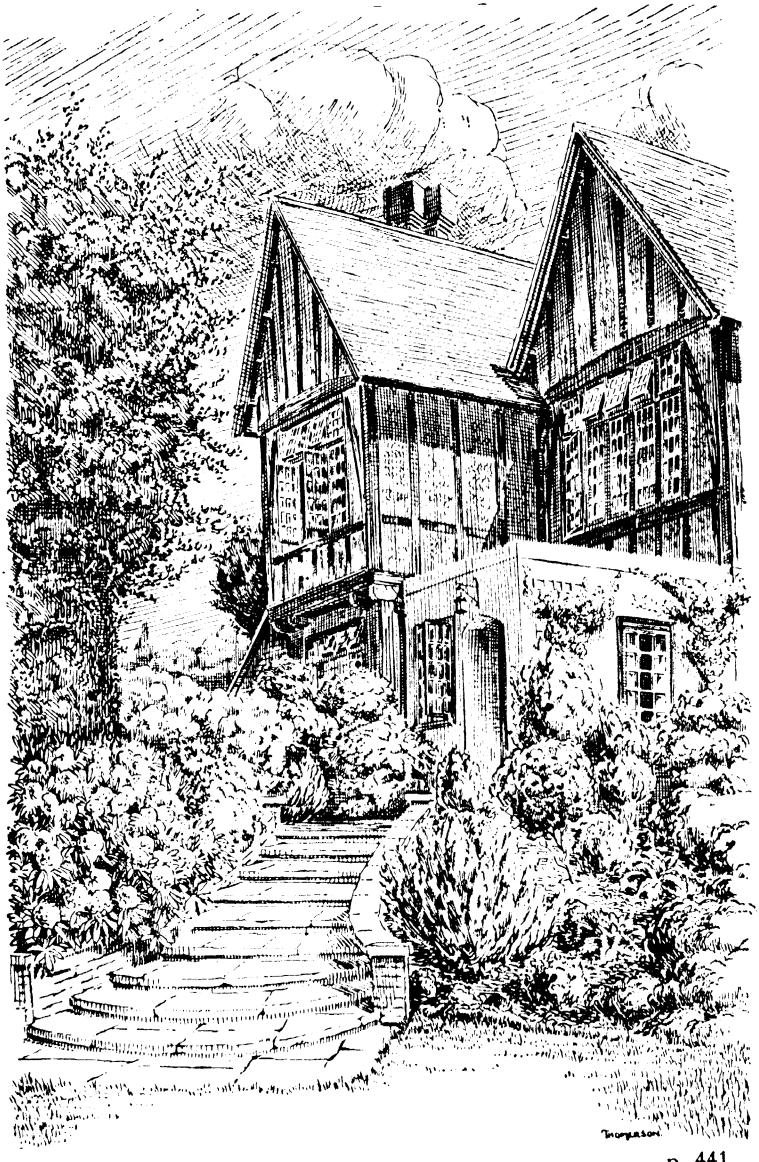

fig. 42

p. 441

THE GARDEN STEPS

tasmanica the flowers are hermaphrodite and, what does not necessarily follow, self-fertile. The pseudo-dioeciousness of *P. mucronata* has brought a blush to virgin cheeks on more than one occasion. There was, for instance, The Case of the Maiden Ladies. Two sisters they were who, admiring a fruiting specimen at one of the Royal Horticultural Society's fortnightly shows, bought it. The plant grew but did not fruit.

After three years they again met the vendor and revealed their disappointment.

"Ah," said he, in the most every-day manner, "to make it berry you must have a male as well."

The ladies looked aside, conversed in whispers, returned to the attack and ordered "a gentleman plant".

Relating their adventure to a bosom friend, the elder of the two paused on the words "and he came last week".

"Well," prompted the friend, "and what did you do?"

The younger sister took up the tale. "To be quite truthful," she began, "we scarcely knew what to do, so we asked Ellen [a maid of forty years]. We thought she would know; her sister married a sailor. Ellen thought and better thought and then said "Give him to me". She took him into the garden and planted him beside the lady, thoroughly mingling their roots. And now we're hoping for the best."

In spite of its imperfection—which, after all, need not be too seriously regarded, for the plant is cheap enough and one "male", if encouraged, can give points to Haroun-al-Raschid—the shrub is quite invaluable in a sun-bathed piece of lime-free soil. In autumn the large red, white, pink or lilac berries are densely clustered at, and towards the ends of the branches which are at all seasons dressed with small, hard, prickle-pointed leaves.

Pheasants are very partial to the fruit. A couple of hen-birds, with the assistance of sundry Blackbirds and Thrushes, pretty well stripped our plantation by the beginning of December. Allow them? Of course I allow them. They have as sound a title to the fruits of the earth as I have; probably sounder.

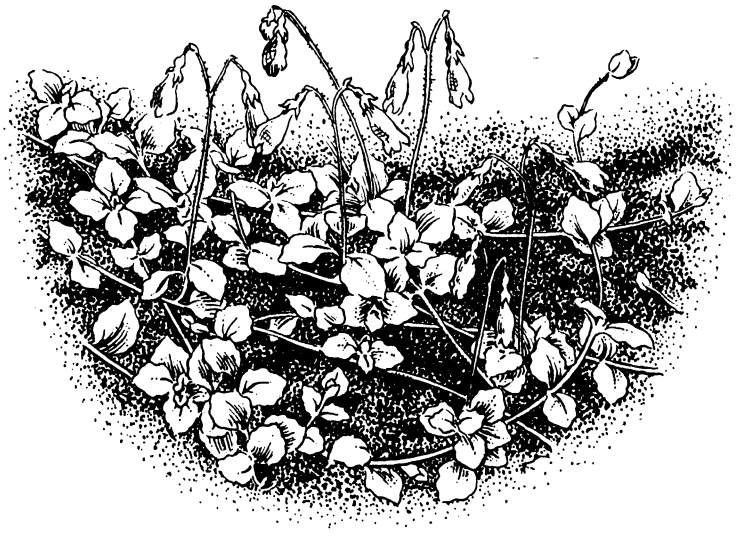

fig. 43 p. 435

LINNAEA BOREALIS *var.* AMERICANA [× ⅔]

My socialism, you observe, is of the polygeneric order.

