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Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

By
B. Y. Morrison
(adapted)

FOREWORD

The report which follows is written in diary form although it represents the final elaboration of the very brief notes that were made day by day. In rewriting the original statements, advantage was taken of certain after-knowledge, with the result that comparisons are made that could not have been made if the entries had been kept in strictly diary form.

The observations have not been recast to bring them into consecutive order to the several ends which lay behind the purpose of the trip. For the sake of clarity, perhaps it should be re-stated that the main purposes of the trip were to familiarise the writer with the plant material commonly grown abroad, particularly any new forms introduced into cultivation from the wild or representing the selection and breeding activities of horticulturists; the observation of nurseries and horticultural institutions, both in relation to their maintenance and organization; and finally the study of the various barberries as represented in botanical and horticultural collections.

March 26 - 27

The landing at Plymouth came about 7:00 A.M. after a very noisy night in the harbor, with the usual preparations for debarkation.

Crossing town from the pier to the North Road Station of the Great Western R.R., I found it impossible either to telegraph or telephone to Mr. Williams in Cornwall, who had asked me to come down for the Wednesday and Thursday nights to see daffodils and the other interesting plants of his collection. So without actual knowledge as to whether or not this later visit would be agreeable, I went on to Helston, the railroad station,and after telephoning from the station went by bus to "Lanarth" at St. Keverne.

Mr. P. D. Williams, who is quite as famous for his rhododendrons as for his daffodils, is a typical example of the distinguished Englishman who makes his estate a veritable horticultural museum. His home is near St. Keverne, a tiny village sufficiently near the sea coast to be influenced by it with the result that all the estate owners of the region have the advantage of the mild climate and the difficulty of the sea gales. This has determined, to a large estent, not only the location of the houses but the development of the gardens and the general plantations.

It is difficult to imagine an American climate comparable to that of Lanarth. In a general way it is much like San Francisco, yet warmer throughout the year. It is not enough warmer to be compared with Santa Barbara, however, and differs completely in the lack of a dry season.

As one comes in to the estate from the main highway that runs along the main ridge one senses rather than sees the gradual drop into the little valley where the house is located. The drive enters between sloping banks and comes out in a level clearing with rising lawns to the right and the house on the left with rising woods behind and beyond it. The house, itself, is

not large or elaborate, built of stone and appallingly cold to a visiting American. Built directly on the ground level, its drawing room, dining room, and library all look out over the drive to the garden surrounded slope on the right as one enters.

Imagining oneself standing in the entrance doorway looking out, the view would be across the drive, a stretch of level lawn, a tiny brook, and up a gently sloping lawn to the thickly planted crown of the rise. As a matter of fact this lawn is merely an elliptic clearing in a wood that not only serves as a wind break against the gales that come over from the sea but is carefully designed as a shelter for many semi-tender plants that need the protection of their fellows and the added protection of a little shade, high overhead.

My host seemed to feel that this was an essentially local development of woodland planting and while this particular garden is relatively old, I was to see later many other examples of the same style. In later years it has been much copied by other owners of large estates.

In brief, the woodland consisted of many sorts of trees planted at irregular distances, but near enough together that all grew into one more or less compact grove. Relatively few individuals stood out as specimens. Under this canopy of large trees were planted smaller trees and large shrubs, some single and some in naturalistic groups. No special effort was made to establish an herbaceous ground cover, although various plants had been established in groups or colonies.

The paths through the area wandered at will and were purely for service, without thought of vista or careful beauty.

In my opinion, my host underestimated two factors in his success, one the relatively small limits of temperature variation, and the other, the character of the water supply. Roughly speaking, the range of temperature lies within about 30°, aside from occasional drops. From 40° - 70° are usual extremes with rare spells of frosty weather that play serious havoc if they come after growth has started. Water is con-

stantly present in the atmosphere, fogs and rains are frequent and equally distributed throughout the year. In addition the property owner here is abundantly furnished with natural supplies. Through much of the woods the drainage is so imperfect that one has to keep to the paths. With such water available, it is possible to maintain such a mixed planting in a way that would be absolutely impossible in this country.

The limiting factors for the plant list are the occasional frosts that kill the subtropical material and the lack of summer heat that prevents the ripening of wood. The result is that this place is particularly rich in broad-leaved evergreens from South China and similar areas. New Zealand and Australian plants do only moderately well. Acacia melanoxylon was represented by a 10 inch tree only about 20 feet high but in excellent health while A. decurrens dealbata was in wretched condition. One or two poor specimens of eucalyptus were kept more as evidence that they would survive than as examples of the genus. Clematis armandi, which seems to be hardier than I understood, covered whole trees of Cupressus sempervirens and much of the face of the house, and an enormous plant of Camellia reticulata was the special pride of the owner. Even here the latter must be planted on the house wall to insure some ripening of the wood and must be furnished with morning shade from an evergreen oak to the east.

In a deeper hollow, east of the house and in deep shade under evergreen oaks were several fine specimens of tree ferns.

Chamaerops excelsa, Phormium tenax, Dracena indivisa were all present, not lovely but necessary examples of hardiness.

The most beautiful rhododendrons at the time of my visit were the plants of R. sutchuenense with enormous trusses of wide open, clear pink bells.

Little need be said about the narcissus plantings save that they were located in several different sections of the place. In every case the areas were surrounded by 6-8 foot hedges of cypress. The bulbs were planted in Dutch beds and all were kept clean by hand cultivation, both beds and paths. Extra protection was given by temporary screens of rough burlap or coir screening, all intended to break up any

winds that came over into the enclosures. No shades of any kind were used to preserve or develop the color of the flowers.

The spectacular feature of Mr. Williams' work has been his attention to a strain of red-cupped incomparabilis sorts that have pure golden yellow perianths, as compared to the pale yellow or shaded yellow perianths more commonly found, and red cups that are sun proof. His results, which are not yet in general trade, are truly amazing.

While at Mr. Williams' house, where I met also Mr. Guy L. Wilson of Broughshane, Ireland, and Mr. J. Lionel Richardson of Waterford, Irish Free State, we all visited the Carnsulan Nurseries at Coverack. These are relatively new, as yet rather illy kept, and suffering decidedly from the sea gales that sweep over them. As the nurseries are on the cliffs that overlook the bay, there is almost no opportunity to protect the plants either by hedges or walls. So far no attempt has been made to plant new hedges as windbreaks nor to employ general bed-cultivation, with most unfortunate results.

The trip from Mr. Williams' place by motor to Redruth, where I took the train for London, was made in the late evening so there was little opportunity for general observation but one could see acre after acre of rough land filled with gorse and heather that was of no possible use save in the hunting season! But here I had my first intimation that the saying popular in America that every cottage has its garden is a lovely myth for I passed many cottages that were as unkempt and unplanted as those of the equally mythical American village. Of course the abundance of stone, both for building purposes and for general use, impresses one at once and the great height of the stone walls that line the roadways is conspicuous.

March 28

After settling in a hotel and attending to an additional supply of English money, the remainder of Saturday and all of Sunday, March 29, went into the ordinary tourist stunts of seeing London, with the Houses of Parliament, Westminster, the various bridges, Buckingham Palace, Green and Hyde Parks.

March 30

Preliminary visit to Kew, meeting Sir Arthur Hill and Major Chipp. This proved to be a perfectly formal visit without any special interest, and a somewhat amused reception from Sir Arthur, who seems to think of F.P.I. in a less serious light than I regard as proper! Also a visit to see Col. Durham of the R.H.S., who has the highest regard for Mr. Ryerson and recalls his visit of last year with pleasure.

March 31

In spite of the mildness of climate, the rock garden at Kew is scarcely awake. Chionodoxa, scillas, and Muscari azureus are all in full flower. Snowdrops have finished completely. Leucojum vernum in fine shape. Narcissus minor, nanus, and cyclamineus in full flower with the various bulbicodiums coming into bud.

Primula rosea, which should certainly be introduced, is just coming into flower, the flower shoots pushing up more rapidly than the pinky-bronze rosettes of leaves. It is planted along the edges of the artificial streams that skirt the rock garden here, its brilliant pure pink flowers making a conspicuous contrast with the foliage. P. marginata is in full flower; P. denticulata and its white form also, with P. palinuri just ready for opening.

Corydalis tuberosa makes a brave show with fine leaves and 8-10 inch shoots topped with white and brown flowers.

Iris reticulata is in full flower.

On the scree slopes are many saxifragas. The only ones actually open, however, were x irvingii, white with red stem and calyx, x apiculata in sulphur yellow, and x apiculata alba, white.

On a ledge, S. oppositifolia major shows fair tufts of purplish-rose color. S. sancta looks rather like a dirty greenery-yallery sedum, but makes a wonderfully thick moss-like carpet. S. marginata has fine white flowers. S. juniperifolia, dullish flowers; burseriana, Tulley's variety, very nice

clear lemon flowers; x apiculata alberti, dull sulphur white; Hasgei, brilliant gold, nice in all respects; S. elizabethi, good flowers, sulphur white with gold center.

Hacquetia epipactis is a curious thing, umbelliferous, like an eranthis gone wrong, with greenish-yellow bracts and close heads of minute, greenish-yellow flowers.

Helionopsis japonica in the bogs shows evergreen rosettes somewhat browned and burnt by winter; new buds are pushing up and flower stalks with flowers opening as they grow - rose to paler pinks.

April 1

Moving to cheaper hotel and office routine.

April 2

This is the beginning of the Easter Holidays which in England are much more serious and more absolute than in America. When shops are closed -- all are closed and the person who needs supplies is unfortunate.

April 3

Holiday.

April 4

Went to Ipswich by train, partly to see the town and partly to see the home of Thompson & Morgan's seed business. As compared to many places, Ipswich seemed less orderly and somewhat marred by its commercial background. There were many excellent old half-timber houses, some with overhanging second stories. The seed business I did not find but learned later that to a large degree it was a mail order house, reselling seeds from many sources.

The town itself furnished little of general interest. One finds soon the holly, ivy, yew, box, laurustinus, privet, aucuba, combinations that become so monotonous later on.

A trip by bus to Felixstowe, which is on the coast, takes one through some agricultural land, largely wheat and oats, with narrow strips of closely planted woodland between fields; through several picturesque villages to a sea-side town much used by summer visitors. The summer part of the town faces a rather gravelly beach, with a good sea-wall and "board-walk", a fair series of small park-spaces, undistinguished in planting save for the use of Veronica speciosa, a species commonly used in California. North from the public beach the land rises abruptly from the shore and is crowned by a series of small places that seemed rather well wooded.

As the typical English drizzle began by evening and continued all night, I went on to Ely by way of Cambridge on the morning of

April 5

The trip to Cambridge takes one through rather uninteresting country, with fields of potatoes, wheat, barley, and oats. Here I saw some of the first plantings of forest trees, a curious mixed planting that seems to be common in England, larch, Scots pine, a spruce I couldn't see, and an oak I do not know. All are planted as young trees, 1-3 feet high, mixed indiscriminately as far as I could discover, and planted 4-6 feet apart each way. After several years of growth, the rapid-growing larches are far ahead and often touch each other above the rest.

In Cambridge one goes through a rather unlovely part of town toward the college street where one famous college after another lines the way. For the gardener, the astonishing thing comes in noting the magnificent effects that can be had with complete restraint in planting. Here, on account of the holidays, the yards were all open to visitors and towns-people, and surely the most excellent effects come from the major contrasts that come from fine

sward, gray buildings, and rows of magnificent trees. In some cases even the myriad crocus planted in the banks seemed rather foolish and out of keeping, but in the deeper parts of the woods, sheets of Anemone blanda and A. apennina made the most lovely drifts of color.

From Cambridge to Ely takes one up into the fen country where the land has been drained by canals and the areas between have been developed into fertile fields for grains and for vegetable crops. Crossing this in late evening toward the low hill on which stands the crowded village of Ely with its superb cathedral is a moment not to be forgotten.

April 6.

Sight-seeing at Ely. No important horticultural data save notice of the early shearing of ivy on walls, a shearing so severe that practically no leaves remain and the older vines have developed a thick mat of short stems like fruit trees. Back to London.

April 7

Plants noticed at Kew that we should try in America.

Acantholimon glumaceum. This would be an excellent substitute for a dwarf shrub, even if there were no flowers of any sort.

Achillea argentea. This forms very charming rosettes of silver-grey-green leaves that eventually are somewhat scattered as the stalks develop. I should like to grow it at Bell to study the actual habit before we decide too definitely as to its value.

Achillea conjuncta. To my eye this suggests an antennaria rather than an achillea since the leaves are simple and entire. Good foliage color.

Achillea nana. Even now this forms an excellent dwarf carpet of silver gray.

Acorus gramineus var. minimus. A very charming small rush useful along the stream borders for the rock garden. Evergreen but

somewhat burned.

Antennaria stramineum. Of all the antennarias here, this forms the smallest rosettes; new growth is now showing; a bright silver gray.

Anthyllis hermanniae var. hystrix. Look up this plant and its history. It forms here a dense twiggy bush very much like an American hypericum.

Arabis alpina Rosabella. A pink garden form of A. alpina that has a better growth and finer flowers of purer pink (though pale) than any I have seen elsewhere.

Arabis sturii. A very small scale 2 inch carpet, just ready to open flowers.

Cardamine trifolia. A rather interesting but somewhat coarse herb with basal leaves almost flat on the ground and short dentaria-like shoots of white flowers. Second rate but early and hardy.

Cotoneaster microphylla glacialis. The chief beauty and distinction of this form of microphylla is its fine growth and closely prostrate habit of growth, fairly hugging the rocks.

Crocus versicolor picturatus. The species crocus do not make a very good display at Kew, but this form, just past prime, looks as if it were particularly robust. The ground color is rather a dull lavender, heavily veined on the outside with a deep crimson purple.

Cupressus obtusa filicifolia. This looks to me like what we call chamaecyparis and not cupressus. As a young plant or as a heavily pruned plant in the rock garden, this is most interesting but when it grows freely to size it is very ugly. The branches are compact and develop to some length without branches, rather suggesting fern fronds, as is indicated in the name.

Dianthus arenarius. At the present time this is burned in the center of the clumps.

Dianthus pallens. The foliage, though coarser than that of some species, apparently makes a good mass through the winter.

Dianthus petraeus. As compared to many species, this is essentially a green-leaved sort.

Dianthus squarrosus. This also makes a green winter carpet, dense and fine.

Draba rigida. This should be used in large colonies, as it forms a low, 1-1½ inch, carpet of leaves from which rise the short flower stems with golden flowers.

Erica carnea vivelli. This is the form of Erica carnea if deep color is wanted. The habit is dense and compact, not over 10 inches here, and the plants are covered with glowing, deep crimson flowers. Often used at Kew as a ground cover.

Frankenia thymifolia. Look up the history and description of this species. It looks as if it would make an excellent carpet if hardy in our climate.

Gagea lutea. If this species is typical of the genus, one need not worry very much that they are not in cultivation unless they would be better in a warmer climate. The plant has the general aspect of a scilla, but the flowers are a dingy, greenish-yellow.

Genista aspelathioides. An excellent rock garden genista, flat on the ground with short, spiny twigs. No signs of flower yet.

Hacquetia epipactis. Refer to first entry, page 6; at this date the plant is much more showy than formerly, as the greenish-yellows have clarified somewhat.

Hermodactylus tuberosus. It is curious that this flowers so early at Kew. It is planted in several parts of the rock garden, always on sunny well-drained slopes, the largest group on a south slope in the scree, above many saxifrages, so presumably it is lime-loving.

Hyacinthus orientalis. This seems a curious plant or else there are several forms, but the nicest plant in the bulb border might be described as a smallish, light green-blue "Roman" hyacinth. We should ask for bulbs.

Hypericum olympicum. An excellent small species forming small tufts not over 6 inches high, almost evergreen. Something like our ascyrum.

Juniperus communis var. compressa. An excellent juniper for the

rock garden as it is naturally compact and has an erect habit.

Juniperus communis var. echiniformis. Equally good and entirely different, forming dense rounded bushes, prickly because the juvenile, spiny needles are kept, hence, hedgehog-like.

Polygonum equisetifolius. Winter kills at tips.

Potentilla argentea var. calabrica. Foliage gray-green. Plant makes a flat carpet.

Primula frondosa. Only budding at this date.

Primula juliae x elatior. This hybrid grows apparently more like juliae than elatior but the flowers are intermediate, pale pink dulled with chamois. Not really showy - at least not now or here.

Primula leucophylla. This is just coming into flower. The blooms are small, of clear primrose-yellow color, with golden anthers showing in the eye.

Primula pubescens Faldonside. A fine form with glowing crimson flowers.

Primula pubescens G. F. Wilson. Just showing buds. A fine deep purple.

Primula viscosa Mrs. J. H. Wilson. Pure velvety magenta with a fine white eye.

Primula - The next two, which I have not yet found in lists to report what group they belong to, are beautiful hybrids, possibly classified under P. pubescens.

Morven - not yet out but deep purple.

Sparkler - Deep crimson buds - leaves some what like vulgaris, so this may be a juliae hybrid.

Raoulia australis. A very tiny carpet plant. Eventually dries off in center. The newest, minute rosettes are almost pure white. This is much grown in pots and dishes in England.

Rhododendron scintillans. This is not yet open, but shows as an excellent, compact, ledum-like bush with rather dark leaves.

Salix herbacea x lanata. A hybrid, origin not noted, that is useful in rock gardens here; prostrate in large patches with 6-8 inch erect twigs.

Saxifraga hymnoides. Not yet in flower but excellent. A wonderful mossy carpet in which the oldest leaves show a bright red winter color and the new shoots a clear yellow-green.

Saxifraga ligulata. One of the saxifrages now called Bergenia. Leaves are very shabby from winter injury but the fine heads of blush white flowers, with deep pink centers, are borne on tall, reddish stalks (10-14 inches). Used at Kew on higher parts of the rock slopes where the injuries show less!

Saxifraga ligulata speciosa. Differs from the last chiefly in the fact that the foliage is uninjured and the color of the flowers, here a pale rose self.

Scilla bifolia rubra. Much the nicest of the pink scillas. In some ways this rather suggests a chionodoxa in style and habit, but the color is a fine, clear rose-pink.

Thymus serpyllum var. nicans. This interested me chiefly because it makes an erect, rounded bush, rather than the usual rather spreading mass.

Veronica aurea. A nice, dense mound up to 10 inches. The leaves are yellow-green, with the older ones somewhat bronzed.

Veronica buchanani. A semi-prostrate shrub, never exceeding 6-8 inches here, with small evergreen leaves, which die off on the older parts leaving bare stems.

Veronica hectori. One of the many interesting forms that suggest lycopodium, with their slender erect shoots, crowded opposite leaves, more or less yellow-green toward the growing tips.

Veronica pagei. Another semi-prostrate shrub that dies off on old wood. Leaves blue-green and very flat.

Veronica pinguifolia. This grows out into mats 6-12 inches high, which eventually die out in the center. The leaves are

blue-green, especially on the newer growths.

Veronica propinqua. A 4 inch shrublet that looks at first like an erect golden juniper.

In addition to the New Zealand veronicas already noted in the rock garden, there is a collection planted along the path that divides the rock garden from the herbaceous collection (systematic). The latter garden is shut off by a high wall (probably 12 feet), so that many of the veronicas at its foot (facing west) are never touched by the sun till after midday. Those opposite are planted on the two dry wall steps that support the east line of the rock garden. The lower step is about 18 inches high with a 2 foot shelf. The upper shelf is about 12 inches high and slopes back to the mound - mostly covered with small trees and shrubs to make a background for the rock garden when viewed from within. In the morning this group is shaded somewhat by the vines and the rose pergola that cover the walk.

These walls are planted also with cistus, helianthemums, crocus, tulip, and brodiaea species, sempervivums, etc., all suggesting heat-loving plants.

(No notes were taken on veronica flowers as I missed most of the early ones while on the continent, but the essential characters of the plants are their leaves and growth habits, since these are often more showy than the small heads of dull lavender or dirty white blossoms, no matter how freely produced.

Although the plants seemed less happy here than at Edinburgh, everywhere there are some indications that some pains must be taken, certainly with the procumbent and prostrate species, to keep their growth compact and full in the center.)

Veronica albicans. Erect growing, leaf obovate.

Veronica amplexicaulis. Spreading to erect, leaves deep green with no sign of winter burning.

Veronica angustifolia. Very poor here, tall and straggling, with leaves remaining only on the newest wood. Leaves 2 inches, almost linear.

Veronica arborea. Dense, erect shrub, here only 10-14 inches high, most resembles obovata but makes a more symetrical plant.

Veronica balfouriana. A good decumbent sort.

Veronica buchanani. A dwarf, very compact bush, 6 inches high, blue-green leaves.

Veronica buxifolia. When young this is a very compact little shrub but when old becomes tall and straggling with bare stems, that eventually fall over most awkwardly.

Veronica canterburyensis. Here a rather straggling poor bush with small, scale-like leaves of yellow-green color.

Veronica carnulosa. Decumbent with 10-14 inch erect tips, rather good growth; leaves obovate.

Veronica cassanoides. Foliage small, resembling that of a cassinia, hence the name.

Veronica colensoi. Rather nice rounded bushes, 12-18 inches high with acute, ovate leaves.

Veronica colensoi minor. Low rounded bushes, not exceeding 6-8 inches, with green foliage. Possible carpet plant.

Veronica cupressoides. Name describes this perfectly.

Veronica decumbens. Very compact growth and somewhat cupped - ovate leaves of bluish-green color.

Veronica edinensis. Same general type as loganoides but about 3 sizes larger.

Veronica ewanii. The plants here are either very weak or very young as they are poor. New growths are blue green. Habit erect.

Veronica gigantea. Apparently tender - dead.

Veronica glaucifolia. Very badly sunburned.

Veronica hectori. Very dwarf, something like lycopodioides.

Veronica hillii. Dense rounded bushes, 12 inches high, leaves blue green, but some browned from winter.

Veronica hunteri. Although planted with shrubby soils, this looks herbaceous. Verify.

Veronica leiophylla. Poor shrub, burns badly.

Veronica lindsayi. An erect somewhat rounded mass with leaves that are somewhat cupped, crowded on stems.

Veronica logani. My only note is that this looks tender.

Veronica loganioides. Dense dwarf bushes suggesting an erica, 4-6 inches.

Veronica matthewsii. Poor, weak, straggling growth; foliage badly burned.

Veronica monticola. Straggling with dead centers here; poor, leaves almost round.

Veronica mulhiensis. This forms a dense rounded bush. Leaves linear obovate.

Veronica obovata. An erect bush of dense habit, up to 12 inches.

Veronica parviflora. Quite shabby here with badly burned foliage. The leaves are of very distinct shape.

Veronica parvifolia var. devoniensis. Rather open habit, but good erect growth 12-18 inches high to form rounded shrub. Good.

Veronica pimelioides. In the shade of the wall, this is rather shabby; on the dry-wall-bank it forms rounded bushes 14-18 inches high with reddish shoots and reddish young shoots.

Veronica pimelioides minor. Good dwarf form.

Veronica pinguifolia. See in rock garden notes this date page

Veronica salicornis. Very dwarf with habit like a juniper.

Veronica subalpina. Rounded bushes.

Veronica sutherlandii. 6-8 inches here, to be higher in time; blue-green foliage and coris-like growth.

Veronica townsonii. Rounded, erect shrub up to 18 inches; rather seriously burned as if there had been too much late growth. Leaves linear, acute.

Veronica vernicosa. Rounded, compact bushes, 14-18 inches high, of good habit, with deep green leaves, rather yellow-green when new.

Notes from Alpine House.

This is a small cold house, with ventilation below benches. Plants are all in pots or pans set on cindered benches, when in flower, and after flowering returned to frames in yard adjoining. These are not a complete list of what was in bloom, but only of a few plants that caught my fancy.

Muscari latifolia. Very broad leaves, as the name shows, and stalks; somewhat tubular flowers, deep grape or plum below with a short tuft of clear lavender flowers above.

Primula allioni alba. A midget affair with a few small leaves and some thin, papery white flowers almost on the ground.

Primula cottia. Pale pink flowers with whitish central zone.

Primula frondosa. In very good shape, being protected from the weather.

Primula heterochroma. Like a dull pink acaulis except for the pattern in the eye.

Primula hirsuta. Also improved by shelter. Intense rose magenta.

Scilla sibirica azurea. Under glass this shows as a lovely pale greenish-azure.

Tecophylaea cyanocrocus. Although sometimes called Chilean crocus, this flower has not really a crocus shape, the lobes being essentially flat. The amazing thing, of course, is the deep,pure,gentian-blue color, ultramarine or deeper. Tender.

Tulipa violacea. Very small, rather slender flowers of a variable but delicate purplish-rose with a yellow star at base.

Miscellaneous Notes - from general plantings.

Magnolia delavayi. Is planted in a 10 foot wall, facing east. Here its handsome foliage is relatively little injured.

The magnolia group in the arboretum is largely underplanted with Erica mediterranea alpina; with Helianthemum alyssioides, a very straggling bush up to 18 inches that makes a good mass in time; H. oleandicum , with thread-like green twigs. The erica is just coming into flower.

Erica vagans. Looks very shabby at this time as all the browned flowers persist. This is also true of E. ciliaris, which makes a straggling bush up to 12 inches high and 18 inches across with as much die-back as elsewhere.

Skimmia japonica. Is planted closely together here, under trees, especially to form a ground cover under evodia.

Choisya ternata. This is always winter-killed here on the newest shoots that have not ripened well. The plants under most shade of trees, which also have grown least well, suffer least. Several on wall have suffered to same degree.

Euonymus. Several dwarf evergreen species related to E. radicans are used as ground covers under larger species. Various species of cistus are near them and continue the planting.

In the most dense shade of trees large masses of ivy are used, especially large-leaved forms. In some places

the ivy is mixed with Mahonia aquifolium, a rhododendron (probably ponticum) and interplanted with bulbs strong enough to rise through it all. Scilla campanulata rather than Scilla nutans, which is kept in grass, and various narcissus especially in more open deciduous woods are the common bulbs. They are also used in the euonymus plantings.

Chionodoxa and Scilla sibirica are used chiefly in cultivated circles around deciduous shrub groups. Muscari are not much used, except solid masses of Heavenly Blue in one spot near the dwarf rhododendrons and crabapple.

Crocus are common in grass, in mixed colors including yellow, especially Dutch yellow. They suffer greatly from weather and from the depredations of birds that pull the flowers. Snowdrops are past but do not appear to be common; nor leucojums, except in the fern beds.

Daffodils are used chiefly on one or two knolls and in the open woods from the birch and poplar collections on toward the rhododendron dell and again on toward the Queen's Cottage and through all that inclosure.

Mass plantings, serving as screens or as boundaries, include commonly various rhododendrons but chiefly ponticum, Viburnum tinus, aucuba in many forms, live oaks, box, yew. Not as much cherry laurel as I expected. Camellias are not common nor apparently very fine here. Olearias look very shabby just now. English holly in its many forms is most common of all. Box is not as much used as one might fancy but when used appears more in a mixed border than as edgings or specimens, as we understand them.

Through all the masses there are deciduous, coniferous, and broadleaved species, the evergreens to solidify the deciduous groups; the deciduous trees for flowers or fruit to lighten the solidity of groves of evergreen.

Flowering apples, forsythia (which is much less floriferous than with us), peaches, almonds, cherries, amelanchier, are the chief flowering trees, not forgetting laburnum of which there seem to be many forms.

Erica mediterranea with its forms is very common in ordinary shrubberies.

Evergreens. Cedrus atlantica and libani are mostly good and C. deodora mostly poor; apparently missing the heat. Yews all fine but Japanese yews less conspicuously fine than with us where T. baccata does not always look so well. Biotas fair; Chamaecyparis lawsoniana and forms excellent; junipers only fair; Sequoi gigantea fair to good; S. sempervirens badly burned and ragged. The pines are only moderately happy as are a few species of abies and picea. Hemlocks look rather poorly except the dwarf or pendulous forms used as specimens or in the rock garden. (It should be remembered that Kew suffers from smoke and gas from nearby factories as well as low elevation and poor soil.)

Gorse is common and makes a fairly good plant but apparently is not much valued except in its double form.

Everywhere one is impressed with the closeness or density of plantings; even on lawns where trees or shrubs stand free. One doubts if the newer plants will ever have the room to form the specimens left over from the plantings before Kew was Kew as we know it.

There is an interesting practice of planting young trees among old trees, just as one finds them in nature - but here presumably for future replacements.

There seems to be a common practice of shearing or "lopping" rather than pruning, many plants and trees. This is conspicuous on ivies on walls, where the shearing is so severe that scarcely a leaf is left. (Done in March). When done to woody plants, they are cut to the main limbs almost as wayside trees are pollarded. So far as I have seen, there is no pollarding in Kew, though there are many examples in the village. Hollies are regularly sheared (April) when they are free standing specimens, a practice I was told that induced more twigs, just as we shear evergreens and create density.

Fatsia japonica. Seems moderately safe from cold if planted under trees, even deciduous trees. Here in the starved soil, it grows less rankly and produces rather smaller leaves.

