

**SOJOURNS IN NATURE  
THE ORIGINS OF THE BRITISH  
ROCK GARDEN**

*by*

**Susan Elizabeth Schnare**

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## ABSTRACT

The popularity of the rock garden is seen as a late nineteenth century phenomenon, which followed the creation of the Backhouse Nursery rock garden in York, England, in 1859, although a few earlier gardens are sometimes mentioned as isolated incidents. This thesis proposes that the rock garden evolved out of efforts to cultivate alpine and rock plants, and traces interest in their collection back to sixteenth century Europe. A terraced garden at le Jardin des Plantes, Montpellier, France, indicates that by 1598 there was interest in simulating specialized plant habitats. The earliest known rock garden was built in Orford, England, about 1767, and by the early nineteenth century, rock gardens were popular garden features, as may be seen from the numbers of articles in the horticultural press.

From these published accounts, the design, construction, culture, planting, and maintenance of rock gardens are compared and studied. As proof that rock gardens were created as places to grow alpine and rock plants from the first, lists of alpine and rock plants recommended for gardens between 1789 and 1856 are analyzed. The majority of the plants on these lists were low, spreading, needed the improved drainage offered by the structure of the rock garden, and, to a lesser extent, had alpine origins. Between 1789 and 1856 the reasons for plant choice did not change significantly.

This thesis explores the origins of the rock garden, studies its history, and analyzes its structure and plants to place it in context with the rest of landscape history.

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A rock garden is a sojourn in nature, supposedly taking us out of the usual ways. It represents a souvenir of travels over mountain ranges and the flowers gathered by the path. . . . It appeals to our love of adventure in building, in cultivating, and in walking among the treasures everyday. . . . It has more of mystic meaning than any other form of gardening, linking the play days of man with the secrets of nature.<sup>1</sup>

Stephen F. Hamblin, *American Rock Gardens* (1931).



## INTRODUCTION

Rock gardens are equal parts art and science. As will be shown in this thesis, their origins are inextricably imbedded in botany, and their main purpose has been to meet the specialised needs of alpine and rock plants, and to display them to their best advantage. Their delicate beauty and diminutive forms, the challenge of their culture, their collection, and the romantic image of their high and distant native homes have made alpine and rock plants treasured garden plants for more than three hundred years. Despite centuries of popularity, the origins of the rock garden are misunderstood, its early history is for a large part missing, and its importance to landscape history is unrecognized.

This thesis aims to correct the current distorted picture of the early history of the rock garden by exploring its origins, adding to the fund of knowledge, and correcting misunderstandings of events and ideas. Determining the origins and revising misconceptions about the early years is important to counter the inaccurate stories of the first rock gardens continuously perpetuated in new garden histories.

### Review of Literature

General garden histories offer several theories on the origins of the rock garden. Lady Rockley in *History of Gardening in England* (1910), first published in 1895, attributed the development of the rock garden to the 1880s when William Robinson's influence generated a desire to give the immense numbers of recently introduced mountain and rock plants, "as nearly as possible, the same condition of life in England as on their native hills." She mentioned the rock garden built at the Royal Botanical Gardens, Kew in 1882 as "one of the first."<sup>2</sup> This was repeated by Eleanor Sinclair Rohde in *The Story of the Garden* (1933): "so many new alpines were introduced during the late nineteenth century that rock gardens began to be established in the 'eighties. One of the first was that made at Kew in 1882."<sup>3</sup> James and Louise Bush-Brown in *America's Garden Book*, published in 1939, but still being reprinted in 1965, agreed with Lady Rockley and Rohde, but also gave Robinson credit for bringing wild flowers into gardens: "until brought to their attention people did not consider wild flowers worthy material for gardens."<sup>4</sup>

The landscape architect Fletcher Steele thought "that there are charms in Alpine plants was a discovery of the Victorian era." In his article, "Prejudice in Rock Garden Design" (1944), he looked to Switzerland for the source of inspiration, and attributed Henry Correvon with proving that they could be cultivated on rocks. As he explained, "this attracted the Englishmen who had been wondering for sometime what to do with his rockery. Farrer . . . bred the vulgar things to the new Swiss contraption and the Rock Garden was born."<sup>5</sup>

Reginald Farrer's dramatic potted history of art, gardening, and the world, "Rock Gardens and Garden Design," in *Horticultural Record* (1913) proclaimed the rock garden a Chinese invention:

It was unfortunate for us, however, that the art of Chinese gardening came to us first in a wholly irrelevant form, and quite divorced of any idea of utility as a means of cultivating alpine plants, or flowers at all. For it came to us at second hand—preserved, adapted, immortalized perpetually by the living and moving force of Japan . . . ; but then, unintelligently dumped upon us by the utilitarian Dutch, without elucidation or annotation of any kind to fertilize our minds and prepare them for that tree of such profound roots and colossal stature.<sup>6</sup>

Another theory claimed that the rock garden descended from the Italian grotto. Richard Bisgrove in "From Grotto to Mountain Peak: Evolution of the Rock Garden" (1982) maintained "the origins of rockwork in English gardens are not associated with mountain peaks . . . . The inspiration came instead from the rocky caves of the Greek coast; caves dedicated as shrines to the gods."<sup>7</sup> Graham Stuart Thomas in *The Rock Garden and its Plants: from Grotto to Alpine House* (1989) also attributed the origins of the rock garden to the grotto, and to the enthusiasm for collecting ferns in the late nineteenth century, although he cites many earlier examples of rockwork in gardens.<sup>8</sup>

The rock garden built in 1773 at the Chelsea Physic Garden by William Curtis is often cited as the first, although portrayed as an isolated event. The facts concerning this event offered in published works are almost always incorrect. John Fisher in *The Origins of Garden Plants* (1982) said, "William Forsyth, who



succeeded Philip Miller as Curator of the Chelsea Physic Garden, assembled his own rockery in 1774."<sup>9</sup> Even the *Oxford Companion to Gardens* (1986) credited Forsyth with building the Chelsea rock garden in 1774.<sup>10</sup>

The confusion surrounding its early years and origins is compounded by a debate over its original purpose. Lady Rockley's assessment was that rocks were used "since the early days of the landscape school" but their purpose was to "accentuate some impression," and "there was no idea of using rocks for a home for alpine plants."<sup>11</sup> Anthony Huxley in *Illustrated History of Gardening* (1978) felt that the Chelsea Rock Garden was built for the rocks "sakes rather than for growing plants."<sup>12</sup> On the other hand, Miles Hadfield maintained that the Chelsea Physic Garden was "the first rockery for alpine plants ever made,"<sup>13</sup> and placed Kew "rather late in the day with a rockery."<sup>14</sup>

Few research-based works into the origins of the rock garden exist to date. "Early rockeries and alpine plants," by Richard Gorer and John Harvey published in *Garden History* (Summer 1979), was written to find evidence of early rock gardening. They attributed the development of the rock garden to "the fusion of originally separate branches of gardening: the rock garden or rockwork and the cultivation of alpine plants,"<sup>15</sup> but dated it from the Backhouse rock garden in 1859. They cited earlier "associations of rocks with alpine plants," and gave numerous examples, including the rock garden at the Chelsea Physic Garden (which they attributed to Forsyth in 1774) as "what is regarded as the first rock garden in Great Britain."<sup>16</sup> While they found "evidence for a definite fashion of rock gardening in the last generation of the eighteenth century," they saw the lack of detail in Delamer's *Flower Garden* (1856) and Jane Loudon's weak discussion of growing potted alpine plants in 1857 as hardly suggesting "fertile ground for Backhouses' remarkable enterprise."<sup>17</sup> Their appendix of the one hundred and twelve alpine and rock plants in Graefer's catalogue and Curtis' *Botanical Magazine* lists their appearances in twelve catalogues published from 1770 to 1868, introduction dates, and prices, without relating this information to the rest of the text.

Gorer's earlier related works presented information on rock gardens in a



similar manner. *The Flower Garden in England* (1975) offered the theory that "the flower garden with its beds and borders, its rockeries, pools and shrubberies . . . is barely 150 years old. Before about 1830, although flowers were grown rather extensively, it would appear that they were grown mainly for decorating the house."<sup>18</sup> Gorer then discredited his statement with early lists of plants and descriptions of gardens. In *The Growth of Gardens* (1978), Gorer suggested the Chelsea Physic Garden rock garden was "chiefly intended for ferns."<sup>19</sup> The information presented in "Early rockeries and alpine plants" appears to be an offshoot of his argument:

In the eighteenth century the rock gardens seem to have been largely planted with ferns, but as the nineteenth century progressed the rock garden tended to become the alpine garden. . . . and the alpine garden as we know it today, seems to have been principally the creation of the nursery of Backhouse at York. . . . At a time when most garden historians would tell you that bedding was the only interest of gardeners, Backhouse started issuing catalogues solely of alpine subjects.<sup>20</sup>

In a survey of rock garden history written for a 1984 lecture to the American Rock Garden Society, Francis H. Cabot disregarded the established preconceptions and seriously considered the work of the early botanists. He correctly concluded "that we are part of a continuum that may go back a bit further than we thought and whose golden age may have been with us for some time."<sup>21</sup>

Most important to this study is Mark Laird's article in *The International Journal of Garden History* (1991), in which he looks at the development of ecological awareness of botanists of the eighteenth century.<sup>22</sup> In concentrating on the period between 1749 and the beginning of the nineteenth century, Laird ignores earlier work done on the European Continent, an example of which are the gardens created to reconstruct plant habitats at Montpellier, France, in 1598. He is correct though in including the rock garden as a part of this movement.

### Scope

Because the early history of the rock garden is poorly studied and misunderstood, this thesis will concentrate on events and developments prior to 1860, including a discussion of the Backhouse Nursery that extends into the twentieth century. The end date is suggested by a common idea that the rock garden began with the one created at the Backhouse Nursery in 1859. The later period of rock garden history has been knowledgeably discussed by Brent Elliott in *Victorian Gardens* (1986), David Ottewill in *Edwardian Garden* (1986), and Graham Stuart Thomas in *Rock Gardens and Alpine Plants* (1989).

Rocks have been used as structural elements and features in a wide variety of garden types, but the rock garden is defined by its purpose to supply rocky, well-drained conditions and display alpine or rock plants. A rock garden therefore may have contained plants with no visible rocks (although it must have had an altered soil structure to improve drainage), but it was not composed of rocks with no plants.

Because the rock garden's lineage has been shown to be a result of botanical and horticultural purposes, this forms the primary emphasis of this thesis. Although the rockwork of other garden traditions may have influenced its evolution, no direct evidence has been found to link them. Aesthetic values of each era were imposed on the rock garden and helped to shape it, but only in the midst of the Victorian era is there any evidence that the original purpose as a simulated habitat for alpine and rock plants was totally lost in some gardens.

The title "British Rock Garden" is meant to differentiate the rock garden that was developed in Great Britain from the Oriental rock garden, which used rock to form 'false mountains,' sculptural elements, or to represent the structure of the earth,<sup>23</sup> and the French dramatic use of rocks as monumental structures, such as at Bagatelle and Monceau. This term is not meant to imply that interest in alpinism was solely British, or that other countries, particularly the United States, France, Switzerland, and Germany, did not contribute in important ways to its later development.

The popularity of the rock garden in the United States and Canada began in



the late nineteenth century. Few early (pre-1860) rock gardens are known to have been built in North America, and before 1830 they were infrequently discussed in the literature. However, after the 1830s, several Americans offered information and recommendations comparable to those of the British authors. This information has been incorporated into Chapters 3 and 4.

### Arrangement

The aims of this thesis are reflected in its arrangement into five chapters: the first two explore (1) the historical evidence of early interest in alpine and rock plants, and (2) the development of the rock garden from 1767 to 1860; the last three chapters are organized thematically to study and analyze rock gardens on the basis of (3) its structural design and construction, including its relationship to the rest of the garden and materials, (4) in general terms, the arrangement and management of plants in the rock garden, and (5) the characteristics that constituted a desirable rock garden plant. Much of the supporting evidence for the last chapter is contained in three tables, which have been placed in Appendix VI. Six appendices are located at the end of the text, followed by the bibliography. The notes and references are at the end of each chapter.

Appendix I offers a glossary of terms relating to rock gardens, but some clarification of terminology is perhaps appropriate at this point. "Rock garden," preferred in this thesis, is practically interchangeable with the terms, "rockwork", "artificial rock," and "rockery," which were popular at different periods of time. "Rockwork" and "artificial rock" were earliest, and can, particularly prior to 1772, refer to an unplanted rock structure, or one planted rustically with wild shrubs and non-alpine plants. "Rockery" was a Victorian term and is associated with the taste of that era for ornamentation and bright flowers. "Rock garden" is preferred because it clearly denotes a cultivated state and may be used in a broader sense to take in associated features, for example a pond or bog, or associated plantings, such as ferns or shrubs at the base of the rockwork.



### Sources of Information

Unfortunately limited documentary evidence was found for the crucial time period between 1720 and 1767, when it is believed the first rock gardens were made. Information on their earliest popularity is also scarce, and the search for supporting evidence and information on the earliest rock gardens yielded many dead ends. This thesis has relied heavily on published works, which, although accessible, until now had not been adequately examined for an explanation of how the rock garden evolved.

Illustrative materials used in this thesis come from a variety of sources. Photographs not by the author are acknowledged, as are illustrations from books. Maps illustrate the layout of gardens and their relationship to surrounding features, but have been enlarged or reduced, which has affected their original scale.

The eighty-eight sites in several countries that were visited for this study included, besides rock gardens, those noted for their use of stone, or linked with important people or events. Few early rock gardens still exist, and those are mainly in remnants. Sixteen of the earliest rock gardens are listed in Appendix VI with others important to this study. Many of the ideas expressed in the pre-1860 literature could often be found in late nineteenth and twentieth century gardens, and so many of the gardens visited were later than the period under consideration. Observations made on visits to later gardens helped form an understanding of the earlier ones.

Because the rock garden is defined by its plants, it is important to identify the qualities that made alpine and rock plants desirable. This was done by studying lists of plants recommended for rock gardens to identify the characteristics that caused them to be included. Whenever possible, a nomenclature consistent with the Royal Horticultural Society's *Dictionary of Gardening* (1992) was adopted, as this work is widely available. When the plants were not to be found there, *Index Kewensis* and other botanical references were used.

Information in this thesis is provided to support the recurrent theme that the rock garden was developed as a recreation of habitats for alpine and rock plants, and that its history began considerably earlier than has been generally recognised.

Limited financial resources restricted garden visits and time in major libraries. This thesis does not constitute a catalogue of all known rock gardens, rock plants, or materials. In fact, it is suspected (and hoped) that information yet hidden in archives somewhere will emerge, perhaps as a result of this thesis, to identify earlier gardens and present a more complete picture of their origins and development.

## NOTES

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21. Francis H. Cabot, "As It Was in the Beginning, the Origin and Roots of Rock Gardening in North America," *Bulletin of the American Rock Garden Society* 42: 5 (1984): 22.
22. Mark Laird, "Approaches to planting in the late eighteenth century," *Journal of Garden History* 11:3 (July-September, 1991): 154-172.
23. *Oxford Companion to Gardens*, 115.

## CHAPTER 1

### EARLY BOTANICAL INTEREST IN ALPINE AND ROCK PLANTS

Science developed despite great religious resistance in the sixteenth and seventeenth centuries. Superstition and astrology formed the basis for knowledge of medicine and the natural world. Chemistry was still closely tied to alchemy, and astronomy was just beginning to separate from astrology.<sup>1</sup> Despite the possibility of persecution,<sup>2</sup> by the fifteenth century a network of scientists existed across Europe. Science inched its way slowly forward, shedding the myths and superstitions that had been invented to give reason to an incomprehensible world in favour of theories based on experimentation and observation.

As part of their goal to "collect and catalogue all existing specimens,"<sup>3</sup> natural scientists of the sixteenth and seventeenth centuries included fauna and minerals, as well as plants, in their studies. A book by the French doctor Pierre Borel (1620-1689) can be used as an example. Borel's *Hortus seu armamentarium simplicium, mineralium, plantarum & Animalium, ad artem medicam utilium* (1666) describes animals, minerals, and plants and their medical uses.<sup>4</sup>

#### Botanical Gardens and Plants from the Mountains

Early in the fifteenth century, the architect Leon Battista Alberti declared that a garden should be planted with "every fine fruit that exists in any country," expressing the idea of the garden as a "summation of contemporary knowledge of the natural world, a microcosm of nature in a literal sense," or as "a catalogue of nature."<sup>5</sup> Botanical gardens developed from private collections of rare and medicinal plants to the encyclopedic collections of the public botanical gardens of Padua, Pisa, and Florence, which became centres of learning in the 1540s.

In the last half of the sixteenth century, explorations and plant collecting created a flood of new plants which poured into Europe from Turkey and the New World. In less than one hundred years, more than twenty times the number of plants entered Europe as had in the preceding two thousand.<sup>6</sup> Their arrival added impetus to the development of collections of herbaria and living plants used by natural scientists as reference and research materials.<sup>7</sup>



Many botanists took a particular interest in alpine plants, as part of the exploration of the world. Ada Segre discussed their interest in "new habitats in the old world"<sup>8</sup> in "Italian Flower Gardens in the 17th Century and the Introduction of Ornamental Plants" (1992):

This explains the many botanical explorations in the mountains (Monte Baldo by Pona), in grottoes (Pierre Pena and de L'obel) and the subsequent description of newly found plants. The new approach to physical places is clearly expressed by Mattioli in a dedicatory letter [written before 1568],. . . in which he states that the number of medicinal plants on earth is infinite, 'these can be found in woods, amongst stones, in caves, in the sea, in lakes, . . . in marshes.'<sup>9</sup>

In 1657 Hyacintho Ambrosino reported that his botanical garden held illustrations of plants collected in the Alps near Mantua and Lucerne and an index of all the plants found on Mount Cimone (in the Appenine Mountains near Bologna).<sup>10</sup>

In 1606 Francesco Malocchi, Curator of the Pisa Botanical Garden, sent a box of living plants to Clusius (1526-1609) at Leiden:

For my pleasure, I will send you a small box of plants that I found in our mountains, and . . . so that you will tell me what you think of them; they are labelled with some of my comments; but on the whole I shall submit to you.<sup>11</sup>

The box contained about one hundred and twenty-four plants, including species of roses, iris, and tulips (see Appendix II). Clusius may have been considered an expert on mountain plants because of the Austrian flora with descriptions of alpine plants and their habitats he had written twenty-three years earlier. The second part of the four part herbal *Rariorumm aliquot stirpium per Pannonian, Austriam, & vicinas quasdam provincias observatarum historia* (1583) is devoted to "plants from mountainous regions."<sup>12</sup> In "Works by Carolus Clusius" (1993), H. Wille concluded that Clusius was first in taking the study of alpine plants so far and in fact "pioneered in this field of study."<sup>13</sup>

Clusius was not the earliest to notice the alpine plants. Conrad Gesner, a

natural scientist widely respected during his lifetime, is important to this study because of his interest in mountain plants and his contact with British botanists.

### Conrad Gesner

Gesner (1516-1565) lived most of his life in Zurich surrounded by the Alps. Botanical expeditions to the mountains were one of his great loves, and British scientists, who visited him perhaps also learned to appreciate the mountains and their plants, and were influenced to look at their own mountain flora.

The first public botanical gardens were not founded until the 1540s, but private collections existed long before. As a child, Gesner worked in the garden of his uncle, John Friccius, and by the late 1520s or early 1530s, he had developed a reputation as an herbalist.<sup>14</sup> Gesner received a doctorate in medicine from Basle University in 1540 and returned to Zurich, where he built up collections of plants and natural science specimens as well as a medical practice.<sup>15</sup>

Botanical gardens, important teaching tools of every medical school, were also necessary to identify the medicinal plants bought from collectors. Gesner's interest in plants, particularly those of the mountains, went deeper than their medicinal uses or scientific study, as is shown by a statement made in 1541:

So long as God grants me life, I will each year climb some mountains, or at least one, at the season when the flowers are in bloom, in order that I may examine these, and provide noble exercise for my body at the same time as enjoyment for my soul.<sup>16</sup>

A garden Gesner created in the 1560s included rare plants from France, Italy, Britain, Germany, Poland, and other parts of Europe, and "many of the most curious kinds found in his own country."<sup>17</sup> In 1561, he travelled in Switzerland and Germany, traversed the Rhetian Alps, and ascended Mont Braulius, combining his search for health with the study of botany. "Among other fruits of this expedition, his herbarium, garden, and museum received large accessions."<sup>18</sup> In 1565 he succumbed to the plague, leaving much of his work unfinished.<sup>19</sup>



British travellers visited the European Continent and studied natural features, collections, and gardens wherever they went. In 1594 the Scotsman Fynes Moryson (1566-1629) reported that near Verona "on the North-side of the City without the wals [*sic*], is the mountain Baldo, and famous for the great plenty of medicinale herbes."<sup>20</sup> In an account of his Continental travels between 1663 and 1666, John Ray reported seeing an alpine fern (*Asplenium viride*) in Giacomo Zanoni's garden in Bologna.<sup>21</sup>

There are many references to the collection of alpine plants and their presence in gardens from the early seventeenth century on, but little was said about cultural practices given them. *La montagne*, created at le Jardin des Plantes in Montpellier in 1598, shows that by the end of the sixteenth century, there was an interest in reconstructing plant habitats for cultural purposes.

### La Montagne at Montpellier

Montpellier had long been known as a centre for botanical studies, when, in 1598, by order of Henry IV, Pierre Richer De Belleval (1564-1632) was employed to lay out a botanical garden that would contain collections of all domestic, foreign, medicinal and economic plants.<sup>22</sup>

Belleval corresponded with other curators and exchanged plants, but his "special delight" was to take collecting trips through the mountains of France: the Alps, Pyrenees, Cevennes and the *garrigue* around Montpellier, which Linneaus regarded as "that 'paradise of botanists.'"<sup>23</sup> Belleval's trips resulted in his treatise *Entretien sur divers choses choisies des écoliers lorsqu'ils étaient en herborisations*, which unfortunately was lost. In 1598 Belleval had one thousand, three hundred and thirty-two species under cultivation, and his success in "creating suitable situations and soils for his plants . . . was recognized as an important event in the scientific world."<sup>24</sup>

Early in the development of the botanical garden, Belleval constructed a mount, not to provide a view of the garden or an





**Figure 1.** Two views of La montagne showing the terraces, walk at the base, and bog garden. Photos by Eric Guillou (1993). [Originals in colour]



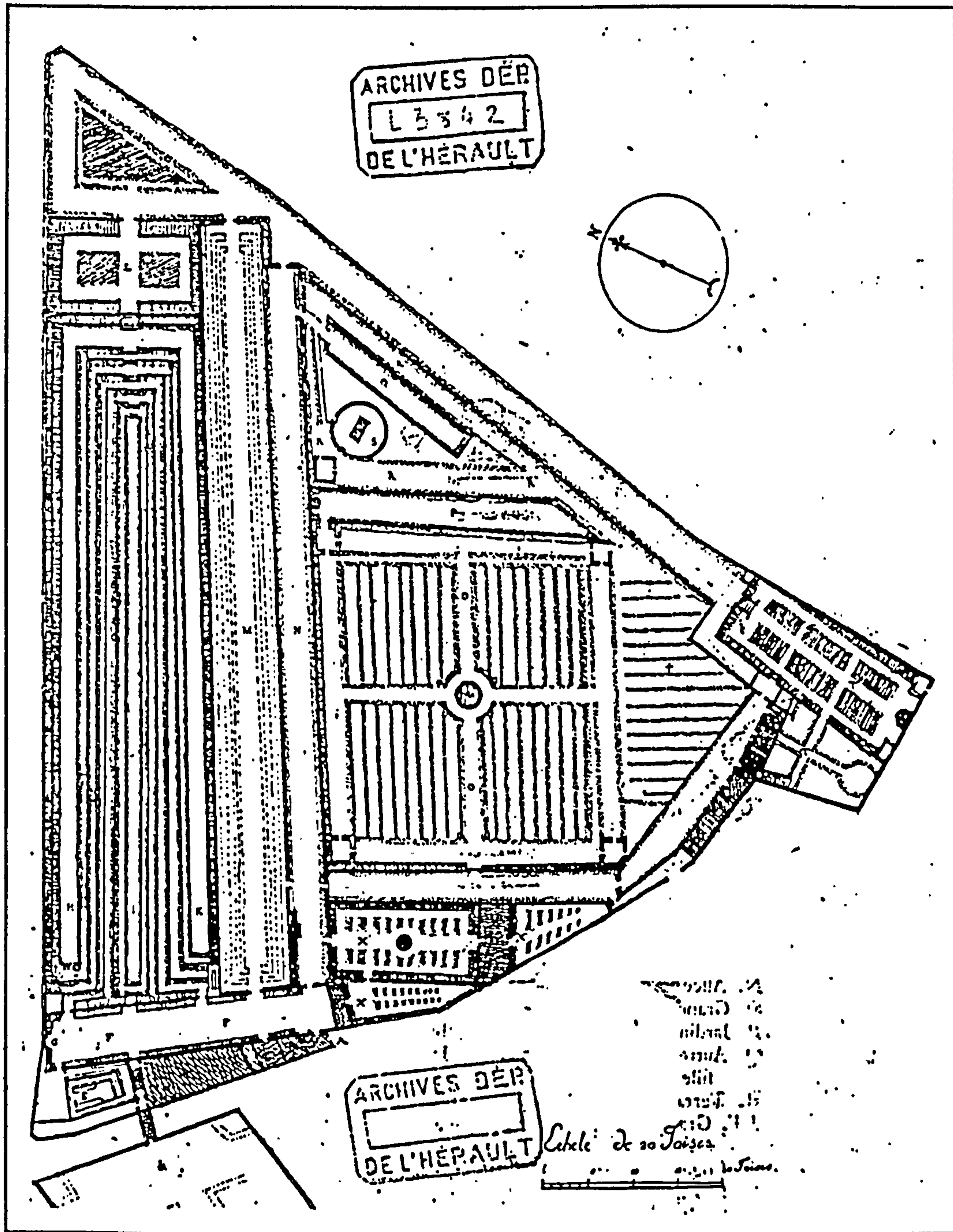


Figure 2. Plan of les jardin des plantes (1787). 'H' and 'K' are the terraces; 'I' is the bog. Courtesy of le Jardin des Plantes, Montpellier.



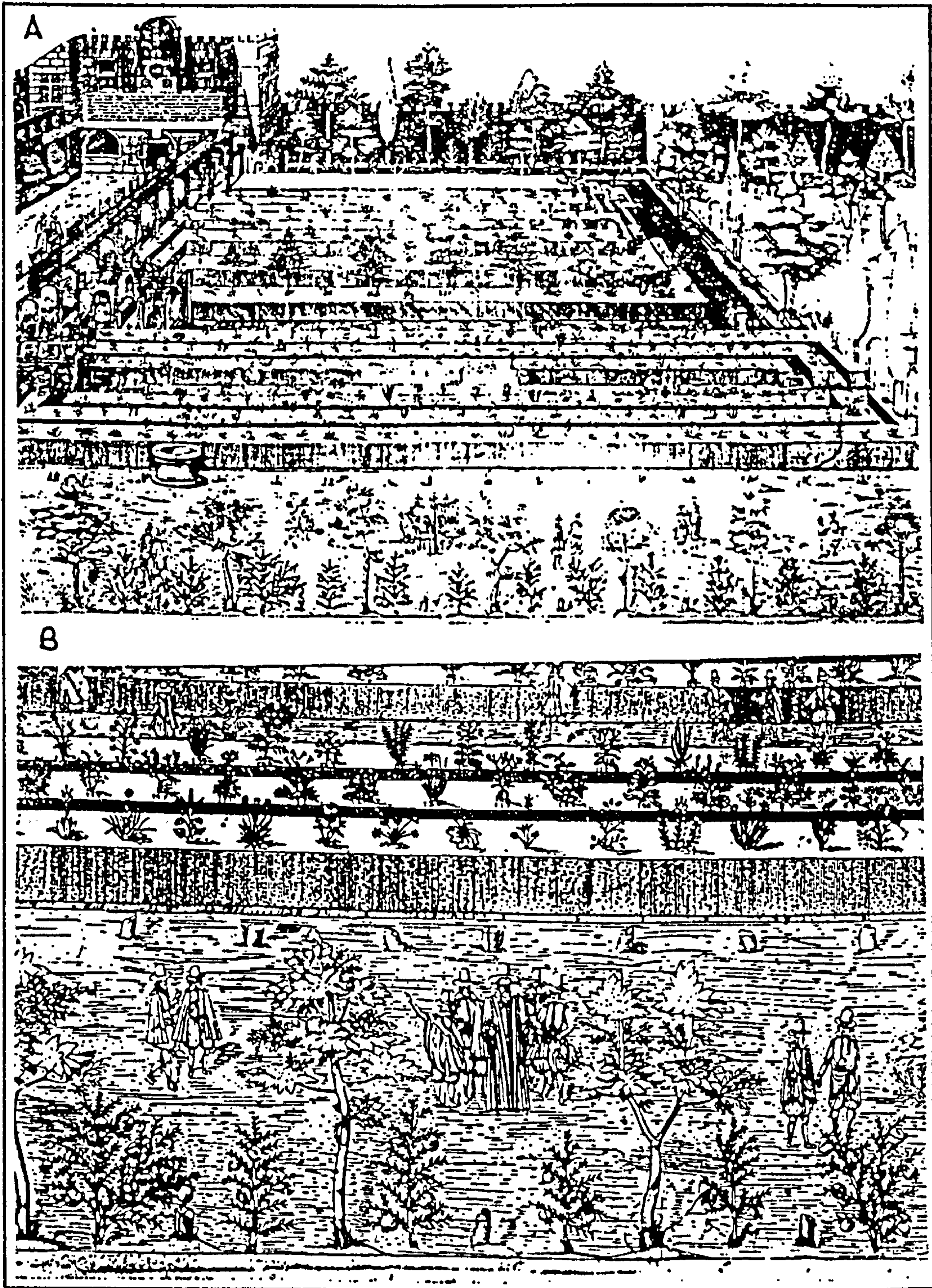


Figure 3. Eighteenth century engravings: (A) part of la montagne; (B) De Belleval and pupils in the principal alley (marked 'N' in figure 2). Courtesy of le Jardin des Plantes, Montpellier.



interesting feature, but to simulate the ecological conditions of the plants Belleval collected (see figures 1, 2, 3 and 4). Its sides were formed into terraced beds on which plants were arranged according to their natural habitats: "those accustomed to a rocky sun-exposed surface at the summit, mountainous and forest plants on the slopes, and aquatic ones in an artificial marsh."<sup>25</sup> Thomas Platter described it after his visit in 1598:

An artificial mountain made of terraces in tiers allows at one time culture and presentation of plants to visitors. Its orientation from east to west and its height determine two exposures: the one to the north devoted to plants that come from wooded lands and forests; the other to the south where bushes, thorny or not, and plants from the copse grow at the same time. The path from the summit is the destiny of plants from sunny, rocky, and sandy places being in every way much more dry and exposed than the lower levels. It appears that the first level of the mountain has been dug into the ground [below ground level].<sup>26</sup>

Belleval's first garden lasted only twenty-two years before it fell victim to the need to extend the city defenses. In 1622 the push to improve fortifications led to the destruction of many old churches and buildings for their stone, and the botanical garden which lay in the path of the new wall. Belleval was able to transplant only his rarest and most valuable plants to the garden of the *Ecole de Pharmacie*, but had little success as it was winter.

*La montagne* was rebuilt on a smaller scale at the new botanical garden, where it was referred to as "a sandy and pebble mountain" by John Locq in 1676.<sup>27</sup> Marie-Francois Rouquette offered the following eighteenth century description in her thesis, "The Royal Garden at Montpellier" (1992):

There is a large sunken pit or tank next to which several caves which are wondrously cool in the summer have been constructed and where moist and mossy earth allows the cultivation of aquatic plants. Everything is perfectly prepared furthermore for the other species. It has even been elevated to form a mountain by several platforms of different heights.<sup>28</sup>

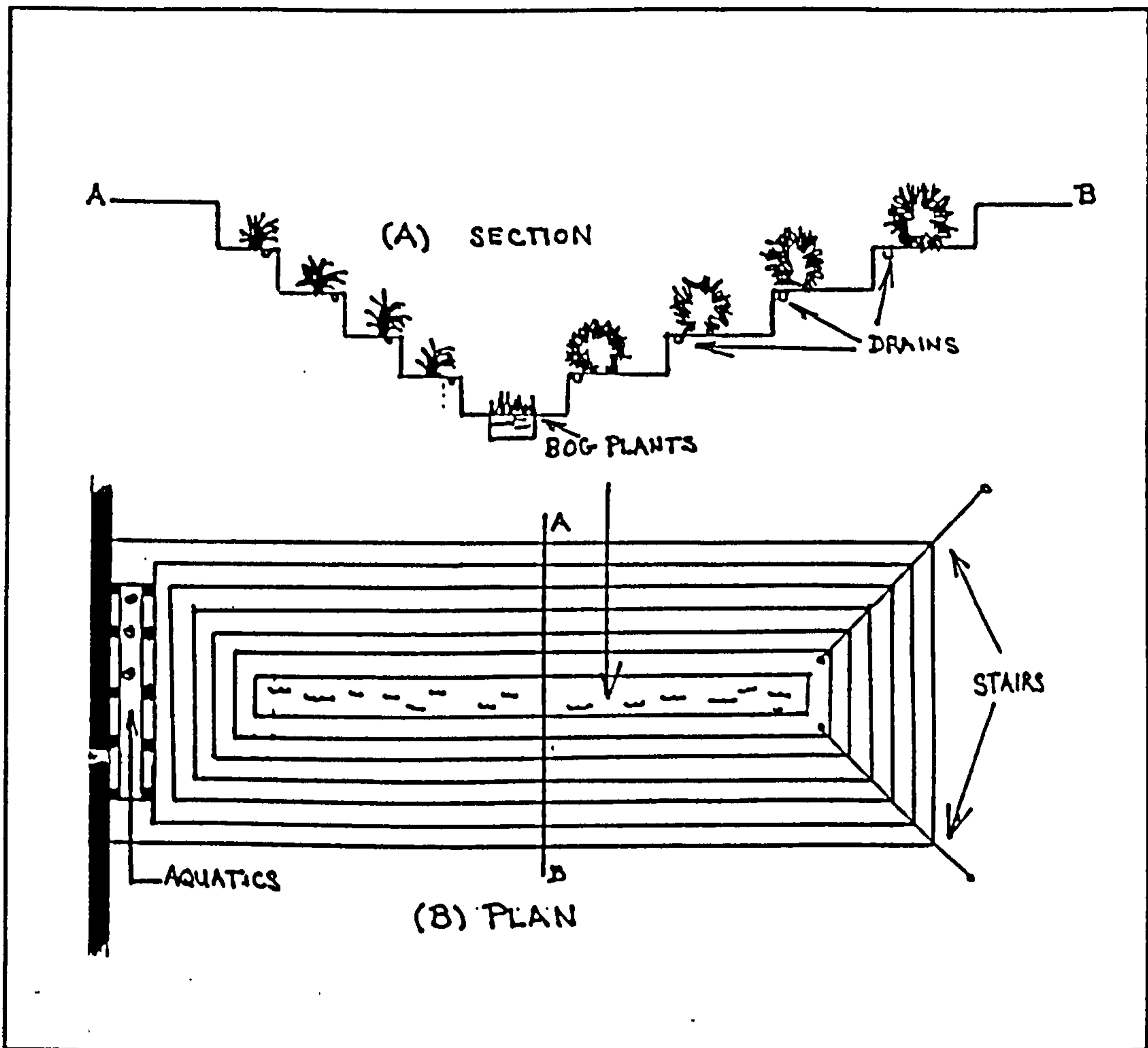


Figure 4. (A) Plan of la montagne showing (a) tank for water plants, (b) stairs, and (c) bog. (B) The section shows (a) terraces, (b) drains, and (c) the bog. Drawn by the author from information supplied by Eric Guillou.

The plan and section in figure 4 are based on the second, still existing garden. What is shown is more of a valley than a mountain: long parallel terraces form the sides and at the bottom is a pond for the bog plants. One end is now formed by the medical studies building and a tank for water plants. In the corners at the opposite end are stairs to the beds on the terraces.

Olivier de Serres created "*une montagnette*" at his estate Pradel in Arcliche, France, based on *la montagne*, which he had visited.<sup>29</sup> He also included illustrations of mounts in his *Theatre d'agriculture et message des champs* (1600). One shows a square mount with ramps in each corner and fifteen foot-wide terraces (see figure 5). Eleven feet of the terrace was for walks and four feet for



beds of herbs, and he suggested that it could be hollow to provide shelter for the plants in the winter.<sup>30</sup>

Montpellier continued to maintain its reputation for excellence in botanical studies and to attract botanists from throughout Europe. The famous professor of

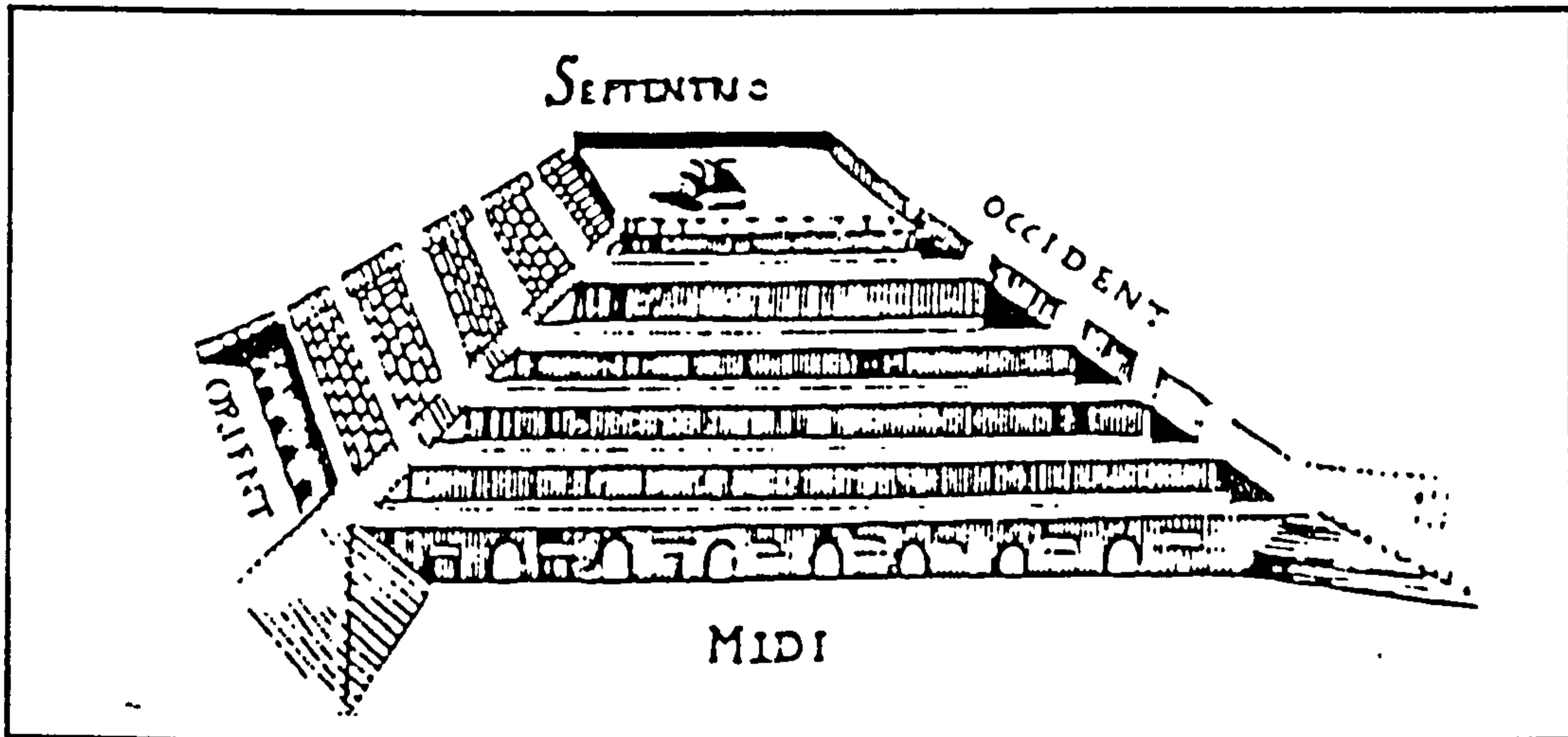


Figure 5. Olivier de Serre's design for a square mount from Huxley, *History of Gardening* (1978).

medicine, Guillaume Rondelet (1507-1566), who befriended and inspired Gesner in the 1530s, taught at Montpellier until his death and included the Belgian Matthias de l'Obel (1538-1616) among his students. Clusius studied at Montpellier in 1551. By the time of the Englishman Thomas Penny's visit in 1566, the mountains surrounding Montpellier had been thoroughly explored by botanists.<sup>31</sup> While a student there, Joseph Pitton de Tournefort (1656-1708) explored the Alps and Pyrenees collecting plants.<sup>32</sup>

John Ray (1628-1705), the dominant British botanist of his day, spent the spring and summer of 1664-5 botanizing in the mountains of Switzerland. An account by Pulteney in 1790, tells of the seriousness of his study and the high standard of his work:

In the course of their journey, he everywhere notices those plants that are not natives of England, and gives copious catalogues of them. They spent in the whole six months at Geneva, which gave Mr. Ray an opportunity of informing himself largely, relating to plants of



Switzerland, particularly those of Mount Saleve, the Dole, and of Mount Jura. He even discovered some that were unknown to the preceding botanists, although these were the regions of Gesner and the Bauhines. The celebrated Haller even ranks him among those who made large accessions to the Botany of that Country, and gives strong testimony of his skill, fidelity, and judgement, in discriminating, describing, and extricating the plants of that fruitful region.<sup>33</sup>

On leaving Switzerland, Ray went to Montpellier for five months to attend lectures in the natural sciences and pursue his varied interests.<sup>34</sup>

The references to botanists connected with Montpellier studying mountain plants, Maw's detailed report of Belleval's explorations of the Alps, Pyrenees, and local mountains, and the description of *la montagne* as an "artificial mountain," serve to support the theory that Thomas Platter's plants from rocky, sunny, and sandy places" included those now known as alpine and rock plants and discussed in Chapter 5. A botanist who visited Montpellier for any length of time would have been familiar with *la montagne* and the experiment in growing plants on its terraces. There is the possibility that some, like de Serres, constructed similar features in their own garden. Perhaps they also noted the east-west orientation of *la montagne*, the grouping of different habitats closely together, and that elevating the beds improved cultural conditions and displayed the plants advantageously, as these are all features that were later important in the rock garden.

### Early British Botanical Explorations

British botanists who travelled to the Continent during the sixteenth and seventeenth centuries returned with new ideas on the natural sciences. Great Britain became the focus of their interest, and the forests, fields, marshes, and hills around their homes became their laboratories.

In 1540 William Turner, an ardent Reformer, went into exile in Europe for the remainder of Henry VIII's reign (1491-1547),<sup>35</sup> and again during Mary's reign (1553-1558). During his twelve years abroad, Turner sought out the most important botanists and natural scientists of the day, including Conrad Gesner, with whom he shared interests in animals and plants.<sup>36</sup> In Italy he attended lectures in



Bologna, most notably those of Lucas Ghinus,<sup>37</sup> and received his doctorate in medicine in Ferrara.

Turner (c. 1508-1568), considered the "Father of English Botany,"<sup>38</sup> may have been a model for later British botanists who travelled on the European Continent and interacted with scientists there. The British botanists who followed Turner continued to return with new information and knowledge, and spread out across the British Isles, studying, naming and collecting plants, and organising expeditions.

St. Vincent's Rocks in the Avon Gorge, Bristol, and Mount Snowdon, in North Wales, two areas richly endowed with unusual plants, were early centres of botanical activity. As the more accessible of these locations in a time when travel was difficult and dangerous, Saint Vincent's Rocks was the earlier to be explored. The three-hundred-foot-high limestone cliffs and ledges that loom over the tidal River Avon for centuries were regarded as a botanical Mecca: "Their vegetation is luxuriant, and the ledges are crowded with rare xerophilous species, mingled with a few hardy survivors from some ancient herb garden."<sup>39</sup> They since have been virtually destroyed by centuries of over-collecting and quarrying.

William Turner included twelve plants he collected at Saint Vincent's Rocks during a stay in Bath in the first part of his herbal, published in 1551.<sup>40</sup> He was followed by practically every botanist to work in Britain, including John Gerard, author of *Gerard's Herbal* (1597), who "'spent two daies upon the Rockes to seek for Meum."<sup>41</sup> Matthias de L'Obel made his first visit in 1569, and in 1581 returned with Clusius, the distinguished botanist from Leiden: "On St. Vincent's Rocks he [L'Obel] gathered several of our rarer flowers, and saw an abundance of a remarkable fern--some variety of Hartstongue--which has long since totally disappeared."<sup>42</sup> John Goodyer (1592-1664) visited St. Vincent's Rocks on a rare trip away from Hampshire in 1638. According to Thomas Johnson, Goodyer found *Veronica hybrida* (now *Veronica spicata*),<sup>43</sup> and *Sedum rupestre* (now *Sedum anglicum*) is said to be his discovery.<sup>44</sup>

J. W. White in *Flora of Bristol* (1912), thought that the dangers and deprivation botanists suffered in order to collect plants was evidence of their



commitment to science:

That those learned men, prosperous and middle-aged for the most part, should have set forth on excursions through little-known parts of the country--into the remote West, across the perilous tides and passages of the Bristol Channel, and through wild Wales to her northern mountains--is evidence enough of their desire to make progress in natural science and to gain knowledge first hand.<sup>45</sup>

On the other hand, the camaraderie and excitement of the field trips probably offered recompense for the endless hours of solitary study.

Because of the distance and difficulty of the journey, English botanists came late to the Welsh mountains. The earliest known botanical tour was made by Thomas Johnson and his band of botanists in 1639, but by 1686 Edward Lhuyd referred to " 'Divers Gentlemen . . . gon from London, Oxford and Cambridge, to Snowdon, Cader Idris and Plinlimon in search of plants.'"<sup>46</sup>

The wildness of Snowdon gave travellers much material for their journals. In the 1680s, two young botanists from Oxford declared, "the dark clouds and ye cragginess of ye rocks made such a dismal sight, that it would have startled a heart of steel to behold them. For my part I onely never beheld, but never fancy'd there were such prodigyes in nature."<sup>47</sup> Thomas Pennant made the summit of Snowdon the goal of his journey in 1781 and, viewing the scene from a picturesque perspective, described it in mixed terms of awe and enchantment:

A vast mist enveloped the whole circuit of the mountain. The prospect was horrible. It gave an idea of the numbers of abysses, concealed by a thick smoke, furiously circulating around us. Very often a gust of wind formed an opening in the clouds, which gave a fine and distant vисто of the lake and valley. . . . They then closed at once, and left us involved in darkness: in a small space, they would separate again, and fly in wild eddies around the middle of the mountains, and expose in parts, both the tops and bases clear to our view.<sup>48</sup>

Snowdon, or Wylfa, the sacred mountain of the ancient Britons, was not uncharted territory, but had for centuries been central to the lore of Wales.



Snowdonia was a royal forest, and by 1626 the deer population was so depleted by over-hunting that there were no stags to be found.<sup>49</sup> While these descriptions suggest an intense fear of mountains, it is more likely alarm and terror were an important part of the mountain experience. Snowdon's unpredictable weather and steep precipices no doubt gave the climber a sense of achievement and courage.

### Thomas Johnson and the *Socii Itinerantes*

By 1626 Thomas Johnson (1599-1644), a native of Selby, Yorkshire, was an apothecary in London. Attending the Society of Apothecaries' simpling days and travelling with a group of apothecaries called the *Socii Itinerantes* and other botanical friends, he botanized his way around London, through Kent, and as far north as Durham, including much of Yorkshire and Lincolnshire, and of course St. Vincent's Rocks.

Johnson's goal was to catalogue all the native plants he could find, as well as those that came to his attention through "the kindness of my friends, or the books of writers."<sup>50</sup> Johnson did his plant hunting, naming, and listing for pleasure, and to provide tools and materials for other scholars.<sup>51</sup> His *Itinerary of a Botanist through North Wales in the year 1639 AD* was the last of a series of pamphlets on his botanical investigations.

On 22 July 1639, Johnson, Paul Stone, and Edward Morgan, a Welsh-speaking herbalist, left London for Wales.<sup>52</sup> Reverend Walter Stonehouse (1597-1655), "a great student of divine and human things,"<sup>53</sup> met them in Chester after travelling across from his parish of Darfield, near Barnsley, Yorkshire.

They botanized and explored their way across northern Wales. On a mountain named Garthgogo they collected *Caryphyllus saxatilis Ericaefolius Bauhini*,<sup>54</sup> and explored a cave under a mighty precipice "called by the terrible name of *Ogo-Gumbyd*," where they studied plants growing in the cave and in the fissures of the rocks at the entrance.<sup>55</sup>

Near Caernarvon they visited fellow botanist Thomas Glynne, and enjoyed his garden and the beautiful scenery around his estate:



There are dark groves, brooks murmur gently as they flow over the pebbles, there are gardens on this side and on that, beautified by many flowers and plants the higher of them sloping gently, presents a very pleasing view; on one side *St. George's Channel* can be seen, and not far off the island of *Mona* and even *Ireland* can be seen in fine weather; on the other side our British Alps, the highest mountains in the whole island, rear themselves up, so that wheresoever you go there is something worth seeing.<sup>56</sup>

On August third, they mounted their horses at dawn and set off for "the British Alps," and with a farmer's boy as a guide, climbed through the clouds toward the summit:

Having climbed three miles, we at last gained the highest ridge of the mountain, which was shrouded in thick cloud. Here the way was very narrow, and climbers are horrorstricken by the rough rocky precipices on either hand, and the Stygian marshes, both on this side and that, the greatest of all which is called the "Abode of the Devil" by the inhabitants. But when we got to such a point on the ridge that we could not proceed any further, we sat down in the midst of the clouds, and first of all arranged in order the plants that we had, at our peril, collected among the rocks and precipices, and then ate the food we had brought with us.<sup>57</sup>

Johnson listed twenty uncommon and rare plants they collected, specifically mentioning three as being dug up presumably for transplanting: a rush he called *Gramen junceum marinum* (*Juncus squarrosus*), *Lichnid marinam Anglicam* (*Silene uniflora*), and *Caryophyllum marinum* (*Statice armeria*). *Nasturtium petraeum* (*Cardaminopsis petraea*), also on his list, but not mentioned as dug up, appeared as well on a list of Walter Stonehouse's garden plants made in 1640 and 1644, so evidently other plants were also collected live.

During a side trip to Beaumaris, they were sent to Carnedh-Lhewellyn, a mountain near Bangor, which was reputedly the best place in the country to find rare plants, but their guide refused to climb up to the precipices in fear of eagles that reputedly killed cattle by flying in their faces and causing them to fall over the precipices.<sup>58</sup>



The entire journey was characterized by thick clouds and rain. Crossing the mountains out of Wales on their way home, they travelled through a pass that Johnson called "the house of clouds, a country foul with raging winds," getting their fill of wind and rain in the process.<sup>59</sup>

The Civil War was a disruptive and destructive time. Thomas Johnson lost his life fighting as a Royalist officer, and Walter Stonehouse was imprisoned and forced out of the living he had held in Darfield since 1631, losing his plant collections in the process.<sup>60</sup>

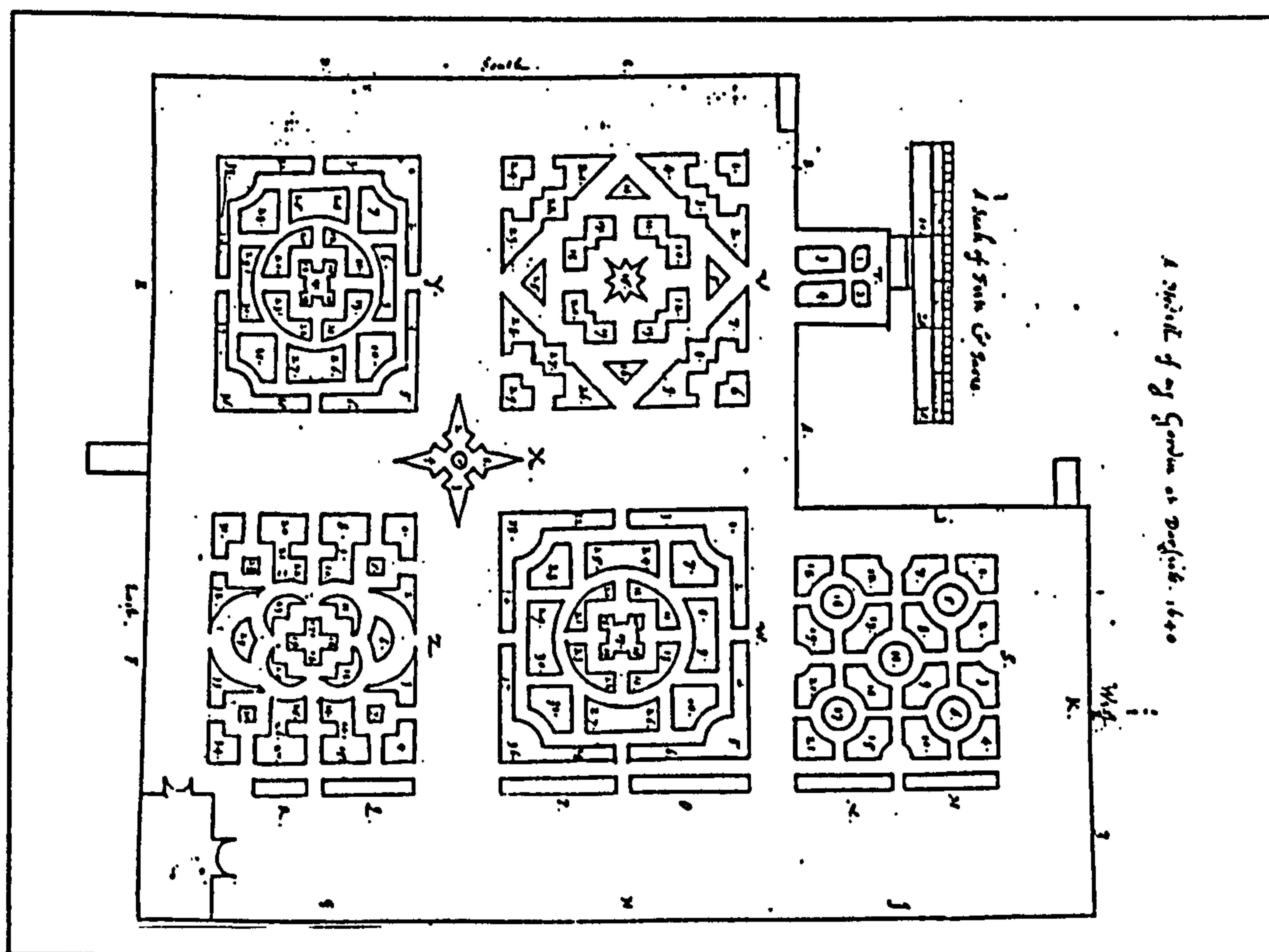


Figure 6. Walter Stonehouse's 'Best Garden,' at Darfield Rectory, Yorkshire (1640) From Gunther, *Gardeners' Chronicles* (15 May 1920).