At the present moment, beneath my window, there are five Brown Squirrels, two Ring-Doves, three species of Tits, a Redwing, Starlings, Thrushes, Blackbirds, Chaffinches and Sparrows galore, a Great Spotted Woodpecker and actually a Hawfinch clearing up the remnants of their breakfast.

The Spanish War, the Squirrels agree, is a most deplorable business. Has it not cut off the supply of

Barcelona Nuts? They find, I am glad to report, the easily obtainable Messina Filberts a satisfactory substitute.

You think, I daresay, that ours is quite a Zoological Garden. We wish it was more so. Damage to plants? It is trifling; nothing, indeed, to the benefits received. Think; no spraying with insecticides is ever necessary in the open, soil fumigation is never dreamt of and I doubt if in a day's slug-hunt you would bag more than a brace.

But the utilitarian aspect is the lesser part. Animals in the garden add to its animation, its friendliness, and allow one the unusual experience of being mildly altruistic without being suspected of ulterior motives.

And now, patient reader, we have gone the round and arrived at the steps you may see on page 438. We have travelled a good distance since the Ackling days, you and I. The journey has been valuable to me in many ways and, I hope, not without interest and entertainment to you.

GLOSSARY

APETALOUS	Without petals.
AXIL	Angle between upper surface of leaf and branch or stem to which it is attached.
AXIS	The stem or other central, longtitudinal structure on which other organs are arranged.
BRACT	A modified leaf from the axil of which a flower or floral axis arises.
CAPSULE	A dry fruit of more than one carpel which splits to allow escape of the seed.
CARPEL	A simple pistil; as commonly used, one cell of an ovary.
CILIATE	Fringed with hairs.
CLAW	(In Iris) narrowed base of an inner perianth segment.
CONSPECIFIC	Of the same species.
CORDATE	Heart-shaped and indented at junction of petiole and leaf-blade.
CRENATE	With rounded notches at edge.
CYME	Broad, flattish inflorescence in which the central flower opens first.
DECUMBENT	Lying on ground with end ascending.
DENTATE	Bearing teeth directed outwards.
DENTICULATE	Minutely dentate.
DIOECIOUS	Having male flowers on one plant and female on another.
DRUPE	A fleshly fruit containing one or more "stones".
FASTIGIATE	Of close, erect growth.
GLABROUS	Smooth; free from hair and down.
GLAUCOUS	Of a bluish-green colour; covered with bluish "bloom".
HILUM	Point of attachment of a seed.
IMBRICATE	Overlapping.
KEEL	The conjoined anterior petals of a papilionaceous flower; a central ridge.
LANCEOLATE	Lance-shaped.
LINEAR	Long, narrow and with almost parallel margins.
MUCRONATE	Tipped with a sharp, rigid point.
NODE	Joint of a stem from which leaves, and in certain cases roots, arise.
OB	As a prefix, indicates inversion of ovate, cordate, lanceolate, &c.
OBLONG	About three times longer than wide.
ORBICULAR	Round.
OVAL	Broadly elliptical.

OVATE, OVOID	Egg-shaped.
PANICLE	A branched raceme.
PEDICEL	Stalk of an individual flower.
PERIANTH	The floral envelope; generally used when only either calyx or corolla is present or when calyx and corolla are of same nature, as in a Lily.
PETIOLE	A leaf-stalk.
PINNATE	Applied to a leaf in which leaflets are attached in two rows to a central axis.
PISTIL	Female part of a flower and made up of stigma, style and ovary from above downwards.
PROCUMBENT*	Bending towards ground.
PROSTRATE	Lying on ground.
PUBESCENT	Furnished with soft hairs.
PUNGENT	Ending in a sharp and rigid spine; acrid.
RACEME	Inflorescence in which stalked flowers are borne on an unbranched and usually elongated axis.
RENIFORM	Kidney-shaped.
SCAPE	A leafless floral axis rising from the ground level.
SESSILE	Without a stalk.
SETOSE	Bristly.
SINUATE	With a deeply waved edge.
SPIKE	A racemose inflorescence bearing unstalked flowers.
STAMEN	Male element of a flower and consisting of anther and filament.
STOLON	An underground stem.
TOMENTUM	A dense covering of matted hairs.
UMBEL	Terminal cluster of stalked flowers radiating from a common point.
UNDULATE	With wavy margin.
URCEOLATE	Shaped like an urn with contracted mouth.
VERTICILLATE	Arranged in a whorl.
VILLOUS	Bearing long, fine hairs.
WHORL	Three or more leaves or flowers arranged in a circle round a stem.

ABBREVIATIONS

Two identical capital letters in juxtaposition indicate plurality; e.g. RR. means more than one member of a genus of which the name begins with R, Rhododendrons for instance.

var.—abb. of *varietas*=variety.

*In botany, generally given the value of "prostrate", but to be understood in this book as having the above meaning.

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