Various Japanese andromedas and their kin seem excellent.

Berberis wilsonae. And allied species seem less good than at Bell.

Daboecia polifolia. Becomes very straggling with age but can be sheared back severely after flowering to induce new growth.

Erica vagans. Will make up to 3 feet when crowded and supporting itself.

Erica vagans grandiflora. Flowers along the upper 6 inches of shoots - brown now.

Erica vagans kevernensis. Full of persistent dead flowers along the upper 6 inches of twigs.

Erica williamsi. Shows small weak plants with few flowers.

Keteleeria davidiana. Is represented by a very fair plant about 12 feet high.

Raphiolepis. Species not known; looks less well than at Savannah.

Rhododendron. Look up all hybrids, paralleling Smithii aureum and related forms.

Sarcococca ruscifolia. Must form an underplanting in shade.

One mixed planting on a low knoll crowned with a fine Cedrus deodara and several pines - is a mass of double gorse, dotted with Spartium junceum, laburnums and miscellaneous rose species for earlier bloom. Among the pines are a few Prunus yedoensis and a few English hollies.

Berberis stenophylla. Is a very common shrub planted thickly to form dense berries - magnificent sights when filled with orange blossoms in May.

We should look up Photinia davidsoniana which looks something like an evergreen pear. P. salicifolia is deciduous here. P. serrulata rotundifolia looks promising.

Cotoneasters. Most of the cotoneasters here are no better than ours though many are much older and, therefore, larger than ours. The most interesting specimen is a very old plant of C. multiflora, about 8 feet high and with a 12 foot spread, apparently grafted 3 or 4 feet above ground on a crataegus (?) stock, with the result that it is widely spread like some Japanese maples.

The following notes are not a catalog of the species represented but only notes of a few that caught my fancy.

Cotoneaster buxifolia. Makes a 6 foot high, 8 foot broad, tangled brush; semi-evergreen.

Cotoneaster congesta. Is our stiff semi-evergreen, semi-creeper at Bell.

Cotoneaster divaricata. Is certainly misnamed as it is almost as flat on the ground as C. horizontalis.

Cotoneaster herroviana. Here is 6 feet high of the general type of C. salicifolia. Check against books.

Cotoneaster lactea. Is a fine 4 foot, spreading evergreen.

Cotoneaster nitens. Deciduous, but erect to 2 feet and then spreading as in C. horizontalis.

Cotoneaster pannosa. Semi-evergreen, to 12 feet with many strong stems, almost small trunks.

Cotoneaster rubens. Is more or less evergreen, more or less prostrate but rather stiff.

Cotoneaster serotina. Is apparently half-evergreen here and something like salicifolia in growth. Refer Curtis, B.M.

Cotoneaster turbinata. Two plants, one a reasonably compact evergreen, somewhat sun scorched, up to 6 feet, and the other 8 feet, very coarse, and stiff in growth.

The crataegus, pyrus, malus and sorbus collection is laid out in four orchard-like rectangles banded by dug beds in which are planted cotoneasters, pyracanthas, rubus, etc., not an especially decorative treatment but compact.

April 8

This was my first chance to see an exhibit of the Royal Horticultural Society, a showing of early daffodils at the new hall. To the stranger from America, this building, like many others typically British, is gray and depressing in the extreme. One might believe that a nation that has to endure so much gray weather at home and protests its love

for gayety and sunlight by such continuous visiting on the Continent, would build buildings that were of decently clear colors, but such is not the case. This building, which is modern, has been carefully planned to provide a diffused light over acres of dull gray concrete walls. Flowers, of course, if visible at all, are brilliant beyond imagination but are often almost invisible.

The early show is given since that makes possible good general displays from the more southern growers of daffodils. Often people are represented by groups of flowers brought out under glass, groups so large and so fine that one does not suspect their origin. The most interesting exhibits at this time came from Mr. Calvert and Mr. Richardson.

April 9.

Mr. Lionel de Rothschild invited me to lunch with him at New Court where I met, among other guests, Mr. Edgar F. Stead of Christchurch, New Zealand, Major F. C. Stern, and Mr. J. B. Stevenson, the latter two gentlemen also fine gardeners who entertained me later at their places. Mr. Rothschild asked me then to week-end with him at Exbury during the rhododendron season. Afternoon - more daffodil notes at the R.H.S. show.

April 10.

The major portion of the day was taken by a days trip to Dinton, the home of George H. Engleheart, almost the dean of daffodil men. Dinton is a tiny village just beyond Salisbury in Wiltshire.

The Engleheart place is an extensive one with many acres of pasture land and a long ridge of green sand formation along the northern side, perhaps a hundred feet or more above the country from the top of which one gets a wonderful view out over the country to the north - a country of broad farms and wide strips of forest.

The house, a small one of stone, is very old, the newest part dating to Queen Elizabeth's time. One enters a fair-sized hall from which opens on the left the dining room, kitchen, and scullery, and on the right

a tiny hall from which one enters the library, drawing room, and the circular stairway.

The changes in level of the ground about are beautifully made by retaining walls of old stone, now covered with mosses and lichens. There is a certain calm and serene beauty in these bits of wall and sward that is difficult to analyze and get into words, but it is a beauty that arises chiefly from exact proportions and beautiful attention to the detail. The contrast of green sward, gray wall, and colored flowers has already been noted.

The level on which the house was located was almost unplanted save for some evergreen vines and trees about the house. From a paved terrace at the back of the house, one ascended to the next terrace which was as gay and full of flowers as the last had been green - a simple garden with gravel paths and with beds full of pinks, primroses, iris, canterbury bells, wall flowers, tulips, columbines, roses, pear trees and so on. Through this one walked to come out into a grass grown orchard in which are the first signs of daffodils. These do not really begin until one comes to the wide fields that begin here and run up to the green sand ridge.

Since the terrible epidemic of eel-worm that nearly wiped out Mr. Engleheart's work, few daffodils are grown at Dinton but the several long Dutch beds cut across the fields to the base of the wooded ridge.

Here, between open thickets of hazel and alder, under beech and oak, we walked slowly up into a tiny clearing lying open to the sun, where are planted the small company of last seedlings, nearly all white ajax and Leedsii with some fine pale pink trumpets. As far as I could discover - for Mr. Engleheart was not specially communicative as to pedigrees, Leedsii and trumpet blood are equally concerned in these seedlings with pink coloring coming out from the portions showing ancestry of the Leedsii varieties.

April 11 & 12

Office work. Week end trip to Canterbury in Kent. The chief horticultural value of this side trip came from seeing the hop fields, now greatly reduced in number

and extent, and the apple orchards.

In the latter it seemed strange to see acre after acre of relatively dwarf trees in which the stock union was well above the ground line, in some cases as much as two or three feet. The trees are severely pruned to form open, spreading tops, somewhat vase-shaped with carefully built main branches and short fruiting spurs from one end of the branch almost to the very tip. These had the appearance of severe annual pruning and formed great knotty masses, somewhat like those on elms and willows that have been pollarded.

It was interesting also to see the closeness of the plantings with trees 15 feet apart in the rows and rows not over 20 feet apart. Some orchards were in grass but most were in clean cultivation with two or three rows of gooseberries or raspberries between the trees in the row.

Black currants were also used in some places but not so much here, as far as I could see.

There are also extensive cherry orchards through this district, of a dark red, sweet cherry variety and in these the trees appeared to be much larger and to be allowed more freedom of growth than was allowed the apples.

Although no horticultural work was done in Canterbury proper, there is in the cathedral grounds a charming enclosure that has been made into a sort of retired garden for the war memorial. The walls that surround it are mostly old, built with lime mortar that has disintegrated enough and has caught debris enough to permit the growth of many herbs that have seeded into it. At the time of my visit, there were wall flowers in bloom everywhere - plants of small size and somewhat starved appearance, as compared to border grown plants, but full of starry flowers, mostly in golden yellow and light brown colors.

The actual design of the area was of the simplest. The area is rectangular with a 10 or 12 foot border next to the walls; then a five foot flagged path and a central grass plot cut by transverse paths with a simple shaft at the intersection. This monument is rather similar to many seen in England - a series of broad steps, square, circular, or octagonal, with a slender shaft at the center, topped by a cross. The inscriptions are reduced to the smallest size with excellent lettering.

There was little planting in this area save for the broad borders, a few Irish yews for accent, and a couple of old apple trees which served temporarily for decoration. No unusual plants in the borders.

April 12 & 13:

Miscellaneous notes at R.H.S. Show.

Tulipa humilis. Has charming blush-pink flowers.

Tulipa kolpakowskiana. Is an excellent yellow species.

Tulipa polychroma. Is a tiny affair of pale gray lilac, especially the three outer petals; inner three white with gray-lilac mid-rib.

Primula denticulata hallii. Is really a strain of P. denticulata raised by John Hall, Phoenix Nurseries, Castle Street, Cambridge, in which the colors deepen from lavender to deep plum-purple. The new forms are not quite so clear in color as the types but should be valuable nevertheless. Mr. Hall has named several and tends to describe some as "pink" or "rose" which they are not.

Grey-leaved plants at the Alpine Society Show - taken without idea of hardiness as they were all pot plants from alpine houses.

Anthemis hausknechtii
Convolvulus cneorum
Diotes maritima
Helichrysum frigidum
Leucophyton brownii
Raoulia australis
Stachys aurea
Veronica bombycina

Look up Phlox mesoleuca exhibited as from Texas. a 10-12 inch slender phlox, somewhat like divaricata in stem

Notes at Kew.

Allium paradoxum. 6-8 feet, broad, somewhat curly leaves, papery sheath with 3-4 waxen, somewhat yellow bulbils and a

single, large, pendent, white flower, also occasionally a second branch, flower and bulbil. This is one of the worst spreaders known and can never be eradicated.

Allium montanum. Just coming into flower; is a slender plant with small heads of white flowers.

Allium stipitatum. Just coming up to flower; broad leaves 4 inches wide, up to 14 inches long.

Tulipa lanata. In the herb garden at Kew it is fine; about as large and tall as Darwin but with leaves further up the stem. Inside of petals glowing orange scarlet, slightly showing the pattern of exteriors. The exteriors, especially of the three outer petals are patterned.

Tulipa suaveolens. Is very dwarf and rather ugly - red and yellow - but I should want to try it nevertheless.

April 14 & 15

Regular daffodil show, R.H.S. No special notes can be added to the show notes given under the date of April 8, except to say that this is the main show in London which is supposed to be a middle date that will suit the largest number of growers. Like most compromises, however, it suits very few people as it is often too late for southern growers and too early for the northern people. Everyone assured me this was a very poor and small show this year.

April 16.

On the special invitation of Mr. Gerald Leake, who is on the Council of the R.H.S. and is managing director of R. H. Bath, Ltd., I went to Wisbech to see their nurseries and gardens. He was particularly anxious that I see daffodils grown under field conditions as opposed to carefully grown exhibition flowers. This is a more or less amusing point of view inasmuch as the people here make almost a fetish of not grooming their flowers.

The nursery is an interesting one since it does not confine itself to the growing of bulbs and plants for sale but does a large business in cut flowers and an even larger one in fruits and vegetables.

In order to fit Mr. Leake's plans, I left London for Peterborough and was met there by his nursery car which took me cross country to Wisbech. The country is essentially flat, with fields of black, peaty loam that made me think of the fen country near Ely and came to mind again when I saw the country between Zwolle and Didemsvaart in Holland. From an American point of view, the ground is poorly drained by nature, and even with canals and ditches seemed wetter than was reasonable for good crops.

At the nursery we saw large orchards - principally of apples - grown larger and planted farther apart than in Kent, with many nursery crops between the rows. Peonies, polyanthus, primroses, grape hyacinths, squills, and snowdrops were all planted here in masses, although there were fields of peonies grown elsewhere in pure stand. Roses are grown in wholesale quantities.

The propagation yards for perennials are the usual series of frames that form row after row over a large area. Some were of brick and concrete and others of temporary wood construction. As it was pouring rain by this time, we did not go through all the areas.

The daffodils were grown in fields with Dutch bed culture and had relatively little protection from hedges and coir screens. The range of varieties was distinctly limited since this nursery always considers narcissus as a source of cut flowers as well as salable roots and the requirements for market are very definite, being restricted by factors related to packing for shipment as much as anything else!

To me, as a narcissus enthusiast, the only thing of real interest here was a series of trumpet seedlings in which Mme. Plemp was seed parent. Mme. Plemp is a variety of poor quality, short stem, and unreliably bulb production, but the progeny were all vigorous, with good but not unusual stems, and flowers of average to very good quality.

April 17

Leaving the night before from London, this day was spent, together with most of April 18 at Waterford in the Irish Free State to see daffodil cultivation at the

highest pitch of production of exhibition flowers.

Mr. Richardson buys stocks of narcissus and small numbers of bulbs to make his collection the finest in the country - all with a view to showing at the exhibitions. His plants are grown in two separate units - one small one where the most expensive bulbs in small stocks are grown and the other where larger stocks are planted.

The small patch is located below the house lawn in the lee of a thick shrubbery in which there are many evergreen trees and beyond which is a thick holly hedge. The entire area is enclosed in a fence of chicken wire with an added thickness of coir screening. The latter is best described as mesh netting of coarse hemp twine woven with 1 inch squares. It has been found not only to break wind but to check some frost movements. In addition each Dutch bed is surrounded by a muslin screen 36 inches high, stretched on upright rods about 40 inches high and covered by removable green muslin shades. In this way every flower develops in a half light, at slightly tempered temperatures and protected from rain and wind, both of which are severe and frequent. In addition to this equipment in the yard, there was a small greenhouse, used for winter forcing of freesias and similar stock, in which backward flowers could be hurried and an unheated house in which cut flowers were stored and kept. This house also served as a temporary staging room in which groups were set up informally before they were finally packed for shipment to the shows.

As the annual show of the Midland Daffodil Society was to be held at Birmingham on Wednesday and Thursday of the following week, I had the advantage of seeing Mr. Richardson prepare his entries for the show, choosing the blooms for each class with their alternates.

April 19

Enroute to London.

April 20

Mr. F. A. Secrett of Marsh Farm, Twickenham, invited me to spend the day at his farms, particularly to see the

daffodils purchased from Mr. Engleheart. His major business is truck gardening and for this he owns about 9 farms, averaging about 40 acres each, through the urban and suburban districts south of London. There is a limited amount of greenhouse space on each farm, used chiefly for starting young plants and forcing early lettuce and rhubarb. In addition to this each farm has the usual large equipment of frames, both hotbeds and cold sash.

All planting is most intensive with different crops set between rows and between plants in the rows. The most compact group were frames in which lettuce was almost ready for cutting, carrots to mature in about three weeks, being sold as young carrots, cauliflowers for later maturing and cucumbers to be trained between cauliflowers for later harvest.

Millions of narcissus are raised for cutting. The staple crops are Emperor, Golden Spur, King Alfred, Poeticus ornatus, Horace, and perhaps Virgil. These are planted in rows in the field, usually 3 rows in a strip about 14 inches wide with a space between for field cultivation.

The other narcissus are of peculiar interest because Mr. Secrett purchased everything that Mr. Engleheart had, his entire stock of unflowered seedlings and all, at the time he was threatened with extinction by eelworm. Hundreds of bushels of bulbs in quantities from single bulbs to thousands were given hot water treatment and planted out. Many were lost as they were too severely infested with nematode to survive treatment.

From the survivors Mr. Secrett is working up stocks. Each is given the most rigorous testing under field conditions before naming. Since most of the stocks are of poeticus varieties, they have to be examined again, from the point of view of distinctions, before they are named and sold.

Mr. Secrett's attitude toward the whole treatment of infected stocks showed the utmost sanity. The treatment is given with the greatest care and the treated stocks are planted away from all others and watched for any signs of imperfect sterilization. If this should appear, they are sterilized again and replanted in another area. Every effort is made to prevent permanent infection of the soil by clearing the land of narcissus and planting truck crops for

five years.

Although not strictly apropos of entry under this date, it might be recorded here that the prime essential for market flowers are good stem, firm petal substance, good carriage of the flower and a relatively short neck or stalk between the ovary and the real stalk of the flower. Any extra length here prevents proper packing which is not by bunches, as here, but in shallow boxes in which the flowers are carefully fitten in overlapping rows until the box appears to be filled only with flower faces.

April 21

This was the opening day for another R.H.S. Show in which many miscellaneous plant exhibits were staged and final narcissus displays were put up. Although there were many fine groups, there was no particularly outstanding group since most of the nurserymen brought up groups of shrubs and trees that had been forced into bloom under glass - cherries, spiraea, wistaria, brooms, azaleas, etc.

The outstanding narcissus exhibit was from Mr. Secrett who showed most of the numbered seedlings of which he had fair stocks. To the casual observer they appeared like one sort but, when examined one against the other, showed all the interesting variations of eye color and pattern, relation of eye and perianth, shape, style and carriage of perianth segments.

The only plants of which I made special note were

Tulipa chrysantha. Closely resembles T. clusiana in all regards but has a yellow instead of a white ground.

Azalea "Evening Glow". This was shown by Cutbush of Barnet in Hertfordshire and is listed by them as a Kurume. Whatever it may be, it is not pure Kurume and to my eye suggests a hybrid of R. mucronatum Don and a Kurume. It has fine, rather spreading growth with large dull, slightly woolly leaves and clear, slightly lavender flowers that are larger than those of Kurumes but not so large as those of R. mucronatum. I believe this should be bought for comparative study and possibly for hybridizing.

April 22

The show of daffodils set up by the Midland Daffodil Society is very different from that staged in London, both in size and character. Since it is the outgrowth of the personal enthusiasm and devotion of the late Robert Sydenham, it is natural that this should be so.

It is held in the two conservatories of the Egbaston Botanic Garden in Birmingham. This so-called botanic garden is, like many others both in England and France, essentially a public park in which as many trees and shrubs are labelled as possible and where flower shows are staged from time to time in much the same fashion as our local U.S.D.A. chrysanthemum and amaryllis shows are given. The city is essentially a manufacturing city and is both dirty and smoke covered so that the growing of any plant is difficult. The gardens are in the suburbs, about a mile from the heart of town and occupy an irregular hillside, sloping essentially to the south - a feature not counting for much during the two days I was there when rain and fog were continuous.

One enters the garden through the office units which connect with the range of glass houses, and by another corridor with the outer system of paths. I believe I can say without discourtesy that the collections of plants in the greenhouses are both indifferent in character and in condition.

The outer grounds are in much better shape although there are no unusual plants. The entrance buildings occupy a corner of the property from which everything slopes away. Below the conservatory group is a fair area of lawn bounded by shrubbery groups and various trees. Within the border plantation is an area given over to a rock garden. In this the rocks are of magnificent size and are well placed but there is very scanty planting and no unusual masses or species. No one was there to explain conditions, but in many gardens of this sort the worst depredations in the rock gardens come from visitors who consider the plants there their personal property!

Two glass houses were emptied to hold the show and in the midst of greatest confusion the exhibitors set up this stand. After judging, the public is admitted and

crowds through the aisles, asking questions of the exhibitors who stand by and take orders whenever possible.

That evening, Mr. Wilson, Mr. Richardson, and I were driven to the home of Mr. V. S. Arkwright in Presteigh, Radnorshire, not only to see the daffodils growing there, to see a little of that part of England, but to arrive close to Mr. A. M. Wilson's gardens where rather serious narcissus breeding has gone on for years.

As it was pouring torrents of rain almost the entire time, the trip was of doubtful pleasure.

April 24

The actual site of Mr. Arkwright's place is a bit of hilly land. His house is on the brow of a deep wooded valley with a fine, rushing trout stream below and forested slopes of beech and oak across. The actual plantings on the place were more than ordinary. Daffodils distinctly second rate.

The one feature of interest was the collection of seedling aubretias and arabis. All the best forms of the latter are white, the pink or pinkish forms being distinctly inferior to the pink forms of aubretia which are very similar. By practicing rigid selection in generation after generation of seedlings, Mr. Arkwright has obtained really excellent pale pink forms of arabis, although,as was noted, these are still less good than aubretias.

His aubretias are excellent but are mainly in paler shades of lavender, a gray lavender series and a pink lavender series, neither one leading up to the deeper purples and so-called crimsons of some growers. It is difficult to be certain, if one depends solely on memory, but I should say, in spite of their excellence, the aubretias here are not so good as many I saw elsewhere, notably the masses in the garden of Mr. Christy beyond Forres, Scotland. They do illustrate, however, the Englishman's passion for selection and development of a personal strain of some favorite garden plant and lead one to wish that Americans would grow some of our native wild flowers from seed and practice the same sort of selection.

From Mr. Arkwright's it is only a few miles drive to Mr. A. M. Wilson's place, which is located in a rather wide valley. Mr. Wilson cooperates closely with Mr. P. D. Williams in breeding experiments and the exchange of stocks. He also grows many flowers for cutting and sale.

There were no new features of operation, planting or breeding to be noted here. The conspicuous seedlings were nearly always Fortune derivatives.

Going on from Mr. Wilson's by motor to Knighton we (Mr. Guy L. Wilson and myself) took train for Hayshem where we boarded boat for Belfast, arriving there the morning of April 25, leaving almost immediately for Ballymena, the station for Mr. Wilson's garden. There was no improvement in the weather but even so it was easy to see plantings from the train that suggested the climate: camellias, Auracaria imbricata, and all the forms of Lawson cypress are flourishing to amazing degrees and Irish yews show what they really can be - immense trees forty feet high and twelve to fifteen feet in diameter of crowns.

Driving from Ballymena to Broughshane, Mr. Wilson's village, there was little to note save the rather fine pasturage and the excellent potatoes.

Mr. Wilson's garden is new but his daffodils are planted with provisions for shelter in coir screens, since the hedges were not yet grown. Here I saw excellent hedges of Lonicera nitida which is entirely evergreen and has only the fault of too rapid privet-like growth. In many parts of England this is semi-evergreen as it is here in Washington, D. C. The major portion of his daffodils are on the old family place, now occupied by his brother

Here there were no unusual features or practices, save in the preparation of land for new plantings. This is heavily manured in autumn and then, after ordinary ploughing, is trenched and ridged so that the ridges are almost two feet high. This is left all winter, then leveled and given a crop of early potatoes. When these are harvested, the land is ploughed and is ready for planting to narcissus.

To my eye, the site seemed too wet and too illy-drained to be useful for bulbs. The soil is heavy and the natural slope of the soil slight; nevertheless, excellent bulbs are grown here with perfectly good basal plates and certainly all the plants showed superb health.

In the gardens were excellent examples of Primula chionantha which is one of the most lovely of the Sikkimensis Sections with fine rosettes of excellent foliage, tall stalks with heads of large, sweetly scented, palest sulphur-white flowers with mealy calyces and stalks. In Mr. Wilson's personal garden, there were many other of the more usual Chinese primulas of the Candelabra and Denticulata groups, several fine old double polyanthus, a fine garden strain of auriculas (as opposed to the exhibition auricula that must be grown in pots), and excellent patches of Gentiana acaulis. Mr. Wilson, however, is not a general plantsman, being too much devoted to daffodils.

April 27

Was spent mostly en route to London to be there in time for the Rhododendron Show on April 28. This show is participated in almost equally by amateurs and commercial members and is managed more or less by members of the Rhododendron Society, an independent organization which comes under the care of the R.H.S. only for its shows.

The commercial exhibits consisted of groups of plants lifted in bloom, with burlap wrapped about the roots. These were massed often in crowded banks, so that the individual character of the plants disappeared and only the character of the flower masses showed. This produced gorgeous and glowing masses of color. Various other shrubs and small trees were added to these groups, particularly Japanese maples among the deciduous azaleas. This is practiced also in some of the natural plantings out-of-doors. White birches are also used in this same way, the silver-white stems and the yellow-green foliage making charming contrasts.

The exhibits from amateurs were of several types, large masses of plants similar to those shown by growers, banks of cut sprays and class entries arranged to show the botanical divisions and organization of the genus. These latter classes are distinctly small, as there were relatively few exhibitors and, in many cases, the exhibited bit was too small to be characteristic, since the owners could or would not cut more than a single truss of bloom. In some sections, however, as much as would constitute a small branch was cut. This seemed particularly valuable in the Hippophaeoides Section which is made up of small plants

with growth more or less like a ledum, small leaves and small crowded heads of flowers usually lavender in color. At first glance they seemed very much alike but closer scrutiny showed that the flowers varied in more than the color of the corollas, since the color or lack of color in stamen filaments, and the color of the pollen made a distinct difference. Again when one looks at the growth characters of the branches and the arrangement of the leaves on the twigs, the differences are most obvious but this could not be seen here so well as in plants grown in the open at Kew, where notes were made as to the preferred sorts (see page

Particular interest centered for me in flowering branches of R. albrechti, of which we have seedlings already growing at Bell Station. This apparently will be an excellent early-flowering species - coming into bloom enough later than R. mucronulatum to make it safe from spring frosts and yet early enough to make a great addition to the early shrub garden. The sole objection that can be levelled against the plant is the color which, of course, belongs in the magenta-pink series. It varies somewhat among individual plants, and some selecting should be done.

R. dilatatum or rhombicum also promises to be an excellent shrub but has a less pleasant color than R. albrechti.

R. quinquefolium is a charming plant but does not make as great a display as might be wished; the flowers appearing among the leaves rather than above them. The pink form, which the Japanese usually call R. quinquefolium roseum but which should be referred to R. pentaphyllum seems to be as rare in England as elsewhere. I saw some small plants said to be of this species at the Sunningdale Nurseries which we should order in 1933 or 1934 when they are large enough to be shipped.

Notes were not taken on the species of the falconeri, fortunei, grande, etc. series as these plants are all counted definitely tender to cold as far as English experience goes although they are kept growing in many cases. Whether or not English experience need be taken as final is doubtful since some plants might prove hardier here where we have better summer ripening periods but there are many sections of the genus that can well be investigated before these.

As an educational feature, part of the specimen flower exhibits were arranged in botanical order, by sections, and in close relationship where possible in the section. In this way it was possible for the veriest beginner to see the kinship of the groups and the relationship of one group to another.

Other educational exhibits included herbarium material arranged in such a way that questions of critical value could be seen by the casual observer. This has to do with some of the large-leaved species, R. sino-grande and allied species.

One of the very impressive things about the group of rhododendron enthusiasts is the extraordinary interest taken by the members in very technical matters. The men know their plants, have a rather keen appreciation of the botanical details and of the history of the separate introductions.

April 29

Among the species rhododendrons at Kew, I noticed the following. There are some plantings in the rock garden, but most of these are planted by themselves or with other ericaceous plants near one of the small pavilions (see plan).

Rhododendron achroanthum (16282F). One of the purple hippophaeoides series.

Rhododendron adenopodum . A splendid tall pink with gorgeous pink flowers. If there is any chance of hardiness, this should be tried.

Rhododendron aeschmophyllum. This makes a tall bush up to 4 feet with rather loose and awkward growth; leaves drooping. Rose-colored flowers with crimson red styles.

Rhododendron cantabile. Interesting among the many purple hippophaeoides for its conspicuous red filaments and the orange-color pollen.

Rhododendron caucasicum "Cunningham's Sulphur". There is some uncertainty as to the exact origin of this plant, as it is considered by some to be a natural variation from type caucasicum. Others insist it must be a hybrid. A

true but pale sulphur color. Growth slow and compact.

Rhododendron cinnabarinum. There are many examples of this in Great Britain with many variations in color but all are yellow-orange or red. This plant had the typical drooping bells of yellow shaded with orange from the calyx half-way up the tube.

Rhododendron compactum multiflorum. A curious rounded bush with rather dense twiggy growth, suggesting Daphne odora in general style. The flowers are in tight, really crowded heads, in which the buds show a deep rose color and the open flowers an azalea-like form, pale rose color with deeper dots on the upper lobe.

Rhododendron dasypetalum. A purple-flowered form with erect habit.

Rhododendron davidsonianum. This is just coming into flower here in fine bushes. A truly excellent shrub of the general Yanthinum-Yunnanense type, holding its leaves rather better than some and producing complete masses of pale lilac-white flowers, touched with orange on the upper lobe.

Rhododendron emasculum. Noted in the rock garden as having a rather open erect growth with scattered leaves and relatively few pinkish lavender flowers.

Rhododendron fargesi. Noted for its large bells of gorgeous pale pink.

Rhododendron flavidum. By this time this species is almost over its flowering. The pale greenish-yellow flowers are not very showy here as they are much damaged by the weather. It is conceivable that in a decent climate it might make a good bush.

Rhododendron floccigerum. Interesting as representing a very different sort of plant from what we commonly think of as a rhododendron. The flowers are bell shaped with a wide diameter, red or yellow with red-flushed edges. Two to three feet.

Rhododendron harrisii. Noted for its bell-shaped flowers of deep blood red.

Rhododendron hippophaeoides. Up to 4 feet, small leaves, lavender flowers.