Stonehouse's extensive collections included about eight hundred and sixty-six plants according to the list he compiled in 1640 and 1644, now at Magdalen College.<sup>61</sup> Three plants that were collected on the climb up Snowdon, *Nasturtium petraeum* (*Cardaminopsis petraea*), *Chamaeitea repens montana* (possibly *Salix herbacea*), and *Caryophyllus montanus minimus* (another name for *Cardaminopsis*



*petraea*), appeared on Stonehouse's plant lists. Apparently they were grown in the parterres of his "Best Garden," but the cultural techniques Stonehouse used are not known, nor is it known if the beds were raised (see figure 6).

Welsh botanists were observing their native flora as early as the late sixteenth century. Sir John Salisbury (1567-1612), who had a garden at Lleweni, near Denbigh, compiled plant lists for the years 1596, 1607, and 1608.<sup>62</sup> On his list for 1608, he reported *Vaccinium myrtillus* groweth in most of the montaynes of Wales.<sup>63</sup>

John Ray (1627-1705) travelled through the mountains of Wales, but for much of his information on Welsh alpine plants he depended on Edward Lhuyd (1660-1709), whom he described as "no mean herbalist but a man of good skill in plants."<sup>64</sup> When Ray's revised *Synopsis* was published in 1689, it contained eighty-eight new plants discovered by Lhuyd on Snowdon in the summer of 1688.<sup>65</sup>

### Edward Lhuyd

Edward Lhuyd (also spelled Lloyd or Lhwyd) grew up in Wales and spent much of his youth searching for plants in the Welsh mountains. In the spring and summer of 1682 he travelled to the Merioneth Mountains and Snowdon, and along the way found twenty-six plants of which six had not been recorded by John Ray in his *Synopsis Methodica Stirpium Britannicarum* (1698).<sup>66</sup>

Edward Lhuyd, the second Keeper of the Ashmolean Museum in Oxford (1690-1709), excelled in the discovery of Welsh mountain plants, and built his reputation as a natural scientist on his knowledge of Wales. Although Lhuyd is not known to have had a garden of his own, he was instrumental in bringing Welsh mountain plants, particularly those of Snowdon, to the attention of other botanists. As he stated, "I judge it better worth a mans while going to Snowdon alone; than if he search'd all the other Hills in North Wales."<sup>67</sup> In 1686 two fellow Oxford students searched for alpine plants on Snowdon. Although they wrote about the horrors of the mountain and local food, they were amazed by the richness of the alpine flora.<sup>68</sup>



Although Lhuyd went to Oxford in 1682, he managed to spend nearly every other summer in Wales throughout the 1680s and 1690s.<sup>69</sup>

Like Johnson and Ray . . . Lhuyd sought plants in Snowdonia, but unlike them he came summer after summer and so was the first botanist or traveller to get an intimate knowledge of the mountains. In fact very few even since Lhuyd can have known the high ground from Snowdon to Pumlumon as well as he.<sup>70</sup>

Lhuyd maintained his status as an authority on Wales through frequent trips home, and contact with other Welshmen, who often did research for him. One of his collaborators, Thomas Evans, Vicar of the Parish of Llanberis at the base of Snowdon, became renowned as host and friend to visiting botanists. One of his guests was the Yorkshireman Dr. Richard Richardson, who climbed Snowdon with Lhuyd in 1693.<sup>71</sup>

Richardson, acknowledged as "the leading botanist working in the north," was noted for maintaining the best collection of plants in the north of England. He was also said to have "greatly increased the state of knowledge concerning native plants and their habitats."<sup>72</sup>

### Richard Richardson

Except for his years of study and later brief trips, Dr. Richard Richardson (1663-1741) lived all his life at Bierley Hall in North Bierley, near Bradford, West Yorkshire. He received a Bachelor of Medicine degree at University College, Oxford, and then spent three years at Leiden, where he earned a Doctor of Medicine degree in 1690. Richardson's interest in botany was either initiated or intensified by living and studying with Paul Hermann, a professor at Leiden. After Leiden, Richardson received another Doctor of Medicine degree at Oxford, and returned to Bierley, his formal education complete.

According to one tradition, instead of a career in medicine, Richardson then dedicated his life to his interests in antiquities and botany,<sup>73</sup> but John Nichols in *Literary History of the Eighteenth Century* (1817) stated, "Dr. Richardson's



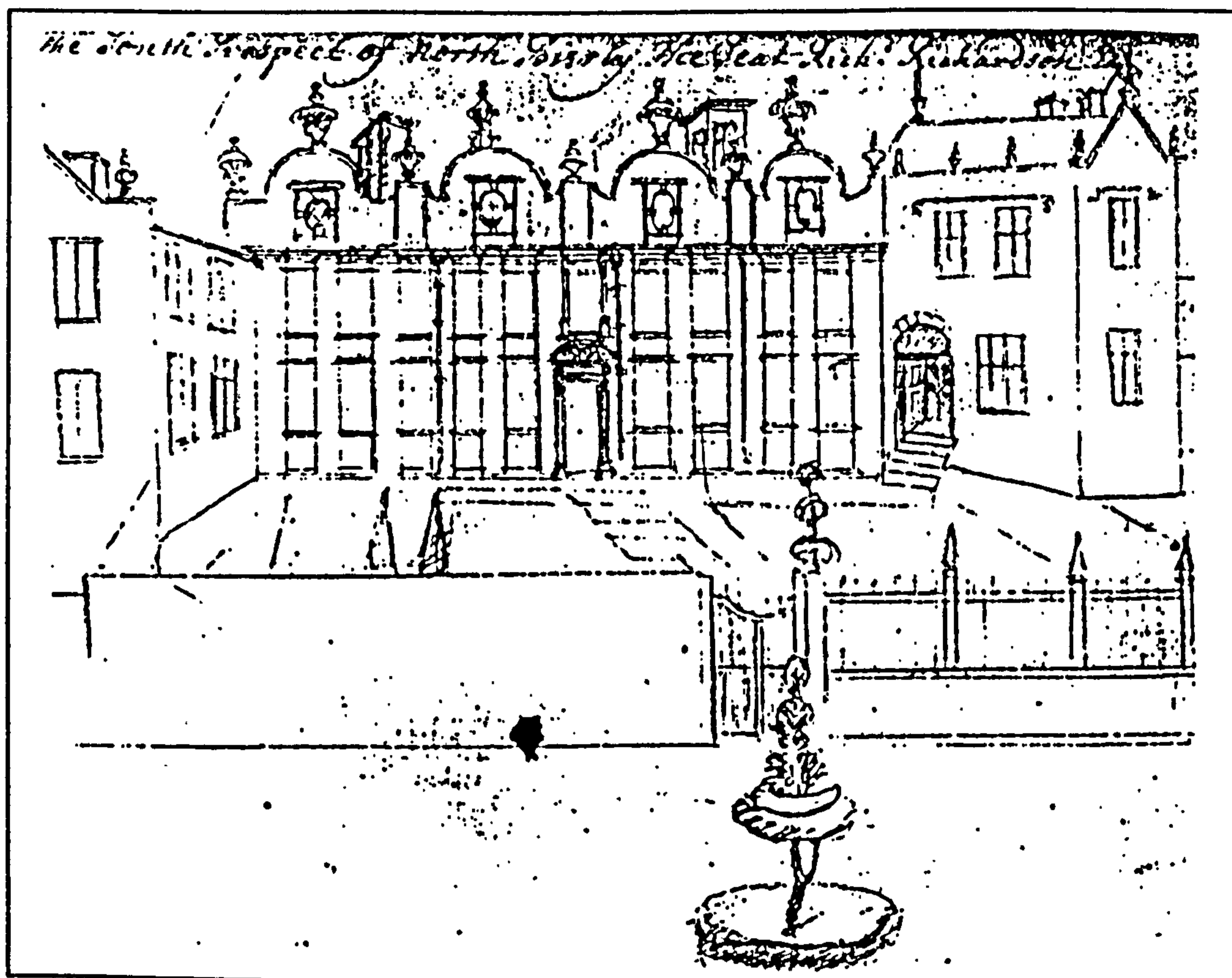


Figure 7. Drawing of Bierley Hall (c. 1720) from *Samuel Buck's Yorkshire Sketchbook*.

practice was very extensive, and employed most of his time, except what he spared in writing to his numerous correspondents, taking botanical excursions, and more especially in the culture of his flower garden, hothouse, and greenhouse."<sup>74</sup>

About 1690, Dr. Richard extensively remodelled Bierley Hall, built by his father in 1636, adding the Dutch-influenced facade shown in Samuel Buck's sketch (figure 7).<sup>75</sup> But Richardson's primary interest was the collection and cultivation of native and exotic plants. His garden was surrounded by a fine hand-made, narrow-brick wall, which provided a back for his greenhouse (the second in the north) and contained a flue with a fire-hole that was still intact in the mid-twentieth century.<sup>76</sup>

The walled garden is clearly shown on two maps: the 1892 Ordnance Survey map, and a map (c. 1908) showing a proposed site for the hospital that replaced





Figure 8. 1908 map of proposed hospital site showing the walled garden on the upper right. West Yorkshire Archive Service, Bradford Branch. [Original in colour].

Bierley Hall (see figure 8). The later map has been used here, as it offers the same content, but in greater detail and clarity. It shows that the corners of the walled garden were curved, and paths divided the enclosed ground into quarters, with a wide border around the perimeter. Above the garden is a pond or reservoir, and the north wall appears to have greenhouses or cold frames against it, although by 1841, when James published his *History of Bradford*, the hot-house with its small, leaded panes had disappeared.<sup>77</sup> The space between the walled garden and the house, through which the driveway passed in 1908, was only a matter of a few yards.

Although the map was published one hundred and sixty-seven years after Richardson's death, it is possible that the walled garden was shown in nearly the



same arrangement of beds and paths as he left them. The esteem with which his family held his memory makes it possible that the garden was maintained, at least until his grand-daughter's death in 1861.<sup>78</sup> Kenneth Lemmon saw the walls of Richard's garden and ancient pear trees that may have been the rows of trees shown along the walks in the walled garden (figure 8).<sup>79</sup>

Living away from the centres of learning, Richardson relied on the contact the postal service offered as a link with new discoveries and developments as well as with friends. Friends were then, as now, sources of plants, books, and encouragement. Richardson's correspondence filled twelve folio volumes.<sup>80</sup> The selected letters published by Dawson Turner as *Extracts from Literary and Scientific Correspondence of Richard Richardson* (1835) are particularly important as Richardson rarely published his work.

A letter from William Sherard (1659-1728) to Richardson in 1718 shows intense interest in mosses and ferns, and that the goal, at least for Sherard's brother, James, was still to have an encyclopedic collection of plants:

I received your last curious parcel of Mosses. . . Dr. Tournefort gives only his names, and Mr. Ray's or other Authors, as synonymes to his Mosses; he has multiplied them in his book of Plants about Paris, all which I think I have. Your new collection of Mosses I long to see. . . This winter I have done little that way; but in the Summer and next Winter, designing to live in the country, will make a thorough search. My brother sends his service, he aims at having all the English Plants in his Garden, or near his house.<sup>81</sup>

Two other letters in this collection are of particular interest. In 1718, William Sherard wrote to Richardson asking for information in preparation for a botanical tour of Wales. Richardson's answer provided Sherard with a plant by plant guide to the district based on his own trips to Snowdon, of which the earliest was probably with Lhuyd in 1693. The letter, which names about sixty plants, was published several times and used as a guide by several other botanists (see Appendix II).<sup>82</sup>

Included with his observations on the Snowdon plants were notes on the



culture of those he grew, many of which he had collected in 1693. Of *Bulbosa Alpina junifolia pericarpio unico erecto &c.* R. S. M. (*Lloydia serotina*), he said, "flowers in June. I brought several bulbs, but they would not flower in my garden, but in a year or two died."<sup>83</sup> Of *Hieracium Alpinum villosum flore magno singulari caule nudo*, R. S. M. 3. (*Hieracium murorum*), "it rarely exceeds four or five inches in height when in flower; it is not a very common plant here. I kept it in my garden four or five years, where it flowers yearly, but it is a difficult matter to preserve it from the snails; it is a Sun plant."<sup>84</sup> He mentioned growing *Trichomanes ramosum (Asplenium viride)*, (which Ray had seen in Zanoni's garden in Bologna) for more than twenty years "in my Garden, and it now remains the same,"<sup>85</sup> and also appeared in the catalogue of his garden twenty years later.

Richardson reported finding *Nasturtium petraeum (Cardaminopsis petraea)* on "a moist rock, above the lake Oû, as you ascend Snowdon. I have now in my garden Plants from thence, which thrive well with me."<sup>86</sup> In a later letter from William Sherard, *Nasturtium petraeum* appeared again. Sherard mentioned Johnson's 1636 expedition and reported the fate of some of their donations to the Chelsea Physic Garden: "I saw most of the Plants we sent, in good state. Your *Nasturtium petraeum* of Johnson does not appear; nor the Welsh Lake Plants, which were set in the pond."<sup>87</sup>

The two main sources of information on plants in Richardsons garden are his Snowdon letter of 1718 and a catalogue of his garden made in 1740, the year before his death. The eighty-nine-page manuscript entitled *Index Horti Bierleyensis Plantas iam Britannicas notabiliores quam Exoitas Compectens Juxta Raij Methodum Dispositas* dated 1740, said to be in Richardson's hand,<sup>88</sup> was received by the York Minster Library through a bequest of Samuel Hailstone's library in 1858.<sup>89</sup> Apparently Richardson included all his plants from trees and fruit trees to ferns and flowers. The polynomial names were organised by family and species, although many species were represented only by a line drawn where a name would have appeared.

In his Snowdon letter, Richardson reported success in growing *Draba incana* and *Minuartia verna*, rock plants requiring well-drained, rocky or gritty soil, and



*Cardaminopsis petraea*, which is found on river gravels and screes in mountain habitats. Among the nineteen ferns in his catalogue were two mentioned in his Snowdon letter: *Trichomanes ramosum* (*Asplenium viride*) and *Filix montana ramosa minor augusti-denticulata*, D. Llwyd, R. S. M. (*Aspidium dumetorum*). These may be seen as indications that Richardson accommodated his rock plants some way, perhaps with with raised, rocky beds, or possibly rockwork.

According to the Royal Horticultural Society *Dictionary of Gardening* (1992), *Aspidium dumetorum* is terrestrial or rupestral, and *Asplenium viride*, which thrived in Richardson's garden, "must be grown among lime rich rocks."<sup>90</sup>

Of the Snowdon plants listed in Richardson's letter of 1718, only four appeared in his 1740 catalogue. These include the previously mentioned ferns, *Alsine Myostis lanuginosa Alpinus grandiflora, sive Auricula muris villos flore amplo membranaceo*, R. S. M. (*Minuartia verna*), and *Hieracium pulmonaria dictum augustifolium*, R. S. M. (*Hieracium maculatum*), of which he said, "not alpine, rare,"<sup>91</sup> but whether they were descendants of the same plants, or replacements, cannot be determined.

Richardson's garden may have been in decline by 1732 when he reported the loss of all his tulips in letters to his son.<sup>92</sup> By 1733 his health had failed so that on good days he could walk with difficulty to the fish ponds at the bottom of the ravine. In 1733 Richardson reported they were "in their glory" in a letter to his son.<sup>93</sup> Evidently this was the site of an orchard, as he also mentioned "an appearance of plenty of fruit." Features in the area of the fish ponds are all that remains of the Bierley Hall landscape today, and except for the ponds, which may be Medieval, the remains of a forest, a Druidical circle, and cave were added by Richardson's son, also Dr. Richard Richardson, in the late eighteenth century.<sup>94</sup> Bierley Hall became an isolation hospital in the early twentieth century, was replaced by a modern hospital building about 1908, and was demolished in 1968, but sections of the walled garden lasted into the 1970s.<sup>95</sup>

Interest in collecting alpinists as herbarium specimens and living plants, and recreating their habitats can be seen by the end of the sixteenth century. On the terraced garden at Montpellier, known as *la montagne*, plants from the mountains,



and sandy, rocky, and sunny regions were grown near bog, water, and forest plants. The long, straight terraces were formal with no effort made to make them look natural, but they were effective in presenting the plants as well as providing the conditions for a variety of plants. The east-west orientation gave ample northern and southern exposures.

*La montagne* at Montpellier is the first known of its kind. Little is known of the culture of rock plants at this time, but it is possible that by 1598 the accepted way to grow alpiners and rock plants was on raised, rocky beds or terraces. Possibly visitors to Montpellier, besides de Serres, recognized the idea as having application in the garden, took it away with them, and implemented it in their gardens.

It is evident that interest in alpine and rock plants in England gained strength throughout the seventeenth century, with many botanists going to North Wales and Mount Snowdon from the late seventeenth century. Dr. Richard Richardson brought back plants to grow in his garden and had notable success with some that require rocky conditions. Richardson maintained a long and close friendship with John Blackburne, who later created the first documented rock garden.



## NOTES

1. Martha Ornstein, *Role of Scientific Societies in the Seventeenth Century* (London: Archon Books, 1963), 28.
2. Ornstein, 4-5.
3. Lazzaro, 13.
4. Muriel McCarthy and Caroline Sherwood-Smith, eds. *The Enchanted Herbs: An Exhibition of rare Botanical, Gardening and Herbal book in Marsh's Library* (Dublin: Archbishop Marsh's Library, 1992), 25.
5. Claudia Lazzaro, *Italian Renaissance Garden* (New Haven and London: Yale University Press, 1990), 10.
6. Lazzaro, 11.
7. Lucas Ghinus was born about 1490 near Imola. He graduated in medicine from Bologna University, taught there from 1427 to 1532, moved to Pisa University and then returned to Bologna in 1544, according to a press release from Biblioteca Comunale di Imola (Bologna, 13 October 1990). This information was kindly supplied and translated by Ada Segre. William Turner attributed the invention of the herbaria to Lucas Ghinus, the first professor of Botany in Europe and founder of the botanical gardens at Pisa and Florence, who pressed plants and stitched them to paper according to Charles E. Raven, *English Naturalists from Neckum to Ray* (Cambridge: University Press, 1947), 77.
8. Ada Segre, "Italian Flower Garden in the 17th Century and the Introduction of Ornamental Plants," *Proceedings of Congreso Internacional de Jardineria* (4-6 November 1992) (forthcoming).
9. Segre quoting Mattioli (before 1568), letter to the Giovanna, Archduchess of Austria.
10. Hyacintho Ambrosino, 'Hortus Studiopsorum Bononiae Consitus,' Bononiae, 1657, 71-72. Supplied and translated by Ada Segre.
11. Francesco Malocchi, 8 November 1606, Bologna, Italy, letter to Clusius, Leiden Botanical Garden, Rijksbiblioteek, Leiden, volv. 101 cc.2. Supplied and translated by Ada Segre. Malocchi's mountains were the Apennines of Tuscany. The list, in Appendix II, was published in Fabio Garbari, Lucia Tongiorgi Tomasi, and Alessandro Tosi, *Giardino dei Semplici* (Pisa: Cassa di Risparmio di Pisa, 1991), 42.
12. H. Wille, "Works of Carolus Clusius," *Botany in the Low Countries (end of the 15th century - ca. 1650) Plantin-Moretus Museum Exhibition* (Antwerp: The Plantin-Moretus Museum and the Municipal Printroom, 1993), 115; describing Carolus Clusius, *Rariorumm aliquot stirpium per Pannonian, Austriam, & vicinas quasdam provincias observatarum historia* (Antwerp: C. Plantin, 1583).



13. H. Wille, 115. Clusius name was Charles d'Ecluse before latinizing it.
14. Charles Hamilton, Foreword to *Mammalia. Horses*, ed. Sir William Jardine, The Naturalist's Library (London: Henry G. Bohn, 1866), 19.
15. Gesner spent a year studying at Montpellier, where he became friends with the professor of medicine, Rondelet. Hamilton attributes this friendship and his experiences at Montpellier with "confirming his predilection to the study of nature." Hamilton, 22-23.
16. Gavin de Beer, *Early Travellers in the Alps*, new ed. (London: Sidgwick and Jackson, 1966), [np]; quoting Conrad Gessner, *Libellus de lacte et operibus lactariis* (1541).
17. Hamilton, 28.
18. Hamilton, 28-29. Lists of Gesner's garden plants may exist, but it was not possible to locate them for this study.
19. Trevor I. Williams, ed., *Biographical Dictionary of Scientists* (London: Adam and Charles Black, 1969), 214. Between 1551 and 1558 Gesner produced *Historia Animalium* in four volumes. A fifth volume was posthumously published, but *Historia Plantarum*, which would have been his greatest work, was never written.
20. Fynes Moryson, *Itinerary*, vol. 1 (Glasgow: James MacLenose and Sons, 1907), 378. Moryson is probably misquoting the appendix to C. Clusii, *Rariorum aliquot stirpium*, . . . . "Praelerea accessit montis Baldi descriptio, auctore Joanne Pona, was added to editions from the 1580s.
21. John Nichols, *Illustration of Literary History of the Eighteenth Century*, vol. 1 (London: Printed for the author, 1817), 350. According to the Royal Horticultural Society *Dictionary of Gardening*, vol. 1, 260, *Asplenium viride* must be grown on lime rich rocks. See also the discussion of Richardson's plants on page 40. 5.
22. Dora Maw, "The Romance of a Garden," *Journal of the Royal Horticultural Society* (1941): 125. Dora Maw was the daughter of the botanist and collector George Maw (1832-1912). No biographical information has been found, but to produce this article, she used the Montpellier archives and read ancient French. The information she offers, as far as it can be checked against Platter and maps, has been shown to be accurate. She is remembered by Professor William Stearn as a "scholarly, elderly lady who made use of the Lindley Library" (17 March 1993, letter to the author).
23. Maw, 127. According to French-English dictionaries, the "garrigue" is a Mediterranean-type terrain of stony, sun-drenched hills.
24. Maw, 125.
25. Maw, 125.



26. Marie-Francois Rouquette, "Le Jardin Royal de Montpellier sous l'ancien regime (MD Thesis, Faculty of Medicine of Montpellier, 1992), 33-34. Kindly translated by Robin Schnare.
27. Eric Guillou, Rome, Italy (21 September 1993), letter to the author.
28. Rouquette, 92. Kindly translated by Robin Schnare.
29. Guillou (21 September 1993).
30. Anthony Huxley, *An Illustrated History of Gardening* (New York and London: Paddington Press and the Royal Horticultural Society, 1978), 99. Parts of de Serres' estate survives, and is now an agricultural college, according to Eric Guillou (21 September 1993).
31. Raven, 161. Rev. Thomas Penny (c. 1530-1589) was primarily known as an entomologist, but sent drawings of plants to Clusius, and visited Gesner just prior to his death. Ray Desmond, *Bibliography of British and Irish Botanists and Horticulturalists* (London: Taylor and Francis, 1977), 488.
32. Benjamin Waterhouse, *The Botanist* (Boston: Joseph T. Buckingham, 1811), 105; According to Blanche Henrey, *British Botanical and Horticultural Literature before 1800*, vol. 1 (London: Oxford University Press, 1975), 50-51, Tournefort enrolled at Montpellier in 1679 to study medicine and received his Doctor of Medicine at the University of Orange in 1688. In 1683 he became Professor of Botany at the royal botanic garden in Paris. Tournefort produced the first complete regular arrangement of plants, although it was later superseded by the Linnaean system.
33. Richard Pulteney, *Historical and Biographical Sketches of the Progress of Botany*, vol. 1 (London: T. Cadell, 1790), 212.
34. Charles E. Raven, *John Ray, Naturalist* (Cambridge: University Press, 1942), 137.
35. According to Raven, 75, Turner probably made his principal residence Cologne, as many other English refugees had done. Comments in his *Herball* (1551-1568) refer to gardens he created there and in Bonn for plant collections.
36. Williams, 521. Turner later supplied Gesner with information for *Historia Animalium* (1551-1558).
37. Pulteney, 54; 60.
38. Williams, 521.
39. James W. White, *Flora of Bristol* (Bristol, n. p., 1912), 4-5; 45.
40. White, 47.



41. Robert T. Gunther, *Early Science in Oxford. Vol. XIV Life and Letters of Edward Lhwyd* (Oxford: University Press, 1945), 76.
42. White, 49.
43. Thomas Johnson, *Mercurius, pars altera* (1641), quoted in Gunther, 76.
44. Gunther, *Science in Oxford*, 77.
45. White, 45.
46. Brynley F. Roberts, "Edward Lhuyd--Welshman," *Nature In Wales* ns 2:1 (1983): 43.
47. Roberts: 43.
48. Thomas Pennant, *Journey to Snowden* (London: Rutland, 1781), 164.
49. Pennant, 166.
50. Thomas Johnson, *Itinerary of a Botanist through North Wales in the year 1639 AD*, T. S. Ralph, ed. (Bangor: Evan Thomas, 1908), np.
51. Johnson, 4.
52. Johnson, 4. Desmond, in *Bibliography of British and Irish Botanists*, 450, says Edward Morgan (1610-1680) became curator of a medicinal garden in Westminster and was, according to Evelyn, "a very skilful botanist."
53. Johnson, 4.
54. Caspar Bauhin's *Pinax*, first published in 1623, lists *Caryophyllus saxatilis Ericaefolius ramosus repens* (Lib. VI, Sect. III). In the Gray Herbarium's copy of the 1671 edition, this is annotated as *Arenaria tetraquetra*, which is, however, not a British native. It is possible that Johnson, using Bauhin's *Pinax*, misidentified this plant. Of the eight arenarias listed in Smith's *English Flora* (1824-8), only *A. verna* is said to grow in Wales. Smith does not give Bauhin's synonym, but other synonyms listed refer include "saxatile" and "juniperina." The RHS *Dictionary* shows its name as changed to *Minuartia verna*. Clapham, Tutin, and Moores's *Flora of the British Isles* (1987) reports it as a native, "a local plant of base-rich rocks, screes, and pastures," found in North Wales and other rocky and mountainous regions.
55. Johnson, 6.
56. Johnson, 7.
57. Johnson, 7.



58. Johnson, 9.
59. Johnson, 10.
60. Robert T. Gunther, "The Garden of the Rev. Walter Stonehouse at the Darfield Rectory, in Yorkshire, 1640," *Gardeners' Chronicles* (15 May 1920): 240. Stonehouse received his BA from Oxford in 1617 and a Doctor of Divinity in 1629.
61. Stonehouse's list of plants was published as four articles by Robert T. Gunther in *Gardeners' Chronicle* (15 May 1920): 240-241; (22 May 1920): 256; (29 May 1920): 268; and (12 June 1920): 296.
62. Robert T. Gunther, *Early British Botanists and their Gardens* (Oxford: Oxford University Press; repr., New York: Kraus Reprint Co., 1971), 243.
63. Gunther, *Early British Botanists*, 243.
64. Roberts, 43.
65. Desmond, *Botanists and Horticulturalists*, 385.
66. Roberts: 43.
67. Gunther, 69.
68. Roberts: 43.
69. Roberts: 43.
70. Frank V. Emery, "Edward Lhuyd and Snowdonia," *Nature In Wales*, ns 4:1 & 2 (1985): 3, quoting W. M. Condry, *Snowdonia National Park* (1966).
71. Nichols, 225-52
72. Nichols, 225.
73. William Cudworth, *Round About Bradford*, (Bradford: Thomas Brear, 1876), 69.
74. Nichols, 232.
75. The plant shown in the foreground is probably the Cedar of Lebanon sent to Richardson by Hans Sloan in about 1715.
76. Kenneth Lemmon, "North Bierley Hall: A forgotten garden," *Garden History* 1:3 (Summer 1973): 48. Richardson's friend John Blackburne was famous for building the first greenhouse in the North which allowed him to cultivate the first pineapple in that region. As soon as the workmen had finished Blackburne's, they moved to Bierley and built one for Richardson.



77. John James, *History of Bradford* (Bradford, Yorks.: Charles Stanfield, 1841) 381.

78. Cudworth, 70; James, 318.

79. Lemmon: 48. Lemmon based his assumption that this was the first Dr. Richardson's walled garden on the size of the bricks and the presence of a fire-hole and flues in the wall.

80. Richardson's 12 volumes of correspondence have not been located, although individual letters exist in various collections.

81. Nichols, 355.

82. H. A. Hyde, "Samuel Brewer's Diary," *Supplement to Report of Botanical Society and Exchange Club* (1930): 3; Dillenius and Samuel Brewer went to Snowdon with Richardson's letter in 1726.

83. Nichols, 348.

84. Nichols, 348.

85. Nichols, 348.

86. Nichols, 348.

87. Nichols, 352.

88. Cudworth, 69.

89. Samuel Hailstone (1768-1851) was in his lifetime considered the "most learned and accomplished botanist" in Yorkshire. His son Edward was a geologist. James, 316.

90. Royal Horticultural Society, *Dictionary of Gardening*, vol. 1 (London: MacMillan Press, 1992), 260.

91. Nichols, 348.

92. Nichols, 232.

93. Nichols, 266.

94. Cudworth, 72.

95. Lemmon: 47.



## CHAPTER 2

### EARLY ROCK GARDENS AND ALPINE PLANT COLLECTORS

Rock gardens developed out of attempts to cultivate alpine and rock plants by simulating the conditions of their native habitats, but as they became features in the garden, aesthetic values were applied and the object shifted to recreating the habitat in an artistic way. The structure of this chapter reflects the change in emphasis. The first part continues the discussion of collecting and cultivating alpine and rock plants from a horticultural perspective. The second part discusses gardens that have felt the impact of artistic values, and the effects of ornamentation on the rock garden. Aesthetic values were expressed in rock gardens as (1) the artistic, but naturalistic arrangement of rocks, and (2) in non-naturalistic ornamentation, such as statuary, urns, and painted rocks. Although a debate between the proponents of the two ideals continued from the 1820s through the 1850s, many gardens combined both in varying degrees and combinations, while maintaining collections of alpine and rock plants.

In the most fashionable of gardens at the middle of the nineteenth century, there was a decline in the popularity of plant collections, that has been attributed to the contemporary taste for bright effects, but the rock garden with its alpine and rock plants continued to be popular with horticulturalists. Chapter 2 ends with a study of the influence of the Backhouse Nursery and their rock garden which was created in the 1850s.

The period of time between 1720 and 1800, although crucial to the understanding of the early rock gardens, is marked by a lack of information. Whether materials concerning the construction and cultivation of rock gardens never existed, or have been lost, destroyed, or not yet been found, cannot be said, but the result is that any information from this time period is extremely important, and at times it is necessary to look for meanings and explanations based on very little data. This is in contrast to the wealth of information offered by the mid- and late nineteenth century horticultural journals and books.

The studies of gardens, collectors, and designers discussed in Chapter 2 are unevenly documented. The best documented examples are John Blackburne's garden and one created at the Chelsea Physic Garden. Less well documented is the



Lady Ilchester's garden at Abbotsbury Castle, about which many questions still exist. The garden historian Lady Rockley pointed it out as a rock garden built in 1780, and if that was so, it adds to the evidence that rock gardens were being created earlier and more widely than has been recognised.

## PART 1: BOTANICAL INTEREST IN THE ROCK GARDEN

In the search for origins, the identification of the first rock garden created is of primary importance, but although the 1767 description of John Blackburne's garden is the earliest known, it was not necessarily the first rock garden ever built. As suggested in Chapter 1, it is possible that Blackburne's friend, Richard Richardson, grew his Snowdon plants on rockwork of some kind. Just as when the members of the Society of Apothecaries decided to build an "Artificial Rock" in 1772, their use of established terminology does not give the impression that this was the first time one had been built, Blackburne's announcement of his plan to build rockwork for plants in 1764 was not made with any air of discovery either; instead, it is stated in the matter-of-fact way that was to become well-established jargon.

### John Blackburne of Orford Hall: the first known Rock Garden

John Blackburne's intention to build a garden for alpine and rock plants appears in a letter written in 1767. This account of garden work and future plans is also a request for plants directed, not to Europe as would be expected, but to North America. On April 9th, John Blackburne of Orford Hall wrote to William Logan at Stenton in Germantown, Pennsylvania:

I have just made a piece of ground to contain more shrub flowers and in ye midst of it a bog for plants that grow in bogs. I am going to make a piece of rock work for plants yt grow in rocks, viz: sedum, stonecrop, lycopodiums, lychens, mosses, etc.; most likely your part of America affords many pretty sorts of these, which as we have not many of these, would be very acceptable.<sup>1</sup>



Logan's interest in native American trees, shrubs, and plants involved him in correspondence with botanists and nurserymen in England and America, including three generations of Blackburnes. In the eighteenth century Stenton, built in 1728, became a meeting place for important naturalists and plant collectors like John Bartram.<sup>2</sup>

In 1772 Thomas Pennant spent the first night of his second tour to Scotland at Orford Hall, near Warrington, Lancashire, visiting John Blackburne, then eighty-nine, and confirmed that Blackburne had indeed followed through on his plan. Pennant (1726-1798), botanist, zoologist, and antiquarian reported, "He . . . has the aquatic plants in their proper elements; the rock plants on artificial rocks; and you may be here betrayed into a bog by attempting to gather those of the morass."<sup>3</sup> Pennant also confirmed that Blackburne was following the ancient practice of studying the habitats and reconstructing them for plant collections. Like *la montagne* at Montpellier, the shrubbery, bog, rocks, and pond in Blackburne's garden were grouped together.

John Blackburne was in the horticultural vanguard of his day. Pennant compared him favourably to John Evelyn and his collection of hothouse plants to that of Kew. He claimed Blackburne, an ardent gardener and plant collector since early in his youth, had "a universal knowledge in the culture of plants . . . has the best fruit and the best kitchen garden: his collection of hardy exotics is exceedingly numerous."<sup>4</sup> Blackburne was primarily renowned for being the first to have hothouses and to have cultivated and ripened a pineapple north of the River Trent.<sup>5</sup>

Blackburne's rockwork, and bog and pond gardens would have been well known to many people, as a constant flow of visitors passed through the entrance gates to Orford Hall. John Blackburne was "in the habit of receiving many eminent naturalists,"<sup>6</sup> and Anne and John, Jr. apparently were as well. An unfounded rumour that Linnaeus himself had visited was probably based on the visit of two of his Swedish students.<sup>7</sup>

The Blackburne family correspondence with Logan continued for at least ten years. In the last existing letter from John Blackburne to Logan written in 1775,





**Figure 9.** Painting of Orford Hall (1854). Courtesy of the Warrington Library. [Original in Colour].

at the age of eighty-two years, Blackburne was still exchanging plants, roots, and seeds. John's daughter Anne greatly respected as a naturalist in her own right, and his grandson John, Jr., F.R.S., M.P. for Lancashire, also corresponded and traded plants with Logan.<sup>8</sup>

One of Blackburne's sons, Ashton, emigrated to America and supplied his sister Anne's museum with American specimens. On 29 June 1771 Anne wrote to Linnaeus:

Sir,

Having a Bro<sup>r</sup> who lives near New York in North America, who annually enriches my cabinet with the productions of that Country, if it wou'd be agreeable to you I wou'd send you a few Birds & insects, which I believe are not in your Sys. Nat.<sup>a</sup> & which he kill'd within 50 miles of that place."<sup>9</sup>



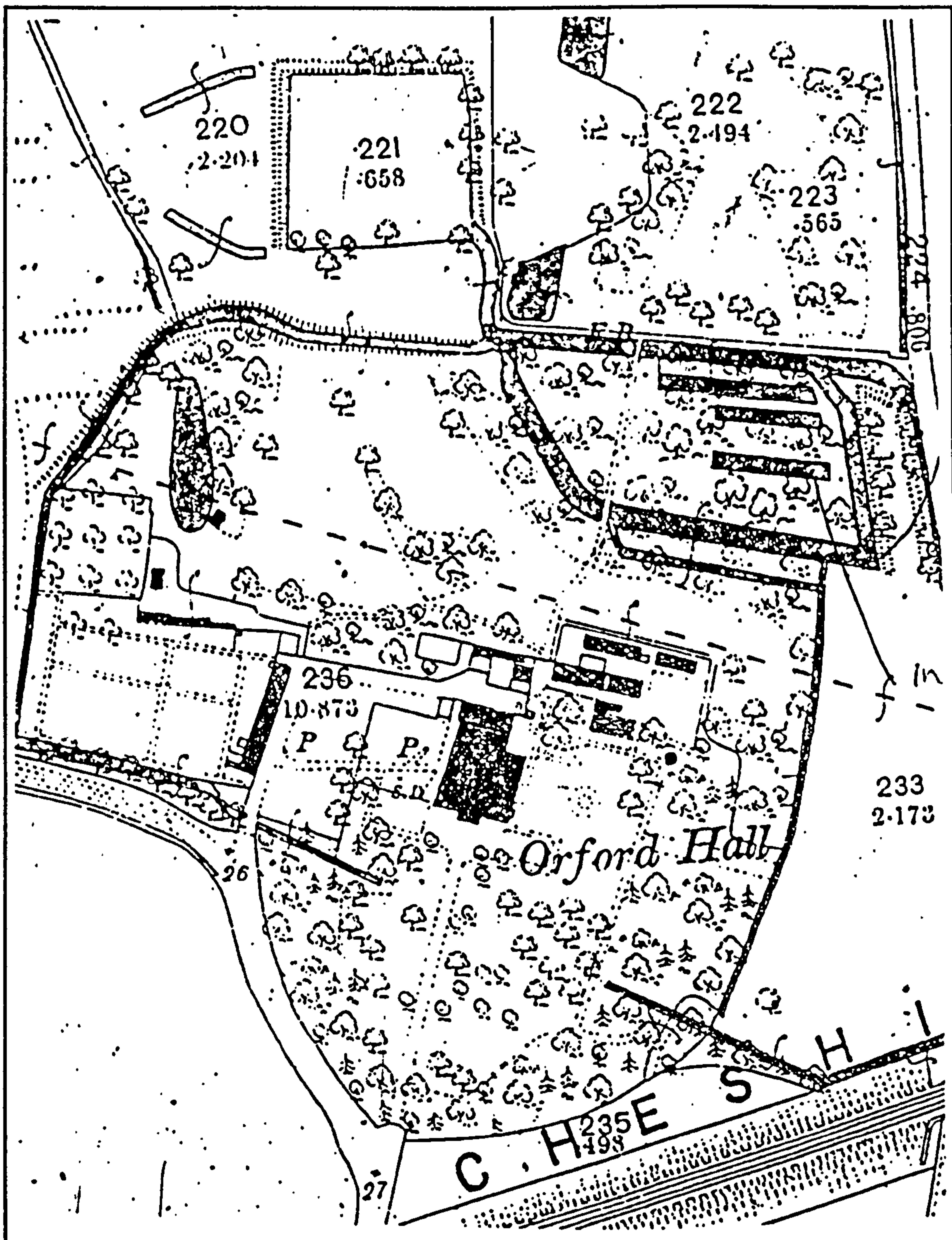


Figure 10. Orford Hall. Ordnance Survey, Lancashire, Sheet 109, 1<sup>st</sup> Series, 1893, 1-2500. Enlarged, not to scale.

In another letter written Oct. 14, 1771, Anne explained her difficulty in adopting Linnaeus' system of classification: "My father has one of the best collections of plants in the country, but at 73 years old, thought it too late to learn a new system



and therefore I had little help from him."<sup>10</sup>

Eight years later Blackburne's gardener Adam Neal published *A Catalogue of the Plants in the Garden of John Blackburne, Esq.*, arranged according to the Linnaean system. Listed, among hundreds of stove and greenhouse plants, trees, and shrubs, were many herbaceous perennials which could be considered candidates for the rock garden. These included, for example twenty-four campanulas, eighteen saxifrages, and fourteen sedums. Judging from the many American and acid-loving European shrubs (magnolias, kalmias, rhododendrons, and azaleas) in the catalogue, Blackburne's shrubbery was probably an American Garden.

On Blackburne's death in 1787 at the age of ninety-three,<sup>11</sup> Anne moved nearby to Fairfield, where she designed a garden arranged by scientific order, "which would have been a great means of facilitating the knowledge and study of botany"<sup>12</sup> if illness had not prevented her from completing it. John Jr. inherited Anne's museum, which became the Hale Museum, and is now the Warrington Museum.

Orford Hall was demolished just before World War II, and today the property is an over-used, poorly maintained public park from which every trace of the garden has been erased. A painting of the house made in 1854 shows the edge of a greenhouse (see figure 9). The rock garden, shrubbery, and bog might have been located near the oval pond shown to the upper left of figure 10. Perhaps near what is referred to as the "little wood behind . . . and a small stream and duck decoy" in *The Victoria History of Lancaster*.<sup>13</sup> The curious system of canals or drainage ditches that surround Orford Hall, also appear on the 1848-50 Ordnance Survey map, but their purpose has not been identified.<sup>14</sup>

About six years after John Blackburne created his rock garden, one was constructed at the Chelsea Physic Garden. Probably because Blackburne's garden was destroyed and forgotten, and the Chelsea rock garden continues to exist in a prominent position in a famous London garden, it has long been famous as the world's first. It is unique in having been maintained in some fashion as a rock garden for over two hundred years, but instead of being the first, it may have been



built to bring the Chelsea Physic Garden up to date. The Chelsea rock garden is mentioned frequently in garden histories, but the considerable amount of documentation available on its construction is rarely consulted, and the information used is generally inaccurate and incomplete.

### The 'Artificial Rock' at the Chelsea Physic Garden

On 17 August 1769 the administration of the Chelsea Physic Garden, owned by the Worshipful Company of Apothecaries, was restructured in an attempt to rescue the garden from the neglect into which it had fallen as its illustrious gardener, Philip Miller, sank into poor health. A committee was set up for the purpose of making a collection of the *Materia Medica* and making an inventory of all the plants in the Chelsea Physic Garden. This project continued through 1770. On 30 October 1770 the direction of the garden was placed under the care of one general committee, and a new minute book with longer reports and more extensive instructions was started.

At this time a member, Stanesby Alchorne made a catalogue of the books, pamphlets, and manuscripts in the library. Other projects proposed included building a new greenhouse with two stoves and a large room over the greenhouse for receiving books and preserving collections of dry plants, wharfing the area near the Thames, and making a proper place for water plants.<sup>15</sup> In December 1770 Philip Miller resigned. William Forsyth was hired for the post of gardener and took over on 6 February 1771.

According to the minute books, 1771 was a time of making repairs: clearing out overgrown trees and limbing up remaining trees in the 'wood and wilderness'; filling a pond, painting and repairing the watergate, building a well, and connecting a drain with the Thames. Plants were received from Kew, Syon House, and Mr. Gordon's Mile End Nursery, and the gardens of Drs. Pitcairn and Fothergill, and Mr. Lee. Joseph Banks and Dr. Solander donated a bag of seeds,<sup>16</sup> which perhaps included some from the South American alpine plants they collected at Terra del Feugo.

In 1768 Joseph Banks and Dr. Solander had set off with Captain Cook in the



Endeavour as part of an expedition in search of a new continent or large land mass in the southern hemisphere. At Terra del Fuego, they and four others, including two servants, made an excursion to the mountains to hunt for alpine plants, which Banks briefly discussed in his journal entry for 16 January 1769:

This [mountain] I in particular was infinitely eager to arrive at, expecting there to find the alpine plants of a country so curious. . . . Dr. Solander, Mr. Green, Mr. Monkhouse and myself advanced for the alp, which we reached almost immediately, and found according to expectation, plants which answered to those we had found before.<sup>17</sup>

Despite a terrible snowstorm in which Solander nearly died and the two servants perished, they collected one hundred and twenty-five plants. Banks wrote, "probably no botanist has ever enjoyed more pleasure in the contemplation of his favourite pursuit than did Dr. Solander and I among these plants."<sup>18</sup>

This trip also may have supplied some of the materials used in the construction of the artificial rock at Chelsea. *The Encyclopedia of Gardening* (1822) tells that "tuffa, corals, and madrespores brought from Otaheite [one of the destinations of that voyage] by Captain Cook, as ballast, now forms part of the rock work in the Chelsea garden."<sup>19</sup> Shells are shown in the 1924 photograph of the rock garden (see figure 11), but they are no longer in evidence.

At a meeting on 21 June 1771 the Physic Garden thanked Messrs. Aiton, Gordon, and Lee for gifts of plants. Among the plants listed in the minutes are several that are recommended for rockwork in the lists discussed in Chapter 5. These include "*Aquilegia canadensis*, *Asplenium ceterach*, *Geranium moschatum*, *Polypodium lonchitis* (*Polystichum lonchitis*) *Rubus arcticus*, *Teucrium montana*, *Sedum rupestre* (*Sedum anglicum*), and *Cucubalus Behen* (*Silene latifolia*)."<sup>20</sup> Other plants, which do not appear on the master list of rock and alpine plants in Chapter 5, but might have been cultivated on rockwork, include "*Antirrhinum repens* (*Linaria repens*), *Saxifraga umbrosa*, *Ruscus androgynus* (*Semele androgyna*), and perhaps two referred to as *Phlox saxifrage* and *Phlox sedum*."<sup>21</sup>

The arrival of more than a dozen species requiring specialized conditions



probably acted as a catalyst for the construction of the artificial rock at the Chelsea Physic Garden.

On 16th Sept. 1772, Alchorne reported:

He has purchased about 40 Tons of old Stones from the Tower of London which he laid into the garden, at his own expense, for the purpose of raising an Artificial Rock to cultivate plants which delight in such soil and begged this committee to accept them for the company's use--Agreed that this committee do accept the same; and return Mr. Alchorne thanks for his present.<sup>22</sup>

Alchorne (1727-1800) was a valuable member of the Company, and acted in a temporary capacity as Demonstrator of Plants from 1771 to 1772. Besides cataloguing the library, he presented the herbarium with collections of dried specimens, worked in the garden and greenhouse, and was involved with the inventory and labelling of the plants during the summer of 1772.

According to the minutes, the construction of the rockwork was discussed at a meeting held on 18 November 1772: "Agreed that the Brick steps on each side of the Tool house a nuisance to the garden; and they be forthwith removed in order to extend a piece of artificial rockwork from slope to slope." This decision fixed the location of the rock garden which was built the next year.

As the Minute Books are the original source of information on which all the variations of this often told story are founded, it would be best to let them tell the story as much in their own words as possible.

On 16 April 1773, Alchorne, the chief agitator for the building of an artificial rock and the original donor of stone from the Tower of London, reported that "Mr. Chandler had at his own expense laid into the Society's garden, a large quantity of flints and chalk and begged the Committees acceptance of the same for the purpose of creating a piece of artificial rock work." The gift was accepted with thanks. At this time also the committee agreed (1) on the ornamental value of a rock garden, (2) it would be useful for cultivating rock plants, and (3) that William Curtis (1746-1799), the Demonstrator of Plants (1772 to 1777) and a member, Uriah Bristow, would build it:



That a piece of artificial Rockwork will be a very ornamental addition to the Society's garden as also very useful for the cultivation of such plants as will only thrive in Stoney soils That Mr. Chandlers kind present, the lava given by J. Banks esq.r and the Stones presented last year by Mr. Alchorne, will be sufficient for creating such a rock. That the same therefore be immediately erected against the Tool house in the place where the cold frame formerly stood, under the direction of Mr. Curtis and Mr. Uriah Bristow who has kindly offered his assistance upon the occasion. And that the said gentlemen be empowered to expend any sum in this service not exceeding five pounds.

17 May 1773

Mr. Curtis reported that he had met Mr. Bristow several times at the garden, and that they had together proceeded in erecting the Rock proposed by the last Committee which was now in great forwardness. Agreed that the Thanks of this Committee be given to the above gentlemen for what they have already done, and that their farther assistance be desired to compleat the same.

14 June 1773

Mr. Curtis reported that he had met Mr. Bristow, at the garden several times since the last committee and had proceeded in building the Rock, according to the desire of the last committee and hoped soon to finish it.

16 August 1773

Mr. Curtis reported that Mr. Bristow and himself, had attended several times and compleated their work about the Artificial Rock, but they had been obliged to employ labourers since the last committee. . . . Agreed that the committee do very much approve their performance, that the thanks of this committee be give to Messrs Bristow and Curtis for the pains they have taken; and that the expense be charged to the Bricklayers Bill.

The construction of the Chelsea rock garden is a story of a successful collaboration between garden staff and administration. Although Curtis was in charge of construction, with Bristow's assistance, Alchorne, Chandler, and Banks supplied the stone at their own expense, and along with other members, planned, promoted, and supported the project.

Curtis' interest in alpine and rock plants did not end with the building of the Chelsea garden. He later developed his own botanical garden, which he moved



from London to Brompton in 1789. The ten-acre Brompton site contained an area for British rock plants and aquatics and a separate area for foreign alpine plants arranged according to the Linnaean system.<sup>23</sup> It is not known if Curtis grew his on rockwork, but as editor of *Botanical Magazine* (1789-1799), he often recommended alpines for pots culture, rarely mentioning rockwork.

Curtis made a six-week collecting tour in 1782, botanizing on the moors, fields, bogs, and rocks of Yorkshire. On the mountains around Settle and on Ingleton he found several saxifrages and sedums, and "in the enchanting woods of Hackfall, near Grewelthorpe, he found *Pyrola rotundifolia*, the common wintergreen."<sup>24</sup> In 1793 Curtis made a trip to St. Vincent's Rocks, but he mainly botanized in the North and the home counties.<sup>25</sup>

The Chelsea Physic Garden continued experiencing cyclic periods of neglect and rejuvenation. In 1815 a "Report on the Botanic Garden" in the Minute Books once again discussed its decline because of the illness and death of the gardener, "Most parts of the garden appear likewise to have been greatly neglected, and weeds suffered almost to overwhelm it." During the period of activity that followed, the old tool house was removed and the rock garden became freestanding. On 27 May 1847 a new gardener, Robert Fortune again reported to the Garden Committee:

From various causes, with which the Committee are doubtless acquainted, the garden has been allowed to get into a most ruinous condition. When I took charge of it last Autumn, I found it overrun with weeds, the Botanical arrangements in confusion, the exotic plants in the houses in very bad health, and generally in a most unfit state for the purpose for which it was designed.<sup>26</sup>

In May 1848, during Robert Fortune's brief term as gardener, a circular pool for aquatic plants was built into the top of the rock garden. After a year and a half at Chelsea, Fortune left on the second of his three plant collecting trips to Asia. The garden, described as being built against a tool shed perhaps as a bank, probably achieved its present oval shape in 1815, when the shed was removed, or when the





Figure 11. Rockwork at the Chelsea Physic Garden from F. D. Drewitt, *Romance of the Apothecaries' Garden at Chelsea* (1924).



Figure 12. Chelsea Physic Garden rock garden. Author's photo (1990).



pond was added in 1848. Although no illustrations of the rock garden prior to these developments are known, they must have altered the appearance and function of the rock garden drastically. The stone from the Tower of London (and probably the shells and corals from Otaheite) were removed by W. G. MacKenzie, the curator in the 1970s. As he said:

In my time I have removed much of the Tower of London Stone which was Portland and had weathered, as can be seen around the City, to almost pure white. This against the black basaltic lava was too much of a contrast to live with or serve as a background for any plant. I did, however, leave some as steps to the pond and in doing so kept the record straight.<sup>27</sup>

Comparisons between the photograph taken over sixty years ago and the garden today show a lowering of height and erosion of form (see figures 11 and 12).

In the mid-eighteenth century strong links existed between the Chelsea Physic Garden and the Royal Botanic Gardens at Kew, and Sir Joseph Banks (1743-1820) played important roles in the development of both gardens. In 1777 Banks became Scientific Advisor to King George the Third (1760-1820), and during his reign was virtually director of the royal gardens at Kew.

Some of the lava brought from Iceland was taken up the Thames on barges and used to build a raised bed for mosses in the garden at Kew. The lava, which was an important component of the rock garden at Chelsea, may have been used in rock gardens for its recognized moisture-holding properties. The French mineralogist, Faujas de Saint-Fond, visited Kew in 1784, twelve years later, and observed:

In fact, since this lava is full of cavities, fissures and rugosities, and moreover is spongy, soaking up water which is retained for long periods, the idea arose of using it for wide, slightly raised, borders surrounding the beds of a shady moss-garden which would be unique of its kind.<sup>28</sup>

In 1775 Thomas Blaikie, recently returned from collecting in the Alps,



remarked that Kew held the only alpine collection superior to that at Upton.<sup>29</sup> Despite references to its plant collections, very little is known about the early rock gardens at Kew, although in 1883 it was noted that "several small detached pieces [of rock garden] had existed previously."<sup>30</sup> Because of Bank's interest in alpine and rock plants, his involvement with the creation of the Chelsea rock garden, and his influence at Kew during that time, it is possible that a rock garden was created under his direction, a product of the same wave of interest that caused the creation of the Chelsea rock garden.

