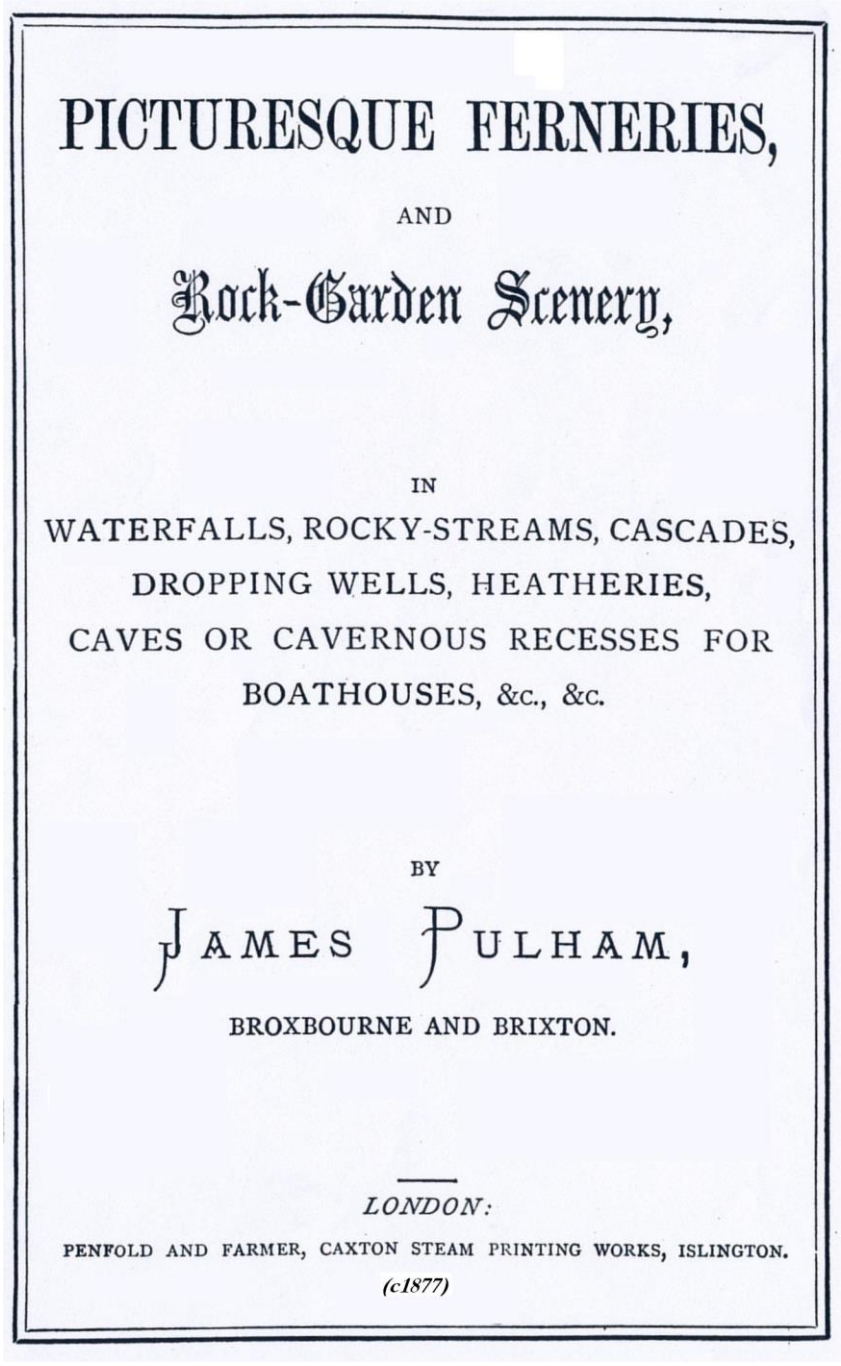
Archive 1 - *Picturesque Ferneries and Rock Garden Scenery* – c1877



PICTURESQUE FERNERIES,

AND

Rock-Garden Scenery,

IN

WATERFALLS, ROCKY-STREAMS, CASCADES,
DROPPING WELLS, HEATHERIES,
CAVES OR CAVERNOUS RECESSES FOR
BOATHOUSES, &c., &c.

BY

JAMES PULHAM,

BROXBOURNE AND BRIXTON.

LONDON:

PENFOLD AND FARMER, CAXTON STEAM PRINTING WORKS, ISLINGTON.

(c1877)

This document is a copy of *Picturesque Ferneries and Rock Garden Scenery*, written and published by James 2 as a promotional booklet c1877. There are four main sections. Namely:

1 - His philosophy about the construction of rock gardens and ferneries; their general form of construction, and the pleasure that they can provide

2 - Descriptions of the various outdoor locations in which these gardens are most ideally suited, and the features that are most appropriate to these situations, such as waterfalls, rocky streams, caves or boat houses etc.

3 - A similar discussion on indoor ferneries, plant houses or winter gardens etc.

4 - Opinions of the Press concerning rock gardens in general, and some specific Pulham sites in particular.

5 - A description of a typical naturalistic Pulhamite Fernery, Conservatory or Winter Garden – all in a poem of 26 verses!

6 - Appendix A - James 2's list of Recommended Plants for use in rock gardens and ferneries. This section consists of a set of scanned pages from his booklet, as his sequence is somewhat erratic, and the names of some of the plants have since changed. This way, there can be no argument!

7 - Appendix B - James 2 also appended a list of his satisfied clients, which again was in a slightly hap-hazard order, so they have been arranged here in a roughly chronological sequence. His list also only extended as far as c1877 – the date of publication – but details of other sites that have been discovered and / or identified have been incorporated here. In view of the general lack of archive documentation, however, some of these dates and details are based either on material from other sources – such as clients' archives etc – or on observation and assessments. They are therefore subject to correction at any time, and it is also not pretended that this list is complete. Hopefully as a result of this book, other sites may come to light during the course of time.

This booklet does not include any technical information, or 'trade secrets' – these were things that the Pulham craftsmen took to the grave, and only passed on to their apprentices. There is consequently no clue as to the precise formula of Pulham's Artificial Stone, or 'Pulhamite', but English Heritage have produced an extremely useful booklet entitled *Durability Guaranteed. Pulhamite Rockwork – Its Conservation and Repair.* This is available in the normal way from English Heritage Publications.

Preface

In offering this subject of Picturesque Fernery and Rock-Garden Scenery to your notice, I respectfully wish it to be understood that, as much of it may already be known to many readers, some is intended for the information of amateurs who hesitate - wanting to be sure of what is proper to do - and not for experienced gardeners, though I have found many want to know much of what is here written.

Some have erroneous ideas of what good rockwork is or should be; many have not the least idea or notion of it, or the requirements of growing ferns, Alpines, or other rock plants. Thus, as there is an increasing taste and desire for picturesque scenery - even in small suburban gardens or pleasure-grounds - for the growth of ferns and Alpines, I hope this may prove acceptable, so as to enable amateurs especially to proceed on right principles, without wasting money in such fruitless uninteresting abortions (commonly seen and called rockery), bad both in taste and mode of construction. It is even so at times where expense has been little cared for, as numerous failures prove, which are so often the result of wrong principle. The peurile notion and prejudice existing, for want of knowing better, is so difficult to overcome.

The idea of some as to what rockwork should be is so vague, as the best they have seen is frequently only what they term Cockneyism (which many have a horror of), and, truly, rock-work in general is such, and hence they condemn it, because they have not seen it done in the proper naturalistic style, which I have - or shall here endeavour to describe - and that rocks arc essential in rugged picturesque landscape garden scenery.

The horticultural part of the subject I leave to practical writers, except making a few extracts from their writings immediately connected with the subject treated of, for the sake of meeting some of the questions often asked - many assuming to know so much -though some really think they do know what they profess, until convinced of their errors by want of success or by positive failures.

I also add a list of a few hardy plants most suitable to grow on and about the rocks (more especially for winter and autumn effect), being so often asked by amateurs the question, as they are not satisfied with being referred to the gardener or nurseryman, as I have usually done.

Waterfalls, Rocky Streams, Cascades, Dropping Wells, Heatheries, Caves or Cavernous Recesses for Boathouses etc.

Some gentlemen, for want of proper advice, will often .go to greater expense laying out grounds on a uniform plan of levelling down arrangement, and making the ground up sometimes to a height - one side to match another - forming straight banks and slopes- when, by a picturesque treatment adapted to the nature of the ground, with rock to give support to banks, where necessary, much more effect and natural appearance may be gained at less cost.

It is not generally known that rocks cropping up or out, are desirable to produce rugged picturesque effects in gardens, such as we see in the natural landscape, and that, if not naturally so, it may be artificially formed; or natural rocks may be arranged to appear so, by what is called rockwork. The difficulties supposed to exist in accomplishing such an object induce me to say the Pulhamite system of naturalistic rockwork is the style adopted by the principal landscape garden architects of the day, and many other gentlemen of known good taste, in laying out pleasure grounds, parks, etc., for picturesque and natural effect.

The work is generally executed with the natural rock of the locality, if there are any to be had – such as sand or limestone – built up, and joined where really necessary, with Pulham's stone-like cement, which is made to imitate the colour and texture of real stone or rock, though scarcely any is in view where the stone is large. Sometimes the rock is found and developed with good effect on the spot.

Where no real stone or rock exists, or it is too expensive to get it to the place, it may be artificially formed on the spot - with burrs, rough bricks, or concrete for the core - which is then covered with cement, to imitate the colour, form and texture of the real rock. This may be as of red, yellowish, grey, or brown sandstone - also limestone and tufa, whichever is desired or most consistent with the geology of the district - the imitation of which is so perfect as to be generally supposed real rock by those who have not seen it in progress of formation, or knew the place well previously. In fact, so closely by the latter, as to create such surprise as to lead to the invariable inquiry; ‘Where did you get those great stones from?’ and ‘However did you get them up?’ ‘Why, they look as if they had grown there!’ Where it is of sufficient extent, as at some of the places named in the list, stones have been connected by cement to form broad bold faces - so desirable for distant effect - the masses look impossible to have been moved.

Not as if stones piled by the workmen's hand,
But strikingly natural; effective, and grand!
Some relics to appear in confusion hurled,
As if fragments of our ancient world.

The height and boldness should impress the beholder with wonder, admiration, and amazement. Even Sir R. Murchison, walking on the Terrace at Lockinge, supposed the rocks to be natural to the place; and that the church close by had been built with stone from it. This is part of stone, and part of the Pulhamite formation.

Gentlemen of the British Association discussed what stone the rocks were at the Brighton Aquarium. One remarked, "We had some of the old red sandstone there," which is the general impression.

It is worked generally as a stratified rock, with some bold projections and recesses, fissures, dip, cleavage, cracks, clefts, outliers, etc., so as to appear as if it had originally been naturally deposited in a soft state. It is then hardened by pressure, time, or other natural causes; formed into solid rock, then upheaved and broken by some stupendous, mighty volcanic force, or other convulsion of nature - some broken into fragments, some cropping up, or out at various angles, degrees of elevation, or dip. It appears more or less like an escarpment in irregular, rugged, picturesque, romantic form, apparently worn by the action of weather or water, through countless ages, as seen in nature.

It makes natural-looking ferneries, heatheries, waterfalls, cliffs, dropping wells or natural fountains; also outliers and rocking-stones, apparently formed by being detached from the general mass or mother-rock, all of which in this imitation - as also in the natural stone - are worked with numerous hollows between the strata, on the ledges, in the cracks and clefts of the rock. There is plenty of space for soil, having good drainage for plants to grow freely about it, according to the aspect, as in nature. This is arranged so that all get moisture, by the hollows communicating with each other - connected as much as possible with the bank or soil of the interior of the rock - so that the plants have much more soil than is usual in nature. Many ferns actually require very little soil, especially if they have a porous, damp surface of rock, either real or artificial, for the roots to attach to and thrive upon, which they do on both, as may be seen at some of the places mentioned in the list, though the better for having some depth of soil to root in, which is easily provided for, by working it hollow; many other rock-plants will flourish where they appear to have but little soil.

Rock-work should be made to appear natural to the place, as it may be, and as if it cropped up naturally, massive and bold; of rugged, irregular plan and of varied outline, falling in with the surrounding undulations, even if it is not extensive, and raised where it is possible, so as not to be able ‘to see over it,' but so as to look up, and see the planting on top, in order to form a striking feature in the landscape, and viewed from a distance, to lend enchantment to the view.

When it is adopted for giving irregular, rugged shape to the margins or banks of a lake, stream, or pond, etc., then, in looking down upon it, we should see the rock in the highest parts - changing formal banks into rugged angularity, and naturalistic appearance, by the aid of shrubs, trees, plants, etc. - instead of all smoothly curved or straight banks and slopes.

It is a certain amount of this angularity of the rock that produces effect in the picturesque treatment of banks, together with shadows caused by some few projections, which will also prevent it getting too much overgrown, as it often does when well planted.

As to appearance, those who know the effect of bold projections and depth of shadow will understand that it is the same as in architecture - there must be the projection to produce light and shade.

The same may also be said of sky-line; that is, where there is height enough to get a sky-line, a broken irregular one is most effective - as in a noble building aspiring to the ‘architecturesque,’ as it is termed by Professor Kerr.

By this naturalistic system of forming rocks, we try to avoid doing anything contrary to nature, or to what is consistent with geology. We make it appear natural and possible, so as to have the appearance of natural ferneries, etc. - altogether different to ordinary rock-work, which is generally called rockery, sometimes made of clinkers, hard refuse from gasworks, etc. These hold no moisture, so needful to the well-being of the plants. Sometimes, pieces of stone are set up on end to make a lot of pinnacles, or any way that seems to fit best. In this Cockney tea-garden style of arches, mounds, circular rustic ponds, waterfalls - often like mill-weirs, etc., are made formal and smooth, instead of irregular and rugged, as in nature.

It is a favourite object to form an arch or arches, and they get some praise by those not knowing better, or being unacquainted with geology. No arch should be made unless it can be done to appear as if natural to the place, the rock being backed by a solid rock, on each side, or as if a fissure broken or worn through, originally forming it; for instance-

There is a spot, as you may know,
If ever you to Langdale go;
Into a chasm a mighty block
Hath fallen and made a bridge of rock.

The gulf is deep below,
Worn by the force of water so,
And in a basin, black and small,
Descends a lofty waterfall.

- Wordsworth.

Tree roots should be avoided, except in the ravines or fissures, as they soon fall and look untidy, when piled up in the usual way; they are very well lying in the slopes between the rocks, where they may become overgrown with ivy, periwinkle, etc.

Unsightly objects may be concealed from view - a plain wall may be made a pleasing object, as if a portion of a cliff clothed with verdure, by means of this system of rock formation.

As an expedient, a hardy fernery may be well formed in a flat garden, if need be, by excavating a narrow space, raising the ground on each side in undulating lines, with easy slopes down between rocks, made to rise up in irregular form, for external effect, and if for an inside fernery, internal effect also.

Another way of forming a hardy fernery, on or in flat ground, is to make an escarpment, having nearly a northern aspect, by cutting a section, and throwing up the soil high enough to avoid seeing over it, same as executed at Lord Braybroke's (See Fig 1) - in such a case drainage must be provided for. By this means it will not appear as if artificially raised, the soil out of the hollow laid on behind and raised above the rock to slope down to nothing; then plant trees, shrubs, etc. thickly about it to conceal it from view on the outside.

Fig 1 - Lord Braybrooke's estate at Audley End

In forming such an escarpment of rock, it can be planted on top, so as to get shade below, by avoiding a southern aspect. Some deep recesses should be formed for ferns requiring much shade and moisture; although, where it is possible, a secluded place shaded by trees is most suitable. Or it could be nearly surrounded by shrubs, having only a way in and a way out by irregular paths, with an entrance forming a chasm in the rock, thus avoiding all arches apparently built up.

In all cases, whatever is done should be of such proportions as to appear natural in size, otherwise it helps to destroy the grandeur which should pervade even a small extent of rock - not to look like rock-work, but real

rocks, natural to the place. If desired, water may be well introduced, if there be a means of drainage, as an accompaniment to rocks in such a fernery, though not absolutely necessary; a little judiciously arranged will produce an effect, and make a pool to water plants from, and for water lilies to grow in; also for the Osmunda ferns, requiring damp or even boggy places.

Mr. Williams, the well-known fern and orchid cultivator, says: "That he should advise fern lovers to visit Mr. Parsons, at Danesbury, and see this charming spot, and his favourites; and everyone having a taste for chaste and elegant foliage. The rockwork here was executed by Pulham." I may add, when I took to the place, I found it a rubbish-hole - as I have some other places before - but this enabled an interesting cave and dropping-well to be formed in Pulhamite rock - the former in the bank, for a shady summer seat, and though built up to close it, is quite dry, great care being taken in construction to exclude all damp from passing into the wall, which generally makes such places damp and uninviting to sit in.

In the picturesque treatment of the rock garden, a regular formal stream may be converted to an irregular, winding and rugged rocky pebbly brook, by the aid of rocks cropping out now and then at the bends, between which the heath, shrubs or grass, should slope down to the water's edge, and a variety of lilies, and other aquatic plants at intervals, and ferns growing about the rock, especially the harts-tongue, so at home hanging over the water, being an evergreen fern; also rushes, where space enough - the strata of rock sometimes stretching across the stream, making large or small rugged waterfalls, according to the depth of the bank, the water running over the rocky bed among the boulders; and, as the Poet says, make the musical waters

"To ripple and shine
With the glory and dash of a miniature Rhine,
For there are sermons in stones
and music in running brooks."

And I may add, a charm in still water, an element so desirable for variation in landscape scenery, and more charming, when found

Embosomed in a lovely, rocky glen,
Uninjured by the hands of thoughtless men.

Where the stream flows over a cascade into a silvery lake, in the midst of luxuriant shrubs and trees of varied growth and tint of colour, broken occasionally by rugged rocks jutting out and over the water's edge, and its peaks or the escarpment towering in a broken sky-line, frequently topped with vegetation, some growing about the face of the cliff: on the ledges, in the cracks and crannies between the strata; and some trailing plants, as the woodbine, jasmine, clematis, honeysuckle, cotoneaster, ivy, etc., hanging down the face, creating a scene of romantic grandeur and of picturesque beauty, delightful to gaze upon, such as may be seen in some of our popular places of resort - so pleasing to the artist and lover of the picturesque - conveying to the mind feelings soothing, while captivating by its repose; the

forms and colour of the rocks, trees, etc., being beautifully reflected in the water, with the sky and other surrounding objects to perfection.

None, having a taste for the picturesque, can travel through our lovely valleys, as the Derwent, Wye, Dove, Severn, Dart, Tamer, Dee - sometimes passing over rivers, chasms, or between high cliffs, without feeling emotions of the sublime, in admiring the charming variety of the landscape, varying from lovely sylvan beauty to the romantic, in its varying degrees of change and sublimity; in the magnificent effects of the rock, the beautiful windings of the rivers, as we ride along the noble valleys, sometimes in passing over chasms, sometimes between high cliffs of most rugged forms, at times the water rushing and sparkling among the rocks down far below the embankment, the stream displaying the most curious and beautiful windings; so unlike the serpentine form, or line of Hogarth system of beauty, too often adopted, in making artificial streams of parallel width. An example may be seen in one or more of our finest London Parks, the banks formed of brickwork of formal line instead of irregular curves sloping to the water's edge.