Rhododendron hippophaeoides roseum. Interesting not only as a rose-colored sport that appeared as a single seedling at Kew, but as a very nice plant in its own right. The flowers are not an especially pure pink but are not magenta. 21462F is the number of the seed from which it came.

Rhododendron hormophorum. Interested me as it is of the general type of R. davidsonianum but is almost deciduous. This might make it hardy in our climate. Not very floriferous here.

Rhododendron impeditum. One of the most compact dwarfs, forming a very dense twiggy mass 12 inches high and over 2 feet wide. Flowers are lavender and the stamens lighter than the corolla.

Rhododendron impeditum. As this grows in the rock garden at Kew, this is not free flowering. Lavender. Just opening this date.

Rhododendron keiskei. Here is a plant of rather poor habit with very few and scattered flowers of palest yellow with prominent white stamens.

Rhododendron lapponicum. One of the hardiest and to my mind ugliest with dense but somewhat awkward growths, dense heads of small flowers of the muddiest and dingiest purples.

Rhododendron lockmium. Tall growth like an old Kamia - rather nice pink flowers.

Rhododendron lysolepis. One of the many purples.

Rhododendron metternichii. Recommended to me as very hardy. A plant making prostrate growth and giving masses of second-rate pink flowers. This is supposed to be a very hardy species, however, and was recommended to me by several growers.

Rhododendron oresbium. Very compact flat growth and excellent lavender flowers.

Rhododendron orthocladum. Makes very dense growth but is not very floriferous here. Deep magenta, like the newly opened flowers of the darkest R. mucronulatum.

Rhododendron osmerum. Deepest purple. 21995F.

Rhododendron pachytrichum. Just over flowering - a dull white.

Rhododendron phoeniceum. This is not the azalea variety used for stocks for the Indian azaleas but an evergreen species with very deep scarlet tubular flowers. 2 feet.

Rhododendron Rosy Bell. A hybrid of ciliatum x that Mr. Osborn thinks will be tender here. It makes rounded bushes up to 2-2½ feet with good foliage and masses of 2 inch bell-shaped flowers of pure rose color outside and light hue within.

Rhododendron rubiginosum. In many ways this suggests a taller R. carolinianum but the flowers are deep rosy pink.

Rhododendron scintillans. Somewhat like R. hippophaeoides but with very dense twiggy growth; ½ inch clear lavender flowers with reddish stamens. One group numbered 21998F showed a very bright appearance, since the anthers are orange-yellow and in this group the calyces were somewhat orange tinted.

Rhododendron searsei. Noted only for the charming range of color from pale lilac whites to deep lilac rose. (Look up series)

Rhododendron semantium. One of the many dwarf lilac purples.

Rhododendron stimulosum. Notes very meager on this which should be looked up. Marked "Garden Hybrid" with glowing salmon-pink flowers, rather tubular, with projecting stamens and pistil; in close heads.

Rhododendron trichocladum. To my eye rather ugly. Dense bushes, deciduous with inconspicuous clusters of flat-faced, greenish-yellow flowers, sometimes marked with a dull brown crescent on the upper lobe. The flowers are borne with short stems and are often overshadowed by the developing leaf shoots.

Rhododendron triflorum. The type of a long series, not so very showy, with loose and open habit and rather rosy flowers.

Rhododendron williamsianum. This is a very lovely dwarf species, reported to be very tender. The flowers are large nodding bells borne in twos and threes of a tender pale pink, buds deeper. There is also a handsome and more robust hybrid of this general character as a result of the cross orbiculare x williamsianum but it also is tender.

Rhododendron yanthinum. This is a most poisonous deep magenta color. I saw it afterwards in some plantings where it had been used sparingly with some of the rosier forms of R. yunnanense where it was "not so bad" but it will always be "difficult".

April 30 - Kew

Anemone intermedia. A garden hybrid. Look up history of origin; flowering now with forms of A. nemorosa but larger than these. White with lilac flush on reverse.

Anemone nemerosa alleni. One of the selections made by the Mr. Allen who also worked on galanthus.

Anemone nemerosa robinsoni. A very fine form of even deeper blue lavender than alleni.

Armeria fasciculata. One of the tall, coarse-leaved forms with 10-12 inch stalks of good rose-colored flowers.

Chrysanthemum oppositifolium. One of the most charming species in the rock garden with flat turfs of typical foliage from which rise 4-6 inch leafless stems with flowers about 1½ inch diameter.

Ceanothus rigidus. Is now in flower on the walls. This species has very handsome evergreen leaves but is rather slow to show all its flowers. When they finally appear, the slender twigs are roped in a deep blue which does not show well at a distance.

Claytonia sibirica. The leaves are coarse and ovate on long petioles, making a 10 inch rosette from which rise the taller stalks with pinker flowers than ours. Has become a weed in some parts of Great Britain.

Clematis armandi. Is growing and flowering feebly on a 10 foot brick wall facing east.

Clematis montana rubra. Is just breaking into flower.

Daphne retusa. In the rock garden suggests a smaller and less exotic D. odorum. Pinky-white flowers, too far from path to test their scent.

Parasyringa sempervirens. Another of the broad-leaved evergreens of the general privet persuasion, suggesting somewhat the foliage of Ligustrum ionandrum which is not hardy here unless on a wall! They will send us seed from which it comes readily.

Podophyllum versepelle. Is a most interesting Mayapple with a whole shower of smaller, greenish-white flowers and taller-stalked shoots.

Tulipa eichleri. Almost over.

Tulipa fosteriana. 12-16 inch gorgeous scarlet flowers with black blotches edged with gold at base of petals inside.

Tulipa kolpakowskianum. Almost over.

Tulipa micheliana. Just coming into flower, scarlet, acuminate petals with a yellow-bordered, black blotch at base of petals inside. Some petals dull on outside in some plants.

Tulipa praecox. Is almost as tall as Darwin tulip and shows a curious dull pinkish-orange color.

Tulipa praestans. Is now in full flower; scarlet.

May 1

Letters and office notes.

May 2

It was interesting to note the type of development given in Hyde Park and Kensington Gardens, two abutting public parks of the west end of London.

Thanks to the dismal climate, grass grows everywhere and everyone walks wherever he pleases over the whole area except in a few small enclosures that are kept carefully mown; and are usually marked or fenced.

Through the entire area there is a minimum of planting. All the main effects are the result of contrasts

of trees and turf. Although there are artificial lakes in each park, they do not enter into the main pictures. Practically every road and path is paralleled with trees which are set at such distances that there will be from 50 to 75 feet between the rows. In the row the distances are less, sometimes as little as 30 feet. Relatively few species are used for this, with English elm, linden, and horsechestnut as the commonest.

Within the areas included by the rows of trees, there are isolated groups and specimens of various ages, but as far as I could see mostly trees of same age. Here the variety of species is greater, but oak, beech, birch, holly, sycamore, several maples are the dominant trees.

Along the special walks where careful attention is given to both grass and plantings, there are few, if any, large trees. In Kensington Gardens, these "Flower Walks" parallel the outer boundaries. The walks are straight with broad grass margins up to 10 feet with a wide bank of shrubbery mostly broadleaved evergreens as a background. Between the grass and the shrubbery are the areas given over to bedded flowers. These beds vary in depth but are rarely less than 5 feet deep. The flowers planted in them are made into solid beds at least 10 feet long, sometimes even more. This is strictly a matter of bedding practice as practically nothing remains in the ground year after year. In Hyde Park Gardens bedding of this type occurs chiefly along the paths north from Rotten Row, near Hyde Park Corner.

Relatively speaking, there is almost no shore planting along the shores of the Serpentine. This starts from an elaborate and rather ugly water terrace in Kensington Gardens near Lancaster Gate. The water flows out of the water garden that has only a few feeble nymphaeas and some overgrown rushes, into a naturalistic pool which has some planting along the shore, chiefly Iris pseudoacorus, petasites, acanthus, several reeds and rushes, used in bold masses. Elsewhere the grass margins are continuous. Outside of the Kensington Gardens the water passes under the crossroad and comes out into the broader part of the Serpentine. Here the shores are artificial and the paving goes down to the water's edge. The actual depth of the water is very little for many feet beyond the shore line since the children are allowed to wade and sail small boats here. There is also a public boat house and a swimming bath house for public use.

As compared with such Washington parks as I know, the London parks are used from ten to fifty times more. They are essentially city parks in areas of crowded population and represent the only play spaces for many families. The enormous number of nursemaids, children, and pet dogs with owners passes belief. In all this lies the essential wisdom of the type of planning and maintenance that have been given.

May 3

Poured all day.

May 4

Office work.

May 5

Arrived at Brodie, Scotland, about 11:30 a.m., having left London the night before. Wakened in Scotland, sometime after the train left Perth, to a view of the country that was entirely different from anything I had seen in England, huge barren mountains and rough upland with boulders of all sizes and great stretches of heath and moorland. As it was still cold, with snow on the distant mountains, there was little to see by the way or even in the few cottages that could be seen.

Brodie is a very small village beyond Forres and benefits enough from the influence of Moray Firth to have a rather equable climate. The Brodie estate is fairly large but he has only a small area developed about the castle. One approaches through a long avenue of very old beeches, so closely grown together that little survives under them, and comes finally to a large gravelled courtyard directly in front of the entrance. At the time of my visit the second floor, where the special living rooms are located, was undergoing repairs so that I had little idea of the castle from the library and the improvised dining room downstairs, but it was interesting to be living even for a time in a castle with 5 to 7 foot walls.

From the library one looks out directly onto a broad lawn with magnificent trees. Two winding gravel

walks lead away right and left, mostly hidden by trees and shrubberies, toward the flower and kitchen gardens that lay at the extreme end of the lawn.

There were no unusual plants among the trees but there were admirable specimens of Sequoia gigantea, sempervirens, Auracaria imbricata, Chamaecyparis lawsoniana and several of its forms, and even Pinus pinea, all of which give some notion of the type of climate.

The small bits given over to flowers were not important but the large area given over to a shrub collection that bounded the end of the lawn farthest from the house and through which one passed into the huge kitchen garden contained many good things, particularly a fair set of cotoneasters and Chinese berberis. The most interesting feature, however, was a plant of Daphne blagayana over four feet across, covered with its deliciously scented white flowers. The plant was covered with the usual number of small stones (4-6 inches in diameter) laid through the area to induce layering and to keep the roots cool.

The kitchen garden is walled on three sides and has a high beech hedge on the fourth. It is divided roughly into quarters by the two main cross walks that are the only carefully built paths in the garden, with well graded gravel bases, grass edges, and flower borders about 6 feet wide backed by rows of espaliered fruit. The areas within the quadrants are variously filled, this year the southeast being given over largely to daffodil stock beds and seedlings for final judging before sale or rejection. The southwest quadrant had only a few daffodil beds of seedlings just coming into flower and the northwest only the remains of former crops that were to be given this final chance before discarding. The northeast quadrant alone had preserved its original identity as an area for fruit and vegetables.

May 6

The special feature of the day was a trip by motor to the private estate of a Mr. Christy who lives beyong Forres and has a fine rock garden and an excellent, if young, plantation of Chinese rhododendrons.

As a preliminary planting note, it should be mentioned that there is only 19 inches of rainfall at his garden but there is so much moisture in the air and so small a range of temperature that the ground is covered with mosses to 6 to 8 inches and all the trees and shrubs are distressingly coated with mosses and lichens.

The rock garden is on a steep slope facing south and west and is far from ideal in design since it is neither naturalistic or frankly artificial. The two worst features are the pseudo-ruins of a house or small shed and several small ponds that occupy precarious positions on the hillside.

To me, as an American, the most interesting groups were the lewisias with which Mr. Christy has been most successful. Unlike the equally successful moraine culture that I saw later in England, his plants were grown in a dry wall. This gave them the perfect drainage and extra heat that they seem to require. The northern sides of the same wall were used for raymondias, much overestimated plants in my opinion, since they are usually furnished with shabby and winter-burned foliage when the beautiful flowers are produced. Only when grown in an "Alpine House" do they have any chance to develop properly.

The first spring flowers had passed, the early saxifrages, arabis, and phlox, with most of the bulbs and the later phloxes, dianthus, campanulas, etc., had not come in.

One of the amazing features was the freedom of self-sowing of most of the dwarf species narcissus. N. cyclamineus was grown by hundreds and showed an interesting variation in color from the typical golden yellow. N. bulbicodium and its several forms were also much in evidence.

The rhododendrons occupied the slopes of a long valley that ran roughly east and west with a small stream through the bottom that had been dammed to form several small and shallow pools, glorified at the time of my visit by sheets of the exquisite pink of Primula rosea. The slope facing south was essentially in pine wood with some oaks. The natural soil is sandy with some gravel but has been so long furnished with leaf soil and decaying heaths and heathers that one walks over a porous, springy mass that must be fully a foot deep, not counting the 6 inch carpet of living mosses.

The standing trees are placed in such a way that a light and somewhat broken shade is cast over the entire area, but no special demand is made on the supplies of soil moisture by the tap-rooted trees.

The individual rhododendrons are planted at wider intervals than in most collections. Each one is given a carefully prepared hole at least five feet in diameter in which the basic soil is improved to a considerable depth. As a result this care, with the equable climate, makes possible the growth of many species that can not be grown in England except in the extreme south.

The north-facing side of the valley is much more heavily wooded and includes more beech and oak so that clearings have been made in many cases to admit the plantings. I took no notes of the species chosen for this side, but Mr. Christy explained that any species that started into growth very early in the year was put here with the hope that the slightly colder and darker exposure would delay growth.

In the working nursery Mr. Christy's gardener used methods of seeding that would be impossible here. The soil mixtures for rhododendrons, meconopsis, primula species are much like our own, a sandy, well-drained mixture with leaf soil, but they used an older, less fibrous leaf soil which packs badly in flat and pan and is difficult to water again.

To assist with germination the flats are left in the open during the winter and brought in at the time germination seems likely. In most cases the stands were less complete and less uniform than I should care for. They also seemed very slow in picking out all seedlings and too content to allow small growth for the first year. Instead of sowing hard seeds at once and putting them in a frame for the winter to be brought back into heat in March and then, if germination is poor, set out the following winter.

Mr. Christy has also a very fine collection of seedling aubretias, mostly from commercial strains of seed.

His bulb garden was amusing to me since he had planted his tulips and crocus species in a dump for large gravel and small cobbles in the hope that the extra heat would ripen the bulbs.

May 7

En route to London.

May 8

Return to London - office details.

May 9

Mr. Lionel de Rothschild had invited me for the week-end to his country place at Exbury in the New Forest beyond Southampton. The railroad station is Brockenhurst and the drive from the station to the estate takes one through several small villages and through a bit of the forest which seems a very puny affair to an American. In the open parts of the country adjacent to the roadway the flowering gorse made brilliant contrasts with the rather sombre color of the pines and the almost white roadways and bits of exposed chalk.

The estate itself is enormous and although an old place has not been many years in Mr. Rothschild's possession. It was chosen as being within reasonable distance from London and as having suitable soil and a fairly temperate climate suitable for the growing of rather tender rhododendrons. The house has been rebuilt and is, as such houses go, rather small and simple. One comes in from the highway from the rear, passing the stable and greenhouse yards on the left, swings through an open meadow into the forecourt. The drawing rooms of the house face in a southerly direction, looking out over meadow land, practically unplanted, toward the sea where the Isle of Wight is visible on clear days.

It is very difficult to suggest the plan or organization of the place, for although I was there from Saturday until Monday morning, I did not walk twice over the same territory and practically all the daylight hours were spent in walking over the estate. Let it suffice to say, therefore, that the house and service units are close together relatively near the entrance; that the drawing room and library look off over meadows to the sea; that the dining room faces a small formal garden; and that the service side of the house abuts the garage court. Beyond the garage court lie the greenhouses and frame yards which are similar to those of any big estate, save that here most of the houses are built of teak wood so that there need be no painting. They also include a wide

span greenhouse, with relatively little head in which all the absolutely tender rhododendrons are planted in beds. Some other plants are included as well but the general effect is of rhododendrons. The vast portion of the estate lies opposite the entrance court so that if one were standing in the main entrance door looking out, he would be facing a wide meadow bounded by plantings with forests beyond that shelter the rhododendron plantings.

The only bit of rhododendron planting that is really old is a portion belonging to the old house which abuts the meadows commanded by the drawing rooms. This is more beautiful than much of the remainder because of its age, but it is by no means so important horticulturally as the newer plantations. It can be described best as a grassy strip with trees and shrubs in a thick belt on either hand. The native oaks and pines of the region have been supplemented by various coniferous trees which are collected by most British estate owners, conspicuously in this case by handsome cedars of all three species. Ordinary rhododendrons and the older arboretum hybrids, Chinese magnolias, some of the Chinese species rhododendrons, particularly R. augustini in selected color forms, fine masses of Viburnum davidi, Ruscus aculeatus, various sarcococcas, Kurume and ledifolia azaleas, camellias, Viburnum tinus, and similar plants are the features of this area, with many flowering trees and conifers of various ages in the general planting.

Through the rest of the acres and acres of plants there is a general monotony that comes from newness and the too general planting of material of one age and size. This is the only criticism that can be levelled at this admirable undertaking.

If one crosses the lawns from the entrance court, his progress is stopped by shrubbery borders that mark the edge of the woodlands. If he turns to the right, he comes soon into the space given over to the collection of deciduous trees and shrubs, a collection that reflects the owner's interest in numerous collecting trips from the Orient, but which is entirely cosmopolitan nevertheless. A small set of very poor specimens of American hickories were pointed out with particular pride.

The purpose of the collection seems to be the es-

tablishment of a group that will be entirely comparable to that at Kew and will from its different location give entirely different readings on the behavior of plants. As far as I could discover, however, there was no special program by which the data gathered would eventually be made general public property. Through such house parties as this one, the information goes to other collectors who keep in close touch with one another and exchange materials. Through common discussion at council meetings of the Royal Horticultural Society it has further private dissemination. When data enough have seemed to accumulate, or when the rich owners get beyond their depth, some technical worker may be called in, either as in Mr. Bean's case, to make an inventory of the Exbury plants, a modern Hortus Exburiensis, or to write up a genus as Dr. Schneider has been commissioned to do by the Royal Horticultural Society, for the R.H.S. and this group of rich amateur collectors are largely one and the same thing, a relation that is cemented by the fact that the R.H.S. council, essentially this group, meets every Tuesday for practically the entire day.

These gardens also provide the specimens and observation grounds that yield data for such works as the late J. B. Millais' "Genus Rhododendron."

This group and their gardens, similar to Mr. Rothschild's, also furnish the nucleus of material resulting in the Rhododendron Society, a society open to general membership, and the Rhododendron Association which is really a private clique that largely controls and finances the collecting trips of Ward and Forrest.

Returning to Mr. Rothschild's place, one can only describe it by the word colossal. The species are grouped by their botanical divisions. Most of the plants are still too young for flowering, for with many of the plants ten to twenty years must elapse before flowering is complete. Wherever the soil was used for planting, as much care as was needed was given to make it ideal for the plants. This varied in different portions of the place, for there were some natural deposits of leafy soil as well as some well washed hillside that showed the poorest gravelly soil under oaks.

The section given over to deciduous azaleas showed the very favorite and common practice of mixing them with a collection of Japanese maples, the colors and leaf patterns

of the maples contrasting well with the naked azaleas at flowering time and adding variety to the foliage masses thereafter.

A specially constructed rock garden was prepared, at great cost, of red sandstone from Wales. The stones are enormous and in the present stage completely overshadow and dwarf the dwarf rhododendrons planted in it. The rocks are set extremely well. One enters as through a deep rocky gorge and comes out into an open area with a lower rocky central portion. Almost none of the plants here are large enough to make much show and suffer decidedly by lack of neighbors. All are spaced as for their actual future development which will be tangled and interlaced mats. It seemed to me that it would have been wiser to have planted more plants and thinned later or to have combined other plants in the planting. The latter scheme would have produced a whole, not in character with the Chinese original but certainly of more value in setting off the beauty of the individual species which in any case must be looked upon as exotics in Great Britain. For my own part, I should certainly have used some conifers - junipers and yews - and some plants with really broad foliage as a relief from the masses of small leaves and tiny flowers. The same argument could be used for flower color for the majority of the plants of the Hippophaeoides Section have flowers of rather dull lavender and purple that could be much set off by their neighbors.

In the propagating sections I felt that there was nothing of improvement in the handling of seeds and seedlings save perhaps in the older stages where 3 inch or 4 inch pot plants were plunged in screened cinders inside of yard frames for which there were rolled lath shades. The question of course arises at once if cinders as plunging material might not be too hot in this country.

May 11

I left Exbury in company with E.H.M. Cox, editor of New Flora and Sylva, whom I had met in America in 1929, and was motored by him to London, stopping en route to see Captain Dalrymple at his Bartley nurseries in the other side of Southampton. Mr. Dalrymple has become famous for the work he has done in developing a special strain of Primula pulverulenta, known as the Bart-

ley strain, and for his work with colored freesias.

The primulas really represent a slightly hybrid race in which P. pulverulenta is the dominant member. The other contributing species probably are, or were once, japonica, bulleyana, cockburniana, and possibly beesiana. At the present time only selection is practiced and is practiced more as rogueing than as selection since the strain is propagated from seed and the poor colors are removed at flowering time. The colors saved run from pale chamois to deep salmon pinks and plants showing the typical meal or farina of P. pulverulenta are the only ones saved.

I have no information as to the original sources of his strain of colored freesias. Presumably they all go back to Max Leichtlins' original groups, but the practice of private exchange among amateurs and gardeners in Great Britain is very complicated. Further evidence of this was noted in Holland where Mr. Hoog of Van Tubergens told me that many of the species crocus forms I had understood were selected by Mr. Bowles had really come from them. At any rate, from whatever source they may have come, Mr. Dalrymple now has an excellent collection of color forms. Although no inquiry was made as to the reasons, there seem to be two very distinct races, one with much smaller flowers in the forms that have red and orange-red colors as compared to the larger flowered varieties in pale pink, lavender, pale yellow, and tinted white.

The nursery is relatively small and is attached to a large bit of ground laid out in a most unusual fashion with ten to fifteen foot grass walks through open woods, mostly of white birch. Much of the space under the trees was given over to beds largely planted to shrubs but with enough herbaceous material to insure later flowers, although the whole design would have been quite excellent if merely in green slopes. Azaleas were just going by their best at the time of our visit - Kurumes in some parts, but with a very poor selection of varieties and deciduous azaleas, so-called mollis hybrids elsewhere.

The only rare plant ordered here was Disanthus cercidifolius which is not to come over until the spring of 1932.

May 12

With Mr. E.H.M. Cox and in his car, I made

trips to Felbridge and East Grinstead.

At Felbridge we visited Mr. F. W. Millard who has a most unusual establishment. Mr. Cox suggested that I go there since he believed the conditions of soil and climate as nearly approximated mine as any in England. Mr. Millard confirmed the temperature range for cold but not for heat, but neither he nor Mr. Cox had any conception of the amount of bright weather.

The property bought by Mr. Millard was originally a bit of swampy land. It has been drained and levelled and so worked that the black bog soil, though still acid in reaction, is arable and fine. The plot is rectangular in shape, perhaps 75 feet in width and 250 feet in depth. One enters by the drive from which a path branches on the left to reach the house door. All the lawn is higher than path and drive so that there are dry walls to hold up the difference in grade. These are full of blooming plants, rock garden species or small perennials, as opposed to the choicer alpines.

Behind the house is a level yard that runs across the property on which are raised bits of rock garden of most carefully prepared soil and underdrainage all with portions constructed on the plan of the so-called moraine or scree.

Immediately behind the house this area is bounded by the work shed behind which is a small greenhouse, figured in New Flora and Sylva for October, 1929, page 57, in which Mr. Millard gives some details for growing on alpines from seed. The rest of the place is given over to plots where mother or seed plants are grown and to larger areas where lining out stock is grown on. The amazing thing of course was to see the rows of Gentiana sino-ornata like green cresses in fifty-foot rows of solid verdure.

Mr. Millard insisted that the essential factor on which success depended was the soil mixture not only for its acid or lime reaction but for its draining powers. The essential qualities of a good compost seem to be the proper balance between the retention of moisture and quick drainage to prevent sogginess. In the out-of-door work this is achieved by the addition of coarse sand or fine crushed rock to the mixture. In potting soils for small stuff, Mr. Millard uses finely crushed brick so that the potting soil is dotted through with bits of red, giving a most amusing appearance.

After lunch we went on to Mr. Ingwersen's nursery beyond East Grinstead (R.R.Station, Kingscote) on property belonging to the estate of Wm. Robinson.

This nursery is just as different from Mr. Millard's garden as possible. It is on a hill slope that, to my eye, seems too steep for economy and surely would be if it were not possible to get so much hand labor. One drives up a steep hill and comes out in the foreyard of the cottage with a small display nursery rockery all about, informal or naturalistic to the right (still under construction) and formal, simulating dry walling, on the left.

Immediately below this dry walling is a long and narrow terrace with ten frames and three small houses - one a cold house for alpines in pots for exhibition showing and the other two merely roofs to shelter benches full of small alpines in pots for sale, the choicer things or hairier species that can not be left out in all weather.

Below these terraces were others with Dutch beds of the coarser plants and below that the general slope of the hillside with small conifers and coarser perennials.

Another fairly large rock garden is in process of construction along one of these lower slopes and will be a rather imposing affair when complete. It is being built in naturalistic style and shows a rather clever use of rocks of moderate size combined to build up ledges which rise up and through the mounded up soil. In so far as I could discover, this rock garden built on a natural slope with fine natural drainage had no underdrainage of stones provided. The only additional drainage was given in the nature of the soil mixtures in the upper layers, between the rocks, the ledges, etc. This is sufficiently gritty and porous to make it impossible for stagnation to rot off the crowns of plants in it.

Mr. Ingwersen and his son are both ardent plant collectors and have been more or less over the entire alpine district in Europe but have not gotten over into the Caucasus. That is to be the last trip of the senior Mr. Ingwersen, dated some time in the future. B.Y.M. asked if he, an American, might go on such a trip and was most cordially assured he would be more than welcome. Mr. Ingwersen has also been on collecting trips on some of the Mediterranean islands.

The son has paid particular attention to the collection of European species and natural hybrids of primula and has many in his collection. For the most part these are not garden flowers for the layman. Even in England most are grown in pots in the open alpine house.

As a result of these special interests, the Ingwersen nursery has, in addition to its general stock of useful garden and rock garden plants, an additional population of species of unusual things which lend as much distinction to the place as the owners' characteristics set them apart from the usual nurserymen.

May 15

Mr. J. B. Stevenson of Tower Court, Ascot, whom I met first at Mr. Rothschild's, asked me down to see his planting of rhododendron species. In company with Mr. Edgar F. Stead of New Zealand and Collingwood Ingram of cherry fame, we went down to Ascot in the early afternoon, returning next morning.

The place, which is moderately large, is a tract of very uneven land, mostly wooded, with sandy peat ridges and low-lying strips between running down to almost bog soil. Ditches have been put through the wettest places to insure movement of soil mosture. These flow into a small lake.

One enters from the main highway by a steep and curving drive and comes out in a small courtyard before the house which is located on the highest ridge on the place.

All the area between the house and the main highway is wooded, with thin stands chiefly of pine but with some oak and other deciduous trees. The little greenhouse and work yards are here, as well as the gardener's cottage, but there is little planting as yet as this is the last area to be worked on.

All about the house is given a rather usual garden terrace treatment. To the right of the house as one approaches, but hidden from view of the entrance court and visible only from the drawing room windows, is a long green terrace with a central grass panel and formal rectangular

beds right and left. It is enframed by the trees that grow up from the surrounding valleys but has a fine view over the surrounding country by the fact that an opening has been made in the trees at the far end of the garden. Immediately before the house the terrace is very narrow, scarcely more than a broad gravelled walk and a narrow bed that parallel the long house facade. From this steps go down to a second terrace walk from which radiate down the slope, as fingers from a hand, various 6-10 foot paths. Each path has a different planting on either side and the gardens formed by each path and its distinctive planting are separated from each other by evergreen shrubberies.

At the time of my visit the most conspicuous of these long vista gardens was that in which were great masses of Ghent, mollis, and japonicum azaleas in all shades of color from palest lemon or ivory white to deep burnt orange and orange-red. As most of the bushes are fairly old and well established, there was an admirable display. This section also contained many clumps of lilies, notably magnificent clumpsof Lilium auratum var. platyphyllum which everyone in England seems to consider the most dependable and permanent of all the auratum varieties.

The garden containing the Japanese species of the Tsutsuji Section was much less showy than it might have been in our own country as the Japanese azaleas of this group, with the exception of R. mucronatum G. Don and its allies, do not ripen their wood sufficiently in summer to be able to withstand even 10° frost in winter. As a result the horticultural forms of Kurumes are poorly represented in England. Forms of R. mucronatum are few and poorer than here. Forms of the plants known in trade as Azalea macrantha and S. macrostemmon grow fairly well but do not flower so freely.