Banks, famous for his own expeditions, took an active interest in the journeys of others so engaged. On New Years' morning of 1776, he breakfasted with Thomas Blaikie, the day after his return from the Alps, to plan an expedition to the East Indies, but it was cancelled because of the American Revolution.<sup>31</sup>

### Thomas Blaikie: Plant Hunting in the Alps

In 1775, Thomas Blaikie (1750-1838) was employed jointly by Drs. John Fothergill and William Pitcairn to "undertake a journey to the Alps in Switzerland in search of rare and curious plants."<sup>32</sup> He left London on 13 April 1775 and explored the mountains for nearly nine months, usually alone and on foot. He faced avalanches, hunger, dishonest guides, falling rocks, and angry Catholics who burned down his hut in an attempt to kill him, and learned French, made friends, wore out many sets of travelling and mountaineering companions, and met famous men such as Voltaire, then living in exile near Geneva.

Blaikie often noted (in idiosyncratic spelling) the habitats and conditions in which he found plants growing:

About this place I found many curious plants viz the *Saxefraga bryoides* upon the rocks in flower, *Veronica Alpina* on moist places. . . , *Cardamine Celedefolia* upon the cold and moist places by the borders of the ice where hardly any other plant grows; it is now in flower and about an inch or an inch and a half high, beautiful.<sup>33</sup>

He was deeply affected by the grandeur of the Alpine scenery:



The country is more mountaineous and in several places most beautifull, cascades falling from those rocks which are of a prodegeous height and where the road serpents through this narrow opening formes at every step a differant Ladscape beyond all emagination; here there is a great many curious plants.<sup>34</sup>

Upon returning to Upton, Dr. Fothergill's estate in Essex in January 1776, Blaikie planted his alpines in pots and spent the summer caring for them, visiting the other half of the collection at Dr. Pitcairn's garden in Islington from time to time, reporting: "Some few of them lost but hardly any of the sorts as there was many of each sort; the seeds I likewise sowed in pots and put the whole into a frame under lights."<sup>35</sup> Blaikie's "lights" were probably glass-covered coldframes.

Dr. John Fothergill (1712-1780), a Quaker physician and central figure in botany, purchased Upton in 1762, and created a botanic garden there filled with rare plants sent from all over the world by his many correspondents, probably including his friend and fellow Quaker, William Logan.

The main feature of the garden at Upton was a suite of greenhouses about two hundred and sixty feet long containing more than thirty-four hundred species of exotic plants, and another three thousand grew outside. Blaikie viewed Dr. Fothergill's collection of alpine plants, with the addition of those from the Alps, as "almost superioure to any in England Kew excepted."<sup>36</sup> Sir Joseph Banks reported that "no other garden he had seen in England, whether royally supported or in private ownership, had at that time so many rare and valuable plants."<sup>37</sup>

In September 1776 the Comte de Lauragais employed Blaikie to lay out estates in Normandy, and he spent the rest of his life in France, where he was involved in the creation of the gardens at Monceau, Bagatelle, and le Petit Trianon. The massive rockworks and 'rocks' in these gardens were for the most part large masses or pillars of stone made by cementing other large rocks together. Their structures may have been inspired by the "frightful rocks" Blaikie saw on his journey through the Alps, but if they were planted at all, it was more likely with the ferns and mosses traditionally found on ruins, not alpine or rock plants.<sup>38</sup>



The massive rock at the Bagatelle is particularly noteworthy as it is very similar to Joseph Paxton's famous Wellington Rock at Chatsworth, which it predates by sixty years.

In 1778, three years after Blaikie's journey to the Alps, the Drs. Fothergill and Pitcairn sent Archibald Menzies (1754-1842) to the Scottish Highlands to collect the mountain flora nearer home.<sup>39</sup> British alpines are distributed from Snowdon in Wales to the most northern mountains in Scotland. "Their headquarters are in the Grampians; and the highest hills of Aberdeen, Forfar and Perth are the most prolific in the abundance and variety of species."<sup>40</sup> Soon after Menzie's collecting trip, several botanists, including the two Dickson brothers of Dickson's Nursery, John Mackay, Principal Gardener of the Edinburgh Botanical Garden (1800-1802), and George Don were actively exploring and collecting the flora of the Highlands for plants. Don's numerous trips to the Highlands, and his impressive, but controversial list of plant discoveries makes him the most notable of the Scottish plant hunters.

### George Don: Plant Hunting in Scotland

George Don (1764-1813) spent the last thirty years of his life searching the mountains of Scotland, mainly in Forfarshire and Aberdeenshire, for plants, finding an impressive number, although some of his findings could never be duplicated. From his nursery in Forfar, he offered living plants and dried botanical specimens for sale to gardeners and collectors across Great Britain.

After an apprenticeship to a clockmaker and working briefly as a journeyman in Glasgow, Don began gardening in Perthshire in 1779. At this time too he began making collecting trips into the hills. After five years spent gardening in Worcester, Doncaster, and London, Don returned to Scotland in 1784.

In 1797 Don took a 99-year lease on Doo Hillock (Dove Hill), and intensified his search of the mountains to expand his collection, which, according to Cox in *History of Gardening in Scotland* (1935), "for number, diversity and rarity of the hardy plants," was perhaps unsurpassed in Britain.<sup>41</sup> Apparently Don's nursery did not contain rockwork, but depended on a natural range of soil



types, as described by Dr. Patrick Neill in 1809:

The plants are of a hardy sort, Mr. Don not possessing either greenhouse or stove for the protection for such as are tender. It is in alpine plants and in hardy perennials, and annuals, that the Forfar garden excels. The garden is situated on a bank which slopes down to the lake of Forfar, not far from the town; and it fortunately includes a great variety of soils, from dry to peat bog. No place could be found more favourable for alpines and aquatics, which are in general found to be of rather difficult cultivation, but which flourish here as in their native habitats. . . . This season Mr Don has introduced several hundred species of hardy plants, most of which we are told have neverbefore been cultivated in Scotland.

George Don's garden was not known for its design and layout, but contained an extensive collection of hardy and alpine plants. The plants were "grown in a long border in botanical arrangement, apparently almost all unlabelled."<sup>42</sup> He received orders for his plants from across Britain, but the nursery was never a financial success, probably as a result of Don's long collecting trips into the hills.

In 1802 John Mackay, Principal Gardener at the Edinburgh Botanical Garden, died after a brilliant but brief career, and George Don was asked to succeed him. While in Edinburgh, Don attended all the lectures required for a medical degree (probably the reason for his lack of success at the Botanical Garden) with the intention of setting himself up as a country doctor. However, in 1807 upon returning home to his nursery, which had been left in his father's care, he again took up his old pastime of spending weeks in the hills, and was unavailable when needed as a doctor.

Although unsuccessful as a businessman, doctor, or principal gardener, George Don excelled as a botanist. He wrote several scholarly papers on systematics, and collected an herbarium that is now in the Botany Department at Oxford.<sup>43</sup>

Rock gardens began with a purely horticultural function, although they were probably meant to be aesthetically pleasing from the first. Backhouse requested "pretty sorts" of plants for his rockwork from Logan,<sup>44</sup> while the Chelsea Physic



garden was to be "a very ornamental addition to the Society's garden."<sup>45</sup>

## PART 2: ROCK GARDENS INFLUENCED BY ARTISTIC VALUES

Early in the nineteenth century, non-botanists began to see ornamental possibilities in the rock garden beyond the cultivation of plants. Rock gardens could bear statuary, caged or chained birds and small animals, and feature a wide range of objects with no pretense to naturalism, and no relationship to plant habitats. The debate between the ornamenters and those who thought the rock garden should be an naturalistic feature had begun by the 1830s, and can be illustrated by an example of an ornamented rock:

Composed chiefly of considerable pieces of the rock of Gibraltar, adapted to the purpose of a vivarium, at the present inhabited by an eagle, and several smaller rapacious birds. The structure is excavated in different parts for the seclusion of its tenants. . . . The whole covers an area of about 30 ft., and is upwards of 10 ft. in height, somewhat in the shape of a truncated cone, on the surface of which there is a spacious reservoir for fishes, aquatic plants, and oceanic birds, with a jet d'eau in the centre, ascending through an interesting specimen of rock much elevated above the level of the water, which is prevented from overflowing by a siphon, that conveys it through the mouth of an antique head of a gigantic reptile, nearly resembling that of an Ichthyosaurus. The interstices of the rock are verdant with alpine and appropriate indigenous plants; these, descending over the stones, embellish and augment the pleasing appearance of the fabric, which would prove a beautiful object in an arboretum, or at the termination of a vista. The largest caverns were for a long period the domiciles of an uncommonly fine vulture, a white-headed eagle, an ossifrage, and a magnificent auriculated owl, all natives of the most inhospitable regions. . . . Occupying an angle in the garden there is a pilgrim's cell, constructed in great measure of the jaws of a whale, having furniture manufactured of the bones of the same animal, and lighted by a circular stained glass window.<sup>46</sup>

What at first seems like a confusing collection of features on the rock, represents a wide range of natural science subjects and contains references to pre-history and religion. Botany, in the "alpine and appropriate indigenous plants" and aquatic plants in the reservoir, was merely one of a number of interests. Also



included were (1) geological specimens: pieces of the Rock of Gibraltar and an interesting rock specimen through which fountain spouted; (2) birds: an eagle, ossifrage, an owl, and oceanic birds; (3) fishes; (4) prehistory: the head of a gigantic reptile resembling an Ichthyosaurus; and (5) theology: the pilgrim's cell in the bones of a whale could represent the story of Jonah and the whale, and stained glass. The owner's suggested location for it as a focal point in a vista harkens back to Batty Langley's 1728 recommendations (see "Artificial Rocks" on the next section).

The opposing argument for was for artistic naturalism and a botanical focus. An article, published in 1833, came from Switzerland seemingly as a direct response. Robert Mallet, on a continental tour, was inspired by the alpine scenery and flora, to write on "rockworks; a branch of garden craft well worth attention, and very often blotched."<sup>47</sup> While recommending the characteristics of the surrounding landscape be followed, Mallet warned that:

The scene should suit the rockwork, which should be artificial chiefly in the suppression of the appearance of art. But be it ever remembered that the common style of making rockworks, piling stones into cones, pyramids, arches, &c., mixing them with fragments of broken statuary or architecture, sea shells, corals, mirrors, singing-bird cages, water organs, &c., is barbarous and absurd. . . .

I cannot approve of chained eagles, sea gulls, land tortoises, porcupines &c., pets not uncommonly found in rockworks.<sup>48</sup>

General collections embracing several natural science subjects can be traced back to the early natural scientists, for example Gesner and Turner, who studied animals, birds, and fish concurrently with botany, and Borel, who wrote on plants, minerals, and animals. The idea of ornamenting rockwork with objects such as statuary, fountains, and mirrors, perhaps dates to the classical tradition, which employed rustic rockwork to support statuary and as bases for fountains. As the horticultural use of rockwork developed in Great Britain, it is possible that the classical tradition of ornamenting rustic rockwork was seen as suitable for the rock garden.



### Rustic Rockwork and Artificial Rocks

By the time botanists developed the idea of growing alpine and rock plants on it, ornamental rockwork had been used as features in gardens for centuries. Although no evidence has been found to directly link the rock garden with rustic rockwork of the sixteenth and seventeenth centuries in Italy and France, similarities in their structures, and the terminology used to describe them, strongly suggest a connection. In the presence of water, classical rustic rockwork often acquired a patina of mosses, ferns, and wild plants,<sup>49</sup> but rock gardens were built to be planted with alpine and rock plants, which frequently included mosses, ferns, but as part of the plant collection, or planting design.

The rock garden and the rococo garden, with its rocks, pebblework, and grottoes, also share materials and terminology. The rococo garden stems from the classical tradition. In France, *Rocailleurs* created the pebblework and shellwork of rococo gardens, said to date from the 1720s.<sup>50</sup> In the late nineteenth century, the French craftsmen who built rock gardens were also called *Rocailleurs*.<sup>51</sup> Rock gardens are not generally found in association with rococo gardens. However, the acceptance of rocky structures in the garden might have been assisted by the classical tradition of rockwork in the garden, and possibly helped both rococo and rock gardens gain popularity.

In the sixteenth and seventeenth centuries, mounts resembling rugged heaps of stone and earth were sometimes planted naturalistically in gardens. Such a mount, the Rocher de l'Hermitage in Le Lydieu, a retreat in the park at Gaillon, was probably built in the 1560s. In *Princely Gardens* (1986), Kenneth Woodbridge referred to them as "artificial rocks," and suggested the French built them to express symbolism and allegorical associations, mentioning that "the most frequent reference was to Mount Parnassus, with Apollo and the muses."<sup>52</sup> These mounts did not bear much resemblance to *la montagne* at Montpellier, which was a terraced structure that formed a central valley. The garden mounts generally served as features in gardens and provided views of the garden or surrounding countryside. Such a mount was built in the garden of New College, Oxford University in 1529.<sup>53</sup>



By the early eighteenth century, rocky features were accepted in the English landscape, as may be seen in Batty Langley's *New Principles of Gardening* (1728), which recommends "Mounts, Aviaries, Grotto's, Cascades, Rocks, Ruins, Niches, or Ampitheatres," as features to terminate walks.<sup>54</sup> A poem, he used to illustrate the idea, suggests sources of inspiration as the Alps and the wilderness of North America:

Besides the Fountains which to Art we owe,  
That Falls of Water also can bestow,  
Such, as on rugged Jura we descry,  
On Rocks, and on the Alps which touch the Sky  
Where from the steep Precipices it descends,  
And where America itself extends. . . .<sup>55</sup>

Horace Walpole criticised Girardin's *De la Composition des Paysages* (1777) for the promotion of classical and naturalistic features to ornament gardens, objecting in particular to the recreation of model mountains on a level lawn:

"Mon. Girardin, being a rigid classic, will tolerate nothing but Grecian temples and domes. . . .

His receipt for making rocks in your garden is not less admirable: 'Take a mountain, break it into pieces with a hammer, number the fragments and observe their antecedent positions: place them in their original order, cover the junctures with mould: plant ivy and grass and weeds, which will hide the fractures, and so you may have a cart-load of Snowdon or Penmenmaur in the middle of your bowling-green, and no soul will suspect that it did not grow there.'<sup>56</sup>

Girardin's eclectic acceptance of both classicism and naturalistic features in the landscape was predated at Blair Castle in Perthshire. There the classical statues were used to decorate a reproduction of a natural rock. The artificial rock was constructed in 1754 and removed in 1762, and held (though perhaps at different times) statues of the four seasons and an eagle.<sup>57</sup>

In 1776 Richard Graves poked gentle fun at a small garden in which a collection of garden features had been assembled. An artificial rock was a part of



the garden melange:

Curio, ambitious of a taste  
 Having his little garden grac'd  
 With every object for the eye  
 Which Art or Fancy could supply:  
 To crown the whole, at length had made,  
 Without water, a cascade.  
 Behind his artificial rock,  
 A cistern plac'd, he turn'd a cock,  
 And lo! the little Naiads spout  
 And Sputter--till the tub ran out.<sup>58</sup>

Richard Graves, *The Cascade* (1776).

It is possible that Graves' artificial rock was the type of naturalistic feature built at Blair Castle, or by 1776 it may have been a rock garden planted with rock plants. From descriptions of rocks by the architect William Chambers, 1772 has emerged as a time by when artificial rocks had become accepted by non-botanists, horticulturalists and those concerned primarily with design as habitations for alpine and rock plants.

### Sir William Chambers' Descriptions of Rocks

Chambers' descriptions of the planting of rocks between 1757 and 1772 show changes in plantings: (1) in 1757, he first described an artificial rock as planted with wild plants as ruins would have been; (2) in 1763, his description of the planting on the banks of the Ruined Arch at Kew repeated this; but (3) his Chinese rock in *Dissertation on Oriental Gardens* (1772) is planted with rock plants.

As an employee of the Swedish East India Company, William Chambers (1723-1796) visited Canton, China in 1745 and 1748. His reputation as a sinologist was created by observations he made during these visits, and gave him a basis on which to begin his architectural career. In *Designs for Chinese Buildings* (1757), Chambers described Chinese gardens and discussed an "artificial rock":



In compositions of this kind the Chinese surpass all other nations. There making them is a distinct profession; and there are . . . . numbers of artificers constantly employed in this business. They cover them, in different places, with trees, shrubs, briars, and moss; placing on their tops little temples, or other buildings, to which you ascend by rugged and irregular steps cut in the rock.<sup>59</sup>

In this case the Artificial Rock was planted to create a romantic atmosphere of wildness, not for horticultural interest, or the botanical value of the plants.

By 1763 Chambers had designed the Ruined Arch at Kew (still a prominent feature in the Royal Botanical Gardens landscape) to represent an ancient Roman road in the form of a ruined triumphal arch, but it also served as an over-pass for cattle and sheep from Kew Road to the pastures within the hahas.<sup>60</sup> The sides of the Arch have grown up to a dense tangle of shrubs, but Chambers' *The Buildings of Kew* show low plants mingling with partially submerged rocks covered the area between the base of the arch and the top of the bank (see figure 13). Judging only by the illustration, it might be thought to be an early rock garden, but Chamber's description of the planting as those of a ruin with "briars and other wild plants, and topped with thickets,"<sup>61</sup> show that it was not.

Chambers continued his discussion of Chinese gardens in *Dissertation on Oriental Gardens* (1772). Although his description of the temple on the rock and steps cut in the stone was the same as it had been thirteen years before, there is a significant change in the plants listed from both of his earlier descriptions of artificial rocks. The plants on the rock now include, not plants for a ruin, or even Chinese plants, but some that might be found in a British rock garden:

All kinds of grass, creepers and shrubs which thrive on rocks, such as moss, ground-ivy, fern, stone-crop, common house-leek, and various sorts of the sedum, crane's-bill, dwarf box, rock roses and broom; with some trees rooted into the crevices.<sup>62</sup>

Chambers reference to rock plants as those which "thrive on rocks," is very similar to John Blackburne's "plants yt grow in rocks" in 1767,<sup>63</sup> and predates the



Chelsea Physic Garden's "plants as will only thrive in stoney [sic] soils" in 1773.<sup>64</sup> The plants he listed, with the exception of dwarf box and trees, appear on the lists of recommended plants in Chapter 5.

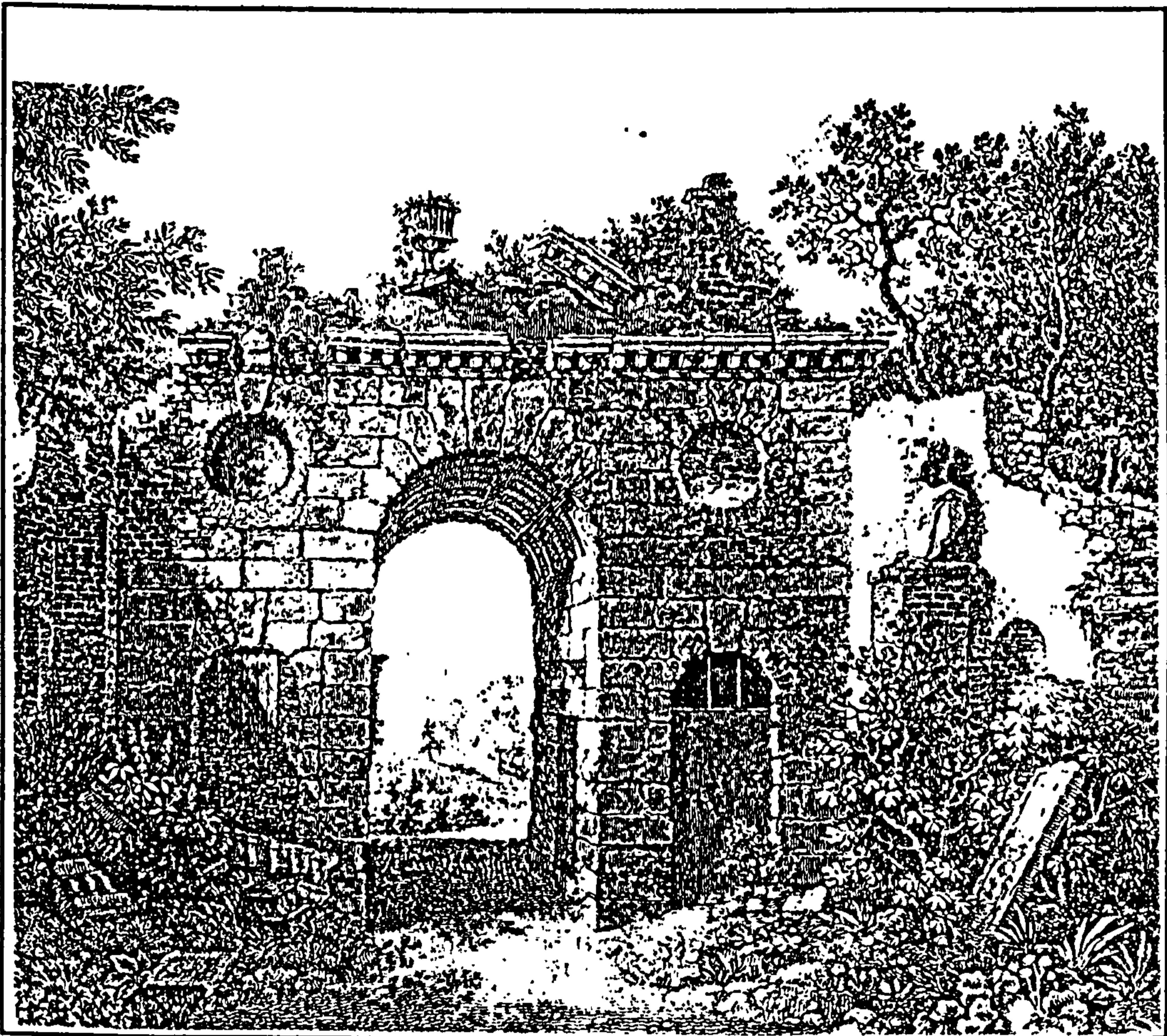


Figure 13. The Ruined Arch from Chambers's *Buildings of Kew* (1763).

Because of Chambers' obvious exaggerations, inventions, and inaccuracies, *Dissertation on Oriental Gardens* was largely discounted in England as a record of Chinese gardens.

The Chinese disguise was a familiar literary device which he presumed would be accepted and understood. It might well have been, had he not visited China. The public, informed of his travels, regarded him as



an authority, and so mistook the mask, and the jokes for reality which they obviously thought ridiculous.<sup>65</sup>

Later Chambers explained, " 'for the end of all I have said, was rather as an artist, to set before you a new style of Gardening; than as a Traveller, to relate what I have seen.'"<sup>66</sup>

Despite the controversy surrounding Chambers' *Dissertation* and the fact that the plants within had never "appeared on Chinese paper,"<sup>67</sup> Chamber's writings on Chinese gardens, architecture, and furniture are considered by some to be "the most serious and objective studies of Chinese style published in England."<sup>68</sup> Chinoiserie, with its associated rocks and wild scenery, was a popular fashion in England in the mid- and late nineteenth century, and Chamber's descriptions of Chinese rocks could have reinforced the theory that the rock garden originated in China, whether or not it was his intension, but no evidence has been found that clarifies this connection.

The year after *Dissertation on Oriental Gardens* was published, Abercombie referred to rockwork in his *Universal Gardener and Botanist*: "Likewise in some parts is exhibited artificial rock-work, sometimes contiguous to some grotto, fountain, rural piece of water, &c. and planted with a variety of saxatile plants, or such as grow naturally on rocks and mountains."<sup>69</sup>

As interest in the natural sciences, particularly in botany, blossomed in the second half of the eighteenth century, it became as popular to be a botanist as it was to be one's own landscape gardener, and often the pursuits overlapped and merged. Lady Ilchester greatly preferred her gardens and country houses to London,<sup>70</sup> and her creation of the sub-tropical garden now known as Abbotsbury Garden is evidence of her interest in botany. It is possible that her interest in botany and in the design of gardens converged at Abbotsbury Castle in 1780.

### The Lost Garden at Abbotsbury Castle

Lady Rockley (1865-1941) sent a paper to a joint conference of the Royal Horticultural Society and the Alpine Garden Society in London (1936). In



"Rock-gardening of Different Periods in Different Countries," written the year Abbotsbury Castle was destroyed, she mentioned the garden as the first to embody the ideal of the rock garden:

The utilization of rocks on the seashore near Abbotsbury, in Dorsetshire, seems to be more like a forerunner of the modern idea of rock gardens than most of the stone compilations of the 'landscape' period. Lady Susan O'Brien, daughter of the first Lady Ilchester, probably planted this rock garden sloping down to the sea, with two stone summer-houses for shelter overlooking it, about 1780.<sup>71</sup>

Lady Rockley may have visited the garden and used her own observations as a basis for her statement, but most of the information on the garden at Abbotsbury Castle was apparently based on Lady Susan O'Brien's journals and letters, once held at Melbury House, now in the British Library Manuscripts collection.

Apparently from the first there was a misunderstanding of these. Gloag says in *A Book on English Gardens* (1906):

Susan Fox-Strangeways,--whose romantic marriage with Mr. O'Brien, the actor, was the talk of the town and recorded by Walpole and all the gossips of the day--mentions in her diary . . . having assisted at her mother's removal into the new house in 1780, and planned the Rock Gardens in front of it, sloping down to the sea, with stone arbours at each of the four corners to give shelter from whichever way the wind might blow.<sup>72</sup>

It is possible that Gloag's reference is somewhere in Lady Susan's densely written and nearly illegible journals, but also in the collection is a clearly written letter from her mother: "We talk of going soon for a day or so to Abbotsbury. My house there is finished and pleasant and I have contrived a flower garden at the bottom of the hill. Also an evergreen drive around the back and the fields in front of the house."<sup>73</sup> This makes it more likely that Lady Ilchester designed her own garden.<sup>74</sup>

Remains of the walled garden, now three-quarters covered by rubbish, fill the area between the site of the Castle and the steep bank that drops away to Chesil



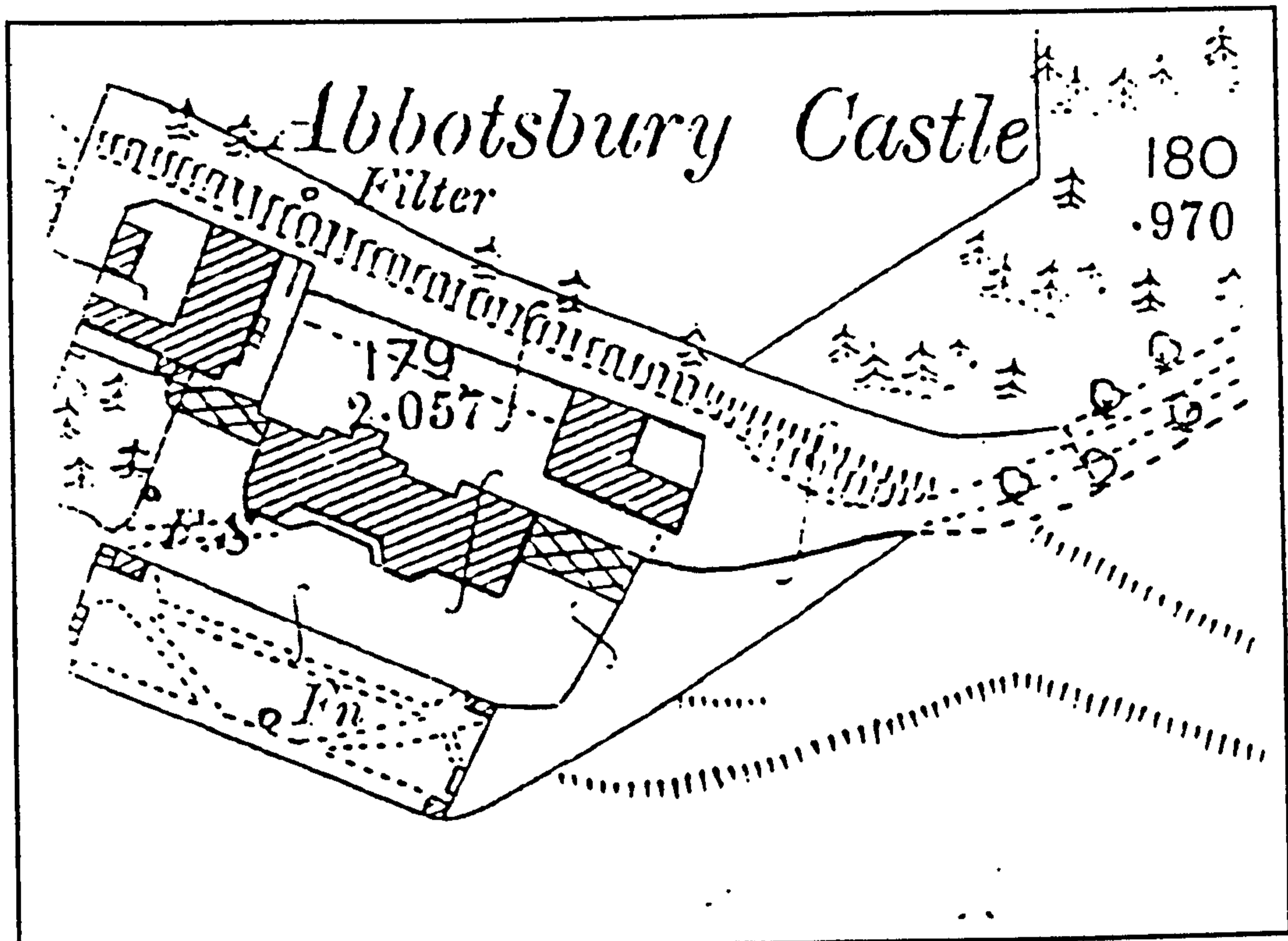


Figure 14. Abbotsbury Castle. Ordnance Survey, Dorset, Sheet 46, 2<sup>nd</sup> Series 1902, 1-2500. Enlarged, not to scale.

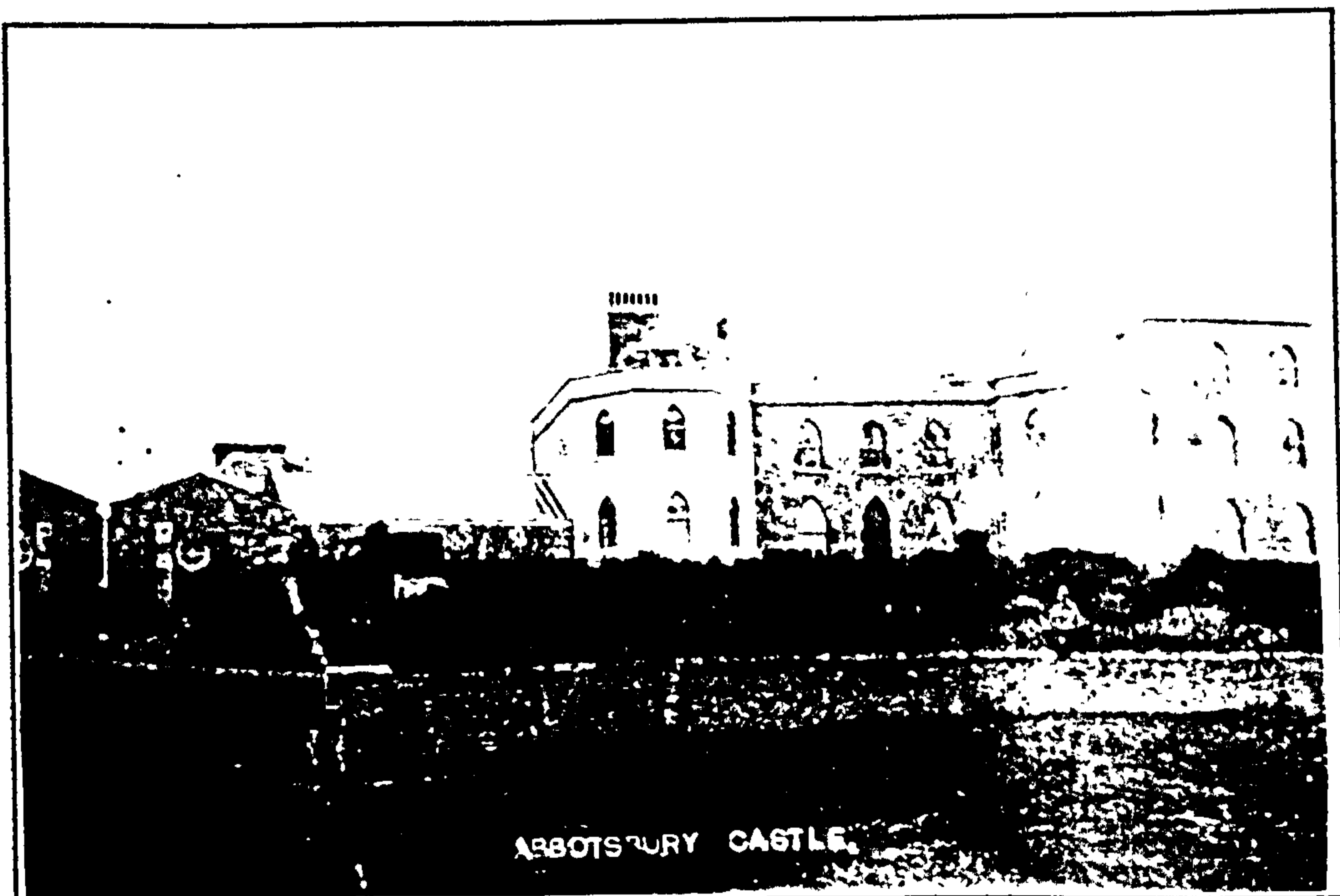


Figure 15. A postcard of Abbotsbury Castle before 1936, showing the walled garden and summerhouses. Courtesy of Abbotsbury Sub-tropical Garden.



Beach. It was laid out as a long rectangle enclosed by high walls and bisected by a wall with an arched opening in it. The garden contained, not four, but two small gothic summerhouses backed against the south-facing wall and overlooking the garden and the sea. Photographs show the arbours, and a charming walled flower garden. An article in *Gardeners' Chronicle* (1899) described passing through an avenue of tamarisk to enter "a recently-formed garden near the mansion, where Agaves and Aloes by the score are planted out in rockwork, with Mesembryanthemum in almost every conceivable variety amongst them."<sup>75</sup> The garden was called "the new rockery" which suggests an old rockery.

In 1906, Gloag said, "The rock garden she made, the Fig trees she planted, and the Arbours she built are there unchanged, and have an eighteenth-century air about them, forming a veritable 'souvenir heureux' of a very charming woman."<sup>76</sup> He listed the plants in the garden as:

Seventy or eighty varieties of Mesembryanthemum (commonly known as Ice Plant) run wild over the stones; and Orange Marigolds (single and double), Yellow Auricula, Calceolaria, and Aubretia bloom all winter through, and the early kind of Polyanthus Narcissi can generally be picked here before Christmas, and from February onwards they flower profusely.<sup>77</sup>

These could be plantings from the "new rock garden" described in 1899.

The Gardens Inventory Site Recommendation Form for the nearby Abbotsbury Sub-Tropical Gardens attributes its success with tender plants to its sheltered position and the climate, which is "unique in Great Britain having an almost frost-free winter in most years and rainfall which is much lower than other mild gardens such as Cornwall or in W. Scotland."<sup>78</sup>

An article in *Gardeners' Chronicle* in 1908 reported the rock garden had been "modernized," and in 1913 disaster truly struck. Abbotsbury Castle burned and was rebuilt using beach sand in the mortar,<sup>79</sup> and in 1936 it was demolished. During World War II the site of the castle became a base for American troops. The ruins were levelled and the garden was filled in with earth and rubbish.



The tamarisk hedge still borders the farm lane leading to the site of the Castle, where the garden walls remain relatively intact, and within them, in the small area not covered by fill, outlines of walks and traces of garden features can be traced. Most noticeable is the abundance and variety of naturalised garden plants in the fill and the fields: fritillaria, verbascum, geraniums, myosotis, iris, and salvia, and the fig trees pushing up through the rubble in the shelter of the walls.

Another important example of a rock garden was built in Wales for a young girl. Mariamne's garden, high on the side of a hill overlooking the Ystwyth River and its valley, merged Picturesque values with the cultivation of botanical collections. The site was inspired by the Picturesque, but the walled garden hidden in the midst of a thicket of shrubs contained botanical collections and the furnishings were Romantic.

### Mariamne's Garden

In 1783 Colonel Thomas Johnes (1748-1816) began to develop his Welsh estate, Hafod, which included Devil's Bridge, near Aberystwyth, to his ideals of the Picturesque and gracious living. This involved extensive tree planting, and the creation of walks ornamented with bridges and other features throughout the estate. These were all aimed to embellish and highlight the natural beauty of Hafod, a place of "the sweetest interchange of hill and valley, rivers, woods, and plains, and falls with forest crown'd, rocks, dens, and caves."<sup>80</sup>

To students of the Picturesque, the wilder aspects of nature were appreciated, especially as they might resemble a painting,<sup>81</sup> and as they became designed features, the rustic nature of the rock garden was ascribed with qualities of the Picturesque. A fictional Spaniard in Southey's *Letters from England* (1807) described how the search for the Picturesque, outdoor activities, and the collection of natural science specimens, all important aspects of rock gardening, had become popular pastimes:



Within the last thirty years a taste for the picturesque has sprung up;-- and a course of summer travelling is now looked upon as essential as ever a course of spring physic was in old times. While one of the flocks of fashion migrates to the sea-coast, another flies off to the mountains of Wales, to the lakes in the northern provinces, or to Scotland; some to mineralize, some to botanize, some to take views of the country,--all to study the picturesque, a new science for which a language has been formed, and for which the English have discovered a new sense in themselves, which assuredly was not possessed by their fathers.<sup>82</sup>

The Johnes family was horticulturally inclined: Thomas was involved with agricultural pursuits, and his wife Jane, a great lover of plants and flowers, had a conservatory and a walled flower and shrub garden of about two acres on a level area near the river Ystwyth. In 1795 Thomas Johnes asked the respected Scottish agriculturalist Dr. James Anderson (1739-1808), who was at Hafod to advise Johnes on his agricultural ventures, to chose a location, and to design and lay out a garden for his daughter Mariamne (1784-1811). This was to be her own garden where she could house and tend her collection of plants.

The result was a unique garden, alpine in position and plants:

A narrow craggy path . . . conducts us to Miss Johnes' flower-garden, stuck among the most precipitous rocks, and commanding more beautiful views perhaps than any yet mentioned. . . . The tufted tops of the woods are spread out like a carpet beneath it; the river, the vale to the south, the towering hills, in short the principle beauties of the place, are here combined in the happiest manner. Behind this favoured abode is an undulating meadow of the sweetest verdure, watered by a pure alpine rill, and bordered with natural groves of birch, a kind of tree particularly beautiful and luxuriant at Hafod.<sup>83</sup>

Anderson divided the garden into upper and lower sections. The lower, where an obelisk to the memory of Francis, the fifth Duke of Bedford, was placed in 1805, was a heather garden,<sup>84</sup> while the upper garden, "wonderfully pretty,"<sup>85</sup> walled, gated, and locked, sheltered and protected Mariamne's collections of plants.<sup>86</sup> Malkin's description of 1803 specifically mentioned Mariamne's collection of



alpine plants:

In the centre of the thicket is planted a flower garden, so carefully sheltered and judiciously disposed, as to realise a paradise in the wilderness. The taste in which it is laid out is not so studiously ornamental as that of the garden below [Jane Johnes' garden]: it aims at a coincidence with the peculiarities of its situation, and exhibits in a nursed state many of the most curious plants, which are the natural growth of high exposures in foreign climates.<sup>87</sup>

Thomas and Mariamne Johnes' letters to Sir James Smith, the founder of the Linnean Society, chronicle the development of Mariamne's garden. Mariamne wrote, "Dr. Anderson has been so good as to fix on a very pretty spot for a flower garden for me--which you and I never visited--when it is formed, I shall be very impatient for your company as I promise myself great pleasure in working with you in my little garden."<sup>88</sup> Anderson was still at Hafod on 11 January 1796, and Thomas Johnes reported:

Dr. Anderson has been most amazingly active here, and has done more than I can thank him for-- Among others, he has made, or rather begun to make the most singular garden for my little girl I have ever saw. . . it will equally surprize you as it has me.<sup>89</sup>

Mariamne's great enthusiasm for life encompassed the worlds of art, music, and the natural sciences, including the insects, lichen, and plants she collected avidly and drew. In March of 1796 she reported finding a maidenhair fern to Smith, and offered to send him a specimen "if it is the one that is so curious."<sup>90</sup> Smith was impressed by Mariamne's intelligence, talents, and personality, all the more because she was practically alone in her interests. As her proud father said, "I only shine in Botany but like the Moon by borrowed light, or rather to please her, who is dearer to me than the light."<sup>91</sup> Smith explained:

She has made out every plant within her reach, that is in *Flora Londinensis*, or *English Botany*, and has the latter almost by heart. She



longs to Botanize in Chalk country. She is almost equally fond of insects, and her whole delight is to walk with me about in the woods, searching for mosses and insects, patiently attending to everything I say, and telling me all her observations, doubts, queries, etc. This is the more extraordinary, as she has had no companion till now . . . it is a most remarkable instance of early ardour.<sup>92</sup>

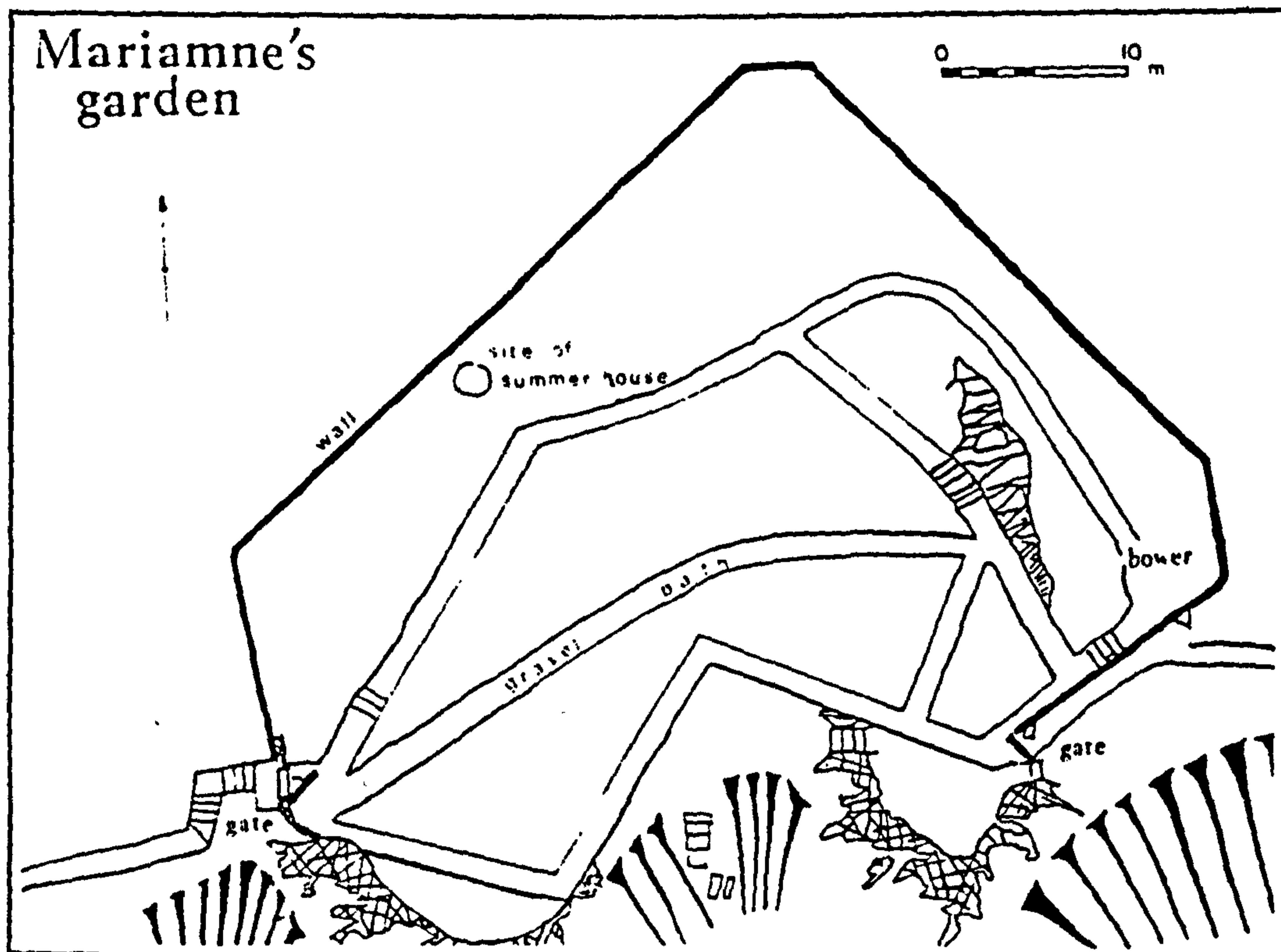


Figure 16. Plan of Mariamne's Garden. Courtesy of Briggs and Kirkham (1990).

Mariamne's pleasure in her garden and plant and insect collecting treks came to a halt in July 1796 with the development of a long-lasting spinal disease. Although she survived, her back was deformed and she was an invalid for several years. By 1802 eighteen-year-old Mariamne was back in her garden, which had been maintained during her absence.

In 1803 Mariamne's garden, was sited in a Picturesque location, but all the features were aimed to produce a Romantic scene. The moss house and a vase by



the sculptor Thomas Banks inscribed with "Epitaph on a Robin Red-breast," evoked a sense of melancholy, while the moss house lent the scene a hermit-like air. In 1803, Benjamin Malkin reported that the effect of these qualities produced a contemplative character:

The moss-house gives a hermit-like air to the retirement; and the vase, which I left my friend Mr. Banks in the act of placing there, inscribed with a few lines from the muse of Mr. Rogers, to commemorate a domestic circumstance, will finish most happily the contemplative character of the scene.<sup>93</sup>

The unhappy story of the family fortune, always in a disastrous state, suffered a few more tragic twists. In March 1807 Hafod burned to the ground along with most of its priceless treasures. The Johnes spent most of the next four years in London, while Hafod was rebuilt on a grand scale. While in London, Mariamne was taken ill and died just before her twenty-seventh birthday. Her devastated parents returned to the newly rebuilt Hafod to bury her, and then divided their time between a new house in Devon and Hafod for five years until Thomas Johnes' death. Jane buried Thomas at Hafod with Mariamne and then returned to Devon.

Although she never returned to Hafod, Jane probably continued to pay for the maintenance of Mariamne's garden until her own death in 1834.<sup>94</sup> Figure 16 shows Mariamne's garden and some features, including the paths and moss house at the top. In 1940 an article in *Architectural Review* described the garden as:

So overgrown with rank laurels that it is almost impenetrable, but it shrouds an urn on a pedestal, with the figure of a weeping woman in relief, by Thomas Banks. It is called "The Robin's Grave," and the pedestal bears some verses by Rogers.<sup>95</sup>

The house was destroyed in the 1950s, and Jane and Mariamne's gardens have been virtually destroyed through a combination of tree planting, road building, and careless "restoration" carried out by the owners, the Forestry



Commission. In the case of Mariamne's garden "restoration" has been a brutal affair, itself an act of destruction. The overgrown shrubs were killed, shrub and tree stumps burned, and the site of the moss house was disturbed in adding woodchip and pole paths. The original paths may still be traced by the quartz chips that paved her walks and steps cut into a steep bank now hang over a precipice, but the space, once a garden filled with the green of trees, shrubs, ferns and mosses, and occupied by flowers, insects, and briefly a happy child, is now brown and barren, devoid even of weeds.

In the late eighteenth century, it became acceptable, if not fashionable, for women to botanize and garden. Caroline Powys commented on Lady Jersey's hobby: "As her Ladyship is, according to the present taste, a botanist she has a pretty flower-garden going out of the library."<sup>96</sup> Lady Ilchester and Mariamne were among the earliest rock gardeners, and were followed by many more women who formed collections of alpines and rock plants and developed rock gardens.

Perhaps the most notable was Lady Broughton who, over a period of eight years in the 1820s, created an extensive model of a region of the Swiss Alps in her garden at Hoole House (page 126, *Replica Gardens*). The thirty-foot-high peaks of rockwork provided niches for what Loudon considered one of the best alpine collections in England.

Hoole House was perhaps the earliest rock garden to be documented in the *Gardener's Magazine*, of which John Claudius Loudon was editor. The next year, Loudon published a similarly thorough article on Redleaf, which is still the best source of information on this garden. From the first edition of his *Encyclopedia of Gardening* in 1822, Loudon was responsible for much of the early information on rock gardens. The *Gardener's Magazine* articles on Hoole House and Redleaf in the late 1830s mark the beginning of a wealth of information on rock gardens.

From the descriptions of Hoole House and Redleaf it is apparent that rock gardens in the early nineteenth century took a wide variety of forms from replicating a range of mountains to the excavation and amplification of existing rock outcroppings. At times it is difficult to differentiate between the use of rock features and rock for structural uses from rock gardens that use rock for the



cultivation and display of alpine and rock plants. Such gardens might be considered hybrids, using rocks for a number of purposes, and blending features and plants to create gardens that are hard to define. Redleaf, a unique garden that combined rock features and rock plants and selected non-rock plants, was designed by its owner to emphasize the rocky nature of his property.

### The Rocky Lawn at Redleaf and the use of Rock at Biddulph

Loudon considered Redleaf's Rocky Lawn as "an excellent example of improving a country naturally rocky."<sup>97</sup> In 1839 the main features of the landscape at Redleaf were then, as they are today, a large kitchen garden, a Dutch flower garden, and "an anomalous description of flower-garden, which may be called the rock-garden." Loudon saw this as the most important feature of the whole garden, and thought it to be the only one of its kind in England.<sup>98</sup>

The rock garden, visible from the central bay window of the house, spread out over quite a large area. The summerhouse was "placed on a ledge of rock, which before the garden was made, formed one side of a stone quarry; hence immediately beneath this summer-house there is a very considerable hollow. The rest of the flower-garden has an undulating surface, and the beds are chiefly oval or circular." Beds were raised by large blocks of stone, which formed "an irregular rocky margin to each bed."<sup>99</sup>

The *Gardener's Magazine* article listed the reasons for the Rocky Lawn's success as because (1) the site was naturally rocky, (2) a slope allowed excavation, (3) the flower garden was hidden from the house while being close to it, and (4) it was in harmony with the other features:

In the first place, a slight scar, or protruding rock, which appeared above the surface before any of the improvements were commenced, indicated that the same rock was abundant beneath the surface; secondly, the general slope of the grounds admitted of making a large excavation at this scar, and yet preserving the surface perfectly dry; thirdly, this excavation enabled Mr. Wells to get an extensive flower-garden near the house, which at the same time, should not be seen from it; and, fourthly, this lawn was in harmony with the rocky bank in the



English garden, and with the ledge or causeway in the rocky valley.<sup>100</sup>

Redleaf has been subdivided, the rockwork is largely hidden under masses of overgrown rhododendrons, and many of the remaining original trees were felled by the recent hurricanes, but the basic design and major features are still intact.<sup>101</sup>

Early in his career the painter, Edward Cooke, "spent ten days painting, fishing and enjoying the garden and surrounding countryside,"<sup>102</sup> Cooke, whose drawings illustrated Loudon's *Encyclopedia of Plants* and Loddiges' *Botanical Cabinet*,<sup>103</sup> later employed William Wells' techniques in uncovering, building onto, and rearranging the natural stone ledge at his own house, Glen Andred near Tonbridge.<sup>104</sup>



Figure 17. The Rocky Lawn at Redleaf. *Gardener's Magazine* (1839).

In the 1850s and 60s, Cooke helped design the garden at Biddulph Grange, which depends on rocks for its structure, compartmentalization, and ornamentation, and one small circular garden for alpine and rock plants. Throughout the Rocky Glen, the Rhododendron Ground, and China, paths wind between the massive rocks and rock walls, which provide much of the structure of the garden. The



rocks separate the sections of the garden and direct circulation, as well as provide focal points and dramatic effect. Throughout the garden, rare and exotic plants of other lands mixed with the heaths, ferns, and bilberries of the Staffordshire countryside. At Biddulph, rocks shape the landscape, display the plants, and provide a sheltered microclimate which protects somewhat tender plants.

### A Discussion of Horticultural Literature and the so-called decline of the Rock Garden

Comments and articles found in the horticultural literature of the mid-nineteenth century expose two opposing perceptions of the rock garden developments: (1) from the continuous stream of articles discussing and debating different aspects of rock gardening (which are discussed in Chapters 3 and 4), it would appear that rock gardens maintained their popularity, at least in those gardens with an emphasis on plantsmanship; (2) the increasing criticism of taste, and suggests that botanical collections, including alpine collections, no longer had a place in the most fashionable gardens, and that the craftsmanship with which they were created was also in decline. It is probable that both occurred simultaneously, and the taste of the Victorian era, at its peak, overwhelmed and subdued the botanical nature of rock gardens on the properties of those most fashion-conscious.