There are some who admire beautiful scenes, and do not know what constitute their beauty, or why they admire them; that it is often the rock, with its varying rugged forms and colour, clothed with vegetation - for it may be said of this picturesque, as of fine art, the mind and eye require cultivating, to understand and appreciate the picturesque - as a beautiful cliff covered in part with foliage, as forming part of the grandeur of a scene, the imitation of which may be termed picturesque art; or, as Mr. S. C. Hall says, in his description of the rock at the grand Aquarium at Brighton, 'It is, undoubtedly, an example of picturesque art.'

A dingle is a desirable feature to have, the rock cropping out, with broad grassy slopes between, with trees and plants, characteristic of wild rocky scenery. This may be made even in a flat ground surface, by hollowing it out so as to form a grassy glade, sloping up each side. between the rocks of grey, red, or brown tints.

Where rich gorse or broom with bright hollies shine,
Purple heath and brake on the rock shew fine;
There lovely green moss and stonecrop will grow,
Grey birch with sable yew, 'mid the golden glow,

The fir tribe, w'ith their shades of varied hue,
The primrose, foxglove, and vincas blue ;
Other wild flowers in their turn are seen,
Also our good old friend - the ivy green,

Some o'ershadowed by the beech and oak,
Their roots grasping tightly the shattered rock;
All may there appear to he at home,
Make a pleasant and shady place to roam.

Another desirable feature to have is a rocky plateau, constructed and spreading out, apparently natural, may be so made to form a terrace for a

house to appear to stand upon, or a summer-seat in a garden, a Swiss chalet also, with grand effect, especially if it stands high; the ground being made to slope down from it, between the rock, with steps down the ravines where required, the shady nooks and sides being planted with ferns, and other parts with Alpines, heaths, and other suitable rock-plants, such as may be seen at Leyswood, Withyham. A noble house, in character with the surrounding rugged and picturesque scenery, stands on a plateau of bold massive rocks, which form a terrace, enclosing an undulating lawn, and stretching away irregularly, form the sides of the road up to the house; there are walks up to the ravines and about, between the rocks, which are clothed with vegetation, is altogether charming and unique.

The large growing ivy soon spreads and smothers up the rock entirely; it is better with berberis, under trees and in the slopes where grass will not grow. The carexdivulsa covers bare places under trees, as a carpet, also the ground-ivy, about or between the rocks. Many kinds of sweet-smelling herbs may be grown on the exposed rock if desired, as the various kinds of thyme, especially the golden leaf, and the blue flowering kinds, also margoram, fennel, hyssop, etc.

Fig 2 - 'A streamlet of irregular width . . '

As variety is charming, the foliage about the rocks should have variegated kinds mixed judiciously with evergreen shrubs and choice trees, giving a more cheerful aspect, in absence of flowers in winter, as the golden yew, hollies, acubas, variegated rhododendrons, japanese honeysuckle, periwinkle, etc.. Some of the small ivies, found about the banks of our hedges growing wild, of which a dozen, distinct in form and colour, may be found; they look well planted about the rocks.

There are a great number of small variegated ivies also, of which a more detailed list, and of other variegated plants, will be found in the Appendix.

Many, I know, are suitable plants and shrubs, most effective, as well as characteristic of rock scenery; this is for the information of amateurs, who may not be acquainted with them or appreciate the effect of variegation, most of which will be found are remarkable for their foliage, or varied tones of colour and effect, and for flowering in autumn or winter.

Another example I may add to show the comparison of a plan of a stream too often seen, with what may be seen and copied from nature (see Fig 2).

The streamlet should be of irregular width and concreted, so as to be water-tight and kept clean, but the concrete should not be in sight, the rocks cropping out into, and over the water, for a more rugged picturesque effect.

Forming, by an ever-varying course,
Rocky islets and a meandering stream,
Between rugged rocks, worn by its force,
O'ershadowed by foliage, some evergreen.

In the distance, along a pebbly brook,
A tasty bridge may there be seen,
Stretching across from rock to rock,
Decked with ivy, shewing stone between.

There from the bridge may be in view,
Along the vista in a rocky dell,
A sparkling cascade of water too,
The rocks o'ergrown with ferns so well.

O'er beds of stone 'twill ripple and shine
Along a shingly bed as it flow,
'Mid boulders, the relics of olden time,
Into the silvery lake below.

The late Mrs. Ellis, in her admirable work, ‘The Beautiful in Nature and Art,’(Hurst and Blackett) says: ‘The stream in its course: first stopped, then divided, and an island remains, giving variety to the scene; or the stream has been driven this way and that by interposing rocks and headlands, and hence its circuitous course, its many rapids and cascades; with an even bed it would never have looked so beautiful as in its varied and unequal flow, sometimes creeping like a silvery serpent among the roots of over-shadowing trees and rocks.’ The reading of this work helps to inspire us to what she calls beautiful thoughts, and tends to create in us a taste for the beautiful; to improve our gardens, houses and surroundings, causing us to admire the beauty in form and colour of individual trees, rocks, shrubs, etc., till, as she says, ‘we actually love it, and sensations are awakened by beauty that fill us with delight and make us search for it." And I say, to go forth on our walks or travels - on business or pleasure - with more enjoyment, in proportion to the nature of the country through which we pass, and pursue it with more zeal; and it opens our eyes to admire the wonders of the universe with all the more zest.

Mrs. Ellis also says: ‘The effect of a drooping birch springing out from masses of rock and waving its light pendant boughs above the stream, fringed about with bright green ferns, forms a picture on which the eye lingers with delight.

Fig 3 - ‘. . a drooping birch springing out from masses of rock and waving its light pendant boughs above the stream, fringed about with bright green ferns.’

To do this to perfection the rocks should all be consistent with natural formations, to imitate something wonderful, interesting, grand, curious, or beautiful in nature, combining the elements of picturesque beauty or landscape scenery - of rock, wood and water - as real waterfalls, caves, rocky-streams, cliffs, etc., which can be imitated if desired, to be overgrown by the ferns, Alpines, and other rock-plants, as much as can be required. Indeed, so much, that after a few years to need cutting away to shew the rock beneath, as at Highnam, Hutton, Taplow, Fonthill, Lockinge, Southgate, etc, being so much overgrown; also at Welcombe, though executed only eighteen months.

At some places it has been thought desirable the rock should not be hidden from view by the plants. I have been requested not to make so many hollows for plants to grow and hide it as at Kensington. .

To those who do not appreciate the beauty of picturesque scenery, I may venture to say it is because they have not a taste for such; for it is where rocks most abound that the artist loves to dwell, the admirer of nature and tourist delight to ramble. But some of those lacking a taste for the picturesque and the romantic, it may sometimes be said of them-

A fern or a primrose by side of a brook,
It's all the same to him:

He will not care to bestow a look,
For he sees no beauty therein.

In laying out pleasure grounds, some undulations.are necessary, in converting a flat surface into picturesque, and it is often desirable to support artificially-made banks and slopes to sides of lakes, or ponds, giving to their margins an irregular outline; also a picturesque rugged appearance, by rocks cropping out in proper places, so as the grass, shrubs, heath, etc., slope and grow down to the edge of the water, between the rock, not to have a rounded edge, as is so often the case.

Provision or shelter is made for water-fowl and fish, in forming the rock about ponds and streams.

Where the ground rises sufficiently to form a rock-cliff, a cavernous recess may be made for a boathouse, with landing-place on the rock, as at Sandringham, Denmark Hill, Westerham, Champion Hill, Darlington, etc., thus making an interesting feature: the ground rising over it, so as to be overgrown with shrubs, heath, trailing plants, and with ferns inside the hollows, communicating with the soil of the bank, and receiving moisture from the outside, appear as a natural cave. Mr. Broderick Thomas says, writing me from Sandringham, of the boat-cave, thus formed there, ‘’Tis quite a work of art!’ ‘Picturesque art,' is what the editor of the *Art Journal* calls it.

The sides of paths also need support sometimes; or of roads, especially where, as is frequently the case, it is through a cutting; instead of a plain wall or slope like a railway bank, the latter may be made a valley of rocks, as at Allerton Priory, etc., where the trees stand irregularly on the tops of the slopes, and grassy glades between the rocks, with Alpines, ferns, heaths, ivy etc, growing about in wild luxuriance; a bridge across a chasm between the rocks to cross over, and at the same time get a splendid view down the drive or rocky valley, with trees and shrubs growing in the glades, formed by the excavations, without their roots being exposed, or any of their bases buried, as is sometimes the case; whereas it can be generally avoided by the aid of rock-work. The soil taken out may be used to form undulations on either side, giving more depth and effect:

‘To appear as if primeval earthquake's sway
Had rent a shattered circuitous way
Through the rude bosom of the hill,
Telling of the great convulsion still.
(Byron)

Making charming nooks for cosy bowers,
To grow the ferns, heaths, and Alpine flowers.

Mr. G. Abbey, an able, practical writer on the subject of rock-plants, says of Alpines: ‘No one who has not seen them in masses, in their wilds, or in large clumps on rock-work, can form any idea of their beauty, from the cultivation of them in pots - the crevices and ledges being furnished with soil of suitable kind, but without covering the stone to any extent, and leaving some quite naked, otherwise the natural rocky appearance will be destroyed;

mass them as you would bedding plants, and they will form a fine feature in the distance, white, blue, red, and yellow, interspersed with green, and the rocky crags. It is astonishing what splendid masses some Alpines - usually so insignificant in pots - make, when planted in nooks and corners of rockwork, where, small as they are, they often become too large for the places assigned to them. The same, from my experience may be said of rockwork in general."

In the beautifully illustrated work on Alpine Plants, by D. Worster, those who do not know what they are, may there see them displayed in their natural colours and sizes, with a brief description. Some are shown growing among pieces of rock, the effect of which is increased.

Mr. W. Robinson's excellent work, 'Alpine Flowers,' – Published by '*The Garden*,' Southampton Street, Strand - will be found very instructive and interesting; giving a description of hundreds of varieties, and the mode of cultivation. Until these came out, little was heard of Alpines; hence the question asked by some, 'What are they?' Consequently less provision has been made for them till recently. He names, also, about a score of hardy ferns, forty silvery and variegated plants, forty dwarf Alpine shrubs, sixty evergreen Alpines, and one hundred Alpine and rockwork plants of prostrate, drooping habit, to hang over the brows of the rocks, and, I suppose, all hardy, well adapted for effect in autumn and winter.

Though Alpines are strongly recommended about rockwork, there are not many that bloom in winter, therefore it is well to have evergreen and variegated plants in with them, for effect in absence of flowers. I am induced to give a list of some I know to be effective because I have so often been asked, and though generally referring it to the gardener, some gentlemen or their gardeners do not appreciate the variegated plants, or may not take sufficient interest in their effect; and many amateurs like to know. For this reason, I again say, add variegated plants about the rock.

In this system of rockwork, all requirements for the well-being of the plants are considered, and made as perfect as may be, and any suggestions for improvement paid attention to, in hopes of obtaining greater perfection; for it may be considered in this, as in other matters of art, taste, and construction, that nothing is perfect. During the last year considerable improvements have been mad, as may be seen on comparison with earlier works. We make more ledges and out-of-sight hollows for soil and the plants to grow in, and use more natural stone, where it can be obtained at a reasonable expense. .

I need hardly say that the success of the planting depends so much on the interest taken in the welfare of the plants, by those who have the management, to put each variety in a suitable place, according to their peculiarity of form, habit, and growth; not crowding a large growing plant into a small space, or where but little soil: this applies to both ferns, Alpines, or shrubs. I have seen Osmunda regalia, Scolopendium, Asplenium viride, plants requiring much moisture and shade, put in high exposed parts, where sure to fail. Sometimes, maybe, the gardener is not allowed to obtain what

are suitable, and the amateur having used those that happen to be in stock, such like inconsistencies cannot be expected to succeed. Sometimes all the rock is riot planted. It is often found that many more are required than appeared necessary, as, when all well planted, the hollows should not show.

Mr. Bryan, gardener at Lord Braybroke's, says, in a letter, the following year: ‘I am pleased to say, so far as the ferns, rock-plants, shrubs, etc., are concerned, it is quite satisfactory to me and my employers, as all the plants are doing remarkably well.’ This was formed entirely of artificial rock.

Method of Working

How far I have succeeded in this picturesque art, as Mr. S. C. Hall terms it, I beg to invite your inspection of some of the works, executed during the last twenty-five years, many of them under the difficulties, enumerated of adapting it to places unsuited and ill prepared for it. To do all this well, a staff of men have been instructed and grown up in it, many from their youth, and it must be so, for only those will do who have been found to have some taste for this kind of work; as mechanical workmen can rarely be instructed to do it, and it is most difficult to get even what are considered good bricklayers or plasterers to do it without long practice.

Apprentices after a year or two are preferable, and it is absolutely necessary they should have a good practical knowledge of' the use of the various cements, as great strength is often essential in the construction; and it is rare to find a bricklayer or a plasterer who understands the proper use of cements, though most of them think they know, and therefore do not like to be told, or to appear ignorant - it is most difficult to persuade them to use it properly. Anyone who thinks they do should test their knowledge by trying to stick twenty bricks flat, one before another, against a wall, which the writer has done successfully.

Good cement is necessary for the rocks to stand the severest weather, especially between air and water, or in low, damp situations, as it has to be made on purpose; for much of the cement in general use, made and sold cheap, is liable to crack and blister with the heat of the sun, and burst to pieces by frost: hence the numerous failures in its general use that bring it into disrepute.

I invariably supply the cement (then I am enabled to guarantee the durability), some of which I have manufactured especially for the purpose, .and some I manufacture to imitate the light warm colour stones, and which has been tested thirty years: a list of places is appended at the end, with dates of execution, and brief description of some from the public journals.

I also provide stone etc, if required, getting it from the nearest quarries, sometimes using such as has been rejected as unfit for ordinary masonry. But the nearest to be had is not always the cheapest, if far to cart to and from railway, or of indifferent quality.

As to the question of cost, often very perplexing - it being such peculiar work, that nothing can be definitely expressed, specified, or drawn, more than a plan - neither length, height, breadth, or weight can be given, and every place differs from the preceding in extent and shape, having some peculiarity of its own. Sometimes an approximate statement of cost is made, or a limited sum is agreed upon. The difficulty is, we cannot convey an adequate idea of the effect to be produced, so as to appear worth the money; some may anticipate too much, and some too little. Sometimes an account is rendered of time and materials supplied during progress of the work if required, so as to watch the cost, which can be kept down to an outlay of £50, or even £20, if so small a work is desired, or one equal in amount to the cost of a good picture.

To those who hesitate having a work done on account of the cost, I beg to say there is nothing requires doing so well as rockwork. It is much better to have a small tasty fernery costing £30, than one double the size ill done for £40. If what some call a pretty fernery is wanted, I can send men to do it, and adorn it with shells, bits of glass, clinkers, spar, flints, etc., in this Cockney tea-garden style, which some seem to prefer for want of knowing what is picturesque and in good taste.

The Rev. Hugh Macmillan says, in his 'Bible Teaching of Nature': 'In admiring a piece of beautiful scenery, we find nothing in it, except what we ourselves brought to it. There must be beauty in the eye, before it can be seen in the landscape. Nature wears the colour of the spirit; and her charms are reflections of charms within ourselves. In vain does the grandest combination of mountain and plain, forest and stream, appeal to an eye and mind that have no appreciation of scenery; while, to a lover of beauty, such an exhibition will furnish the deepest and purest pleasure.'

Those who contemplate having a fernery or waterfall, lake, rocky-stream, etc., should see some of the wonderful works of nature in the beautiful valleys. glens, etc., if they have not already noticed sufficiently. Where our British ferns luxuriate in their old state, on and among the rocks, in various parts of the country. Those who have not time or inclination to travel, need not go far to get ideas of what rockwork should be - by studying nature, as may be seen in various parts of Kent and Sussex, named in list.

As some evidence of the interest in rugged picturesque scenery, such places have become popular, both inland and seaside resorts, because they are the most picturesque, and where most people visit for a change of scene; and not the flat fertile; though pleasant parts, but where wood, rock and water combine, making up the picturesque, rugged, and romantic scenery, as the Lake districts of Cumberland, Westmoreland, the Lakes of Killarney etc; North and. South Wales, Gloucester, Derby, Devon, Hereford - there the lovely valley of the Wye, the Dove and Derwent, south side of the Isle of Wight, Cornwall, Yorkshire, also some parts of Sussex and Kent; for the rugged and most romantic scenery, the Highlands of Scotland (see list of places at the end), among which are numerous examples of waterfalls, caves, rocky- streams, ponds, arches, and dropping-wells - rocks cropping up forming natural ferneries; and other choice spots, which can be taken as

examples, with perhaps some modification, to suit site or circumstances, or give ideas, some of which should be seen by those contemplating rockwork (if not already seen), and may be imitated or taken as examples in the rock-garden or grounds having banks or undulations naturally, or which may be formed artificially to make an attractive picturesque scene, even within the sound of Big Ben, as may be seen at Denmark Hill, Champion Hill. Battersea Park, Kensington, Sydenham, Highgate, and other suburban places, the particulars of which, and the peculiar nature of some, are briefly set forth in the list of works executed, which will be found at the end, with remarks and date of execution.

'The Scenery of England and Wales,' by Mclntosh (Bell and Dalby, Covent Garden), gives a very interesting account of the curious formations, and explains many of the causes and origin of the beautiful scenery., as well as illustrating a few - though, like many illustrations of the picturesque, falling short of being faithfully delineated.

There are also 'Roscoe's Wanderings in North and South Wales,' (Bell and Dalby, Covent Garden), well executed (except the architectural plates), and Pyne's beautiful work, 'The Lake District.' (Longman and Co)

See my list of places where either interesting, grand, wonderful, curious, or choice portions of natural scenery, etc, may be seen; but no such piles of stones or arches will b found anywhere as are often made, and commonly called rockery, though some very curious formations may be seen which appear impossible to the unlearned in geology ; some may even be seen from the railways as we pass along.

As to terms and mode of procedure, I generally make a visit to the place and give my advice. If my proposals are entertained, I. make a plan, and, if approved, send a man or men, according to the extent contemplated. I visit the work, and give instructions from time:to time, according to the nature and extent of operations and wishes of my clients, charging my time, travelling and hotel expenses; also travelling expenses of the men to and fro at commencement and finish, the rate of which is according to their abilities and experience - some having grown up at it during twenty-five years, others one or two years - so the charges vary.

After an interview, if nothing is done, my time and expenses are charged at per hour, also for making the plan. When I am able to make my visits on the same journey as to other places, as I frequently do, t\le charges are less, having works generally in the North, South, or West of England.

Where there is stone in the locality, I usually send one of my quarry-men to superintend and assist local labourers in getting it in suitable forms and sizes. I also send tackle for use, on hire, when there is none on the estate. Sometimes the rock can be obtained to more advantage, if a quarry is being worked in the locality. Sometimes suitable stone has been found on the estate where none has been obtained before, or even known to exist.

Some ask, when is the best time of year to do it? Inside ferneries may be done at any season, but best in.cool weather; and outside rockwork, from March to November; or, if in real stone, it may be done all the year round. To meet the objection to work being done in short days, I may mention that the pay and charges are less; and if inside, full time is made up by using gas or candle light. As it is usual for us to have great press of work in the spring months, it is better not to defer till it has to be hurried, when so many want their gardens got in order for the season. Wages are then generally higher, demand for all labour being greater. Unskilled labourers of the locality are generally employed to do all they can advantageously.