For me the most interesting plant in this group was a single specimen of R. tosaense and several specimens of R. weyrichi. In garden aspect the former looks very much like a moderate-sized specimen of Kaempfer's azalea, with flowers like a small pale pink Kurume. As they are abundant the plant makes a fine show but is not conspicuous or outstanding on closer observation. R. weyrichi, on the other hand, is not a striking bush as grown here but has brilliant flowers and it may be that in another climate it would be better. As it is native to Korea, I am anxious to try it here and have made arrangements to obtain plants from the Sunningdale Nurseries

in 1952. It resembles, as seen, a rather straggling bush of Kaempfer's azalea with larger but similar flowers, differing chiefly in a purplish flame on the upper lobe. The startling contrast of this blotch on the salmon-orange of the bloom is remarkable.

The other particularly interesting feature of this place is the series of small nurseries where seedling rhododendrons are grown on after their removal from the transplant flats. All the nurseries are under trees that produce high overhead shade and are closely planted in the row and in the distance between the rows. No special variation was given in the nursery treatment over our own practice.

The special pleasure in seeing Mr. Stevenson's nurseries was the sight of numerous finely grown specimens of the rhododendrons raised from Rock's next-before-last shipment of seeds. It was generally conceded among the rhododendron enthusiasts that Mr. Stevenson had more than anyone else, a fact that may be due to the fact that he has done more expanding of his collection in recent years than some of the other growers and still has more unoccupied territory. The plants were in their second and third years in the nurseries and were to be moved in part into their permanent positions late this summer if large enough.

Much less beautiful in effect than the various naturalistic groupings is the little area set aside for the planting of species according to botanical section. This area is in a secluded little valley between the entrance road and the ridge that contains the formal garden. It is completely hidden from general view by deep and wide hedges of ordinary English laurel. At the time of my visit chief interest of bloom lay in the plants related to R. yunnanense, all of which form tall, somewhat open but not ungraceful shrubs up to 10 feet, literally smothered with bloom. They are more or less evergreen but the open habit and the small size of the leaves give a much lighter effect than is obtained from most evergreen species. With the exception of R. vanthinum which is a very trying dull mulberry-purple color, all are beautiful pale lavenders and tinted whites. Each species varies somewhat, within its own limits in all plant characters and only the best forms are being propagated, rather slowly and not too certainly, by cuttings of half ripe wood to selections of R. augustini to secure the forms of the bluest tint of lavender. These, unfortunately for us, are least hardy to cold, and like all of the section start into growth so

early in spring that the new shoots are sometimes killed.

May 14

A general inspection of the outdoor plantings and collections at Kew.

This is the season when one finds most flowers of the earliest species of Ranunculaceae and Cruciferae. The earliest phloxes are full of flowers, and there is a fair scattering of early bulbs, particularly scillas.

In the rock garden the gray-leaved plants are almost as conspicuous as flowering plants since their new growths are grayer than they will appear later. Noted specially antennarias and achilleas. There are several good species of dwarf astragulus, not rampant like the species showing later on; the earlier erodiums have commenced and some of the geraniums. Ixiolirion very showy. Tulip species beginning to go by. Excellent specimens and clumps of Iris bracteata, missouriensis, montana and tenax but rather poor clumps of dwarf bearded species and varieties. Bedding tulips, earlier and Darwins and their under covers in full glory. Azaleas, both Kurumes and japonicum and mollis varieties beginning but no signs of Ghents. Trees in leaf at last.

Hyacinthus haekelii. Makes a charming loose clump like a squill with a spike something like Scilla campanulata but loose and more open with dull white flowers that fade to a warm brown. Scent somewhat like clover.

Scilla verna. There was only one clump of this that I saw and this was in the rock garden. The flowers were more crowded in the head than most scillas, suggesting the inflorescence of some of the ornithagalums. The other particular characteristic is color, a curious pale blue of slightly greenish hue.

Tulipa korolkowi var. concolor. 14 inch orange-red, just over.

Tulipa kuschkensis. Resembles an erythronium.

Tulipa linifolia. A very delicate small species with slender parts and starry flowers of a lovely glowing salmon-red color.

Tulipa primula. Very dwarf, very lovely, with an open starry

flower.

Tulipa whitalli. One of the largest forms with flowers of curious color, a mixture of green, brown and red that is scarcely beautiful.

Rhododendron mariesii. Labelled as having come from Vilmorin, is another species I have wanted to see. Here it forms a dwarf, somewhat spreading bush like that of R. yedoense var poukhanense but with leaves almost as broad as those of R. dilatatum. The flowers also resemble poukhanense but are a deeper, somewhat rosier color.

The fern collection at Kew is interesting as the British are much concerned with frond variations, cresting, and all that sort of thing. No record was made of species nor of varieties, but it was noted that many plants were combined with them to give color and interest. The earliest pictures were made by Fritillaria imperialis and early squills. Later the varieties of Scilla campanulata, Narcissus poeticus, mauve rocket (Hesperis matronalis), made the main effect, together with the weedy Allium paradoxum; Lillium candidum was not happy but there were some successful flowers of L. superbum later on.

May 15

Kew - Miscellaneous observations.

The only muscari used commonly here is Heavenly Blue and that is most frequently planted as ground cover under pink-flowered crabapples.

Anemone apennina, blanda, and nemerosa are also common cover plants, often in grass as well as alone. The last is very good in moist, shady woods, the other two seeming to like a little more sun.

The coarse scilla used in deep or orchard grass is always Scilla nutans and not Scilla campanulata. Daffodils for deep grass are the older contemporaries of Emperor.

Triteleia uniflora. Used somewhat as a ground cover in shrubberies.

The hedges of English holly bounding the rose garden have grass up to their feet save for a six inch earth border, filled in one case with an old line of narcissus, Mme. de Graaff, in another with Will Scarlett, and in another with Lilium candidum. The rather opaque beauty of Will Scarlett had an unusual setting here that also augmented the profile of the flowers by the dark background.

Pink-flowered forms of Erica mediterranea are in full bloom and their fragrance is of the type that is borne on the air.

Wallflowers used as bedding to flower before the tulips develop are also plants that perfume the air by their scent, a fact doubly interesting as many plant perfumes are not far carrying in cool weather. Occasionally polyanthus primroses are mixed with the wallflowers.

Amelanchier and laburnum are the common, small, flowering trees of evergreen borders, used much as we might use dogwood and redbud here.

Prunus pissardi and flowering peaches are often combined in one planting as the soft bronze leaves of the former make a good setting for the pink and crimson peach blooms that appear later. At Kew these plantings are often set on open lawn so that light can shine through them, but so arranged that one can see them against a somewhat distant evergreen background.

Berberis stenophylla is probably the commonest barberry at Kew and is planted both in some trimmed hedges and as free-growing masses which are usually about 8 feet high with billowing showers of slender branches loaded with deep yellow flowers. Buds are just coloring now.

Chinese magnolias and crabapples have usually been planted where there would be evergreen backgrounds, while Japanese cherries are in an open grove.

Aucuba, holly, ivy, holm oak, cherry laurel, privet, and laurustinus are the common broad-leaved evergreens. Rhododendron ponticum is fairly common also. Viburnum rhytidophyllum is too much injured in winter to be used for much beside wall decoration. Magnolia grandi-

flora also is poor except on wall. Some of the California ceanothus, semi-evergreen and evergreen, are as good as shrubs but so far are not showy in flower.

All ivy on walls is severely pruned in late March or early April, so much so that often all leaves are cut off. In this way a dense mass up to 10 inches deep is formed over the whole face.

Spirea bumalda. Anthony Waterer is winter killed here to ground level, so is treated as we treat buddleia.

Roses, chiefly hybrid teas, are pruned to 6 inches of ground. Saw much evidence of canker. Pruning is finished by late April, which is the general month for shrub pruning. All wall shrubs are pruned then to keep them in bounds.

Pyracanthas on walls and elsewhere are practically berryless due to birds.

Cotoneasters are not much used on walls.

Ceanothus, hybrid sorts, are used for bedding and when so used are pruned as severely and similarly to hybrid tea roses.

Conifers. Yews in the collection are magnificent, particularly all the forms and varieties of Taxus baccata. As grown in ordinary yards, however, they are little better than here in Washington, D. C. Apparently all should be sheared regularly to keep them compact and well covered with foliage. Japanese yews are not so good here. Irish yews, in the avenue, excellent, though much smaller and younger than most that I saw in Ireland.

The common retinosporas have been allowed to develop into trees without shearing with the result that they are as thin and open in growth as if they have been grown here. Not impressive.

Tsuga canadensis rather poor but Pacific Coast species excellent.

Cryptomerias good; Sequoia gigantea excellent; and S. sempervirens of good size but badly winter damaged.

Sheared specimens of live oak are excellent,

almost as good as bays.

Berberis verruculosa is the best of the evergreen berberis here, excepting stenophylla and darwini. There seems to be a fair amount of hookeri, some julianae, but almost no sargentiana. Soulei grows well but burns badly.

There seems to be a general practice of growing plants that winter burn or start to grow too early in spring on a western exposure or even a northern exposure.

Great care seems to be exercised to have young trees of new and old species planted among the existing and established trees. This gives a very naturalistic effect and serves as a guarantee against total loss of any one species. It was impossible to determine the minimum number kept of any one species. However, when any tree was to determine the particular effect or to dominate one section of the garden, any number that might be necessary was used. Curiously enough when trees were planted in formal lines, as in the long vista toward Sion House, the lines were not absolutely uniform, for there in the avenue of live oaks there were occasional deciduous trees.

There seems to be a tendency to produce trees with low crowns, probably due to nursery practice.

Brooms, particularly Kewense and beani are used as under plantings for tall shrubs. C. praecox often appears in beds by itself.

Rosa rouleti, much discussed as a rose for rock gardens, seems a poor thing to me, like a stunted Hermosa that had trouble with growth sending up endless thin shoots like some of our seedling Helenae crosses.

Grass cutting at Kew. They use power mowers and rollers for all the major areas, the vistas, the paths through meadows and woodland. Vistas are usually at least 50 feet wide, wood paths 10 to 15 feet. All rough areas are cut by scythes and the tall grass is cured for hay or compost, either where it falls or is dragged out into the sunny mown paths.

No public vehicles are allowed in Kew and carts are used chiefly for park work although there were several trucks. Since this is so, there is no system of roads as we should build them for an American park. The main paths serve as cart roads and are chiefly gravel base with some asphalt and fine gravel surface. There are relatively few gravel paths.

Don't know grasses well enough to tell what makes up the lawns but there are several grasses, quantities of Poa annua, dandelions, buttercups, Bellis, and grasses that look like rye grass, orchard grass, etc., as well as bluegrass.

If any criticism can be levelled against the solid tree masses, it would be that their total mass was rarely high enough for the distances in the vistas. This is in sharp contrast to the chestnut avenues planted by Wrenn at Walton. There the trees (horse chestnuts of course) are of such great height that they keep the scale of the long axes. The only trees at Kew that are really tall enough are the oldest beeches.

As a general rule, pines, abies, and picea are not good at Kew due to poor soil and smoke-filled air.

Bamboos in their garden, which is in a most sheltered nook inside a wood, lying just off the rhododendron dell, were severely burned this winter, quite as much as ours at Bell, Md. The surrounding woods are beech and some oak and the site is a slightly sunken bowl-shaped hollow, but higher than the lowest part of the Rhododendron Dell. There Sasa forms are poor but those labelled Phyllostachys are better, giving large clumps and taller canes than ours. I imagine ours should be moved to a position where they will have some winter shade, even from deciduous trees, and believe we should try more of the clump types if possible. None are used at Kew as ground covers.

The nursery for trees and shrubs has several heated greenhouses, heated pit houses, frames, and frame yards. The entire area is enclosed by a 10 foot English holly hedge and is subdivided within the yard by other hedges. The beds in the yard are used for lining out plants in their second year, and are prepared as for garden planting, being planted and cultivated entirely by hand. Outside of this area and adjoining it is the

stable yard and also the yard in which much of the composting is done of leaves and vegetable refuse.

The areas for propagation of tender plants and alpines are too separate areas nearer the museum and office buildings. They are walled in by brick walls and are not much subdivided by having more glass. All uncultivated areas are covered with crushed cinders and are immaculate.

In the propagation houses one finds in addition to the usual beds of sand, sand and peat, peat beds that are kept untouched for about 3 years. As far as I could tell the peat was always loose in the bed and about 8 inches deep.

Cuttings in cutting beds were much closer together than ours at Bell both for distances in rows and between rows.

Cunningham's Sulphur and White are the common stocks for rhododendron grafting here at Kew. They are propagated from cuttings which callous and root from the callous and not along the stem as azaleas do.

Rhododendron seedlings are not handled, "kept moving", as quickly as ours and are slower coming on, a practice explained possibly by their limited quarters.

Australian and New Zealand plants, destined finally for dispay in greenhouses, were kept in double frames which have one flow and one return pipe. There is little evidence of shading although there is some whitewash on larger houses.

The herbarium is outside the garden proper and has the usual herbarium look. Library ditto! British woods only in wood museum. Another museum for exotic woods.

May 16

Office

May 17

Sunday

May 18

Conference with Miss Isabella Preston, of the

Central Experiment Station, Ottawa, and general discussion of our similar projects.

May 19 - 22

Chelsea Flower Show. Through the courtesy of Mr. Lionel de Rothschild, I was given a pass to see the show before its official opening on May 20. This proved a somewhat dubious favor as practically everything was closed on account of the visit of the Queen and Princess Mary.

The entrance gate within the hospital grounds admits one to a long avenue lined with small booths showing trade exhibits of mechanical and industrial nature, flower pots, labels, artificial paving stone, fencing, pruning implements, etc., etc. - a truly hideous assembly.

At the first cross path the horticultural parts begin with plant displays replacing the former exhibits, the big tents in the area to the right and open air displays of gardens to show landscape styles on the left.

If one continues on the main entrance path to the farther end, he comes to an exit and finds also on the right the area given over to permanent rock garden exhibits that are refurbished with new flowering plants for each exhibit.

At the outset it should be made clear that Chelsea Show is a trade show with very minor attention given to "New and Rare" plants and that it has also a "social" setting in that it is financed largely by "the gate". Prices of admission to non-members of the R.H.S. vary according to the day and the time of day and it is a well known fact that many outsiders pay the highest rates to see the show in the hope of seeing and being seen with the supposedly distinguished persons who go then.

There are two main tents, the smaller of which is given over to roses and orchids and the larger to general materials from fruits, shrubs, and trees, through all phases of herbaceous material to rock garden plants. Everything is for sale except some material from exhibits from private estates and sales representatives are always present to solicit your patronage. Everything is crowded,

both exhibits and paths between. One showing frequently kills another. The most attractive thing about it all is the diffused light of the canvas top and the relatively cool temperature that keeps the plants in good condition.

Exhibits take two main forms. They are either arranged directly on the ground or are on staging. All the areas about the wall of the tent were on staging and most of those in the center were on the ground but not all. One got no vistas through the tent, over the heads of the people, especially as there were almost as many cross alleys as there were main alleys.

Nearly all the material shown was forced material, which worked to the advantage of some things and to the disadvantage of others. The general impression I had on entering was of a sea of superb flowers set up in beautiful condition. The longer one remained, the less he admired the total effects.

This year the feature which attracted most attention was the exhibit by Sutton & Sons, which occupied two units. The first appeared to be a huge sunken grotto, that I was told was made of concrete over wire netting - a deep hole large enough for an elephant's grave, headed at one end by a towering mass also of concrete. The entire surface of all this was masked by a deep covering of moss, somewhat like our sphagnum. All over the "grave" at regular intervals were dotted superb specimen plants of a fine strain of gloxinias. The mossy headpiece was decorated by huge specimens of trailing scarlet begonias. Tree ferns and palms were amply provided and all one needed were a flight of white doves and a little soft organ music to complete the picture made by the exhibit and the hushed and wondering crowds. The adjoining unit was filled with groups of superb potted specimens of the best strains of schizanthus, cineraria, calceolaria, nemesia, clarkia, etc., with more ferns and palms.

The various gardens of iris, of lilies, of roses, of rhododendrons, of mixed shrubs, the exhibits of sweet peas, carnations, of late tulips, (Darwins and cottage) of peonies, of lupines, all suggested the usual exhibits that we know.

The rock garden exhibits inside were usually on tables with little rock work and small potted plants

sunk in peat moss that was hidden by real moss or by pebbles. There was almost no attempt at naturalistic effect.

The other main tent was given over to the rose and orchid exhibits, neither of which was so large or so fine as what had already been shown at smaller R.H.S. shows.

The small entry tent to the large rose tent was given over to the exhibits of new and rare things for the attention of that special committee of the R.H.S. Aside from Diervillea middendorfiana, a primrose yellow weigelia and some hybrid brooms, Hibernia, C. F. Pearson, Queen Mary, and Lady Moore, there was little of interest for me there.

Two other exhibit units were given over to a small and distinctly second rate exhibit of landscape architects work and to a series of flower paintings. The latter were mostly in water color, a favorite and distinctly English medium, and contained many lovely things.

To the visiting American, there were several points of great interest at the Chelsea Show. One is immediately impressed at the general public interest as exhibited by attendance and by the type of newspaper reports on the plants, stressing first the plant interest and second, if at all, the human interest of exhibitors and prize winners. He is next impressed by the apparently large number of intelligent visitors, not so many as the violently pro-British amateur would have you believe, but still considerable. He notices at once the greater varieties of plants that are brought up for exhibition, a variety that can not be explained away wholly by the British climate. And he notices also how many special strains the different nurserymen have developed.

It is the last feature that has made the most tremendous impression on the writer of all the fine points observed abroad. Nearly every amateur and professional in Britain who sows seed, and people there are interested in raising all sorts of plants from seed, immediately begins a practice of selection. There is far more done by selection than by hybridization, for in many cases the

amateurs have in addition to their personal selection, the benefit of open or chance pollinations. Selection once begun is carried on for years, the aims varying a little from time to time, or dividing and increasing. The results can hardly be estimated. If concrete evidence is needed one can turn to the American genera of phlox, aster, and helenium, all of which have been remade in Europe and returned to us. With the present active interest in American plants from the Rocky Mountains and the Pacific Coast States, it would be well for some Americans to get to work before the British do all that is to be done.

Another interesting feature of such shows and gatherings is the interest the general public shows in the geographical origins of plants. This is particularly true in the plants grown for rock gardens and arises from the fact that many of the people who are interested in these plants arrange all of their holiday times as collecting trips, some in England but mostly on the continent.

May 22

Instead of going to Chelsea for the last day, when there would be the greatest press of people, and flowers in poorest shape, I went to visit the Sunningdale Nurseries at Windlesham, Surrey, which I had been told by Mr. E. H. M. Cox was the best place to buy species rhododendrons since the owner, Mr. H. M. White, received most of his seed directly from the group of amateurs who finance the collecting trips in the Orient. The nursery is interesting also from the fact that it used to be Noble's Nursery and was famous years ago for the Indian azaleas and camellias that were chief ornaments of conservatories in the early 80's.

The nursery lies at a considerable distance from the railroad station and occupies a tract of rather low ground below the main highway. Apparently the entire tract was wooded with pines at one time, but this has been cleared from the major portion and exists now chiefly about the house and offices, which are small and of poor quality. There is no greenhouse and only the most rudimentary frame yard. The general impression is that the place is slovenly and illy kept, but the fact remains that innumerable plants of the finest quality are produced here every year. The principal difficulty at this time of visiting was the fact that the spring crop of grasses and weeds had not been clear-

ed from the ground owing to wet weather. (A later visit found the place immaculate.)

The natural soil of the pine wood is a sandy, gravelly base much like that at Mr. Stevenson's, overlaid with a peaty layer. This is thoroughly mixed and dug over for the commercial beds, to which are added also annual dressings of composted leaves and peat. The plants are set closely in rows and the rows are set from 10-24 inches apart according to the size of the species, i.e. the dwarfs of the Hippophaeoides Section are crowded together and the larger species, as of the Barbatum series, are given more ample room.

The other areas of the nursery have more usual stuff in rather common sorts.

One feature of the place is the large area given over to mound layering of deciduous azaleas of the mollis, japonicum, Ghent, occidentale types. This area is at the lowest part of the gardens, is peaty in character from the constant annual additions of peat soil to the original sand, and is moist but not boggy. The old plants are now some three or four feet in diameter with dozens of shoots due to the repeated cuttings.

Assuming that a stock plant is to be made into a mother plant for mound layering, it is first razed to the ground and induced to send up as many shoots as possible. If there is time, these are again cut down and an even larger number of shoots sent up. As soon as these are somewhat hardened, possibly mid-June in a normal year, the entire bush is given a mulch of six inches or more of finely composted soil made up of decayed leaves and coarse sand, a mixture such as azaleas would like to grow in, which is worked thoroughly through the entire crown of the plant. Here at Sunningdale there is no occasion for artificial watering, but such plants must be kept moist though not wet.

There is nothing to hasten the process of rooting, which normally takes two years. At the end of that time, by careful working, it will be found that each of the young shoots has rooted in the layer of mulch and can be cut off from the old crown as a slender stalk with more or less roots attached. These rooted shoots are then lined-out in much the same position as one-year rooted cuttings might be and are grown on for sale, none being sold without at least one year of field culture.

The great advantage of these own-root plants is that they are never outgrown either by Rhododendron luteum or seedling azalea stocks, the common commercial stocks for this type of plant. In case of some of the less vigorous sorts there is, of course, the disadvantage of the lack of the vigor supplied by the more vigorous stock roots.

The same evening I went from London to Kemsing in Kent for the week end. The estate of Sir Mark Collet III is small and not noted for its gardens, but is interesting to visitors since it is "on chalk". He specializes on iris, having in addition to a large collection of bearded iris, many bulbous, oncocyclus, and regelia species.

These are grown in a special garden at some distance from the house. The collection of bearded iris is planted in a series of raised beds. Through all the soil there are bits of chalk in various sizes, although great quantities have been removed through the years when the site was a vegetable garden. In spite of all this, most of the plants are distinctly yellow, as if suffering from a chlorosis similar to that affecting Japanese hydrangeas when grown in too limy soil.

The bulbous iris, regelia, oncocyclus species and some of the California bearded kyurius having mesopotamica blood are grown in an elaborate house open on the sides and without heat, that can be used to induce summer baking of the rhizomes and bulbs. In spite of all this the plants were only in good, not unusual health.

May 23

From Sir Mark's garden, and in spite of continuous drizzle and occasional downpour, we visited two gardens. First we saw the garden of Mrs. Roger's where we were shown fine rhododendrons much beloved because of their southerly location and proximity to chalk soils. It should be noted, however, that all chalk was well under and that the plants were in location that provided for drainage away from the plants. There were no unusual species.

The second garden was that of Mr. G. P. Baker at Kippington, near Sevenoaks (Kent.) This is a relatively new place as Mr. Baker had to leave his old garden. It falls into two parts, the alpine and rock garden, and the iris garden. Immediately behind the house is a broad terrace a few steps above a rectangular and level lawn bounded on all sides by the perennial borders. The areas to the left are given over to the rock garden, while immediately beyond the area are the iris rows and beyond them work areas, while on the lowermost slopes are bog and rock garden areas. There is little space on the right of the plot and that is given over to kitchen garden.

The rock garden was built by Mr. Dillistone, but I was unable to discover whether the design was entirely his or a combination of his ideas and Mr. Baker's. Mr. Baker is an ardent mountain climber and collector of alpines.

It follows the same sort of planning that is found in most of the larger rock gardens, essentially that of rocky valleys, curving in such ways that various exposures can be given: widening out in places to admit of fair-sized gravelly "moraines" and narrowing at other points, so that some portions are almost completely in shade. This arrangement is one that gives ridiculous looking curves and paths when drawn to plan, but is admirable in its working arrangement. The masses of rock also are arranged in varying amounts so that there are much greater elevations in some parts than others. This is largely a concession to pictorial effect, since the plants themselves, with the possible exception of genera like Ramondia and some sections of Saxifraga that require planting in crevices in rock faces, will all grow in a fairly level rock garden such as Mr. Millard has at East Grinsted. To offset this, it is necessary to resort to artificial watering at times, in spite of the English climate.

In this particular case there is a system of pipes that runs underground following the backbone of all the ridges from which hidden laterals extend in all directions and barely project beyond the rocks. These are fitted with nozzles that produce clouds of mist.

As a result it is possible to alter the character of the atmosphere whenever needed by turning on these artificial fogs, and since all the soil mixtures are of

free-draining character and the whole garden is built over a sub-drainage system, there is no opportunity for over saturation.

No record was made of what Mr. Baker was growing, as that would merely result in a great catalog of alpine species.

The more interesting features of the gardens are the work areas, a small unheated greenhouse for potted alpines and small bulbs that need additional drying in summer. The frames, both the ordinary sorts and a series of deep frames built over 12-16 inch foundations of cinders, used again to induce complete drainage in summer, at which time the sash are returned to their places to increase the heat from whatever sun there may be.

May 24

Although Sunday, the day included a trip to Scotney Castle, Lamberhurst, Kent, a private estate of more interest historically than horticulturally. After passing through a narrow entrance lane, one arrives in a large open court, bounded by the house, the servants' wing, and walls. Passing through the house one comes out on a long rectangular terrace, almost unplanted, that parallels the long facade of the house and commands views out over the valleys of the property - now largely given over to pasturage.

The valley leading down from the south end of the terrace, however, includes a bit of a quarry, now disused and incorporated in the garden, and ends in an open space where is situated the site and part of the remains of the old original castle, with its moat now widened out into a pond-like sheet of water. There is practically nothing of interest among the plants save the old rhododendrons that are very large and well-flowered, although of poor quality from the modern point of view.

The quarry has been allowed to grow up in a semi-wild state with little or no planting. As compared to the made rock gardens, it is not one. The effects are of the simplest sort with large masses of small trees and shrubs

coming up on all sides and practically nothing in the way of herbaceous material save native stuff. The place would admit of the most intensive development since the rocks are excellent and of great size, the natural soil favorable, and a natural supply of available moisture like a small oozing spring over the rock face. The present occupants, however, do not undertake gardening on that scale.

May 25

Although a Bank Holiday, I went with Legendre to the nursery of D. Stewart & Son at Wimborne, since they had some interesting Japanese azaleas in their exhibit at the Chelsea Show.

The nursery proved to be a fairly large one and more nearly approximated an American nursery in stock and organization. There was a small office with a display yard given over chiefly to a small formal area with dry walling for the display of plants, both herbaceous and shrubby, that were suitable for rock garden use, heaths, helianthemums, thymes, dwarf brooms, hypericums, dianthus, nepetas, iberis, acanthelimons, etc. Everything else in excellent taste but not different from many other such displays. The service sheds, greenhouses and frame yards adjoined and made a sort of secondary yard. Extending beyond this in all directions were the blocks of larger nursery stock in all the familiar sizes from lining-out stock planted that spring to fairly large plants for immediate effect. Water was piped over most of the property with outlets to which hose could be attached. In some places provision was made for overhead watering, but that was not as common as proved to be the case in French nurseries seen later.

The block given over to azaleas and rhododendrons was at some distance from the entrance court. It lay in a small natural valley with somewhat more peaty soil than most of the nursery. It was protected on the north by a dense wood, perhaps natural although still relatively small, of pines. On the southern side there was a natural rise of ground that shut off winds from the general direction of the sea, largely grown up in trees and woods, There was some evidence that part of this had once been cultivated,

shown by the occasional occurrence of large specimens of nursery origin, crabapples, old rhododendrons, and brooms.

The nursery was lined out in Dutch beds for all the group of azaleas we know as Japanese, including a few Kurumes, many forms related to macrantha of the trade (R. indicum Sims), some of the ledifolia types (R. mucronatum G Don), some kaempferi types and variants. The stock was illy shaped and showed much evidence of frost injury. The soil in the beds apparently was only the native soil to which had been added some commercial peat. The remainder of the area, given over to rhododendrons and deciduous azaleas, was lined out in the same fashion used for ordinary deciduous shrubs, with no evidence of special soil preparation. Of these plants the deciduous azaleas looked most happy, with good blocks of such sorts as J. C. van Tol and Anthony Koster.

So far as I could discover, there was no evidence that breeding work was being carried on, or that much stock was being raised from seed. Cuttings, layers, and grafted plants made up the major portion.

The frame yards for alpine or rock garden plants were the usual yards with wooden frames filled with coarse sand or screened cinders in which 2½ or 3 inch pots were plunged. The stock was apparently well propagated and grown up to this point, but apparently would begin to suffer from this point on, unless shipped or moved into the open ground. Since most of it would not be needed another year, it would probably be moved unless sold immediately.

From this nursery I went by various buses to Bournemouth, Lymington, and Southampton to Winchester, where the night was spent.

This carried me through a region more or less used as a resort for the summer months and exhibited the usual types of seaside planting with no special features of attraction. The common plants indicated a generally mild climate, more or less comparable to southern Virginia, but without its extremes of summer heat, and with indications of a more even rainfall.