"In 1850 Conrad Loddiges wrote to a customer: 'We are sorry to say the taste for *botanical* plants has much deteriorated of late.'<sup>105</sup> Loddiges Nursery, considered one of the best in the world and rivalling Kew for its plant collections, fell victim to the change in styles, and auctioned off its stock. This might be explained by Charles M'Intosh's view that the widespread passion for botanical collections had ended, and the bright annuals produced in greenhouses had taken their places. In *Book of the Garden* published in 1855, M'Intosh explained the situation with biting criticism of the earlier collectors and their gardens, regretting only that the destruction of collections meant the annual beds were left bare most of the year:



Before the grouping and planting-out system came into fashion--that is, the decorating of our flower-garden borders with plants such as geraniums, verbenas, &c., that require to be taken up or propagated annually, and protected under glass in the winter--our whole dependence was placed on annuals and perennial plants, intermixed or associated with shrubs, evergreen and deciduous. No doubt that ten out of every twelve sorts of annuals thus grown were useless trash, weedy in appearance, and producing none of those brilliant effects for which our modern flower-gardens are so conspicuous: and the same may be said of the perennial plants existing in those days. . . . Gardeners of the days to which we refer had little idea of producing pleasing and agreeable effects by means of colour, either harmoniously or contrastedly arranged. Their great aim was to possess a collection of species and genera, without much regard to the beauty of individuals, or the effect they were capable of producing. This mania for collections was never carried to the same extent generally in England as in Scotland, in many gardens of which from five hundred to a thousand species might have been found. Like all reforms speedily brought about, the transition from one extreme to the other had its defects. With the destruction of collections of perennial or herbaceous plants . . . many an exceedingly valuable plant was consigned to the rubbish-heap, which, had it been kept and propagated, would have filled its place in the parterre. Here one of the evils of the modern system stares us in the face. Our parterres, . . . are denuded of all their glory on the first visit of frost--say, as in the present year (1854) the 5th October.<sup>106</sup>

Although M'Intosh was speaking of collections with regard to bedding out, a correlation can be made with rock gardens. In the 1846, *Paxton's Botanical Magazine* reported that the new annuals could be grown well on rockwork and made a good display, particularly mentioning "engaging effects created by masses of the common scarlet Pelargonium planted on a pile of rough stones."<sup>107</sup>

From the numbers of complaints made about Victorian rockeries, it would seem that Paxton's idea was taken up. In 1856 Hibberd complained that people were reconstructing the rockeries they saw in London parks in their own gardens. The rockery was made of flints and bricks or stones in a pyramidal shape, daubed with blue and green paint, or mossed and bronzed. Plantings consisted of a couple of geranium and ferns stuck in anywhere, with a few shabby lilacs at the back.<sup>108</sup>

Whereas the 1830 rock that was described at the beginning of this chapter



included features that referred to a broad range of mainly natural history subjects, the colourful ornamentation of the Victorian rockery seems to have been a product of the taste of the era, as were the plants, mainly bright flowering tender perennials or annuals.

America experienced the same phenomenon. An artificial rockwork displayed at the Cincinnati Horticultural Society exhibition in the autumn of 1854 by G. M. Kern stepped outside what many people considered the bounds of good taste. This extravaganza of a rocky mountain, planted with trees and creeping plants, was topped with a model castle. It featured waterspouting mermen in a rock-ring pool surrounded by alpine, or woodland plants (a lily and lady's slipper may be identified). Edouard Andre in *Parcs et Jardins* (1879) used it as an example of American rockwork labelled "Le Musee des horreurs.--D'apres G. W. Kern."<sup>109</sup>

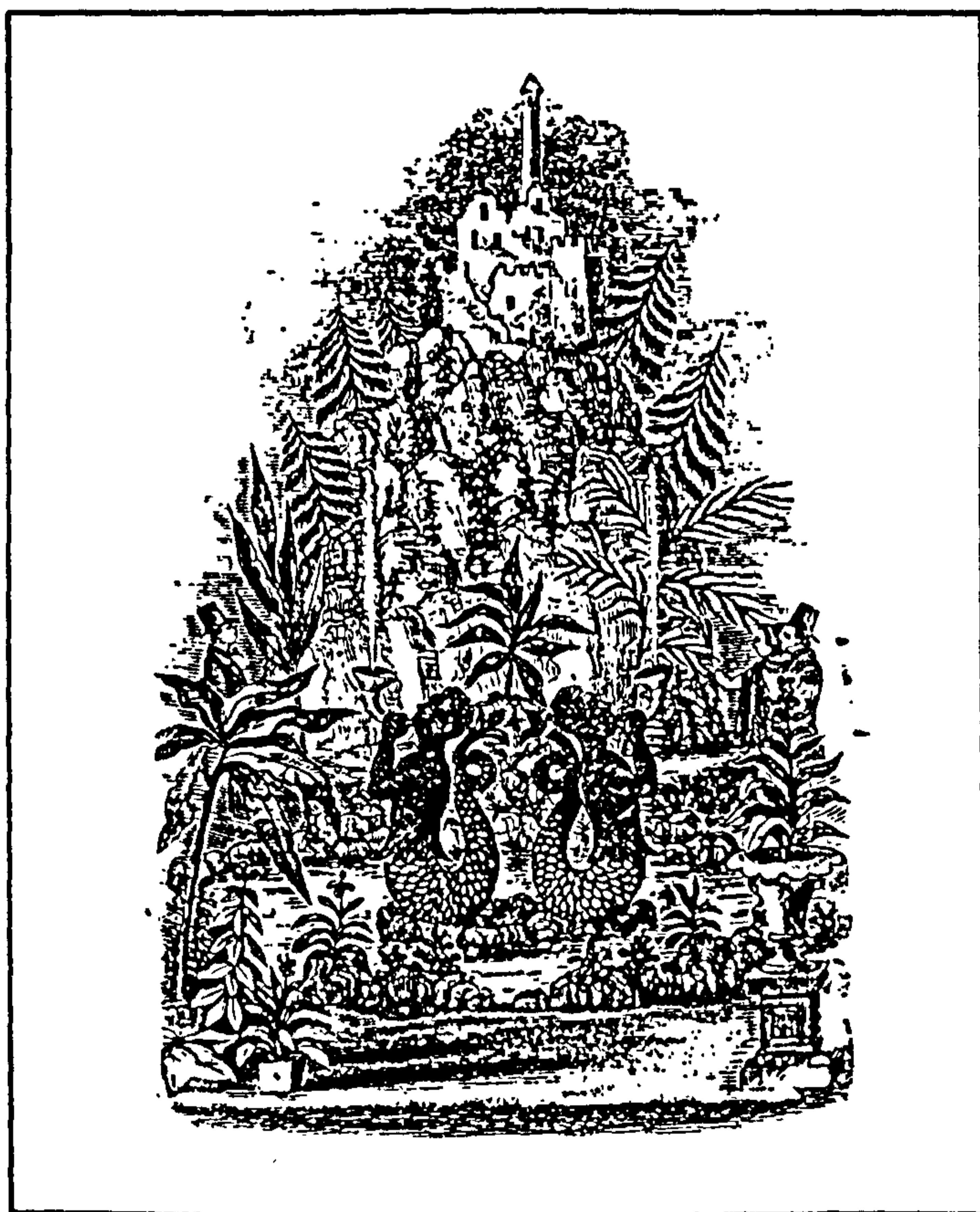


Figure 18. Rockery shown at the Cincinnati Horticultural Exhibition by G. M. Kern (1854).



Although Kern's rockwork epitomized many people's idea of bad taste, Kern pointed to others as the source of the bad reputation the rock garden was acquiring:

The making of rockwork has been but very little practised in this country, and is often undertaken by men of but little taste, and less experience. This will account for the many ridiculous and tasteless specimens of the work, to be met with in different parts of the country and which have caused many men of true taste to condemn the whole art.<sup>110</sup>

In 1856 Shirley Hibberd admitted that "of all the mistakes that are made by amateurs, and even by professed gardeners and landscapists, the Rockery is but too frequently the most ridiculous."<sup>111</sup>

Throughout the Victorian era, the naturalistic rock garden continued to be characterised by collections of alpine plants, as will be discussed in Chapters 3, 4, and 5. At no time did interest in alpines and rock plants die out, although the rock gardeners of the late nineteenth and twentieth centuries remembered the ornamented rockery as dominating the scene. In the 1860s, the rock garden at the Backhouse Nursery was the subject of articles by William Robinson, and thereafter became of considerable interest to those interested in alpine and rock plants. Built during the 1850s and popularized in the 1860s, it became famous as the most beautiful of the naturalistic rock gardens.

### The Backhouse Nursery: a return to naturalism

Often since I have concluded that were the famous "wishing carpet" at my service, I should frequently during the coming spring and summer have a "rapid ride to York," and spend an hour amongst the delicately beautiful "transparencies of the tropical fernery," but for a real feast of interest I should settle down amidst the "heaven kissing" gems of the great Alpine rockery there.<sup>112</sup>

William Robinson (1864)



At the height of its success at the turn of the twentieth century, the Backhouse Nursery occupied over one hundred acres of land in Acomb, just outside of the city of York. The Backhouse Nursery was more than a nursery. It also functioned as a respected botanical garden, a display garden, and a park for the people of York. The Nurseries' many departments excelled at their specialities and were well equipped with ranges of glasshouses for the propagation and culture of tropical plants, a subterreanean room made of tons of stone for tropical ferns, an orchid house, a fern house, and, most famous of all, the rock garden. Because of the rock garden the second James Backhouse came to be seen as the first person to construct rockwork in "keeping with Nature, using large masses of rock in association with water and proper grouping of alpines associated with dwarf shrubs and conifers."<sup>113</sup>

The Backhouse's display gardens doubled as botanical collection. One journalist, discussing the quality of design in botanical gardens, asked, "who, for example would not rather study plants on Mr. Backhouse's beautiful rock-garden than on many ugly excrescences that we need not name in public gardens?"<sup>114</sup> Collectors employed by the Backhouses introduced plants from North America, Lapland, Canada, Switzerland, and Greece for display and breeding. Their stock was monitored through reports in horticultural journals:

The rare and beautiful *Calypso borealis* is now in flower in the York Nurseries. . . . The new Alpine *Kalmia* . . . has been sent to Messrs. Backhouse by their collector in the Rocky Mountains. *Gentiana verna*, *imbricata*, and *brachyphylla* (from Switzerland and the Tyrol), *Primula Dinyana*, the new and fine *P. Venzai* . . . pure white dwarf *Caltha* (*C. leptosepala*), from the Rocky Mountains, and the bright dwarf yellow *Ranunculus montanus*, from the Pyrennees, are likewise objects of interest. The new and strange *Echinocactus simpsoni*, covered with spines like a vegetable "sea urchin," proves to be perfectly hardy, and promises abundant flowers. As a hardy plant this denizen of the Rocky Mountains will be a new feature in Alpine rockeries.<sup>115</sup>

The construction of the Backhouse rock garden, which was said to have taken eighteen years,<sup>116</sup> is dated as 1859, but it was featured in an advertisement just



eleven years after the nursery moved to Acomb in 1853. There are two explanations for this inconsistency: it was an on-going project which spanned the eighteen years following the move to Acomb, with its completion around 1871; or, what is more likely, construction began on the future site of the nursery before the move. There had been a nursery plot in Acomb long before the move, and according to family tradition, planting began in there as early as the 1830s, but not later than the 1840s.<sup>117</sup>

The Backhouse Nursery began in 1816 with the purchase of Telford's Nursery within the York city walls on Tanner Row near Tofts Green. Telford's was said to have been in operation for 150 years at the time of the Backhouse purchase,<sup>118</sup> but even before the Telfords there was a long history of gardening on that site. In 1228 Henry III signed a charter giving the friars a parcel of land including "his chapel of St. Mary Magdalene, standing in a place called Kingstoftes."<sup>119</sup> In 1737 Drake reported in his history of York:

The site of this ancient monestery is now a spacious garden; at present occupied by Mr. Tilford, a worthy citizen, and whose knowledge in the mystery of gardening renders him of credit to his profession; being one of the first that brought our northern gentry into the method of planting and raising all kinds of forest trees, for use and ornament."<sup>120</sup>

By the time of its purchase by the Backhouses, Telford's had become the most important nursery in the North, supplying estates such as Studley Royal with trees and shrubs,<sup>121</sup> and the Backhouses continued in that tradition.

James Backhouse had become interested in botany as a boy in Darlington. He trained at a nursery in Norwich, and in 1816 he purchased Telford's Nursery in York in partnership with his brother Thomas. Their interest in alpine and rock plants is reflected in their 1821 catalogue, which contains about one quarter of the alpine and rock plants recommended on the master list of plants Chapter 5.

In 1831, James, an ardent Quaker, left the nursery in Thomas' management, and followed his calling as a missionary. He spent the next decade preaching in Australia and Norway, often combining preaching with botanizing. In



Scandinavia, he reported in his journal, "At Tana Fjord our Captain kindly sent us on shore in one of the ship's boats, and we spent an hour among the rocky slopes,



Figure 19. Backhouse Rock Garden from *York Illustrated* (1894-5).

at the foot of the mountain, and collected some plants."<sup>122</sup> His manuscript on the flora of New South Wales is now held in the Archives of the Royal Botanic Gardens, Kew.

In 1836 the nursery moved to Fishergate, the site of another ancient friary, to make way for the railway station, and remained there ten years. The move to Acomb in 1853 began a period of rapid expansion. William Robinson visited in 1864 and itemized the numerous features and plants of the nursery, from the numerous ranges of glasshouses to the "Trichomanes house," made of one hundred and twenty tons of rough sandstone constructed to bring to mind "a mountain rent



through which water had trickled for ages."<sup>123</sup> The nursery was by then in the management of James II, who built West Bank Lodge for his family. His father lived in nearby Holgate House with his sisters.<sup>124</sup>

Both James Backhouse (1794-1869) and his son, James II, had strong interests in alpine plants. The elder Backhouse developed his as a boy botanizing in Teesdale to which he returned with his son in pursuit of plants. They visited the Lake District together, and James II made at least five plant hunting excursions there between 1845 and 1866, which he reported in *The Phytologist*.<sup>125</sup>

James III joined the firm, and another father and son partnership existed for a time. Between the 1880s and 1930s, with the peak years from the 1890s to 1915, a trail of Backhouse rock gardens was built across England from Kildrummy Castle in northern Scotland to Torquay on the south coast in Devon. A foreman in the alpine department, Richard Potter, referred to as Backhouse's lieutenant, directed the installation and planting of many of their best known rock gardens, including those at Warley and Friar Park.<sup>126</sup> After his father's death in 1890, James III (1861-1945), a member of the Royal Horticultural Society, Royal Zoological Society, and the Linnean Society, guided the business through extremely active years until 1921.

Because of their large labour force, the Backhouse Nursery performed as an employment agency for gardeners. "This was, of course, long before the Labour Exchanges and National Insurance were even thought of, and unemployment was a calamity."<sup>127</sup> Potential employers looking for a gardener would approach Backhouses:

The Backhouses constituted a first-class training centre for gardeners, together with a servants' registry, for which a fee was charged to the employers. If a gardener became unemployed for any reason . . . he immediately went back to the Nurseries where, provided he had previously given satisfaction, he was sure to be taken on again, until such time as another opportunity presented itself of a job.<sup>128</sup>

This provided employers and gardeners with a much needed training and



employment service, but it also added to the influence of the Backhouse Nursery. The gardeners they trained might have been expected to be skilled in caring for alpine plants and have high standards in the creation of rock gardens.

James III, or one of his employees, was also responsible for an innovation in flower show displays. In 1892 a small rock garden on a 8 by 4 foot wooden frame was constructed in York, and taken to London as an exhibit at the Temple Show. This exhibit, which was sold as it stood for twenty-five pounds, was the forerunner to the alpine exhibits at the Chelsea Flower Show. Although Henry Correvoon had made a small exhibit with alpine plants for a Société d'Horticulture de Genève spring show in 1877, and Kern had made one for the Cincinnati Horticultural Society Exhibition in 1854,<sup>129</sup> the Backhouse exhibit impressed visitors to the show and received a favourable review in *The Garden*:

Everybody was charmed at the show in the Temple Gardens last Wednesday with the way the alpine flowers from York were arranged--just the true and natural way. . . . This little exhibit of Messrs. Backhouse showed the way the plants naturally emerge from the ground among low rocks, which instead of exposing them to the heat, really protects them from its effects; and we hope that they will have the little plan shown in many other flower shows.<sup>130</sup>

In 1936, it was still thought of as a "model of proportion and well planted."<sup>131</sup>

On James' retirement and the sale of the business in 1921, the Backhouse nursery reached its third period of development in its Acomb location. Sir James Hamilton bought the Nursery, and his youngest son, Alexander, on his graduation from a two-year horticultural course at Wisley in 1921, became manager. During this time some attractions designed specifically for children were added, including a gravity-powered railway, swings, roller coaster, and see-saw were located under the cedar trees.

Sir James Hamilton died in 1935 and Alexander followed in 1939 at the age of forty-one. Then, as a result of the war economy and a dishonest manager, the nursery began its decline.<sup>132</sup> The land was acquired by the City of York, and part of it became West Bank Park. The final closing of the Backhouse Nursery



was marked merely by a regretful article in the *York Evening Press* (26 July 1955). During the late 1950s or early 1960s, the rock garden was bulldozed into the chain of ponds leaving a pile of rubble and trash.

The Backhouse rock garden was clearly not the first rock garden, but in a sense it reflects the rock garden's history. The garden in Acomb was a culmination of the Backhouses' long period of interest in alpine plants.



## NOTES

1. Letitia E. Wright, "Stenton," *Bulletin of the Garden Club of America* 11 (May 1923): 18.
2. Wright, 18. William Logan's father, James, came from Scotland to Pennsylvania as William Penn's secretary and stayed behind as his representative. Logan's experiments with maize resulted in a Latin treatise, "The Generation of Plants," at its time considered the most decisive work on sex in plants, and the Australian plants the Loganias were named in his honour.
3. Thomas Pennant, *A Tour in Scotland and Voyage to the Hebrides; 1772* (n.p., 1776), 12-13.
4. Pennant, 12-13.
5. Desmond, *Botanists*, 67.
6. Thomas Kirkland Glazebrook, "Historical and Descriptive Notice of a Plant of the *Sabal* Blackburnia, now in the gardens at Hale Hall, Lancashire, the seat of John Blackburne, Esq. M.P.," *Gardeners Magazine* (1829): 53.
7. Glazebrook, 53.
8. John Blackburne, Orford, letter to William Logan, Philadelphia, 11 March 1775. Manuscript Collection, Pennsylvania Historical Society, Philadelphia. The letters quoted by Letitia Wright are missing.
9. Anne Blackburne, Orford, letter to Linnaeus, Sweden, 29 June 1771, Linnaean Correspondence, 2:47, Linnaean Society Library, London.
10. Anne Blackburne, 2:49.
11. [John Aiken], *Gentleman's Magazine*, f.s., 58 (1787): 204.
12. *Gentleman's Magazine*, fs, vol. 65 (1794): 180.
13. *Victoria History of Lancaster*, vol. 3 (London: Archibald Constable and Co., 1907), 322.
14. There is no reference to the canals or ditches in any of the histories of this area, and David Rogers, Warrington Librarian, had no success in indentifying them with the help of local historians. David Rogers, 23 December 1992, Warrington, letter to the author.
15. Chelsea Physic Garden Minute Books, Manuscript Collection, Guildhall Library, London.
16. *Memoirs, Historical and Illustrative of the Botanic Garden at Chelsea belonging to the Society of Apothecaries of London* (London: n.p., 1820), 69.



17. Joseph Banks, *Journal of the Right Honourable Sir Joseph Banks During Captain Cook's first voyage in the H. M. S. Endeavour in 1768-71 to Terra Del Feugo, Otaheite, New Zealand, Australia, the Dutch East Indies, etc.*, Sir Joseph D. Hooker, ed. (New York: MacMillan and Co., 1896), 51.
18. Martin Hoyles, *The Story of Gardening* (London and Concord, MA: Journeyman Press, 1991), 84. Hoyles reports Banks as writing this, but unfortunately did not cite his sources.
19. John Claudius Loudon, *The Encyclopedia of Gardening* (London: Longmans, Hurst, Rees, and Brown, 1822), 361.
20. These plant names were taken from the Chelsea Physic Garden Minute Books. The names in parentheses have been updated according to the Royal Horticultural Society *Dictionary of Gardening* (1992) or *Index Kewensis*.
21. These plant names were taken from the Chelsea Physic Garden Minute Books. The names in parentheses have been updated according to the Royal Horticultural Society *Dictionary of Gardening* (1992) and *Index Kewensis*.
22. Chelsea Minute Books (16 September 1772).
23. Benjamin Waterhouse, *The Botanists* (Boston: Joseph T. Buckingham, 1811), 18.
24. William Curtis, "A catalogue of certain Plants growing wild chiefly in the environs of Settle, in Yorkshire," *Phytologist* (1863): 108.
25. White, *Flora of Bristol*, 71.
26. Chelsea Minute Books (16 September 1772).
27. Graham Stuart Thomas, *The Rock Garden and its Plants*, (London: J. M. Dent and Sons, 1989), 65.
28. Guy Meynell & Christopher Pulvertaft, "The Hekla Lava Myth," *Geographical Magazine* 53:7 (April 1981), 435. Thanks to Mark Laird for telling me about this article.
29. Blaikie, *Diary*, 108.
30. *Gardeners' Chronicle* (13 January 1883): 48.
31. Blaikie, 108.
32. Thomas Blaikie, *Diary of a Scotch Gardener in the French Court at the end of the Eighteenth Century* (London: George Routledge and Sons, 1931), 21.
33. Blaikie, 76.



34. Blaikie, 75.
35. Blaikie, 108.
36. Blaikie, 108.
37. R. Hingston Fox, *Dr. John Fothergill and his Friends* (London: MacMillan and Co., 1919), 184; quoting G. Thompson, *Memiors of Fothergill*, 37. In *The Flower Garden*, 54; 60, Gorer says the treatment Fothergill and Pitcairn gave their alpines is not known but suggests Fothergill had a rock garden. However, Blaikie describes potting the alpines on his return to Upton and placing them in frames (see Blaikie, 108). There is no mention of rockwork in the contemporary descriptions of Upton, and no reason to think that Fothergill had a rock, or alpine, garden.
38. The rocks are immense and vertical in orientation. They do not offer the necessities for the cultivation of alpines and rock plants, as discussed in Chapter 4, and plants on them would be at too great a distance to be seen.
39. Desmond, *Botanists*, 434. Menzies, a student of Dr. Hope in Edinburgh, later travelled as a collector for Joseph Banks. Blaikie and Menzies are sometimes confused. Fox (*Dr. John Fothergill and his Friends*, 185) says that Menzies went to the Alps.
40. Walter P. Wright, *Alpine Flowers and Rock Gardens* (New York: Dodd, Mead & Co., 1925), 59.
41. E. H. M. Cox, *History of Gardening in Scotland* (London: Chatto & Windus, 1935), 174.
42. Cox, 174.
43. Desmond, *Botanists*, 190. Of Don's five sons, two became respected botanists: Donald (1799-1841), Librarian at the Linnean Society from 1822 and Professor of Botany at King's College, London from 1836; and George (1798-1856), was a famous plant collector for the Horticultural Society of London, Foreman at the Chelsea Physic Garden, and author of the four volume work *General System of Gardening and Botany*. Patrick Hall Don (1806-1876) was gardener to James Bateman at Knypersley.
44. Wright: 19.
45. Chelsea Minute Books (16 April 1773).
46. *Gardener's Magazine* 11: (1830): 491.
47. Robert Mallet, "Horticultural Jottanda of a recent Continental Tour," *Gardener's Magazine* 9 (1833): 272.



48. Mallet: 272.
49. There are many examples of rusticated rockwork in Italian gardens. Some are illustrated in Lazzaro's *The Italian Renaissance Garden* (1990).
50. Michael Symes, *The English Rococo Garden*, 5 Shire Garden History Series (1991), 4.
51. See Edouard Andre's *Parc et Jardin*.
52. Kenneth Woodbridge, *Princely Gardens* (New York: Rizzoli, 1986), 83.
53. *Oxford Companion to Gardens*, 415.
54. Batty Langley, *New Principles of Gardening* (New York: Garland Publishing, 1982; repr. London: A. Bettesworth, 1728), 199. See also page xv.
55. Langley, 199.
56. Isabel Chase, *Horace Walpole: Gardenist* (Princeton: Princeton University Press, 1943), 215.
57. Chris Dingwall, Perthshire, (7 October 1991) letter to the author.
58. H. Sprague Allen, *Tides in English Taste (1619-1800) 2* (New York: Rowman and Littlefield, 1969), 211, quoting Richard Graves, *Euphrosyne* (London, 1776): 263.
59. William Chambers, *Designs of Chinese Buildings* (London: Privately printed, 1763; reprint (London: Gregg International, 1969), 17.
60. John Harris, *Sir William Chambers, Knight of the Polar Star* (London: A. Zwemmer, 1970), 37.
61. William Chambers, *Gardens and Buildings at Kew* (London: Privately printed, 1763); reprint, (London: Greg Press, 1966), 7.
62. William Chambers, *Dissertation on Oriental Gardens* (London: Privately printed, 1772); reprint, Introduction by John Harris (London: Gregg International, 1972), 66.
63. Wright, "Stenton," 18.
64. Chelsea Minute Book, 16 April 1773.
65. John Harris, Introduction to Chambers, *Dissertation*, 2.
66. Harris, Introduction to Chambers, *Dissertation*, 2.
67. Harris, Introduction to Chambers, *Dissertation*, 2.



68. *Oxford Companion to Art*, Harold Osborne, ed. (London: BCA, 1992), 237.
69. Thomas Mawe & John Abercrombie, *Universal Gardener & Botanist* (London, 1778), np.
70. This observation is based on correspondence in Added MS 51344 in the British Library Manuscript Room.
71. The Lady Rockley [Alicia Amherst], "Rock Gardening of Different Periods in Different Countries," *Rock Gardens and Rock Plants*, proceedings of the conference of the Royal Horticultural Society and the Alpine Garden Society (London: RHS, 1936), 13.
72. M. R. Gloag, *A Book on English Gardens* (London: Methuen and Co., 1906), 47.
73. Lady Susan O'Brien's Diaries and Correspondence, British Library Manuscript Room. Add. MS 51344, 65.
74. According to H. A. Doubleday and Lord Howard de Walden, eds., *The Complete Peerage*, vol 7 (London: St. Catherine Press, 1929), 46-47, Lady Ilchester was Elizabeth Strangeways-Horner of Mells Park, Somerset (1722-1792). According to Add. MS 51344: "Correspondence with parents," she was dedicated to her gardens and greatly preferred her country houses to the Burlington Street House in London.
75. *Gardeners' Chronicle* (19 August 1899): 144.
76. Gloag, 47.
77. Gloag, 47.
78. J. A. Kelly, "Survey & Inventory Form" (5 October 1985) Centre for the Conservation of Historic Parks and Gardens, York.
79. Stephen Griffith, Horticultural Manager, Abbotsbury Sub-tropical Gardens (7 February 1991) letter to author.
80. George Cumberland, *Attempt to Describe Hafod* (London: W. Wilson, 1796), 4.
81. Christopher Hussey, *English Gardens and Landscapes, 1699-1750* (London: Country Life), 29-30.
82. Allen, *Tides*, 211, quoting Southy, *Letters From England* (1807).
83. James E. Smith, *Tour of Hafod* (London: White & Co., 1810), 14.
84. Stephen Briggs and Caroline Kerkham, "Review of the Archaeological Potential of the Hafod Landscape, Cardiganshire," *Garden Archaeology in Britain* 78 (London:



Council for British Archaeology, 1991): 164.

85. Thomas Johnes, Hafod, 16 November 1803, letter to Sir James Smith, London, Smith Correspondence, Linnean Society Library, London.

86. Caroline Kerkham is preparing a list of Mariamne's plants from work done for her dissertation on Hafod, but it is not yet completed.

87. Benjamin H. Malkin, *Scenery, Antiquity, and Biography of South Wales from Materials Collected in the Year 1803* (London: n. p., 1804), 348.

88. Mariamne Johnes, Hafod, letter to Sir James Smith, London, Linnean Soc. Library.

89. Thomas Johnes, Hafod, 11 January 1796, letter to Sir James Smith, London. Linnean Soc. Library.

90. Mariamne Johnes, Hafod, 1 March 1796, to Sir James Smith, London, Linnean Soc. Library.

91. Elizabeth Inglis-Jones, *Peacocks In Paradise* (London: Golden Grove, 1988) 126.

92. Inglis-Jones, 127.

93. Malkin, 348-349.

94. Caroline Kerkham, May 1990, conversation with the author.

95. John Piper, "Decrepit Glory," *Architectural Review* (1940): [n.p.].

96. Caroline Powys, *Passages from the diaries of Mrs. Philip Lybbe Powys of Hardwick House, Oxon, AD 1756 to 1808*, Emily J. Climenson, ed., (New York, London, and Bombay: Longmans, Green, and Co., 1899), 197-198.

97. John Claudius Loudon, *Villa Gardener*, Jane Loudon, ed. (London: William Orr & Co., 1850), 183.

98. *Gardener's Magazine*, "Redleaf, the Seat of William Wells," (July, 1839): 362.

99. *Gardener's Magazine* (July, 1839): 366-370.

100. *Gardener's Magazine* (July, 1839): 374.

101. The remaining features include the amazing kitchen garden where dwarf dahlias originated, the fabulous Dutch garden in front of the orangery, once a billiard room (now a private home), and the rocky lawn, although overgrown with rhododendrons.



102. Peter Hayden, *Biddulph Grange, Staffordshire: A Victorian Garden Rediscovered* (London: George Philip and The National Trust, 1989), 66.
103. Mavis Batey, "Edward Cooke, landscape gardener, F.R.S; F.L.S; F.S.A. etc: a Victorian par excellence," *Garden History* 11:1: 22.
104. Batey: 138.
105. Hayden, 33.
106. McIntosh, 815.
107. *Paxton's Botanical Magazine* (1846): 90.
108. Shirley Hibberd, *Rustic Adornments for Homes of Taste* (London, 1856; repr., London: Century and the National Trust, 1987), 404.
109. Edouard Andre, *Parcs Et Jardens* (Paris: G. Masson, [1879]), 420.
110. G. M. Kern, *Practical Landscape Gardening* (Cincinnati: By the author, 1855), 147-148.
111. Shirley Hibberd, *Rustic Adornments for Homes of Taste* (1856); reprint (London: Century, 1987), 401.
112. William Robinson, "Notes on Gardens--No. VI: Backhouse's Nurseries, York," *Gardeners' Chronicle and Agricultural Gazette* (March 19, 1864): 317.
113. R. W. Wallace, "The Rise of the Modern Rock Garden," *Rock Gardens and Rock Plants*, proceedings of the conference of the Royal Horticultural Society and the Alpine Garden Society (London: RHS, 1936), 31.
114. *The Garden*, "The Arrangement of Botanic Gardens," (4 December 1875): [np].
115. *The Garden* (May 8, 1875): 378.
116. H. N. H., "A Beautiful Rock Garden": 477.
117. Conversation with Hugh Murray, York, 4 March 1990; conversation with Jill Thompson, Sheffield, 12 July 1992.
118. John Harvey, "The Family of Telford, Nurserymen of York," *Yorkshire Archeological Journal* 42 (1969): 352.
119. Francis Drake, *Eboracum or the History and Antiquities of the City of York*, reprinted from the 1737 edition (London: E. P. Publishing, 1978), 274.
120. Drake, 274.



121. Harvey, 353-354.
122. James Backhouse [by his sister], *Memoir of James Backhouse* (York: William Sessions, 1870), 215.
123. William Robinson, "Notes on Gardens--No. 5. Backhouse's Nurseries, York," *Gardeners' Chronicle and Agricultural Gazette* (19 March 1864): 269.
124. Backhouse, 236.
125. Halliday, 156. Some of James Backhouse's articles were: "Notes of a botanical ramble in Yorkshire, in the summer of 1844," *Phytologist* I: 1065-1069; "Notes on a few plants growing on Helvellyn or in its vicinity," *Phytologist* II: 422-423; and, "Account of a few day's ramble among the mountains of Cumberland and Westmoreland," *Phytologist* II: 1044-1047.
126. For more information on Richard Potter see David McClintock, "Who was 'Our Mr. Richard Potter'?" *Heather Yearbook* (1991); 17-18; R. W. Wallace, "The Rise of the Modern Rock Garden," *Rock Gardens and Rock Plants*, Proceedings of RHS and Alpine Soc. Conference 1939. (London: Royal Horticultural Society, 1936), 30-35.
127. T. L. Cockell, "A Northern Kew," undated report (Y635) in the possession of York Central Library, 1.
128. Cockell, 2.
129. Henry Correvon, *Rock Gardens and Alpine Plants* (London: MacMillan and Co., 1930), 1; for Kern's rockwork display see figure 18.
130. *The Garden* (28 May 1892): 484.
131. Wallace, "The Rise of the Modern Rock Garden," *Proceedings*, 30.
132. Conversation with Daphne Hamilton, York, April 1990.



## CHAPTER 3

### DESIGN, CONSTRUCTION, AND MATERIALS

The design elements, construction techniques, and range of materials used in creating rock gardens between 1767 and 1860 are compared and analyzed thematically in Chapter 3. These include the position the rock garden was given in the landscape and its relationship to the rest of the garden, size, materials, and types of rock gardens. The structural types include individual rocks, free-standing rock gardens, those on banks, and replicas of hilly landscapes or mountains.

The information used in this chapter was found in books, descriptions, archival materials, and the garden itself, but the greatest amount came from horticultural journals published between the early nineteenth century and 1860. The purpose of these articles was often to counter the large number of rock gardens writers saw as lacking in qualities of workmanship and taste.

In 1827 George M'Leish noted, "The erection of artificial rocks . . . is a practice as common as it is in many instances ridiculous."<sup>1</sup> The refrain continued with little variation through the mid-nineteenth century. In 1845 *Gardener's Chronicle* remarked, "above all things we trust that our advice will have the effect of putting an end to the hideous mounds of flints, &c., which are so frequently seen in places where something better might have been anticipated."<sup>2</sup>

The problems of taste and workmanship, which could be attributed to the popularity of rock gardens, was not limited to the suburban gardens of London, where in the 1850s people tried to recreate the rockeries they saw in commercial pleasure gardens<sup>3</sup>:

Take a flower-garden, and in the midst of it make a pyramid of vitrified bricks and flints, or throw up a hillock of huge stones, and set upon the top of it a small plaster statue; . . . daub the stones over with blue and green paint--in fact, moss them and bronze them, and use plenty of colour. Then stick in anywhere a geranium, a fern or two, and put in a few shabby lilacs at the back, . . . and you have one of these model "Rockeries."<sup>4</sup>

By the 1830s "hillocks of flints and fused bricks" were common in the gardens of Staffordshire and Cheshire, where they were often called "stoneries."<sup>5</sup>



### Designing the rock garden

A rock garden was more than "a mound of earth dotted over with stones."<sup>6</sup> In 1856, Shirley Hibberd listed some guidelines for their design: (1) they must be isolated, except in a rocky district surrounded by rocky features, where the regional character must be adhered to; (2) they should not "betray the hand of art;" (3) one type of rock should predominate, while the others should be geologically consistent; and, (4) because rockeries were "ineffective on a limited scale, they should not be attempted by those of limited means or inclination."<sup>7</sup>

An article in the 1849 issue of *Annals of Horticulture* stated it was necessary to make plans for building a rock garden, especially when working with large rocks, because the position of the rocks should be decided on before they were moved: "much mechanical skill and labour is involved in their removal and disposition, they ought to be at once placed where they are required to remain."<sup>8</sup> A model made of plaster of paris was even better than a plan because "making proper allowance for size, the entire effect is at once perceived."<sup>9</sup> Lady Broughton, for example, worked to a small model of the mountains of Savoy when building her scale model of the Alps.<sup>10</sup>

Along with taste and financial resources, the main determinant of rock garden design was purpose. Besides providing a habitat for plants or a dramatic feature, rockwork might be employed to relieve the monotony of a level surface, to separate parts of the garden, to provide shelter from the wind, to lend privacy, and to form visual barriers.<sup>11</sup> Other elements that determined the structural design of a rock garden included its position in the landscape, form, size, and materials.

The details of a rock garden could "vary in a thousand different ways," as long as it was "complete in itself, consistent in all its parts, and evincing unity of purpose and design."<sup>12</sup> But to build a proper rock garden was recognized as a commitment and expense. "To produce anything like a grand effect, stupendous materials must be employed."<sup>13</sup> Even using artificial materials, "the proper representation of magnitude . . . is expensive, though to attempt less than this is almost to ensure a failure."<sup>14</sup>



### Size

Rock Gardens were not to be cramped, or made up of small fragments, but "should possess a bold natural appearance."<sup>15</sup> Almost all the authors agreed that most rockworks were too small and insignificant.<sup>16</sup> As one observed: "the smaller the rockwork is, the worse it looks, and the more difficult to keep in health, and *vice versa*."<sup>17</sup> As Price remarked in 1824 on that built at Dropmore, "I have seldom seen any rock-work in gardens that had not a rather trifling paltry appearance; that of Lord Grenville is on a scale which alone would preserve it from such epithet; & he has managed to give it-- the blocks themselves being large and massy-- a sort of architectural grandeur."<sup>18</sup>

Written descriptions rarely state exactly, in feet, area, and tons of stone, the size of a rock garden. Loudon's recommendation for building "massy and extensive pieces of rock-work" is vague,<sup>19</sup> but the inclusion of a winding walk, or stair, and wells, or small reservoirs of water, indicates that he probably had something more than ten feet across in mind.

In 1849 a writer offered an idea of the proportion of height to breadth that should be sought:

The steeper it is the less is it suited to the growth of delicate plants, and *vice versa*. Thus, supposing that any reason should exist for making it 10 feet high, it would be better to make it 40 feet wide than 20, and better still to make the width still greater.<sup>20</sup>

Shirley Hibberd added his recommendations in 1856:

The elevation above the pool should be in the highest portions ten or twelve feet, or even twenty or thirty feet, if the site admits of it; but this and the general extent will so depend on local circumstances, that no general directions can be given. One important matter is to vary the surface, the elevation, the general outline, and the angle of the face, which may generally have a slope of about 45 [degrees] to the horizon. . . . If the summit can be made to command a fine view, it will be a good position for a rustic summer-house.



Size can be determined with reasonable accuracy on plans drawn to scale. From a plan in *Gardener's Magazine* (1830), Richard Gorer was able to calculate the size of two rock gardens in a flower garden one hundred and twenty feet long by fifty feet wide, as sixteen feet long and four feet at the widest point.<sup>21</sup> They may have been a common size for rock gardens in medium-sized gardens.

Illustrations may indicate size by showing scale, although they should not be depended on for accuracy. Humans, cattle, trees, ponds, and width of paths may be compared to help estimate the size of the rock garden.

### Position in the landscape

The earliest known recommendation for the location of a rock garden appeared in 1778 in Mawe and Abercombie's *Universal Gardener and Botanist*. Here it was placed in the pleasure grounds "contiguous to some grotto, fountain, rural piece of water, &c."<sup>22</sup> In the decades that followed, acceptable locations for the rock garden varied from within the flower garden to the farthest corners of an estate, depending upon the character of the ground, the size of the property, and the purposes that the rockwork would serve.

At the beginning of the nineteenth century, alpine and rock plants were often thought to need the protection of the flower garden (See Chapter 4). Repton and Loudon both felt that rockwork for picturesque effect belonged in the wider landscape and should be as natural as possible, while rock plants belonged in beds in the flower garden. The artificial nature of the flower garden allowed carefully tended rockwork, which should make no pretense at naturalism. Flower gardens were to be formal, artificial, neat, well cared for, and fenced for protection from animals, and except when attached to the house, invisible from roads or walks.<sup>23</sup>

In 1816 Maria Jackson recommended rockwork be placed in the flower garden, but she also thought that large rock gardens could be built "in pleasure grounds or flower gardens on an extensive scale."<sup>24</sup> The flower garden was to be placed at the end of a walk in the home shrubbery. M'Leish's massive, imaginary rock garden, which he wrote about in 1827, was to one side in the flower garden. Both Jackson and M'Leish found the potential for conflict between the heavy



masses of the rugged rockwork and the more delicate and carefully maintained borders and beds.<sup>25</sup>

At the same time, rock gardens were being built outside the flower garden. In 1810 Lewis Kennedy designed rockwork around a spring at Trent Park, seemingly to Abercombie and Mawe's 1778 prescription.<sup>26</sup> Despite his earlier advice to grow rock plants in the flower garden, Repton sited a garden for rock plants in the outer grounds at Ashridge, and on a raised bank along the terrace at Endsleigh.<sup>27</sup> Rockwork, begun after 1809, was spread across most of the grounds at Redleaf. Although on a monumental scale in places, it was planted with newly introduced and rare flowers and shrubs (see Chapter 4 for a discussion on Redleaf's plants). About 1820 the large rock garden at Blenheim was built on a river bank at a considerable distance from the palace.<sup>28</sup>

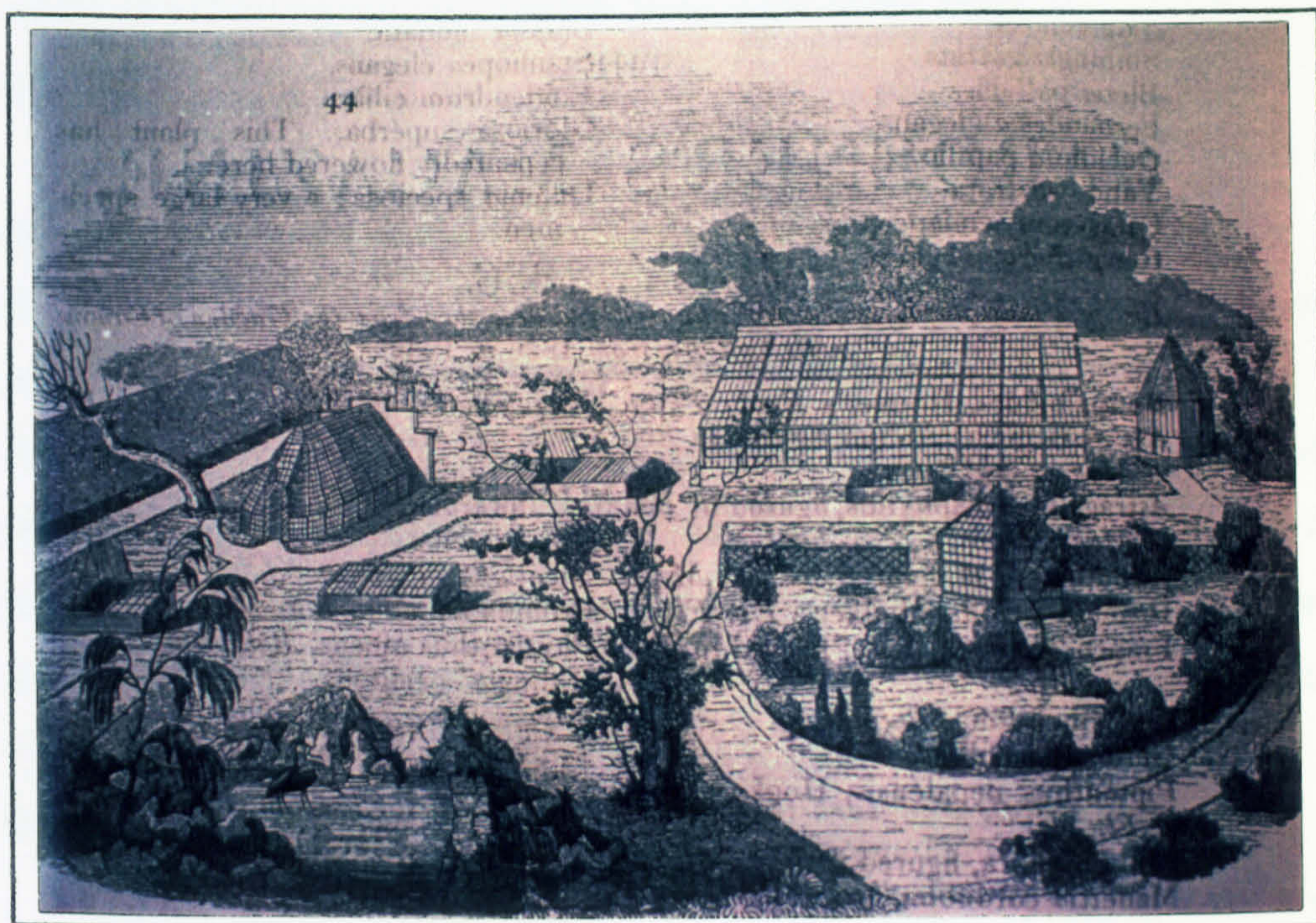
The size of the property was often regarded as determining the location of the rock garden. While estates might offer a choice of natural locations, smaller places had to create them in purely artificial settings. Most writers, realising they had at least two audiences, gave two sets of recommendations: one for estates with extensive grounds, and the other for villas. Suburban or small gardens were mentioned infrequently.<sup>29</sup>

Suitable locations for smaller properties were near "the flower-garden or plant houses, beside an arbour, or any much frequented spot, especially where there is a bank backed with a shrubbery."<sup>30</sup> In 1833 Herman Bourne, a Bostonian, offered a description of a complete flower garden:

In addition to the Green-House and the Hot-House, there is often a small Pond, for the cultivation of marsh and aquatic plants, and a little hillock of stones and earth, thrown together for the accommodation of such plants as require a stoney and rocky locality.<sup>31</sup>

Patrick Neill's garden at Cannonmills Cottage near Edinburgh may have been the type Bourne described. Neill reportedly grew his alpine plants on a bank, but the illustration of his garden shows rugged stone heaps bordering a small pond (see figure 20).<sup>32</sup>





**Figure 20.** The garden at Cannonmills Cottage showing rockwork and pond. *Gardener's Magazine* (July 1836).

A number of reasons were given for the association between rockwork and ponds: (1) so that the rock and water plants might be seen at the same time; (2) so that materials excavated in digging the pond could be used for the rock garden without being moved; (3) because of the association between rocks, water, and plants in nature;<sup>33</sup> and (4) because of the beneficial "moisture exhaled from such a piece of water."<sup>34</sup> As well as being ornamental, locating the rockwork around the spring at Trent Park was seen to "diminish the labour of the Gardener, by having water so close at hand."<sup>35</sup>

An association also existed between rock gardens and shrubberies. Descriptions of John Blackburne's garden suggest that his rockwork was situated with a bog garden within a shrubbery.<sup>36</sup> His arrangement of shrubbery, bog, and rockwork probably served to group and display his collections naturalistically while providing them with shelter (see Chapter 2). Mariamne's garden too contained a collection of American shrubs arranged along the inside perimeter walls to protect her flowers and plant collections (see Chapter 2).<sup>37</sup> The shrubbery later became a



means of screening the rock garden from sight of the house and creating an atmosphere of isolation.

The rockwork itself sometimes provided shelter or screening. Maria Jackson suggested it might be used to conceal the flower garden fence,<sup>38</sup> and Lady Broughton built her rockwork at Hoole House against a garden wall to form "not only shelter, but seclusion also, . . . because it forms a permanent screen."<sup>39</sup> At Drayton Green, Mrs. Lawrence used rockwork to compartmentalize her two acre garden and create views and accents,<sup>40</sup> and even at Chatsworth it was said to function as "a screen, or rather a piece of alpine scenery, dividing the grounds around that princely mansion, with its enriched parterres, from the Mammoth Conservatory."<sup>41</sup> An arch built about 1843 screened the public grounds of Skirving's Walton Nursery in Liverpool from his home garden.<sup>42</sup>

By the mid-nineteenth century, the general consensus among writers was that architecture and rock gardens should be kept strictly out of sight of each other.<sup>43</sup> The rock garden was generally to be as rugged as possible, and was seen as "out of character if placed near fine architectural buildings, or where the ground has a very artificial appearance."<sup>44</sup> The position of the rock garden near the conservatory at Syon House was much criticized. Alternatively, it was suggested, "a rich architectural wall, with all its accompaniments of balustrading, vases, &c., would have been more in character with the place and the circumstances."<sup>45</sup>

Those who wanted a rock or fern garden were told to "keep it somewhere in the back-ground, and not in sight from the windows of the house or the principal parts of the lawn."<sup>46</sup> Lothian's 1845 illustrations of rock gardens show them placed along rural walks. Even the small piece of rockwork portrayed in the frontispiece is in the park, judging by the cattle in the background.

Paxton disagreed, saying, "it is not by any-means necessary that these should be confined to the wilder and more remote scenery of the grounds; but on the contrary, they may be admitted to the more highly finished portions with propriety and advantage."<sup>47</sup> M'Intosh, who said at one point that the rock garden "should never rise out of the smooth-dressed lawn, nor be placed too near the house,"<sup>48</sup> contradicted himself by using Hoole House as a good example. The rock garden



at Lamport Hall, built between 1847 and 1859, but much admired then and later, was only a few feet from the house.

A sense of great distance between the house and the rock garden was desirable. Joshua Major recommended an interesting natural rock be used, even if it was at a distance, and linked with the pleasure ground by graduating the scenery along a rural walk "from the polished grounds til it harmonizes naturally with the rocky and wild composition."<sup>49</sup> The author of *Architectural and Horticultural Fancies and Experiences* (1856) thought the ideal rock garden would be built in an old gravel pit made to appear even more remote by having a "zig-zag approach from some [obscure] point in the grounds."<sup>50</sup> An article in *Paxton's Botanical Magazine* gave two reasons seclusion was necessary: (1) proximity was necessary to appreciate their beauty, and (2) they did not harmonize with the other garden features.<sup>51</sup>

Probably because of the injunction to keep the rock garden out of sight, isolation and discovery became important elements. Kemp suggested that the surprise, and thus the pleasure, could be intensified if the rock garden was secluded, and "approached from the main walk of the garden, through a rustic arch, mantled with climbers, or by a kind of narrow winding passage, canopied and darkened with evergreens."<sup>52</sup>

### Types of Rock Gardens

As a result of having details that can "vary in a thousand different ways,"<sup>53</sup> the rock garden is an individualistic garden form, but it may be categorized into a few major types. The main ones were: (1) large individual rocks, or smaller rocks fitted closely together, (2) free-standing models, (3) rock gardens on banks, and (4) replicas of mountain scenery. Monumental piles of stone, giant rocks formed of smaller stones cemented together, and arches made of stone or cement were sometimes features in rock gardens.

#### Individual Rocks:

Probably the first rock gardens were known as "Artificial Rocks", or simply





**Figure 21.** "A Morning Walk," Gallery of Fashion (1794). Courtesy of the Metropolitan Museum of Art, New York. [Original in colour.]

as "Rocks." They apparently consisted of either one large main rock with a rough and varied surface, or a composite of smaller rocks fitted closely together, on which plants such as mosses, lichens, and saxifrages were planted. Smaller rocks, or fragments, were arranged around the base.

The 1794 fashion plate, "A Morning Walk," possibly the earliest illustration of a rock garden, shows a large rock approximately two to

three feet tall and three to four feet wide, somewhat tipped to the side, with a craggy surface thickly planted with mat-forming, grassy-leaved, and creeping plants. The top is solidly covered with a mat-like mantle of plants. More plants, slightly larger, leafier, and more erect, grow amongst the smaller rocks around its base (see figure 21).

The palms, a rose (behind the rock), and the shrubbery, in which ladies are walking, identify this as a garden.<sup>54</sup> The New York Metropolitan Museum of Art identifies it as Blenheim.<sup>55</sup> Surely no rock would have been allowed there unless it had been carefully planned and tended.

Few contemporary descriptions or illustrations have been found, but a later example shows the intention. A rock in the garden created after 1927 at Parcevall Hall (see figure 22) is particularly beautiful in May and June when the saxifrages are in bloom.





Figure 22. A rock at Parcevall Hall, Yorkshire, 1991. Author's photo. [Original in colour.]



Figure 23. Rockery for a country residence. J. Major, *Theory and Practice of Landscape Gardening* (1852).





Figure 24. The rock garden at Oakfield, Devonshire, 1990. Author's photo. [Original in colour.]

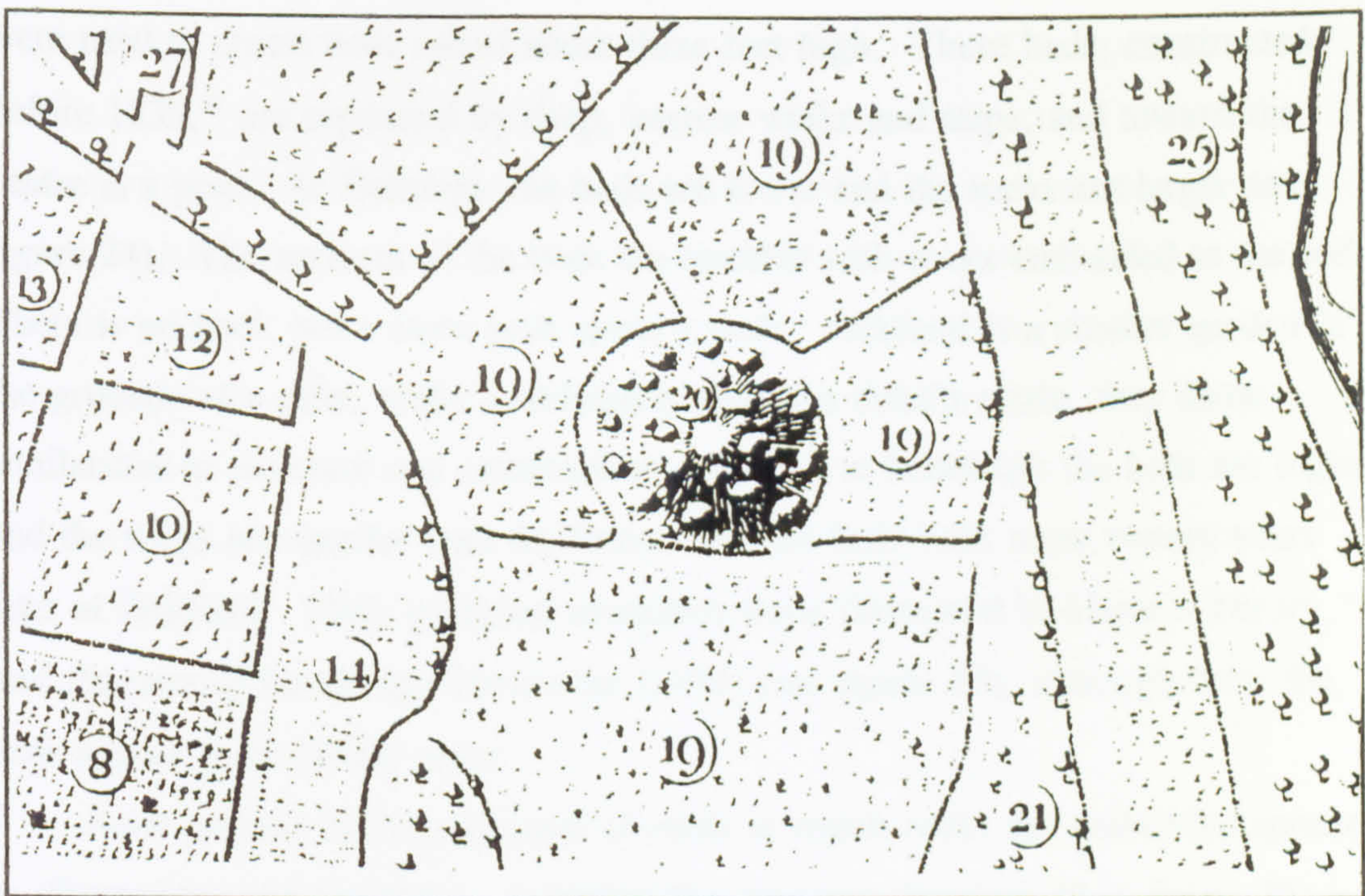


Figure 25. Plan of the rock garden at Glasnevin. Catalogue of Plants . . . of the Dublin Society's Botanic Garden (1802).