Allison, in his ‘Essay on the Beauty of the Natural World,’ says; ‘The form of rocks are most sublime.’ I may avoid appearing such an enthusiast, by saying it is one of the most sublime objects of natural scenery. I will endeavour to picture to the reader what I think is more so; an irregular roken line of cliff, crowned with hanging wood, trailing plants hanging down from above, climbing plants growing up the rock; a gentle slope from the bottom of it down to the edge of a rocky stream, clothed with noble and beautiful verdure, the shrubs and trees of various tones of colour; ferns and other rock-plants growing in a wild state on the ledges and in the crevices of the rock, which, having more or less of nooks and cavernous recesses, alternating in bold projections, producing a noble effect of light and depth of shadow, with a rugged outline, essential to grandeur of effect in this picturesque, as in the architecturesque, and which is enhanced by the sometimes fantastic shape of rude minaret-like outliers rising from the slope - evidently detached from the cliff - often surrounded by verdure; in other places the rocks stretching out and rising above the water, forming the sides of the stream, sometimes overhanging it, some rocks fallen from the cliff and diverting its course, and worn by the action of the water into boulders - the water first flowing from a cleft or fissure in the cliff above; dashing and splashing down, forming a cascade; then running along over the lower strata of rock, forming pools of still water and making beautiful waterfalls in its course, of various heights and shapes, the width varying sometimes into a broad expanse of water, or contracted so narrow as to be crossed by stepping stones; or rushing through a chasm having a bridge across from rock to rock, then opening out into a lovely and romantic valley, as may be seen in many places celebrated for their picturesque beauty. Sometimes the cliffs have ravines, with smaller waterfalls, or forming lovely little glades, grassy slopes and rocky dells, of solemn grandeur, impressing the beholder with emotions of sublimity and admiration of the glorious works of nature, that tend to raise our thoughts to adoration and praise of the Almighty.

Dr. Beattie's lines on retirement may here be appropriately introduced:

> "Thy shades in solemn silence now be mine,
> Thy charms my dearest theme,
> My haunt the hollow cliff, whose pine
> Waves o'er the charming stream.’

I have heard the rock-work of the Bois de Boulogne extolled as if there were none executed in England so well. It is true there is not such an extensive

example in this country, therefore no such an opportunity has occurred for making such a display.

It may be well to mention the cost, which I read was about £45,000, while in the London parks there is not more than £1,000 expended - this being Pulhamite. Battersea Park, not finished planting yet, has been done ten years by three contracts. So much for picturesque art in this country, where may be seen, as the only rockwork in our largest park, formed of brick, burrs, and lumps of concrete made to enclose soil for the shrubs, which is subject to the ridicule of gentlemen of taste - as In the House of Commons, in debate, 1870, etc.

I venture to invite a comparison of the merits of the French style, by the photograph of a cascade in the Bois de Boulogn, a most faithful means of representing any object. It is formed so as the water flows from under a rugged arch, raised higher than the rock on either side, which makes it manifestly a work of men's hands or artificial, instead of appearing as a work of nature, which, of course, a cascade or waterfall should appear. As a photograph of one, shewn by the writer, in Battersea Park, having rock on each side, as it is invariably in nature - this must be a principle in making a waterfall; but so many will not understand the difference until it is explained. Yet Frenchmen have been employed in England, in using stratified sandstone, some of the stones joined to others contrary to their bed, which is of course, inconsistent with nature and geology.

In Kew Gardens, the chief rock-work to be seen is composed of bits of old building stones, burrs, lumps of brickwork, and a very few small bits of rough stone packed up, forming sloping banks that is for hardy ferns and Alpines, and connected with a ridiculous artificial ruin.

Emotions of sublimity or beauty are awakened in the mind by castles or other ruins; also by other picturesque objects, as a portion of which may be consistently added to the scene - as an ancient tower on a precipice, forming a portion of the ruins of an old castle - or may be the ruins of an abbey, church, or ancient bridge; all such objects, which, by themselves, strike the imagination as picturesque: even the bridge, in such a place, may be as a ruin to coincide with the other ruins, altogether producing a charming scene, and emotions of delight, more animated than is experienced by those having little or no taste for such scenes.

These ivy-clad ruins form another element of the picturesque, and can be and are so closely imitated as to be apparently real. They may be built of the same kind of stone as the rocks of the locality, where there are such, on a plateau of elevated rocks. At the same time these ruins are a very convenient means of concealing unsightly walls or other objects near or distant, also to prevent being overlooked from adjoining premises, especially in the vicinity of towns, and are capable of being made to answer some useful purpose in the grounds. For instance, a ruin of a tower may enclose a water cistern above a small room, or what may be termed the first floor; and the ground floor may serve as a garden retreat, tool-house, stable, or a shelter for cattle, cow-house, etc., where such places in the

ordinary way would be often objectionable - thus an interesting feature may be made. An ancient gateway, made with one or two half-ruined towers, may do for a porter's lodge. In forming these ruins by our system, hollows for abundance of soil out of sight are made in the thickness of the walls, especially at the top, for the growth of plants about them, apparently spontaneous, as ivy, yews, brambles, eglantine, wall-flowers; even Alpines and some other rock-plants out of the joints or on the debris, etc.

These ruined haunts of olden time,
So picturesque with rose windows fine,
Mantled with ivy, wild flowers and yews,
Add a rare feature in the charming views.

Fig 4 - The fake 'ruin' at Benington Lordship

There are numerous examples scattered about the country that may be imitated, or modified to suit the circumstances of the intended site and object, adhering strictly to the style of architecture, whether it be Saxon, Norman, Transition, early or late Gothic; but not in Classic styles, such as we see in ruins of temples, etc., at Virginia Water and Kew Gardens; as there are no such real ruins in this country, it becomes inconsistent. Hear what Sir Walter Scott, who was a lover of picturesque and rugged scenery, says on the subject:

'Thus in the garden's narrow bound,
Flanked by some castle's Gothic round,
Fain would the artist's skill provide
The limits of his realm to hide.
The walks in labyrinths he twines,
Shade after shade with skill combines
With many a varied flowery knot,
And copse and arbour decks the spot,
Tempting the hasty foot to stray

And linger on the lovely way.-
Vain art! vain hope! 'tis fruitless all!
At length we reach the boundary wall.'

In good landscape garden design and execution walls may be, and are sometimes, hidden by the formation of ground and planting, the extent also apparently increased.

There is a fine example of various parts of a Norman castle, forming a court-yard to a gentleman's house, at Benington, including an apartment for smoking-room, corridor, large dining-hall; gateway, with high towers each side; a staircase, with enclosing buttressed walls, etc., all built of flint, with artificial stone dressings, mouldings, windows, etc., executed by us in 1835-36-37 and 1838, as a ruin, supposed to be real, and of which a photograph may be seen – see Fig 4.

Here it may be well to say, though I do not venture on the subject of architecture, that to carry out such works faithfully or correctly, it is necessary to know something of it; and as I was brought up as an architectural modeller, etc., succeeding my father, I have made it a study, as essential to success; and hence, also, I acquired practical experience in the use of various cements, so necessary to ensure durability. Having at school read 'Phillip's Geology,' and 'Glimpses of Ancient Earth,' I acquired a love for geology. I name this as I have been often asked the question, why I took to making of rocks.

Inside or Temperate, Exotic, and Tropical Ferneries, Plant-Houses, or Winter Gardens

In adopting this principle of forming or arranging rocks for inside, exotic, tropical, or temperate ferneries and plant-houses, or a combination of all, to form conservatories or a winter garden - it is what is termed the natural style - all plants being planted out, or plunged, and soiled or massed over, apparently growing on, in, or about, the rocks and slopes, in their natural habitats with the best effect, no pots or pans being visible.

In this way, ferneries may be made undulating, of irregular form, inside of walls already built, although it is better for the rocks to be worked up with

the wall, some.advancing or projecting, some receding, and built up roof high, with a large fissure forming a rugged arch for doorway, covered in, the roof resting on the wall or rock. The hot-water pipes should be under the paths, if possible, the paths being usually made of light brown cement concrete, imitating fine hard gravel well rolled and laid undulating; or the floors laid with hollows for pipes, and outlets for warm air, out of sight, and no gratings, with a fall to a rugged pool or dropping-well, water being supplied from a cistern concealed behind, or in the rocks, so as it becomes chilled. A hose may be attached to a pipe, so as to water easily, when and where required: not having to be forced up by hand sparingly, as the ferns are apt to suffer from want of water, when requiring much labour and attention.

A temperate fernery may be well formed, sunk in the ground, where drainage can be ensured, the roof being put on as near the ground level as possible; little or no artificial heat is required in such a fernery, enclosed or roofed in across the rocks. If a tropical and temperate fernery is desired under the same roof, it can be managed by projections in the rock, forming a sort of partition; and what may appear a fissure in the rock, can be made a doorway or passage through - one part kept at a higher temperature than the other by certain arrangements of the hot-water pipes, or position of the furnace and boiler, as at Handsworth (1870-71). This treatment is so enjoyable in winter, and refreshing for the eye to behold, when our gardens are comparatively bare. The stokery can be made impervious to water, by our concrete lining or construction, even if immersed in water.

Mr. Williams, the well-known cultivator of ferns, orchids, etc., in his book entitled, ‘Select Ferns,’ says: ‘Those not having sufficient space to devote to a house, for the special culture of ferns, may indulge their tastes for them, in conjunction with other plants, by building rockwork in the end of a conservatory, stove or orchid-house.’ A beautiful example of this exists in one of the houses of C. B. Warner, Esq., Hoddesdon.

‘At the bottom of the rockwork is a piece of water in which there are Nymphoea coerulea, N. rubra, and other plants; the water flows over the rocks into a rustic basin. It is made to represent stone, by using burrs and cement, and was executed by Pulham,’ in 1849.

There is a good example of it, worked up at the end of a large conservatory, at Poles' Park, built in 1866, where the rocks form an excellent and effective background - both for the plants in the conservatory and the ferns, which have grown about it so as to need thinning; a large tree fern also, which you can walk under, is charming. This rock is constructed up against the wall of the house, which is, notwithstanding, quite dry inside, as may be seen; and this is often done against houses, with complete success, great care being taken by experienced hands and using good cement to exclude all damp.

When there are two walls opposite each other, they may be rockified to appear as a fern-clad ravine, if the space is narrow; or if in an angle, a rocky nook formed, which can be enclosed and covered in for a temperate or an exotic fernery. Where it is possible, a natural hollow or ravine is the best of

all places to make a fernery; or a natural hollow in the side of a hill or bank; or an unused quarry, broken out in irregular picturesque forms.

Mr. Williams, in his able work, *'Select Ferns',* speaking of the floor of his fernery (done by Pulham), says: 'It is of cement, which, after a long trial, I find better than any other material; it affords no harbour for insects or vermin, and can be easily washed down. The aspect of such a fernery, adapted to ferns of all climates, so as to.display them under circumstances that may be termed naturalistic, is enjoyable at all seasons, especially in winter; it is infinitely superior to the ordinary fern-house with its formal stages, and the ferns in pots, which is not consistent with their nature, as their home is on or about the rock. There is no doubt that ferns cultivated in this natural manner are not only more luxuriant in growth, but more beautiful in appearance than they can be in pots, however well managed. The seedling ferns will grow about the natural rock, where kept damp, as freely as in their wild haunts.

A desirable cavernous recess is generally made at one corner of the fernery or conservatory, to form the dropping-well and pool, so that with a very small quantity of water it is made to flow and trickle from the tank and rock above into the pool below. If sufficient water a cascade may be formed, the water then flowing away out through a fissure in the rocky pool, or as a streamlet, meandering through to the opposite corner or a convenient outlet. Here or elsewhere, in a sunny site, may be another pleasing and attractive feature - an aviary, enclosed with glass and wire, the water running through it for the birds to wash and drink. The rock may be formed and adapted in a recess, with glass in front also for an aquarium, so as to appear as a real rocky recess, enclosed with glass, a little water being made to flow into and through it, not as is usual - a glass case rockified, with formal expensive fittings - but all rugged, intricate, and irregular, as if in natural cavernous recesses, the rocks forming the structure, so as to have a picturesque effect.

Mr. S. Hibberd, in his *'Fern Garden',* (Groombridge and Son) says: 'It is frequently the case that ferns and flowers are grown together in the same house, but either one or the other are: often defective, one loving quiet shade with humid atmosphere, the other sunshine with a more abundant and frequent supply of fresh air than most ferns can withstand; but various plants may be selected that will flourish with ferns, as some of the orchidacae begonias, palms, camellias, the beautiful leaved caladium, etc.' I may add, for shading the roof, Cobea scandens var, Tasconia var volxemi (a very handsome climber), and Rhynchospernum jasinoides. Many others will grow on or about the rock in a fernery with charming effect, harmonizing with the warm tone of grey or richer coloured sand or lime-stone rock, or of Tufa, displaying their elegant forms hanging gracefully over or trailing down the face of the rock, making a charming picture, utterly impossible to illustrate faithfully. But it is frequently easy to arrange for a portion to have a sunny aspect in such a structure, so as to have a good place for flowering or other plants requiring some sunny rays, in order to get more of the desired variety of colour than is obtained by the plants here named,

especially as provision is often made in forming the rock so as to be able to remove plants from the pouches, and to replace with others in proper season. Of course, it is necessary that each class of plants should be in the part of the structure adapted to their respective habits - requirements of soil, sun or shade, in moist or dry situations as they need; also, the size they will grow must be considered. I have seen an Osmunda regalia up near the glass where a cactus would do well, as they thrive where it is comparatively dry.

In this kind of structure, as in many large ferneries, there are generally some parts more shady or cooler and dryer than other portions, so that, with the varied temperature and aspects, and planted or plunged as all may be, as in their natural habitations, growing about the rocks and slopes with such good effect, yet easy to change them at pleasure.

Now that economy of fuel is a consideration, it may be as well to remind amateurs, that though we can have a good and extensive display of ferns and other plants by just keeping the frost out, that keeping them from the cutting and cold drying winds and draughts, that are so very injurious to the most tender of the half-hardy ferns and other plants, it is the means of preserving a great many which is impossible to be done in an outside fernery, enabling us to grow many exotic plants. Many tender ferns do well thus protected; so altogether having an immense variety without artificial heat.

Though I would have the most tender plants in the tropical end, I would have a few of the beautiful small variegated ivies creeping about the rock, near the cool entrance, or other such variegated plants deserving a little protection.

At one end or corner may be a cavernous recess for a seat; the dropping well in sight, with water trickling over the rocks into pools below; ferns growing in or about; a variety of water-lilies or aquatic plants in hollows between the rock, below the water, so as to lay on the surface, in which gold or other fish may thrive, but care must be taken not to have fish put in while any lime is in the water. The damp recesses are good for the filmy ferns requiring much moisture and shade, as the Killarney fern, ete. A flow and return pipe, laid to pass through the pool of water, creates a humid or moist atmosphere, so desirable for the ferns, but this needs doing with great care or a leak is certain.

Increased effect may be obtained in the fernery and apparent extent by the judicious introduction of mirrors at certain angles, so as to reflect the objects two or three times, and forming beautiful vistas, as at Denmark Hill, Waterloo, Henham Hall, Brighton, etc.; though this is departing rather from nature, it has a very pleasing effect, the result being more fantastic than naturalistic.

An able writer in ‘The Garden,’ of Dec. 14, 1872, says of Mr. Backhouse's fernery under glass: ‘Though picturesque and beautiful for the form of foliage, is cold and wanting in colour, and would be far more beautiful if,

instead of covering the roof with canvas and paint to darken it, advantage may be taken of many. beautiful creepers, as passifloras, lapagerias, etc., to cover the roof, especially if coloured ornamental foliage plants, as begonias, funkias, etc., were mixed with the ferns.'

I append some notes on grouping plants, etc., by able writers, who recommend mixing other plants with ferns to give more variety in form and tone of colour, than having all ferns.

Mr. Shirley Hibberd, in his 'Beautiful-leaved Plants,' says: 'The prevailing fashion of grouping tends to monotony. For example, an orchid-house is usually deficient of variety of form, all orchids, the meanest and the most gorgeous, have certain features in common, and the eye wearies of beholding repetitions of a type. The connoisseur who perhaps (and most likely) is a man of one idea, may find in the most tame collections of arads, orchids, or whatever else may be his favourite class of plants, abundant and exhaustless entertainment; but there are many who can appreciate beauty without any regard for the dreary particulars of affinities, values, distinctions, and differences, which constitute the character of connoisseurship. Just for these, who are worthy of high regard, let us have in a spacious and comfortable stove, bold picturesque groups comprising some of the grandest orchids, a few .palms, a few dieffenbachias, caladiums, alocasias, anthuriums, ferns, begonias, allamandas, dipladenias, and ixorias, then we may dignify the collection by the title of tropical garden, and satisfy the demands of true art, much more completely than by special collections which have the repute of being scientific; but, perhaps, contribute nothing at all to the aggregate of scientific knowledge. 'Variety is charming,' therefore we should seek amongst many families for the furnishing of a plant-house, which is intended to afford delight at various seasons.' Such may be seen at Woodford - a fine example of this style of treatment; the artificial rock is overgrown in a most luxuriant manner, with many beautiful foliage and coloured-leaved plants, as caladiums, erantheums, ixorias, achimines, tradescantias, pothos, alocasias, echinanthus, begonias, euphorbias, titonias, sonerilla, eschinanthus, croton, nepenthas, the pitcher plant, the cissus discolor, panicum var and cobia scandeus var, shading the roof, trailing and hanging in festoons; also the passifloras, besides numerous and beautiful flowering plants of the season, in the same structure; and orchids may be seen thriving on the rock close by the ferns; this they did in a few months after being planted by Mr. Lovell, the gardener.

This rock is formed of burrs, covered with cement, in the Pulhamite style, in which is plenty of soil, more than they could possibly have in real stone.

Mr. Williams, in his excellent work on 'Ornamental Foliage Plants,' says: 'They have for a number of years been looked upon as purely stove plants, but which we now find thrive well in the greenhouse and conservatory, and actually grow in the open air during the summer months. To do this they need only taking out and plunging in the rockwork or slopes, which will be consistent with forest-clad slopes of the Andes, of 7,000 or 8,000 feet altitude, and the Himalayas, then their places filled in autumn with hardy rock-plants'

Another advocate of flowering plants with ferns, Mr. Robinson, in his 'Garden', says: 'If the temperature is suitable, the planted-out subjects usually do much better than in pots with ordinary culture. In the warm fernery here, the long feathery coral-laden and weeping shoots of Russellia juncea and the rich crimson blossoms of the racemose passion-flower (Passiflora princeps) lend quite a novel charm to the grace of the ferns. We are too apt to isolate ferns from every brilliant flower that intensifies their grace. The fernery, outdoor or in, should not be a mere collection of fronds; as in their own haunts they are accompanied by plants, the glory of which is in their blossom, so they should be in gardens. Among our choicest hardy plants there are many, like the white wood-lily (Trillium grandiflorum) and the mocassin-flower (Cypripedium spectibile), which thrive in the very conditions suitable for hardy ferns; and the same may be said of flowering stove plants and ferns.

In Brazil, orchids grow with ferns, and some prefer stone to grow on, as the Brasavola genera.