May 26

The chief feature of the day was a visit to the two nurseries of Hillier & Sons. The old nursery, more or less in the town, was small and contained chiefly the collection of stock plants from which propagations were made. There was a large and old fashioned glass house of the conservatory type given over chiefly to tender and bedding plants, since the firm does some local "florist" trade. The area beyond was divided by cart roads lined with trees and large shrubs arranged to give a sort of landscape effect. Within the blocks created the plants were lined out. Most of the stocks were small, in some cases totalling less than a dozen plants of varying size.

Among the plants noted were:

Aesculus chinensis and A. Wilsoni. The only species of horsechestnut noted - both rare and with some question of hardiness. Hillier also has A. carnea var. Briotii, with dark red flowers, but this should be bought cheaper on the continent.

Caragana lorbergii. A strange, if not too beautiful, sort with linear, almost grass-like leaflets.

Cercis racemosa. A curious redbud with flowers in small racemes. As it grew at Mr. Rothschild's place, it was too overshaded to flower well.

Fagus sylvatica fastigiata. Is the famous fastigiatic "Dawyck Beech" from Mr. F. S. Balfour's place in Scotland.

Fraxinus platypoda. A rare, but to my eye not too lovely, flowering ash.

Liriodendron chinense. A poor imitation of our native species, but can be had more cheaply on the continent.

Nothofagus antarctica, obliqua, and procera. All considered hardy here.

Prunus serrulata tibetica. Has poor flowers, but bark like a birch (red-brown).

Pyrus caloneura. Look up this species. Do we have it?

Quercus pedunculata purpurascens. A curious oak with leaves the color of purple beech leaves.

Quercus sessiliflora rubicunda. A similarly colored form.

Among the deciduous shrubs:

Deutzia kalmaeflora. An excellent Lemoine hybrid that we should get if we do not already have it.

Among the willows are many forms that are useful in rock gardens, chiefly Salix herbacea (6 inches), hypoleuca (up to 4 feet), lanata (2-3 feet), lapponum, reticulatum, retusa, serpyllifolia, the last three all very dwarf and rather nice.

Acer carpinifolium. Although this has been at the Arnold Arboretum for many years, it should be grown by us also. Its name describes it perfectly; the Hornbeam maple.

Acer circinatum. An American species from California that makes an excellent tree here. We should try it out.

Acer cissifolium. Although somewhat suggesting the obnoxious A.negundo, really makes an excellent tree.

Acer davidi. A Chinese species that parallels in some ways our eastern A. pennsylvanicum.

Acer forresti. No notes made, but marked to buy.

Acer hersii. Another species with excellently striped bark.

Acer hookeri. Related to A. davidii, both in appearance and structure.

Acer lobelii. Looks like a fastigiata Norway maple.

Acer maximowiczii. No notes made, but marked to buy.

Acer miyabei. I believe we have now on hand, but if we do not, should get.

Acer nikoense. A coarse maple of the negundo type, but is rather better than that sort.

Acer rufinerve. excellent tree with striped bark; its variety albo-limbatum has white variegated leaves.

Acer tetramerum betulifolium (Rock 1505) A very charming sort

with smallish leaves.

Acer triflorum. A relative of A. nikoense and sacred to E. H. Wilson's broken leg!

Acer truncatum. Get.

Viburnum ichangense. A very charming viburnum with flat cymes of flowers, very pink in bud, rather white when open and followed by red berries.

Among evergreen shrubs:

Daphne retusa. An excellent Chinese species.

Daphne sp. (Rock 15572). Should be gotten.

Ilex ciliospinosa. Was a fine plant in its young state.

Ilex dipyrena. Closely related to the last.

Ilex pernyi Veitchii. Better than type, though both become too open in time.

Ilex yunnanensis. Looks promising.

Prunus laurocerasus. This species in all its horticultural forms should be investigated. The one we must get immediately is the variety Zabelliana which is of low spreading growth with erect racemes of flowers above the leaves. An excellent under cover.

In addition there were several pit houses much like ones at Bell and similarly used, with small stocks of potted plants.

The other nursery, some distance up the same road, was given over to the cultivation of trees and shrubs lined out in the familiar nursery formation for horse cultivation. Here were planted the stock plants of conifers, on either side of the entrance road to form in time a display planting. Besides ornamentals, most of the fruit stocks were grown here and young trees, chiefly apples, for their commercial trade.

Of all the nurseries visited, this firm maintains the largest collection of species, approximating in some ways the collection seen at the Botanic Gardens. I had been told that this was so and that Mr. Hillier kept in close

cooperation not only with Kew and Edinburgh but with private collectors. When our division wishes to make purchases, it might well turn to this concern, but in most cases it will pay to ask for quotations before placing an order, since small stock is not always available in spite of catalog quotations. It is probable also that on inquiry they might be able to furnish species not listed in the printed catalogs. They will always be a better source for woody plants than for herbaceous material. I did not visit their rhododendron nursery, which is on the road between Southampton and Winchester. This is newly established and not yet characteristic.

May 27

Office work in London.

May 28

The only horticultural feature of the day was a conference with Mr. E. H. M. Cox, whom I was to meet again in Edinburgh in early June, and who promised to take me also to his home near Perth to see his own collection of primulas and Chinese rhododendrons, planted naturalistically on his father's estate.

May 29

Visit to Wisley. One travels to Wisley by bus from London, taking any one of several lines going from London to Guilford. The trip takes about an hour.

Wisley was originally a private estate, and was left to the Royal Horticultural Society as a site for their test garden and training school. One leaves the highway and walks about a half mile through a pine wood carpeted with bracken to the old house site, now given over to the laboratories and dwellings. The place is very lovely, with a fine brick and half-timbered house group with excellent terraces and dry-walling, all constructed in a style that is essentially English.

The terraces are cut by flagged walks making a fine pattern through the lawn. There is some planting about the base of the houses and the walls are filled with well grown but not unusual plants - alyssums, campanulas, phlox; dianthus, iberis, sedums, sempervivums, helianthemums, thymes, etc.

As one leaves the main terrace, he ascends a fine flight of stairs and comes out on a broad grass path flanked by plots of polyantha roses backed by hollyhocks. Midway on this path, on the left at right angles, opens a broad lawn with large mixed herbaceous borders of ordinary garden flowers. Openings through this admit to various test areas for phloxes (P. decussata type), asters (hybrids of American species), bearded iris, tulip (Darwin and Cottage), gladiolus, delphiniums, Oriental poppies, lupines, tritomas, etc. Here are assembled varieties from the trade which are grown to fair size and then judged by judges from the Society for Awards. Reports of these are given in the Journal of the Royal Horticultural Society.

Beyond this area and ascending the hill which is crowned by an orchard, are fields where similar tests are made of annuals, both flowers and vegetables. At the uppermost part of the hill are small students' gardens, the alpine display house, and the yards for the propagation of alpines for the rock gardens.

If instead of having left the main terrace to go up the hill through the gardens described, the writer had turned to the right, walking along the house terrace, he would then have come to another path flanked on the left by a rocky terrace given over to common dry soil rock plants and on the right by the special houses for grapes, trained fruit, etc., used by students in learning how to handle these crops under glass.

This shorter path would then have brought him to the entrance of the rock garden, that is the rocky north slope of the hill just described. The garden is large, possibly two acres and has fine rock work with many large boulders to give it character. It has the appearance of a naturally rocky hill, although parts are obviously built up. The plants are arranged for effect. An artificial stream with only a small amount of water starts from the top and is led down the hill with several small pools en route to the sluggish ponds and marsh garden at the base, an area gaining its chief effect from candelabra primroses, Japanese

iris, herbaceous spireas, trollius, and similar plants that have been allowed to form natural growths, tangled and crowded but gorgeous in effect. The only sign of replacements seemed to be among the primroses which, though happy, were not always able to cope with the semi-wild growths. Primula japonica and possibly pulverulenta were the only ones entirely at home and equal to the new conditions and these were self-sowing everywhere. The Japanese iris also were not to be compared with those grown under optimum conditions.

Immediately beyond this and bounding it was a dense wood underplanted with rhododendrons and deciduous azaleas, all old and mostly unlabeled.

Going through this wood, one comes out in the newer parts of the garden - level fields that are in process of development with collections of trees and shrubs. Here the plants are grouped more or less in botanical relationships. The conspicuous groups are the cotoneasters, spireas, barberries, brooms, etc. Beyond this are still other fields with trees, mostly conifers, that are conspicuously unhappy here.

Circling about and bearing always to the right one comes to smaller areas given over to special plants, including tests of paeonies, apogon irises, and finally to a long border of coarse perennials. The paths bring one again to the lower end of the house terrace.

Among the rock plants especially noted for investigation and possible introduction here were:

Phillyrea ilicifolia. Looked much like osmanthus except that the leaves were less serrate.

Achillea moschata, umbellata, and wiskechii.

Ajuga reptans atropurpureum.

Asperula suberosa

Campanula stevensii nana. Much like C. lauri.

Erigeron andrewsii and leiomerus.

Mertensia echioides.

Sedum brevifolium, divergens, douglasi, oreganum.

Wulfenia carinthiana

Among these will be noted several American species

neglected possibly in the eastern United States.

May 30

A week end holiday in Kent at the home of Mrs. Marian Cran, whom I had met through Miss Barnett of our U.S.D.A. Library in Washington last year. Her cottage is old and charming, but the simple garden contains very little that could serve for her endless horticultural observations, both by press and radio.

June 1

The rock garden in the Royal Botanic Garden at Edinburgh was designed, so I was told, by Sir Isaac Bailey Balfour and presents a much more interesting series of pictures than can be had at Kew, although the area is not too much greater for reasonable comparison. Its location can be seen from the general plan of the garden. This does not show, however, the general topography. The whole area is on a gently rising knoll that is much higher than the street, Inverleith Row, that bounds the garden on the east. The actual plan of the garden, itself, is somewhat tortuous in order to give as many different exposures as possible, and the central portion of the garden rises higher and higher above the general level.

The whole appearance of the garden is ruined by the pipes that are everywhere in order to give sprays when needed. These are ordinary 1 inch pipe standards with a fine spray nozzle on the top, to give a misty atmosphere. This provision seemed so unnecessary to me that I inquired if they were ever used! The gardener told me with some scorn that they had already had to use them that season. This, I am sure, comes from the soil compositions and the drainage requirements and not from the climate!

Unlike the Dahlem Garden, no attempt is made to bring all the plants into ecological groups. It is sufficient that they form good masses in a fine state of horticultural excellence. In this it seems to me that the garden is more successful than that of Kew. The colonies are larger in enough cases so that there are dominant groups at any season, with a fine lot of incidental beauties in smaller amounts. This is the same principle that has long

been recognized in the successful planning of perennial borders, but which is often overlooked in rock garden work because of the owner's inordinate desire to have great numbers of species.

Very genuine criticism can be offered that the rock garden here shows purely arbitrary placing of the rock. In some portions these are set in quite plausible fashion but in others they are set up like dry walling or are placed in arbitrary box-like sections. If the plants were more feeble or the plantings were less abundant, this would be most objectionable. As it is, the worst mechanical contrast comes from the use of light yellowish river gravel for the paths, which has no relation to the dark colored stone of the garden (sandstone, I believe). A dark colored, crushed stone would have removed this objection.

The notes that follow do not begin to suggest the plants that are to be seen in the garden, but were chosen either because of my interest in the genus, or my belief that the plants would do well under our conditions.

Allium cardiospermum. Good heads of deep red flowers.

Allium orientale. Good heads of rather dull greenish-white.

Allium platyspathum angustifolium. Curiously my notes for this record a broad-leaved species, and tight heads of purple flowers.

Alyssum atlanticum. A nice plant on very small scale.

Alyssum idaeum.

Armeria juncea. From S. France. This is one of the rather numerous species forming close tufts of fine foliage and bearing close heads of fine pink flowers.

Armeria longiaristata. Rather dwarf tufts of foliage from which rise on rather tall stems the heads of fairly clear light pink flowers.

Armeria macloviana. A poor species with coarse foliage and 6 inch stalks of dull white flowers no more showy than an antennaria.

Armeria sibirica. One of the dwarf group with fine grassy leaves and in this case flowers of the tenderest pale pink.

Artemesia glomerata. Very flat cushions of gray foliage

from which rise yellow heads of flowers.

Artemisia granaticus. Good gray foliage.

Artemisia tanacetifolia. Has the best silver-gray foliage.

Asperula hexephylla. Look this up as it is very dwarf.

Carex buchanani. This is the carex that has been recommended various times as a tying material. It makes a tall, straggling tuft of narrow leaves.

Chrysanthemum cerataphylloides. White daisies on 6 inch bare stems from rosettes of marguerite-like foliage.

Chrysanthemum densum. Excellent rosettes offinely cut gray leaves.

Cyananthus lobatus. An excellent ground creeper. If we ever request, ask for the good blue form, Ward 5945.

Cytisus decumbens. A rather leafy broom, smothered with large, sulphur-yellow flowers that stand erect on the twigs.

Dianthus cinnabarinus.

Dianthus velebiticus. Noted for its excellent gray foliage.

Dianthus zonatus. Also noted for the excellent gray-green foliage.

Epilobium prostrata. Shining green leaves with red edges. Solitary pink flowers are borne on 3 inch stems.

Eremostachys laciniata. Look up the entire genus.

Erigeron polymorphus. Rather typical rosettes of leaves from which rise rose-colored flowers on 6 inch stems.

Grindelia speciosa. One of Coomber's finds.

Gypsophila cerastioides. An exquisitely tiny form.

Homogyne sylvestris. Rosettes of very fine circular leaves from which rise 8 inchstems with terminal flowers of purplish pink, that resemble cornflowers without ray florets. Mr. Harrow thinks this might not be hardy.

Hydrangea involucrata. A smallish shrub for the outer edges of the rock garden, with deep blue fertile flowers and few white sterile on edges of head.

Iris collina. Apparently an apogon, with a creeping root-stock much like gracilipes (223/24 No. 10)

Matthiola varia. Dwarf like a single stock with pale pink flowers.

Ourisia macrocarpa. 150/27 no notes.

Polygala wayradae. Dwarf; rose-colored with yellow lip.

Ranunculus amplexicaulis graminensis. Flowers of palest lemon over white.

Ranunculus gramineus. Verify name, should be graminifolius? A fine large buttercup, growing up from dense tufts of grassy leaves.

Rhododendron ledioides. Dr. Cowan says this is absolutely the true form and is better than radinum or spheranthum with which it is usually confused.

Rhododendron sargentianum. Close daphne-like heads of tubular flowers with flat lobes, like a daphne or jasmine. Primrose yellow. A lovely dwarf.

Sedum stephani. Coarse, serrate leaves on 8-10 inch shoots, terminal heads of flowers; buds red, opening to yellow flowers with conspicuous red anthers.

Vella spinosa. A spiny, stiff little bush with flowers that look cruciferous. Look up.

Veronica daisenensis. Yellow-green foliage and rather pinky-gray flowers on 3 inch stalks. Japanese?

June 2.

Edinburgh

Achillea ageratifolia. Leaves finely cut; white flowers with dark disc florets.

Achillea aizoon of Gardens - 6 inches; a most beautiful sort, cut leaves, white flowers.

Achillea archeria. Verify this species. A sub-shrubby sort with bare old stems finely cut silver leaves and no sign of flowers.

Achillea brachyphilla. Fine silver-gray leaves like a small dusty miller on 6 inch stems. 8-9 flowers in a head.

Achillea joborneggii. Growing here in dry wall. Rather coarse, serrate gray leaves and white flowers.

Achillea morisiana. This forms a dense mound of fine gray-green foliage with 6 inch stalks carrying about 10-flowered heads of bloom.

Achillea x portae. I have no notes for this hybrid.

Achillea pritchardi of Gardens, forms a carpet of fairly silvery leaves. Here it does not seem to be free-flowering.

Achillea serbica. A flat spreading species from Serbia, with entire gray leaves and fine white flowers.

Achillea umbellata nana. Described by its name.

Aethionema coridifolium. Much better than I had remembered. Apparently I must make a fair-sized plant to flower well.

Allium victorialis. A broad-leaved species 2 feet high growing like a tulip with reddish bases to the stalks. The flowers are greenish white in 2 inch heads, somewhat sweetly scented.

Alyssum montenum. A rather open growth, but excellent heads of bright yellow flowers.

Alyssum spicatum of Gardens forms good masses of foliage but the flowers are a dirty pinkish white.

Alyssum trichostachyum. The most interesting species here with fine mats of very slender leaves and pure gold flowers. Caucasus.

Anacyclus formosus. A gray and woolly plant that suggests santolina. Look up.

Anemone alpina. Grows almost 2 feet high? Is that correct?

Anthemis macedonica. Gray foliage and excellent daisies.

Anthyllis montana. Great mounds of woolly gray foliage and heads of pea-shaped flowers of dull rose color.

Anthyllis montana atrorubens. Similar but flowers deeper rose red.

Arenaria koriniana. Only note is "curious".

Arenaria rosani. Forms an excellent green carpet.

Armeria adamovicii. One of the very coarse species with 12 inch stalks bearing fair-sized heads of deep pink flowers.

Armeria fasciculata. Also a coarse species, but flowers are of very pure pink.

Armeria pungens. Still another coarse species but again a clear pink.

Artemesia baumgartneri. Very good gray foliage, but very poor and coarse flowers on 6 inch stalks.

Artemesia maritima. As this grows here, it develops bare stems too quickly.

Artemesia spicata. Has good silver-gray foliage.

Artemesia wallesiaca. Very gray and very beautiful.

Astragalus leontinus. Dull white flowers.

Astragalus monspessulanus. Flowers have a rusty orange calyx and a purple red corolla - showy.

Astragalus purpureus. Produces great numbers of flower heads on steas that bring them just below the surface of the foliage.

Astragalus sanguineolentus. Flowers pure white, but less showy than the excellent foliage.

Astragalus wulfini. Excellent red flowers overtopping the foliage.

Chrysanthemum caucasicum. Foliage absolutely flat on the ground. From it rise on 6-8 inch bare stems the pure white daisies.

Chrysanthemum hispanicum. This forms an excellent mass with clear yellow daisies.

Chrysanthemum hispanicum radicans. A daisy that much suggests our fennel-daisy, but the plant is flat on the ground.

Gypsophila petiei fructualbo. Sub-shrubby forming huge mounds of green stems that pile up on themselves.

Dianthus calceophilus. Rather tall in growth, gray-green; no flowers yet.

Dianthus falconeri. Forms very dwarf grassy mounds; buds now on 4-5 inch stalks.

Dianthus hungaricus. Broad sheets of excellent foliage now sending up floppy, over-arching stems. No flowers yet.

Dianthus hyssopifolius. Good dwarf sward, 4-6 inch stems, no flowers yet; buds dark.

Dianthus lumnitzeri. Of Gardens. Forms good sward; no flowers yet.

Dianthus musalae. Forms a flat carpet, somewhat tufted, from which rise 2-3 inch stalks with bright pink flowers the size of a dime.

Dianthus neglectus x carthusiorum. No flowers yet. Soft lax grass like a sedge.

Dianthus pallens. Noticed this twice. First entry reads "good grass"; second, wonderful 2 inch carpet of fine gray-green foliage. Verify.

Dianthus petreaus spiculifolius. A gem. 4 inches high with good flowers, well fringed and a clear pale pink.

Dianthus rupicolis. Coarse but good foliage.

Dianthus strictus. Forms an excellent flat sward.

Dianthus subacaulis. A very dwarf mat of fine foliage from which rise 4 inch stems. No flowers yet.

Draba oxycarpa. Forms a flat, grass-like carpet (Syria)

Draba streptocarpa. From North America. Tiny fine rosettes.

Draba subamplexicaulis. Not over 3 inches tall, but like a poor and somewhat weedy arabis.

Erinacea pungens. Exquisite. Look up whole genus.

Erodium absinthioides. Foliage somewhat gray. Beautifully veined, pale rose flowers, usually with deeper upper blotch.

Erodium guttatum. Excellent. Look up.

Erysimum purpureum. Plants here resemble small, deep lemon wall flowers.

Erysimum ruprestre. Nice pale yellow wall flowers with the calyx paler than the corolla.

Genista anglica. 4 inch, rather leafy shrub; deep yellow flowers.

Geranium subcaulescens. A lovely plant but not free-flowering here.

Gypsophila aretioides. Very fine, very compact and dense. No sign of flowering as yet.

Gypsophila transylvatica. Forms a fine, dense, compact carpet with no sign of flowering yet.

Helichrysum bellidioides. Kills out in the old center growths but is an excellent plant.

Hippocrepis comosa. A prostrate legume with flat, clover-like heads of golden yellow.

Iberis carnosa. An excellent dwarf and compact candytuft with fine sheets of white flowers.

Iberis nana. As dense as a dwarf conifer and fine in flower.

Iris ruthenica. Ask for seed.

Iris urumovii. Ask for seed.

Linaria pallida. Forms a 2 inch carpet. Flowers dull.

Potentilla argurophylla var. Himalaya. Has good, slightly gray, strawberry-like foliage.

Rhododendron kotschyi. A fine dwarf with 3/4 inch flowers of clear pink, reddish without on tube. Makes a very dense mass.

Silene caucasica. Forms a 2 inch carpet.

Silene dinarica. Rosettes from which rise 8 inch stems bearing white flowers with inflated calyces.

Tanacetum argenteum var. minor. Sub-shrub, gray foliage.

Thalictrum minus. Forms a flat sward here.

Thymus australis. In full flower now, ahead of others.

Vaccinium mortinia. From Ecuador. Looks like California huckleberry, but delightful pink bells. 3-4 feet.

Valeriana (saliancea?) Name blotted in notes from rain. Dwarf and showy but not scented.

Vesicaria graeca. The plant by this label looks like a coarse loose-spiked alyssum. Verify.

Viola Haslemere. A lovely garden viola of purest ash pink.

June 3

After attending a meeting of the local Horticultural Society, at which Mr. E.H.M. Cox gave a paper on interesting plants, he and I traveled down to Perth to his father's estate, waking up this morning to a day only a little less cold and overcast than the previous days.

The estate is large and includes a considerable portion that is rented out, since Mr. Austin Cox is retired and is not actively interested in farming.

There are four separate gardens at the place, a long narrow garden running east and west and immediately below the conservatory. This is cut by a path that follows the longer axis and is planted with a great jumble of small trees and shrubs with herbaceous things between; a vegetable or kitchen garden that is roughly rectangular with walks paralleling the boundaries that are walled on the east, west, and north sides and cross walks dividing the center plot into quadrants; a small rock garden at the foot of a natural rocky cliff and the woods and glen in which Mr. E.H.M. Cox makes his primula and rhododendron dell.

The last garden was the only one really considered on this visit and was somewhat disappointing after one had read Mr. Cox's book "Wild Gardening" published by Dulau & Co., in 1929. The pictures facing pages 18, 36, 44, and possibly 108 were taken here, but give little idea of the scale of the work.

The charming feature of the place is a deep rocky glen that leads down from an old mill site with a fine stream that tumbles and dashes over rocks. The north side of this, i.e., the one facing the south, is slowly being covered with thickets of dwarf rhododendrons and huge colonies of primulas. At the time of my visit the candelabra section was in full flower and made a magnificent sight with their orange, scarlet, henna, yellow, coral, cerise, crimson, and magenta blooms in varied combinations, a veritable blaze of color in the dull woods. The south side of the gorge is still largely under-developed save for a growing collection of viburnums, which are to be Mr. Cox's next specialty.

The larger rhododendrons and the little seedling nursery lie above the path that skirts the crest of the gorge on the north. These are interplanted with various trees of interest, including many birch species, particularly Oriental ones of recent introduction.

It was most interesting to see this place, relatively recent in development, and compare it with Mr. P. D. Williams' work of forty years or more. The principle is essentially the same, and yet the newer garden is supposed to be a new invention. For the American, neither is strictly practicable since we do not have the sort of precipitation that would give adequate water under trees and our torrential summer storms would soon finish the lower planting of the stream sides. We can learn from both these gardens and similar ones the way in which to use exotic plants in a native scene without creating a false situation.

Returned to Edinburgh.

June 4.

Still raining. Went with Mr. Harrow and Dr. Cowan over the grounds again and took other plant notes that were incorporated in those listed under June 1 and 2.

We also took a general tour of the botanical garden layout, which is clearly shown in the accompanying photostat of the general plan. The only thing that does not show is the planting indications that would make clear the fact that there are no great vistas at Edinburgh as there are at Kew.

In going through the building groups I was again impressed by the areas given over to frames and the multiplicity of uses made of them. Here there were many types of frame, but all of permanent construction; a deep series, a series of double frames with sashes ridged as for a pit greenhouse and many more filled with cinders for plunging.

The famous house for propagation is a lean-to house facing north that adjoins a potting shed and work room. It is not heated, but under it there runs a pipe line from the central heating establishment. The propagation bench is along the inner wall of the house and is a solid and deep bench (about 2 feet, 6 inches). The lower 18 inches are filled with coarse drainage material, stone, etc., as for a rock garden, over which is laid a 10 inch layer of very coarse river sand that is kept slightly acid in reaction by watering with a 2 % solution of glacial acetic acid whenever needed. Should the sand become polluted by falling or decaying leaves from the cuttings, the whole is watered with a weak solution of potassium permanganate. This is made by adding 1 ounce of a saturated solution of the permanganate to 2 gallons of water. After the bench has been watered with this solution, the sand must be tested and restored to acidity if necessary. In preparing the bed, the upper layers of drainage stones are so small and compact that the sand does not filter down into them. The sand is not packed into the bed, but is merely shovelled in and settled by watering. The cuttings are always thrust into the sand, never dibbled, and never firmed into place. They are settled by watering.

All cuttings are lifted every week and rooted cuttings are potted off. The rest are replanted solidly so there is never any vacant space or parts of rows in the cutting bench among the cuttings. If there is a vacant area it is always at one end of the bench and is always kept in a loose and tumbled state, like a field after late fall plowing.

The cutting bed is covered with sash - like a sweat box, but there was no artificial shading at the time of my visit as presumably none was needed, the wall of the potting shed cutting off any sunlight - should the sun ever shine in Edinburgh.

Cuttings of every sort were in the bed, all jumbled together, conifers, deciduous trees and shrubs, herbaceous plants. The theory, apparently well supported by evidence, is that everything will root "in time". They are free to admit that "time" in some cases represents years. They were also unable to tell me just what the temperatures were in the house from the heat conduit, but the impression seemed to be a 45-55° range.

June 5

Returned to London and attended to various matters before going down to Sussex on

June 6

Major F. C. Stern, of Highdown, Goring-by-Sea (R.R. Station Worthing) has a place on the chalk downs that faces the south and is relatively warm and even hot. He belongs to the same group of wealthy amateur estate owners that Mr. Williams, Mr. Stevenson, and Mr. Rothschild do. His possibilities are quite different, however, and while he grows enough rhododendrons and meconopsis to annoy his acid-soil friends, his garden is more interesting for other things. It might be said in passing, also, that his rhododendrons are in a properly prepared site and so high up on the property that they do not get drainage water from limy areas.

There are two major garden areas, the one that has been gradually formed from the kitchen garden by the encroaching ornamentals, and the rock garden that is made in an old chalk pit. The latter has been illustrated and much talked about in garden papers, particularly the old "Garden", now defunct. This pit is a large area, with a chalk wall chiefly on the north side where it rises white and brilliant above the rock garden at its feet and the green lawns beyond. The planted area at its base is more or less like the masses of broken stone that always are found at the foot of a natural cliff, but the stones here are not white.

The essential masses of color at the time of my visit came from huge colonies of helianthemum, dianthus, aethionema, centranthus, and wallflowers. The helianthemums and dianthus were particularly wonderful, as they represent seedling strains of Major Stern's own selection. Here again is a typical example of the Englishman's attitude toward any plant that he may raise from seed. The helianthemums were better than any I had seen with the exception of those offered by Cutbush or Notcutt, distinguished by Scotch names, as Ben Venue, etc.

The dianthus were distinctly a hybrid lot, of parentage impossible to guess. They were for the most part dwarf tufts of grass not over two inches high on which were studded fine pink flowers on 4-6 inch stalks. All were deliciously scented. Among old world plants, surely this genus demands attention from us, especially for our middle and southern states. There are notes elsewhere in this report to indicate something of the range of dianthus species and there are rather specific suggestions for some breeding experiments in Farrer's English Rock Garden.

The vegetable garden area was distinguished for the collection of eremurus just coming into flower and for the collection of peony species, long since past bloom. There were, of course, many other fine things, but too many to remember or note, with the single exception of Allium murrayanum, which Major Stern said was Californian. It looked much like a splendid A. unifolium (?) but held its foliage better.

At the house were staying Mr. and Mrs. McClaren, the former the President of the Royal Horticultural Society, Mr. Ambrose Congreve, Mount Congreve, Walingford, Irish Free State, but for Saturday luncheon, I met there Mr. F. W. Millard and a party of his friends who had come to see the garden.