**Free-standing:**

Free-standing rock gardens were usually islands of rockwork in the form of mounds, crescents, raised-beds, or outcroppings built on virtually level sites.<sup>56</sup> They possibly evolved as the individual rock, or its clustered form, became larger and more sophisticated. Construction methods for these gardens include (1) raising rock-edged beds and filling them with soil, (2) inserting rocks into a mound of soil and debris, and (3) forming a structure of rock and filling the crevices with soil. The availability of materials no doubt helped determine the technique used, as the first two methods require a good supply of soil, and the latter depends on a quantity of rocks. A somewhat standardized model of groups of rugged beds raised one to three feet by rocks separated by paths winding among them emerged in the early nineteenth century. No written discussion of this method of construction has been found, but examples may be seen at Endsleigh and at Oakfield, a 1850s villa near Exeter.

At Endsleigh, rocks approximately one to one and a half feet in diameter were used to create beds raised about three feet high. These beds, constructed before 1839,<sup>57</sup> are separated by deep, narrow walks and steps, and toward the centre is a pool. At Oakfield, the beds are lower and the rocks are larger (see figure 24). The surfaces of the beds are studded with rocks embedded in the soil. There is no pool, but a stone arch spans a walk. Oakfield is a smaller garden in the grounds of a villa, while Endsleigh is part of a duke's estate, they show similarities in structure and construction, although at Endsleigh the beds are higher and the rocks are smaller than the lower, broader beds built some twenty years later at Oakfield. Their grouping resembles those illustrated in Major's *Theory and Practice of Landscape Gardening* (1852) (see figure 23), although there the beds appear to be farther apart.

Rock gardens built as mounds of earth in which rocks are embedded appear in illustrations and literature. A mount-like structure (marked 20 in figure 25) is shown set in the middle of the herbaceous grounds (19) on the 1800 plan of the Dublin Society's Botanic Garden at Glasnevin. It appears to be a large mound of soil from which rocks protrude. Judging by the scale of the plan, it was about



seventy-five feet in diameter with a circular base, and according to the references on the plan, was planted with saxatile and rock plants.<sup>58</sup>

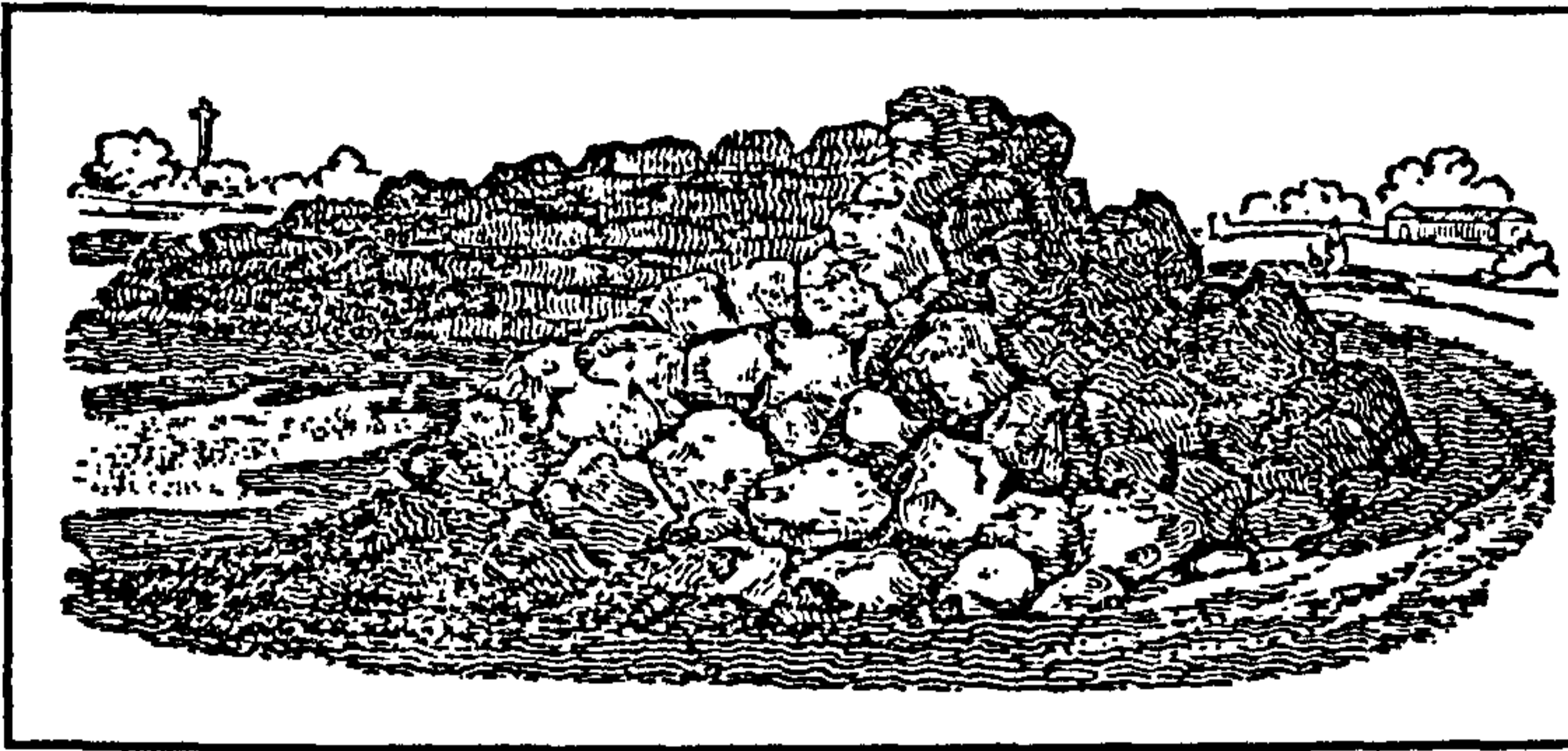


Figure 26. Crescent-shaped rockwork. J. C. Loudon, *Encyclopedia of Gardening* (1822).

In 1827 M'Leish proposed building a mound of "all kinds of rubbish and earth which may be near the spot." The side nearest the flower garden was to be as precipitous as possible, and into this inserted "as

many massive fragments of stone as could be piled thereon."<sup>59</sup> Alpine trees, shrubs and herbaceous plants were to cover the entire structure, and as a finishing touch water would trickle over a jutting stone, or ooze from a crevice, into a pool or basin at the base.

This sounds remarkably like Loudon's description of the recreation of scars, cliffs, and precipices seen in rocky districts, which show rock on only one, or at the most two sides. The upper part was to be planted with turf, trees, and bushes, with the turf forming a continuation of the rocky strata, and the aspect was to relate to the needs of plants grown. The strata would face north for ferns, or plants needing shade, and for flowering plants, it would face south or south-east.

On the sloping side, . . . there ought to be no rocks or stones cropping out, but on the contrary, the appearance ought to be such as to indicate depth of soil, where the slope joins the level surface; that being always the case in nature. . . . To unite the hill with the level surface, "the rock, or hill, including the slope, and a portion of the adjoining lawn, may be planted with trees and shrubs, chiefly in the picturesque manner."<sup>60</sup>

Mounds were also constructed of piled rocks. Lucy Edgeworth described such a garden in 1829 in a letter to Louisa Beaufort: "+ besides I have a pile of great stones, which were dug out which makes rocks for stoney plants + (with



assistance of rotten grass + leaves + turf mould) for heaths + ferns + experiments."<sup>61</sup> Some of Lucy's "stoney plants" may have come from The Trinity College, Dublin Botanical Garden where James Townsend Mackay was Curator. In 1833 Lucy's sister, the author Maria Edgeworth (1767-1849), wrote that MacKay was "delighting himself with a tour of the north of Ireland and Scotland," and that he had rediscovered "some rare Alpine plants on a Mountain named Ben Babben," near Sligo, found there twenty-five years before.<sup>62</sup>

James E. Treschmacher, writing in 1835 from Boston, gave his list of instructions.<sup>63</sup> Rock gardens were: (1) not to resemble a pile of loose stones, (2) not to be in a regular shape, such as a circle or square, and (3) constructed of rocks of varying sizes. This is a departure from Loudon's illustration in *Encyclopedia of Gardening* (1822) showing a crescent-shaped rockwork constructed of rather uniformly-sized rocks (figure 26). According to Treschemacher, immense blocks of stone should not be stacked together, nor should small ones be piled, but small stones might be placed in the crevices between larger rocks.<sup>64</sup> Judging from his instructions to create "separate masses, with passages occasionally narrow and ruggedly rising, so that it is necessary to climb over a slight impediment to make the circuit,"<sup>65</sup> Treschemacher's rockwork was of a considerable size.

Hibberd's instructions for building mounds (which he felt should be used everywhere) began with foundations of brick rubbish, covered with huge dark stones, or conglomerated bricks. "If sandy loam, with a moderate admixture of leaf mould and well-rotted dung, is used in the construction of the mound, six inches deep all over its exterior, there is scarcely anything you may wish to plant in it but is sure to flourish."<sup>66</sup> Although Hibberd's mounds, planted with evergreen shrubs on top and ivy in every crevice, were not intended as rock gardens, the construction method described may have been similar to that used for mound rock gardens.<sup>67</sup>

In 1833 Robert Mallet of Dublin suggested two geological formations to imitate when constructing a rock garden on level ground. Although they did not provide as good a situation for plants, Mallet preferred picturesque groupings of



boulders. The alternative was recreating outcroppings of rock strata, which could be made to dip to the south, and curve to create aspects for plants.<sup>68</sup> Loudon had recommended recreating strata for picturesque geological formations, but disassociated naturalism from the culture of rock plants. Mallet brought the two ideas on rockwork together, manipulating the terminal line of the strata to provide aspects for a variety of plants, and creating fissures and crevices as pockets for planting.<sup>69</sup>

Andrew Jackson Downing, writing from the Hudson River Valley in the 1840s, agreed with Treschemacher that rocks of a variety of sizes should be used. He recommended assembling rocks, from a few pounds to half a ton or more, "around the base of a large rock, in an irregular somewhat pyramidal group, bedding them sometimes partially, sometimes almost entirely in soil heaped in irregular piles around the rock, . . . avoiding all regularity and appearance of formal art." Like Treschemacher, he recommended arranging them in groups. Downing suggested that about a half dozen rocks could overhang each other, sometimes half bedded in the soil and a little distance apart.<sup>70</sup>

Like Mallet, Downing disregarded Repton's prohibition of naturalism in rockwork for the cultivation of plants. Although Downing strongly urged only building rock gardens where geological formations might naturally be found, he made allowances for the owners of level sites wishing to grow alpines and rock plants, and told how indications of rock formations might be introduced artificially:

If a few of the rocks to be employed in the rockwork are sunk half or three-fourths their depth in the soil near the edge of the proposed rockwork, so as to have the appearance of a rocky ridge just *cropping out*, . . . then the rockwork will, to the eye of the spectator, seem to be connected with, and growing out of this rocky spur or ridge below; or in other words, there will be an obvious reason for its being situated there.<sup>71</sup>

His illustration of rockwork (figure 27) shows a form more rugged than Loudon's (figure 26), with a larger main peak in the centre flanked by two smaller peaks,



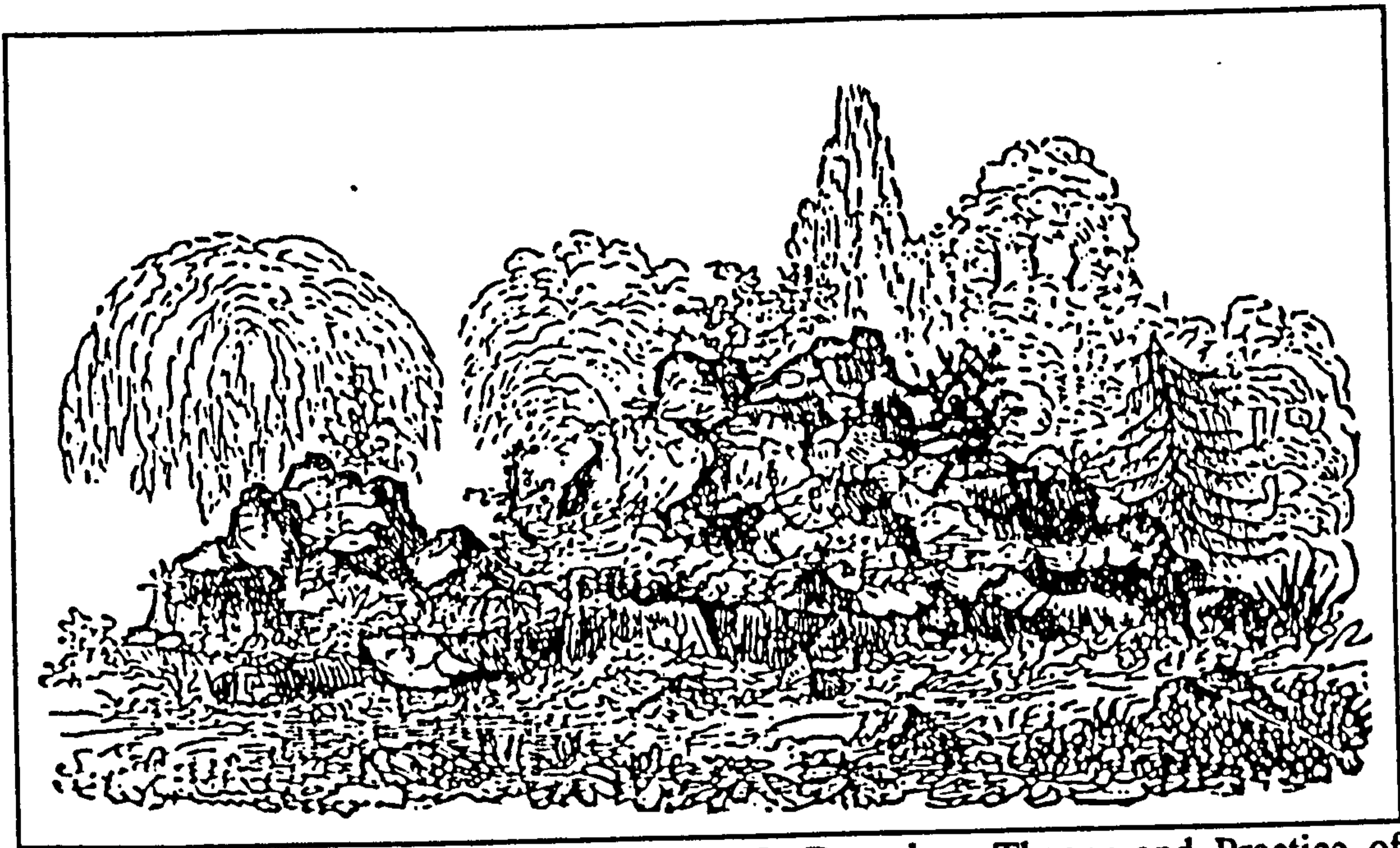


Figure 27. Drawing of rockwork. A. J. Downing, *Theory and Practice of Landscape Gardening*, 1844.

but his instructions resemble those given by Loudon in *The Villa Gardener* (1850):

Beginning at a short distance from where the main body of the rockwork is to be placed, by sinking some fragments of stone into the earth, so deep as to show only their edges, or angles rising above the turf. As the main body is approached, these stone may become more numerous; larger portions or them may be shown; and they may be connected in lines, or ridges, in such a manner as to indicate . . . natural strata.<sup>72</sup>

The rocks increased in prominence and number until the main body of the rockwork was reached, and the groups of rocks developed the impression of strata.

An illustration published by James Lothian in 1845 carried the ends of a crescent around a pond (figure 28), but created a surface more varied than Loudon had with smaller peaks rising on either side of the main central one. It is difficult to estimate the size of Lothian's rock garden, but if the pond had been ten feet long, it would have been between five and ten feet in height and between twenty and forty feet long. Another illustration of a rock garden in Lothian's book



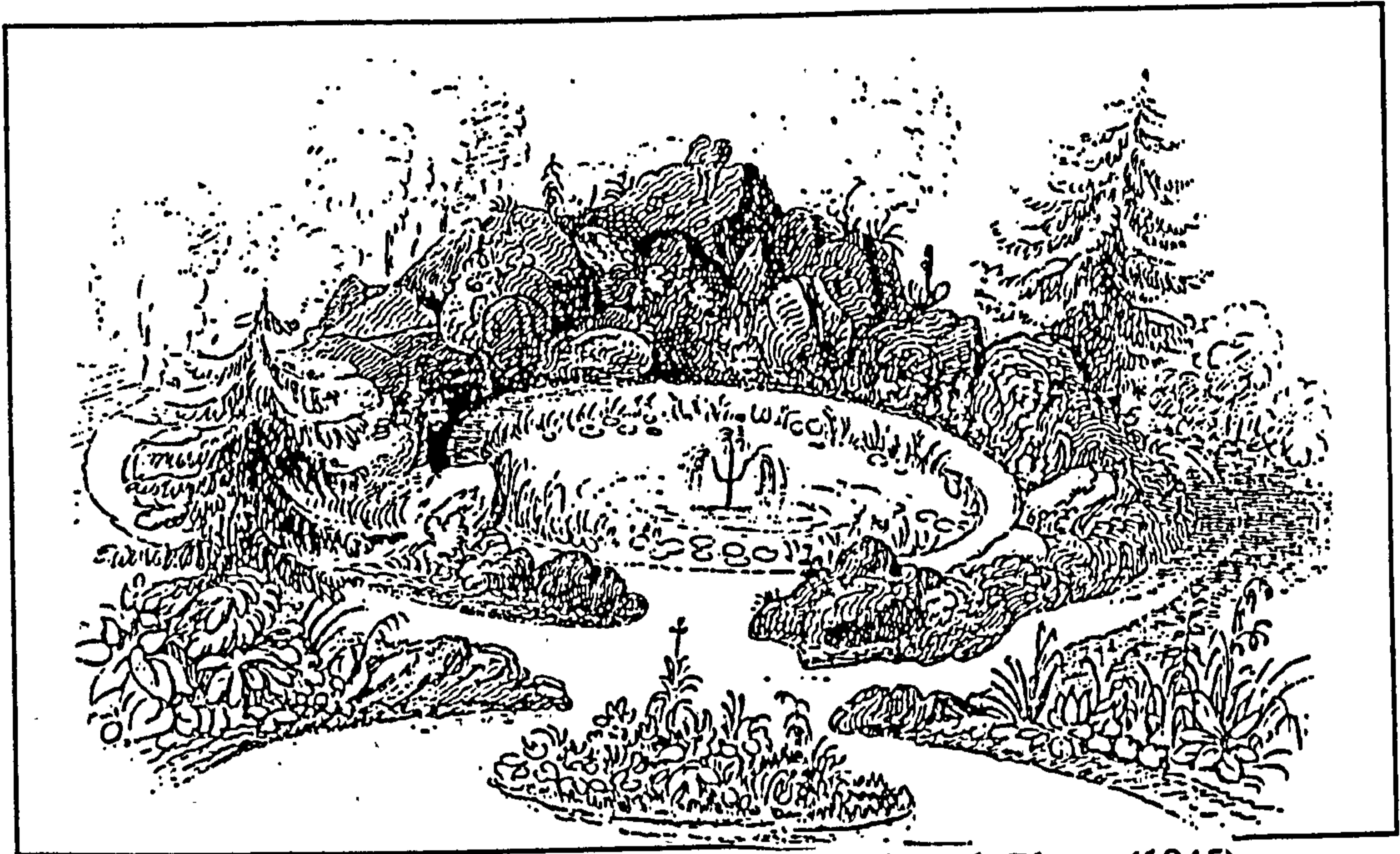


Figure 28. Rock garden. J. Lothian, *Alpine and Rock Plants* (1845).

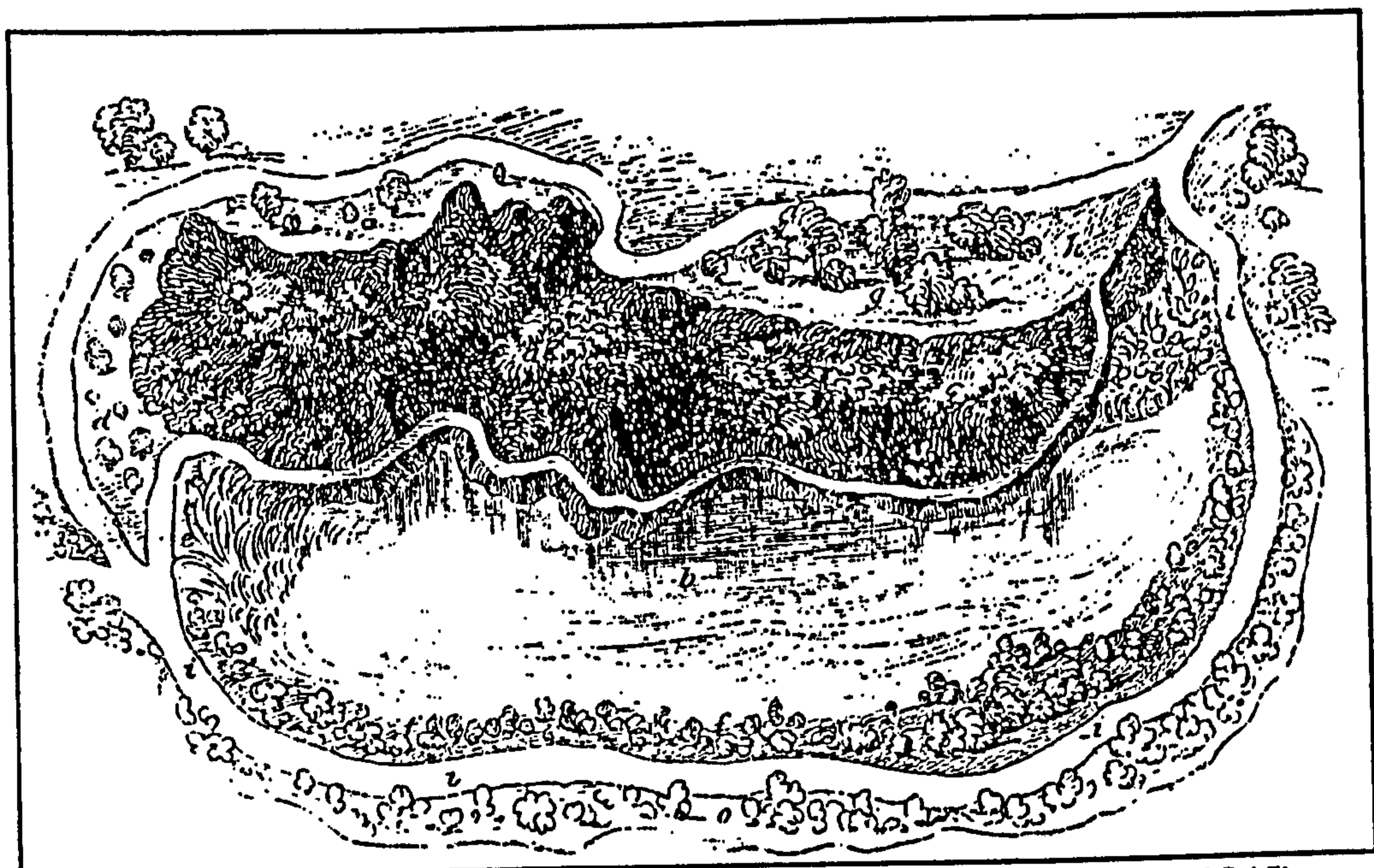


Figure 29. Rock garden in J. Lothian, *Alpine and Rock Plants* (1845).





**Figure 30.** Rockwork at Birkenhead Park, 1990. Author's photo. [Original in colour.]

appears to be as much as one hundred feet in length and twenty feet at its widest point (see figure 29). Both gardens border ponds and are circled by walks, trees, and shrubs.

Between 1844 and 1845, Paxton transformed a flat, clay field from treeless, windswept seaside into a "magnificent pleasure-ground" through the creation of "artificial hills, ridges, and mounds," which were reported to be "very easy, graceful and natural."<sup>73</sup> From its creation, Birkenhead Park was extremely important, particularly to North Americans, who visited and noted the concept that as a People's Park it belonged as much to the poorest British peasant as to the Queen.<sup>74</sup>

The naturalism of the rockwork was said to raise the question at times of whether the rockwork was "natural or artificial."<sup>75</sup> Care was also taken that the planting appeared natural. The rocks were moved without disturbing their mosses and rock plants: "all the stones on the ground . . . were laid in masses of rock-work, and mosses and rock-plants attached to them. The mounds were then planted with shrubs, and Heaths, and Ferns, and the beds with flowering plants."<sup>76</sup>





**Figure 31.** The Backhouse Rock Garden from an undated catalogue. Courtesy of D. Hamilton. [Original in colour.]

As a background to the rockwork were "a few smart touches of Alpine scenery, which already have considerable spirit and character, but which will improve with age."<sup>77</sup>

The rock mounds were once planted with a "great variety of rock plants which spring from the crevices [to] delight the eye of the cursory spectator, and interests, for hours, the lover of botanical sciences,"<sup>78</sup> but their remains are now are plantless and eroded. They appear to have been constructed as mounds of rock, but the rock may form only the upper layer on an earth and rubble substructure.

Sometime before 1864, when it was shown in an advertisement, the Backhouse's created their rock garden on their nursery grounds as a display garden (see Chapter 2). It surrounded a chain of small lakes with rock peaks, cliffs, and grottoes, recreating the geological formations of millstone from hundreds of tons of sandstone blocks.<sup>79</sup> Comparing illustrations of the Backhouse garden with Lothian's illustrations raises the question of whether there were radical differences



between the Backhouse garden and rock gardens built just prior to it, or if the advances in technology, the manpower offered by the railway and a lifting machine, the resources of a prosperous nursery, and plant species collected from around the world allowed Backhouse to build an exquisite example of the type of garden then being built.

#### Banks:

The bank rock garden may occupy a variety of positions from the top of a terraced retaining wall, to an acre of sloping ground. Banks usually provide a freely draining site that shows rock plants to their advantage. Bank rock gardens in turn may beautify an otherwise awkward area. Banks have been used by several botanical gardens to display their collections, and they have also been popular in the home garden.

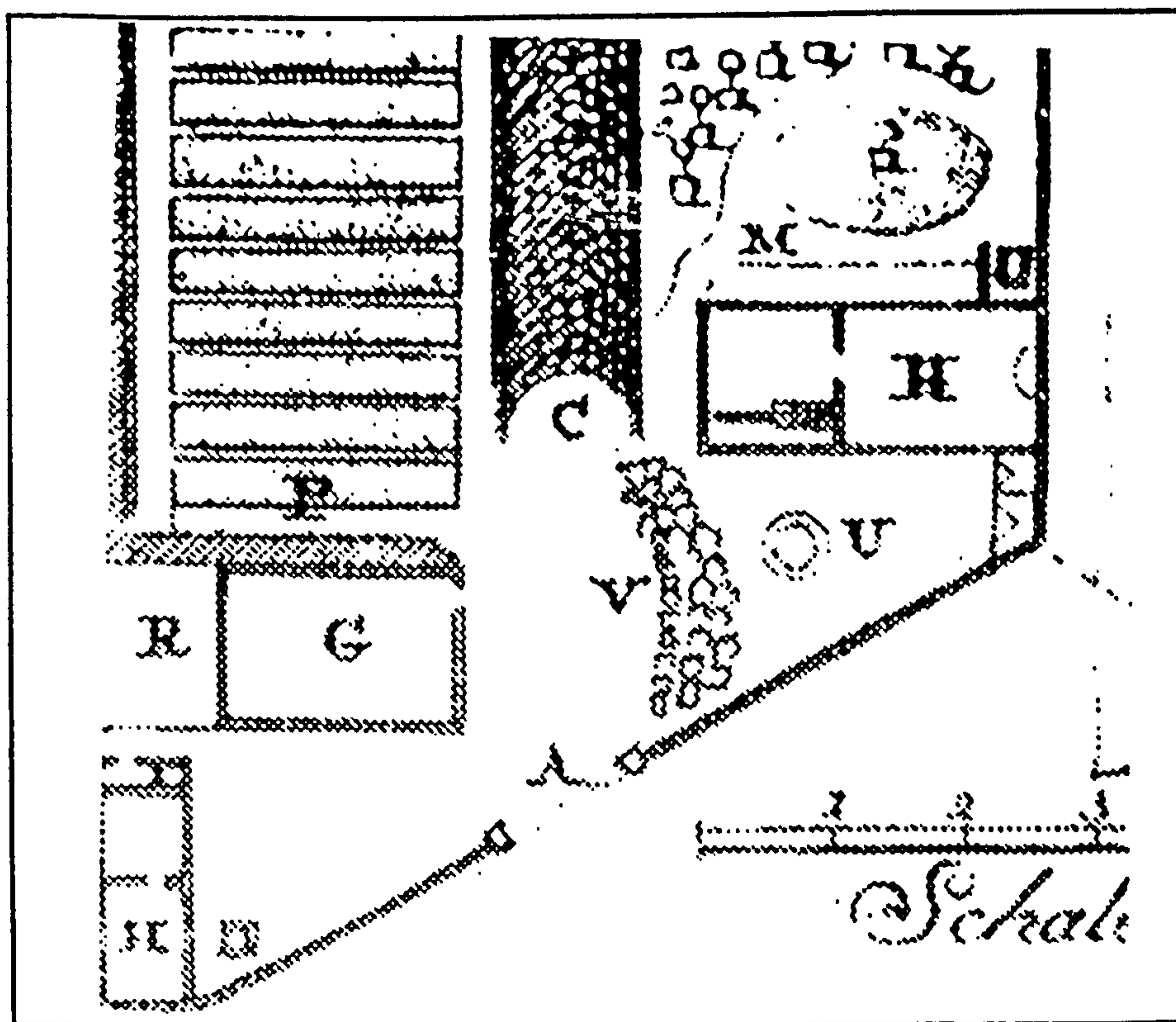


Figure 32. Detail of the 1785 plan of van Tulpenberg showing "V" Theatre of rock plants at the entrance. Oldenburger-Ebbers, Kuijlen, and Wijnauds, *Paradisus Batavus* (1983).



What may be the earliest known bank rock garden appears on an 1782 plan of Zacharias Brakel's garden, van Tulpenberg, near Utrecht, in the Netherlands.<sup>80</sup> The "Theatre of Rock Plants" shown as "V" near the entrance to the garden appears to be a bank planted with alpine and rock plants (figure 32).<sup>81</sup> From its position on the plan, it also appears to be screening "H" and "U" behind it, and perhaps directing the visitor toward the pergola, "C."

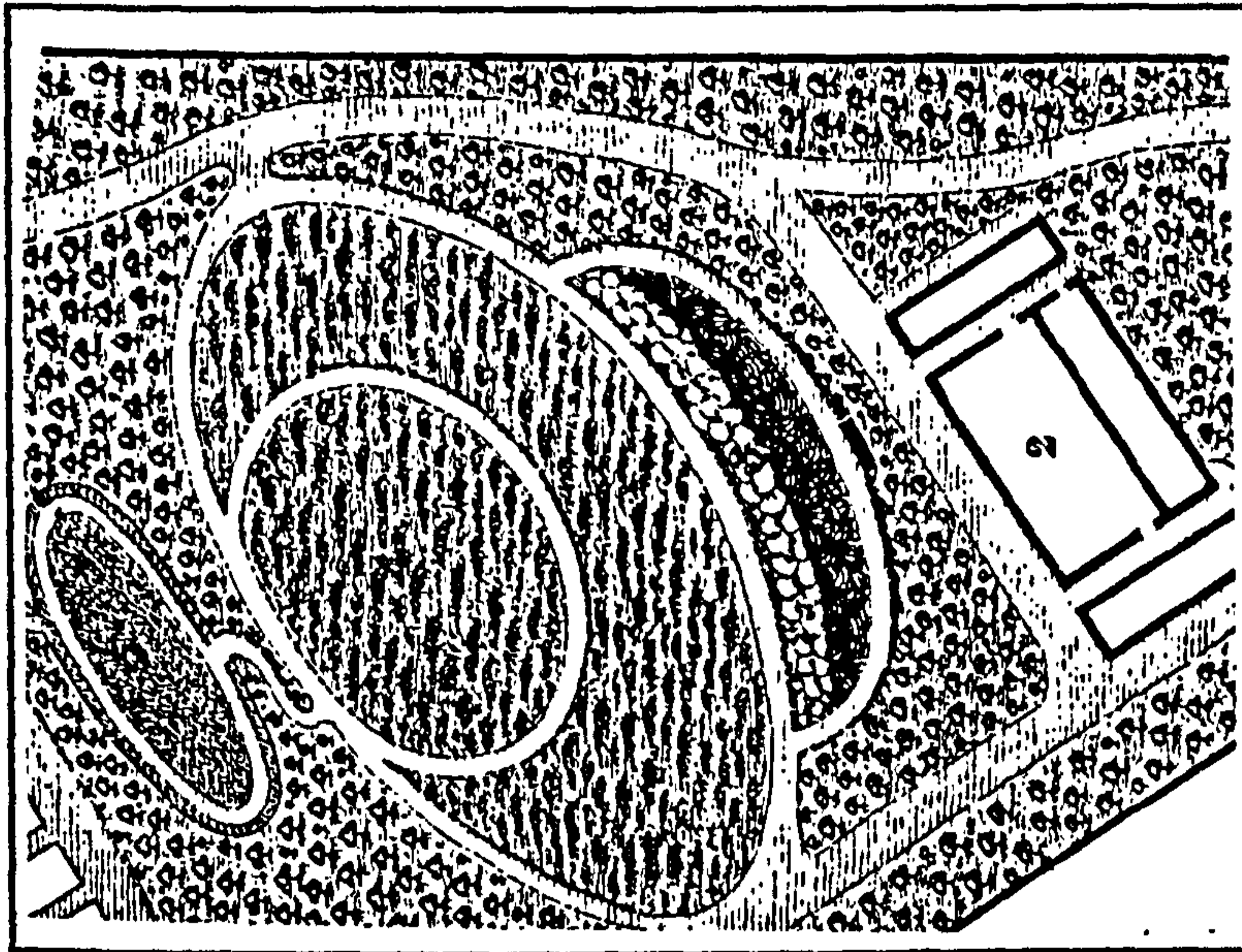


Figure 33. Detail of the plan of the Liverpool Botanic Garden showing (3) Rock Plants and (4) Bog Plants. A Catalogue of Plants in the Botanic Garden at Liverpool (1808).

A bank rock garden appears on a plan of the Liverpool Botanic Garden, published in 1808. The bank was approximately twenty-five feet long and two feet high, facing an elliptical bed for bog plants and was about forty feet from the conservatory and very close to the stove

houses. It either was a sloping bank faced with rock, or a raised stone wall, with a bed of earth at the top.

William Rosco, an amateur botanist, leased the land in 1786, and, with the help of "the distinguished Liverpool physicians, Dr. John Bostock and Dr. John Rutter,"<sup>82</sup> the garden opened in 1802. In 1831 *The Gardener's Magazine* reported that the rock in this garden had been brought "off various foreign stations, as the ballast of ships, by seafaring gentlemen devoted to the welfare of that garden."<sup>83</sup> However, it was not mentioned in Benjamin Silliman's description in *A Journal of Travels in England, Holland & Scotland, and of two passages over the Atlantic in the years 1805 and 1806*, although he discussed the bog garden and pond both of which are shown on the 1808 plan:



On our way we visited the Botanical Garden, an institution which Mr. Rosco and Dr. Currie set on foot about three years since. Under their patronage it has flourished rapidly, and is now a fine establishment. It occupies five statute acres; the ground appears to be well adapted to the purpose, there is a pond and a portion of marshy land in the middle of the garden for such plants as require a wet soil or constant immersion; the hot houses are extensive and handsome, and exhibit a great variety of exotics, while the whole garden is a place of great beauty.<sup>84</sup>

This suggests the rock garden was added between 1805 and 1808.

On 2 April 1811, a paper translated from *Annales du Musée* and read to the Royal Horticultural Society described an experiment in growing alpine plants then taking place at le Jardin des Plantes in Paris.<sup>85</sup> A two-foot-deep ditch down the centre of a sixty-foot-long southwest facing bank was plastered with six inches of a mixture of chopped straw and brick mould to keep the water from running off too quickly. The ditch was then filled with a layer of sieved earth topped with a layer of sieved sandy peat.<sup>86</sup>

The curator of le Jardin des Plantes and author of the paper, Andre Thouin, reported good results in growing roots and seeds of alpine and northern plants in these conditions, but Loudon, on a visit to le Jardin des Plantes a few years later, was told that the bank had not been successful. After two years many of the alpines had died off, while others had grown too rampantly. Loudon suggested the bank was at fault and that pot culture was the best method for growing alpines.<sup>87</sup>

At Endsleigh evenly spaced, rounded rocks, one to two feet in diameter emerge from the soil of the bed on top of a retaining wall about three feet high at the upper edge of the grass terrace. Repton designed the bank along with the rest of the landscape in 1814, and described it as "raised to the height of three or four feet on a face of ornamental pebbles, to bring closer to the eye those lesser rock-plants, or delicate blossoms, which are too minute to be seen from the ground."<sup>88</sup> Mariamne's garden at Hafod, built 1794/5, used the dished slope of a hillside to give her entire garden structure, drainage, and a delightful prospect. The plant



beds in the walled hillside garden were bordered by quartz paved walks. It is not known if the natural boulders and rock faces in the garden were used for planting, and it does not appear that additional rockwork was built.

The rock garden at Blenheim, built around 1820, was said to have covered approximately an acre along the river. It was meant to convey the idea of "rocky scars on the face of a steep bank," and "well-contrived stairs" running diagonally across the bank provided access.<sup>89</sup>

George Spencer-Churchill (1766-1840) inherited Blenheim Palace on becoming the fifth Duke of Marlborough, and set to work creating "the finest botanical and flower garden in England" along the river."<sup>90</sup> The landscape along the river had previously been laid out by the fourth Duke to resemble the type of scenery "depicted by the seventeenth-century Italian painter Salvador Rosa."<sup>91</sup> The fifth Duke laid out the Botany Bay Garden, the Chinese Garden and the Dahlia Garden below the cascade, and his rock garden on a bank above the cascade. Contemporary descriptions called this the *Flora Petraea*, home to "all the rare rock plants which will vegetate in the temperature of this climate, brought from their Alpine solitudes." Here "choice rock flowers. . . adorn the rude rock with their flexile garlands."<sup>92</sup>

This fairy region may not unaptly be called the romance of nature, and although known to be a fiction, has every appearance of reality. Vast masses of rock, seemingly covered with the thick moss of centuries, have been transposed, combined, and shifted into a thousand different forms. In some parts they form rude seats and grottoes; in others, steps hewed in the rock lead to views which absolutely foil description.<sup>93</sup>

In the 1920s the rock garden was "comprehensively overhauled" by Gladys,<sup>94</sup> the second wife of the ninth Duke, but the basic design was left intact, and sometime after Gladys's brief reign the rock garden was abandoned.

An engraving by W. A. Delamotte of 1820, shows three paths branching off a main path next to the river and slanting up the hillside (see figure 35). The upper path was bordered by upright rocks and low plants; the middle path edged by





**Figure 34.** The terraced bank at Endsleigh, 1990. Author's photo. [Original in colour.]



**Figure 35.** Rocks on the surface of the bank at Endsleigh, 1990. Author's photo. [Original in colour.]





Figure 36. Blenheim Rock Garden by Delamotte (1820). From *Blenheim, Landscape for a Palace* (1987).

young trees, perhaps thirty feet tall; and the lower path, set farther upstream, appears to pass through a planting of shrubs. A photograph taken in 1900 shows that the upright rock edging had been removed.

In the private part of the park near the river, few signs remain of the fifth Duke's botanical and flower gardens, but across the stepping stones and under the trees and shrubs may be found the rocks and steps of the rock garden.

#### Replicas of Mountain Scenery:

Rockwork at the following gardens involved three different approaches to creating scale models of rocky scenery. At Hoole House the intent was to replicate a specific section of the Alps, while at Lamport Hall, it was a study of the surface of some unspecified mountain face. At Chatsworth the Strid at Bolton Abbey was reproduced as a beautiful, rugged piece of scenery.

Lady Broughton constructed her rockwork replication of the Alps over a period of about eight years beginning in the early 1820s, working from a model of the Valley of Chamonix in the mountains of Savoy. The basic structure, the walls



and foundation, were built from the local red sandstone.<sup>95</sup> Rising to thirty-four feet at its highest point, the rock garden surrounded a lawn sixty by thirty-four yards in area. The project met with discouraging setbacks. The main wall failed several times because of the weight, rain washed out the soil, and frost heaves disturbed the rocks, but these problems were eventually solved.

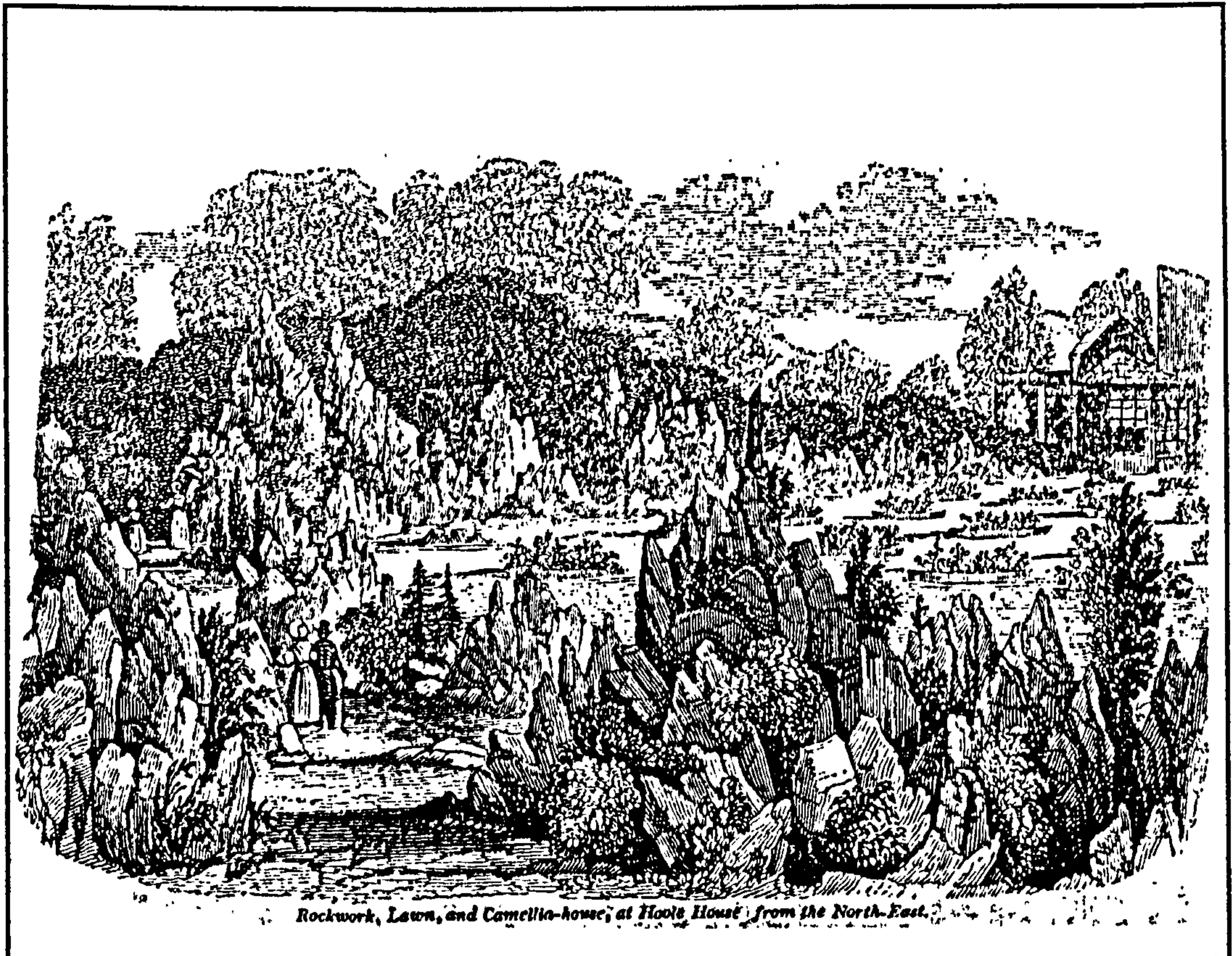


Figure 37. The rockwork at Hoole House. *Gardener's Magazine* 14 (1838).

Some twenty years later another scale model rock garden was created, but this one pointed to no particular landscape for inspiration, except the landscape of the imagination.

Sir Charles Isham (1819-1903) was described as a man who instead of looking "through a telescope to learn more of the great and magnificent," studied, "by means of the microscope, to note the mechanism and the fitness for a destined



purpose in the very minute."<sup>96</sup> The year after Isham became 10th Baronet in 1846, he designed and built a miniature rocky landscape outside his house, planted with rock plants and bonsai,<sup>97</sup> and inhabited with gnomes. By 1859 the rockwork was virtually complete, although a life-sized sculpture of a woman reading a book, was added before 1891.

The rockery's charm lay in its effectiveness as a scale model:

Once inside you forget all about the position, in looking at its deep recesses, bold protrusions, mounds as if fallen from ruins, depressions as of the remains of partly filled moats, and all grouped and studded with next-to-endless varieties of rock and alpine plants. . . . , chiefly in the case of plants minute in size, distinct and beautiful, and sometimes grotesque in form. Many of these are never at home unless they have a rock to cling to. Were the rockery far off, the little things might not be seen for days or weeks. Here they might be visited and noticed any time.<sup>98</sup>

Richard Potter, foreman of the Alpine Department of the Backhouse Nursery and a well-travelled alpine plant collector, reported on the "Unique Alpine Garden":

One seemed to be viewing miles of rock scenery, when the whole space covers only a few yards of ground. The higher portions remind me of the Maritime Alps; while the lower portion (that excavated below the surface of where we stood to view) reminded me of the extinct volcanic regions of the Auvergne in central France.<sup>99</sup>

It was recognized as one of the best rock gardens ever made by critical authorities, such as William Robinson, and admired into the twentieth century, although it broke all the rules: (1) it was near the house, (2) not stratified, and (3) did not present a particularly good situation for alpine plants.

Between 1842 and 1845 Joseph Paxton and the Duke of Devonshire created most of the rockwork at Chatsworth, including the mammoth Wellington Rock and a replica of the Strid at Bolton Abbey, another of the Duke's properties.<sup>100</sup> The



sixth Duke was pleased with the results and credited Paxton with the genius of arranging the rocks:

The spirit of some Druid seems to animate Mr. Paxton in these bulky removals. Behold the tremendous Strid, where again figures the clearest of streams, a facsimile of the renowned chasm of the Wharf, only tamed; and where the *saut perilleux* may be accomplished without danger or alarm.<sup>101</sup>

To complete the natural image of the Strid the "the steep embankments and every part of the wavy outline," were planted with "indigenous plants, rare exotics, shrubs and flowers, . . . the whole abounded by the most magnificent beech, lime trees, sycamores &c."<sup>102</sup>

### Materials

The issue of suitable materials for constructing rock gardens did not become controversial until the late nineteenth century, although questions of taste were raised and guidelines given. One author maintained, "Any rough material will do, except granite and similar rocks,"<sup>103</sup> and from the 1840s articles appeared advising on applying cement coatings to "large rough stones, broken bricks, or stoney rubbish of any kind or colour."<sup>104</sup>

Loudon's 1822 list included: rocky fragments, land-stones, conglomerated gravel, vitrified scoriae, flints, shells, spar, or other earthy and hard mineral bodies.<sup>105</sup> He later amended it to exclude "landstones, pebbles from the seashore, flints, and chalk-stones" which were "intractable materials,"<sup>106</sup> fit only for facing an steep bank to be planted with creepers or alpines.

Considering the difficulty of transporting stone in the early nineteenth century, rubble was probably frequently used to add bulk and drainage to the core of the rock garden, while the larger and more attractive stones were placed on top.

Before the railways made it easier to transport, rock could be brought by barge, but for the most part local materials were used. The walls and foundations of the garden at Hoole House were mainly built of the local red sandstone, along



with some other materials from Wales, but the mountain tops representing "la Mer de Glace" were worked with grey limestone, and quartz, marble, and spar filled up the spaces between the stones to look like snow and a glacier.<sup>107</sup> At Chatsworth and Biddulph large rocks were moved from the nearby moors.

The rockwork in Mrs. Lawrence's two-acre villa garden was reportedly built "of spars, fossil organic remains, and other geological specimens brought back from distant parts of the country."<sup>108</sup> Loudon thought that ruins, antiquities, and mineral curiosities were acceptable when used as garden decorations, and placed them in the same class with "ornamental rock-work." Rockwork could, in fact, "represent some interesting ruin, and this will afford good accommodation for mural plants." However, he warned, "interesting antiquities and mineral curiosities may be introduced sparingly among rock-work, but such things are easily overdone."<sup>109</sup>

In the mid-nineteenth century, Hibberd suggested displaying geological specimens, showing a continuing interest in natural science:

Where a few large blocks are used to adorn a terrace or lawn, they ought to be handsome specimens of some interesting stone; such as two or three immense blocks of granite, or porphyry; they must have majesty of aspect and richness of colour; and to give them a perfect right to the place which they occupy, the owner should have a story to tell about them--when and where they were quarried, the cubic measurement and weight of each block, the nature of the strata to which they belong, and whatever interesting details of geological or geographical interest may attach to them.<sup>110</sup>

The main guideline offered in the mid-nineteenth century was to keep each kind of material by itself:

Thus we might have receptacles for plants formed entirely of decayed wood in one place; another of fragments of rock; in a third, of land-stones or of flints; and, in others of vitrified bricks, of scoriae, of pieces of hewn stone, of fragments of sculpture, of shells, of corals, of spars, of petrifications.<sup>111</sup>



Hibberd also thought rockwork should be restricted to one of type material, but strictly forbade the inclusion of "shells, mixtures of colours, gingerbread of any kind."

Not everyone agreed. Materials listed for a flamboyant mid-nineteenth century rock garden included chalk brought from Croydon by railway; Plymouth limestone brought as ballast to the London Docks, and Welsh slate to form the blues; cart-loads of brown slag from the brick kiln; glass from Sunderland for the greens; and bright vermilion cement.<sup>112</sup>

Despite the inclusion of brick and rubble on his list of materials, Loudon recognized rocks were most sought after in gardens, because, as he explained, "as part of the foundation of the earth expressed grandeur, sometimes mixed with the singular, fantastic, or romantic," the expression of which forms "a fine contrast to that of perishable vegetation."<sup>113</sup>

Even after the advent of the railway, the creation of large gardens with stone was an expensive proposition that not everyone wishing to grow alpines could afford. From the early nineteenth century, alternatives were sought in regions where stone was not readily available, cities, and suburbs. At first rubble and brick were probably used as they were, but by the 1840s the best substitute was considered to be irregularly-shaped conglomerated masses of vitrified brick roughly coated by cement.

The details of form are thus wrought out, and then the whole mass is coloured, so as to give it a time-worn appearance. Dull colours of a brownish or greenish tint, should generally be used; though if any particular kind of rock is intended to be represented, its natural colours should be indicated. Stratification is also indicated by colouring.<sup>114</sup>

The term "cement," in use by 1840, was generally understood to mean Portland cement, although it was often referred to as artificial rock:

An artificial hydraulic cement produced by a mechanical incorporation of carbonate of lime and silicate of alumina, which are then chemically combined in the calcining stage of manufacture, and the resultant product reduced to a fine powder.<sup>115</sup>



In the 1840s William Newman, a nurseryman of Chichester, traveled throughout England building rockwork. A description of a cement rockery and arch at Skirving's Walton Nursery in Liverpool illustrates his technique:

The skeleton, or shell, of rockwork, being hollow and filled with soil, is formed of common walling stone, and the fused or vitrified masses from brick-kilns; these masses are afterwards covered with Roman cement, and formed into blocks, recesses, and projections, or overhanging crags. . . . Apertures and interstices are left for receiving alpine shrubs and rock plants. The whole is left to dry properly.<sup>116</sup>

Newman finished it with a coat of oil paint that gave the cement the appearance of "veined or stratified granite." As an indication of the good taste with which this was constructed it was pointed out that "all shell, coral, or vitrified materials are rejected, except where the proprietor of the grounds insists on their introduction."<sup>117</sup>

In the 1840s James Pulham (1820-1898) added the construction of rock gardens to services offered by his cement company. A formula known as Pulhamite was applied over a brick and rubble core, and cavities were provided for planting. Later this became the main focus of his business to the point of stopping the production of Portland cement and buying it from other sources<sup>118</sup>:

Pulham's practice was to assemble masses of clinker and other discarded building materials to form the foundations of the rockery, and then to pour over this structure the Portland-cement mixture, which was then moulded into individual boulders. A guiding principle in the design and assembly of the "rocks" was geological accuracy, as the cement had the colour and finish of some types of sandstone, and the rockeries were arranged to suggest the natural strata of sandstone outcrops.<sup>119</sup>

Cement was sometimes seen as preferable to real stone, and "far more natural," as it had "none of the disjointed appearance which usually accompanies rockwork made without cement."<sup>120</sup>

In 1851 a query in *The Gardeners' Chronicle* asked for "a composition to



wash a mass of artificial rock in a plant house, of a good colour to harmonize with foliage, wet or dry, and not to wash off. Portland cement dries too pale, and Roman is too 'dirt colour.'" The answer was immediate: "Mix Portland cement with soot or fine cinder dust."<sup>121</sup> An announcement that appeared in *The Gardeners' Chronicle* in 1845 offered a recipe for vermilion coloured artificial coral, had met with an interjection from the editor, "we hope that no one will have such bad taste as to take this advice. What possible business can red coral have among rockwork? Such devices belong to the barbarous ages of gardening."<sup>122</sup> There was a limit.