Those who have a desire to grow ferns, and not space enough, can have a miniature fernery in or outside of most houses. A small place may be found in which a selection of small British ferns can be grown, and need not occupy much space; a wall may be simply rockified and become overgrown with small ferns, Lycopod, etc., occupying but little space, and do well even in our crowded cities, especially if enclosed and warmth given to it; and much may be made of a little space, apparently increasing the extent by certain devices in the formation. This will enable those who collect a few, when making their tours among. The glens of North and South Wales, the Highlands of Scotland, the lakes of Killarney, Cumberland, Westmoreland, Devonshire, etc. (in all of which interesting varieties are found), to plant them as living mementos of some favourite spot. Some out-of-the-way nook or place, even a rubbish corner, has sometimes been utilized for the purpose. Some of the little enclosures attached to town houses, if in the shade, are very well adapted for a fernery. If no larger spot can be found, a fern-case, fitted with a moderate quantity of tuffa rock, in the window, will sometimes hide an unsightly view or blank wall. Many small choice varieties will grow on a miniature cliff, with a small pool of water for fish, and be a source of amusement (in such 1cases as those made by Mr. Gray, of Chelsea), nicely fitted with rocks of picturesque form.

Another means of growing ferns and Alpines with good effect, I may add, though not much connected with the rock, is in what I have named a F'erndelabrum or Alpinetum[1], which is composed of a series of basins,

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[1] The material of which it is made is Terracotta. It was first made and exhibited at the Exhibition of 1851, with fountains, vases, etc., for which I was awarded Prize Medal; also in 1862, and at Paris, 1867. Our manufacture of Terracotta helps to keep some of the rock-workers employed in winter, when much cannot be done outside (during severe frost and snow), and it keeps our men together through many years, as many have been in our employ 20 years - some more.

quatrefoil or circular, one over the other, with one of another plan at bottom. By this means, about forty or more middling-size ferns or Alpine plants may be grown in it, especially by having a minute flow of water from the top allowed just to keep them moist, by a tap to turn on in dry weather. On a space of about five or six feet square, pieces of rock being introduced in the basins for the roots to cling to, a pipe is carried up the centre, so that, by the turn of the tap, a fine spray of water will flow over and water all in a minute; every basin has good drainage. This will answer either as a hardy fernery in a shady place for temperate, or may be placed for a tropical one, and may be made of any size by increasing or decreasing the number of basins; or, it may stand in an exposed garden for Alpine plants to grow in with good effect.

Opinions of the Press

GARDEN ROCKWORK

(Extracted from the Art Journal, 1865)

Especially at this season, attention is directed to a means by which our gardens may yield us additional enjoyments by the aid of Art. It is only of late years that ferns have been cultivated in conservatories. They were regarded as weeds until a refined taste appreciated their grace and beauty; and now they rank foremost among the treasures we derive from nature. To arrange them skilfully - either within doors or without - is not an easy task, and our thanks are due to those who teach us how to make the most of them, and of other 'borrowings' from the woods and dells that refresh the eye and gratify the mind. Our suburban homes owe much, in that way, to contributions derived from such places.

We are glad to associate with our own dwellings 'gems' obtained, it may be, from all-beautiful Killarney, or gloomy Scottish glens, or wild dells of Wales, or the mountains and valleys of Westmoreland. Those who love such things will thank us for a word of counsel as to how they may be best cherished and enjoyed. Mr. Pulham, of Broxbourne, has long made that branch of 'Art' his study - his peculiar business is to make 'much of little;' by its aid apparently to enlarge grounds of very small proportions so as to make them appear of vast extent.

We have recently seen some grounds in Addison Road, Kensington, that illustrate this power. The grounds were laid out and the rockwork executed under the direction of R. Marnock, Esq. They cannot contain many acres, yet taste, judgment, and matured skill have been so exercised as apparently to have obtained all the varieties of scenery that one might have looked for if wealth had been expended to make perfect half-a-mile of mingled wood and water with huge rocks and venerable forest trees; here he has had more scope than usual; sometimes he is limited to a few square yards of space, and it is wonderful what he can do - has often done - by representing, sometimes in natural stone, found near at hand, and sometimes by 'imitation stone, caves, cascades, mimic cliffs, in a word, rockwork of all kinds, 'big or little," amidst which the ferns and wild flowers grow as freely as in their natural homes. When such objects are done well, they are invaluable acquisitions; when carelessly wrought, they are deformities; it is only the eye and mind of an artist on which reliance can be placed. Those who require such aids either extensively or to a very limited degree will, we are sure, thank us for directing their attention to the 'System of Rockwork and Ferneries,' concerning which Mr. PULHAM has published a prospectus.

WELCOMBE HALL

The *Gardeners' Magazine* of June 8th, 1872. Writing of the gardens at Welcombe, Stratford-on-Avon, the seat of the late Mark Phillips, Esq. has the following: 'At the head of this lake there exists a stupendous and successful example of rockwork, recently constructed by Mr Pulham, the eminent rockwork artist, of Broxbourne, Herts, It is considered to be one of the grandest and happiest of Mr, Pulham's efforts in this line. Immense blocks of Welsh stone were chiefly used in its construction, the work costing several hundred pounds. The site was happily chosen, and is hidden from the body of the lake by a pre-existing arrangement of banks and shrubs, etc.; at the same time, the main portion of the rocks are made to surround and spring out of the water with much naturalness, ascending as they do from twenty to about thirty feet in height, and is further enhanced by a perpetual stream of water made to fall from rock to rock into the waters below, in a most natural way. The *tout ensemble'* of the whole is perfected by the tasteful disposition of ferns and other rock plants.

[Here we found a rubble wall, intended as a waterfall, the water ran down both behind and before it, almost lost to view. At our finish, a lady wrote the following verse:

Stones here are placed, where stone ne'er lay before,
And Water trickles and falls like a small *Lodore;*
Then for a name, which it must have, of course,
So we intend to call it 'Welcombe Force.'

There is now a rocky dell with waterfall, and a boathouse in the bank

Golden with sable yews and cypress here abound,
Weeping willow and ivy clothe rocky dell around ;
Many an Alpine flower is also there,
Choice ferns and lilies graceful and fair.]

THE NEW ROCKWORK IN BATTERSEA PARK.

From the Garden, of March 15th, 1873

This is the first attempt at making a really picturesque rockwork that has been carried out in any London Park. Considered as such, its effect is very good indeed, and the imitation of natural rock very happy, as might be expected when we state that it \vas executed by Mr. Pulham, of Broxbourne, who has made most of the really effective rock-gardens in the country. Our illustration shows rather a close view of the portion of the rockwork near the cascade; the general effect of the whole, as seen from the other side of the lake, is very different and very satisfactory of its kind. As yet, the rocks are not sufficiently covered or garnished with vegetation to present the best effect, but already their appearance is highly satisfactory. This rock-garden

is not one prepared especially for rock-plants, but rather for its picturesque effect in the park. It is easy, however, to group rock-plants on the slopes of earth near the large masses of artificial rock, and this has already been done to some extent. In one part, we were glad to notice that the excellent opportunities which such large rocks offer for the display of the glorious new clematises had been taken advantage of. Our illustration of this rock-garden, drawn by Mr. Justyne, and engraved by Mr. Cooper, is, we believe, the first ever published which gives a worthy idea of a rock-garden on a large scale which is really worthy of imitation. Such examples cannot fail to have the best effect on the gardening designs of the future.

RUIN AND ROCKWORK

From the Journal of Horticu1ture, June 18th, 1873

(*Norton*). You need not be surprised that your imitation does not satisfy you. Rockwork is most .difficult to construct so as to look natural. A poet and man of taste justly wrote a century since: 'I went to see a fine piece of ruins built at a great expense, which, the day after I saw it, tumbled down for nothing. It must have been much improved by this fortunate incident. It is hardly possible to put stones together with that air of wild and magnificent disorder which they arc sure to acquire by falling of their own accord.' Mr. Pulham has recently very successfully arranged some rockwork at the Battersea Park.

HATFIELD HOUSE GARDENS.

From the Gardener's Chronicle, May 9th, 1874

The lake, which has recently been re-made and extended, is between four and five acres in extent, and is to be skirted by a fine wide walk with bold sweeps of turf, finished on the park side by broad masses of evergreens and flowering shrubs. At its southern end it is proposed to form a rootery furnished with ferns, an admirable site for such a charming adjunct to these noble gardens. The noble walk around, and the rootery at the southern end, must needs be charming; in fact, the situation is far too choice for a common rootery, however carefully formed and furnished; it is worthy to be enriched with all that a Pulham can accomplish in the formation of picturesque imitations of natural strata and the representations of a real rocky dell, made vocal by the music of falling water. With such a basis as this artist could lay, and furnished by Mr. Bennett, one of the most delightful slices of nature in her wildest and most picturesque moods might be placed there.

EXTRACT FROM MR. W. ROBINSON's *'ALPINE FLOWERS'.*

There can be no doubt that as picturesque effects may be produced in this way as in any other, and this variety of artificial rockwork may be admirably associated with shrubs and trees, and vigorous climbing and trailing plants. When properly constructed, care is taken to make the interior of the cemented masses with deep beds of earth, having holes here and there in the face of the structure from which plants can peep forth, while the top is left open and may be planted with shrubs and trees. The new hybrid clematis, with their noble flowers, will, if planted in these rich cases of earth and allowed to fall over the faces of the rock, make an unrivalled display; and the position is also most suitable for all kinds of climbers, trailers, and shrubs.'

DUNORLAN PARK

From the Garden of June 27th, 1874

The gardens of Dunorlan are tastefully laid out, and pleasingly diversified by means of rock-work and fine specimen conifers. At the foot of the hill we cross a little rustic bridge, which spans a stream formed by the overflow from the lake above. From this point a fine view of the waterfall (of which the accompanying is an illustration) is obtained through the trees, and the splashing of the sparkling spray falls pleasantly on the ear. This charming bit of scenery is one of the best features of the place. The great masses of imitation rocks are very artistically and naturally disposed, and are draped with costoneaster, periwinkle, berberis, escollonia macrantha, the clumps of lastrea, osmunda, and other British ferns. From the pond, a meandering stream trickles through the lower portion of the grounds, and the banks of this are judiciously embellished with jutting masses of rockwork, partly draped with hardy heaths, and other plants in keeping with the surroundings The place has been improved and beautified under the direction of Mr. Marnock, who has made it one of the most interesting in its neighbourhood. The waterfall and rockwork have been constructed by Mr. Pulham, of Broxbourne, and, like all his work, show a pure taste and a perfect knowledge of his art. We have seen artificial rock in many countries, but never any so naturally (that is to say artistically) formed as that made by James Pulham.

WESTONBIRT

The *Journal of Horticulture,* July 31st, 1873

In an article upon Mr. Holford's Westonbirt gardens, The Journal says: Some rockwork, executed by Mr. Pulham, of Broxbourne, next claims attention. We have before had occasion to notice in connection with Battersea Park how well he executes this sort of work, which it must be confessed is one of the most difficult things to manage well in landscape gardening. Where rocks naturally exist the utilisation of them for ornamental purposes can generally be effected with ease and without much expense - where nature does much art is the less required - but the artificial arrangement of rocks in places where they do not naturally occur is more frequently bungled than anything we know.

The biggest mountain that man can make is but a molehill to the great upheavals of nature, nor would it be desirable, even if we could attain it, to form any approach to a natural hill in our gardens; but, on the other hand, more modest efforts are apt to result in miniature caves that no one can go into, masses of stones that a man and a barrow could take away in a few hours, and for which there is no *raison d'etre* in a cultivated place. Mr. Pulham in this instance has made the rockwork so that it might be supposed to be the remains of the quarry from which the stones had been taken to build the house, and an excellent resemblance to a disused quarry the place bears. 'Made to puzzle the geologists of a future age,' Mr. Lucas, Mr. Holford's gardener, suggested; but geologists are a hard-headed as well as hard-handed race, and are not so easily taken in.

OAK LODGE, KENSINGTON

Mr. Robinson, in his excellent weekly *Garden,* says of one of these places, in an illustrated description, January, 1872: 'The best example we know of a well-arranged garden in London, is the one of which we now furnish a view of part of the grounds. . . . Perhaps the first thing asked by some of those who have not seen the charming garden, of which our illustration gives but a feeble notion, will be: 'Why is a rock-garden in such a position?' Because a formal and ugly duck-pond and island were there before the garden was designed. . .

Here, then, was a problem: a small formal pond and an ugly formal bank, just in the place where a clear-seeing landscape gardener would desire a little repose and a spread of velvety grass. But it was solved, and ably solved. The ugly bank became a varied mass of picturesque rock, seamed with graceful ferns and trailing shrubs, the water fell into what seemed a natural hollow in the earth, and around it sprung up tufts of iris and yucca.

Rich masses of specimen rhododendrons crest the rocks. The rocks, in fact, form a sort of retaining wall for the masses of earth to accommodate these plants. Mr Alfred Dawson, who sketched and etched the view for us, does not usually betray any animosity to a well-garlanded rock-garden, but, in this case, he has, while giving us the rocks faithfully enough, been somewhat cruel to the graceful drapery of vegetation with which they are clothed, by ignoring its existence to a considerable extent.

It is a mass of artificial rock cleverly and artistically constructed by Mr Pulham. . . . Although the place is only a few acres in extent, and in comparatively closely-built neighbourhood, it seems as free and broad, to one standing on the lawn, as if it were fifty. I may add that in its construction many plants were made in the ledges of the rocks for plants, which I was required to fill up, feeling it would be too much overgrown; and so it would have been. The rocks were executed in 1863-64.

DESCRIPTION OF THE AQUARIUM AT BRIGHTON, WITH ITS PULHAMITE ROCKS.

From the Art Journal

We have drawn attention to the Aquarium at the Crystal Palace. It is entirely the work of Mr.Lloyd. He keeps his guests in good health, ministers to their comforts, and is continually receiving new acquisitions to his admirably arranged tanks; he has not sufficient knowledge or experience to give the tanks the picturesque character they are made to assume at Brighton. Indeed it is probable that financial considerations influenced him in their construction - certain it is that the Aquarium at Sydenham is a profitable undertaking, and likely to be still more so - the shareholders are well content, while the commercial success of that at Brighton is at least doubtful: the cost of the one exceeding £7,000, while, probably, that of the other was not much over £10,000. But the Auarium at Brighton has advantages which that at Sydenham never can have. They are obvious. The tanks are prodigious in size - two of them, indeed, are in length 60ft. and 120ft.

It is, however, less with the Science than the Art of the Brighton Aquarium that we have to do. It is a pleasure to know that its Art is of a right good order. As it is, the best has been done that could have been done. Descending several stairs, lined with graceful *Terracotta* vases, examples of Art-manufacture, the works of Mr. Pulham - with most of which engravings have made our readers familiar - we enter the vestibule. Each tank, entirely open - or, rather, enclosed by huge sheets of plate glass - is lined at the back and at the sides by picturesque rock-work, judiciously and very tastefully constructed, with wisely-arranged interstices for the fish, wherein, perhaps, they hide too much, but which give them shade and consequent health. Fish, like all other created things, must have retirement and rest.

In time, the rocks will be partially covered with *conferva,* and the *actiniae* will soon cling to them as homes - they have partially done so already. The rock-work, as well as the other work we shall presently describe, is entirely the design and construction of Mr, James Pulham, of Broxbourne. They advance indubitable claims to rank as examples of *Picturesque Art.* At the end of the broad passage, on either side of which are the enormous tanks, is one of the most impressive, most effective, and most refreshing sights to be seen anywhere - rock-cliffs, ferneries and waterfalls: that is also the work of Mr. Pulham.

It is to this particular feature of the Aquarium that we desire to direct the special attention of our readers - not only because it adds very greatly to the attractions of the place, but as a mode for all other undertakings of the kind wherever executed. As evidence of what may be done in the way of grace and picturesque beauty in private grounds - small as well as large - and in extensive or moderately sized conservatories and ferneries, Mr. Pulham is well known. We have, from time to time, engraved many of his productions - in *Terracotta vases,* principally, and fountains – but, for some years back, he has also devoted himself to works such as that we are describing -often on a far more important scale, as in the grounds of Mr. Bessemer, at Denmark Hill, and notably in the park at Battersea, on which time has had its improving influence.

His supremacy above other ‘decorators’ of this order he owes chiefly to his extraordinary imitations of sandstone, which, we believe, is a coating of cement and sand, mixed by some peculiar process, and laid over common stones, burrs, flints, etc. The mixture, be it what it may, is so pure as not in the slightest degree to prejudice the water that passes over it, or to injure the plants that grow among and about it; while its appearance is so natural as easily to deceive the uninitiated, and, indeed, the eye of the geologist.

We were told that the men of science who assembled at Brighton in the summer expressed surprise where he could have obtained blocks so large, and they were not undeceived until after a careful examination. It is made to assume the various textures and colours of the actual sandstone - the colours being in the substance, and not merely laid or painted on. Obviously, these blocks may have the most picturesque forms; vacuums may be left *ad libitum;* hollows to hold soil for ferns and other rock-growths. Here one may be rounded, and here one pointed; a mass may be in this place, and a bold projection in another; interstices for planting being judicially left wherever they can be most effective; while water may be made to fall from the summit, winding about fantastically, yet naturally rushing over caves or dripping through mosses, terminating in rugged pools where fish harbour, and running in narrow rivulets, or through broad channels in which flourish the flower-weeds of the lake and river.

This is what has been done at Brighton, at Mr. Bessemer's, and in other places. These it may be our pleasant duty to describe hereafter. At the Aquarium, seats are placed at the east end, just outside the music-room, whence the whole effect of this fernery is seen at a glance. The water falls over a massive rocky brow - as shown in the engraving - winds about, forms

pools, and runs off through small channels. The several interstices are even now richly planted with ferns - young as yet, but giving abundant ‘greenery,’ and destined to grow so that they will clothe the whole with verdure, and require trimming rather than nursing.

What now exists is very charming, but by no means what it will ultimately be. We show that the Aquarium is not the only attraction which "the Aquarium" contains. It will be obvious that much study, experience, and knowledge, combined with natural taste, are required to render ferneries of this kind more than merely agreeable. Clumsy or ill-educated hands and minds would make them confused and out of harmony - attempting too much is to be avoided, as well as doing too little. In all the works executed by Mr. Pulham, the just medium has been aimed at and reached. Those at Brighton will be seen by hundreds of thousands - time will be continually improving them, and we do not doubt that the verdict of the public will be that of the Brighton Aquarium Company – ‘entire satisfaction!’

S C. HALL.

Another writer says: ‘This Aquarium almost realises Percival's description of the floor of the sea, where

> Life in rare and beautiful forms
> Is sporting amid deep bowers of stone.

. . . and the spacious Fernery presents a highly pleasing appearance.’

‘The Pulham Poem’

A Description of a Naturalistic Pulhamite Fernery, Conservatory or Water Garden

by

James Pulham

THOUGH the following describes a combined structure - varied and extensive - of course you can have one according to means, requirements, and site. Even a most awkward-looking nook will make an effective Fernery, or a narrow space, if with plenty of light, for:

If but small Fernery is your aim and delight,
As a Fern-clad ravine with dropping well in sight,
Then add some rich-coloured plants with ferns - you may
Have gold with silv'ry tinge, to make a good display.

BEHOLD! A noble Fernery forms a rocky dell;
Its beauty is a theme on which to fondly dwell.
Lovers of the picturesque will enjoy a display
Of ferns and foliage plants, handsome in leaf or spray.

Fine cliffs of sandstone rock, as in nature is found,
In tints of brown, grey, and red, there ranged around.
Not as if stones piled by the workman's hand,
But strikingly natural, effective, and grand.

In varied lines of strata, some massive and bold,
Shattered and weather-worn, look mossy and old.
In the clefts and crannies there ferns will be seen,
And all clothed with verdure of the loveliest green.