Mr. Millard then broached the subject of an exploring expedition in the American Northwest, that proved to be a scheme of Mr. Ira Gabrielson to charter an hydroplane and get in to some of the smaller high alpine lakes. It would require about £ 1,000 for the scheme and the English group would be willing to have the American rock garden public subscribe £ 250 and have the corresponding share of seed.

June 7

As a further diversion (in the rain) our party was taken to the residence of Col. Stevenson-Clarke for luncheon and to see the gardens. As it poured or drizzled all the time we were there, it was a gay affair. It is essentially a wooded place, so that on this dark day the English scene was even darker and drearier than usual. Major Stern and Mr. McLaren (?) were particularly concerned to see Mr. Stevenson-Clarke's magnolias, especially M. Wilsoni, Nicholsoniana, and sinense, that had been undergoing various rebaptisms at the hands of the taxonomists. As all of these species are relatively tender, I had a jaundiced view of the situation!

However, we found M. Correvon and his grandson, now a student at Wisley, at the Stevenson-Clarkes' and carried them back to Highdown for garden-viewing and dinner. Mr. Correvon enlivened the scene - in spite of weather and gentility!

June 8

Back to London and office details. Saw some people in regard to Iris Show of next day.

June 9

This was first day of joint shows of Iris Society and Alpine Garden Society, with a dinner in the evening where I had to give one response to the toast "Our Guests", the other speaker being M. Correvon.

The Iris Society Show was chiefly interesting for some of the minor items, since the general level of showing is good, but the material shown far below the American level. American stuff is not represented, except very old Farr and Sturtevant varieties and California things that Mr. Mitchell apparently has sent as momentos of his visit.

The most interesting part of the show for me was an exhibit by Mr. B. R. Long, "Lugan", Square Hill Road,

Maidstone, set up to show the results of crossing. He exhibited parents and progeny and gave, on a card, a printed statement of the range covered in the seedling group. For example:

Marquisette pollen on a seedling of Imperator x Olympus (Olympus being a red bicolor with some hint of bronze in the hafts) gave a series of seedlings like Troost, but some clear pinks on a white ground.

Moonlight x Valkyrie gave 18/28/8, a dull greenish-yellow with large flowers, long spoon-shaped petals, and dull color pointing to Valkyrie.

Mme. Durand x Asia, strangely enough, gave some delightful tall plicatas of the Mme. Chobaut type on tall branching stems.

Le Grand Ferre x Valkyrie gave one good near-variegata.

Chasseur x Ophelia gave a series of excellent variegata-plicatas, of which I preferred 43/27/15 with very deep colors, and after that 43/27/5, with tan standards and falls with gound white passing to tan on the margins, almost hidden by deep purple red dots and reticulations.

Leutha x Mystic gave amusing near-plicatas of the general type of Cygnet.

Yellow Moon x Leutha gave variegata-amoena yellows.

Jean Chevreau x Mme.Cheri gave branching yellows but with very poor small flowers.

On Amos Perry's stand there were many fine stalks of G. P. Baker, a fairly good but somewhat puckered yellow, somewhat hinting at plicata yellow.

Florence Bignell, 7 flowers on stalk, standard darker than falls, somewhat like a plicata.

Yellow Gem, apparently of the same series, but quite a good yellow standard. Suggests my own (Shekinah x London) x Cygnet) series.

Moonstone, peach over lemon yellow standards; falls

maroon red over yellow with central vein; poor.

Bardley, very ugly, yellow and dahlia red.

Seedling 54/31. Good yellow of pallida form, with brownish reticulations on haft. Smallish, 30 inch stem, 6 flowers, on short branches.

On Mr. G. P. Baker's stand of sixteen:

Zingarello, a very nice red of the Bruno series with very broad hafts.

El Capitan in extremely poor form.

Cecile Bouscant - very poor and crowded on stem.

Granny (Baker) falls a curdled blue lavender.

Fedalma - a plicata as if from Grevin!

Jane Austen - a very charming pink plicata but flowers small for its tall stalks.

Among seedlings entered for award:

18/31 (Perry) 4 foot stalks, 9 flowers on good branches borne on upper half of stalk. A good but not deep yellow of Shekinah type.

85/31 (Perry) deeper yellow, almost like Gold Imperial, but taller and better branched.

Rhodes, a very nice dark red purple of the general red-brown dark Bruno strain.

On Orpington stand:

Bezant, tan standards, falls almost white with a flush of blue lavender, suggesting Ochracea.

Orient Pearl, a lemony Mad. Cheri, almost all pink gone from falls that are both reflexed and pinched.

Wraith, a most hideous veined and flushed, tan yellow and fawn.

Seedling D.I. 5 - lovely flushed tan, gold, etc. Standards excellent, falls somewhat like Mme. Cheri, but better shaped and longer, except for a tendency to thin texture, really quite nice.

Mrs. Dyke's stand:

Snowdrop, too much like Taj Mahal.

Rhadi, blue lavender standards; falls smoked with fawn, purple-flaked, really hideous.

Mayford, interesting as of the type of the old varieties, Miss Maggie and Attraction.

Ternissa, like a slightly intensified steepway.

Gilda, small and yellower than W. R. Dykes, standards very far apart.

Iceberg, a good white.

Etruria, a deeper Sherbert.

Refna, a deeper Mme. Cheri.

Sabra, like a huge Florentine.

Thrill, a curious flower, magenta with an inner glow of yellow.

Herbert Oliver, like a late Muee d'Orage.

June 10

Official work before departure for the continent.

June 11

The trip to the Vilmorin nursery at Verriere is a short trip from the station near the Luxembourg

gardens - a particularly dark and unpleasant station, under ground, full of smoke and grime. One travels out through Paris, and the outlying villages where workmen are establishing their homes, curious houses usually taller than wide or deep - a striking contrast to the country places that string out into long buildings with their outbuildings attached sometimes as single lines, sometimes as wings about a dirt court yard.

The village of Verrieres-le-Buisson is small with winding cobbled roads between usually walled villa gardens. We went first to the offices and laboratories where we were met by M. Meunissier, since M. Roger de Vilmorin was absent from sickness. The yards about the office are small and were not in as good order as other parts of the establishment. Various buildings were to right and left as one entered - and a foot path led through the yard directly opposite the entrance gate. This path was covered with an arbor on which were planted vines used as specimens or mother plants from which are gathered seed or propagating wood. There was not much of unusual interest here save some fair-sized specimens of Berchemia (?). The remaining areas were filled with the usual beds of small potted plants - perennials and rock plants from which sales were made.

To the left beyond this yard and separated from it by a wall, also vine covered, was a second yard filled with frames in which, among other things, was a large collection of sempervivums - some bought from M. Correvon, some from Dutch dealers and some from French sources - all showing the same confusion in nomenclature that I found everywhere else.

In the office building we were shown upstairs to where the laboratory rooms are located and there met M. Simonet who is working on chromozome counts in iris. He has verified some of Longley's counts but differs in others. He also is making crosses in apogon and xiphium groups, covering some of the ground already covered by Doctor Stout and some new ground as well. Unfortunately for me, he spoke almost no English and understood little more, so we got only secondhand conversation, and I have no idea of his reasons for the repitition of the work.

To the right, beyond the office yard, lies the

park of the oldest Vilmorin establishment - a huge oval lawn surrounded by trees and shrubs now much overgrown and spoiled by age and crowding. Magnificent cedars dominate the scene but many excellent conifers are through all the plantings.

Beyond all this to the east lie the open farm nurseries for seed growing and for the propagation of some perennials. Just as in the office yard there was a main axis path with special plants on either side for exhibition and propagation material, so here was a main road with wide perennial borders on either hand. Although the scene was gay with color, there was not so fine a display as there had been or as there would be again in a few weeks.

After lunch we crossed the main road beyond the nursery office to the other nurseries - going first through a huge frame yard - filled with frames of potted plants, mostly annuals, all grown so that they can be taken to exhibitions - calendula, schizanthus, nemesia, salpiglossis, stocks, Delphinium ajacis, calceolaria, tuberous begonias, hydrangeas, and so on.

Beyond this in separate inclosures or huge yards were fields for seed growing, perennials mostly, and for the growth of perennial plants for sale. Again one found the rectangular system of plots with wide central axes, more simple in this case with borders of thyme, sweet pinks and Nepeta mussini. Among the plants grown, there seemed to be nothing of unusual interest, save some of the armerias. The Vilmorin group of the type of "Bee's Ruby", i.e., one of the tall, large-leaved forms, was showing considerable variation in color with not only the usual large cerise pink heads and their gradations toward white, but a fair number of plants with a faint yellowish hue in the pink that suggested salmon or even a tendency toward henna. The men here seemed to think nothing of it and were not interested in segregating any from the mixture, as far as I could discover. The pinks, delphiniums, erigerons, trollius, gaillardia, etc., were quite ordinary strains, but of good quality.

From the second of these seed and plant yards one could see the grounds of another of the Vilmorin estates, much like the first.

After this we had a look at the herbarium and offices, over the stables and garages, where are kept fine collections of wax models of fruits and vegetables, collections of seed and fruits, and all the Vilmorin exhibits of wheats bred for generations and variously exhibited.

Plants noted at Verrieres:

Allium giganteum
Allium kesselringii
Allium macropetalum
Allium suwarovii
Allium sp., somewhat like a tall victorialis
Berchemia lineata
Berchemia racemosa
Cedrus libani, var. brevifolium
Cerasus acidus var. semperflorens
Cytisus cinerea
Funkia fortunei and fortunei robusta
Geranium armenum, tall, rosy purple.
Geranium nodoss, tall, 20 inches, clear pink.
Liriodendron chinense
Lonicera alesuaemoides
Mahonia aquifolium compacta nana
Polygonum bistortum
Populus lasiocarpa
Rumex acetifolia - "oseille" vegetable like spinach, but with continuous growth. Winter.

Then back to Paris and a visit at the Colonial Exhibition. From the horticultural point of view this was not interesting as there was little landscape work. The buildings have been located in an already existing naturalistic park with many scattered trees and apparently no planting has been done save some bedding in places that needed that sort of decoration and the planting of some huge Phoenix canariensis palms and some orange trees where exotic notes were required. The whole place was quite hideous and ill kept with strangely incongruous lighting fixtures of modernistic design and many strange buildings, all modern, bizarre, and grotesque with African motifs to the point of nausea. Among all this, the

lovely American building copied from Mount Vernon looked almost too pristine; too unsophisticated.

June 12

At this present time of visiting, the approaching interest in the gardens at Bagatelle lies chiefly in the coming annual inspection and judging of the 1931 novelties in roses. These had been planted in the fall of 1930 in beds at the head of the garden nearest the orangerie. They appear to have been very severely pruned after the fashion used here, a practice which produces a crop of flowers much later in the year than we should expect at home, mid-June for France and really mid-July in England.

As far as we could see, Legendre and I, there were no roses of striking individuality, rather a paralleling of existing sorts, often of the novelties of the year before, but the following notes were made more as a reminder of what was seen than anything else. It seemed to me, also, that no one could possibly guess the character of either flower or bush from the tiny plants, so illy established in their beds.

In the small show garden I noticed the climbing rose, Paul Lede, which has moderate growth, but superb flowers like a huge Ophelia, Reve d'Or, and Bouquet d'Or, and a charming sub-shrubby clematis, C. integrifolia var. Durandi, with flowers about 3 inches in diameter, and the color of C. Jackmanni.

Climbing Rose, E. Veyrat-Hermanos, is a better climber than Paul Lede, with very double flowers, flesh to orange.

An interesting hybrid Lutea was Reveil di Jonnais (E. Buatois) much like Mme. Eduoard Herriott, but with a clear yellow zone at the base of the petals.

Fancy (van Rossem) much like Mme. Herriott but with more yellow on the reverse.

Marechal Petain (Reymond) like a double Safrano.

Richard E. West (A. Dickson) a good lemon-yellow tea.

Gooiland (van Rossem) bicolor pink, outside deep rose.

Mme. Edmond Rostand (Pernet) orange, bleaching to white.

From the 1931 test roses:

Contessa de Sastago (Dot) brilliant salmon-orange bleaching to Herriott color.

F. Cambo (Dot) beautiful salmon-orange, lighter edge (line); bleaches badly and color flecks in aging.

Nuria de Recolons (Dot) like an open Druschki.

Orange (Dot) 8 petals, orange Pernetiana.

No. 885 Hybrid rugosa (F. Guillot) more like a hybrid tea than a rugosa, 8 petals, deep red, apparently an everbloomer, no sign of rugosa save in prickles.

Seedling No. 2052 (Felberg & Leclerc) deep purple red, much like old Crimson Champion.

Seedling 3079 (Felberg & Leclerc) like Kaiserin Augusta Viktoria.

Seedling No. 3175 (Felberg & Leclerc) fine big flowers almost fully double, darker than Souv. de Georges Pernet, more pointed petals. Very sweet scented.

No. 7 (L. Lens) like a fine Ophelia, but more yellow and petals more pointed.

No. 8 (L. Lens) like a darker Gruss an Teplitz or Richmond seedlings.

Elena Castello (Manuel Munne) like a tea in scent.

C. E. Geier (Felberg & Leclerc) # 1761. Good, fully double, dark red.

No. 6166 (Ketten Freres) good deep red, somewhat like Hadley, not vigorous?

Among the varieties from older tests:

Barbara Richard (S. Dickson) very double, but with both stamens and pistils, flesh pink; free flowering and apparently vigorous.

No. 421 (M. Rosseau) red, like a HP x HT cross.

Prof. Gnau (Mattr. Tantau) almost white, yellow flesh center, 3 rows petals, curious scent.

Margarete Gnau (Max Krause) very double, like a deep bowl, a refined tea of W. R. Smith color.

Briand Paneuropa (Jan Bohm) very double, of frilled type, pale rose, sweet scented.

Bozema Nemcova (Jan Bohm) cup-shaped, clear rose fading to white.

Heinrich Kaedes (Kordes) gorgeous, almost Padre-color, but rather more double.

Mrs. J. Campbell Hall, a pure tea, blush white.

Rita Weldon (S. Dickson) a very good white tea, faintly tinted like the ancient Golden Gate.

V. Vivo E. Hijos (Bernaux) tea, pink to orange, poor form but striking color.

Alliance Franco-Prusse (Goinard) like a good Perle des Jardins.

Mme. Anna Charton (Schwartz) a tender pink blushed from the edges toward the center, over a lemon-flesh ground. Sweet.

Archduchess Maria Immaculata (Soupert) like a very refined Maman Cochet.

Souv. de Paul Neyron (Levet) somewhat more double than and more blushed tinted than Safrano.

Souv. de Gabrielle Drevet (Guillot) tea, flesh deeper rose on edges.

Hugo Roller (W. Paul) good.

Herzogin Marie-Antoinette (Jacobs) good, like a lemon-yellow Safrano.

Dr. Grille and Marie Van Houtte, old favorites but still excellent.

Col. Dazier. H.T. pure pink over white ground, large blooms, fragrance like La France.

Elvira Aramayo (Looymans) hyb. per., brilliant orange-red, with quilled petals on fully developed flowers.

Ann Quinard. (C. Mallerin) poor growth but excellent flowers, deep blackish crimson like Crimson Champion.

The remainder of the rose garden was given over to roses that had received awards in other years and those that were kept for purely decorative effect. All the beds were arranged in the formal French style with dwarf box edgings, plantings of one or more varieties to the bed with standards at intervals, usually of a different sort, and pillars, arches of climbing roses at intervals. As a result, the whole garden, from the orangerie at one end to the curving pergola at the other, presented a curious effect, not that of an open terrace, for there were too many vertical elements, and yet not of solid plantings cut through by walks forming vistas, since the roses made too substantial a planting to build up the effects of solids. It seemed one more demonstration of the effect that the rose, if grown to produce good flowers, is not a charming plant - true heresy to the rose lover who is so obsessed by the beauty of the individual blossom that he sees little else.

The most delightful bit of the garden, to me, is the small very formal garden that lies just below the entrance road, with a parapet and wall to support the road on one hand and a tall boundary wall of brick on the ends and other side. Essentially a long garden, its length has been further accentuated by the long paths that parallel the long axis. The two long panels of bedding that hold the flowers show nothing of great interest from the point of view of plants, only the usual flowers of summer bedding, annuals for the most part, supplemented by standards of fuchsias, latanas, heliotropes, and the like. The wall is

closely covered with vines of many sorts, but predominantly climbing roses and large-flowered clematis hybrids, the latter none too happy. Among the roses are many of the climbing sports of hybrid teas, noisette, and the more tender sorts, as the hardier hybrids of wichuraisna and multiflora are kept in the rose garden above.

One steps down from this garden to a slightly lower garden of much the same character, but with plantings of perennials and several pools for nymphaea and other water plants.

Although there were many labels on other plants than roses, and although there had been some attempt to gather together the newer Chinese plants, particularly cotoneaster, berberis, viburnum, and so on, reflecting a little the character of the English collections, it was very badly done for effect and the labeling was often incomplete or inaccurate.

In fact, there is little in the Bagatelle gardens that one need study except the essential character of the two long gardens which are done with great nicety of detail and show a great amount of individuality in design - essentially green gardens of wall turf and box-edged beds in formal pattern, with summer plantings that make the whole gay carpet of colors, often too motley for our taste, but certainly gay; for here as elsewhere in Paris one sees the most garish combinations - purple, orange, cerise, blue, salmon, and scarlet all cheek by jowl - with verbena, calceolaria, calendula, ivy geranium, lobelia, begonia (semperflorens and tuberous types), salvias, petunia, marigolds, as commonest plants.

Late in the afternoon (5:00 p.m.) we left Paris for Nantes by the Paris-Orleans R.R. with a fine journey through the valley of the Loire with its shifting course between wide fields of wheat and potatoes and vineyards, wooded banks, sometimes quite high, crowned with crowded villages and occasional chateaux. We reached Nantes after dark (10:41 p.m.) and were hurtled through the narrowest of streets to the hotel.

June 13

The particular visit to Nantes was that of the

nurseries of the Guichard Soeurs, at which camellias are the special crop. While formerly they grew many specimen plants, huge pyramids in tubs, now they have only smaller stuff, none exceeding 3 or 4 feet.

At the city nursery and office there is little propagation. One enters the yard with the residence on the left and a small office to the right, and the inevitable main path directly before one. Here this path is bordered by larger formal beds, edged with our own dwarf, narrow-leaved euonymus, planted in double rows and kept about 6 inches high. The beds are filled with specimens of the plants they grow for sale, in four inch and six inch pots, plunged in the soil - here chiefly leptospermums, grevilleas, etc.

Along the right wall beyond the small office and all across the back of the yard are the glass houses and along the left back of the houses are the slat houses. Everything is immaculate and precise.

The man-foreman took us about a half mile toward the edges of town where the actual propagation is carried on.

Cuttings of one year wood, at a stage just a little more than half ripe, are taken in autumn. They are usually 3 nodes long, but sometimes are only 2 nodes long. One leaf is left on and the usual slanting cut is made by the lower node. The cuttings are put in sand frames, so closely that the leaves over-lap almost like scales. Here they callous slowly in closed, shaded frames like our cold frames, usually not striking roots until the following spring. There is no bottom heat and watering only is needed. The winter temperatures seem to be like those of Savannah. Air is gradually admitted as rooting is finished and growth commences and as soon as safe the glass sash are removed and a shade made of stalks of heather is laid over the beds on frames that raise it 2-2½ feet above the beds. This shade is kept on all summer. The soil of the beds is the natural soil of the place with coarse sand and some peat added. It is acid.

The rooted cuttings are left in the bed until their first growths are hardened and then transplanted to

other similar beds with sufficient room between plants to permit growth but with sufficient crowding so that the plants shelter one another.

The manager told us that formerly they had practiced grafting for all sorts but that they used it now only for the varieties that did not root freely. A side graft is used of this general type.

Of course we heard the usual regretful remarks about Q.37 and the loss of the American trade.

After lunch we looked through the "Botanic Garden". This is scarcely more than a fair-sized city park with lables on most of the trees and a small section near the conservatory and offices where plants, here mostly herbaceous, are planted in their natural orders - not complete collections but enough to show the general character of the order.

The park itself is completely walled and fenced with main gates at strategic points and paths so planned that cross city pedestrians may go through the park without too much indirection. There is no vehicular traffic.

One enters usually from the lower gate on the street that parallels the river and the railroad and finds an irregular rolling bit of land that rises gradually toward the far boundary. It is cut across by an artificial stream that rises at the highest point and tumbles through a rather cleverly made rocky stream bed into a series of pools large enough for a few nympheas and the inevitable carp and ducks.

The upper garden with the herbaceous collection also included a small rose collection, a dahlia collection, and a border of succulents from one of the two glass houses.

None of the collections was complete nor authoritative, nor did many of the innumerable park visitors seem in the least horticultural in their interests. On the other hand, everyone paid great attention to keeping on the paths and to keeping litter off the grass. As a botanical garden it was of small interest but as compared to many of the small parks in America it was of great interest.

My eye was attracted to two forms of Osmanthus aquifolius, one var. rotundifolius with rounded leaves as its name indicates, usually spineless and more like a privet, the other var. latifolius much like the type but larger-leaved and with fewer spines. Ligustrum massalongianum Vis looked like a very good evergreen privet with narrow leaves. And there appeared to be a true plant of Berberis actinacantha but without sign of flower or old fruit.

June 13

We left that evening (6:41 p.m.) for Angers (7:45 p.m.)

June 14

The Botanic Garden at Angers is at the end of the main street of the upper town and embraces a bit of a very rough valley that runs across the garden at right angles to the main street. One enters into a small rather formal terrace and goes at once down many steps into the park, which is a park rather than a botanical garden. There is a great circular path that goes about the entire garden with various side paths that make short loops from the main path. The major areas are sodded and trees and shrubs are dotted about in a naturalistic fashion. There is little bedding save about the entrance and before the conservatory and office buildings. In the rear of the latter is a small nursery where bedding stock is raised for all city parks.

The main park is an open, level area where temporary market fairs can be held. Such a fair was in progress at the time of my visit, so that the entire area which seemed to be a number of city blocks, was filled with tents and side shows. The only decorations of the site seemed to be trees, planted regularly about the perimeter of the blocks and irregularly through the center. One small portion was reserved for park space. This was a level area with wide gravelled spaces - a huge fountain and in the next area a band stand. Flower beds filled with the usual summer bedding plants were located in the French fashion as narrow borders parallel to the paths.

Beyond these areas was another section of the park with gravelled surface under trees planted like an orchard. Here were numberless seats, as if for a "wine-

garden" although there was no public concession of the sort.

The town of Angers is much larger than Nantes appeared to be, possibly because it is more even and widespread with level country for suburbs, while Nantes is on the river and rises chiefly to one side.

As this was Sunday we saw no nursery but tried to see the Arboretum Allard, once private but now in the hands of the Institute Pasteur, with only caretakers in charge and scanty funds for operation. It had been founded as a private collection by M. Allard who wished to will it to his city at his death, but as he could not leave a maintenance endowment, the city refused it and it went to the Institute Pasteur. No one really cares for it and it is falling into ruin.

June 15

It is chiefly an interior plot of land with only a long avenue of horse chestnuts on either side of the drive that comes to the main road. If one comes up the drive, the villa lies ahead with gardens and groves to the right and beyond. The villa is in a second enclosure, now locked to the general public, with a formal lawn before the house and an ornamental kitchen garden behind it.

If one does not wish to go to the villa, he turns off to the left through a grove largely made up of oak species. The two winding paths that traverse it, however, are lined with superb collections of box in one case, in species of holly and many more varieties and forms of English holly. These paths both lead to the conifer section, through which one passes to the section given over to deciduous trees and shrubs.

Now everything is overgrown with grass and weeds, just being mowed in the roughest way for coarse hay and bedding. The plants themselves have lost or soon will lose all their labels and the whole life work of one man will perish.

Before going into the arboretum we had paid a short visit to the nursery of Charles Detriche with its offices and fields just across the road. This nursery is given over to the usual wholesale production of small plants,

chiefly woody.

The place is organized in the usual bed system with rectangular beds and regular paths and roads. Water is piped everywhere over the place and portable overhead sprinklers are carried wherever needed and attached to the pipes. One could see them playing in all directions.

There seemed to be no unusual practices in cutting or grafting or budding, nor in the growing on of small plants. The seed beds were usually in the open and from such discussion as was finally translated to me, I gathered that the usual delays in germination were attributed to seedtoo old or too dried before sowing. They seemed to have little idea about the necessity of cold for some seeds.

Here as elsewhere one found much propagation by layering - the usual mound layers in some cases but in many more the practice of pegging down the mother plant if its shoots are pliable, or of planting it on one side and then spreading out in a fan shape for pegging down. Rooting usually required two or three years for best results. In some cases only the common soil was used, in others it was supplemented by coarse sand or by sand and coarse peat.

Plants noted at Ratticher's nursery:

Abies concolor candicans. A very glaucous form of this fir.

Berberis ruscifolia. A curious evergreen barberry suggesting in some ways a form of stenophylla.

Betula purpurea. The same plant Russell received from Vistica in Southern California.

Hedysarum multiflorum. Much like some of the indigoferas, but with larger and showier flower clusters.

Ilex laevigata polycarpa. Very heavily berried.

Ilex perada. Excellent fruits and foliage.

Indigofera decora rosea. Dwarf andmuch like our I. kirilowi.

Podocarpus koreana. Much like Irish yew (verify name)

Pterocarya hupehensis. Good tree for quick growth.

Retinospora andeleyens sphaeroides. There is no evidence for this name, but the plant is a dense spherical bush with scale-like leaves and twigs that suggest the form filicoides.

Retinospora pisifera nana repens. Good dwarf creeper.

Tamarix kashgarica. Rather coarse but of fine gray color. Young tips winterkill a little.

After lunch we visited the nurseries of Mons. F. Delaunay & Sons. Their town nursery adjoins the Arboretum Allard. From the entrance gate one sees a main drive leading to the far boundary of the property. The usual specimen and stock trees line this road. Immediately at the left of the entrance are the residence, office, packing buildings, and garage. To the right the perennial fields and over the remaining area the seed beds and cutting beds for the choicer materials with the mound layering and layering plots at the farthest end. There were few frames and no glass houses here. Over-head irrigation everywhere as at Detriche's.

After looking over the nurseries near the office, we were driven to two other nurseries owned by this firm. The first was a large area outside the town where wholesale stocks of fruit trees occupied the greater part of the area, although there were the usual propagations of deciduous shrubs. Field culture with horse cultivation!

The second nursery is much smaller and is within the town. It is given over almost entirely to the propagation of various forms of Euonymus japonicus that are used as specimen plants, sheared into topiary shapes. There is also a smaller area entirely under lath where aucubas, aspidistra, palms, auracaria, etc., are grown for the florist trade, and several small greenhouses, all empty now save one containing a small collection of cactus and succulents.

June 16

Next morning we left at 10:05 for Amboise, arriving at 12:09 for lunch with Mr. Legendre's sister and her family and then a visit to the chateaux and castle

of which only a portion remains, partly in use as a sort of hospital and refuge for the old and partly as a show place and museum.

From the horticultural point of view, the most interesting part of it all was the terrace garden, between a part of the castle remaining and the site of portions now destroyed. Here is a rectangular terrace simply planted with parallel rows of lime trees that have been allowed to grow together into a solid canopy, thickened by clipping all of its surfaces so that it has the formal aspect of the usual clipped trees. A central path marked the main axis, and a broader path paralleled the parapet of the terrace.

There were vestiges of roses and some flowering shrubs under some of the trees to suggest that once the lindens had not make a solid canopy, but it is questionable if the former more open planting could have given the beautiful effect that is now to be had from this dark grove from which one looks out over the shining valley.

At 4:14 we left for Orleans (7:50) to see the main group of wholesale nurseries of the region.

June 17

The nursery district of Orleans lies to the east of the Loire, along the famous Route d'Olivet, which is the road connecting with the Rue Royale of the town proper.

Our first visit in Orelans was to the home of M. Roger Chenault, son of the more famous Leon Chenault who died in 1930. While the son is rather different from the father in his horticultural interests, he has a most unusual garden in the city proper, in which are planted many kinds of specimen trees and shrubs and some plants, particularly various cotoneasters, pyracanthas, roses, regal lilies, lilacs, philadelphus, syringa, ruscus, danae, and similar plants that yield good flowers, fruit, or foliage for the cut flower markets.

It is rather difficult to suggest the organization of the place which fronts, narrowly, on the Rue Royale and runs through to the Loire. There is a formal forecourt to the house which has its long facade parallel to the street, a gravel terrace immediately behind the house and beyond that an oval lawn with roses and similar ornamental plants. Beyond this point the property widens, almost to its full width and is variously bisected by straight cart roads and one drive that runs from the front street on the right side, directly through the property to the river. Between these various roads and paths are the plantations of shrubs and flowers for cutting and, as in many French gardens, contrasting edgings, arbors, or shrubberies line the paths themselves to give variety.