While the design and construction of rock gardens seems generally to have moved by 1860 toward a greater adherence to standards already in place in 1820s, the position of the rock garden in the garden and relationships with other parts of the garden was subject to change. Some of the variation was determined by the size of the property. The rock garden was already associated with water and bog gardens by 1767, and adjacent, if not surrounded, by the shrubbery. It became more sheltered and separated from the wider landscape until, by 1860, it was isolated. Its rustic nature was seen to clash with architecture and the formal landscape, and the small plants it bears need to be viewed at close range.

Construction methods apparently depended on the type of materials used, and they probably depended, especially before the railway, on the availability. The type of garden depended on the land form. Free-standing rock gardens were constructed on level sites, while slopes and banks were used as they were or made into terraces. At first the same is true of materials, but when the railway made the transportation less expensive, natural rock, or specific types of rock, became available to greater numbers of gardener.

Changes in taste and technology also caused change. A coating of cement was sometimes preferred in gardens of the mid-nineteenth century because it added smoothness and unity. The availability of less expensive, better quality rock brought by railway may have change the taste toward natural stone.



## NOTES

1. George M'Leish, "Observations on the Improvement of Flower-Gardens," *Gardener's Magazine* (1829): 48-9.
2. *Gardeners' Chronicle* (17 May 1845): 327.
3. Vauxhall Gardens is an example of such a popular commercial pleasure garden. Brent Elliott, *Victorian Gardens* (London: B. T. Batsford, 1986), 52.
4. Shirley Hibberd, *Rustic Adornments for Homes of Taste* (London, 1856; repr., London: Century and the National Trust, 1987), 404.
5. *Gardener's Magazine* 12 (1831): 444-5.
6. Loudon, *Villa Gardener*, 1850, 184.
7. "Formation of Rock Gardens," *Annals of Horticulture* (1849): 61.
8. *Annals*: 62.
9. *Annals*: 62.
10. *Gardener's Magazine* 14 (August 1838): 357.
11. *Gardeners' Chronicle* (17 May 1845): 327.
12. *Annals*: 62.
13. *Annals*: 62.
14. *Annals*: 62.
15. *Gardeners' Chronicle* (17 May 1845): 327. This is repeated in other places, for example Loudon's *Encyclopedia* (1822) and Kemp, "On Small Gardens," *Gardeners' Chronicle* (14 December 1850).
16. M'Leish: 48-9. This appears to be the earliest complaint of this nature.
17. *Gardeners' Chronicle* (10 March 1849): 147.
18. Uvedale Price, "Letter Copy Book," [on Dropmore] (1824) Additional Manuscript 51648, Manuscripts Department, British Library, London. This was kindly given to me by Sophie Piebenga.
19. Loudon, *Encyclopedia*, (1822), 884.
20. *Gardeners' Chronicle* (10 March 1849): 147.
21. Gorer, *Flower Garden*, 99.
22. Mawe and Abercombie, *Universal Gardener*, n.p. Section on pleasure grounds.



23. Humphry Repton, *Landscape Gardening and Landscape Architecture*, edited by J. C. Loudon (London: Longman and Co., [1834]), 213.
24. Maria E. Jackson, *Florist's Manual, or hints for the Construction of a gay Flower-garden*, 2<sup>nd</sup> Edition (London: Henry Colburn and Co., 1822), 22.
25. Jackson, 22; and M'Leish: 48.
26. Lewis Kennedy, "Sketch of ROCKWORK as Reservoir for SPRING in Flower Garden," "Notitiae of Trent Park" 1814, 24. Manuscripts Collection, Morton Arboretum, Lisle, Illinois. Kennedy created his "Notitiaes," to illustrate his proposed improvements.
27. Repton, 529.
28. James Bond and Kate Tiler, eds., *Blenheim, Landscape for Palace*, (Oxford: University Press, 1987), 119.
29. *Paxton's Botanical Magazine* 12 (1846): 90. A brief reference is made to front gardens and country cottages.
30. *Paxton's Botanical Magazine* 12 (1846): 87.
31. Herman Bourne, *Flores Poetici: The Florist's Manual* (Boston: Monroe and Frances, 1833), 198-199.
32. *Gardener's Magazine* (July 1836): 333.
33. *Gardeners' Chronicle* (19 Oct. 1850): 663; *Gardeners' Chronicle* (31 Dec. 1842): Amateur's Garden, No. 1111.
34. *Gardeners' Chronicle* (14 Dec. 1850): 791.
35. Kennedy, "Notitiae of Trent Park," 1814.
36. Wright: 19; and Pennant, 12-13.
37. Briggs and Kerkham: 4.
38. Jackson, *Florist's Manual*, 20.
39. Charles M'Intosh, *The Book of the Garden*, vol. 1 (William Blackwood: Edinburgh and London, 1853), 701.
40. Loudon, *Villa Gardener*, 307, 316.
41. M'Intosh, 701.
42. *Gardener's Magazine* 19 (1843): 452.



43. *Gardeners' Chronicle* (31 December 1842): Amateur's Garden No. 1111: "A piece of rockwork is very interesting, when it is placed in a proper situation and constructed with taste. . . . It would be out of character if placed near fine architectural buildings, or where the ground has a very artificial appearance, and instead of adding beauty and interest to the scenery, would mar and destroy the effect of the whole."
44. *Gardeners' Chronicle* (31 Dec. 1842): Amateur's Garden, No. 1111.
45. M'Intosh, 701.
46. Edward Kemp, "On Small Gardens," *Gardeners' Chronicle* (14 Dec. 1850): 791.
47. *Paxton's Botanical Magazine* 12 (1846): 87.
48. M'Intosh, 701-703; quoting Edward Kemp, "On Small Gardens."
49. Joshua Majors, *Theory and Practice of Landscape Gardening* (London: Longman, Brown, Green, and Longman, 1852): 36-37.
50. Author unknown, "Rock and Rootwork," *Architectural and Horticultural Fancies and Experiences*, 1856, 53. Whitmore Collection, Number D45 F49, Gloucestershire County Record Office.
51. "Rockerries, Grottoes, and Caverns," *Paxton's Botanical Magazine* 8 (1841): 138.
52. Kemp, *Gardener's Chronicle* (14 Dec. 1850): 791; M'Intosh, *Book of the Garden*, vol. 1, 701-703; quoting Edward Kemp, "On Small Gardens."
53. *Annals*: 62.
54. Mac Griswold, *Pleasures of the Garden: Images from the Metropolitan Museum of Art* (Harry N. Abrams, New York, 1987), 72.
55. Mary F. Doherty, Photograph Library, Metropolitan Museum of Art, New York, 21 October 1991, letter to the author.
56. Repton, *Landscape Gardening and Landscape Architecture*, 213: Repton recommended rock plants be grown in raised beds. Margaret Meade-Featherstonehaugh and Oliver Warner, *Uppark and Its People* (London: George Allen and Unwin [1964]), 76. In a letter of 6 July 1812, Repton suggested rock plants for beds in the parterre: "The contrast between this parterre and that in which the fruits and rock plants are proposed to prevail will increase the interest of both."
57. "Memorandum of work at Endsleigh," (14 June 1839), Devon Record Office, Exeter: "The Rock Garden Archway to be paved with small Pebbles from Brude."



58. *Catalogue of Plants . . . of the Dublin Society's Botanic Garden* (Dublin: Graisberry and Campbell, 1802). This was kindly supplied by Peter Goodchild.
59. M'Leish: 49.
60. Loudon, *Villa Gardener*, 184.
61. Christine Colvin and Charles Nelson, "Building Castles of Flowers, Maria Edgeworth as Gardener," *Garden History* 16: 1 (Spring 1988): 65. Louisa Beaufort's sister Harriet anonymously wrote *Dialogues on Botany* which were sometimes attributed to Maria Edgeworth.
62. Colvin and Nelson: 64. James Mackay (1775?-1862) was the brother of John (1772-1802) Curator of the Edinburgh Botanical Garden 1800-1802.
63. James Englebert Treschemacher was born in Nottingham in 1790, and trained as a banker in London. In 1832 he moved with his family to Boston, Massachusetts, where he continued to work as a banker, but was also curator of botany for the Boston Society of Natural History until his death in 1853. He was noted for his proficiency in mineralogy and botany.
64. T[reschmacher]: 457.
65. T[reschmacher]: 457.
66. Hibberd, 410.
67. Hibberd, 406.
68. Robert Mallet, "Horticultural Jottanda of a recent Continental Tour," *Gardener's Magazine* 9 (1833): 273-274.
69. Mallet: 273-274.
70. Andrew Jackson Downing, *A Treatise on the Theory and Practice of Landscape Gardening*, 8<sup>th</sup> Ed. (New York: Orange Judd and Company, 1859), 399-404.
71. Downing, 402.
72. Loudon, *Villa Gardener*, 184.
73. Howard Daniels, "European Parks, No. 1," *Magazine of Horticulture* 15 (1855): 411.
74. "The Peoples Park at Birkenhead, Near Liverpool," *The Horticulturist* (1 May 1851): 226.
75. Daniels: 411.



76. *Horticulturist*: 226.
77. Daniels: 411-418.
78. *Horticulturalist*: 226.
79. *The Yorkshire Gala* [Catalogue] (York: Country Life, 1908), 110.
80. Correspondence with Carla Oldenberger-Ebbers and the University of Utrecht Library has uncovered no further information on the rockwork. It is possible further information could be found in Z. Brakel, *Catalogus Boomen Heesters*, Utrecht: Muntendam, 1794. It is possible this was a free-standing, crescent-shaped model, but the arrangement of stones shown in figure 32 resembles the garden for rock plants at the Liverpool Botanic Garden (figure 33), and it appears that there was no path around the structure.
81. Carla Oldenburger-Ebbers, J. Kuijlen, and D. O. Wijnauds, *Paradisus Batavus* (Wageningen, NL: Pudoc, 1983), plate. Jan Woudstra kindly sent this illustration. The botanical usage of "Theatre" dates at least from John Parkinson, *Theatrum Botanicum: the Theater of Plants* (1640), and probably means a display.
82. Adrian R. Allan, "The Building of Abercromby Square," *University of Liverpool Recorder* 92 (1983-86): 321.
83. *Gardener's Magazine* 12 (1831): 445.
84. Benjamin Silliman, *A Journal of Travels in England, Holland and Scotland and of two passages of the Atlantic in the years 1805 and 1806*, vol 1, 3<sup>rd</sup> Ed. (New Haven: S. Converse, 1820), 79.
85. This paper was translated by Richard Salisbury, who studied at Bierley and gardened in Chapel Allerton, near Leeds. After Peter Collinson's death, Salisbury bought his garden at Mill Hill, near London.
86. Andre Thouin, "Description of a Bank for Alpine Plants," *Anales du musée*; reprint, Richard Salisbury, translator, *Transactions of the Horticultural Society* (1812): 24-25.
87. Loudon, *Encyclopedia*, 1012. See Chapter 4 for a discussion of alpine plant culture.
88. Repton, 597.
89. M'Intosh, 701.
90. Dr. William Fordyce Mavor, LL.D, rector of Bladon-with-Woodstock, vicar of Hurley (Berks.), was the headmaster of Woodstock Grammar School and ten times mayor of Woodstock. Once tutor to Lord Blandford and self-appointed poet laureate,



he wrote a guidebook to Blenheim that went through thirteen editions. Although he was not allowed to visit the new developments near the cascade, the twelfth and thirteenth editions of his *New Description of Blenheim* quoted Dr. Joseph Bowles of Faringdon Hall's description. David Green, *Blenheim Palace* (London: Country Life, 1951), 192-193.

91. Hugh Montgomery-Massingberd, *Blenheim Revisited, the Spencer-Churchills and their Palace* (London: Bodley Head, 1985), 119.

92. William Mavor, *New Description of Blenheim*, 13th Ed. (Oxford: Henry Slatter, 1846), 63.

93. Mavor, 65-66.

94. Montgomery-Massingberd, 156.

95. *Gardener's Magazine* 14 (1838): 357-358.

96. *Journal of Horticulture* (20 June 1872): 502-503.

97. Isham may have been responsible for stimulating interest in bonsai, the Japanese art of dwarfing trees, first reported by Robert Fortune. An article entitled "Japanese Dwarf Trees" in the *Illustrated London News* (Sept 1891) shows photographs of dwarfed trees in the Lamport rockery reputed to be seventy years old. *Country Life Illustrated* (1898) reported "pygmy trees . . . have been gathered here at no small expense, and not a few of them that are almost 100 years of age."

98. "Lamport Hall," *Journal of Horticulture and Cottage Gardener* (20 June 1872): 502-503.

99. Richard Potter, "Unique Alpine Garden," undated newspaper clipping in the Lamport Hall Collection.

100. Joseph Paxton (1803-1865) was a gardener at the Horticultural Society of London at Chiswick, when hired by the sixth Duke of Devonshire, who hired him as Headgardener at Chatsworth. After distinguishing himself there, he worked on other important projects, most notably the design of People's Park at Birkenhead, and the Crystal Palace.

101. Taylor, 90.

102. William Adam, *Gem of the Peaks* 5<sup>th</sup> Ed. (1851, reprint, Buxton, Derbyshire: Moorland Reprints, 1973), 125.

103. *Gardeners' Chronicle* (9 May 1844): 152.

104. *Gardeners' Chronicle* (4 March 1843): 134.



105. Loudon, *Encyclopedia*, 360.
106. Loudon, *Villa Gardener*, 184.
107. *Gardener's Magazine* 14 (1838): 359-61.
108. Loudon, *Villa Gardener*, 319.
109. *Annals*: 63-4.
110. Hibberd, 409.
111. Loudon, *Villa Gardener*, 184.
112. *Gardeners' Chronicle* (30 August 1845): 591.
113. Loudon, *Encyclopedia*, 360.
114. *Annals*: 62-3.
115. John Watson, *Cements and Artificial Stone* (Cambridge: W. Heffer & Sons, 1922), 1, 9.
116. *Gardener's Magazine* 19 (1843): 452.
117. *Gardener's Magazine*: 452.
118. Brent Elliott, "We must have the noble cliff," *Country Life* (5 January 1984): 30.
119. Elliott: 30. For more information on Pulham see Sally Festing, "Pulham has done his work well," *Garden History* 12: 2 (Spring 1984), and "Cliffs, Glades and Grotto at Merrow Grange," *Garden History* 11: 2 (Autumn 1983).
120. *Gardeners' Chronicle* (4 March 1843): 134.
121. *Gardeners' Chronicle* (5 April 1851): 214.
122. *Gardeners' Chronicle* (16 August 1845): 562.



## CHAPTER 4

### CULTURE AND PLANTING

The cultivation of alpine and rock plants in pots and on rockwork has long been a matter of much discussion and experimentation. Chapter 4 studies recommendations that have been made and attempts to identify changes in techniques and methods.

The types of plants used on rock gardens, and how they were arranged and maintained, depended in part on the way their native habitats were perceived and efforts to recreate them. An example of this is the general practice in the first part of the nineteenth century of covering alpines to keep them in the dark and dry during the winter months. The dark imitated the effect of the snow blanket, and the frozen ground was reasoned as a state of drought.

Plants chosen related to a large extent on their availability. While nursery catalogues may indicate regional availability, the earlier gardeners were dependent on trading, collecting, and buying from botanical gardens and botanists.

#### The Culture of Alpine and Rock Plants

Alpine and rock plants can be grown in pots, rock gardens, or raised beds, and many will do well in flower beds. As the greatest control over environmental conditions is possible with plants in pots, this has generally been the preferred method of cultivation for rare, valuable, and very small plants. Pot culture filled the uncertain acquaintance period between the introduction of rock plants and the discovery of the most successful means of cultivating them. It also offered advantages in displaying the smallest species, their size "rendering them less effective in rugged rockwork that when thus associated with kindred forms."<sup>1</sup>

In rock gardens, the plants, not the rocks, were the main focus, as opposed to rockwork that was used for dramatic effect.<sup>2</sup> The small flowers lost their charm when planted in beds "where the pitiless shower defaces their delicate tints with earthly splashes, or their distance from the eye causes their minute yet elegant characters to pass unnoticed."<sup>3</sup> They looked far better "hanging pendant from the crevice of a rock, or covering the sunny bank with their numerous blossoms."<sup>4</sup> In turn, flowers softened the hard edges of rocks:



About flower gardens, and all bright orderly scenes, every bit of rough stone should be made beautiful with flowers, . . . there is no position in which flowers look more grateful to the eye than when springing from the clefts of a boulder, or the sides or summit of a dark mound.<sup>5</sup>

In 1737 Lord Petre wrote to Dr. Richardson describing his experiments growing *Rubus chamaemorus* in different soils and shaped pots:

I have planted the Cloud-berry rootes in several different manners, and kinds of earth. I have also ordered some long pots to be made, that I may try that method; but the great difficulty here will be to find a proper soil for them, there being no such thing to be had here as Peat-earth.<sup>6</sup>

Philip Miller's directions in the third edition of his *Gardener's Dictionary* (1737) suggest pot culture was at that time the common method of growing alpine saxifrage: "It is usually planted in Pots fill'd with fresh light Earth."<sup>7</sup> Thomas Blaikie potted the alpines brought back from his 1775 collecting expedition and sank them in cold frames (see Chapter 2).

Collections of alpines in pots were made throughout the nineteenth century. In 1818 Loddige's Nursery pointed to the large numbers of highly desirable alpines available, and recommended creating collections, as they took little space and were inexpensive: "A single square yard will in proper sized pots afford abundant accommodation for more than fifty species; so that almost every one may afford themselves in innocent and delightful gratification."<sup>8</sup> Potted alpines made an interesting display, were easy to care for, and "in a good selection, one or the other of the kinds will always be in bloom during the spring, summer, and autumn months."<sup>9</sup>

Charles M'Intosh thought the amateur gardener would do well with "a small collection of about one hundred species."<sup>10</sup> In 1835, William King, of Wenvoe Castle, Cardiff, sent a query to *Floricultural Cabinet*, saying he was "about to make a collection of Alpine Plants in pots, after Mr. M'Intosh's system," and asking for a list of the best kinds available, and information on (1) their care



summer and winter, (2) the best aspects for different times of the year, and (3) soil.<sup>11</sup>

M'Intosh developed his techniques for the cultivation of the alpines at Dalkeith, then considered the largest private collection.<sup>12</sup> He aimed to recreate the conditions of mountain habitats. The deep snow cover that offered protection from frost and damp in the mountains was imitated by covering the alpine pits. Toward spring air and light were admitted gradually as if the snow cover was melting, and light was fully admitted in March when growth began. They were then propagated, repotted in sandy peat and loam soil in pots five inches deep with one to two inches of drainage at the bottom, and mulched with white pebbles for water retention and air circulation. During the growing season the plants were saturated with water from above to imitate the melting snow and the atmospheric moisture.<sup>13</sup> Plants were arranged within an even-span pit divided by a wall according to their need for sun and shade. Only the hardiest species were recommended for rockwork.

Thomas Rivers (1778-1877), a nurseryman from Sawbridgeworth, Hertsfordshire, described his method in the 1834 issue of *Gardener's Magazine*. Potted alpines were arranged on a platform three feet wide by eighteen inches high on the north side of a hornbeam hedge. The only mention of correlating culture to their original habitat is his comment that the "plants seem to enjoy the trifling elevation, as if they were growing on their native rocks."<sup>14</sup> His main concerns were (1) providing adequate moisture, (2) giving them shade in the summer, but more light and air autumn and spring, and (3) baffling the worms, "the greatest of all enemies to alpine plants in pots."<sup>15</sup>

Rivers was the only one to mention the display of plants in bloom. In his system the pots were only moved to bring those in blossom forward. For winter protection, they were left on the platform, and "covered with fern about nine inches thick, laid high in the centre of the platform, and over the fern a single covering of small Prussian mats."<sup>16</sup>

An 1849 article in *Annals of Horticulture* offered guidelines for the care of alpines in pots, recommending "a general revision, division, and repotting" about



August. In the summer they were to be placed in a shaded and sheltered place, and in the winter in a well-drained pit covered by wooden or any waterproof covers at night, during bad weather, and when raining to keep the plants moderately dry. "In the very severe weather of midwinter, the whole of the plants may be covered over with a loose layer, six inches or a foot thick, of dry tree-leaves."<sup>17</sup>

Mr. C. Moore's method of cultivating rock plants, reprinted from an address to the Regent's Park Gardener's Society in Hibberd's *Rustic Adornments for Homes of Taste* (1856), also recommended repotting and dividing in August, summer shade, and winter protection. In winter the pots were "plunged to the rim in coal-ashes, or some other coarse porous material, and protected from severe frosts by suitable coverings."<sup>18</sup> In spring they were removed from the porous material to prevent them rooting "out of the pot," and again "shaded from the mid-day sun, and sprinkled night and morning with water, gradually diminishing this on the approach of winter."<sup>19</sup> Seed was sown as soon as it was ripe.

Cultural recommendations varied somewhat among authors. The main difference was in the season for repotting and propagation. Moore and the *Annals* article recommended waiting until August at the end of the growing season, but M'Intosh did it in March at the beginning of the growing season. A review of Lothian's book in *Paxton's Botanical Magazine* attributed failures to "the neglect of timely and sufficient potting. To make fine specimens they require to be potted early."<sup>20</sup> All authors agreed on shade in midsummer to some degree, winter protection, and that the plants should be well watered during the growing season, but kept dry throughout the winter.

Miller said that the alpine saxifrage should be "in the Summer Season placed in the Shade, but in the Winter it should be exposed to the Sun,"<sup>21</sup> and instructions for growing potted alpines reiterate this advice throughout the first half of the nineteenth century. In 1856 Hibberd explained that they "should be sufficiently screened from summer sunshine to prevent the exhaustion of the plants by evaporation, yet not screened from the sun altogether."<sup>22</sup>

The recommendation to shade alpines in the summer disregards the clear,



exposed atmosphere of their native high altitudes, but recommendations for watering and winter protection of alpine plants were apparently in recognition of their adaptation to high altitude conditions. According to the *Royal Horticultural Society Dictionary of Gardening* (1992), there:

Almost all precipitation falls as snow, and water remains tightly bound in solid form by low temperatures; in effect, high alpine below the snow are almost at dry rest. Although at snow-melt water is released in enormous quantity, almost all of the habitats described are exceptionally free-draining. . . . As the season progresses many plants find themselves in situations that have become almost arid, through wind-drying and bright sunshine.<sup>23</sup>

### Hardiness

A debate over whether alpine plants were hardy enough to survive the British climate ran throughout discussions on their culture. Moore felt, as did Lothian, that it was a serious mistake to think that "because many of them grow upon the summits of mountains, and in other exposed situations, they are capable of enduring an intense degree of cold, and are therefore left unprotected during the winter."<sup>24</sup>

Sir John Hill (1707-1777), who was adviser to Gilbert White, Lord Petre, and the Duke of Richmond on their botanical collections,<sup>25</sup> joined the hardiness debate early on the side of outdoor planting. In *Eden*, he suggested recreating in the garden the natural conditions that would have been encountered by a plant he called Apennine Adonis:

As a Native of the *Apennines*, and of the coldest Parts of them, for in such it thrives best in its wild State. . . . it requires no stove or Greenhouse: the open Ground will serve it perfectly. . . . Let him chuse for its Place some small Spot in the Garden open to the Winds.<sup>26</sup>

Hardiness was less of an issue when plants were grown on rockwork, which



was seen as protecting the plants:

For the most part, Alpine plants may be cultivated without artificial protection, the natural circumstances attending to their culture on rock-work being favourable to the endurance even of such species as may be barely hardy under other conditions.<sup>1</sup>

Even those who thought alpines hardy enough to endure the winter fully exposed recommended keeping a potted plant of each in reserve, protected in frames in the winter: "for sometimes a very severe, or oftener a very wet winter will materially injure, if not destroy, the less robust kinds."<sup>2</sup> Duplicates were to be planted on the rockwork in the spring, and left there in the autumn or taken in depending on whether they were "hardy or tender, rare or plentiful."<sup>3</sup>

Lothian's ideal nursery plot, where plants could be propagated and maintained, was encircled by a path and surrounded by a shelter belt of trees (see figure 38). Here duplicates were to be plunged in coal ashes in a wooden frame (raised for drainage) during the winter and covered with wooden sashes. Glass ones were said to be too expensive when the wooden ones worked well.<sup>4</sup>

### Soil

Hill recommended a light but moist soil for "Apennine Adonis," and provided water retention in the layer of clay, and also built in drainage in the form of gravel:

For its Soil, let him *dig* out some Pasture-Land from under the Turf on the Side of a Hill, where the Mould is light and mellow, and is accustomed to some settling of Wet. . . . Let him take out the Mould here two feet deep; let him lay in the Bottom a thin Coat of Clay, but not too firmly beaten; upon this let him scatter some large Gravel, and then pour in his Mould.<sup>5</sup>

Instructions for the care of *Pulsatilla vulgaris* were to "let the Soil such as it is found to live best in a wild state, only a little more enrich'd, but let the Compost wherein it is rais'd from seed be lighter."<sup>6</sup>



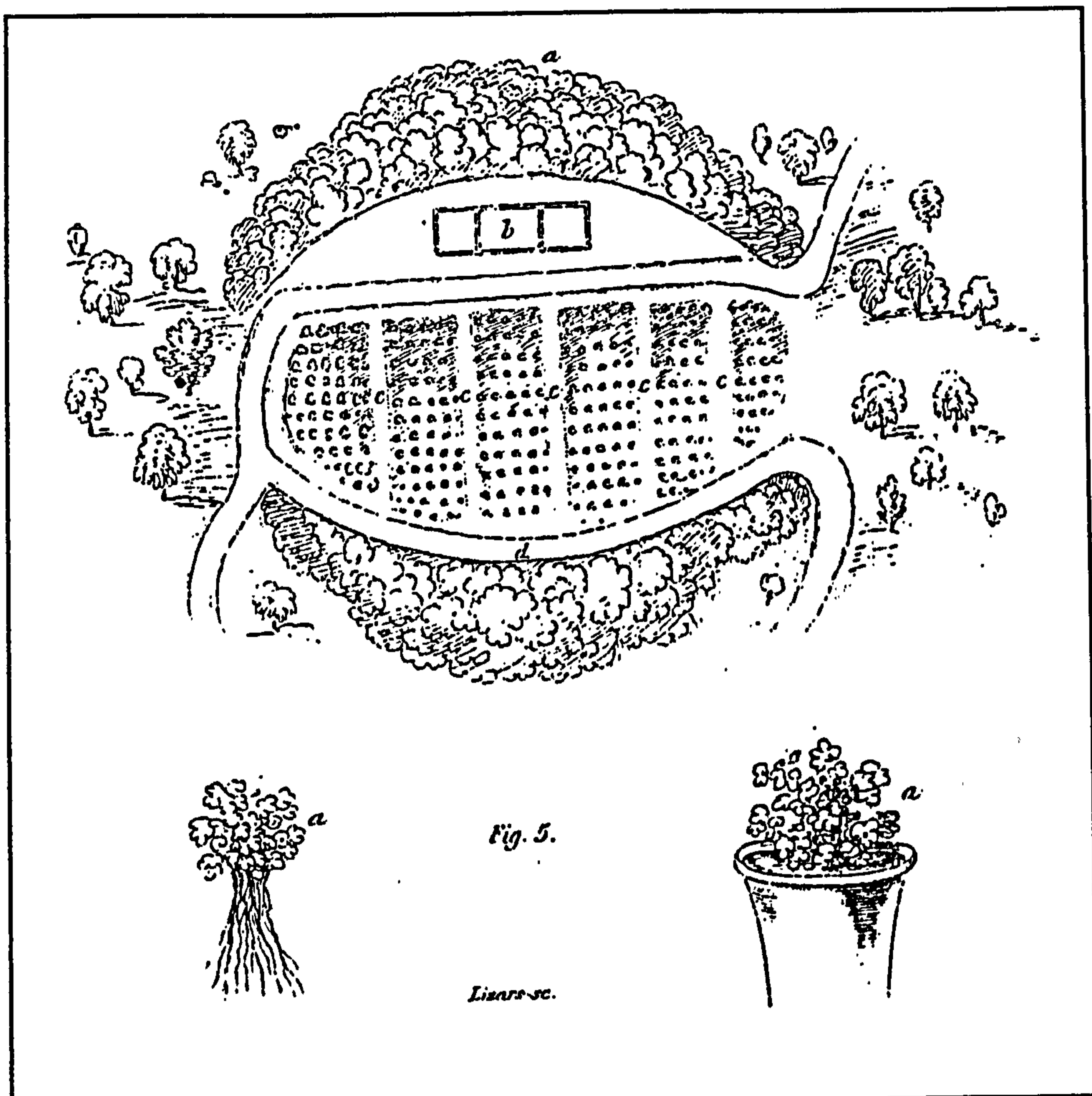


Figure 38. Nursery plot showing frames and beds in Lothian, *Alpine or Rock Plants* (1845).

Graefer's soil recommendations for the rock plants in his list of 1789, with the exception of "moist gravelly soil" for *Sedum villosum*, call entirely for dry soils, in blends of sand, brick rubbish, and gravel.<sup>33</sup> A list in the 1837 issue of *Floricultural Cabinet* offered richer soils, including loamy peat, common mould, sandy peat, and sandy loam (see Chapter 5 for a discussion of both lists).<sup>34</sup>

### Moisture

Rockwork was seen as helping to maintain "a greater uniformity of moisture."<sup>35</sup> Drought conditions and too much moisture, which was prevented by covering potted plants in the winter, were not as much of a problem on rockwork:



The superabundance of fluid percolates amongst, and drains away between the stones; and if a time of drought follow, the stones prevent that rapid evaporation which inevitably takes place when the soil has no such protection."<sup>36</sup>

Care was advised "to provide an outlet for superfluous water" during the construction of planting pockets.<sup>37</sup>

Mulch was used to further regulate moisture. M'Intosh used a pebble mulch on his plant pots to retain moisture while permitting air to circulate.<sup>38</sup> On the rockwork at Hoole House mulch also served to regulate heat from the sun. There plants were:

Protected from the weather by broken fragments of stone, clean-washed river gravel, the debris of decaying rock, moss, or other suitable substances, according as the object was to retain moisture; to evaporate moisture, in order to prevent the plants from damping off; to increase the heat, in which case dark fragments of stone are used; or to diminish it, which is the employment of white pebbles, which, by reflecting the light and heat, keep the ground cool.<sup>39</sup>

An article in *Paxton's Botanical Magazine* in 1846 attributed the loss of tender annuals and delicate half-hardy perennials to "redundancy of moisture in the soil, particularly in a still atmosphere." In addition to providing good drainage, it suggested plants like helianthemum be mulched with "small pebbles, shells, or pieces of brick, to prevent the shoots from resting on the damp ground."<sup>40</sup> In fact, mulch was recommended for "decided succulents, such as Sedums, Sempervivums, and the hardier species of Cacti in summer, together with the whole race of alpines."<sup>41</sup> Gravel or stone chip mulch, still used in rock gardens, "keeps plant necks dry, eliminates soil splash, conserves soil moisture, and prevents soil panning and erosion."<sup>42</sup>

### Aspect and Position

Rockwork was probably oriented east to west to provide ample northern and



southern exposures. According to Mallet in 1827, rock gardens modelled on outcroppings could be made to provide many different aspects by dipping to the south and curving. The strata could be broken into fissures for planting: "the broken and irregular terminations of the strata afford fine nooks and shelves for plants, and moist shady caves."<sup>43</sup> Shelves were "produced by one stratum projecting farther out than another,"<sup>44</sup> and "dark caves" were considered "effective features" where "a considerable elevation can be attained."<sup>45</sup>

During construction, hollows, recesses, and protuberances were to be formed "in, on, or against, which the plants might be fixed," according to their natural habits.<sup>46</sup> Rockwork for banks was arranged to form "plenty of interstices for the insertion of plants in the front."<sup>47</sup> Planting pockets, or nidus, varied in size depending on the size of the plant and number that would be planted there. In large gardens "the divisions or beds in rockwork should not be small, but formed for growing masses of plants; smaller spaces may be made at intervals for single plants of Fuchsias, Cistus, Cytisus, Daphne, &c."<sup>48</sup> In 1850 Kemp wrote that provision needed to be made when placing the stones for "planting a few shrubs, and a greater number of herbaceous rock plants in their interstices, which should be left broader or smaller according to the size of the plant."<sup>49</sup>

Some art was "required in arranging the crevices so that the soil "would not be washed out by the rain, and "the roots laid bare." Treschmacher recommended the use of moss to fill "the lower part of these interstices."<sup>50</sup>

### Planting Rock Gardens

The arrangement of plants in the rock garden apparently took its needs and aesthetics into equal consideration. According to Lothian, the proper disposal of the plants was "necessary for appearance as well as success in culture."<sup>51</sup> Thought was given to the arrangement of plants under natural conditions. In 1849 an author commented on the problem of keeping small plants visible while trying to reproduce the effect of elevation:



Strict accordance with nature would lead us to place the smallest plants on the highest parts, and the larger ones below them, but this would be evidently opposed to the purpose of the rock garden, which is formed principally for the cultivation and display of the minute but interesting plants which are designated Alpines. Something may be done in carrying out the principle alluded to, by placing smaller plants near the tops of some of the smaller protuberances of rock near the base, where they would be of easy access; and where rock-work is on a large scale, a diminution in the size of the shrubby plants near the top will serve to convey an idea of the depressing influence which altitude had on vegetation.<sup>52</sup>

Major's advice was to "keep immediately under the eye the simplest and most interesting kinds. This may not be done so readily. . . on bold and majestic rocks, but it may always be managed on smaller groups."<sup>53</sup>

Attempts to place plants in proper exposures on rockwork determined, at least in part, planting arrangement. Alpines and shrubs requiring full exposure were prominently displayed on the sheltered south side with the half hardy plants and sun-loving shrubs, while ferns and other plants requiring shade clothed the northern aspect.<sup>54</sup>

In the rock garden, where the plants and not the rocks were "expected to contribute ornament," plants were to be "copiously distributed, to preclude the possibility of the real object ever being mistaken."<sup>55</sup> Prince Puckler-Muskow saw "rock-plants planted impenetrably thick" at Cassiobury Park in the late 1820s, and *Gardener's Magazine* reported that at Hoole House in 1831 the rockwork was "so generally covered with creeping and alpine plants, that it all mingles together in one mass."<sup>56</sup>

Lothian listed thirteen genera to be planted on the tops and sides of the rockwork, including saxifraga, veronica, draba, sempervivum, and sedum.<sup>57</sup> Common heather and other hardy heaths, planted here and there throughout the rockery, were said to "have a very imposing effect during the summer and autumn months."<sup>58</sup> In 1845 it was noted that many species of iris and primula thrived on rockwork and produced a good effect, because they stayed green throughout the winter.<sup>59</sup>





**Figure 39.** Painting of Lady Broughton directing the planting of a potted plant in the rockwork at Hoole House. Courtesy of David Baldwin. [original in colour.]

The height of the rockwork was emphasized by planting taller plants on top. A standard barberry was said to be "effective on some prominent part of the work,"<sup>60</sup> and the Scotch thistle "an appropriate and noble addition if planted in the most elevated spots."<sup>61</sup>

The north side was mainly reserved for the cryptogams (spore-bearing, non-flowering plants) and alpines that required shade. The larger ferns occupied crevices and beds of peat, leaf-mould, and sandy loam at the foot of the rockwork. In Hibberd's ideal cave, mosses and ferns were to drip from the roof "in rich beards of green, and grey, and gold,"<sup>62</sup> and another example placed "a strong tuft of the elegant Lady Fern (*Athyrium filix-femina*)" just within the cave entrance."<sup>63</sup>

Vines were not often recommended, but in 1850 *Gardener's Magazine* suggested they would make "important and engaging accessories [if allowed] . . .



to scramble over the bolder parts of rockeries, . . . duly pruned and regulated, so as not to smother things of more value."<sup>64</sup> Clematis, hops, *Wisteria sinensis*, some brambles, and Ayrshire roses were suggested for this purpose.

In 1849 it was considered "by no means essential that the whole area of a rock-garden should present a rocky surface." While continuing to represent "the rudeness and ruggedness of nature," beds of soil might be thickly planted with "herbage and plants appropriate to the scene."<sup>65</sup> In 1856 Hibberd suggested petunias, verbenas, antirrhinums, and ivy-leaved geraniums be planted against the rockwork and in nearby beds.

Some accommodation would have been necessary to successfully grow plants that were not alpine or adapted to rocky conditions, such as fuchsias, barberries, Scotch thistle, roses, clematis, hops, and wisteria mentioned in this chapter, in rock gardens. While non-rock plants that could take well-drained conditions, such as yuccas and barberries, occupied the rockwork, the others were probably planted in nearby beds and at the foot of the rockwork. Vines were most likely planted in beds and trained across the rockwork.

Trees and larger shrubs were generally arranged on the periphery to frame the rockwork and provide seclusion, while contributing to the atmosphere. On the bolder parts of very large rockworks, trees might be planted to give "the desired romantic effect: such trees must, however, be planted young, and be allowed to mould themselves to the scene."<sup>66</sup> The highland pine and common birch were suggested as striking and appropriate.<sup>67</sup> Hibberd suggested framing a bank of rockwork with syringa or a holly on one corner, and on the other a few rhododendrons, while a white poplar, birch, or some other tree, could be planted toward one side.<sup>68</sup> Loudon felt that trees, such as varieties of the common thorn, were needed planted to the side.<sup>69</sup>

Mown grass was generally thought not to harmonize well with rocks. In 1850 a recommendation was made for a turf of "common moor Heath, Whortleberry, &c., cut into sods, and laid with a broken line along the margin of rocks, and interspersed in parts with the dwarfest trailing evergreens."<sup>70</sup> While providing "a beautiful rustic finish," this was to mark the transition and connect



"the rocks with any dressed Grass beyond."<sup>71</sup> Major, looking back twenty years to a quarry garden he had laid out in the 1830s, realized that he had been in error. "Congruity was overlooked, 'smooth shaven lawn,' and graceful winding walks, and cultivated shrubs had no business in such a locality."<sup>72</sup>

### Maintenance

The care of the plants once they reached the rock garden was mainly a simplified version of the routine for those in pots, although shade, watering, and winter protection were of less importance. An author in 1849 felt that the plants selected "should be so entirely hardy as not to require any protection, and little care and attention, after once being properly planted."<sup>73</sup>

Guidelines for routine maintenance were given only occasionally. The roots of hardy perennials were to be examined each spring, and fresh soil added as needed.<sup>74</sup> In the autumn, dead flower stocks were removed, and any necessary pruning and reduction was done, but pruning that was too formal was warned against, as it would "destroy the air of natural negligence which should at all times pervade scenes."<sup>75</sup> While reduction was an important rock garden chore, the mutilation of evergreen trailing shrubs was seen as "one of the commonest and greatest evils in the management of rock gardens."<sup>76</sup> The remedy was to move the smaller plant, or preferably, "place these spreading plants so far from the others as not to interfere with their growth for some time" at the time of planting.<sup>77</sup>

Preventing the plants from overrunning each other was a major concern: "for in rockwork, as well as in other associations, the strong are terribly inclined to bear down the weak."<sup>78</sup> *Aubrietia*, *Arabis alpina*, some alyssums, broad-leaved sedums, and Ivy-leaved Toad-Flax were listed as "encroaching neighbours, unless coerced incessantly."<sup>79</sup> Invasive plants, for example tussilago, were allowed only "where there is a great deal of room, although it is next to impossible to eradicate runners from rockwork, although they may be choking other plants."<sup>80</sup>



### Shrubs

Shrubs, like herbaceous perennials, were planted in crevices and fissures on the rockwork, but they were also planted in nearby beds and used to soften and hide the corners of the rockwork. Many were too large to be accommodated in smaller rock gardens built for the display of alpines and rock plants, but on larger rockworks and when well-managed, they were considered indispensable for creating "a charming effect."<sup>81</sup>

When placed "on an upper level" they added to the appearance of height.<sup>82</sup> The barberry was specifically suggested for creating a good effect on "some prominent part of the rockwork." If the rockwork was small, shrubs should occupy angles, and trailing shrubs should be placed on the lowest terrace, while upright ones should be associated with the "perpendicular lines of stonework."<sup>83</sup>

Used sparingly, cupressus and yuccas produced a picturesque effect.<sup>84</sup> The tufted, palm-like appearance of the Yucca and the spire-like habit of the Cupressus were said to give them "a distinctness which contrasts well with other plants."<sup>85</sup> Both were to be kept somewhat near the base, placed on some jutting block, "either isolated or as part of a group "with plants of other forms."<sup>86</sup> Shrubs on rockwork were considered more manageable than herbaceous plants, but "they soon encumber the place with their roots and light-impeding foliage."<sup>87</sup>

Any shrub with a neat appearance that was "either naturally small or capable of being kept small by the pruning knife" might be included in the rock garden.<sup>88</sup> Kemp recommended "shrubs with trailing habits, evergreens, and a few of the less delicately branched weeping kinds, and those which assume a wild, and ragged, and picturesque character" most congenial to rockeries.<sup>89</sup> The most popular genera were cistus, trailing genista, and juniperus, the upright cupressus, and yuccas.<sup>90</sup> The savin (*Juniperus sabina*) was considered "a beautiful plant for this purpose,"<sup>91</sup> and along with ivy, *Cotoneaster microphylla*, *Berberis empetrifolia*, periwinkles, and common heaths "always seem in place and at home."<sup>92</sup>



## Ferns

Although in Miller's time ferns were "seldom propagated in gardens,"<sup>93</sup> there was intense interest in collecting them among the botanists. Between 1663 and 1666, John Ray reported seeing *Asplenium viride*, an alpine fern, in Giacomo Zanoni's garden in Bologna,<sup>94</sup> and Richardson pointed out in his letter of 1718 that it had been growing in his garden for over twenty years.<sup>95</sup>

In 1829 his article, "Observations on the Cultivation of Ferns," James Housman suggested those with "distant or foreign correspondents" should engage them in collecting fern fronds to send, as "they may be raised from seed with the greatest ease."<sup>96</sup> He also recommended imitating their natural habitats in hothouses and gardens by collecting soil, or material in which it was found growing, along with the plant:

Whether inhabitants of the dry or moist rock, the shady wood, or open plain; whether found growing on sound or decayed timber, on clay, loam, or decomposed vegetable earth; all these substances can be transferred with the plant and placed in such parts of the flower-garden as will correspond with their respective habits and character.<sup>97</sup>

Hibberd considered ferns "too delicate, too choice, too individual to ever be placed at a disadvantage."<sup>98</sup> They had no place in "the midst of gay borders and parterres," and although beautiful anywhere, they were most at home, and "befitting among tree-stumps, and in boldly designed rock-work, or water-scenery, where they appear in their proper character of wildness and simplicity."<sup>99</sup> They were considered especially appropriate in the shady parts of the rock garden, where the "presence of these plants creates a very natural aspect," and were said to be able to thrive on rockwork without much soil or water, "because from the smaller number of pores in their leaves, they can live and maintain a healthy appearance for a long time, with only a small amount of moisture about their roots."<sup>100</sup> In 1835 Treschmacher reported that a friend had turned his outdoor cellar stairwell into a rocky glen planted with over two hundred ferns "all growing beautifully, and presenting a singular and interesting contrast to the other surrounding species



of vegetation."<sup>101</sup>

The Great Conservatory at Chatsworth was said to have contained a large rock "covered with a quantity of waving, plume-like, delicately green foliage, which renders it particularly attractive."<sup>102</sup>

A fernery required "ample space, variety of sunshine and shadow, plenty of moisture, an atmosphere comparatively pure, alternations of slopes, hollows, and acclivities of surface, and good shelter from high winds and frost."<sup>103</sup> Rockwork ferneries, he suggested were best constructed as round or square hillocks, with about a foot of the proper soil, faced with stones or other material," on foundations of "lime and brick rubbish."<sup>104</sup> They should provide a variety of exposures: "one side at least should never see the sun, one should have it winter and summer, while the other two should but occasionally bask in its rays."<sup>105</sup>

### Lichens and Mosses

Mosses attracted the interest of botanists, who formed collections and traded specimens, but according to Philip Miller they were not popular garden plants. Although they had recently been discovered to be "perfect Plants," rather than the "Excrescencies [*sic*] produced from the Earth, Trees, &c.," he saw them as having "no Use or Beauty."<sup>106</sup> They were not able to be propagated from seed, but had to be collected, as did the lichen.

Although mosses and lichens never received the status of herbaceous plants, they were considered of value when grown on the rock garden, and several authors made efforts to encourage people to grow them. Loudon suggested a massive rockwork, large enough to walk through, could be planted with lichens, mosses, mountain aquatic bog plants, and aquatics.<sup>107</sup> Mallet, wandering in the Alps, began his episode on rockwork with an observation on lichen:

To descend suddenly from great to small: the extreme loveliness of the mossy carpet, and the air of the gardenesque had, brought to my mind how little care our framers of rockwork take to cherish those beautiful revellers in shade and moisture, the lichens: no plants are so suitable for rockwork, none look so well; because none adapt themselves to and



preserve the contour of the stones so well, and none when once established, need so little care.<sup>108</sup>

The review of Lothian's book that appeared in *Paxton's Botanical Magazine* in 1846 began with a lament over the lack of interest in lichens and mosses.

The minuteness of the majority, and the singularity of many . . . of these plants, together with the rich appearance of some of them when growing in large patches, render them well worth care and culture, wherever there is an appropriate situation for them. But they have no richly coloured flowers to allure and dazzle the eye.<sup>109</sup>

The cultivation of mosses was mainly a matter of collecting the soil in which they were growing along with the plants:

Let as much of the soil in which the plants are growing naturally be taken up with each plant (or tuft) as will fill the stone or hollow, but observing to leave it below the lip, in order to allow the rain to lodge therein. A collection of mosses thus formed, would, even of themselves, prove interesting. . . . Many of the lichens will also succeed by this treatment.<sup>110</sup>

Loudon, observing that lichen and mosses did not grow on sandstone, and infrequently on limestone, recommended that the base of the rockwork, "and such parts as are near the eye, may be formed of masses of granite or basalt; selecting such for the shady side as are already covered with mosses and lichens."<sup>111</sup>

Sandstone and limestone were to be kept in the background and partially covered with shrubs and plants.

Mallet had success in growing lichens and reported his technique:

I have found that each plant of the common *Lichen ventosus*, when established will increase at least four inches in diameter every winter, and the best mode of getting them established is to select plants from flat pieces of rock, with some of their natural mould adhering; to plaster the stone on which the lichen is to be planted, and likewise the bottom of the plant, with a puddle of peat and clay; and to press the



plant firmly to the stone. The operation should be performed early in the autumn, that they may be established before the drought of the succeeding summer.<sup>112</sup>

The most common way to add lichens and mosses to rockwork was probably, as Loudon recommended, to collect rocks already bearing them.<sup>113</sup> Paxton brought stones to Chatsworth from the nearby moors still bearing their attached mosses and plants, as Repton had at Thoresby, and Bateman and Cooke at Biddulph.

### Availability and Sources of Plants

Although several authors suggested lists of highly appropriate plants for rockwork (see Chapter 5 for a discussion of plant lists), few records exist of actual plantings. An 1846 article in *Paxton's Botanical Magazine* reported "engaging effects created by masses of the common scarlet Pelargonium planted on a pile of rough stones," and discussed the cultural advantages of planting annuals on rockwork.<sup>114</sup> From the number of references to it, there can be no doubt that annuals and tender or half hardy perennials were sometimes planted in rock gardens.

Between the two extremes, the collection of true alpine plants and the rocky pile covered with bright annuals, were probably thousands of rock gardens containing varying blends of true alpines and bright annuals. This may be illustrated by the lists of plants at Hoole House and Redleaf.

In 1831 Hoole House contained "one of the best collections of alpines in Britain."<sup>115</sup> A list of the genera (as well as some species) shows typical rock plants, for example saxifrages, sedums, and cerastium, mixed with many plants not usually mentioned, including *Calceolaria fothergillii*, *Galium graecum*, *Jeffersonia diphylla*, and *Moehringia nucos*, a Mediterranean annual now considered a weed. Lady Broughton's evergreens included those well-known in rock gardens: arbutus (probably *Arctostaphylos uva-ursi*), rhododendrons, brooms, daphne, but also the less commonly mentioned laurustinus, azaleas, cedars, and box.<sup>116</sup>

The rocky lawn at Redleaf was also noted for its plants, but here hardy



herbaceous perennials and shrubs were mixed with half-hardy shrubs and perennials and California annuals:

In short if the reader can imagine all the plants introduced into this country that it is desirable to cultivate in a flower-garden or against a conservative wall, and in a select shrubbery, he will form a good general idea of what are planted on the rocky lawn at Redleaf.<sup>117</sup>

Instead of a collection of alpiners and rock plants, the effect was more an informal flower garden which included all the rare and interesting plants that could be obtained. Several alpiners are listed by name but it was not mentioned as a collection, although John Cox, a gardener there, was "an early authority on alpiners."<sup>118</sup> The plants in the rocky beds were:

Fuchsias, myrtles, and other shrubs generally planted against conservative walls; magnolias; a fine collection of azaleas and rhododendrons, particularly on the rocky precipices; Berberis, Mahonia, Garrya, and in short, all the finer shrubs that are rather tender, and some of the more rare trees.<sup>119</sup>

There were also specimens of cotoneaster and *Arctostaphylos uva-ursi*, and an entire bed of *Juniperus sabina*, as well as the California annuals, heartseases, petunias, lobelias, and pelargoniums.

Availability ultimately controlled what was planted in rock gardens. The main sources of rock plants from the late eighteenth century to the mid-nineteenth were (1) exchanges with other gardeners and botanists, (2) nurseries, (3) botanical gardens, (4) plant collecting, sometimes by a professional collector.

Climate, soil, and nursery stock limited local availability. A *Gardeners' Chronicle* article of 1849 proclaimed it useless to offer a list:

Because, after all, the power of cultivating particular plants will depend on climate. . . The only way of proceeding is to try experiments, to consult the intelligent nurserymen of the neighbourhood, and to observe



what thrives in their care. Every dealer can furnish a list of plants suitable for rockwork, and give instructions which possess local value.<sup>1</sup>

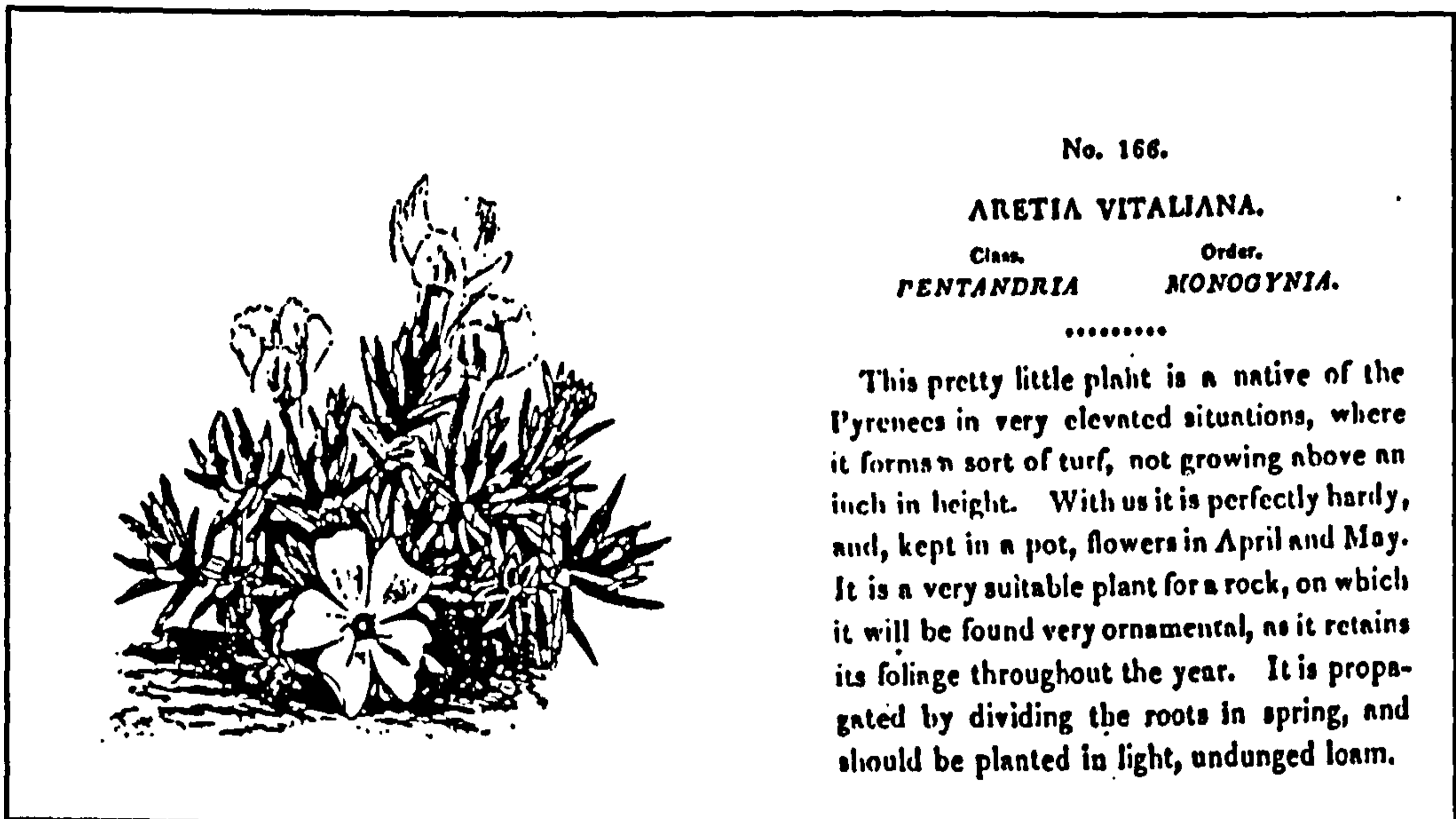


Figure 40. *Aretia vitaliana* (*Vitaliana primulaeflora*), No 116 in *Loddiges Botanical Catalogue*, vol. 2 (1818). Drawn by George Cooke.