Along the gardenesque paths that endure for all time,
Formed by curves that do with grace combine,
Through rugged arches of rock to pass in and out,
By an undulating way, winding round about.

Through the valley of the dell runs a meandering stream.
With gentle waterfalls sparkling down between.
There trickling or dancing down the craggy brow,
Into a tiny lake o'er rocky beds to flow.

In a tortuous course it will ripple and shine,
Mid pebbles and boulders, relics of olden time,
Fringed with varied foliage, dropping o'er the brim,
There gold and silv'ry fish, with trout and perch can swim.

Choice aquatic plants in its water will grow,
The Queen of Lilies, too, will flourish and blow.
A bridge mantled with climbers cross from rock to rock,
Forms a pleasing feature along the tiny brook.

In a secluded nook you'll have a cosy seat,
There 'midst natural beauties to make a retreat;
See outliers tall and bold, decked with green all round,
A rocky islet, too, by groups of foliage crown'd.

Behind the flowing water of a gleaming cascade,
An interesting pathway can also be made,
And there up through a chasm to a rocky plateau,
Obtain a splendid view of fairyland below.

A fissure in the sandstone, at first very small,
Makes a curious bridge of rock, near a waterfall;
Which appears by force of water, worn thro' just so,
In remote ages, or myriads of years ago.

Noble tree-ferns and palms grace the lovely scene,
With their elegant forms, pleasing to all I ween;
Beneath their arching fronds thro' peeps kept clear,
Vistas of picturesque beauty will there appear.

Some plants on rocky ledges grow spreading and tall;
Others trail and creep about, adorning it all.
With cheerful and rich colours all of varied hues,
Of gold and silvery tints make some charming views.

Beneath a scarp of rock, I am pleased to tell,
Of musical water trickling in a dropping well;
There fording the pebbly stream by a narrow stride,
Fresh beauties doth appear in view on the other side.

The roof by varied climbers may be well adorned,
As Cobaeas with Passiflora, and shade be thus formed
Their branches in festoons are pendant overhead,
Some with gay flowers of orange, blue and red.

In fern-clad recesses such warmth will pervade,
That choice tropical gems may thrive in the shade;
And mossy grot or caves humid as they require
For tender ferns and lilies, those which you admire.

Even some beautiful orchids the rocks do crown,
With many spikes of bloom all trailing down;
The cliffs by varied creepers are so well arrayed,
As Hoyas and Pothos with Cissus there display'd.

Flowering plants of the season bloom with good effect,
Add a charming lustre in the sunny aspect,
Not all sown in pots and pans, but allow me to say,
But about me rocks and slopes, a more natural way.

Lit up for evening display, 'tis a splendid sight,
A delightful resort when all is cheerful and bright
'Mid varied shades of colour as you wander there,
All will be harmonious and so charming fair.

These emotions of delight, if means we employ,
With taste and experience, at all seasons enjoy,
For half may be temperate during winter time,
Pleasant and shady when summer sun doth shine.

In cavernous aquaria it's pleasing to keep
Gems of the finny tribe from the waters deep
And in snug aviaries, open to the solar ray,
Cheerful birds of song, with some of plumage gay.

Aged votaries of nature can have near home,
Small picturesque scenes in a ferny dell to roam,
View foliage, rock, and water, have changes of air,
And explore the whole round in a Bath chair.

When the scene around is refreshing and calm,
Sweet sounds of good music adds another charm,
To the trickle of water, so pleasant to hear,
Especially with friends, who so pleased appear.

If you are sceptical, and think I exaggerate,
My scheme I grant may appear to you intricate;
But it should be comprehensive, and thus realise
Its being unique, if not a surprise.

A scene of picturesque beauty is quite a treasure
Viewed by the eye of taste a frequent pleasure;
Where there's harmony of form and colours combin'd,
Displaying by light and shade all well defined.

Excuse me, Sir or Madam, I entreat thee,
If too enthusiastic I appear to be;
For without some zeal we may lack success,
And 'tis my darling theme I do confess.

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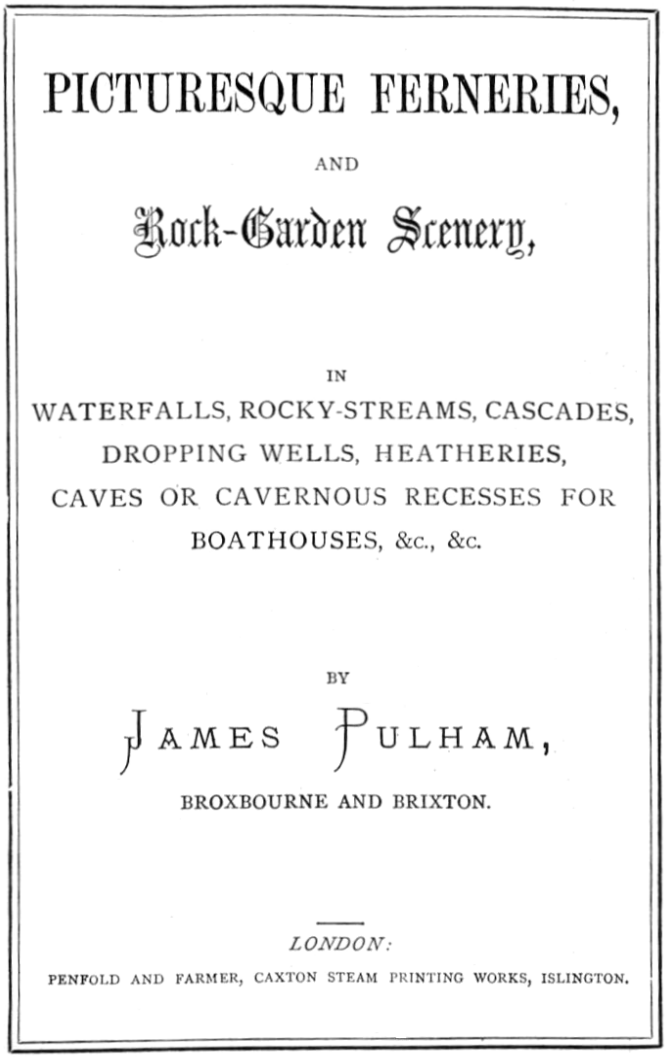
Appendix A - The Pulham Plant List

In his promotional booklet, *Picturesque Ferneries and Rock Garden Scenery,* published c1877, James 2 appended a list of recommended plants for these habitats. Some of their names (or their spelling) may have changed – or other varieties may have become available – since its publication, but his original lists and comments are reproduced here.



PICTURESQUE FERNERIES,

AND

Rock-Garden Scenery,

IN

WATERFALLS, ROCKY-STREAMS, CASCADES,
DROPPING WELLS, HEATHERIES,
CAVES OR CAVERNOUS RECESSES FOR
BOATHOUSES, &c., &c.

BY

JAMES PULHAM,

BROXBOURNE AND BRIXTON.

LONDON:

PENFOLD AND FARMER, CAXTON STEAM PRINTING WORKS, ISLINGTON.

APPENDIX

TO

PULHAM'S PICTURESQUE ROCK-GARDEN SCENERY,

FERNERIES, &c.

—o—

I now append a list of a few of the most choice hardy plants, shrubs, conifers, and flowers, having either beautiful foliage, colour, or variegation—all hardy and suitable to grow on, about, or between the rocks, either erect, drooping, creeping, or trailing down them, the shrubs being chiefly the dwarf kinds, most of which I have seen and admired; also of Alpine flowers, chiefly such as are attractive, or have variegated foliage, and bloom in the autumn or winter months, or for a long time, most of the names being as plain as possible for amateurs to understand—as I find many want to know what plants are most suitable, and for whom this list is intended—not for professed and experienced gardeners.

It is very desirable that both shrubs and plants should be selected from the nursery by the experienced amateur or gardener, so as to be more sure of having good ones, especially as many plants and shrubs are represented in some nurserymen's catalogues to be beautiful which do not always realize the expectation—hence much disappointment.

Though I have mentioned many plants very common, they are not the less good and proper, as most good things become common, because they are good, and, therefore, not often appreciated as they deserve to be—I have added those too—as some may not think of having such plants about the rock. Any effective plant or shrub of the garden may have a suitable place on or about properly formed rock-work. Most ferneries may have a sunny side or exposed parts, which enable us to have a greater diversity than is usually the case, so as to have in many cases a charming, wild, and natural appearance.

There should be no trimming of shrubs with shears into conical, round, or other formal shapes, but allow them to grow natural, for they are generally of good form unless disfigured by accident—then some cutting may be desirable to regain the irregularity in outline of their normal condition. When getting too large for the site, they should be cut with a knife so as not to shew having been cut, more than is possible. Sometimes we see shrubs cut of the sugar-loaf shape, or of an inverted bowl, and fantastic shapes—more curious than beautiful—and especially inconsistent with rocky-picturesque scenery.

First, are the names of shrubs and conifers, most of them being small growing or dwarf, except a few that are peculiarly characteristic of rock-scenery.

SHRUBS AND CONIFERS.

[NOTE.—A. and W.F.S., is Autumn and Winter Flowering Shrub; D.Eg., Dwarf Evergreen; E.F.S., Early Flowering Shrub; D.W.F.P., Dwarf Winter Flowering Plant; and, E.S., Evergreen Shrub.]

The variegated Hollies, and dwarf rock Holly.
Golden and Silver Yews. The common Yew, though large, is so characteristic of rock-scenery, that I name it.
Aucuba Japonica, limbata, longifolia, and others.
Dwarf Rhododendrons, such as hirsutum, præcox, ferrugineum, pulcherrimum nobleanum, and other varieties.
Retinospora pisifera, or Japanese Cypress, pretty golden tinged. R. obtusa nana, is a rich brown or bronze colored foliage. R. leptoclada, R. pisifera aurea plumosa, R. filifera a weeping variety, R. ericoides, and many other varieties.
The Euonymous: as E. radicans var., E. japonica aureo, E. flavescens, E. microphilla, and E. latifolia or white fruited kind.
Golden-leafed Diplopappus chrysophylla, a heath-like growing shrub.
The golden Chinese Juniper, a hardy variegated conifer.
Cryptomeria elegans, a conifer of chocolate hue.
Irish Yew, adapted to grow in nooks and corners where height is required, and not occupying much space.
Wild Olive, Elæagnus japonica var., requiring a dry place.
Osmanthus ilicifolius var.
The several varieties of golden and silvery box, as Buxus Pendula, &c.
Laurustinus, W.F.S., with a good space to spread in.

Thuja aurea, golden tinted. T. pygmea, brown tipped. T. reptans bronzy foliage.
Juniperus Japonica and common Juniper, prostrata, hibernica compressa, sabinioides, squamata, virginiana pendula, viridis, and Chinensis aurea
Arbutus unedo, with pretty berries in winter.
Pinus montana, a low spreading conifer, P. Pumila P. sylvestris aurea, of golden tinge in winter.
Red Dogwood, Cornus siberica, has red stems in winter, but deciduous, also the variegated and C. Canadensis.
Picea pectinata, or silver fir, and P. pygmea, a cushion-like conifer, and the variegated varieties.
Buffalo Berry, a pretty fruiting shrub.
Gravillea Rosmarinifolia.
Iberis jucunda, a lovely little miniature shrub, three inches in height.
Alyssum saxatile, var. F. shrub, Gold-dust.
Eleagnus rotundifolia, a pretty E.S.
Pyracantha, E.S., especially the var. crenata and Craetagus of sorts.
Bromelia-leaf Sea Holly, Eryngium bromeliaefolium, an evergreen perennial.
Doronicum austriacum, very early F.S.
Sambucus racemosus, and spectabilis, a pretty F.S.
Berberis vulgaris, Darwinii, Bealii, Aquifolium, E.F.S., and the Himilayan Barberry. Some of this genus are very desirable for growing among rocks in the shade of trees.
Liquidamber, a handsome foliage tree.
Bryanthus Brewii, dwarf F.S., and B. erectus.
Prunus sinensis flore pleno, a pretty D.F.S.
Dwarf var. Arbor vitæ, gold and silver varieties.
Alpine Willows, such as Salix serpyllifolia, pyrenaica, and others.
Pernettia mucronata, has purple berries,
Prunus tomentosa, a handsome Japanese W.F.S.
Azalea amæna, F.S., and A. Pontica.
Skimmia japonica, D.S. with red berries.
Pinus parviflora, a silvery conifer, and P. Pinaster variegata.
Biota elegantissima glauca and others.
Acer palmata, copper color early D.S., and Acer negundo variegata.
Japanese Acer Polymorphum, with crimson foliage and Acer rubrum.
Lilium Candidum fol aurea marginatus, with margined foliage.
Some of the Camelias, in a southern aspect.
Arthrotaxus selaginoides.
Deutzia crenata flore pleno, gracilis, and others.
Santolina Chamæcyparissus, incana and rosmarinifolia.
Tamarisk, Tamarix gallica.
Syringa alba and S. Persia.
Dwarf Ramondia pyrenaica, and Hoominum pyrenaicum.
Cupressus Lawsonii nana, and several others.
Juncus effusus spiralis var, the variegated cork-screw rush.

Cassia floribunda, A.F.S.
Forsythia viridissima, F.S.
American laurel, A. and W.F.S.
Philesia buxifolia, D.Eg.F.S.
Japanese Laurustinus, or Viburnum Sieboldi.
The various Abelias.
Taxus Dovastonii. T. depressa. T. Ericoides, and T. Aurea gold-striped.
The Cranbury Vaccinium Vitis Idæa, Uliginosum, Oxycoccus and others.
The Daphnes, as Cneorum and Fioniana.
Eugenia or Rose apple Eg. F.S.
Japanese roses, Rosa rugosa, rugosa alba and rugosa fl pl
Abies Clanbrasiliana.
Garrya eliptica, D.E.S.
Adam's Needle, Yucca gloriosa, recurva, filamentosa, flaccida and others.
White and Yellow brooms.
Double flowering Peach, Persica sanguinea, albo pleno, and others.
Weigelia of sorts, amabilis, Van Houtte, Isoline, and many others.
American red root, Ceanothus Americanus, azureus, dentatus and others.
Grislina littoralis, E.F.S.
Polygonum complexum.
Variegated Tree Ivies.
Laurus Angustifolium.
Aralia Sieboldi and A. quinquefolia.

CLIMBERS AND TRAILERS,

Suitable to grow up, or trail down, especially over the thick strata of the rocks.

The numerous variety of small var. Ivies, as the golden clouded Ivy, Hedera conglomerata, and a score of others different in form or color. A great many (very good small Ivies) may be obtained from the banks and hedges, growing wild.
The large and small leaf periwinkle, or Vinca major and minor, both variegated, as well as the double forms.
Golden Japanese Honeysuckle, Loniceria Japonica.
The varieties of Clematis, such as Jackmanii, Montana and Lanuginosa are very beautiful trailing about on an extensive piece of rock-work.
Passiflora cœrulea, racemosa and other hardy varieties are very beautiful for trailing about on an extensive piece of rock-work.
Cotoneaster microphylla C. Simonsii, and frigida.
Trailing Daphne, Garland flower, and the variegated, F.S., in sheltered places.
Phlox frondosa, P. reptans, setacea, nelsonii, and others.
The trailing Gaultheria, procumbens or Chickberry, pretty E.F.S., with bright berries in winter, and G. shallon, with purple berries.

Linnæa Borealis, or Twin flower, an E.F.P.
Dwarf Japanese Virginian Creeper, Ampelopsis Veitchii.
Coronilla gibraltarica varia iberica and others.
Bignonia radicans, Veitchi, Martiana, and Sedeni, are fine flowering, climbers, in a sheltered aspect.
Weeping Juniper, also the variegated or carpet savin.
The Creeping Wintergreen, Pyrola rotundifolia, has bright berries in winter.
The Prostrate Speedwell, Veronica rupestris, alpina, and taurica.
Variegated Creeping Jenny, Lysimachia nummularia aurea.
Banksian Roses E.F.P., in S. aspect.
The Rock Gentian or blue Gromwell, Lithosper mun petræum, prostratum and purpureum cœruleum.
Bearberry, E.S., with bright red berries.
Ceanothus, divaricatis, americanus, and rigidus.
Wistaria sinensis, trained along the high rocks.
Evergreen Honeysuckle, bloom twice a year, and the creeping Honeysuckle or Lonicera sempervirens, has red berries in clusters.
Helianthemums, or rock rose, H. croceum pilosum, vulgare and its varieties in every shade of color, both single and double flowers.
Gum cistus, Cistus ladaniferus, purpureus formosus, splendens, and others.
Berberidopsis corallina.
Berberis empetrifolia.
Lardizabala bitternata, in sheltered aspect.
The trailing Cranberry with its bright scarlet berries in Autumn.
The variegated creeping Partridge berry, Mitchella repens does well under trees and shrubs.
Escallonia macrantha, E.F.S.
Lily of the Valley tree, Clethra arborea.
Muhlonbeckia complexa, Eg.
Jasminum officinalis, grandiflorum, and others.
Desfontinia spinosa.
Dracaena indivisa.
Ficus repens, in a southern sheltered aspect.
Ground Laurel, Epigea repens, for under trees.
Apios tuberosa, very free growing climbing plant.
The drooping Forsythia suspensa, a W.F.P.
Adlumia cirrhosa purpurea.
Beauty of the rocks, Petrocallis pyrenaica.
Some of the hardy grape vines, having beautiful foliage, where the rock is of sufficient height and extent not to smother it up.

As some of the plants named may not be what are generally understood as rock-plants, it may be well to say that, in forming a Rock-garden, some of the shrubs and plants named may crown the heights, and others in the ravines or slopes and glades, it is desirable to have ap-

parently fallen masses or *debris*, at or about the base of the cliff. In this, many plants will thrive better than on the rocky ledges above; and, of course, these pieces or screes may very properly lay any way most covenient for the plants, whether growing erect, climbing, or trailing. These pieces or *debris* may be, and generally are, of real stone, even where the cliff is formed of artificial rock for economy; a great number of small alpines may be thus grown near the eye for close inspection.

I am induced to say this, as I continue to find, since writing the foregoing pages, so much lack of taste for the really picturesque and rugged; as it is often thought, if the plants can be growing over a heap of stones or roots, so as to look down upon them, that perfection is attained. I therefore beg to invite a comparison of the effect of a bold rugged formation of rock, clothed with many of the plants named, with the ordinary so-called rockery-works. For instance, imagine a broad rocky ledge, with a variegated Periwinkle, Cotoneaster, Carpet Savin, or other trailers, drooping over the rocky brow, and some of the numerous evergreen or variegated climbers growing up the face of the rock, with golden and other Hollies or Shrubs; also, now and then, a small Weeping Birch, &c., which are all beautiful in mid-winter, when so many desire the enjoyment of their garden more than in summer-time.

A FEW OF THE BEST

HARDY ALPINE AND OTHER PLANTS,

Adapted to grow on and about the rocks, many of them are variegated or evergreen, blooming in autumn or winter, and worthy of growing either for their beautiful foliage or flower, or long continuance in bloom; most of them are perennial, and all hardy.

Soldanella alpina, clusii, montana, and minima, W.F.
Bambusa Fortuni, or Chinese bamboo, nana, aurea, and others.
Ficaria grandiflora, or large Pilewort, W.F. and ranunculevides.
Aspidistra Lurida, var., in a sheltered aspect.
Dondia epipactus, Draba aizoides, ciliaris, and others in bloom.