Since the seller of cut flowers in France uses a very different type of material from our florists' it is possible to grow here many things out of doors that we would not use. Euonymus in many named sorts, ruscus, danae, Portugal laurels, and similar plants are used for cut branches. Holly and box in lesser amounts. More and more pyracanthas and cotoneasters are being tried out for their berries but much difficulty is experienced in maturing the crops on account of the birds. M. Chenault was most proud of his stand of Regal lilies, grown from seed and being increased annually by the same method. Most of his bulbs were rather young, few having more than 6 or 7 buds. In cutting, he gathers the stalks just before the first flowers are ready to open.

Plants noted at Roger Chenault's:

Asparagus verticillata. An herbaceous asparagus that gives good greens for summer bouquets.

Berberis rugidicans. Looks like a form of B. sinensis; is said to come from China and be valuable both for fruit and leaf color.

Euonymus koopmanni (syn. fimbriatus). A strange but not beautiful euonymus with linear leaves.

Fuchsia riccartoni. Practically herbaceous here. M. Chenault says that there are various plants in trade under this name. His, of course, is true!

Hypericum repens (glaucous leaves) and H. reptans are excellent for rock gardens. In trade, but should be pushed.

Nothofagus antarctica. Can be propagated by cuttings of half-ripe wood in summer.

Oxalis deppei. A good deep rose flower. Roots used as vegetables.

Roses. Polyanthus Leonette Chenault is a pink form of Marie Pavie with all its good qualities.

Rose. Maxime Corbine, color like Leonie Lamesch, but a strong hybrid wichuraiana.

Wisteria sinensis alba. True stock.

M. Chenault told me that M. Jacob, gardener to Miss Willmott, was a personal friend of his.

From this nursery garden we went to the establishment of Barbier & Sons and saw the younger Barbier, who worked at one time at Dreer's while Legendre was there. Although this nursery was large and fairly well kept, there was nothing of special interest in any department although it was here that I first saw Nepeta sacrantha Souvenir d'Andre Chaudron, a rather coarse perennial that suggests scutellaria more than Nepeta mussini.

From Barbier's we went to see the old garden of the late M. Chenault, which is quite small and pitifully overgrown, the whole garden being one dreadful jungle of rare plants of many kinds - trees and vines in one hideous tangle. There seems little likelihood of affairs being bettered since Mlle. Chenault, who now lives alone, refuses to have any change made in any part of either house or garden.

Plants noted at home of the late M. Chenault:

Amphyrapis sp. (possibly arborescens), a small shrub much like a lavender.

Clematis aromatica and C. caerulea odorata. Excellent plants of about the type of C. recta, but with flowers approximately like that of the Jackmanni group, except that they are more starry, usually with 4 bracts.

Dracocephalum ruskyana. A good 12 inch blue lavender labiate, suggesting sage.

Fagus englerians. An excellent beech.

Halimodendron argenteum. A rather straggling shrub of poor growth, but with silvery leaves and small clusters of rosy flowers.

Jasminum affine. Near but not like officinale and floribundum; yellow.

Magnolia rustica fl. pl. Beautiful deep rose.

Marlea platanifolia. A curious shrub. Look up.

Plagiospermum sinense. Look up.

Polyiothyrsis sinensis. Look up.

Rosa chaberti. Everblooming. Check at Bell.

Styrax platanifolia. Much like obassia.

After this short visit we went almost across the street to see the "Grandes Roseraies", the late M. Chenault's nursery, now sold to Rene Cassegrain who does not have either personal knowledge or interest of the late owner but who has maintained the old staff and is giving the best care to all the old specimens, so that even if there are no additions, there will be no losses.

The nurseries are practically flat, but slope very gradually away from the road toward a shallow ravine. One enters between residence, office, and service buildings that more or less surround a gravelled court. The main road that leads from this court goes directly through the property to the far boundary with the usual fine trees and shrubs along the borders.

It passes first through the areas given over to propagation, seed beds, sand beds, and frames, some without and some under lath shelters. Beyond this are the usual areas of nursery beds planted in the usual fashion with narrow paths between and rows requiring hand weeding. Water is piped everywhere and overhead irrigation standards are to be found at regular intervals throughout the area.

The soil of the area is naturally a somewhat sandy, dusty loam, but has been fertilized for so many

years that it resembles any good garden soil with deep mellow soil. In the areas for cuttings which are made mostly under bell glasses at this time of year, an annual mulch of coarse river sand is added that is dug in after the cuttings are removed.

The bell glasses are painted white inside with one small unpainted patch for inspection and are placed in double rows with paths between. In some cases a light screen shade is put over the whole bed but not always. Cuttings seem to be placed just as closely together as possible in the jars and are made just as we would make them.

Special plants noted:

Cercis racemosa. Seen at Mr. Lionel Rothschild's;not very different save in inflorescences.

Ligustrum chensulti. An interesting semi-evergreen privet.

Acer carpinifolium. Noted elsewhere. This is a reference for purchase.

Acer carpinus, cordata, quercifolia, tschonoski (spelled Tschonowski in catalog) yedoensis are four hornbeams that should be watched.

Cotoneaster praecox. Good stock.

Daphne acutiloba, blagayana, buxifolia, dauphinii, should all be bought here.

Fuchsia riccartoni. Good stock.

Indigofera decora alba. Excellent. Noted white form here only.

Viburnums. Refer to Lemoine's list and check against this, as stock here is better grown.

Berchemia. All species, giraldiana, lineata, and racemosa.

Roses. R. chaberti, longicuspis, sempervirens and Wilsoni. Polyanthas Leonette Chenault and Ami Leon Chenault, Cl. Wichuriana, Aristide Briand.

Beyond the areas of special propagation for salable plants under field cultivation are two new gardens, one a display garden for roses after a rather simple formal pattern and the other a semi-naturalistic garden where all sorts of unusual new plants are put with a small rock garden at one end, a water garden midway, and a simple shrub border at the other end. At the present time most of the plants are very small so that the general effect is pretty enough, but it will be a matter of only a very few years until all are as overgrown as in the old Chenault garden.

From this place we drove through town to a larger field where we saw the field budding of roses and the growing on of large blocks of various fancy conifers. Planting here was in rows for wheel cultivation. The soil was heavier but of good texture.

At all these nurseries they used a new Rototiller for preparing the soil. Although I had been told by Capt. Dalrymple in England that he was able to use it in raw land - to bring it completely under cultivation in three cultivations - the French prefer to leave the soil roughly ploughed in the usual way to aerate all winter and then give the final cultivation with the Rototiller just a day or so before planting time.

As we left this place we passed some of the field cultures of M. Turbat and saw him for a short time. He had just returned from a nursery convention in Berlin and was most excited at the way the German horticulturists have been organized and are mutually helpful in their financial affairs. He also spoke of the huge size of the new nurseries of Spath at Ketsin, where the rows were reported to be 15 kilos long!

After leaving M. Turbat here, we returned to town and saw him in his nursery which adjoins the "Grandes Roseraies" and is enough like it to be its twin, except that there were no exhibition gardens at the end of the plots.

Returning to the city proper, we looked about the town, particularly the Parc Louis Pasteur, the esplanade where the local fairs are held and another park in the western part of town, of which I could not find a name.

The esplanade is many blocks long and about a city block wide. The usual city street goes all about

it, but only one or two of the cross streets are allowed to cut through it. All the earth is bare, no grass and no gravel as in many places. The only planting consists of three rows of horse chestnut trees about 40 feet apart on each side, leaving a space about 60 wide in the center. The trees are about 25 feet apart in the row so that they have grown together forming solid shade. As far as I could discover, they had never been trimmed to form solid heads or sheer faces.

The Parc Louis Pasteur is relatively new . It is surrounded by a stone and iron fence with a fine hedge of pyracanthas inside. Relatively level throughout, its meandering paths seem rather funny. The ground is very poor and is full of chalk, so that many plants show signs of chlorosis. M. Chenault selected the plants for the shrubberies and tree groups so that the selection is more modern than in the old parks we had seen, but it is still too new a park to show much character in planting. At the moment it is dominated chiefly by hideous life-size and more-than-life-size statues in pure white marble.

The other older park is a long and irregular plot with a more or less meandering central path covered with gravel and widening out at times to a circular part where there are benches for visitors. Plantings were of the simplest sort - mostly trees, with shrubberies near the borders and only a few beds of summer annuals.

The rest of the town showed almost nothing of plant life save what one saw above the tops of the walls.

June 18

Through the courtesy of the young M. Barbier, we were driven across country to Les Barres to see the old Arboretum and Fruticetum of the Vilmorin family. The arboretum is now, of course, given to the government and is used as a sort of Forestry School. M. Parde was away and we saw the place under the guidance of one of

the guards. There are many magnificent trees, especially conifers, but the place seemed unnecessary to study carefully as the soil is deep in moss, the trees covered with lichen and moss, all indicating the dripping weather that seemed chronic.

The shrub collection is across the road from all the forestry plantations and is in far better condition since the old keeper, Mons. C. LeMosse, really cares for such work and has unusual pride in it. In spite of the reduced finances and his limited help, he keeps all immaculate. The trees are in excellent shape, the labels clear, the grass well cut and the borders trimmed. New areas for trees are being added beyond the present plantings, but these are much too young to show character.

The especial pride of the place is the rhododendron collection. Since the soil here is not quite suitable for rhododendrons (I could not find out if from actual chalf, of which I saw no sign or from low acidity or what) all the beds have to be made from imported soil. The bushes are now badly grown together but there is no chance to make more borders, so the destruction must continue. Only Rhododendron discolor (or decorum - verify) was in flower.

M. LeMosse gave us each exchange seed lists for our use. He begged me to see that our seed exchange list came out earlier as our seeds get to him too late in summer to be very useful.

June 19

From Orleans (7:11 a.m.) to Paris (9:00 a.m.) early to arrange for the few details needed before going off to Nancy and the possible trip to Rotterdam on Sunday. Left Paris (12;20 p.m.) for Nancy 5:00 p.m.) where we arrived to find an English rainstorm.

June 20

Still raining but on we went to see M. Lemoine in what remains of his father's nurseries. Since the

Lemoines are no business men, it has been rather better to sell off bits of the land than to propagate new plants from which the middlemen alone made profit. It is quite useless to describe the used-grown, broken down place, with greenhouses in most filthy condition and with half the glass broken or missing. The organization is much like that of any other nursery save that there are many divisions of 10 foot hedges of Biota chiensis nicely trimmed. On the beds between were plunged the potted young shrubs for sale and the new plants for sale and the new plants for trial, many of the latter bought from English dealers.

Among new plants, M. Lemoine is still working with lilac species. He seems to be repeating all of Miss Preston's crosses and has many more in addition. There is nothing especially new among philadelphus hybrids. The one philadelphus I saw that caught my fancy was the exquisite, if old variety, Coupe d'Argent, which M. Lemoine says is difficult to propagate as it makes little wood, It is one of the dwarf slender growers and flowers profusely - with huge, flat, white, single flowers, deliciously scented. If we do not have it already, we should get it even if we have to buy rather larger plants than we prefer.

Notes of plants seen at Lemoine's:

Aristolochia moupinensis
Berberis farreri dielsiana
" veitchii
Berchemia liniata
Brunella webbianus
Calycanthus fertilis
Clerodendron wilsonii
Cotoneaster wilsonii (Lemoine got it from Gauntlett)
Deutzia azalaeiflora
" mollis
Dipelta chinensis
Romecon chionantha
Euonymus wilsoni
Forsythia sp. Farrer 388
Indigofera amblyantha
Lindera obtusifolia
Philadelphus Coupe d'Argent. Very fine flowers, but rather poor growth. Late blooming.

Phillaryea sp. - used as a stock for osmanthus.
Potentilla sp. Hers. 2725. Plant very compact, for a potentilla, cream-white flower of beautiful form.
Rhus potanini
Schizandra propinqua
Schizophragma sp. V.M. 1251
Spirea bullata crispifolia
Stauntonia coriacea
Syringa palabiniana excellens
" henryi rutilans. Like a purple lutece
" reflexa pallens
" sweginzowi albida

M. Lemoine says there are few really dark lilacs in the group of S. henryi or in the group of Giraldi hybrids.

Triptegeria forrestii
Viburnum betulifolium myriocarpum
" bullatum
" coriaceum
" dasyanthum
" harryanum
" lobophyllum
" orientale
" propinquum
" Wilsonii

The public garden at Nancy had a very nice small rose garden in which I noted the following polyanthas that seemed unusually fine:

Chatillon
Hofgartner Kolb
Lafayette (Joseph Guy)
La Marne
Maud Dawson
Natalie Bottner
Rodhatte

Returning to Paris (3:55 p.m.) from Nancy (12:05 p.m.) we found we could not carry out our plan to go to Rotterdam and other Holland places together as M. Legendre's brother-in-law had become worse, and he was needed in Amboise.

June 21

The day was spent chiefly in sight seeing. The only horticultural work was a second visit to the gardens at the Luxembourg with their four solid bosquets of trees, the sunken garden parterre with its formal balustrades, tubbed oranges, and flower beds, and the avenue of clipped lindens, and the gardens near the Louvre, extending toward the Place de l'Etoile. There is no need to describe these. They are typically French and more or less like the gardens already described from the Bagatelle.

The amusing thing in all the French gardens is the common use of Verbena venosum. No one seemed to know anything about V. canadensis which certainly is many times as handsome and spreads above the ground rather than underground.

Fuchsias are kept many years by keeping them in cold pits during the winter and severely pruning them in the spring. Erythrinas are treated in the same way but are slower in coming into flower after they are put out of doors.

Left Paris 10:55 p.m., for Berlin

June 22

Arrived Berlin at 6:35 p.m., going directly to hotel.

June 23

Spent the day at Dahlem Botanic Garden.

Unlike the usual botanic garden in which the plantings follow the systematic arrangement of species, this garden is planned to show the ecological grouping of plants. Dr. Schneider told me later that since the war many parts of the garden have gotten away from their original plan as there are neither funds nor staff to maintain them, but certainly portions of the rock garden

were all one could ask.

If one comes from Berlin by the underground to Podbialski Allee, he reaches the garden at the gate on Konigin Luise Street. Here on the right there are the usual small office for the admission tickets and sale of post cards and the usual public rooms. On the left, and outside of the enclosure, are the buildings for the students, the herbaria, etc. From the main gate a broad roadway, not open to traffic however, leads almost to the innermost part of the garden. The areas to the right are all groves of trees with proper underplantings of herbs and shrubs to indicate their several characters. On the left, behind the museum group, are the special small gardens where plants, chiefly herbs, are arranged in their natural group. At the end of the main path, one comes on the group of glass houses used for display in winter but largely emptied in summer. Before this is a rather formal terrace and leading away, at right angles to the entrance road, is another garden of formal design and simple bedding, which extends to the informal area first noted on the right as one enters. It is in this portion, however, that one comes upon the first of the series of rock garden units.

To one who had been viewing rock gardens in which the motif was essentially horticultural, whether to produce large masses of difficult plants or to establish as large numbers of different species as possible, the Dahlem Gardens are rather a shock for in them rare plants appear cheek by jowl with the commonest herbs.

There is a certain monotony in the construction of the several units for nearly all rise to a similar height, suggesting a low peak. And nearly all show the broken stone scree or moraine at one foot, possibly leading down to a boggy place at a still lower elevation. To a degree this is inevitable since alpine plants appear under such circumstances.

Considerable care has been used to have the proper type of rock for each formation and to arrange them in plausible array. As compared with the usual English rock gardens, in which rocks are decorative but not necessarily geological additions and serve more often to divide

colonies of different plants than to suggest geological formations, these units seem rather rocky. This comes also from the use of small rocks of varying sizes through the soil and over the surface to suggest the natural disintegration of the larger rocks. It is extremely well done. The other striking contrast with English rock gardens occurs in the frequent introduction of large areas of mixed species. This results in poorer individual specimens in nearly every case but produces, on the other hand, very naturalistic groups, whether of herbs or of small sward - a much less gardenesque effect than one gets in Great Britain.

One should be able to decide in his own garden as to which style he will follow and if his interest is in growing as large a collection of mountain and alpine species as he can within a limited area, he should make less attempt to simulate alpine rock arrangements and frankly prepare his garden so that the soil and rock mixture will insure cultural success and the rocks, if conspicuous, will serve only as decoration. In other words he will plan a horticultural arrangement. If, however, he wishes to reconstruct a bit of nature, he will have to curtail his interest in a plant collection and let the rocks dominate the plan.

No attempt was made to record the species used in each of the rock garden units or even to list the names of the units themselves. Nor was any effort made to record all the species in flower. Only a few special plants were noted as species we should investigate for our conditions.

Adenostyles alpina. Altogether too coarse for the usual small rock garden, this 2 foot perennial might make a good plant for the ordinary border, especially one not too dry. In a general way it suggests some of our American species of eupatorium, with fair-sized flat heads of rosy purple flowers. The leaves are cordate and coarsely serrated. Apparently spread a little at the base of the clump. Grows both in full sun and half shade toward base of rock gardens.

Alyssum bornmulleri. This, of course, was long past flower but appeared to grow as a fairly spreading carpet of low silver-gray rosettes from which the more or less erect flower stalks appeared. The colony was too far from the path to show if the rosettes were on prostrate stems or rose from underground stems. Certainly it was much more tidy than many alyssums so long after flower.

Artemesia splendens var. brachyphyllum. Useful for its carpet of minute silvery leaves, beautifully cut. No sign of flower.

Bupleurum ranunculoides. A rather coarse umbellifer with grassy leaves something like those of Ranunculus graminifolius and 14-20 inch stalks bearing green-yellow umbels. Not a "choice" plant but one that should be useful and hardy.

Chrysanthemum corymbosum. Camomile. This again is a very coarse plant, objectionable to many people from the rank odor of the leaves when handled. The leaves suggest feverfew in their general style and yellow-green color but are somewhat more coarsely lobed. The stems grow 2-3 feet high and are crowned by flat-shaped panicles of daisylike flowers about 2 inches across. The individual plants show flowers with some variation in size, but all are of a glistening whiteness with pure yellow centers. Since this blooms at the same time as many of the lavender erigerons, violet and lavender veronicas, etc., it should be useful. (See Kew and Edinburgh notes for other interesting chrysanthemum species).

Dianthus giganteus. Although there are many more notes on dianthus under the Kew entry for July 3, this species was most conspicuous here. It belongs to the clustered section with small heads of bright rose-colored flowers that become paler with age. The stems, 2 feet high, are very wiry and slender and the foliage narrow, forming a fair rosette at the base.

Genista saggitalis. This curious alate species apparently seeds well here and seed should be asked for if desired. The plant is much more curious than beautiful, forming dense but ragged tufts about 10-14 inches high and somewhat broader.

Gypsophila tenuifolia. Catches the attention as it looks like little tufts of grass, 2 inches high. No sign of flowering.

Helichrysum plicatum. It was impossible to tell if this was an annual or perennial species but it made fine patches of slender plants bearing typical heads of clear and brilliant lemon yellow.

Moltkea petrea. This is the most lovely plant seen at Dahlem and was equally beautiful when seen later in England both at Mr. Ingwersen's and Mr. Millard's. Possibly the easiest way to describe it is as a delicate, somewhat shrubby 6-8 inch onosma with myriads of 2 inch flower heads of rather small pendant flowers of pure deep blue with scarcely a trace of purple.

Onosma stellulatum. Unlike many of the onosmas that seem to make a great amount of foliage and stalks with relatively little flowering, this species gave a fair amount of clear, rather pale lemon-yellow bloom. Like many others, it is somewhat coarse and hairy.

Primula grandis. This species was mentioned at Edinburgh when Cox and Jellito were discussing what could be grown here at Dahlem. There was a splendid colony here, on the north side of a dry slope, with good foliage and tall flower stems, showing a good amount of seed coming along. The flowers are said to be small and not particularly beautiful.

Scabiosa silenifolia. This is only one of many small species of scabiosa that were noted, all much more interesting than the one we grow as an annual. This species makes fair-sized rosettes, almost flat on the ground from which rise 12 inch, almost leafless, flower stalks, bearing inch wide, lavender flowers.

Senecio abrotanifolius. The particular character of this plant that arrests attention is the curious color of the somewhat daisylike flowers. The plants are about 12 inches tall of somewhat irregular growth with finely cut leaves somewhat like a coarse Coreopsis verticillata. The flowers have narrow rays that do not overlap entirely but make irregular starry flowers. The orange color is very intense and slightly pinkish as in some of the dimorphothecas.

The conspicuously beautiful part of the garden at this time was the section representing southwestern Yunnan. The area sloped rather gently from the southwest toward the east. A small artificial stream starting at the top wandered deviously down the slope making many marshy spots en route and widening out into an open, rocky, wet meadow toward the base, draining artificially, of course, into the lake below. At the time the masses of

bloom came from great colonies of nearly all the candelabra primroses, the sikkimensis section, some of the involucratae, and a magnificent colony of P. littoniana at the best stage of its growth, with glowing crimson buds and a few rings of opened purple bells at the base of the head. Iris chrysographes, wilsoni, bulleyana, delavayi, (forrestii almost over), Trollius ledebouri, etc., and various astilbes also made great masses of rich color while several rose species, not labelled and unfamiliar to me, scrambled over some of the shrubby background in fountains of color.

Other interesting group collections at Dahlem were collections of plants with variegated foliage and with doubled flowers. These were rather catholic and not all-inclusive since they had trees and herbs and shrubs all in close quarters.

June 24

The only horticultural activity of the day was a visit to many of the smaller parks through the residential sections of the city where apartment houses are the typical dwellings. Nearly all of these are built with balconies which may be balconies in the sense that we use the word or small porches recessed into the face of the building.

The use of window boxes for the decoration of both balcony and window is very prevalent. Ivy geranium, dwarf petunias, marguerites, scarlet runner beans are the common plants of the boxes, and they all grow out to the light presenting their best faces to the pedestrians below and yielding only a green screen for those who sit on the balcony.

There seems to me a curious psychology here for the owners rarely permit the plants to grow beyond such a height that a person seated on the balcony can not see over them, seeming to believe that they will not be observed from the street and quite forgetting that all balconies save the top can be seen by those above. In fact the whole attitude of these and other city dwellers toward privacy was most interesting. In public parks no effort was made to shield seats and the most personal matters seemed to be discussed on the very sidewalks.

The conspicuous thing about the smaller parks through all these areas was the intimate and accurate relation of their plan to the surrounding blocks of buildings. In nearly every case the plans were of the simplest nature, the areas being determined largely by the paths and these in turn by the location of streets converging on the area. Generally speaking there were shaded groves or paths for sitting - an open lawn for effect and flowers - and an open play area for children or for games.

A very considerable amount of statuary is used in German parks, with a great contrast between the baroque and rococco work of former times and the heavy stylized work of modern sculptors. Some of the figures of the animals and small children, particularly those treated with a degree of humor, were charming and quite in character with the severe and foursquare nature of the plan of planting. On the other hand, the life-sized figures, supposedly athletic and after the Greek mode, of nude male figures succeeded only in being painfully literal and ugly, failing always to suggest anything of vitality or life, chiefly because of a slightly relaxed posture.

The great Charlottenberg Park beyond the Brandenburger Thor, has to be considered as a grove through which both roads and paths wind in rather old-fashioned style. Trees are planted in all sizes and species everywhere with the ground beneath carpeted in rough grass, mostly unmown. Shrubberies were used more to make barriers than to provide flowers. They paralleled the boundaries in a general way, screened public and small service buildings and accented the intersection of paths and decorated the areas about statues.

The interesting thing for me in observing the park work in Berlin was to be observed in the careful way each area preserved its unity of character. A park like that last described was uniformly a grove, a solid block of trees of as marked solidity as the surrounding areas of houses; a small park for play in the apartment house area was frankly functional and not decorated; a small garden for flowers like the park to the east of the Platz der Republic, is frankly a small flower garden and no more although some seats are introduced into the design.

Possibly the most interesting treatment of a series of statues along an avenue is to be found in the Sieges Allee, which shows a planting in which a repeat motif of a light or white-colored statue is repeated regularly for the entire length of the avenue. There are the usual lines of street trees, the usual wide pavement, and then a wide park band in which the statues are located. Each figure is given a niche treatment with clipped hedges and the long strips between are lower and decorated with narrow flower beds in which the plants are changed from time to time. At the time I was in Berlin, the chief flowers were pink Japanese hydrangeas, blue ones being used only in flower boxes.

June 25

The horticultural work at Potsdam is a curious blending of French and German mannerisms. The plan is essentially French, with gravelled areas, broad terraces, trimmed trees, oranges in tubs and the like, but the details have a heavy German touch that is ugly here.

Even the naturalistic stream and plantings at the lowest level below the palace seem more a German imitation of a French imitation of a German style than anything else.

The points of the place lie chiefly in the sharp accentuation of areas of solid shade, areas of half shade, and open spaces, and the clever introduction by means of formally treated axes of the formal note into or through naturalistic areas.

June 26

By appointment I finally saw Dr. Camillo Schneider, just returned from Geneva, and saw the type specimens of Berberis julianae and sargentiana. Our specimens of the former are correct and our latter plant is wrong. We went over all the species that Dr. Schneider thought we might have but none represented our plant. He is anxious to have complete specimens. His specimens of B. sargentiana are the same as those Legendre has from the older Chenault and that I saw growing at Kew and at Wisley.

He is anxious to have specimens of any and all plants that we have of which we can give origins to compare with those in hand for his study for the R.H.S. This study, of which I heard first at Kew, will not be completed for several years and is to be a much less formidable affair than his preliminary studies in the Bull. L'Herb. Bossier!

He showed me specimens he had received in 1916 from Dr. Van Fleet representing

amurensis x veitchii (2 different seedlings)
(Dr. S. questions what Dr. VF had as Veitchii)
vulgaris purpurea x Thunbergi
poireti x veitchi
veitchi x poireti
veitchi x amurensis

Dr. Schneider would like to have specimens of all these if they can be located. He would like also to have photographic copies of all my drawings!

June 27 - Saturday

June 28 - Sunday

Both days visited other city parks including the Zoo, etc.

June 29

Having left Berlin about 10:15 p.m. on Sunday night, June 28, I arrived at Zwolle in Holland (changing at Deventer), where I was met by Mr. B. Ruys of the Royal Moerheim Nurseries of Dedemsvaart. This small village is about 20 miles from Zwolle and is difficult for the foreigner to find. We drove by auto through agricultural lands reclaimed within the last 20 years from marsh or ponds. After draining, the upper layers of peat are removed for fuel and the lower soil is then put gradually under cultivation. It is often 6 feet below the original soil level. Potatoes, wheat, and pasturage were seen chiefly.

I could have gone by bus or steam train to Dedemsvaart but would even then have been between 3 and 4 miles from the nursery.

The nurseries are about 40 years old. The original area near the offices is given over chiefly to perennials. The offices and residences are along the public road that parallels the canal. One passed between the packing shed and office to an open yard with small greenhouses and work sheds and rows and rows and rows of frames for seedlings, cuttings (now being made), grafts (chiefly double gypsophila), and one year plants. Hedges, shelters, and lath shades were used as we would use them and water was available at regular intervals.

The areas beyond are difficult to describe but were filled with perennials in wholesale blocks, planted in Dutch beds with narrow paths between. Delphiniums were just beginning to go by, lupines practically prime, and phloxes and astilbes just showing first flowers.

Mr. Ruys' special achievement is a new perennial delphinium of character and habit like the blue forms but of good crimson color. Although he has worked for this for years, using D. nudicaule to supply the red color, there have been no results until recently one seedling of D. alatum x nudicaule resulted in a robust plant of fine habit but ugly purple flowers of curious color. This was allowed to set seed from which came plants of every possible variation including 3 red-flowered plants of good habit and constitution. These were carefully segregated and selfed (?) and their progeny is being raised separately to see if other breaks will appear. The three plants now in flower are good crimson and show no trace of the plum or prune purple one gets in ordinary delphiniums, their reds tending if anything toward orange as in nudicaule.

The plants noted at Ruys' Nursery that we should investigate:

Cotoneaster microphylla glacialis
Cotoneaster praecox (Nan Shan)
Hedera helix conglomerata minima
Hydrangea opuloides acuminata
Malus "Aldenham Purple"
Malus purpurea aldenhamensis (not a synonym)
Potentilla fruiticosa Beesii
Potentilla fruiticosa dahurica
Potentilla fruiticosa Friedrichsenii
Potentilla fruiticosa mandschurica

Potentilla fruiticosa parvifolia (Syn. Farreri)
Potentilla fruiticosa parvifolia prostrata
Potentilla fruiticosa veitchii
Salix bockii

Herbaceous plants:

Anchusa Italica Morning Glory
Anchusa Italica Pride of Dover
Anemone pulsatilla Mrs. V. D. Elst
Armeria hybrida gigantea
Aster alpinus (in all its forms)
Aster amellus
Aster frikartii
Aster thompsonii nanus
Aster thompsonii Winchmore Hill
Astilbe (all the collection)

In addition Liliput, W. Reeves, Koreana.