In 1835, nurserymen around London were said to "drive a considerable trade in these rock plants. . . and generally keep them in small pots in appropriate mould so that they may be purchased and transplanted at any time of the year."<sup>2</sup>

In 1818 Loddiges Nursery began showcasing their plants in *Loddiges Botanical Cabinet*. There, amongst the brilliant new ericas and pelargoniums from the Cape and Australia, were sprinkled plants from the Alps and the woodlands of North America (see figure 40). Along with historical information on each plant were instructions for its propagation and culture. Usually pot culture was recommended, but occasionally a plant was deemed hardy enough for use in the rock garden. *Silene acaulis* was said to be "suitable for adorning an artificial rock, or equally well adapted for a small pot, which it will cover with its closely-matted tuft."<sup>3</sup>



Botanical gardens also sold plants. Housman in his 1829 article said, "The above [ferns] are all to be had at the Liverpool garden. I could give the names of many more species, but not knowing where they could be purchased, I omit them."<sup>123</sup>

While describing Mrs. Lawrence's collection of "most rare and beautiful" rock plants, it was acknowledged that "everyone cannot procure American ferns, and other plants of such rarity and beauty as are there displayed,"<sup>124</sup> other sources for beautiful plants were pointed out:

Hundreds of alpines, and many British ferns, . . . may be easily procured from botanic gardens, or by one botanist from another; and even if no perennials could be obtained suitable for rockwork, there are the California annuals, which alone are sufficient to clothe erections of this kind with great beauty and variety of colouring.<sup>125</sup>

An advertisement in *Gardener's Magazine* shows that in 1829 there was enough of a market for plants from the mountains to support a trip to London by an independent botanist:

M. Schleicher, the Swiss botanist and collector, is now in London with plants and seeds for sale or exchange. He laments in our gardens and nurseries, the neglect of scientific botanical collections, and the love of showy flowers, seminal varieties, and hybrids. Speaking of the botanical garden of Geneva he represents it as fallen to a very low state for want of funds; Professor Decandolle . . . is so much occupied with municipal matters as to have little time to attend to either the garden or authorship.<sup>126</sup>

Collecting plants for one's own garden was popular with those botanically oriented, and made an objective for travel. "An Irish Lady" reported finding gentians "within a pleasant distance from Dublin, by means of the Great Midland Railway."<sup>127</sup> Gorer attributed increased interest in alpines to rail travel:



Once it was possible to leave London one day and arrive in Switzerland the next, it was much easier to visit the Alps, and many gardeners would bring back plants of the superlative alpine display.<sup>128</sup>

Mrs. Webb went to the Alps in search of the many alpiners "well deserving our notice which are expensive to purchase and difficult to rear," and collected forty species on her first trip in 1861. In preparation for transporting plants from the mountains of Switzerland to her garden:

I had two deal boxes made, 1 foot 8 inches long, 1 foot 3 inches wide, and 4 inches in depth, fitted up with divisions about 3 1/2 inches square, and lids to drop over them, much like the lace boxes used in shops; two or three holes were pierced at the bottom of each compartment for drainage, and when the squares were filled with damp moss, they were ready for the reception of roots. . . . When we went in search of plants, I found it better to carry a tin case, which is sold in most towns in Switzerland for botanical purposes, and this, with a frail, and a fern-trowel (a very useful implement, to be purchased at Buck's, Tottenham Court Road), proved very efficient for collecting roots.<sup>129</sup>

Part of the survival technique for alpiners is a well-developed root system that can penetrate through feet, if not yards, of rocky soil.<sup>130</sup> This makes mature plants practically impossible to transplant, and amateurs, who dug up plants to bring home, probably had a very low success rate.

Early on collecting became a race between nurseries and a contest between gardeners that took its toll on wild flower populations. As Treschmacher observed in 1835:

So great indeed has been and I believe is still, the demand for them, that any one acquainted with the subject will know that the Alps, the Apennines, and every mountainous chain in the moderate climates has been ransacked for the purpose of adorning these faint imitations of nature's stupendous piles.<sup>131</sup>

Despite their popularity, it was not until the late nineteenth century that alpiners, or



other wild plants, were seen as valuable in their native habitats and protected.<sup>132</sup>

Although foreign flowering plants were thought to be all that was needed to "render the face of the stratified rock artistical."<sup>133</sup> Hibberd recommended collecting local plants, saying "a very novel effect may be produced without the help of a single exotic." He suggested dedicating a raised bank:

To these simple children of our native wilds, whose traditional histories sanctify them in our memories as associates in many of the greatest scenes in our history, and embellishments of many a glorious page of pastoral verse.<sup>134</sup>

His list of these "friends with whom we cannot easily part" included: "the periwinkle, rock-cress, lovely tormentil, still more lovely wall snap-dragon, or ivy-leaved toadflax; cinquefoil, linaria."<sup>135</sup> The pleasure of collecting them on spring and summer rambles was extended by "the perennial pleasure of seeing them bloom year after year under the culture of our own hands."<sup>136</sup>

The recommendation of keeping potted alpine plants in shade is puzzling as it contradicts current knowledge that they grow best in full exposure. While this might be thought to show a lack of knowledge and understanding, there are two possible reasons for the recommendation for shade: (1) at first it was thought that alpines and rock plants needed, not only fast draining, but dry soil, the shade might have in part counteracted the lack of moisture; (2) it is possible that this advice originated with the early botanists in the hotter climates of Italy or France, where shade was necessary in the summer to keep alpines from dying.

For the most part developments in culture seemed to be linked with advances in the knowledge of plant needs. Planting was also consistent, and the main determinant was the size of the rock garden. Shrubs and even small trees were allowed on large gardens, but smaller ones were devoted to herbaceous plants and some small shrubs.

Availability determined the plants used to a large extent, but certain plants were recommended by authors. Chapter 5 studies the plants recommended for rock gardens and looks for a reason behind the choices.



## NOTES

1. "Alpine or Rock Plants," *Annals of Horticulture* (1849): 289.
2. *Paxton's Botanical Magazine* 12 (1846): 86-90. "Here the plants not the rocks contribute ornament."
3. T[reschmacher]: 456.
4. T[reschmacher]: 456.
5. Hibberd, 409.
6. John Nichols, *Illustration of Literary History of the Eighteenth Century*, vol. 1 (London: Printed for the author, 1817), 350. *Rubus chamaemorus* appeared on Loudon's list of rock plants in 1822. See Table 2.
7. Philip Miller, *Gardeners' Dictionary*, 3<sup>rd</sup> corrected edition (London: Printed for the author, 1737), n.p. See entry for Saxifrage.
8. *Loddiges Botanical Cabinet* 1 (1818): No. 32.
9. *Annals*: 289.
10. Charles M'Intosh, *Book of the Garden*, vol. 2 (Edinburgh and London: William Blackwood and Sons, 1855), 814.
11. William King, *Floricultural Cabinet* (1 Sept. 1835): n.p.
12. Charles M'Intosh's books included: *Practical Gardener and Modern Horticulturalist* (1825), *Flower Garden* (1838), and *The Book of the Garden*, 2 vol. (1853-55).
13. M'Intosh, 814.
14. Thomas Rivers, "Floricultural Memoranda," *Gardener's Magazine* 10 (1834): 133.
15. Rivers: 133.
16. Rivers: 133.
17. *Annals*: 289-90.
18. Hibberd, 421-22.
19. Hibberd, 421-22.
20. James Lothian, "Review of *Practical hints on the culture and general management of Alpine or Rock Plants*," *Paxton's Botanical Magazine* 12 (1846): 236-7.
21. Miller, section on saxifrages.



22. Hibberd, 422.
23. *RHS Dictionary*, 135.
24. Hibberd, 423; "Review," *Paxton's Botanical Magazine* (1846): 236.
25. John Feltwell, *The Naturalist's Garden* (Topsfield, MA: Salem House Publishers, 1987), 92. Wilfrid Blunt [*Art of Botanical Illustration* (London: Collins, 1950), 152-153] portrays Hill as a "ludicrous figure," but as the contents of his writing are being discussed here, his personal history is of no importance.
26. Sir John Hill, *Eden: a compleat Body of Gardening* (London: Privately printed, 1773), 254.
27. *Annals of Horticulture*, "Alpine or Rock Plants," (1849): 289.
28. *Annals*: 289.
29. *Annals*: 290.
30. Hibberd, 422.
31. Hill, 254.
32. Hill, 259. *Pulsatilla vulgaris* appeared on Loudon's list of rock plants in *Encyclopedia*, 1822, 884. See Table 2.
33. Graefer, n.p.
34. "Review of *The Flower Garden*," *Floricultural Cabinet* (1837): 180.
35. *Paxton's Botanical Magazine* 12 (1846): 88.
36. *Paxton's Botanical Magazine*: 88.
37. "Formation of Rock Gardens," *Annals of Horticulture* (1849): 63.
38. M'Intosh, 814-15.
39. *Gardener's Magazine* 14: 1838: 361-2.
40. *Paxton's Botanical Magazine* 12 (1846): 89.
41. *Paxton's Botanical Magazine*: 89.
42. *RHS Dictionary*, vol. 1, 136.
43. Mallet: 272-273.



44. Loudon, *Villa Gardener*, 184.
45. Hibberd, 413.
46. *Annals*: 63.
47. Hibberd, 407.
48. *Annals*: 62.
49. *Gardeners' Chronicle* (14 Dec. 1850): 791.
50. T[reschmacher]: 457.
51. Lothian, 32.
52. *Annals*: 63.
53. Major, 37.
54. *Annals*: 63; T[reschemacher]: 457.
55. *Paxton's Botanical Magazine* (1846): 87.
56. Ludwig Heinrich Herman von Puckler-Muskow, *Tour in England, Ireland and France in the years 1826, 1827, 1828 and 1829* (Zuurich: Massie Publishing, 1940), 74; *Gardener's Magazine* (1838): 357.
57. James Lothian, *Practical Hints on the Culture and general management of Alpine and Rock Plants* (Edinburgh, 1845), 33. To be planted on the top and sides: thymus, iberis, parietaria, linaria, phlox (dwf.), saxifraga, veronica, polygala, cochlearia, draba, sempervivum, sedum, and mesembryanthemum.
58. Lothian, *Practical Hints* (1845), 32; *Annals*: 63-4. Suggested plants included: Strawberry trees (arbutus); Sun rose (Helianthemum); Rock rose (Cistus); Bramble (Rubus); wild rose (Rosa); wild Honeysuckle (Lonicera); Hawthorn (Crataegus) pink and white flowered; Furze (Ulex) dwf, double, Irish; Juniperus procumbent varieties for the higher parts; Genista, procumbent and low-growing species for higher parts; Hedera Helix, associations and effect. Herbaceous perennials: Cheiranthus cheiri appropriate against perpendicular structure; Saxifraga, indispensable; Campanula; Dianthus; any of the smaller herbaceous plants and all of trailing habit.
59. *Gardeners' Chronicle* (17 May 1845): 327.
60. *Gardeners' Chronicle*: 327.
61. Hibberd, 413.



62. Hibberd, 413.
63. *Annals*: 63-4.
64. *Gardeners' Chronicle* (14 December 1850): 791.
65. *Annals*: 62.
66. *Annals*: 63-4.
67. *Annals*: 63-4.
68. Hibberd, 407.
69. *Villa Gardener*, 184.
70. *Gardeners' Chronicle*: 791.
71. *Gardeners' Chronicle*: 791.
72. Major, 41.
73. *Annals*: 63.
74. Month by month directions for alpine plant care on rockwork are detailed in *Annals*: 290-2.
75. *Annals*: 290.
76. *Annals*: 63.
77. *Annals*: 63.
78. *Gardeners' Chronicle* (10 March 1849): 147.
79. *Gardeners' Chronicle*: 147.
80. Mallet: 273.
81. *Gardeners' Chronicle* (10 March 1849): 147.
82. *Annals*: 63.
83. *Gardener's Chronicle* (10 March 1849): 147.
84. *Annals*: 290.
85. *Annals*: 63-4.



86. *Annals*: 63-4.
87. *Gardeners' Chronicle* (10 March 1849): 147.
88. *Gardeners' Chronicle* (10 March 1849): 147.
89. *Gardeners' Chronicle* (14 December 1850): 791.
90. *Annals*: 290.
91. *Gardeners' Chronicle* (17 May 1845): 327.
92. *Gardeners' Chronicle* (14 December 1850): 791.
93. Miller, section on ferns.
94. Nichols, 350.
95. Nichols, 348.
96. James Housman, "Observations on the Cultivation of Ferns," *Gardener's Magazine* (1829): 51.
97. Housman: 51.
98. Hibberd, 410.
99. Hibberd, 426.
100. *Paxton's Magazine of Botany* (1849): 121.
101. T[reschemacher]: 456-57.
102. *Paxton's Magazine of Botany* (1849): 121.
103. Hibberd, 420.
104. Hibberd, 420.
105. Hibberd, 420.
106. Miller, section on mosses.
107. Loudon, *Encyclopedia*, 884.
108. Mallet: 272.
109. *Paxton's Botanical Magazine* (1846): 236.



110. Lothian, 33.
111. Loudon, *Encyclopedia*, 884.
112. Mallet: 272.
113. Loudon, *Encyclopedia*, 884.
114. *Paxton's Botanical Magazine* (1846): 90.
115. *Gardener's Magazine* (1831): 551.
116. *Gardener's Magazine* (1838): 362-3. The list of principal genera at Hoole House included: saxifrages, sedums, cistus, pansies, rock pinks, anemones, dryas, myosotis, heaths, violas, *Lychnis alpina*, erinus, *Frankenia laevis*, campanulas, ajugas, alyssums, anemones, oxalis, hepataticas, antirrhinums, aquilegias, arabis, aretias, asters, astragalus, armerias, anagallis, *Cheiranthus alpinus*, cerastium, claytonias, *Convallaria bifolia*, coptis, trifolia, *Cornus canadensis*, Cortusa, Matthioli, cyclamens, *Calceolaria Fothergilli*, drabas, erodiums, *Galium graevcum*, *Gaultheria procumbens*, globularias, cranes-bills, gypsophilas, gentians, hieraciums, hypericum, hippocrepis, *Jeffersonia diphylla*, lathyrus, lotus, *Leontodon aureum*, linums, mitellas, *Moerhingia mucosa*, menziesias, *Ornithopus durus*, ononis, onosma, orobus, pinguiculas, phyteumas, pyrolas, potentillas, primulas, *Pisum maritimum*, *Polygala chamaebuxus*, *Ribes arcticum*, *Aubrietia purpurea*, *Saponaria ocymoides*, *Salvia pyrenaica*, statices, silenes, soldanellas, *Solidago minuta*, *Bellis minuta*, *Teucrium pyrenaicum*, *Tiarella cordifolia*, *Mitella diphylla*, *Trientalis*, *Thymus corsica*, dwarf veronica. Evergreens include: yews, privets, laurels, arbutus, rhododendrons, brooms, cedars, box, daphnes, laurustinus, azaleas.
117. *Gardener's Magazine* (July 1839): 370.
118. Brent Elliott, *Victorian Garden* (London: B. T. Batsford, 1986), 48. Cox's obituary credits him with the rare and beautiful shrubs, alpine and herbaceous plants at Redleaf, which were "surpassed by few." *Gardener's Chronicle* (September 1881): 378.
119. *Gardener's Magazine* (July 1839): 370.
120. *Gardeners' Chronicle* (10 March 1849): 147.
121. T[eschemacher]: 456-460:
122. *Loddiges Botanical Cabinet* 6 (1821): No. 568.
123. Housman: 51.
124. Loudon, *Villa Gardener*, 322.



125. Loudon, *Villa Gardener*, 322.
126. *Gardener's Magazine* 5 (1829): 332.
127. An Irish Lady, "Botanical Notes on Ireland," *The Phytologist* (1895): 171.
128. Gorer, *Growth Of Gardens*, 173.
129. Mrs. T. W. Webb, *Floral World and Garden Guide* (1869): 130.
130. *RHS Dictionary*, vol. 1, 135.
131. T[reschemacher]: 457.
132. See Henry Correvon, *Rock Garden and Alpine Plants* (MacMillan and Co., London, 1930), 77-83.
133. Loudon, *Villa Gardener*, 184.
134. Hibberd, 414.
135. Hibberd, 413-4. The list includes: periwinkle, rock-cress, lovely tormentil, still more lovely wall snap-dragon, or ivy-leaved toadflax; cinquefoil, linaria, sea-side thrift, fairy mullein, Germander speedwell, mallows, wild convolvulus, rock-rose, crane's-bills, willow herbs, hawkweeds, and musk thistles, brilliant bird's foot trefoil, which may be found in any meadow or hedge-row, the pimpernel, the wild heartsease, the yellow avens, the lovely oxalis, lithrum, orchises, and the blatter campion. Away from the town smoke, the native heaths, double furze, broom, bugloss, large bindweed, wild-briar rose, and squill might be added.
136. Hibberd, 414.



## CHAPTER 5

### PLANTS IN THE ROCK GARDEN

As the central element of the rock garden, plants contribute purpose, life, and form, while the elevated structure supplies them with well-drained soil, improved exposure to light, and air circulation. The rock garden provides low plants with relative freedom from competition and displays prostrate, mat-forming, and creeping plants to their best advantage, providing them with a place to spread, cling, and drape. This chapter studies lists of plants recommended for the rock garden between 1789 and 1859 in an attempt to identify the qualities that make them desirable rock garden plants.

Through the creation of a master list, the most commonly recommended plants have been selected and their characteristics identified. While Table 3 appears in the text, three tables created for this chapter are located in Appendix VI. The first is the updated master list of names, the second shows the dates that the plants appear on lists, and the third (Table 4) is a study of the characteristics of the plants used on three or more lists.

#### Definitions of Alpine and Rock Plants

Plants used in the rock garden have long been known as "alpine and rock plants."<sup>1</sup> The *Facts on File Dictionary of Botany* defines alpine plants as:

A major regional community of vegetation in high mountainous regions and on high-level plateaus. The plants generally grow in thin stony soil and are subject to high light intensity and high wind speeds . . . . The vegetation changes as the altitude increases due to the associated drop in temperature. The vegetation also differs between north- and south-facing slopes. The lower limit of the alpine zone varies in different mountain regions and also varies with the wetness of the locality and the mass of the mountain range.<sup>2</sup>

According to this definition, any plant from an alpine region is considered an alpine, including ferns, shrubs, and mosses. The Royal Horticultural Society's *Dictionary of Gardening* offers a less literal definition:



Strictly, an alpine flora encompasses those species that inhabit the world's mountains, or the Alps in particular, above the tree line. The more general definition of alpine--a plant of the Alps, or any lofty mountain--has been considerably broadened by the 20th-century gardener to include a wide range of plants suitable for cultivation in the rock garden, in troughs and raised beds, or in the alpine house.<sup>3</sup>

Many alpine plants grow happily in normal garden soil, while others can be too large or vigorous for the rock garden. Plants originating on the woodland floor, along the seashore, or in the arctic may grow better in conditions provided by the rock garden and may have low, spreading, growth forms best displayed there.<sup>4</sup> The second definition recognizes that the meaning of "alpine" has broadened through horticultural use to include plants not strictly of alpine origin, but resembling them in form and cultural requirements, although this happened considerably earlier than the twentieth century. By 1845 James Lothian, author of *Practical Hints on the Cultivation of Alpine and Rock Plants* (1845), defined alpine plants as:

Natives of high or alpine situations, many of which are denizens of hills and woods of Great Britain, while others are inhabitants of bogs and water-- hence the latter are generally termed aquatics-- in short, any plants, which from their minuteness and rarity, cannot with safety be planted out in the plots or borders. This constitutes (what are called by cultivators) Alpine-plants.<sup>5</sup>

Rockwork was built to meet the cultural requirements of alpine and rock plants from the mid-eighteenth century. John Blackburne built his rockwork for "plants yt grow in rocks"<sup>6</sup> as stated in his letter of 1767. In 1773 the Chelsea Physic Garden's rock garden was built for the "cultivation of such plants as will only thrive in stoney [sic] soils,"<sup>7</sup> and *The Universal Gardener and Botanist* gave its directive to plant rockwork with "a variety of saxatile plants, or such as grow naturally on rocks and mountains" in 1778.<sup>8</sup> By the early nineteenth century, Repton wrote of "the numerous class of rock-plants,"<sup>9</sup> although he did not mention any by name. The rockwork of Lewis Kennedy's Spring Garden at Trent Park was to be planted with "creeping and trailing plants such as saxifrages, sedums, &c.



joined with some delicate growing plants."<sup>10</sup> Mariamne Johne's garden, created in 1794/5, was described:

It aims at a coincidence with the peculiarities of its situation, and exhibits in a nursed state many of the most curious plants, which are the natural growth of high exposures in foreign climates.<sup>11</sup>

Early in the popularity of the rock garden, rock plants were selected by knowledgeable writers to recommend to their readers, amateur and professional gardeners. Their lists contained what were then considered the most interesting and beautiful. Although it might be expected that the endorsement indicated availability and relatively basic culture, *Bartsia alpina* is now considered practically impossible to grow.<sup>12</sup>

A study of these lists suggests (1) criteria for the inclusion of plants in the rock garden, (2) the appearance they gave these gardens, and (3) how concepts of appeal and suitability changed.<sup>13</sup> A master list and four tables have been created for the study of plants recommended for use in early rock gardens by merging nine lists published between 1789 and 1856.<sup>14</sup> The first three lists are the earliest known to exist, but after 1835 lists of suggested rock plants became more common. The six later lists were chosen from journals and books thought to be readily available to most gardeners.<sup>15</sup>

Graefer's *Descriptive Catalogue of Upwards of Eleven Hundred Species and Varieties of Herbaceous or Perennial Plants* (1789) is the earliest known list to identify and recommend rock plants.<sup>16</sup> Among the eleven-hundred plants are seventy-five specified for the purpose of "planting artificial rocks and ruins."<sup>17</sup> Also included is information on height, soil, situation, time of flowering, fragrance, colour of flowers, and native country.

The recommendations for soil were usually for a dry, sandy soil mixed with brick rubbish, or a dry, gravelly soil, although a moist, gravelly soil was suggested for *Saxifraga villosa*.<sup>18</sup> All but four of the seventy-five were said to demand well-drained soil in some form. Those four either required "strong, deep soil" or



accepted "all soils and situations."

Graefer listed fifty-two plants as having heights of one foot or less (thirty and one half centimetres), twenty as between one and two feet (thirty and one half to sixty-one centimetres), while only five were two feet or over (more than sixty-one centimetres). This suggests his plants were chosen for low growth, but that up to two feet (sixty-one centimetres) was acceptable. Their land of origination ranged from England to "The East," including France, Spain, Germany, Italy, Switzerland, Austria, North America, Siberia, Portugal, Italy, Lapland, Hungary, The Levant, and Island of Crete. The Alps, Pyrenees, Tyrol, Mt. Sipylus, and Helvetian Mountains are mentioned specifically as sources. Asia was mentioned as a source for only one plant, and the Southern Hemisphere was not represented at all.

John C. Loudon included a list of one hundred and thirty-three "Flowers for Ornamenting Rocks . . ." in his *Encyclopedia of Gardening* (1822). Although he remarked that "in strict propriety, *mountain or rock plants* only should be introduced on artificial rock-work,"<sup>19</sup> Loudon, pointing to the difference between their native moist, cool mountains and the ridges of soil and stone where they were to grow, selected those that grew naturally in dry soil. He included bulbs, biennials and annuals, and marked the most ornamental and those with long flowering periods.<sup>20</sup>

In 1835 *Floricultural Cabinet* listed thirty-nine plants "suitable for rock-work and very showy" suggested by an unknown author in response to a request.<sup>21</sup> The author also included the English name, and information on flowering time, colour, and height. The plants included reached a maximum height of thirty centimetres.

Two years later *Floricultural Cabinet* published "Review of *The Flower Garden*," which contained a list recommending one hundred and forty plants for the rock garden, including short lists of bulbs, annuals, and biennials. The anonymous author listed flowering times, recommended soil, which was either sandy loam, common mould, or peaty loam, offered an occasional comment. For example of *Saxafraga oppositifolia* was said: "a more suitable and beautiful plant cannot be appointed to adorn the brow, and enliven the bosom of artificial rock-work."<sup>22</sup>



The Scotsman Patrick Neill wrote of "numerous and endlessly diversified rock plants" in his *Fruit, Flower, and Kitchen Garden* (1838). Helianthemums, gentianas, penstemons, and primulas were mentioned by genera as "alpine and trailing plants" suitable for rockwork.<sup>23</sup> The thirty-three plants he named specifically are included in the master list.

*Gardeners' Chronicle* published two anonymous lists in 1844. "A Lady" suggested thirty-nine in October and "Z" suggested an additional thirty-nine in May.<sup>24</sup> The lists are similar in their greater concentration of less common plants and shrubs. The first contains seven ferns and six shrubs. The second begins with fourteen "shrubs for rockwork," and concludes with twenty-five perennials. Also mentioned were: cistus, hardy heaths, helianthemum, pyracanthas, crocus, dianthus, ferns, narcissi, penstemons, saxifragas, scilla, and sedum. Although the majority of the plants listed were from North America and Europe, Asia and South America were represented by the appearance of *Aquilegia fragrans* from the Western Himalayas, *Aquilegia glandulosa* from Central Asia and Siberia, *Berberis empetrifolia* from Chile and Argentina, and *Gaulthera phillyreifolia* from mountains in Argentina.<sup>25</sup>

James Lothian, perhaps the most skilled rock gardener among these authors, recommended a wide range of plants for the rock garden. Perennials, bulbs, annuals, and biennials in his comprehensive lists in the appendix to *Practical Hints on the Cultivation of Alpine and Rock Plants* (1845) include many genera not on other lists, for example: cyripedium, orchis, cyclamen, erigeron, hepatica, and sanguinaria. Lothian's six hundred and sixty-six alpine plants are followed by lists of fifty-one ferns, forty-three marsh and bog plants, forty-seven aquatic plants for a pond, forty-eight species of musci (moss), ten liverworts, a group called allied plants including eight lycopodiums and three equisetums, and one hundred and eighty-nine American shrubs for borders and beds around the rockwork.

Lothian's is the sophisticated, comprehensive list of a skilled botanist, but, as well as being vastly out of scale, it is out of character with the other lists. Many of the plants were doubtlessly difficult to obtain and required considerable skill to



cultivate. Because many of the plants it contains could not be considered popular rock plants, Lothian's lists have been excluded from the master list, but are compared to it in Tables 2 and 4, to add information on popularity and use.<sup>26</sup>

Shirley Hibberd's list of forty-eight plants holds no surprises. The plants he offers include many of the usual choices. In his list of plants "suitable for rockeries and raised banks, and for rustic work generally" in *Rustic Adornments for Homes of Taste* (1856), Hibberd provided the English name, botanical name, and colour of blossom. As a postscript he suggested that, "many showy border-flowers may be advantageously used, such as Phloxes, Delphiniums, Gentians, Abronias, Violas, and ornamental Grasses."<sup>27</sup>

### Table of Names

The master list of three hundred and eighty-one plants was created from some 600 names, many of which were duplicates, often under different names.<sup>28</sup> The object of Table 1, the Table of Names, is to unify the plant names on the master list for the creation of Table 2, the Table of Dates, Table 3, and Table 4, the Table of Characteristics.

Table 1 consists of three columns. The first contains the master list by preferred name, in this case preferred are those offered in the *Royal Horticultural Society Dictionary* (1992). Synonyms appear in the second column. Although more synonyms exist, Table 1 lists only those on one of the plant lists, or used in this study. Common, or English names, are rarely used by botanists, but often mentioned by gardeners in letters, diaries, and plant lists. These appear in the third column to help identify plants referred to by common names in historical documents, and allow their comparison to these tables. As an example *Juniperus sabina* appears on several lists only as Savin.<sup>29</sup>

The majority of plants on the master list are herbaceous perennials,<sup>30</sup> but intermingled are small or prostrate shrubs and subshrubs, for example *Erica tetralix*, *Daphne cneorum*, and *Teucrium montanum*. Ferns appear on lists in 1844 and 1845, but the mosses and club mosses that Blackburne said he would grow on



his rockwork are not mentioned in the 1779 catalogue of his garden (see Chapter 2 for a discussion of Blackburne's plants), and appear only in Lothian's extensive lists.

Annuals, biennials, and bulbs are either few or nonexistent on most of the lists, but Loudon and the 1837 *Floricultural Cabinet* offer separate lists of bulbs, annuals, and biennials. They recommend five of the same bulbs: *Allium flexum*, *Fritillaria pyrenaica*, *Ornithogalum pyrenaicum*, *Oxalis acetosella*, and *Oxalis violacea*; but differ in their choices of annuals and biennials.

### Table of Dates

The Table of Dates consists of eleven columns with the master list occupying the first column. The second column indicates whether that plant is still in commerce and can be found in the 1993/94 edition of *The Plant Finder*.

According to *The Plant Finder*, two hundred and sixty-six of the plants on the master list may still be found in nurseries in Great Britain, although a few were available only as varieties. Only one-third of the plants on the master list have gone out of commerce.

The next nine columns, headed "1779" to "1856," represent the publication dates of the lists. Reading down the columns, except for 1845, gives eight full lists.<sup>31</sup> Reading across the rows allows the appearance of individual plants to be traced, and makes a side by side comparison of the lists possible.

If the number of lists on which a plant appears can be used as a gauge for suitability and acceptance, plants used on only one list may show deviation from conventional choices. Of the three hundred and eighty-one plants on the master list, one hundred and seventy-three, or forty-five percent, appear only once. This might express the wide variety of plants available, individual tastes, idiosyncratic ideas about what constitutes a rock plant, error in selection, use of a new or uncommon species, or use of an obscure name.

Most of Graefer's seventy-five plants fit the low, spreading image of a rock plant, but of the thirty-two recommended only by him, five (*Antirrhinum majus*,



*Chelidonium majus*, *Nepeta cataria*, and *Trachelium caeruleum*) exceed sixty-one centimetres in height. Graefer intended his plants for use either on artificial rocks or ruins, and some of the plants that do not fit the profile of a rock plant might have been intended for planting ruins.

### Table 3

Table 3 shows compliance and deviation. The appearance of the same plant on two or more lists suggests that the author was choosing known plants with a wide appeal, while plants appear only on one list may indicate the lack of a common ideal or experimentation. In the eight plant lists that make up that master list, a steady increase may be seen in five of the lists, but 1837 and both lists from 1844 exhibit a decrease in shared plants, or those that appear on more than one list. The greatest deviance was sixty-one percent on 1844A. This might have been caused by the author's desire to introduce readers to different plants, or by an influx of new plants becoming available. Shirley Hibberd's list of 1856 shows the most conventional choices.

Table 3.-- Compliance and deviation of plant lists.

List Date	Number of Plants	No. Shared	No. Deviant	Same %	Deviant %
1789	75	43	32	57	43
1822	133	88	45	66	33
1835	39	32	7	82	18
1837	140	99	41	71	29
1838	33	28	5	84	15
1844A	39	15	24	38	61
1844Z	39	30	9	76	23
1856	48	44	4	91	8



Phlox and ferns do not appear on any of the lists until 1844, which suggests that they were not widely grown in the rock garden until the mid-nineteenth century. Because of the large number of plants that appear only once, and the greater number of later than early plant lists, changes in plant use over time are difficult to determine from Table 2. Such trends are more clearly shown by Table 4.

### Table of Characteristics

The Table of Characteristics aims to develop a profile of rock garden plants, and investigate the theory that the rock garden was developed to: (1) create conditions in which alpine and rock plants would thrive; and (2) attractively display low, spreading plants, by determining the origins of rock garden plants and identifying their growth habits and a need for fast draining soil.

To select those most popular, the seventy-five plants that appear on at least three lists have been entered into the first column of this table. The next four columns present information on plant origins (alpine, sandy areas and seashore, rocks and rocky conditions, woodland, and arctic or sub-arctic), their forms (mat-forming, prostrate, creeping or cushion, or erect), and height. Soil drainage is the most significant difference between garden beds and rock gardens. Plants requiring well-drained soils, whether moist or dry, to grow well, are distinguished here from those that thrive in ordinary garden soil.

This information has been gleaned from a variety of sources. As a recent authority, *The RHS Dictionary of Gardening* was used whenever possible. William Robinson's *Alpine Plants for English Gardens*, Reginald Farrer's *My Rock Garden*, and Henry Correvon's *Rock Garden and Alpine Plants*, filled in the gaps. When information was not available or unclear, or when sources conflicted, the box was left empty. The last columns compare the dates the plants appear on the lists.

Of the seventy-five plants that appear in this table, thirty-five are of alpine origin, eleven are found in rocky areas, four in sandy areas, four from woodlands, and two are from the arctic. Forty-eight have mat-forming, prostrate, or creeping



forms, and forty-six preferred well-drained soil. Sixty-three plants are less than thirty centimetres, twelve are between thirty-one and sixty centimetres.

No one plant was recommended on all nine of the lists, but nine plants appeared on five, six, or seven. Those most highly recommended plants were *Arabis alpina* (5), *Aurinia saxatile* (7), *Campanula cochlearifolia* (6), *Draba aizoides* (7), *Epimedium alpinum* (6), *Phlox subulata* (6), *Saxifraga oppositifolia* (5), *Sedum anglicum* (6), *Veronica fruticans* (5). Of the nine, all but one were under thirty centimetres, seven were mat-forming, six required well-drained soil, and five were known to be alpine in origin.

From the list of seventy-five plants and the nine most popular plants it might be concluded that the criteria for recommending plants for the rock garden included the following qualities in order of importance: (1) low stature, (2) spreading form, (3) a need for improved soil drainage, and (4) alpine origins. Most rock garden plants combine more than one of those qualities.

Dividing the sixty-seven year period between Graefer's and Hibberd's lists in half places Graefer's and Loudon's lists in the first half and the 1835 and later lists in the second half of the time period. *Campanula cochlearifolia* and *pulla* do not appear until the second half. *Rubus saxatilis* and *Telephium imperati* are not on post-1837 lists, and *Teucrium montana* appears only once in the last five columns. *Arctostaphylos uva-ursi*, *Campanula persicifolia*, *Dryas octapetala*, and *Geranium sanguineum* are only listed in the later lists. As no changing pattern can be seen in their characteristics, this is thought to reflect changes in plant availability (see Chapter 4 for a discussion on plant availability).

### Conclusions

Certain dangers are inherent in making assumptions based only on lists or catalogues: they do not constitute proof that the plants were widely used. In fact, common practice may well have been not what was advised (see Chapter 4 for a discussion of planting). On lists there is no way to take into account plants that are mentioned by genera but not by species, although they may have been referred to



only briefly because they were considered common.

It is possible to make some observations from these lists and tables. The plant heights on Graefer's list show that by 1789 a criteria for selecting rock plants had at least partially developed. Fifty-two plants of the plants on his list reached thirty centimetres or less and twenty-five were over thirty centimetres tall. The 1835 list offered only plants of thirty centimetres or less. Refinement of the criteria probably took place through trial and error with new introductions allowing an increasingly greater choice of desirable plants.

The basic criteria for acceptance into the rock garden seems not to have changed substantially over the years. While Graefer and Loudon include a small percentage of plants that do not match the profile, the majority of their plants were the low, mat-forming plants seen in later rock gardens. Graefer's list, with twenty plants between one and two feet, gave a somewhat taller, less-uniform appearance, but by 1835 almost all of the plants recommended were low. Rather than radical differences, these recommendations of alpine and rock plants are characterised by the continuous perpetuation and refinement of an ideal in place by 1789.



## NOTES

1. Repton, 213.
2. Stephen Blackmore and Elizabeth Tootill, eds., *The Facts on File Dictionary of Botany* (Market House Books, USA and UK, 1984), 14.
3. RHS *Dictionary*, vol. 1, 134.
4. As examples, many of the phlox, campanula, and dianthus on the master list will grow happily in the flower garden; *Rubus arcticus* is an arctic plant; and *Cornus canadensis* is a North American woodland plant.
5. James Lothian, *Practical Hints on the Cultivation of Alpine and Rock Plants* (Edinburgh, 1845), 21.
6. Wright, "Stenton," 18.
7. Chelsea Minute Books, 16 April 1773.
8. Mawe and Abercrombie, 1778.
9. Repton, 213.
10. Kennedy, "Notitiae on Trent Park" (1814), n.p.
11. Malkin, 348.
12. Elizabeth Harmond, Watertown, CT, (18 December 1993) letter to the author.
13. The lists chosen span the period of this study beginning with the earliest known, that published by Graefer in 1789, and ending with Hibberd's list of 1856.
14. The master list is in the first column of Tables 1 and 2 in Appendix V. The nine plant lists may be seen in Appendix IV. While the tables may prove useful in the conservation of early rock gardens, this is not their primary purpose, and they do not constitute a catalogue of all the rock plants in culture at any time.
15. These lists were found during the course of this study. Others became known later, but as a sample of plants, not a catalogue, was desired they were omitted.
16. Desmond, 629, says German born, Graefer, worked with Philip Miller at the Chelsea Physic Garden, and was a partner in the Mile End Nursery with Thompson and Gordon. According to Loudon, *Encyclopedia*, 1827, 1109-1110, Banks recommended Graefer as gardener to the King of Naples at Caserta. While employed there, he designed gardens for other noblemen and was superintendent of Bronte, Lord Nelson's estate. He was murdered in 1816.
17. Graefer, *Descriptive Catalogue* [1789]. This book may be found in the British Library. Graefer's original eighty plants for rockwork and ruins were reduced to seventy-five by name changes that combined species.



18. *Saxafraga villosa* is also currently known as *Saxafraga rosacea* Moench.
19. Loudon, *Encyclopedia*, 1822, 1034.
20. Bulbs, annuals, and biennials are included in the master list.
21. The query for plants suitable for rockwork is in *Floricultural Cabinet* 3 (1 January 1835): 116. The response is in *Floricultural Cabinet* 4 (1 August 1835): 138-139
22. "Review of *The Flower Garden*," *Floricultural Cabinet* (1835): 180.
23. Patrick Neill, *Fruit, Flower, and Kitchen Garden* (Edinburgh, 1838), 242.
24. *Gardeners' Chronicle*, 5 October 1844: 67; *Gardeners' Chronicle*, 9 May 1844: 152.
25. Information on sources is from the *RHS Dictionary of Gardening*.
26. Lothian's lists are included in Appendix IV.
27. Hibberd, *Rustic Adornments*, 424.
28. Many plants have been known by more than one botanical name, which are known as synonyms. Because of their lengths, Tables 1, 2, and 4 are located in Appendix V.
29. Savin appears in a short list of shrubs in *Gardeners' Chronicle*, March 10, 1849: 147; and in the list of the principal genera at Hoole House in *Gardeners' Magazine* 14: 1838: 362-3. A precedent for including common names was set by Harvey in *Early Nursery Catalogues* (1972).
30. *RHS Dictionary*, 135. "Annual species represent only about 4 percent of the alpine flora (on submontane plains they may comprise 56 percent of the total). Perennial herbs may be equally adapted to a very short growing period."
31. Lothian's 1845 lists were not used to create the master list, but may be seen in Appendix IV.



## CONCLUSIONS

The history of the rock garden is a chapter in the story of our love of plants, and our search for knowledge of the world, and our place in it. This search, which resulted in the development of the natural sciences, has been continuous through time. The main quality or element to emerge from this study has been a sense of continuity, not a static lack of change, but a common thread that runs throughout, the rock garden's legacy of its botanical and horticultural origins.

The aim of this thesis was to (1) explore the origins of the rock garden, (2) add to the fund of knowledge on its history, and (3) correct misinformation and the misinterpretation of events.

The origins of the rock garden were found to be directly linked to its purpose (which has also been a source of confusion) as a garden in which to cultivate and display alpine and rock plants. Interest in alpine and rock plants began by 1583, when Clusius published his Austrian flora, and efforts to reconstruct their habitats were underway by 1598. Although alpines were grown in British gardens by the early eighteenth century, the first known rock garden was constructed around 1767, about one hundred years earlier than is generally recognized.

The rock garden at Chelsea Physic Garden has been shown not to be the first, and neither was it an isolated event. Interest in growing alpines and rock plants by 1773 was widespread, and in building the rock garden, the Chelsea Physic Garden was responding to a need, and perhaps bringing the garden up to date.

Based on their common terminology and structural similarities, the development of the rock garden's structure may have been influenced by other garden traditions, including the classical and rococo. However no direct evidence for this was found. Picturesque and Chinese values are also attributed to the rock garden, but it seems likely they were applied after the rock garden had developed.

The confusion about the origins of rock gardens stems from a crisis of taste that occurred in the middle of the nineteenth century. When botanical collections declined as popular garden fashions in some gardens the rock garden became an ornamental feature decorated with statues, paint, cement, and bright annual plants.



Although many rock gardens continued their associations with alpine and rock plants throughout this period, the brightly ornamented model attracted the outrage of horticultural writers.

With the resurgence of interest in alpine collections in the late nineteenth century, the rock garden was rediscovered by a new generation of enthusiasts, who rewrote its history, but did not differentiate between the naturalistic rock garden and the ornamented rockery. All the previous gardens were grouped together and ridiculed harshly. The resulting prejudice toward all earlier rock gardens virtually erased them from the history of the landscape. At this point rock garden was "invented."

At this time also, the Backhouse nursery, a grander, more beautiful, and technologically advanced rock garden caught the public attention. During their peak years at the end of the nineteenth and the beginning of the twentieth centuries, the Backhouse Nursery built and planted hundreds, if not thousands, of rock gardens across the country. The next generation of rock gardeners, looking back over forty years of more, deemed the Backhouse rock garden the first, although by then the Backhouse gardens were seen as too grand and dramatic.<sup>1</sup>

Some of the features of the rock garden have remained constant. The association between rock gardens, and bogs, ponds, and shrubberies, first mentioned on *la montagne* at Montpellier, has been maintained throughout the rock gardens history. John Blackburne located his garden within a shrubbery, near a pond and a bog he created for plant collections, and thereafter these associations reoccur frequently.

The greatest differences between rock gardens were functions of their size or the size of the property. Rock gardens were generally recommended for remote parts of the estate, and were large and planted with shrubs as well as herbaceous perennials, ferns, mosses and lichens. Smaller gardens on small properties were isolated by shrubberies and devoted to smaller plants.

Perhaps the most important point to emerge was that the purpose of the rock garden has consistently been as a place to cultivate and display collections of alpine



and rock plants. The study of lists of plants recommended for rock gardens and published between 1789 to 1856 reveal that the majority of these plants were low or prostrate and required well-drained conditions. Most of the changes in rock plants probably resulted from new introductions.

### Conservation

It is hoped that by establishing the rock garden's long and interesting history more attention will be placed on identifying, locating, and conserving early models. At the present, efforts to conserve and restore the earliest of the gardens are disappointing. Without more information on its earlier form there is not much that can be done for the Chelsea Physic Garden rock garden. In this case the association between water and rock gardens moved too close. A pond has covered most of its surface since the 1840s, and no illustrations prior to this development are known to exist. In 1970s, the bulk of its material were removed and it was rebuilt by the Curator. An excavation of Abbotsbury Castle garden is possible, but not likely, because of a lack of interest in the site and the expense of removing tons of rubbish. Redleaf is a prime candidate for restoration on the scale of the fine work that was done at Biddulph in the early 1990s. Redleaf is a unique and fascinating garden, and despite having been subdivided, it is basically intact. Furthermore, the main owner is anxious to end the decay and eager for help.

Endsleigh, where two important rock gardens exist in excellent condition, a lack of knowledge is preventing restoration. The terrace rock bank remains overgrown by brush, while the rock garden, that was being repaired by 1839, is being replanted to ferns, because of the generally held idea that at that time rock gardens were only planted to ferns.

Hafod is an example of how not to conserve a garden. In the interest of getting quick results and more public access, the Forestry Commission cleared the brush and destroyed the stumps. It is thought that some of the shrubs could have been original or the off-spring of original plantings. Coppicing would have allowed identification, and if left in place, the stumps could have indicated an age. Adding



pole-edged woodchip paths and disturbing the site of the moss house has destroyed even more evidence.

These examples show the importance of correcting misunderstandings and setting the rock garden in its proper context in garden history. Chapters 3, 4, and 5, while written to support the historical evidence in Chapters 1 and 2, could supply information on construction methods, materials, planting design, and maintenance, which could be useful for conserving rock gardens.

Plants, especially outside of the formal garden, are more than a garden ornament. In the case of the rock garden, alpine and rock plants provide the purpose, interest, and decoration. Chapter 5 offers guidelines for choosing plants and includes lists of plants that could form a starting point for replanting.

Dr. Helen Goldie, a geographer in Durham is presently working on the use of tufa in gardens. Her earlier work included a study of the limestone pavements that occur naturally in Yorkshire and the Lake District and have been subject to destruction. Both her works have a horticultural application.<sup>2</sup>

The negative side of this subject that emerged from this study, the destruction of geological features and native plant populations in the search for new garden plants, which started early and ended only recently, was disturbing. An assessment of the damage may be in order.

In the future many sites containing rock gardens will face conservation. It is hoped that the information supplied by this thesis will encourage careful consideration of their restoration, and perhaps even save a few from destruction.



## NOTES

1. Hadfield, "Evolution of the Rock Garden": 529.
2. Helen S. Goldie, "Human impact on limestone pavement," *Endins* 13 (1987): 71-81; "Human influence on landforms: the case of limestone pavements," in *New Directions in Karst*, K. Paterson and M.M. Sweeting, editors (Norwich: Geobooks, 1986), 515-540.



Glossary

**Alpine Plants:** Plants acclimatised to the high elevations of mountains. See Chapter 5.

**Artificial Rock:** An early name for a rock garden, used primarily in the eighteenth century.

**Moraine:** the ridges of stones and earth deposited by melting glaciers, or a garden that imitates the moraine's well-drained and gravelly, but well-watered, conditions.

**Rockery:** A rock garden. This term is used mainly to indicate a mid-Victorian rock garden.

**Rock Garden:** The American Rock Garden Society definition of a rock garden is:

A garden which provides suitable cultural conditions for alpine, saxatile, and other low-growing plants, usually simulating in miniature the terrain and general appearance of the plants' natural mountain habitat. Under some circumstances, the rock garden may be somewhat formal in character, such as, for example, when it is near a dwelling.

**Rock Plant:** Any low-growing plant that prospers and looks appropriate in a rock garden.

**Rockwork:** A rock garden, or any mortarless construction of stone, such as a wall or ruin.

**Scree:** A moraine-type rock garden. Screens tend to be shallower and spread over the side of a hill.







List of Plants Collected by Thomas Johnson on Snowdon, 1639

Thomas Johnson, *Itinerary of a Botanist through North Wales in the year 1639 AD* (Bangor: Privately printed, 1908), 8.

- Filix petroea elegans* (*Asplenium lanceolatum*).  
*Caryophyllus montanus minimus* (*Cardaminopsis petraea*).  
*Nasturtium petraeum* (*Cardaminopsis petraea*).  
*Chamaeitea repens montana* (possibly *Salix herbacea*).  
*Cotyledon sive Sedumpetroeum hirsutum* (not known).  
*Gramen sparteum spica foliacea minus* (*Festuca vivipara*).  
*Gentianella Bavarica* (*Gentiana bavarica*).  
*Gramen junceum marinum* (*Juncus squarrosus* L.).  
*Muscus ceranoides* Bauhini.  
*Muscus Cupressi facie*.  
*Oxalis rotundifolia* (*Rumex scutatus* L.).  
*Rhodia Radix* (*Rhodiola rosea* L.).  
*Salix humilis saxatilis* (*Salix foetida*).  
*Sedum rotundifolium serratum* (*Saxifraga nivalis*).  
*Sedum minus flore albido* (*Sedum album*).  
*Carduus mollis* (*Serratula alpina* L.).  
*Lichnid marinam Anglicam* (*Silene maritima*).  
*Caryophyllum marinum* (*Statice armeria*).  
*Serpillum hirsutum* (*Thymus serpyllum* L.).  
*Viola Martia palustris* (*Viola palustris*).



Dr. Richardson to Mr. [William] Sherard.

John Nichols. "Memoirs of Richard Richardson, M. D. of North Bierley, Near Bradford, in the West Riding of the County of York." *Illustration of Literary History of the Eighteenth Century* I. London: Printed for the Author, 1817, 348-351.

HONOURED SIR

May 1718

Mr. Evans's house I suppose to be your head quarters, where you will meet with plenty *Sedum minimum non acri flore albo*, R.S.M.11. In the way to the old Castle from Mr. Evans's, nigh the Bridge, before you come to Pont Vawr, by the water side, *Arundo valatoria minor foliis caesiis*; and in the water, and upon the sand, in the in the same place, *Subularia repens folio minus rigido*, R.S.M.3. At Pont Vawr, at the further side nigh the Bridge, is *Papaver luteum perenne lacinat. folio Cambrobritannicum*, R.S.M. At the head of the Lakes grows *Myrtus Brabantica, s. Anglica, Park*; and in the Lakes, *Subularia fragilis folio longiore et tenuiore*, R.S.M. This, I suppose, grows deep in the water, for we found it cast out of the lake on the bankside, and gathered several specimens of it, though we could not find it growing. In the same place grows *Gladiolus lacustris Dartmonni, Clus.* and also *Graminifolia lacustris sobolifera*, D. Lhwyd. In the way to the Castle on the left hand, amongst the moist rocks, *Caryophyllata aquatica nutanti flore*, C.B.P. *Adiantum petraeum perpusillum Anglicum foliis bifidis vel trifidis*, R.S.M.2 - From Mr. Evans to Hisvae by the way to Trigvulcaugh. In going to these places you must ascend the Glyder. The first remarkable place in the way is Lyn y Cwn, in which lakes you will find *Gladiolus lacustris*, and *Subularia repens fol. minus rigido*, R.S.M.3.; and both these in almost all the mountainous Lakes of Snowdon, and amongst the rocks nigh the water. On the South side of the lake, *Hieracium pulmonaria dictum angustifolium*, R.S.M. It flowers here about the end of June; I have Plants of it in my Garden, brought from thence; I never met with it any where else. On the right hand nigh and also above the Lakes, on the rocks, and upon the large stones fallen from the rocks, you will find in flower about the same time *Hieracium Alpinum villosum flore magno singulari caule nudo*, R.S.M.3. It rarely exceeds four or five inches in height when in flower; it is not very common plant here. I kept it in my garden four or five years, where it flowers yearly, but it is a difficult matter to preserve it from the snails; it is a Sun plant. Upon the same rocks you will find *Virga aurea montana folio Augusto subtus incano flore conglobato*, Lhwyd. R.S.M. Though Mr. Lhwyd found *Lycopodium elatius Juniperinum*, and above this Lake in the way to Trigvulcaugh; yet when I was with him we could not find it, neither have I ever met with it since, though I have looked for it several times. In the springs that issue out of the foot of the rocks as you ascend the Glyder, you meet with *Cochlearia rotundifolia*, Mor. Pinax. At the top of the Glyder are Trigvulcaugh rocks, on the North side of which, growing out of the clefts of the steep rocks, you will find the *Plantago minor angustifolia*, J.B. This seems to me a distinct Plant from the Marine one; the leaves are shorter, narrower, and more rigid, the spikes shorter; I have kept it in my Garden



ever since I was in Wales with Mr. Lhwyd, and it never varies: that from the Bishoprick of Durham, and also from Northumberland, is no other than the Marine one; I have this also in my garden. On the same rocks you will find *Rubia quadria folio erecta*, J.B. *Thalictrum minus*, which Mr. Lhwyd calls *folio latiore*, R.S.M. *Caryophyllus maritimus*, and also *Salix pumilo folio rotundo*, J.B. This is the same with *Salix Alpina Alm. rotundo folio repens*, Bocc. Mus. That upon Ingleborough and Snowdon are the same; I have the Plant from the last place in my Garden. *Sedum Ericoides* is common, and also *Gnaphalium montanum flore rotundo folio latiore*, *Lychnis Alpina minima*, Ra. Hist. Under that side of Trigvulcaugh rock which faces the North, and above the Lake Lyn Ogwyn, that being about a quarter of a mile off, and in view of it, you will find springing out of the naked rocks *Bulbosa Alpina juncifolia pericarpio unico erecto*, &c. R.S.M. It flowers about the beginning of June. I brought several bulbs of it from thence; they would not flower in my Garden, but in a year or two died. If Mr. Evans be living, he will shew the place he was with me when I found it last. In the rills in the same place grows *Muscus Trichomanoides purpureus Alpinus rivulis inascens*, R. Lhwyd, R.S.M.; and a little below under the shady rock, on the right hand, Mr. Lhwyd shewed me several roots of *Filix montana ramosa minor folio angusti-denticulata*, not far above the Lake Lyn Ogwn. This Lake lies at the foot of the mountain Hisvae, which you may ascend if you have time and a fair day, which is not met with often here, but the place to ascend this mountain is opposite to a few small houses, called Nant-francon. In the way to the top of it you will find *Cotyledon hirsuta*, P.B. *Sedum et Rupe St. Vincentis*, *Adiantum Alpinum crispum Schwenkfeld*, J.B. *Lysimachia Chamoenerion dicta folio angusto*, C.B.P. growing out of the cleft of the naked rock at the top of the mountains. In this place Mr. Lhwyd and myself sought for a *Polypodium Ilence His. Lug.*; but the violence of the rains and the thickness of the clouds rendered our searches unsuccessful; we could not then meet with *Paronychia similis sed minor perennis Alpina repens*, which Mr. Lhwyd had found before in the same place; but I afterwards found it in another place, and it has ever since flourished in my Garden. In your return home, at the top of the Glyder, if you be not sufficiently wearied, you may climb up the steep rock Trevan, if you think it worth the time to do, only for the sight, *Juniperus Alpina*, J.B.