The Golden and Lemon Thyme, and other varieties. Fisher & Holmes's is especially beautiful.
Oxalis lobata, Deippei and elegans, or wood sorrel, thrive in a northern aspect. O. corniculata rubra will grow on steep banks between rocks, where scarcely anything else will thrive.
The Pentstemons, such as glabra, Jeffreyanus, speciosus, &c.
Arabis albida, var., and A. lucida, var. or Rock Cress.
Spirea Japonica, var., beautiful golden reticulated foliage.
Reineckia carnea foliis, var.
Acanthus latifolia and A. mollis, bold handsome foliage plants.
Carex divulsus, covers bare places under trees.
Siberian squill, Scilla siberica, bifolia nivalis, and others.
Sissyrinchium grandiflorum and the white var., W.F.P.
The small leaf Acæna, microphylla.
Scopolia carniolica, and orientalis, E.F.P.
Hypericum calycinum, St. John's Wort.
The var. Queen of the Meadows, Spirea ulmaria variegata, and others.
Viola Cornuta, and the white variety, lutea, and many others, W.F.P.
Several kinds of the Sunroses, Helianthemums, especially the variegated.
Silvery Veitch.
The noble Fumitory, Corydalis nobilis, Corydalis lutea, will flower from March to October.
Mountain and silvery Catsfoot, Antennaria doica, and tomentosa.
Shaggy Cerastium, grows under the projections of the rock.
The Tritomas, Burchelii fol var. and media, A.F.P.
Christmas Roses, or Heleborus niger, fœtidus and maximus.
Centaurea candidisima, Clementei, and others.
Dwarf Daffodil, Narssissus minor, minimus, tenuior, and others.
Winter Aconite, Eranthus hyemalis, will grow well under trees.
Pulmonaria siberica, officinalis, grandiflora, &c.
Spring Snowflake, Leucojum vernum.
Cyananthus lobatus, lovely light blue flowers.
Some of the early flowering Anemones, as Blanda, Angulosa, trifolia, and Apennina.
Early blue creeping Forget-me-not, Myosotis disitiflora.
Eritrichium nanum, a lovely alpine, but difficult to grow.
The Aubrietia purple and variegated forms, Eg.W.F.P.
Some of the dwarf Chrysanthemums, A.F.P.
Schizostylus coccinea, W.F.P.
The Winter Heliotrope, Tussilago fragrans,
Alpine wall flowers, Chieranthus alpinus, Marshalli, and the double forms of the common wall flower do well on the rocks.
Cotyledon umbilicus and spinosus.
Luzula pilosa, var riparia albo marginata, and others.
Sibthorpia europæa, or the variegated Cornish Moneywort.
Ecremocarpus scaber.
Cortusa Matthioli, a lovely Primula-like plant.
The Cuckoo-pint, Arum, maculatum, Italicum and others.

Teucrium chamædrys, alpina, and several others.
Globe flower. Trollius europeus, grows in moist places.
Vittadenia trilobata. The Australian Daisy.
Cyclamen coum, europeum, and the ivy-leafed, hederæfolium F.P.
The alpine and Rocky Mountain Columbine. Aquilegia alpina, chrysantha, pyrenaica and glandulosa.
(Evergreen), Candy-tuft, or Iberis sempervirens, and I. jucunda.
Aucuba leaf or variegated daisy, and the double varieties of the common daisies.
Dactyllis elegantisima and Nana fol var.
Euphorbia Amygdaloides fol var.
Iris reticulata, I. florentinus, var., I. Fœtidissima, var., and I. Iberica.
Sweet Williams do well on the rocky-ledges, also several of the Dianthus, as superbus, alpina, petraeus, pungens, and others.
Ground Ivy, Glechocoma hederacea fol var, good for growing under the trees between the rocks.
Arenaria Valcarica, verna, and grandiflora.
Red Whortleberry, Vaccinium Vitis Idæa.
Verbena Montana, or new hardy Verbena.
Ajuga reptans, var., or Creeping Bugle.
English Lady's Slipper,the prettiest native orchid, Spectabile, the grandest of the hardy American orchids, pubescens, the downy Lady's Slipper, arietinum, acaule the stemless Lady's Slipper, and montanum, a beautiful Californian hardy orchid, all these are lovely plants for moist shady spots about the rock-work.
The hardy Cacti, as the Opuntia raffinesquiana.
The Fish-bone thistle, Chamaepuce diacantha.
Comfreys, Symphytums of sorts flourish under trees, especially the variegated S. Officinale.
Golden Sage, Salvia officinalis aurea and tricolor.
Linum flavum, alpine flax Linum alpinum, and the Pyrenear flax.
Dieleytra eximea, spectabilis, formosa and cucullaria.
Gentiana acaulis Andrewsii, alpina, cruciata, and gelida.
Convalaria multiflora, pubescens, bifolia majalis variegata.
Polygala Chamæbuxis, Andromeda floribunda, Empetrum nigrum and scoticum.
Morina Persica, handsome thistle-like plant.
Variegated Jacob's ladder, Polemonium cœrulea var.
The hardy Pitcher plant, Sarracenia purpurea, in damp places.
Senecio Pulcher, A.F.P.
Achillea umbellata, a silvery foliage plant and tomentosa.
Thalictrum adiantioides, maiden-hair Fern-like foliage, Eg.
Winter Cherry Physalis alkekengii.
The Crocus of Scripture, Amarylis lutea.
Viola odorata and its varieties, blue, white and red, both single and double.
Bulbocodium vernum, and colchicums of sorts.
Variegated Coltsfoot, Tussilago fol var.

The Catch-fly, Lychnis viscaria rubra fl. pl., viscaria splendens, viscaria alba, alpina, and pyrenaica, all of which are evergeen.
Aquatics, Aponogeton distachyon, Pontederia cordata, Orontium aquaticum, villarsia nymphaêvides, and Water Lilies of sorts.
Gold-dust, Alyssum saxatile compactum, and the variegated form.
Funkia ovata, Sieboldiana, undulata, medio picta, aurea, lanceolata, Fortunii, marginata, and variegata, are all bold handsome foliage plants.
English Primroses, embracing the beautiful high-colored single varieties and the double forms—double-white, purple, crimson, sulphur, yellow, rose, and flesh.
Alpine Primroses; these embrace some of the loveliest of our alpine plants, and grow with the utmost freedom in cool moist spots between the stones. Among the best, may be mentioned, Primula viscosa, marginata, nivalis, farinosa, spectabile, auricula, longiflora, pedemontana integrifolia, and many others.
Himilayan Cowslips, Primula denticulata, purpurea, Sikkimensis, and pulcherrima.
Japanese Primroses. A new race, recently introduced, forming a group of lovely spring-flowering alpines, having large heads of richly-colored flowers. Among the best, may be mentioned, Primula cortusoides amœna, amœna alba, amœna lilacina, and the beautiful "Queen of the Primroses," Primula Japonica.
Hardy perennial Mesembrianthemum uncinatum.
Dwarf American Phloxes, Phlox ovata, glaberrima, carolina, and others.
Thrifts of sorts, Armeria alpina grandiflora, cephalotes rubra, and maritima.
Hare-bells of sorts, Campanula rotundifolia, pulla, Hostii, muralis, garganica, pumilla, and pumilla alba.
American Cowslips, Dodecatheon media, Jeffreyanum, and integrifolium.
Dwarf Crane's Bill, Geranuim sanguineum, argenteum, and cinerium.
New Zealand Fuchsia, F. procumbcus, F. globosa, and gracilis, are also worth growing.
Mountain Blue Daisy, Globularia cordifolia, nudicaulis and nana.
Monkey Flower, Mimulus cupreus, and Rœzlii.
Alpine Forget-me-not, Myosotis Alpicola azorica, and azorica alba.
Evening Primroses, Œnothera riparia, taraxicifolia and macrocarpa.
Ophiopogon Jaburan and spicatum, as well as the variegated forms of both.
Spring Vetch, Orobus vernus, vernus albus, and cyaneus.
Alpine poppies, Papaver alpinum, nudicaule, and nudicaule album.
White cinquefoil, Potentilla alba, rupestris and dubia.
Alpine Butter-cups, Ranunculus montanus, Thora, and glacialis.
Sea-lavender, Statice spathulata, bellidifolia, incana, and oleifolia.
The Bird's-foot Violet, Viola pedata, pinnata, biflora, and cucullata.

Many varieties of the Saxifrages, as cymbalaria or golden Saxifrage, bucklandii, oppositifolia, pyrenaica, mossy Sax Hypnoides, long-leafed Sax, S. longifolia, S. pectinata, purple mountain, Saxifrage S. oppositifolia, S. umbrosa var., S. notata, and others too numerous to mention, are evergreen, and more or less variegated and of silvery foliage.

Many of the Sedums, as S. acre, S. Ewersii, S. elegans japonicum foliis var., S. grandiflorum, orange and purple stonecrop, rock stone-crop, and a great many others.

The Houseleeks form a fine group for adorning the rock-work, forming close tufts of rosettes of almost every shade of color, varying in size and color of flower. Among the most conspicuous might be mentioned, Sempervivum arachnoideum, the cob-web houseleek, californicum, spinosum, rupestre, hirtum, montanum, tectorum, soboliferum and a host of others, all of which are admirably adapted for the winter garden or rock-work.

These Saxifragas and Sedums will alone make a small rock-work effective all the year round.

There are a great variety of hardy Heaths, which will grow well on or about the rocks, on the highest, driest, and most exposed parts, where there is but little soil; on steep banks between the rock, or places too much exposed for Ferns, as they root deep, in poor and stony soil, where free from lime; and by having sufficient variety, some will be in bloom all the year round, as Erica carnea, E. cinerea, and E. vagans. There are about fifty varieties, enough to make a Heathery.

An able writer in the *Garden*, of January 21st, 1876, Mr. McNab, of the Royal Botanic Gardens, Edinburgh, gives the number of varieties of plants growing about the stones in the rock-garden, that were in flower on the last of each of the following months of 1875:—

January, 13.	October, 86.
February, 30.	November, 20,
March, 56.	December, 13.

And 658 varieties in the twelve months, exclusive of a number of dwarf Alpine shrubby species, which do not flower regularly; and of many species of plants which do flower, chiefly of the saxifrages, sempervivums, and sedums, which are not included in the number given in this list.

FERNS.

At the last, I think my list of plants will be incomplete without a few of the best, evergreen or hardy, as an important aid in making the Rock-garden, in the most shady parts, effective, in autumn, winter, or all the year round.

Allosorus crispus, Mountain Parsley Fern.
Asplenum Adiantum Nigrum, Black Maiden-hair Spleenwort.
„ Marinum
„ Lanceolatum.
„ Germanicum.
„ Fontanum.
Athyrium filix foemina (Lady Fern) Edwardsii.
Blechnum Spicant, Hard Fern, and many others.
Cyrtopteris fragilis.
Cyrtomium falcatum.
Hymenophyllum Tunbridgense.
Lastrea filix mas crispa.
Osmunda Cinnamomea.
„ Regalis, Royal Fern.
Polystichum Lonchitis, Holly Fern.
„ Lobatum.
„ Angulare, Prickly Shield Fern.
„ Proliferum Crawfordianum.
„ Thompsonae.
„ Wollastonii.
Polypodium Dryopteris, Oak Fern.
„ Robertianum.
„ Cristatum.
„ Omnilacerum.
„ Cambricum.
„ Pulcherrimum.
„ Elegantisima.
Scolopendrum Vulgare crispum (Hartstongue Fern).
„ „ Corymbiferum.
„ „ Sagittatum.
Trichomanes radicans, Bristle Fern.
„ Andrewsii.

For further information about Ferns, I recommend Williams' "Select Ferns," which well describes both hardy and exotic. Sold at Victoria Nursery, Holloway.

For further information respecting soils, where and how to plant, I recommend Robinson's "Alpine Flowers for English Gardens," 2nd edition, price 15s., at office of the *Garden*, Southampton Street, Strand. Also his "Hardy Flowers." Many beautiful alpines, &c., appear in course of illustration in the *Garden* during this year, 1876.

Since my pamphlet was published, a second volume of Woorster's "Alpine Plants" has appeared.

I hope I shall not appear invidious in giving the names of the following firms where such plants, as I recommend, can be as well obtained as any I know :—

Mr. B. S. WILLIAMS, of Holloway, for Ferns, Orchids, Palms, &c.

Mr. WARE, of Tottenham, and Messrs. BACKHOUSE, of York, for Alpine flowers and other Rock-plants.

Mr. SMITH, of Worcester, for beautiful variegated Shrubs and Conifers.

I am forming a rocky-cliff in my garden, on or about which I am planting one or more of the Shrubs, Conifers, and other plants herein named, in order to shew what may be done for picturesque effect, to make a rock-garden pleasing in the dull days of autumn and winter, or all the year round, which may be seen at my residence, The Orchard, High Cross, Tottenham, N. (G. E. R. trains pass Seven Sisters' Station every quarter of an hour from Liverpool Street.)

Appendix B - List of Satisfied Clients

St James' Church, Silsoe, Bedfordshire. ***1828-31***. Built complete church

Proctor, George, Benington Lordship, Benington, Herts, ***1835***, Mock ruined 'Castle' with gateway, rooms (smoking-room, corridor, dining room). *(Still in very good condition)*

Warner, J Esq., Woodlands, Hoddesdon, Herts, ***1842***, Fernery, Lake, Waterfall, Fountain. *(Fernery and Fountain no longer viable)*

Duncombe, Capt Arthur, Kilnwick Percy, Pocklington, Yorks, ***1848*** Hall and staircase within the Hall *(No garden work on this occasion, and fire destroyed the central hallway, but some pillars still remain)*

Church of St Thomas of Canterbury, West Hyde, Harefield, Herts. ***1844-45***. Built complete church. *(Repyted to be the finest example of knapped flint-work in the county)*

Baker, William Robert Esq., Bayfordbury, Hertford, Herts, ***1845***, Alpine Rock Garden in natural and artificial stone *(very nearly demolished)* and circular pool with fountain. *(Now replaced)*. Rocky path and open-topped grotto in Pinetum, 1848.

Sterry, F Esq., Coombe House, Croydon, Surrey, ***1848***. Rocky Pool or Water Cave enclosing tank for watering garden

Gambier Parry T. Highnam Court, Highnam, Glos, ***1847-62***. Waterfalls, Caves, Fernery, Rocky Stream, lsland, Cliff to hide Greenhouse. *(T.Gambier Parry was the brother-in-law of William Robert Baker of Bayfordbury. Still maintained in excellent condition by present owner)*

Church of St Mary, Clophill, Bedfordshire, ***1849***. *(Built complete church)*

? Oak Lodge, Kensington, London, ***1851***. Waterfall, Cliffs, Fernery. *(Patron not known)*

Cooke, E W Esq. 'The Ferns', 9 Hyde Park Gate South, Kensington, London. ***1852***. Fernery, Rocky Banks in Tufa

Salomons, Sir D, Bart., 'Southborough' *(? also 'Broomhill')*, Tunbridge Wells, Kent. ***1854***. Rocky Pass, Banks, Cliff, Fernery .

Church of St Mary Redcliffe, Bristol, Avon. ***1855***. Restoration of figures and tracery around North Porch

Cemetery Chapel, Ware, Herts, ***1855***. *(Built complete church)*

Church of St Augustine, Broxbourne, Herts. ***1855.*** *(Extensive external and internal restoration of brickwork etc)*

Gasiot, J P Esq., Clapham Common, London. ***1856***. Fernery with Dropping Well

Walker Mrs, Southgate House, Southgate, London. ***1856***. Cave, Rocky Pond, Cliffs for Fernery, Rocking Stone.

Levick, J Esq. Ponsbourne, Cheshunt, Herts. ***1858***. Rocky Pond, Fernery.

Blake, W J Esq., Danesbury Park, Welwyn, Herts. ***1859***. Cave, Dropping Well, Pass for ferns and other rock plants in old chalk pit but in artificial stone. *(Fernery intact, but site almost derelict)*

Noble, J Esq., Berry Hill, Taplow, Bucks. ***1859-62.*** Waterfalls, Ford across lake, Cliffs and cave to hide Gas Works. *(Boathouse now vandalised, but otherwise in good, but completely overgrown condition. There is also a circular sunken fernery in a clump of trees near the lake)*

Westminster, Marquis of. Fonthill Abbey, Fonthill Gifford, Tisbury, Wiltshire. ***1859-60***. Waterfalls in a rocky stream, pond, island, rocky pass and cliff. *(Everything very overgrown and in poor condition, but still exists)*

Wilson, F Esq. Tunbridge Wells, Kent. ***1860***. Fernery, Cliff to Bank

Pulham, J, 136 Station Road, Broxbourne, Herts. ***1860s***. Fernery and Alpinery (in own home)

Pulham, James 2, 'The Orchard', High Cross, Tottenham, London. ***1860s***. Fernery and Alpinery

Berger, F Esq. Lower Clapton, London. ***1861***. Fernery

Duckworth W (World Bank), Orchardleigh Park, Lullington, Nr Beckington, Somerset. ***1862***. Waterfalls in Rocky Stream, Cliffs, Bank, Rocky Island and Pond.

Portland, His Grace the Duke of. Welbeck Abbey, Worksop, Notts. ***1862-67.*** Subterranean Passage, Dropping Well, Drinking Fountain. *(Passage still there, but no sign of well or fountain. However, there is a lot of evidence to indicate that Pulhams were involved in several other features)*

Reed, H Esq. Dunorlan Park, Tunbridge Wells, Kent. ***1862.64***. Waterfalls, Rocky Stream, Spring, Rocky Banks, Plateau for Summer House, Fountain etc *(Recently restored with help of Heritage Lottery Grant)*

Mountain, S H. Norland House, Bristol, Avon. ***1863***.

Stone, Alderman. 'The Hoo', Hill Wood, Sydenham, London, SE26. ***1863-70***. Rocky Stream, Ruins etc.

Loyd Lindsay, Lt-Col R, and Lady Overstone. Lockinge House, Wantage, Oxfordshire . ***1864-71.*** Waterfalls, Rocky Stream, Cliffs for alpines and ferns.

Preston Corporation, Miller Park /'New Park', Preston, Lancs. ***1864.*** Waterfall, Cliffs, Rocky Pond, Drinking Fountain – naturalistic.

Wright F, Osmaston Hall, Derbyshire. ***1864.*** Fernery.

Campbell, Colin Esq. Woodseat, Uttoxeter, Staffs. ***1865***. Fernery.

Child, Coles Esq. The Palace (Now Civic Centre), Bromley, Kent. ***1865-70***. Waterfalls and Ferneries

De Paricinni, J Esq. Datchet, Berks. ***1865***. Small Fernery

Fielding, J Forest Hill, London. ***1865***. Fernery against house

Goldsmid, Sir F., Bart M.P. Rendcombe Park, Rendcombe, Glos. ***1865***. Waterfalls, Lake, lsland in local stone.

Hanbury, R. Poles Park, Ware, Herts. ***1865-92***. Conservatory, Fernery, Dropping Well.