Caltha leptosepala grandiflora
Campanula erinus major
Clematis recta purpurea
Ephedra sikkimensis
Ephedra sikkimensis Gerardiana
Erica carnea vivellii
Erigeron (all hybrid forms)
Gaillardia aristata hybrids, particularly Tangerine
Geum hybrida Fire Opal
Helenium hybridum Moerheim Beauty
Helianthemum hybrids (entire set)
Hosta fortunei
Hosta fortunei robusta
Hosta glauca
Hosta minor alba
Lathyrus latifolius "Rose Queen"
Lavendula hybr. Walhampton Giant
Podophyllum emodi
Podophyllum emodi major
Podophyllum leichtlini
Primula hybrida Bunty
Primula hybrida Juliana Gloria
Primula hybrida Pam
Primula hybrida Wanda
Primula Juliae
Scabiosa caucasica Miss Willmott

Scabiosa (entire series)
Stachys grandiflora rosea
Stachys grandiflora superba
Tradescantia virginiana Leonora
Tricyrtis hirta
Tricyrtis macropoda
Trollius ledebouri
Trollius patulus Bees' variety
Trollius pumilus Moerheim
Viola cornuta Jackanapes

Mr. Ruys has a separate nursery in which he grows all his deciduous shrubs, his conifers and rhododendrons. The latter are all grafted on ponticum stock.

He also purchased some years ago what used to be the Tottenham Nurseries. These are smaller and are used chiefly for perennials, although there are some fair blocks of azalea, adromeda, pieris, leucothoe, menziesia, erica, and callura. Curiously enough, box does not grow well at any of their nurseries.

Left Dedemsvaart that night by train about 6:00, going to Amsterdam for the night since there are larger hotels there.

June 30.

From Amsterdam to Haarlem by train (9:45 a.m. - 10:20 a.m.). With the help of the information bureau man, I got my tickets and then got to Van Tubergen's nursery where I saw the younger of the younger Mr. Hoogs!

Although their nurseries are really inside the city and appear small at the moment of entering, they stretch back in all directions between houses and gardens. There were no great displays of bloom save from ixias and their strain of "Shelford Hybrid" eremurus.

The soil in the nurseries at Haarlem appeared almost pure sand although in some places Mr. Hoog told

me they had actually added sand to make it hotter and drier on the surface. To contrast to this porosity, there is an even and constant supply of capillary moisture that can be seen by digging 2 or 3 inches below the surface. Additional supplies of water can be had from the supplies piped in all directions.

To me the most interesting features were the large, wide-spanned, unheated greenhouses used for the cultivation of tulip and iris species and regelio-cyclus hybrids. Some few allium species, some gladiolus species, and various other plants that need a little extra roasting are grown here. Mr. Hoog says that the greenhouses are actually cheaper than the additional care that is needed for these plants in field cultivation.

He told me that practically all their tulip species are now grown from seed, although they have some collections in Persia, etc.

We went for lunch in a park pavilion in what used to be an old estate but is now a public park in the village of Heemstede. And after lunch went on to their larger field nurseries where more perennials, including iris, peonies, phlox, astilbe, etc., are grown in great quantities. Here we paid special attention to other allium species with ornamental flowers. Mr. Hoog also asked my attention to the brodiaes they had and wanted to know if there were obvious differences between B. capitata and B. congesta! a question I could not answer. He has several species I do not.

Allium albo-pilosum
" atropurpureum (rather dull purple)
" christophi, better than kasativiense - not in trade, but possibly can spare one bulb.

" dioscorides, more curious than lovely.
" multibulbosum
" pendulum - white flowers.
" roseum grandiflorum
" rosenbachianum album
" sphaerocephalum
Alstroemeria chilensis
" pelegrina
" pelegrina alba
" tricolor
Anthericum hookeri
Briphthalmum salicifolium
Brodiaea minor, very dwarf with wide umbels of very fine large, dark purple flowers.

Colchicum hybridum Lilac Wonder
Eremurus, particularly Shelford, Shelford Isobel,
Shelford Rosalind, Shelford White Beauty.

Leontopodium aloysiodorum
Lilium dahuricum "Orange"
Lilium dal-hansoni
Lilium martagon cataniae
Oxalis adenophylla
" enneaphylla
Pelargonium endlicherianum
Tradescantia virginiana Hutchinsoni
" " J. C. Weguelin
" " Leonora
Tricyrtis hirta
" macropoda
" pilosa

Mr. Hoog also urged me to study for our climate the crocus species and suggested that many of Mr. Bowles' best things had really come from them.

As compared to Dedemsvaart, which has a temperature range much like Norfolk, Va., as nearly as I could tell, Haarlem is much warmer and rarely has the degrees of cold in winter.

The public parks in Haarlem are very simple, mostly grass and trees and the lovliest — that which parallels the winding canal (see map) which is merely lawn and great trees — could not be improved by any amount of planting. The same is true of the parks that surround the Zoo - which are like open woods - part with undergrowth - part with grass floor - simply done so that long areas of light and shade are reflected on the lawns. The effects, therefore, are of the simplest - sharp contrasts from the grassy lawns with the patterns of tree trunks and cast shadows. There are no obvious patterns from either paths and roads, or from flower parterres, especially as flowers are used so sparingly.

Although the train from Haarlem for the Hook left at 9:35 p.m. (really 8:35) the light was quite bright enough that one could see the bulb fields between Haarlem and The Hague. Tulip harvest was practically over and the beds were freshly dug with the piles of old top either burnt or burning at regular intervals over the fields.

down the long avenue and sees the beds against one another.

Among the beds on the terrace before the palm house, there is no conspicuous plant save erigeron Merstham Glory which is an admirable form giving a perfect sea of lavender bloom.

Cistus everywhere are excellent. Spartiums, interplanted in shrubberies and especially in the slope of double gorse, are just coming into flower and lighten the dark masses of foliage very brilliantly. Lavender is coming into full flower.

General mowing, by hand, is in progress for the rough areas under trees, the grass being dried for hay or for composting.

Rose species are still in scattered flower, especially the Chinese forms like caudata. There is also a good deep red form of Rosa sinica.

July 4

Waterlilies are in full flower in the several ponds. Lilium giganteum is in fine form among the large-leaved rhododendrons among the oak woods. It is interesting to see the faint pink lines on the inside of the petal - a feature I have not noticed before.

As one looks across the herb garden, it is astonishing to see how few plants carry well as pure masses of color. The senecios are good, most of the delphiniums, sages, chrysanthemums, alstroemerias, Allium giganteum, anchusas, a very few herbaceous veronicas, centranthus, none of the verbascums, none of the legumes, only a few campanulas, a few sidalceas. The achilleas are a particularly dull and dirty lot.

Are either Artemesia ludovici or its variety gnaphalioides, our Artemesia Silver King? I think not as both forms seem coarser and larger in all their parts.

The old Galega officinalis is much better than I had remembered and is much used both here and on the continent. We should revive it.

In the warm border outside the greenhouses, there are some calochortus, particularly the varieties near Pendey's Vista and Eldorado strains. Some of the yellow globe tulips have been good and gone by. Brodiaeas are excellent, particularly lactea. Brevoortia ida-maeia is fine.

The alpine house is locked and empty.

The only showy lychnis is the old S.chalcedonica.

Erigeron as a genus should be investigated.

In the "blue garden" the delphinium hybrids are good but are not a patch on those seen elsewhere, particularly in Holland. They, with galega, several salvias, Campanula persiscifolia, erigerons, some veronica, shasta, make the chief color effect.

Achillea dypcolata. Not all the plants flower but the gray foliage is sufficient. Flowers are like yellow milfoil on 16 inch branching stems.

Achillea nana. 8-10 inch, much less gray than some but with nicely cut foliage and more abundant flowers ;ole dull white milfoil.

Allium angulosum. Dull pink, certainly not the best.

Allium bidewilliae. 6 inch, faintly pink over white, leaves all burned off by this time. Saw this also at Van Tubergen's. It is smaller and much less showy than either (acutifolium?) or unifolium.

Allium carneum. Looks very much like a pale cernuum, except for a difference in the carriage of the flowers in the umbel that is difficult to describe.

Allium farreri. This is a charming species forming dense tufts of flattish leaves and 12 inch stalks of more or less drooping, dull, almost blue-purple, flowers.

Allium giganteum. This is the most spectacular of the alliums on account of the three, almost four font flower

stalks and huge round heads of dull rose flowers. The individual flowers are not so delicate as some, but the head is showy and carries well across the garden. The foliage is broad and somewhat battered.

Allium hymenorrhizum. Dull and poor.

Allium suwarovii. Out of bloom; apparently I have missed it altogether but it is of the large-headed type like giganteum.

Allium senescens giganteum. Looks more like a giant form of chives than any of the species, but so far as I can tell is no great improvement over chives for the garden border.

Allium subangulatum. A rather charming sort, now just going by. It is much like our Cernuum but with more pendant flowers and a deeper rose, almost purple.

Alstroemeria haemantia. The species giving the clearest rose pink flowers, all, of course, showing the yellow flame and feathers on the upper lobe.

Alstroemeria ligtu var. pulchra. This seems to be the smallest flowered sort although tall and free growing. The blooms may have been just opening but if not, all showed a somewhat hooded form; not showy as seen.

Alyssum argentum. Excellent.

Antennaria straminea. Tiny silver rosettes in fine flat masses; no signs of flowering here. Noted before (see April 7).

Armeria longaecaristata. Somewhat coarse in foliage but not bad with 10 inch stalks and clear, rather lilac-white flowers.

Armeria sardoa. Another coarse-leaved species with 12 inch stalks and good, lilac-pink flowers.

Artemesia pursiana. This again suggests our "Silver King" with entire leaves.

Asperula hirta. Gives a typical 4 inch carpet with white flowers.

Aster pattersonii. Forms coarse rosettes from which rise 12 inch branched stalks with 1-1½ inch lavender, erigeron-like flowers.

Aster tenellus. One of the most charming plants now in flower here. Dwarf cushions of narrow, yellow-green foliage and 6 inch stalks bearing solitary daisies of pure, dark myosotis blue.

Calceolaria biflora var. obtusifolia, and C. John Innes. Are planted at Kew on a southeast slope in the scree. Saw them at Ruys' Nursery in frame. Both sorts make basal rosettes from which rise nearly naked stalks, 6-8 inches high, with clear yellow pouches. No one seems to be certain as to what they will stand in the way of frost.

Campanula linifolia. In the rock garden very much suggests C. rotundifolia in general habit and color but the flowers are differently borne and all the leaves are narrower.

Chrysanthemum cinerariaefolium. Has a rather loose, open habit with leaves much like Dusty Miller if not quite so gray; flower stalks 10-14 inches, bearing 2 inch white, daisylike flowers with somewhat revolute ray florets.

Chrysanthemum corymbosum. See entry under Dahlem, page 124.

Chrysanthemum densum. A dwarf, sub-shrub with beautiful gray leaves and relatively few flowers, here all without rays - as in Santolina. Excellent.

Chrysanthemum pellens. Much like the common established daisy and need never be introduced.

Dianthus atrococcineus. A 14-18 inch, deep red cluster head.

Dianthus atrorubens. A rather coarse 12-14 inch cluster head in which the flowers are rose pink and the calyces deep crimson.

Dianthus attenuatus. Forms very delicate compact cushions of gray foliage from which rise almost leafless, 6 inch, very slender stalks, topped by starry, deeply fringed flowers.

Dianthus banaticus. As this grows in the herb garden at Kew it makes a very scanty cushion, forms 10 inch stalks with small, rose-pink flowers in heads.

Dianthus cinnaberinus. Here this is a variable species but most plants gave sweetly scented white flowers, though few were pinkish with reddish zones; 10 inch stalks.

Dianthus croaticus. This cluster head makes good tufts of crimson-tinted, grasslike basal leaves, from which rise relatively few 10-14 inch stalks with deep rose-colored flowers in heads.

Dianthus fragrans. This is a most charming plant, forming a fine carpet of tiny leaves not over 2 inches high, from which rise the 4 inch stalks bearing small, starry-fringed white flowers, with no scent as far as I could discover.

Dianthus giganteus. As seen at Kew this cluster head was much like, but much poorer than, D. sanguineus (see page 143) with paler flowers (See also page 124)

Dianthus glutinosus. It is difficult to judge this from the plants at Kew. It seems to make somewhat woody stems like a carnation, which become shabby with age unless cared for. It seems extremely floriferous, with small white flowers and reddish calyces.

Dianthus heptinervus. Appears like a poor caesius.

Dianthus hirtus. In the borders at Kew this makes only a very feeble plant, sending up 6 inch stalks with small white flowers. The deeply fringed petals are often reflexed. No scent.

Dianthus hoeltzeri. This looks more or less like a ragged D. plumarius, white in color, very floriferous, and scented.

Dianthus huteri. A cluster head that forms very little rosettes at the base and sends up the usual stalks of flowers. The color in this case is much like that of a good D. deltoides.

Dianthus hyssopifolius. One of the usual grass pinks, sending up from the cushions 6 inch stalks bearing pink-white flowers, sometimes showing a faint darker pink eye, deeply fringed on margin, scent faint, calyx sufficiently red to be noticeable.

Dianthus integrifolius. This species makes dense, dwarf cushions of very narrow foliage from which rise very lax, over-arching flower shoots, 6-8 inches high, bearing very small white flowers. Just past flowering.

Dianthus liboschitzianus. A rather nice cushion, compact and well furnished with leaves, from which rise the 6 inch flower stalks. The flowers are deeply fringed but the petals are so wide that they form a perfect pentagon and are never ragged.

Dianthus lilacinus. One of the most floriferous of the grass pinks here, forming good cushions, smothered in bloom. The flowers are well formed, fringed, and have a sweet but not powerful scent.

Dianthus litta. In the rock garden there is a very handsome tuft of this species marked "seedling" which may suggest questionable identity. It appears somewhat like a strong plumarius hybrid with rose-colored flowers, coarsely fringed and faintly scented. The petals do not overlap but form a starry flower.

Dianthus lumnitzeri. A rather interesting species as it forms good dwarf cushions of blue-green leaves from which rise 10 inch branching stalks, bearing fair-sized, fringed, fragrant, starry-white flowers.

Dianthus naudicaulis. A rather shabby cluster head with little grass in the rosette and 12-14 inch stalks bearing heads of small rose-colored flowers with crimson calyces.

Dianthus pancicii. As this grows in the bed at Kew, it seems very feeble but might be better elsewhere, although as most of the cluster heads are robust, it may always be a poor thing. Little grass in rosette and dull pink flower.

Dianthus pubescens. Is a very coarse cluster head, spreading its flower stalks in all directions. Flowers not yet opened.

Dianthus rigidus. This species was well past flower but was conspicuously free flowering if rather coarse in habit.

Dianthus sanguineus. Another cluster head, 12-18 inches high, with deep rose flowers about the red calyces.

Dianthus stewkianus. An interesting species not yet in flower. It forms 2 inch cushions from which rise the slender overarching flower stalks. If grown in rock garden, might be more interesting.

Dianthus stribneyi. Notes incomplete - as it is noted only as "deeply fringed - pale pink." It comes just after D. lilacinus in my notes which might indicate that I intended the comment given to differentiate it from that species.

Dianthus strictus. This species apparently spreads out into 1 inch cushions of prickly grass from which rise the 4-6 inch flower stalks. All flowers over.

Dianthus superbus. In the borders this formed 2 inch cushions of compact foliage from which rose the 6-8 inch stalks bearing deeply fringed starry lavender-pink flowers.

Dianthus superbus nanus. This appeared only in the rock garden and I failed to note the heights, noting only that it was most floriferous, deeply fringed, and white.

Dianthus tenea. This seemed to me a most desirable species since it forms the most charming 1 inch cushions of fine, small foliage, from which rise the erect 4 inch stalks. Unfortunately all the flowers were past.

Dianthus tenuifolius. In the Kew borders this makes excellent dense cushions with few stalks (height not taken) bearing cluster heads of rose-colored flowers of pure hue and good form.

Dianthus velebiticus. A rather nice sort, more or less of the plumarius type, forming good gray-green cushions and throwing up 8-10 inch branching stalks of pinky-white flowers with a deep, red-brown zone and sweet scent.

Dianthus velenowskyi. A rather decent, but not very outstanding cluster head, 10-12 inches high, with pink to pale rose flowers. Just going out of bloom.

Dianthus waldsteinii. Dwarf cushions from which rise 4-6 inch flower stalks bearing deeply fringed, starry white flowers with a pinkish zone.

Dianthus zonatus. Curiously enough there is not a single plant here with zone flowers! 6-10 inch stalks. Flowers finely fringed but not scented.

Erodium chamaedryoides rosea. This dwarf species makes an interesting carpet of small geraniumlike leaves that lie rather flat, above which appear the scattered, flat-faced flowers of pinky white, veined somewhat like our spring beauty (Claytonia virginica). It does not make a sheet of color as far as I could see.

Erodium macradenum. A lovely open rosette from which rise endless stalks of beautifully veined pink flowers that always remind me of some of the pelargonium species. Is in full flower and is full of both buds and seed stalks.

Erodiums: All should be investigated as almost any that are hardy would be worth growing.

Eschscholtzia caespitosa. Probably an annual here. 6-8 inch mounds of very delicate, narrowly-dissected, yellow-green foliage, studded over with small flowers 3/4-1 inch in diameter, lemon-yellow in color, suggesting hunnemannia almost as much as eschscholtzia.

Felicia pilifera. Here this must be treated as an annual. As it grows at Kew, it forms rather sparse little plants branching to send up solitary terminal little daisies of the most lovely turquoise blue with purple discs. The 8-12 rays give a rather starry effect to the flowers that open flat only after about 2:00 p.m. Saw this also at Mr. Bowles', where it grew in much the same fashion.

Gentiana decumbens. Look up notes for this. My only comment seems to be "very nice blue" and memory gives an uncertain picture of decumbant stalks, somewhat like Asclepiades in arrangement with whorls of larger, erect, blue flowers.

Gentiana macrophylla. This was noted merely as one never to bother with as the flowers are minute and of a very poor, wishy-washy color.

Geranium pratense. Of course this is a common plant, more useful in the general border or open wettish meadow than in rock gardens, but it is a most effective cranesbill

that forms fairly compact rounder bushes up to 3 feet, and as much across, starred all over with the blue-lavender flowers. It varies greatly from seed from white to rather ugly mauves. In contrast to the blue-lavender flowers, the ruddy stems and leaf bases are conspicuous.

Hemerocallis plicatus. The plants of this species were at the top of the bank, too far from the path for really good observation but apparently it is a dwarf species with the foliage overlapping the somewhat branching stalk. The flowers are somewhat like those of H. demortieri but are less graceful. As flowered here, it is not a useful species.

Jasione perenne. My only note for this is that it is now at the peak of its flowering. (If I am correct that I saw this plant, or one similar, from train windows as I went down to Suningdale, then it is a native of chalky downs, over which there is some peat.)

Morina longifolia. This excellent plant is now used often in bedding where the excellent spring leaves of deep green, marbled and veined with silver and white, make splendid rosettes from which rise the flower stalks much like an acanthus except that the delicate white flowers seem entirely out of keeping with the whole plant.

Nepeta macrantha. To those who know nepeta only as N. mussini, or as ordinary catnip, this offers another surprise for it makes an excellent, tall perennial from 3-4 feet high but with rather slender stems that have to be given either stakes or pea brush. The abundant flowers that come from the terminal axils are large, almost as large as some of the salvias, and of a good clear lavender color.

Phlomis tuberosus. (Look up hardiness). This is a very coarse plant but certainly is a striking contrast on account of the large scale of its parts. Large, coarse basal leaves, from which rise 4 foot red stalks that branch above, bearing whorls of pale, rose-pink flowers.

Primula wilsoni. Note was made of this because it was unusual rather than showy. It belongs in the section and has smallish, somewhat pendant bells that vary in color from deep rose to deep brownish-crimson. Textures velvety.

Salvia superba. A fine, somewhat coarse perennial, forming strong erect clumps, 3-4 feet high, topped by solid masses of bloom. The calyces are deep red-purple and the medium sized flowers are purple. If this is not in common cultivation, it should be.

Scabiosa columbaria. A charming dwarf scabiosa, forming rather flat rosettes of typical leaves from which rise the bare 6-8 inch stems, topped by flowers about an inch in diameter, of a dull ashes of roses hue.

Scabiosa vestina. Another species forming a flat rosette of basal leaves, in this case not more than 2 inches high, from which rise 6 inch stems bearing slightly larger flowers, 3/4-1¼ inches in diameter, of a soft clear lavender color. (Verify these species for duration. Biennials?)

Senecio abrotanifolius. An interesting but rather lax-growing plant 6-10 inches high, somewhat woody at the base, with leaves somewhat like Coreopsis verticillata, and rough flowers of a curious strong, buffy-orange color. Just going out of flower.

Senecio ledebourii. From Siberia. A most striking plant with huge rosettes of erect leaves 2 feet high and as much as 10 inches across, suggesting horse-radish leaves, from which rise strong 3-4 foot stalks topped by a long inflorescence of crowded yellow daisies like mullein head or a tritoma. The striking character carries all across the garden. The gardener told me, on my asking, that it did not sucker.

Stachys grandiflora. From Asia Minor. Grows up to 3 feet with large, somewhat tubular, rosy-magenta flowers borne in whorls along the upper part of the stalks. Showy.

Stachys longifolia. From the Caucasus. This is a somewhat coarse plant, forming rosettes of larger leaves from which rise 12-14 inch branching stalks, bearing 3-4 inch heads of dull mauve-pink flowers. Most effective in large clumps.

Waldenia candida. Look up. An interesting tuft like sessile tradescantia. Flowers white.

July 4 - 5 Holiday

July 6

The particular expedition of the day was a trip to see Mr. E. A. Bowles, famous for his writings and particularly for his interest in crocus species.

It is very difficult to set about a description of the place which is a smaller house and estate than the one that goes down in the family. One enters the gate and finds before him an oval lawn dotted with various beds and trees and the house opposite. The property appears to extend only a short distance to the right and considerable distance to the left, which proves to be the case. Like many similar English gardens, it is a veritable museum of trees, shrubs, and plants, and as such sometimes sacrifices effect for cultivation. Lawn areas are reduced to a minimum - the oval before the house and the lawns below the drawing room, seen to the left of the house as one approaches. To the left of these is a solid planting of trees and shrubs that extends to the little stream that runs like a still canal through the property. Beyond the stream are the kitchen and working gardens and the meadow full of naturalized beardless iris, astilbes, geraniums, spireas, trollius, etc., and the hot dry bank and rock garden.

Unlike most of the rock gardens I have seen, Mr. Bowles' garden has not been planned at any one time and has less equipment for nature and the weather than most. It also reflects his own particular interests.

The trees and shrubs of the grovelike part of the garden are planted to provide a maximum of contrast in foliage color and size and in habits of growth. With amazing temerity he has used many golden and silver-leaved trees, variegations, and pendulous forms that are usually taboo to the orthodox, with the result that even in July, when relatively little is left to flower, the effect is gay and charming.

Without too great an aside, I might say here that in England, where there is so much gray and gloomy

weather, golden leaved shrubs, even the despised golden privet, take on a value that it is hard to understand elsewhere. Whether or not one would care to champion a general use of such plants, one can surely report a most successful garden here. In addition to their skillful use, they have been so placed that from strategic points in the paths one can see them all in their happiest juxtapositions.

The rock garden, which is essentially a south bank below the canal-stream, is much less elaborate than most. It is essentially coarser in scale than most, with larger, bolder masses of less precious plants, and the special things in smaller areas.

Veronica, cistus, helianthemum, dianthus, verbascum, centranthus, campanulas, geraniums, yucca, furnish the bold masses with cytisus, genista, spartium for larger touches. I found several interesting alliums, A. sphaerocephalum, an unidentified species of no great beauty of flower but with an amusing growth of the developing flower stalk that bends around in a circle like a flamingo's neck; another unidentified species, for which Mr. Bowles suggested A. albiflorum, and the curious and somewhat invasive A. siculum, interesting only for the curious, cuplike flower buds.

In the smaller, delicate rockery near the house were many unidentified plants brought back from many collecting trips on the continent, including many lovely sempervivums, all without name save one or two.

The kitchen gardens were not particularly different from many others and the crocus frames were just as described in Mr. Bowles' book - sandy and sunny and full of labels!

The glass houses contained succulents, vines, half-hardy bulbs - hedychiums (among which I saw the striking scarlet-flowered H. greenei), and similar half-hardy things. Outside the houses, along their warm foundation walls, were various amaryllis, crinums, and related plants.

Ask Mr. Bowles in time for seed of Agapanthus caulescens; seed or bulbs of Tulbaghia violacea, some-

what like onions in its rank-scented leaves, but with lavender-pink flowers more like brodiaeas, and possibly seed from his purple-leaved peach that flowers just after almond and keeps its deep leaf color no matter how hot the summer. Look up Fraxinus gleditsiafolia. Buy the deciduous Asparagus filicina (or filicoides)from Van Tubergen. Send Mr. Bowles seed of the Hesperaloe sp. Doctor Griffiths has at Chico.

July 7

The trip today was given over to Wm. Robinson's estate. I stopped first at South Godstone to see Miss Sophie B. Steel, Mrs. Peckham's sister, who has a nice small garden where I saw two important plants that should be in gardens at home if they are not already; Campanula grandis, which is somewhat like persiscifolia but more erect and robust with more starry, less cupped flowers, the beautiful pale lilac forms of C. lactiflora that was so beautiful at Mr. Bowles', and a dianthus that Miss Steel believes to be D. superbus monspessulanus. Certainly it has the deeply fringed pale pink flowers of D. superbus and differs as a fine form might differ. The greenish-brown zone on the petals comes chiefly from the hairs over the zone. Miss Steel has promised seeds.

Mr. Robinson's estate is beyond East Grinstead, nearer the Kingscote station. It is essentially a hillside garden dominated by and arranged for the stone Tudor house.

The drive runs up through rather naturalistic woodlands into a large gravelled court on the east side of the house.

There is a small terrace south of the house from which one can go down into the meadows of the valley beyond. There is a much larger terrace to the west, bounded on the south by the retaining wall that drops to the meadow, on the west by a beautiful stone pergola, on the north by a low wall and planted bank, up which, under a stepped pergola, is a ramp that leads to the upper bowling green.

The west terrace is given over almost entirely to roses which are in rectangular beds between stone-flagged paths. The garden design is almost elementary, with a broad central pair along the main axis, a border path and the remaining areas divided into four square units. The roses are planted in solid groups with annuals beneath and annuals or low perennials for edging. In no cases, so far as I could see, were the rose varieties, or the annual ground covers balanced in symmetrical units. Ursinias, venidium, nolana, were all on trial. There were some particularly lovely pinks of curious dull salmon-red tints. The marigold borders were variously planted with really bold masses of a much more limited number of species than in most gardens.

There were many unusual vines in the pergolas, the white Chinese wistaria, the chief feature of the west pergola and to my mind, Paul's Lemon Pillar, the rose of the stepped pergola.

The upper bowling green had simple borders with again very limited planting lists - Nepeta mussini, various thymes, helianthemums, dianthus, cerastium, alyssum, violas, campanulas (especially pusilla, garganica etc.)

Above this the land rises rapidly to an upper road and is covered with various ericas and callunas.

To the west of the hill lies an open wood of various conifers, through which one descends to an orchard with a superb double perennial border on its northern limit. Here again the planting list is meager and the individual masses large, often 5 and 6 feet across. Here, too, as at Kew and Wisley, one sees the use of pea brush instead of plant stakes. This looks quite horrible as the perennials first appear, but is the nicest kind of support as the plants grow up through it as vines might do, require no tying, and in time hide all vestige of the brush.

Going through the border and skirting the orchard, one comes to the valley where the gardener's house and kitchen garden are located - the old valley, once a pond but recently drained and overgrown, and the

lower remaining pond.

The peculiar character of the place lies in the perfection and restraint of the treatment and the absolute unity of the whole scheme. Unlike all other places of such size, this one gives absolutely no suggestion of the museum although there are many species represented and labels can be found if hunted for.

July 8

Office work.

July 9

Sunningdale and Chiswick for nursery purchases.

July 10

Office work.

July 11

Saturday

July 12

Last visits to Kew and Wisley.

July 13

Trip to Aldenham House, Elstree.

One leaves the bus at the lodge and goes through open meadows under a long winding road lined with horse chestnuts up to the more closely planted park about the house, which is a rather ugly red brick and stone affair commanding fine views out over its own meadows. The formal gardens about the house are in the same ugly style but are perfectly kept. All have been well illustrated in books and magazines. The work yards, kitchen gardens, and frame yards again have chiefly their excellent maintenance to make them distinguished.

North of the house and west from the work area is the acreage given over to the first arboretum. This is rolling ground - undulating ground with all of amoeba-like beds crowded full of everything! All in fine shape as to cultivation and care. Everything is appallingly crowded and there is relatively little method in the plantings, either for botanical consanguinity or horticultural effect! Here, again, only the excellence of the maintenance redeems the place.

July 14

Last visit to Ingwersen Nursery, Kingscote.

July 15

Visit to Millard at Felbridge.

July 16

Sailing.

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