Pipe, Miss, Clapham Park, London. ***1865.*** Fernery, Dropping Well

Preston Corporation, Moor Park, Preston, Lancs. ***1865***. Rocks for bridges to rest on, Drinking fountain, Rocky tunnel and roadway

Anderson, S J Jun. Esq. Ankerwycke House, Wraysbury, Berks. ***1866***. Fernery

Buxton, Sir Fowell and Lady E. *Probably* Northrepp Hall, *but could be Colne House or Upton House,* Cromer, Norfolk. ***1866***. Conservatory, Fernery, Dropping Well. Seat and Flower Stand

Chaplin, Henry Esq. Blankney Hall, Lincoln, Lincs. ***1866***. Cave, Rocky Pass for ferns and other Rock Plants

Hanbury, R C Esq. M.P. Bedwell Park, Essendon, Herts. ***1866***. Fernery, Cliffs to hide wall of Walled Garden,, Root House for ferns, rock plants and shrubs. *(Cliff still in good condition - approx 50 yds long x 12 ft high)*

Hastings, Marquis of, Donnington Park, Donington, Leics. ***1866***. Cave for Eagles, Waterfalls, Rocky Stream, Pond

Her Majesty's Commissioners of Works and Royal Parks. Battersea Park, Battersea, London. ***1865-70***. Waterfalls, Rocky Stream, Cave for shady seat on the Peninsula and in other parts of the Park

Hicks, T. Streatham, London. ***1866***

Kitchen J. Dunsdale, Yorks. ***1866***. Rocky Stream, Waterfalls, Boat House, Lakes and ponds concreted. *(This failed and was removed. Water features no longer exist. Follies remain but derelict)*

Platt, John Esq. M.P. Bryn-y-Neuadd, Llanfairfechan, Gwynedd. ***1866.*** Waterfalls, Fernery, Ponds

Preston Corporation. Avenham Park, Preston, Lancs. ***1866-75***. Waterfall, Cave etc. Adjoins Miller Park *(with which it is jointly graded)*

Stewart, J. West Wickham, Kent. ***1866***.

Batten, J. 'Bickley '?, Bickley, Kent. ***1867***

Braybrooke, Lord. Audley End, Essex. ***1867***. Rock Garden, Pond Garden, Otter Pool. *(Still in good condition*)

Green, J Esq. Chiselhurst, G London. ***1867***. Rocky entrance to Gateway

Milner, Edward. Dulwich, London. ***1867***

Moilliet, J L. Abberley Hall, Worcester. ***1867***.

Platt, James Esq. M.P. Oldham, G Manchester. ***1867***. Fernery

V & A Museum. Kensal Green Cemetery, Kensal Green, London. ***1867***. Monument to William Mulready, designed by Godfrey Sykes in Pulham's Terracotta. *(Won a silver medal at the Exposition Universal in Paris in 1867. Still in good condition)*

Watkins, Miss. Dulwich, London. ***1867***

Wigan, J Esq. Winchmore Hill, G London. ***1867***. Fernery and Rocky Banks

Rosherville Gardens, Gravesend, Kent. ***1867***. Cavern with Dropping Well for Drinking Fountain

V & A Museum, Henry Cole Wing, Kensington, London. ***1867-8***. Terracotta on to Exhibition Road

Barclay, H F Esq. Woodford, Essex. ***1868***. House for Ferns and Orchids, rich-coloured Ornamental Leaf Plants. With Dropping Well, in which a variety of plants are flourishing about the rock, with Orchid.

Birchall, Lieut-Colonel Thomas. Ribbleton Hall, Preston, Lancs. ***1868***. Fernery etc

Cox, J H Esq. Uxbridge, G London. ***1868***. Rocky Cliff, Dropping Well, and Alpinery, to hide a Gardener's Cottage, and forming fernery and Alpinery

Dugdale, J Esq. Wroxall Abbey, Wroxall, Warcs. ***1868***. Fernery

H. R. H. The Prince of Wales. Sandringham, Norfolk. ***1868-1905.*** Waterfalls, Rocky Stream, Cave for Boat House, in cliff open to lake. Almost certainly added Walled Kitchen Garden i1903-05. *(Still in very good condition)*

Ingram, Mrs. Mount Felix, Walton-on-Thames, Surrey. ***1868***. Cave and Dropping Well, Fernery

Lamplough, J and Chamberlain, J. Highbury Park, Birmingham, W Midlands. ***1868***. Small Fernery *(1868- ? survives)* and Rock Garden *(1902)*

Morland, W C Esq. Lamberhurst Court Lodge, Lamberhurst, Kent. ***1868***. Fernery

Pease, J W Esq. M.P. Hutton Hall, Guisborough, North Yorkshire. ***1868-74***. Waterfalls in Mountain Stream, Exotic Fernery, Rocky Stream through Pleasure Grounds. In natural stone.

Prescott Decie, R Esq. Brockleton Court (or Hall), Brockleton, Worcester. ***1868***. Hardy Fernery and pathway between Rocks

Allen, E W Esq. Peckham, London. ***1869***. Fernery

Bessemer, H. Bessemer House, Denmark Hill, London. ***1869***. Bridge on Rocks, Waterfalls, large Fernery entirely built of Rock, forming Cliff outside, a Moorish Temple in the Rock, a Boat-house entirely in Rock, Lake and Ponds concreted, also Rocky Island and Streams.

Davies, H D Esq. Isleworth, G London. ***1869***. Fernery

Dubath, Lieut-Colonel. Chichester, W Sussex. ***1869***. Fernery and Aviary

Gover, H. Sydenham, London. ***1869***

Ismay, T H Esq. 13 Beach Lawn, Waterloo, Sefton, Lancs. ***1869***. Fernery with stream from Dropping Well, Aquarium in rocky recess, Aviary, Cliff with Alpines and Ferns

Johnson, Mrs. Blundeston Lodge, Lowestoft, Suffolk. ***1869***. Fernery

Mace, W J Esq. Sydenham, London. ***1869***. Fernery with Dropping Well

Mendel, S Esq. Manley Hall, Manchester, Greater Manchester. ***1869***. Rocky Lake, Pathway, Cliff, Boat House

Morris, G J Esq. Liverpool (Near), Merseyside. ***1869***. Rocky Road and Drive, Rocks for Bridge to rest upon and to hide buildings

Moser, H Esq. Forest Hill, London. ***1869***. Rockwork for Ferns and Camellias

Nicholson, W Esq. Herne Hill, Camberwell, London. ***1869***. Hardy Fernery, and Dropping Well, supplied from Fountain.

Pease, E. Darlington, Durham. ***1869***. Fernery

Pease, H Esq. Pierremont, Darlington, Co Durham. ***1869***. Boathouse in the rock, Fernery, Dropping Well

Peek, F. Sydenham, London. ***1869***

Piggot, J Esq. Isleworth, G London. ***1869***. Rocky cliff to hide wash house of neighbouring property

Platt, Capt Henry. Gorddinog, Conwy, Caern (near Bangor), Gwynedd. ***1869***. Waterfalls, Rock Bridge, as if natural, Lake and Streams

Brook, E Esq. Caen Wood Towers *(now Athlone House)*, Fitzroy Park, Highgate, London. ***1870***. Fern-clad Ravine, Dropping Well, Waterfall, Stream

Buxton Corporation. Pavilion Gardens, Buxton, Derbyshire. ***1870***. Waterfalls, Rock, Banks

Clark, Lattimer Esq. Sydenham Hill, G London. ***1870***. Cliff to support a bank, a Cave for seat, and a Dropping Well, and Rocky Pathway, is well over-grown with Alpines etc.

Hoare, H Esq. Staplehurst Hall, Staplehurst, Kent. ***1870***. Rocks on margin of lake for Alpine and other Rock Plants

Leigh, R Esq. Barham Court, Canterbury, Kent. ***1870***. Dropping Well, Rocky Pool

Osley, F Esq. Birmingham, W Midlands. ***1870***. Inside Fernery with Dropping Well

Russel, S J Esq. Handsworth, Birmingham, W Midlands. ***1870***. Two Interior Ferneries of different temperatures

Stone, Alderman. Sydenham, London. ***1870***. Cliff to support a bank, Cave for Seat, Dropping Well, Rocky Footpath.

Thorpe, J Esq. Leicester, Leics. ***1870***. Fernery, Dropping Well

West, G Esq. Alscot Park, Stratford-on-Avon, Warcs. ***1870***. Interior and Exterior Temperate Ferneries made of Rock

Whitmore, Capt. Gumley Hall, Market Harborough, Leics. ***1870***. Fernery, Rocks formed to support slippery bank of lake

Aston. Gipsy Hill, Norwood, London. ***1871***. Dropping Well etc in Garden for ferns and alpines to grow about

Barcley, Robert. High Leigh, Hoddesdon, Herts. ***1871***. Pulhamite rockwork, cave, grotto, cascade, pathway across water.

Crowley, P Esq. Croydon, G London. ***1871***. Fernery, Dropping Well

Fison, C H Esq. Thetford, Suffolk. ***1871***. Fernery

Gower, G L Esq. Titsey Place, Surrey. ***1871***. Waterfalls, Rocks, Bridge in Stone and Artificial Stone.

Hamel, A J Esq. Leicester, Leics. ***1871***. Small Fernery, Dropping Well

Higgs T. Highland Gardens, New Barnet, London. ***1871***. Rocky Bank forming cliff, with Dropping Well. For Ferns, Alpines and Shrubs

Im Thum, J C. Champion Hill, London, SE5. ***1871***, Pond concreted and Rockified, Rocky Stream, Waterfalls, Boat House formed in Bank. All in Rock

Jackson, J A Esq. Thurnby Court, Thurby, Leics. ***1871***. Rocky Banks for Ferns, Alpines and Shrubs

Jacomb, C Esq. Springfield Park, Upper Clapton, London. ***1871***. Fernery, Dropping Well etc

Booth, J Esq. Nottingham, Notts. ***1872***. Fernery

Brighton Corporation. Grand Aquarium, Brighton, E Sussex. ***1872-75.*** Fernery, Cliff, Waterfalls, Sea Lion's Den, Fairy Cave, Rocky Stream, Aquarium Tanks. Fernery now demolished, but rockwork in display tanks and balustrading still exist.

Buffen, F F Esq. Hendon, London. ***1872***. Banks supported with Rocks for Alpines and Plants

Dunville, J Esq. Norbiton, Surrey. ***1872***. Alpinery etc

Foster, W O Esq. M.P. Apley Park, Bridgnorth, Shropshire. ***1872***. Rock Cliffs to support banks for Alpines. Perhaps the 'waterfall rockery', part of Edward Milner's design to rework the gardens in 1871-1872

Johnson, J Esq. Kenyon Hall, Kenyon, Lancs. ***1872***. Large Fernery

Neame, G F Esq. Grange Road, Upper Norwood, London. ***1872***. Rocky Banks for Ferns and Alpines

Newman, J Esq. 'Buckfield Keep', Leominster, Hereford and Worcs. ***1872***. Fernery of Rock, Corridor, Dropping Well with streamlet from it. Path over to look down on works

Sinnock, Miss. Hailsham, E Sussex. ***1872***. Alpinery, Fernery

Stafford, J Esq. Leicester, Leics. ***1872***. Fernery

Turner, A Esq. Leicester, Leics. ***1872***. Interior Fernery

Windsor-Clive, Lady Mrry. St Fagans Castle, Near Cardiff, Glamorgan. ***1872-76***. Extensive Pulham scheme, with plan, poem, letters and bills surviving. Work involved landscaping the stream. *(Maintained in good condition)*

Ainsworth H. Smithills Hall, Bolton, Lancs. ***1873.*** Waterfall, Rocky Stream with Bridge across

Anderson, Thos Esq. Waverley Abbey, Farnham, Surrey. ***1873***. Not known

Austin, H. Beckenham, G London. ***1873***

Burroughes, Mrs. Burlingham Hall, Acle, Norfolk. ***1873***. Fernery etc

Buxton, E N Esq. Woodford, G London. ***1873***. Rocky Dell for Fernery and Alpines

Chatto, J P. Torquay. Devon. ***1873***. Fernery

Fielden, J Esq. Nutfield Priory, Reigate, Surrey. ***1873***. Noble Cliff of Rock to support high and falling banks and trees. For Ferns, Heaths and Alpines

Findlay J. Kelvingrove Park, Near Glasgow, Strathclyde. ***1873***. Temperate and Exotic Fernery with Waterfalls and Stream through it. *(Nothing remains of this feature, but the park was owned by Glasgow City Council at this time. James 3 constructed a rockwork feature close to Kelvin Way to coincide with the **1901** Exhibition)*

Leaf, P Esq. Park Hill *(later St Michael's Convent),* Streatham, London. ***1873-80***. Fernery and Artificial Ruin of Castle gateway and Tower for summer retreat and view. *(Fernery and conservatory since demolished; sunken rockwork walkway, grottoes, bridge and lake still in good condituon)*

McArthur, J Esq. M.P. Brixton, London. ***1873***. Dropping Well etc

Scott S. Sundridge Park, Bromley, Kent. ***187374***. Chasm, Fernery, Alpinery, Cliff.

Stradbrooke, Rt Hon. Earl of, Henham Hall, Henham, Suffolk. ***1873***. Fairy Cave, NB John Popham is working on this site. *(The gardens have been totally demolished to make way for a new development)*

Temple, J Esq. Leyswood House, Withyham, E Sussex. ***1873***. Large Fernery

? Streatham, London. ***1873***. Artificial ruin of Castle Gateway, Tower for Summer Retreat and View, Fernery

Barry, Dr. Sydenham Hill, London. ***1874***. Dropping Well

Craysfort, Rt Hon Lord. Glenart Castle, Arklow, Eire, co Wicklow. ***1874***. Boat House, Waterfall, Fernery, lsland on Lake, Vases

Crossfield, Mrs. Warrington, Cheshire. ***1874***. Fernery

Crowley, F Esq. Alton, Hampshire? ***1874***. Fernery

Holford, R. Westonbirt House, Tetbury, Glos. ***1874-75***. Fernery, Alpinery, Lake concreted. *(Fernery and alpinery no longer there, but there is rockery and dropping well in a glade, and waterfall and rocks into lake. Everything in good condition)*

Manchester Corporation? Manchester Aquarium, Greater Manchester. ***1874***. Rocks to tanks

Manser, A Esq. Hoddesdon, Herts. ***1874***. Fernery

Ridgway, J Esq. Goudhurst, Kent. ***1874***. Fernery

Rolls family, 'The Hendr, Monmouth, ***1874***. *(Garden designed by Edward Milner. Now a golf course with restricted access)*

Rothschild, Baron Lionel de, Gunnersbury Park, Hounslow, London. ***1874***. Rocks to Boat House, Bridge, Lake and design for building on the lake (not executed)

Snow, H Esq. Leicester, Leics. ***1874***. Fernery

Wright, F, 'The Hayes', Swanwick, Derbyshire. ***1874***.

Bradshaw, Mrs. Leek, Staffs. ***1875***. Fernery

Brassey, H A Esq. M.P. Preston Hall, Aylesford, Maidstone, Kent. ***1875***. Waterfall, Stream, Fernery

Hewitly, Mrs. Hampton Court House, Hampton, Greater London. ***1875***. Fernery in Conservatory

Philips, Mark Esq. Welcombe Hall, Stratford-on-Avon, Avon. ***1875***. Welsh Stone rockwork at head of lake - 20-30ft high - with a cascade. Planted with ferns and rock plants.

Pratt, J Esq. Ryston Hall, Downham Market, Norfolk. ***1875***. Fernery

Durham, F. Aldenham Abbey, Herts. ***1876***. Fernery

The following items are not included in James 2's booklet, because they date from after its publication c1877. The dates quoted are therefore deduced from other available records or assumptions.

Grey, Earl de, Studley Royal, Yorks. ***1870s***. Pulham's Terracotta, Vases

Miller, T Horrocks Esq. Singleton Hall, Singleton, Lancs. ***1870s***. Cave, Dropping Well

Ormsby Gore, J R Esq. M.P. Brogyntyn Hall, Oswestry, Shropshire. ***1870s.*** Waterfalls, the principal one flows over a broad high rock, under which you can walk behind the water, as at the falls of the Geisbach etc.

Collin, Thomas Esq. Roydon Hall, Yalding, Kent. ***c1871.*** Fernery with Dropping Well etc

Burbridge, J. Champion Hill, SE5, London. ***1871-3***.

Whinfield, E W. Severn Grange, Worcester, Worcs. ***1873-5***. Balustrade

Durham, Earl of, Rt Hon. Berwick ?, Berwick-upon-Tweed, Northumberland. ***c1874***. Fernery

Baker, L J. Haydon Hall, Ruislip, Middlesex. ***c1874***. Fernery

Hare, Sir Thomas, Downham, Bromley, Kent. ***1876***. Fernery

Brassey, T H. Normanhurst Court, Battle, E Sussex. ***1875-7***. Unspecified Terracotta

Shuttleworth, Joseph, Swiss Garden, Old Warden, Beds. ***1876***. Semi-circular building with glass dome. Reached along passages clad with Pulhamite stone (including stalactites) and lit with stained glass windows. *(Still in good condition, but with some poor restoration in places)*

Kleinwort, J. Brixton, London. ***1876***. Fernery

Patchet, J Esq. Nottingham, Notts. ***1876***. Fernery

Way, Major, Wick Hill, Brighton, E Sussex. ***1876***. Rocky Cliff to hide a wall

Morris, J. Crouch Hill, London. ***c1870s***. Small Fernery

Wilkinson, J Esq. Accrington, Lancs. ***c1870s***. Fernery

Barclay, J G Esq. Knotts Green House, Leyton, London. ***c1870s***. Cliff for plants to grow on

Blythe, J B Esq. Woolhampton Hall, Berks. ***c1870s***. Rocky Recess

Clayton, J Esq. Lincoln, Lincs. ***c1870s***. Natural Rock for Fernery and Alpinery

Corbett, J. Droitwich, Hereford and Worcs. ***c1870s***. Waterfall, Fernery

Mason, Beckenham , Greater London. ***c1870s***. Fernery

Mather, F. Berwick-on-Tweed, Northumberland. ***c1870s***. Fernery

Wortley, ?, Wortley Hall, Yorks. ***1870s***. Pulham's Terracotta

Beauchamp, Earl of, Rt Hon. Madresfield Court, Great Malvern, Hereford and Worcs. ***1877-79***. Three tiers of rocks, Steps, pool etc. *(Pulhamite mimics natural geological formations with pronounced horizontal*

stratification. Rocks up to 30 foot high for Ferns etc. Still in excellent condition)

Wigan Corporation, Mesnes Park, Wigan, Lancs. ***1878***. Waterfall and cascade, Rocky Bank and Chasm.

Insole, James Harvey, Insole Court, Llandaff, near Cardiff, Wales. ***1878-98.*** Entrance drive, Rock garden with stream, Rocky 'cliff' with grotto, indoor fernery. *(Currently being restored, and in potentially good condition)*

Walter, John III. Bearwood *(now BearwoodCollege)*, Wokingham, Berks. ***1879-85***. Rock Garden, Cascade, Stream.

Ardilaun, Lord, St. Stephen's Green, Dublin, Eire. ***1880***. Waterfall and Rockwork to lake edge and as an outcrop. Natural stone and Pulhamite. *(Beginning to wear, but clearance exercise started in 1996. Lord Ardilaun funded this project, and presented the park to the town)*

Parker, William J P. Ware Park, Hertford, Herts. ***1880***. Rock garden, with small lake, pool, summer house, small chapel and ruined arch follies etc. Also walled kitchen garden, with glasshouses and wall terminals etc. *(Still there, but in urgent need of restoration)*

Ardilaun, Lord, St Anne's, Clontarf, Dublin, Eire. ***c1880***. *(Details unknown)*

Brassey, Albert. Heythrop Park, Chipping Norton, Oxfordshire. ***c1880.*** Double-entrance Bats' Cave, rocky paths etc. Fountain *(Still in very good condition)*

? Winterbourne, Teignmouth, Devon. ***c1880s***. Rock Garden, Waterfalls, Caves with Stalactites, bridges etc. *(Very overgrown, and since re-developed)*

Hogg, Quintin?. Holly Hill Park, Fareham, Hampshire. ***1881-92***. Boat cave grotto, lake, stream and rock work. *(Pulhamite delivered by train and then brought to gardens by horse and cart. Restored by Fareham Council since 1983, and in generally excellent condition. Boat cave not regarded as safe)*

Holroid, Henry, 3rd Earl of Sheffield. Sheffield Park, Uckfield, E Sussex. ***1882-85***. Waterfall, rockwork and bridges, using in-situ rock and imported local stone. *(Still in good condition)*

Rothschild, Alfred de. Halton House, Aylesbury, Bucks. ***1883.*** Large domed Winter Garden, small pool, cement-lined stream and cascade. *(Winter Garden now demolished, and garden features in poor condition)*

Rothschild, Baron Ferdinand Le de, Waddesdon Manor, Waddesdon, Bucks. ***1884-92***. Pulham constructions in Pulhamite and natural sandstone near Aviary and along North Drive. Also in Water Garden near Dairy - restored by Bannermans in 1990s - and on nearby Tulip Patch. Dairy designed by Devey.

Montefiore, Sir Francis A. Worth Park *(later Milton Mount College, now Council maintained gardens),* Rustington, W Sussex. ***1885-86***. Rectangular rock feature, approx. 15m long, 7.5m deep & 2m high. 3 tiers, W. aspect. *(Probably constructed entire site, including formal gardens, fountains, ponds, and Camellia Corridor. Well maintained)*

Leon, Herbert, Bletchley Park, Bletchley, Bucks. ***1885-93.*** Sunken rock garden, rocky borders to lake. *(Features mostly destroyed by property developer c1938, but Government acquired property for it Code and*

Cypher School in 1938 – became home of Enigma Code Breakers – and some small fragments remain in poor condition)

Bryant, T H. 'Juniper Hill', Mickleham, Surrey. ***1887***. Large Fernery *(Partly demolished, but some still remains and has been restored)*

Schroder, Baron, 'The Dell', Englefield Green, Surrey. ***1888-1913***. Watercourse with rockwork, cliff-hung pool, bridge, gorge, castellated Water Tower etc. *(Restored to excellent condition)*

Villies, George, 'The Dell', Piggots Manor, *(now Bhaktivedanta Manor)*, Letchmore Heath, Herts. ***1889***. Small rock garden in Dell setting. *(Now being restored as a Memorial Garden for George Harrison)*

Cowan, James, Ross Hall Park, Glasgow, Strathclyde. ***1890-91***. Artificial lake, and a rivulet over waterfalls and through grottoes and rock gardens. *(Still in good condition)*

Queen Victoria, Osborne House, Isle of Wight. ***c1890s***. Pulham's Terracotta

Warr, Earl de la, Buckhurst Park, Withyham, East Sussex. ***c1890s.*** Pulham repairs to early c19 cascade by Lewis Kennedy. Rock Garden (late c19) below the dam of the lake.

Fish, D T. Hardwick Hall, Whitchurch, Oxfordshire. ***1880s***. Fern dell in grounds - made out of old chalk pit.

Carew, Robert , Carpenders Park *(now Cemetery)*, Watford, Herts. ***1891***. Rocky stream, pond and waterfall

Palmer, George, 'The Acacias', Reading, Berks. ***1891***. Conservatory with fernery, cliffs, pools etc. *(Still exists in good condition)*

Samsó, Count Danneskiold. Gisselfeld, Denmark. ***1891-94***. Waterfall and cladding to tunnel under road. *(Gardens designed by H E Milner, and work 'in the style of Pulham' – i.e., unlikely to be by regular Pulham craftsmen, but by someone trained by them. Still in good condition)*

Quilter, Sir William Cuthbert, Bawdsey Manor, Bawdsey, Suffolk. ***1892-1900s*** Rock wall, constructed as an artificial cliff along the sea -150ft high and 400 yds long, with various caves & tunnels. Built of burrs embedded in cement *(Still in good condition, but subject to erosion, and in need of maintenance)*

Gibbs, Henry Hucks (Lord Aldenham), Aldenham House *(now Haberdashers' Aske's School)*, Elstree, Herts. ***1892-97***. Stream over cascades and under bridges. Work around lakes *(Still in good condition)*

Bridges, John Henry, Ewell Court House, Ewell, Surrey. ***1892-1905.*** Lakes with island, rocky stream and cascade. Fountain and Fernery *(Still in remarkably good order, thanks to loving care and restoration grants)*

Newport Corporation, Belle Vue Park, Newport, Monmouth. ***1893***. Cascades and stream, bridges etc. *(Restored with aid of Heritage Lottery Grant 2006. Pulham probably responsible for all the work in the Park, including Pavilion, fountain, terrace, bandstand, tea house, ferneries etc)*

Rolls, John, 'The Hendre', Monmouth, Wales. ***1893.*** Lake, rockwork and cave. *(The remains now form part of a golfcourse)*

Ramsgate Corporation, Madeira Walk, St Lawrence Cliffs (West Chine), and Winterstoke Gardens and Cliff Walk, Ramsgate, Kent. ***1894***. Rockwork gardens along Madeira Walk towards the East Cliff.

Stoke-on-Trent Corporation, Burslem Park, Stoke-on-Trent, Staffs. ***1894***. Rockwork of Pulham stone with cascade topped by a Japanese tea house *(Maintained to a good standard)*

Johnston, John Lawson, 'Kingswood House', Dulwich, East London. ***1894-96.*** Small lake with island, with balustraded bridge and rusticated walls. *(Only the wall bordering a lawn where the lake used to be now remains)*

Oakley, Henry, Dewstow House, Caerwent, Monmouth. ***1895-1910s***. Large construction, with gardens, pools, streams and waterfall etc, and underground tunnels, grottoes, ferneries etc. *(Excellent condition following wonderful complete restoration by Elwyn and John Harris)*

Royal Parks, St James's Park, London. ***1895***. Rockwork to lake edge and Cormorant and Pelican islands

Gilstrap, Major John MacRae, Ballimore Gardens, Ballimore, Argyl and Bute ***1896***. Rocky stream through glen. *(Designed by Thomas Mawson)*

Bulwer-Lytton, Lord. Knebworth House, Knebworth, Herts. ***1896.*** Repairs to balustrading

Bute, 3rd Marquess, Mount Stuart, Argyll and Bute, Scotland. ***1896.*** Stream, cascades and stepping stones, including replication of the Via Delarosa *(Designed by Thomas Mawson, recently restored, and in good order)*

William John Evelyn, Wotton House, Dorking, Surrey. ***1896-97***. Revetting (lining) of Tillingbourne Stream around House, construction of large grotto, bridges and cascade in stream, greenhouse and ferneries, ornamental wall along South Terrace, and probably restoration of main Fountain and Temple. *(See Register entry)*

Joicey, Major W J. Sunningdale Park, Sunningdale, Berks. ***1898-9***. Rocky banks to lake, and path and rockery near house. Rustic bridge above waterfall could perhaps be original. Summerhouse at bottom of park also possibly by Pulham.

Stoke-on-Trent Corporation. Hanley Park, Stoke-on-Trent, Staffs. ***c1898***. Municipal Park in Stoke-on-Trent designed by Thomas Mawson with Pulhamite rockwork

Lloyd, Arthur, Coombe Wood, Croydon, Surrey. ***1898***. Rocky stream and waterfall feeding pond

Crisp, Sir Frank, Friar Park, Henley-on-Thames, Oxfordshire. ***1899***. Involved with 'Mini Matterhorn' alpine garden, with waterfalls and grottoes etc. Also re-designed lake with waterfalls to three levels, deep gorge with rockscape and Japanese Tea House, tunnels and grottoes beneath lake etc. *(Completely restored by George Harrison in 1980s)*

Loder, Edmund, Leonardslee, Lower Beeding, Nr Horsham, W Sussex. ***1890***. Rock garden in good condition. Some rocks moved & re-sited. Cave blocked up. Pulhamite 'Alp' to s. of house *(Maintained in excellent condition)*

Markham, Henry R, Clifton Hall Garden, Clifton, Notts. ***c1900s***. Rocky Recess and Pulham's Terracotta *(Garden designed by 'Mr Milner')*

? Thornby Hall, Thornby, Northamptonshire. ***c1900s***. Rock and Water Garden, Lake, Terrace Balustrade. *(None of the features remain)*

Knox-D'Arcy, William, Stanmore Hall, Stanmore, Harrow, London. ***c1900s***. Rock and Water Garden, Waterfalls, Pools

Anglesey, Marquis of, Beaudesert, Staffs. ***c1900s***. Lake, Watercourse, series of waterfalls. *(Fragmented, eroded & very overgrown. Series of ponds & stepped waterfall (now dry) are evident near the ruins)*

Bethel, Lord, Bushey House, Bushey, Herts. ***1900s***. Rock pools and stream with bridges running to lake *(Quite good condition, but pump out of order)*

Crawley Borough Council, Goffs Park, Crawley, West Sussex. ***1900s***. Small rock feature and banks around pond

Dugdale, J H. Rowney Priory, Ware, Herts. ***1900s***. Small lake and rocky stream with cascades running down to river. *(Still in fair condition)*

Lambert, W. Lenton Firs, Nottinghjam, Notts. ***1900s***. Rocky bank etc. *(Wildy overgrown, but site recently cleared, and some rather damaged Pulham remnants remain)*

Grenall, Lady, Mount Coote, Limerick, Eire. ***1900s***.

Gwyther, Lt-Col S. H. Astley House, Shrewsbury, Shropshire. ***1900s***.

Hopkins, E. Elm Bank, Arkley, Barnet, Herts. ***1900s***. Rock Garden

Morden, Col Grant, Heatherden Hall, Iver, Bucks. ***1902-05***. Balustraded Bridge, Island and cave. Balustraded terrace at back of house. *(Maintained in excellent condition)*

Pearson, Sir Edward, Brickendonbury, Herts. ***1900s***. Pulhamite rockwork at end of moat, with cascade. *(Now completely overgrown and inaccessible)*

'The Grove', Craven Arms, Shropshire. ***1900s***.

Barrow Hills, Chertsey, Surrey. ***1900s***/

Kingswood Lodge, Egham, Surrey. ***1900s***.

Warren House, Kingston-upon-Thames, Surrey. ***1900s*** (Early)

Fenwick, Mark, Abbotswood, Stow-on-the-Wold, Glos. ***1901-20***. Stream garden, waterfalls and rocky stream. Lily Tank Garden, Paved Garden and Sunken Pleasure Garden *(In excellent condition)*

? Cavernham Park, Cavenham, Suffolk. ***c1901***. Garden designed by H.E. Milner incl. fern dell & rock garden. Possibly by Pulhams but no reference found

Hudson, Robert William, Danesfield House, Medmenham, Bucks. ***1901-03.*** Cement-lined pool fed by cascades and rocky stream, rock garden, Italian Water Garden, Orangery, large terrace and selection of balustrading. *(Wide range of Pulham features, all maintained in pristine condition)*

Perrins, Charles Dyson, 'Davenham', Malvern, Worcestershire. ***1901-05.*** Summerhouse leading into fernery and tufa-lined tunnel (with 'stalactites') under road, to garden with pool and rock-lined paths. *(Most features still in good condition)*

Dewar, Lord, 'Homestall' *(later Stoke Brunswick School),* East Grinstead, W Sussex. ***1902***. Formal garden with lily pond, summerhouse etc. Stream and ponds, and occasional outcrops of Pulhamite. *(Excellent condition)*

Redesdale, Lord, Batsford Park, Moreton-in-the-Marsh, Glos. ***1902***. Bridge near entrance, Rock Garden and grotto, with waterfall and Stream extending 600 yards from Hermits' Cave at top of park to lake at bottom. Japanese Rest House and Lantern. *(Everything in excellent condition)*

Lethbridge, W. Wood, South Tawton, Devon. ***1903***. Waterfall and rocky strem. Site designed by Mawson

Ford-Goddard, Sir Daniel, 'Oak Hhill', Ipswich, Suffolk. ***c1903***. Ristic wooded garden.

H M Edward VII, Buckingham Palace, London. ***1904.*** Rock work on mound and to lake edges and island. Two bridges. *(Still in excellent condition)*.

Windsor Castle, Berks. ***1905***. Pulham's Terracotta and rockery. *(No longer there)*

Bolitho, M. Hannaford Manor, Widecombe-in-the-Moor, Devon. ***c1905***. Statue of Father Time in terracotta - Stamped on base. *(Statue no longer exists)*

Belper Corporation, River Gardens, Belper, Derbyshire. ***1906-07***. Fountain and rockword features around the boating lake

Wernher, Sir Julius, Luton Hoo, Luton, Beds. ***1906-11***.

Baring Gould, Francis, Merrow Grange, Guildford, Surrey. ***1907***. Cliffs of artificial stone, Cave, Bridge, Terracotta balustrading to house in 'Merrow' pattern, tunnel and sunken fernery, 'Italian lake' and gardens. *(Restored to excellent condition)*

Melville-Wills, Walter, Rayne Thatch, Bristol, Avon. ***1907***. 'Swiss Cottage', Gothic pump house, grotto / boat cave, recess for seat, extensive rockwork with arches etc. five pools and cascade. See also Bracken Hill and Abbots Pool, Bristol. (*Maintained in excellent condition)*

Greville, The Hon Mrs Ronald, Polesden Lacy, Dorking, Surrey ***c1907***. Rose Garden etc

Melville-Wills, Walter, Cotham House *(now Bristol Homeopathic Hospital)*, Bristol, Avon. ***1907-25***. Fernery

Bartholemew, Charles W. Blakesley Hall, Blakesley, Northants. ***1907-08***. Punting stream with cascades and rock cliffs to bank. Balustraded bridge. Balustrading above garage, and possibly cow-herd's house with pre-cast concrete blocks.

Paget, Sir Arthur, Warren House, Kingston-upon-Thames, Surrey. ***1908-12.*** Fernery, Italian Loggia, Fountain, Sunken Garden, balustrading etc. ***1911-15.*** Part of property now separate as 'The Watergardens' – an ex-Veitch Nursery – with superb Japanese-style garden, cascades, rocky stream and outcrops. *(All in superb condition)*

Perrins, Charles Dyson, Ardross Castle, Alness, Ross-shire. ***1909-12***. Terrace Gardens, Balustrade, Steps, Fountain etc

Colman, Jeremiah, Gatton Park, Reigate, Surrey. ***1909-12***. Unstratified rock garden, and Japanese Garden

Bateson, Sir Robert Harvey, Langley Park, Colnbrook, Bucks. ***1910***

? Henley Hall, Tasley, Shropshire. ***c1910***. Rock and Water Garden, with series of pools with Pulhamite rockwork

London Zoological Society, London Zoo, Regent's Park, London. ***1910***. Rockwork to Polar Bears' Enclosure, Coypu and Beaver Ponds

Melville-Wills, Walter, Markham Brook, Abbots Leigh, Somerset. ***1910s***. Series of small trout pools separated by cascades. *(No longer exist)* See also Abbots Pool, Rayne Thatch and Bracken Hill

Nall-Cain, Charles *(1st Lord Brocket),* 'The Node', Welwyn, Herts. ***1911***. Terrace Garden, rock garden and folly. Also balustrading etc. *(Still in excellent condition)*

Royal Horticultural Society. R H S Garden Wisley, Surrey. ***1912***. Extensive rockery *(Still in excellent condition. James 3 was awarded a silver cup for his work)*

Rogers, Sir Robert, Marl House, Bexley, Kent. ***1912***.

Lytham St Annes Corporation, Seafront rock garden and Ashton Gardens, Lytham St Annes, Lancs ***1914-16***. Rock and water gardens. (*Still in good condition)*

Melville-Wills, Walter, Abbots Pool, Bristol, Avon. ***1915-20***. Rockwork around Chain of three pools, with waterfalls, cave and bridge etc. *(Recently restored with help of Heritage Lottery grant. See also Bracken Hill, Rayne Thatch and Markham Brook)*

Melville-Wills, Walter, Bracken Hill, Bristol, Avon. ***1917-27***. Conservatory, rock garden (with arches) and water garden, two pools and Alpine flower beds. Scattered boulders. Pulhamite cladding to walls etc. See also Rayne Thatch and Abbots Pool. (*Still in excellent condition)*

Macbeth, William G, Dunira, Comrie, Perthshire. ***1920-22***. Terraces, rose garden, rill, half-moon wall-fountain and pool. *(Now in almost derelict condition)*

Folkestone Corpration, 'The Leas', Folkestone, Kent. ***1921***. Zigzag Path, with cliffs, tunnels, caves arches etc.

Thomson, John Graeme, Shipton Court, Shipton-under-Wychwood, Oxfordshire. ***c1919-20***. Formal water gardens. *(Still in good condition)*

Blackpool Corporation, Seafront, Blackpool, Lancs. ***1923*** An expanse of artificial rockeries to the north of the town

Ramsgate Corporation. West Chine Gardens at St Lawrence Cliffs, and Winterstoke Gardens and Cliff Walk on East Cliffs. ***1923-36***. *(Currently subject to extensive restoration proposals)*

Rothschild, Lionel Nathan de. Exbury Gardens, near Southampton, Hampshire. ***1929-33.*** Large natural rock garden, small pool with cascade and ristic archway. *(There is no documentation to ascribe this part of Exbury Gardens to Pulhams, and the dates are rather late for them, but the visual evidence is very strong. The Rothschilds were major patrons of the firm, and the gardens are still in wonderful conditio)*

Mobbs, Sir Giles, Memorial Gardens, Stoke Pgoes, Buckinghamshire. ***1934-36.*** Memorial Gardens surrounded by a colonnaded pergola, and rustic rocky stream. Designed by Edward White. *(Still in excellent order)*

The following installations were mentioned in James 2's bookjlet, but no dates were ascribed to them.

Cunard, Sir Bache, Hallston Hall, Hallston, Leicester

Foster, Major, Southend, Essex. ***?*** Rocky recess for ferns, Conservatory arrangement

Hammond, W O Esq. St Alban's Court, Nonington, Kent. ***?*** Rocks arranged for Alpine Plants

Harman, Rev J. Enfield, Greater London. ***?*** Rocks forming screen for path behind

Ismay, J H. Iwerne Minster *(now Clayesmore School)*, Blandford Forum, Dorset ***?***

London County Council, Botanic Gardens, Regent's Park, London. ***?*** Pulham's Terracotta

Peill, R Esq. Hayes, Grester London. ***?*** Small interior Fernery and small exterior Fernery to hide out-buildings

Robinson, E Esq. Dulwich, London. ***?*** Hardy Fernery and Dropping Well

Rothschild, Baron Ferdinand de, 'The Pavilion', Eythrope, Bucks. ***?*** Small rockwork arch, may be by Pulham. *(Pavilion designed by George Devey between 1876-1879. Part of Waddesdon Estate)*

Scarborough Corporation, Aquaria, Scarborough, Yorks. ***?*** Pulham's Terracotta

Southport Corporation, Aquaria, Southport, Lancs. ***?*** Pulham's Terracotta

Tuley, N C Esq. Wimbledon Park, Merton, London. ***?*** Hardy Fernery

Chauncy, Ardeley Bury, Stevenage, Herts.