- From Mr. Evans to Clogwyn y Garnehd, which is the highest part of Snowdon, the nearest and most fruitful way of simpling is to go by Phynon Velan. Before you cross the water, and in sight a few houses on Mr. Evans's side, amongst the stones by the water you will find *Papaver luteum perenne* in great plenty. After you cross the brook, before you almost begin to ascend the hill, right against a poor house by the way side, you will find *Adiantum Alpinum crispum*. When you come to the rocks that are nigh Phynon Velan, you will find in rills *Acetosa rotundifolia repens Eboracensis*, &c. Mor. Hist. Ox.; but why he calls it *Eboracensis* I know not, for I never found it in our County. In the same place occurs *Thalictrum minimum montanum atropurubens foliis splendentibus*, R.S.M. II; also *Sedum Alpinum trifido folio*, C.B.P. Upon the dry rocks *Sedum Ericoides*, C.B.P. in plenty. Under the largest stones fallen from the impending rocks, you will meet with *Lonchitis aspera major*, *Mathiolo, Park.*; and, if Dr. Dillenius visit these rocks, he will find *Trichomanes ramosum* in plenty, and I doubt not will be satisfied that Mr. Lhwyd's name agrees very well with the Plant; I kept it above twenty years in my Garden, and it now remains the same.



*Trichomanes foliis eleganter incisus*, Inst. R.H. I take to be the same with this. Under the same shady rocks you will find *Filix montana ramosa minor angusti-denticulata*, D. Lhwyd, R.S.M. I have it now in my garden, brought from thence; also *Adiantum nigrum pinulis Cicutar. divisu'*, D. Bobart, R.S.M. Mr. Ray in his 'Travels' takes notice of a Plant in Zanoni's Garden at Bologna, which he calls *Polytricum Alpinum inciso folio costa viridi*; this must be certainly *Trichomanes ramosum*, J.B. Upon the edges of the high rocks of Phynon Velan, I found *Paranochia similis sed minor perennis Alpina repens*, D. Lhwyd, R.S.M. Also *Cirsium humile Polyanthemum Cynoglossi folio*, R.S.M. Also as you ascend to the lake Phynon Urech, you will find *Alsine pumila pulchro flore folio tenuissima R. Cet. Angl.*: this grows on flint stones very plenty by the way side, betwixt Hollywell and Rithyn. In this ascent you will meet with some plenty of *Juniperus Alpina*. In Phynon Criel you will find *Subularia vulgaris erecta folio rigidissimo*, R.S.M. 3 in plenty, and no where else that I know of. Mr. Lhwyd told me of a pellucid *Potamogetton* he found in this place, but I never found it from home. In your ascent to the summit of Snowdon you will find *Serpillum hirsutum fruticosius*, &c Lhwyd, R.S.M. *Lichnis Alpina minima*, R. Hist. with a deeper and a paler red flower. Above Phynon Urech there is very great plenty of *Adiantum Alpinum crispum*. Towards the top of Snowdon, *Salix pumila folio rotundo*, J.B. On the North side of Clogwin y Garnedh, growing out of the clefts of the rocks, you will have *Sedum seratum flosculis compactis maculatis*, R.S.M.; and on the top of the rock, and no where else that I ever found, *Alsine Myosotis lanuginosa Alpinus grandiflora, sive Auricula muris villosa flore amplo membranaceo*, R.S.M. I also brought from thence when Mr. Lhwyd was with me, and it has grown in my garden for several years, though I could never since find it, viz. *Filix Alpina pedicularis rubra foliis subtis rillosis*, R.S.M.: it grows about the middle of the rock Clogwyn y Garnedh facing the North; it is above the head of the highest fountain: if the gentlemen are favoured with a fair day, perhaps they may meet with it in the moist places. In the same part of the rock you will find *Alsine Myosotis facie*, *Lychnis Alpina flore amplo niveo, repens*, R.S.M; and in several places about the North side of the hill. Mr. Lhwyd shewed me from the top of Snowdon, where *Bistorta Alpina pumila varia*, Park, grows, viz. in the steep pastures of Goil Gogh, which lay opposite to it, but I had not time to see it; he told me it grows there in great plenty, and flowers about the end of June. *Nasturtium petraeum* we did not meet with, but I found it in a moist rock, above the lake Lyn Oû, as you ascend Snowdon. I have now in my garden Plants from thence, which thrive well with me. *Pilosella major. s. Pulmonaria lutea speces majus lacinata*, J.B.: this I brought from the rocks nigh Lyn Pleru, in the way to Lhan-Roost. About three miles from thence, in a wood called Penereta, by the way side, nigh a large oak, grows *Campanula Cymbalaria foliis*. If the gentlemen would leave at Mr. Evans's a collection of dried specimens of the Plants of Snowdon and their native places, it would be a great encouragement to young Botanists. I have several times designed it; but either my want of time, or the bad season, would not allow of it. Thus, with my service to the gentlemen that design to visit Snowdon, though unknown, and my hearty wishes for their health. I am your entire friend, &c RICHARD RICHARDSON.



Snowdon Plants in Richard Richardson's Garden. Extracted from his letter to Sherard, 1718:

*Filix montana ramosa minor augusti-denticulata*, D. Lhwyd, R. S. M. (*Aspidium dumetorum*): "I have it in my garden brought from thence."

*Trichomanes ramosum* (*Asplenium viride*): "I kept it above 20 yrs in my garden, and it now remains the same."

*Nasturtium petraeum* (*Cardaminopsis petraea*): "I found it in a moist rock, above the lake Oû, as you ascend Snowdon. I have now in my garden plants from thence, which thrive well with me."

*Paronychia similis sed minor perennis Alpina repens* (*Draba incana*): "Could not find on the top of Snowdon when with Lhwyd, but found in another place and it has ever since flourished in my garden."

*Hieracium pulmonaria dictum augustifolium*, R. S. M. (*Hieracium maculatum*). "Not alpine, rare."

*Hieracium Alpinum villosum flore magno singulari caule nudo*, R. S. M. L. 3. (*Hieracium murorum* L.): "Rarely more than 4-5 inches tall; not common; kept it 4-5 yrs. where it flowers yearly; problem with slugs; it is a sun plant."

*Bulbosa Alpina junifolia pericarpio unico erecto, &c.* R. S. M. (*Lloydia serotina*): "Flowers in June. I brought several bulbs, but they would not flower in my garden, but in a year or two died."

*Alsine Myostis lanuginosa Alpinus grandiflora, sive Auricula muris villos flore amplo membranaceo*, R. S. M. (*Minuartia verna*): "I also brought it from thence when Lhwyd was with me, and it has grown in my garden for several years."

*Plantago minor augustifolia*, J. B. (*Plantago lanceolata*): "In my garden ever since I was in Wales with Lhwyd; distinct plant from the marine one; the leaves are shorter."

*Plantago* marine variety (*Plantago maritima*): "Also in my garden."

*Salix Alpina Alm. rotundo repens*, Bocc. Mus. (*Salix herbacea*): "That upon Ingleborough and Snowdon are the same. I have a plant from the last place in my garden."



## APPENDIX III

### ADDITIONAL INFORMATION ON THE BACKHOUSE NURSERY

#### List of Gardens built by the Backhouse Nursery (listed by original owner)

Backhouse Nursery Rock Garden, Acomb, York.  
Samuel Doncaster, Whinfell Quarry Garden, Sheffield, S. York.  
Mr. J. Hawthorne Kitson, Elemete Hall, Roundhay, Leeds, W. York.  
B. S. Rowntree, Homestead Gardens, Clifton, York.  
Ernest Leetham, Tadcaster Road, York  
Moy Hall, MacIntosh  
Henry Lamb-Gritton, Kettering  
C. L. Lucas, Warnham Court, Horsham  
Torcross Quarry, Felixstow  
Birmingham Botanical Garden  
J. Ogston, Kildrummy Castle, Kildrummy, Scotland  
Colonial R. Easton Aitkens, Lansdowne Park, Helensburgh, Scotland  
Ellen Willmott, Warley Place, Brentwood, Essex  
Arthur Backhouse, Torquay  
Warwick Castle  
Municipal Rock Garden, Holme Field House, Wakefield, W. York.  
Lady Ardilaun, St. Anne's, Dublin  
The Right Hon. Lord Battersea, Overstrand, Cromer  
Mrs. H.W. Jefferson, Stoke Rochford Hall, Grantham  
Mrs. A. Wilson, Tranby Croft, Hull  
Rev. C.A. Barry, Clifford, Boston Spa  
C. Blakett, Esq., Toulston Grange, Tadcaster  
Sir Frank Crisp, Friar Park, Henley-on-Thames, Oxfordshire  
F. Green, Esq., Treasurer's House, York  
G. Goodrick, Esq., The Close, Knaresborough  
F.S. Grantham, Esq., Heather Cottage, Aysgarth  
W.N. Hickling, Esq., Brackenhurst Hall, Notts.  
C.D. Leng, Esq., Sandy Gate, Sheffield  
H. Maughan, Esq., Neville Hall, Middleham  
G. Marchette, Esq., Manor Heath, Halifax  
G.S. Thompson, Esq., Newbuilding, Thirsk  
Rev. W. Travis, Ripley, Yorks.  
William Herbert St. Quinton, Scampston Hall, Malton, Yorks.  
Newby Hall, Ripon, N. Yorkshire. Designed by Ellen Willmott.  
Brighton City Park.  
York Cemetery, Fishergate, York.  
The Retreat, Heslington Road, York.

#### Possible Backhouse Gardens

Newburgh Priory, Coxwold, N. Yorkshire.  
Pasture Wood [Beatrice Webb House], Dorking. Designed by Gertrude Jekyll.



"Review of the National Horticultural Exhibition, Manchester," *The Floral World and Garden Guide*, 1868: 220.

Three prizes, amounting in all to ten pounds, were offered in the class for "50 hardy alpine and herbaceous plants" and the competition produced a delightful display. Some of the competitors presented in their collections plants not properly admissible, and in many cases the names attached were incorrect, as, for example, a tuft of *Sisyrinchium* labelled "Iris pumila". Of course there could be no such defects in the collection presented by Messrs. Backhouse and Son, of York, who took first place in the awards. The plants in this group were extremely hardy, and of the tufty, flowery, open-air loving dispositions requisite to constitute them members of this interesting class of garden plants. We are bound to give the names of Messrs. Backhouse's fifty, both because of their intrinsic merit, and to gratify the ever-recurring hunger of the British public for information about such plants. The collection comprised the following: *Aubretia purpurea variegata*, *Saxifraga crustata*, *Anthyllis montana*, *Silene alpestris*, *Hyacinthus amethystinus*, a lovely plant, with azure-blue flowers; *Artemisia alpina*, *Erinus alpinus roseus*, *Hippocrepis grandiflorus*, *Linum tauricum*, *Primula farinosa*, *Viola pedata*, *Astragalus hypoglottis alba*, *Geranium cinereum*, *Saxifraga tenella*, *Vicia argentea*, *Paradisea liliastrum*, *Allium triquetrum*, *Ajuga alpina*, *Aronicum scorpioides*, *Dianthus caesius*, *Ramonda pyreniaca*, *Erigeron Roylei*, *Dianthus alpinus*, a glorious tuft, covered with large rosy pink flowers; *Primula Sikkimensis*, a Himalayan cowslip; *Iberis coriacea*, *Silene rupestris*, *Pinguicula grandiflora*, *Sisyrinchium odoratissimum*, a very pretty species, the flowers blush, with brown stripes; *Erodium macradenium*, *Linaria alpina*, one of the loveliest of all Alpine and rock plants; *Saxifraga stenopetala*, *Oxalis floribunda*, *Lychnis viscaria alba*, *Orchis nigra*, *Aubrietia Campbellei*, *Tulipa persica*, *Houstonia cerulea*, *Saponaria lutea*, quite a curiosity; *Lithospermum prostratum*, *Dodecatheon integrifolium*, *Saxifraga longifolia vera*, a splendid plant, with many crowded racemes of large white flowers; *Antirrhinum rupestre*, *Mainantheum bifolium*, *Gnaphalium leontopodium*, *Orchis laxiflora*, *Papaver nudicaule*, *Erinus hirsutus*, *Cerastium montanum*, *Oxytropis pyreniaca*.



APPENDIX IV

PLANT LISTS

Achillea tomentosa	Origanum vulgare
Alyssum montanum	Papaver cambricum
Alyssum halimifolium	Parietaria officinalis
Alyssum saxatile	Potentilla recta
Alyssum incanum	Potentilla rupestris
Alyssum hyperboreum	Potentilla argentea
Anchusa orientalis	Potentilla verna
Antirrhinum majus	Potentilla opaca
Arabis alpina	Rubus saxatilis
Cerastium tomentosum	Saponaria ocymoides
Cerastium repens	Saxifraga cotyledon
Chelidonium majus	Saxifraga oppositifolia
Clinopodium vulgare	Saxifraga aizoides
Cotyledon umbilicus	Saxifraga caespitosa
Dianthus deltoides	Saxifraga hypnoides
Dianthus glaucus	Scabiosa arvensis
Dianthus arenarius	Scabiosa columbaria
Draba alpina	Sedum telephium
Draba pyrenaica	Sedum anacampseros
Erinus alpinus	Sedum aizoon
Euphoria myrsinites	Sedum hybridum
Fumaria lutea	Sedum dasyphyllum
Fumaria capnoides	Sedum reflexum
Gnaphalium discum	Sedum rupestre
Gypsophila aggregata	Sedum album
Gypsophila repens	Sedum acre
Hedysarum saxatile	Sedum sexangulare
Horninum pyrenaicum	Sedum villosum
Lanium garganicum	Sempervivium tectorum
Lanium maculatum	Sempervivium globiferum
Leonurus cardiaca	Sempervivium montanum
Linum flavum	Sempervivum arachnoideum
Lithospermum officinale	Silene nutans
Medicago falcata	Telephium imperati
Melissa nepeta	Teucrium montanum
Oenothera pumila	Teucrium pyrenacum
Onosma simplicissima	Trachelium caeruleum
Onosma echioides	Trigonella ruthenica
Origanum sipyleum	Valentia cruciata
Origanum hybridum	Verbascum lychnitis

Plant List 1: Plants marked "r" for rocks and ruins extracted from John Graefer, *Descriptive Catalogue* (1789).



**SUBJECT. 5. Flowers for ornamenting Rocks, or Aggregations of Stones, Flints, Scoria, formed in imitation of Rocky Surfaces, &c.**

5503. In strict propriety, *mountain, or rock plants* only should be introduced on artificial rockwork; but natural mountains and rocks are always moist and cool, and the plants which have their habitations there would not always thrive on dry ridges of earth and stones. On a small scale, therefore, choice is generally made of such plants as are not tall and rampant, and as grow naturally in a dry soil. In the following list, as in the others, the most ornamental of them are distinguished by a letter (s), and those which flower the greater part of the summer by a figure (3), &c.

*Perennials.* *Achillea Clavata* 3, tomentosa; *Ajuga alpina*, pyramidata 3; *Alchemilla alpina*, pentaphylla; *Alysium montanum*, murale, saxatile; *Anemone pratensis*, apennina, baldensis, *Pulsatilla* 3; *Antemissa saxatilis*, *Anthylla montana* and fl. alba, *Aquilegia alpina*; *Aralia alpina* 3, *bellidifolia* 3, *alibica*, *petraea* 3; *Arenaria montana* 3, *saxatilis* 3; *Arnica montana* 3, *Artemisia rupensis*; *Asteragalus campestris*, *hypoglottis*, *Traucantha*, *uralensis* 3; *Aubrieta deltoidea*, *purpurea*, *Hartwegi*, *alpina* 3; *Detonica Alopæcus*, *Brava alpina*; *Campanula carpatica* 3, *censia*, *collina* 3, *pulia*, *pumila*, and *h. alba* 3, *rotundifolia*, *saxatilis* 3; *Cardamine asarifolia* 3; *Cerastium latifolium*, *alpinum*; *Cherleria sedoides*, *Chrysanthemum arcticum*, *Cochlearia saxatilis* *Dianthus collinus*, *arsenifolius*, *plumarius*, *virginicus*; *Draba arvensis*, *dizon*, *ciliaris*, *cuspidata*, *stellata*,

*tomentosa*; *Epilobium alpinum*, *Epimedium alpinum* 3, *Erysimum helveticum* 3, *Ceranium lancastrinse*; *Gedum coccineum*, *raditum*; *Hedysarum obtusum*, *Helichrysum arenarium* 3, *Hypericum pulchrum* 3, *Illecebrum Parrotchia* 3, *Linaria alpina* 3, *Petrorallia pyrenica*; *Potentilla nepalensis*, *Russelliana*, *rupensis*, *virga* 3; *Rubus arcticus* 3, *Chamaemorus* 3, *saxatilis* 3; *Saxifraga aizoides*, *nivalis*, *oppositifolia*, *petraea*, *ajugifolia*, *densa*, *retusa*, *elongata*; *Schizorhiza podolica*; *Sedum anglicum*, *Forsterianum*, *alpicum*, *hybridum*, *rupense*, *sexangulare*, *villosum*; *Silene alpestris*, *lætera*, *rupensis*, *saxatilis*, *Saxifraga*; *Stachys corsica*, *Telephium Inperati*, *Tenacium montanum*, *Thlaspi alpestre*, *Thymus vulgaris*; *Trifolium alpestre*, *montanum*, *umbrosum*, *alpinum*; *Valeriana alpestris*, *montana*; *Veronica saxatilis*, *taurica*;

*Viola grandiflora*, *lutea*, *pubescens*, *speciosa*.

*Bulbs.* *Allium sibiricum*, *Fritillaria pyrenica*, *Ornithogalum pyrenicum*; *Oxalis Acetosella*, *violacea* 3 s.

*Biennials.* *Anodonte edentula* 3, *Ethionema saxatile*; *Campanula Cervicaria* 3, *thyrsoides* 3, *peregrina*; *Carlina vulgaris*, *Chelidonium Chelid.*, *Matthiola incana*; *Cochlearia anglica*, *dänica*; *Echium macranthum*, *violaceum*, *vulgare*; *Hedysarum coronarium*, *pallidum*; *Marrubium Alatum*, *Tedderium montanum* 3; *Verbena Lambertii*.

*Hardy annuals.* *Alfium calycinum* 3, *hirsutum*; *Campanula drabifolia*, *Clypeola Non Thlaspi*, *Erodium montanum*, *Linaria prostrata*, *Picris tinctoria*, *Rosella alpestris*; *Pillene Atarion*, *rubra*; *Trifolium polinicum*; *Viola hantica*, *littoralis*, *tricolor*; *Iberis Tenoreana*.

Plant list 2: John C. Loudon, *Encyclopedia of Gardening*, 1822, 1034.



Botanic Name.	English Name.	Flowering Month.	Colour.	Height.
<i>Alyssum saxatile</i> ..	Mad-Wort .....	April to June	Yellow.....	6 in.
<i>deltoidum</i> .....	.....	.....	Purple.....	4 in.
<i>Anagallis cœrulea</i> ..	Blue Pimpernel .....	July .....	A most vivid blue	4 in.
<i>Anemone pulsatilla</i> ..	Pasqueflower Anemone	April May ..	Dull violet blue..	4 in.
<i>Arabis grandiflora</i> ..	Wall-cress .....	April .....	White.....	6 in.
<i>Asperula odorata</i> ..	Sweet-scented Wood- roof .....	May .....	White.....	8 in.
<i>Calluna vulgaris</i> ..	Common Ling .....	June July ..	Rosy red.....	6 in.
<i>Campanula pumila</i> ..	Bell-flower Dwarf.....	June.....	Blue.....	3 in.
<i>pulla</i> .....	White var. do. ....	June.....	White.....	3 in.
<i>hederacea</i> ..	Ivy-leaved Bell-flower	June August	Purple.....	3 in.
<i>Cistus Heliantho-</i> <i>mum</i> .....	Common Dwarf Cistus	July August	Yellow .....	6 in.
<i>Cistus roseus</i> .....	Rosy Cistus.....	July August	Different shades.	6 in.
<i>Cynoglossum om-</i> <i>phalodes</i> .....	Comfrey leaf'd Hound's Tongue.....	April .....	Blue .....	4 in.
<i>Daphne cneorum</i> ..	Spurge Laurel, trailing	May June ..	Rose .....	6 in.
<i>Dianthus cœsius</i> ..	Mountain Pink .....	June July ..	Delicate pale rose	4 to 6 in.
<i>Draba aizoides</i> .....	Yellow Alpine Whit low Grass .....	March April	Yellow.. ..	2 in.
<i>Erica tetralix</i> .....	Cross leaved Heath. ..	July August	Every shd. of rose	4 to 6 in.
<i>Epimedium alpi-</i> <i>num</i> .....	Alpine Barren-wort ..	May .....	Dark red .....	1 ft.
<i>Erinus alpinus</i> .....	Alpine Erinus .....	June.....	Blue .....	3 in.
<i>Fumaria formosa</i> ..	Red-flowered Fumitory	April May ..	Red.....	4 in.
<i>lutea</i> .....	Yellow-flowered do. ....	.....	Yellow .....	1 ft.
<i>Genista tinctoria</i> ..	Dyer's Green-weed ..	July August	Bright yellow ..	8 in.
<i>Gnaphalium arena-</i> <i>rium</i> .....	Sand Everlasting, or Cudweed .....	May June ..	Rose .....	2 in.
<i>Linaria</i> } <i>cym-</i> or            } <i>bala-</i> <i>Antirrhinum</i> } <i>ria</i> ..	Ivy-leaved Snapdragon or Toad-flax .....	May Nov. ..	Variegated with violet and blue	trailing or pendulous
<i>Linum alpinum</i> ..	Alpine Flax .....	July .....	Light blue .....	4 in.
<i>Lysimachia num-</i> <i>mularia</i> .....	Creeping Loon-strife ..	June July ..	Pale lemon .....	creeping
<i>Orobus vernus</i> .....	Spring Bitter Vetch ..	April.....	Blue .....	6 in.
<i>Phlox subulata</i> ..	Lychnida .....	May .....	Light pink, with darker eye ..	2 in.
<i>verna</i> .....	.....	May .....	Pink, with a black eye .....	6 in.
<i>procumbens</i> ..	.....	May .....	Light pink .....	4 in.
<i>nivalis</i> .....	.....	June.....	Snow white.....	4 in.
<i>divaricata</i> ..	.....	May .....	Blue .....	6 in.
<i>Polygala chama-</i> <i>buxus</i> .....	Box-leaved Milkwort ..	April May ..	Yell. & pale lemon	4 in.
<i>Ranunculus am-</i> <i>plexicaulis</i> .....	Stem clasping Crowfoot	April May ..	White .....	6 in.
<i>Saxifraga hypnoides</i> ..	Mossy Saxifrage, or Ladies' Cushion ..	May June ..	White .....	6 in.
<i>oppositifolia</i> ..	Opposite-leaved Saxi- frage .....	April.....	Crimson, with a blue blot .....	6 in.
<i>Saxifraga granulata</i> ..	Grain-rooted Saxifrage	May .....	White, double ..	6 in.
<i>Scdum album</i> .....	White Stonecrop .....	July .....	White, reddish calyx & anthers	5 in.
<i>Veronica saxatilis</i> ..	Blue rock Speedwell ..	May June ..	Fine blue, pink at the mouth ..	3 in.
<i>prostrata</i> ..	Trailing .....	May June ..	Light blue .....	trailing
<i>Verbena chamaedri-</i> <i>oides</i> .....	Scarlet Verbena .....	June to Nov.	Scarlet.....	6 in.

R. T. W. T.

Plant List 3: *Floricultural Cabinet*, vol. 3 (1 August 1835): 138-9.



## HARDY ANNUALS.

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| <p><b>Calycea Madwort.</b> <i>Alyssum calycinum</i>. Flowers July and August, in sandy peat soil.</p> <p><b>Hairy Madwort.</b> <i>Alyssum hirsutum</i>. Flowers June and July, in common garden soil.</p> <p><b>Nail-wort-leaved Bell flower.</b> <i>Campanula drabæfolia</i>. Flowers July and August, in sandy loam.</p> <p><b>Violet Thlaspi Trench Mustard.</b> <i>Clypeola l'on Thlaspi</i>. Flowers May and July, in common garden soil.</p> <p><b>Mask Heron's Bill.</b> <i>Erodium moschatum</i>. Flowers May and July, in sandy loam.</p> <p><b>Prostrate Toadflax.</b> <i>Linaria prostrata</i>. Flowers in June and July, in common garden soil.</p> <p><b>Tangier Pieridium.</b> <i>Pieridium Tingitanum</i>. Flowers in June, in common garden soil.</p> <p><b>Mignonette.</b> <i>Reseda odorata</i>. Flow-</p> | <p>ers from June till October, in rich mould.</p> <p><b>Alocion Catchfly.</b> <i>Silene Alocio</i>. Flowers May and July, in sand loam.</p> <p><b>Small red Catchfly.</b> <i>Silene rubell</i>. Flowers May and June in common garden mould.</p> <p><b>Prickly Trefoil.</b> <i>Trifolium echinatum</i>. Flowers June and July, in common garden mould.</p> <p><b>Banatian Violet.</b> <i>Viola Banatic</i>. Flowers in April and September, in rich garden soil.</p> <p><b>Shore Violet.</b> <i>Viola littoralis</i>. Flowers in June and July, in peat and loam.</p> <p><b>Heartscase.</b> <i>Viola tricolor</i>. Flowers all the summer, in common garden soil.</p> <p><b>Tenore's Candy Tuft.</b> <i>Iberis Tenoreana</i>. Flowers in June and July in common soil.</p> |
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## BIENNIALS.

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| <p><b>Rock (Ethionema).</b> <i>Ethionema saxatile</i>. Flowers in June and July, in common garden mould.</p> <p><b>Throatwort-like Bell-flower.</b> <i>Campanula cervicaria</i>. Flowers in July in sandy peat.</p> <p><b>Thyroid Bell-flower.</b> <i>Campanula thyrsoidea</i>. Flowers from June till August in sandy peat.</p> <p><b>Common Carlina Thistle.</b> <i>Carlina vulgaris</i>. Flowers from June till September, in common soil.</p> <p><b>Wallflower.</b> <i>Cheiranthus cheiri</i>. Flowers in April and July, in rich mould.</p> <p>and August, in common garden mould.</p> <p><b>Common Viper's Bugloss.</b> <i>Echium vulgare</i>. Flowers in July and August, in loamy peat.</p> <p><b>Garland Hedysarum.</b> <i>Hedysarum coronarium</i>. Flowers in July and August, in common garden mould.</p> <p><b>Pale Hedysarum.</b> <i>Hedysarum pallidum</i>. Flowers in June and July, in sandy loam.</p> | <p><b>Hoary Stock.</b> <i>Mathiola incana</i>. Flowers in May and November, in loam and peat.</p> <p><b>English Scurvy grass.</b> <i>Cochlearia Anglica</i>. Flowers in May, in common garden mould.</p> <p><b>Danish Scurvy grass.</b> <i>Cochlearia Danica</i>. Flowers in May and June in common mould.</p> <p><b>Long flowered Viper's Bugloss.</b> <i>Echium macranthum</i>. Flowers in July and August, in common garden mould.</p> <p><b>Violet-coloured Viper's Bugloss.</b> <i>Echium violaceum</i>. Flowers in July</p> <p><b>Alyssum Horehound.</b> <i>Marrubium alyssum</i>. Flowers in July and August, in sandy loam.</p> <p><b>Dwarf Mountain Germander.</b> <i>Teucrium montanum</i>. Flowers in July and October, in common garden mould.</p> <p><b>Lambert's Vervain.</b> <i>Verbena Lambertii</i>. Flowers in July, in common garden soil.</p> |
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## PERENNIALS.

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| <p><b>Clavenna's Milfoil.</b> <i>Achillea Clavennæ</i>. Flowers in June and July, in loamy peat.</p> <p><b>Mountain Milfoil.</b> <i>Achillea montana</i>. Flowers from June till August, in common mould.</p> <p><b>Roseate Milfoil.</b> <i>Achillea rosea</i>. Flowers from June till August, in common mould.</p> <p><b>Tomentose Milfoil.</b> <i>Achillea tomentosa</i>. Flowers in May and October, in common mould.</p> <p><b>Alpine Bugle.</b> <i>Ajuga Alpina</i>. Flowers in July and August, in common mould.</p> | <p><b>Mount Baldo Anemone.</b> <i>Anemone Baldensis</i>. Flowers in May, in sandy peat.</p> <p><b>Rock Chamomile.</b> <i>Anthemis saxatilis</i>. Flowers in July and August, in common mould.</p> <p><b>Mountain Kidney Vetch.</b> <i>Anthyllis montana</i>. Flowers in June and July, in sandy loam.</p> <p><b>White Mountain Kidney Vetch.</b> <i>Anthyllis montana alba</i>. Flowers in June and July, in sandy loam.</p> <p><b>Alpine Columbine.</b> <i>Aquilegia Alpina</i>. Flowers in May and June, in common mould.</p> |
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Plant List 4: *Floricultural Cabinet*, "Review of *The Flower Garden*," vol. 5 (1837): 177-181.



Pyramidal Bogle. <i>Ajuga pyramidalis</i> . Flowers in May and June, in sandy peat.	Siberian Columbine. <i>Aquilegia Sibirica</i> . Flowers in May and July, in common garden soil
Alpine Ladies' Mantle. <i>Alchemilla Alpina</i> . Flowers in July, in common garden mould.	Canadian Columbine. <i>Aquilegia Canadensis</i> . Flowers in April and May, in sandy peat.
Smooth Ladies' Mantle. <i>Alchemilla glabra</i> . Flowers in July and August, in common mould.	Pyrenean Columbine. <i>Aquilegia Pyrenaica</i> . Flowers in May and July, in sandy peat.
Five-leaved Ladies' Mantle. <i>Alchemilla pentaphylla</i> . Flowers in July, in common garden mould.	Alpine Wall-cress. <i>Arabis Alpina</i> . Flowers in March and May, in peat and loam.
Mountain Madwort. <i>Alyssum montanum</i> . Flowers in July and August, in sandy loam.	Stone Wall-cress. <i>Arabis saxatilis</i> . Flowers in May, in common garden mould.
Alpine Madwort. <i>Alyssum Alpestre</i> . Flowers in July and August, in common mould.	Mural Wall-cress. <i>Arabis muralis</i> . Flowers in May and July, in common mould.
Rock Madwort. <i>Alyssum saxatile</i> . Flowers in April and May, in sandy loam.	Rock Wall-cress. <i>Arabis petraea</i> . Flowers in May and July, in common mould.
Wall Madwort. <i>Alyssum murale</i> . Flowers in April and May, in common mould.	Daisy leaved Wall-cress. <i>Arabis helidifolia</i> . Flowers in May and June, in peaty loam.
Meadow Anemone. <i>Anemone pratensis</i> . Flowers in May, in sandy peat.	Mountain Sandwort. <i>Arenaria montana</i> . Flowers in April and July, in sandy peat.
Alpine Anemone. <i>Anemone Alpina</i> . Flowers in July in sandy peat.	Rock Sandwort. <i>Arenaria saxatilis</i> . Flowers in July and August, in sandy peat.
Siberian Anemone. <i>Anemone Sibirica</i> . Flowers in June in sandy peat.	Alpine Mouse-ear. <i>Cerastium Alpinum</i> . Flowers in July, in peaty loam.
Mountain Arnica. <i>Arnica montana</i> . Flowers in July and August, in peat and loam.	Spring Phlox. <i>Phlox vernalis</i> . Flowers in February, in common mould.
Icy Arnica. <i>Arnica glacialis</i> . Flowers in July and August, in peat and loam.	Sedum-like Cherleria. <i>Cherleria sedoides</i> . Flowers in June and July, in common mould.
Swiss Arnica. <i>Arnica Helvetica</i> . Flowers in June and July, in rich mould.	Dark-leaved Golden-flower. <i>Chrysanthemum atratum</i> .
Greenland Wormwood. <i>Artemisia Groenlandica</i> . Flowers in June, July, and August, in sandy loam.	Rock Scurvy-grass. <i>Cochlearia saxatilis</i> . Flowers in June and July, in sandy loam.
Canadian Milk Vetch. <i>Astragalus Canadensis</i> . Flowers in June and July, in sandy loam.	Hill Pink. <i>Dianthus collinus</i> . Flowers in July and September, in sandy loam.
Lapland Diapensia. <i>Diapensia Lapponica</i> . Flowers in April, in sandy peat.	Hyssop-leaved Pink. <i>Dianthus hyssopifolius</i> . Flowers in June and October in common mould.
Deltoid Aubrietia. <i>Aubrietia deltoidea</i> . Flowers in March till May, in peaty loam.	Alpine Pink. <i>Dianthus Alpinus</i> . Flowers in June and July, in sandy loam.
Purple Aubrietia. <i>Aubrietia purpurea</i> . Flowers in May and June, in common mould.	Mountain Pink. <i>Dianthus montanus</i> . Flowers in June and September, in sandy loam.
Foxtail Betony. <i>Betonica alopecurus</i> . Flowers in July, in common garden mould.	Rock Pink. <i>Dianthus petraea</i> . Flowers in July and August, in sandy loam.
Alpine Braya. <i>Braya Alpina</i> . Flowers in June, in peaty loam—a curious and interesting plant.	Feathered Pink. <i>Dianthus plumarius</i> . Flowers in June and August, in sandy loam.
Carpathian Bell-flower. <i>Campanula Carpatica</i> . Flowers in July and August, in peat and loam.	Aizoon-like Draba. <i>Draba aizoides</i> . Flowers in February and April, in sandy loam.
Hill Bell-flower. <i>Campanula collina</i> . Flowers in June and July, in peat and loam.	Ciliate-leaved Draba. <i>Draba ciliaris</i> . Flowers in February and April, in sandy loam.
Russet Bell-flower. <i>Campanula pulla</i> . Flowers in June and July, in common mould.	Cuspidate Draba. <i>Draba cuspidata</i> . Flowers in February and April, in sandy loam.
Dwarf Bell-flower. <i>Campanula pumila</i> . Flowers in June, in peaty mould.	Alpine Draba. <i>Draba Alpina</i> . Flowers in April and May in common mould.
Garganian Bell flower. <i>Campanula garganica</i> . Flowers in June, in peaty mould.	Rock Draba. <i>Draba rupestris</i> . Flowers in May and July, in sandy loam.
	Alpine Willow-herb. <i>Epilobium Alpinum</i> . Flowers in June, in sandy loam.

Plant List 4: Continued.



- Round-leaved Bell-flower. *Campanula rotundifolia*. Flowers in July, in common garden mould.
- Rock Bell-flower. *Campanula saxatilis*. Flowers in May and August, in peaty loam.
- Alpine Bell-flower. *Campanula Alpina*. Flowers July, in peat and loam.
- Asarum-leaved Cardamine. *Cardamine Asarifolia*. Flowers in July and August, in peaty loam.
- Broad-leaved Mousse-ear. *Cerastium latifolium*. Flowers in June and July in common mould.
- Crimson Crane's-bill. *Geranium sanguineum*. Flowers from June till September, in sandy loam.
- Scarlet Avena. *Geum Coccineum*. Flowers in July and August, in peat and loam.
- Pyrenean Avena. *Geum Pyrenaicum*. Flowers in June and July, in peaty loam.
- Radiated Avena. *Geum Radiatum*. Flowers in June and July, in common mould.
- Obscure Hedysarum. *Hedysarum obscurum*. Flowers in July and August, in sandy loam.
- Alpine Hedysarum. *Hedysarum Alpinum*. Flowers in July and August, in sandy loam.
- Sand Cudweed. *Helichrysum arenarium*. Flowers in July and September, in sandy peat. This genus was formerly, *CNARUAIUM*, and is known in many gardens by that name.
- Fair St. John's wort. *Hypericum pulchrum*. Flowers in July, in peat and loam.
- Mountain St. John's wort. *Hypericum montanum*. Flowers in July and August, in common mould.
- Alpine Toadflax. *Linaria Alpina*. Flowers in June and July, in sandy loam.
- Rock Toadflax. *Linaria saxatilis*. Flowers from June till September, in sandy loam.
- Pyrenean Petrocallis. *Petrocallis Pyrenaica*. Flowers in May and June, in peaty loam.
- Beautiful Cinquefoil. *Potentilla formosa* of Don, *P. Nepalensis* of Hooker. Flowers in June and July, in common garden mould.
- Rock Cinquefoil. *Potentilla rupestris*. Flowers in May and June, in common mould.
- Rock Cinquefoil. *Potentilla petraea*. Flowers from May till July, in common mould.
- Arctic Bramble. *Rubus arcticus*. Flowers in May and August, in peaty loam.
- Rock Bramble. *Rubus saxatilis*.
- Mountain Willow-Herb. *Epilobium montanum*. Flowers in June and July, in common mould.
- Alpine Barren-wort. *Epimedium alpinum*. Flowers in May and June, in peaty loam.
- Alpine Hedge Mustard. *Erysimum Alpinum*. Flowers in May and June, in sandy loam.
- Lancaster Crane's-bill. *Geranium Lancastriense*. Flowers from June till September in common mould.
- Flowers in June, in common mould but should be reserved for large aggregations of Rock Work, as should *R. arcticus*.
- Aizoon Saxifrage. *Saxifraga aizoides*. Flowers in June and July, in sandy peat.
- Snowy Saxifrage. *Saxifraga nivalis*. Flowers in June and July, in sandy loam.
- Opposite-leaved Saxifrage. *Saxifraga oppositifolia*. Flowers in March and April, in sandy peat and loam. A more suitable and beautiful plant cannot be appointed to adorn the brow, and enliven the bosom of artificial rock-work.
- Rock Saxifrage. *Saxifraga petraea*. Flowers in April and May, in sandy loam.
- Moss-like Saxifrage. *Saxifraga hypnoides*. Flowers in April and June, in decayed stone or sand, with peat.
- Podolian Schivereckia. *Schivereckia podolica*. Flowers in June and July, in sandy peat.
- English Stone Crop. *Scelum Anglicum*. Flowers in July and August, in common mould.
- Corsican Hedge Nettle. *Stachys Corsica*. Flowers July and August, in common mould.
- Imperato's Orpino. *Telephium Imperati*. Flowers in June and August, in sandy loam.
- Rock Valerian. *Valeriana saxatilis*. Flowers in July, in common mould.
- Mountain Valerian. *Valeriana montana*. Flowers in June and July, in common mould.
- Rock Veronica. *Veronica saxatilis*. Flowers in June in common mould.
- Scarlet Vervain. *Verbena melindria*. Flowers all the summer, in light rich mould.
- Common Indian Fig. *Opuntia vulgaris*. Flowers in August, in sandy loam.
- Large-flowered Violet. *Viola grandiflora*. Flowers in May and August, in peaty loam.
- Rock Violet. *Viola lutea*. Flowers in May and July, in peaty loam.

## BULBS.

- Twisted Garlic. *Allium flexum*. Flowers in July, in common mould.
- Pyrenean Fritillary. *Fritillaria Pyregolum Pyrenaicum*. Flowers in June and July, in common mould.
- Little Wood-sorrel. *Oxalis acetosella*.
- naica*. Flowers in May and June, in common mould.
- Pyrenean Star of Bethlehem. *Ornithogalum Pyrenaicum*.
- Violet-coloured Wood-sorrel. *Oxalis violacea*. Flowers in May and June, in sandy peat."

Plant List 4: Continued.



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## APPENDIX.

(A.)

ADDITIONAL LISTS of ORNAMENTAL PLANTS for the Rockwork,—American Ground,—and general Flower-Borders; Spring Flowers,—Perennials for the months of May, June, and July, and for Autumn; Biennials and Annuals.

*Rockwork.* (P. 242.)

*Soldanella alpina*, *Clusii*, and *minima*. *Silene acaulis*, *maritima*, *plena*. *Sempervivum arachnoideum*, *grandiflorum*, and even the common house-leek or *fouet* of Scotland, *S. tectorum*. Dwarf crimson-flowered Raspberry, *Rubus arcticus*. *Dracocephalum grandiflorum*. *Frankenia lævis*. *Potentilla tridentata*. *Phlox subulata*, *setacea*, *virginica*, and *stolonifera*. *Oxytropis uralensis*. *Lychnis alpina*. *Linaria alpina*. *Liatris pilosa* and *spicata*. *Hippocrepis comosa*. *Epimedium alpinum*. *Aubrietia deltoidea*. *Dryas octopetala* and *Drummondii*. *Cardamine bellidifolia*. *Aster alpinus*. *Anemone Pulsatilla* or *pasque-flower*. No plants produce a finer effect than the different varieties of the common rock-rose, *Helianthemum vulgare*; double-flowered, pale, yellow, and dark orange-coloured.

*Plants requiring a Peaty Soil.* (P. 249.)

*Rhododendron Caucasicum*, *ferrugineum*, and several beautiful hybrids, such as the *alto-clerense*, raised at Highclere. *Kalmia latifolia*, *glauca*, *angustifolia*, *nitida*. *Erica australis*, *arborea*, *mediterranea*, *ramulosa*, *scoparia*, *vagans*, *ciliaris*. *Ledum palustre* and *latifolium*. *Vaccinium myrtillus*, the bil-

Plant List 5: Patrick Neill, *The Fruit, Flower and Kitchen Garden* (1838), 323.



Rock Plants.--A Lady.-- The following are suitable shrubs for planting on rockwork:--*Cotoneaster microphylla* and *marginata*, *Arbutus uva ursi*, *Berberis empetrifolia*, *Aquifolium*, and *glumacea*, *Cistus* and *Helianthemums*, *Pyracantha*, *Juniperus nana* and *prostrata*, *Cytisus purpureus*, *Daphne Cneorum*, Hardy Heaths, *Genista triquetra* and *sagittalis*, *Vinca major* and *minor*. Of Herbaceous plants procure the following:-- *Saxifragas*, *Pentstemons*, *Statice tatarica*, *latifolia*, *Gmelini*, and *bellidifolia*, *Aquilegia fragans*, *glandulosa*, and *canadensis*, *Campanula grandis*, *pulla*, and *versicolor*, *Dianthus superbus*, and others, *Gentiana acaulis* and *asclepiadea*, *Phlox procumbens*, *nivalis*, and *setacea*, *Oenothera speciosa*, *macrocarpa*, and *Frazeri*, *Iberis sempervirens*, *Geranium ibericum* and *sanguineum*, *Anemone vitifolia*, *Alyssum saxatile*; Ferns and Sedums, *Crocuses*, *Scillas*, *Narcissis*, and other bulbs for flowering in the spring.

Plant list 6: *Gardener's Chronicle* (5 October 1844): 673.

Rock Plants.--Z.--The following are 40 plants that are suitable for a rockwork, viz.:--*Rhododendron ferrugineum*, *R. hirsutum*, *Arctostaphylos*, *Uva-ursi*, *Chamaeledon procumbens*, *Sedum rupestre*, *S. Forsterianum*, *S. populifolium*, *S. vilosum*, *S. hexangulare*, *Pernetia phillyreaefolia*, *p. pilos*, *Mahonia aquifolium*, *Ramondia pyrenaica*, *Soldanella alpina*, *Androsace villosa*, *Corydalis nobilis*, *Phlox ovata*, *P. subulata*, *P. nivalis*, *Vinca minor flore pleno*, *Campanula pumila*, *Gentiana verna*, *Dryas octopetala*, *Digitalis lutea*, *Sibthorpia europaea*, *Arabis alpina*, *Draba aizoides*, *Prenanthes purpurea*, *P. muralis*, *Antennaria plantaginea*, *Gnaphallum arenarium*, *Ceterach offinarum*, *Polypodium vulgare cambricum*, *P. dryopteris*, *Onoclea sensibilis*, *Asplenium adiantum rigidum*, *A. Lonchitis*.

Plant list 7: *Gardeners' Chronicle* (9 May 1844): 152.



LIST OF PLANTS  
SUITABLE FOR ROCKERIES AND RAISED BANKS,  
AND FOR RUSTIC WORK GENERALLY.

English Name.	Botanical Name.	Col. Blossom.
Barren Wort,	<i>Epimedium alpinum</i> ,	Red.
Geneva Bugle,	<i>Apisa genevensis</i> ,	Purple.
Rock Alyssum,	<i>Alyssum saxatile</i> ,	Yellow.
Variegated Alyssum,	<i>A. variegata</i> .	
Rock Wallcress,	<i>Arabis saxatile</i> ,	White.
Variegated Wallcress,	<i>A. lucida variegata</i> ,	White.
Canadian Dogwood,	<i>Cornus Canadensis</i> ,	White.
Rock Sweet William,	<i>Dianthus alpestris</i> ,	White.
Creeping Gysophyllum,	<i>Gysophylla prostrata</i> ,	White.
Wall Snap-dragon,	<i>Linaria cymbalaria</i> ,	Purple.
White Toadflax,	<i>L. alba alpina</i> ,	White.
Rosy Toadflax,	<i>L. cymbalaria variegata</i> ,	Rose.
Rosy Oxalis,	<i>Oxalis rosea</i> ,	Rose.
Early Sandwort,	<i>Arenaria verna</i> ,	White.
White Shining Bell-Flower,	<i>Campanula nitida alba</i> ,	White.
Dwarf Shining Bell-Flower,	<i>C. pumilla alba</i> ,	White.
Vital's Aretia,	<i>Aretia vitaliana</i> ,	Yellow.
Mountain Wallflower,	<i>Chieranthus alpina</i> ,	Yellow.
Little Coronilla,	<i>Coronilla minima</i> ,	Yellow.
Aizoon Whitlow-grass,	<i>Draba aizoides</i> ,	Yellow.
Alpine Erinus,	<i>Erinus alpinus</i> ,	Purple.
Heron's Bill,	<i>Erodium Reichardii</i> ,	White.
Purple Primula,	<i>Primula ciliata purpurea</i> ,	Purple.
Bear's-ear Primrose.	<i>P. auricula alpina</i> ,	Various.
Little Tormentil,	<i>Potentilla reptans</i> ,	Yellow.
Double Cinquefoil,	<i>P. reptans flore pleno</i> ,	Yellow.
Early Flame-Flower,	<i>Phlox devaricata</i> ,	Blue.
White Flame-Flower,	<i>P. nivalis</i> ,	White.
Creeping Flame-Flower,	<i>P. procrumbeus</i> ,	Lilac.
Mossy Saxifrage,	<i>Saxifraga muscoides</i> ,	Yellow.
Double-grain-rooted Saxifrage,	<i>S. granulata pleno</i> ,	White.
Snowy-grain-rooted Saxifrage,	<i>S. nivalis</i> ,	White.
Bird's-foot-grain-rooted Do.,	<i>S. pedatifida</i> ,	Purple.
Starry-grain-rooted Do.,	<i>S. stellaris</i> ,	White.
Azure Stonecrop,	<i>Sedum azureum</i> ,	Blue.
White Stonecrop,	<i>S. dasphyllum</i> ,	White.
Great Stonecrop,	<i>S. monstrosum</i> ,	White.
Common Stonecrop,	<i>S. acre</i> ,	Yellow.
Mountain Houseleek,	<i>Sempervivum montanum</i> ,	Red.
Spider Houseleek,	<i>S. arachnoideum</i> ,	Red.
Globular Houseleek,	<i>S. globiferum</i> ,	Red.
Tabular Houseleek,	<i>S. tabularium</i> ,	Red.
Mountain Speedwell,	<i>Veronica montanum</i> ,	Blue.
Rock Speedwell,	<i>V. saxatile</i> ,	Blue.
Stemless Catchfly,	<i>Silene acaulis</i> ,	Pink.
Alpine Soldanella,	<i>Soldanella alpina</i> ,	Purple.
Little White Soldanella,	<i>S. minima alba</i> ,	White.
Wild Thyme,	<i>Thymus serpyllum</i> ,	Purple.
Azorian Thyme,	<i>T. azorica</i> ,	Purple.
Double Periwinkle,	<i>Vinca minor rubra pleno</i> ,	Red.
Great Bird's-foot Trefoil,	<i>Orobancha majus</i> ,	Yellow.

Many showy border-flowers may be advantageously used, such as Phloxes, Delphiniums, Gentians, Abronias, Violas, ornamental Grasses, etc., etc.

Plant List 8: Shirley Hibberd, *Rustic Adornments for Homes of Taste*, 1856, 423-424.



## I.—LIST OF ALPINE PLANTS.

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<p><b>ACERAS</b> anthropophora</p> <p><b>ACHILLEA, Milfoil</b> clavennæ serrata tomentosa</p> <p><b>ACINOS</b> vulgaris *</p> <p><b>ADONIS</b> vernalis</p> <p><b>ADOXA</b> moschatellina</p> <p><b>ÆTHIONEMA</b> * membranaceum</p> <p><b>AGROSTIS</b> pulchella *</p> <p><b>AJUGA, Bugle</b> alpina chamœpitys * genevensis pyramidalis † reptans, fol. variegatis</p> <p><b>ALCHEMILLA, Lady's Mantle</b> alpina vulgaris</p> <p><b>ALETRIS</b> farinosa</p> <p><b>ALYSSUM</b> calycinum * montanum orientale saxatile fol. varieg.</p>	<p><b>ANAGALLIS, Pimpernel</b> * Monelli * Phillippsi</p> <p><b>ANDROSACE</b> * carnea * chamæjasme * lactea nana * obtusifolia * * villosa</p> <p><b>ANEMONE</b> alpina apennina baldensis hortensis fl. pleno hudsoniana narcissiflora nemorosa cœrulea fl. pleno palmata patens ranunculoides sylvestris fl. pleno thalictroides vernalis</p> <p><b>ANTENNARIA (Gnaphalium)</b> alpina dioica * triplinervis</p> <p><b>ANTHYLLIS</b> * montana vulneraria</p> <p><b>AQUILEGIA, Columbine</b> alpina</p>
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Plant Lists from James Lothian, *Practical Hints on Alpine Plants* (1845), 68-83.



<b>ARABIS</b>	<b>ASTRANTIA</b>
alpina	carniolica
arenosa *	major
bellidifolia	minor
caucasica	<b>AUBRIETIA</b>
ciliata	‡ deltoidea
hirsuta b	hesperidifolia
incana	purpurea
lucida	<b>AZALEA (Chamaedon)</b>
fol. variegatis	† procumbens
petrea	<b>BARTSIA</b>
<b>ARBUTUS (Arctostaphylos)</b>	alpina
alpina	viscosa *
uva-ursi	<b>BELLIDIASTRUM</b>
<b>ARENARIA</b>	Michellii
balearica	<b>BELLIUM</b>
ciliata	crassifolium
grandiflora	minutum
laricifolia	<b>BRIZA</b>
longifolia	minor *
nardifolia	<b>BRASSICA</b>
peplodes	monensis
rostrata	<b>BRODLEA</b>
rubra *	‡* congesta
saxatilis	<b>BULBOCODIUM</b>
verna	‡ vernum
vulgaris	<b>CARILE</b>
<b>ARETIA</b>	maritima *
alpina	<b>CALOPOGON</b>
vitaliana	‡* pulchellus
<b>ARMERIA (Statice)</b>	<b>CAMPANULA, Bellflower</b>
alpina	carpatica
formosa	collina
‡ maritima	fragilis
montana	† garganica
<b>ARNICA</b>	glomerata
montana	fl. albo
<b>ASARUM</b>	hybrida *
canadense	nitida
<b>ASPERULA, Woodruff</b>	fl. caeruleo
cynanchica	patula
odorata	pentagonia *
<b>ASTER</b>	pulla
alpinus	fl. albo
fl. albo	pumila
<b>ASTRAGALUS, Milk Vetch</b>	fl. albo
alopecuroides	rigida
alpinus	rotundifolia
canadensis	fl. albo
depressus	rubra
hypoglottis	rupestris
leucophæus	saxatilis
monspessulanus	
tragacantha	

Lothian: Continued.



**CARDAMINE, *Lady's smock***  
*bellidifolia*  
*pratensis*  
*fl. pleno*  
*trifoliata*

**CAULOPHYLLUM (*Leontice*)**  
*thalictroides*

**CERASTIUM**  
*alpinum*  
*arvense*  
*latifolium*  
*perfoliatum*  
*tomentosum*

**CHAPTALIA (*Tussilago*)**  
*tomentosa*

**CHEIRANTHUS, *Wallflower***  
*alpinus*  
*mutabilis*

**CHELERIA**  
*sedoides*

**CHLOBA**  
*perfoliata* \*

**CHRYSANTHEMUM**  
*alpinum*

**CIRCEA**  
*alpina*  
*lutetiana*

**CLAYTONIA**  
*grandiflora*  
*perfoliata* \*  
*virginiana*

**CNICUS**  
*acaulis* (*Carlina*)

**COCHLEARIA**  
*danica* \*  
*groenlandica* \*

**COMAROPSIS (*Dalebarda*)**  
*fragarioides*

**CONVALLARIA, *Lily of the Valley***  
*majalis*  
*fl. rubro*  
*fl. pleno*

**CONVOLVULUS**  
*soldanella*

**CORNUS**  
*canadensis*  
*suecica*

**CORONOPUS**  
† *didyma* \*  
† *Ruellii* \*

**CORTUSA**  
*Mathioli*

**CORONILLA**  
*coronata*  
*minima*  
*Securidaca* \*  
*varia*

**COBYDALIS (*Fumaria*)**  
*bracteata*  
*bulbosa*  
† *claviculata* \*  
*lutea*  
*tuberosa*  
*albiflora*

**COTYLEDON**  
*lutea*  
*umbilicus*

**CRUCIANELLA**  
† \* *stylosa*

**CYCLAMEN**  
\* *coum*  
*europæum*  
*hederifolium*  
*album*  
\* *repandum*  
*vernum*

**CYPELLA**  
*Herberti*

**CYPRIPEDIUM, *Lady's Slipper***  
† \* *arietinum*  
† \* *calceolus*  
† \* *humile*  
† \* *parviflorum*  
† \* *pubescens*  
† \* *spectabile*

**CZACKIA (*Anthericum*)**  
† *liliastrum*

**DIANTHUS, *Pink***  
*alpinus*  
*armeria* b  
*arenarius*  
*cæsius*  
† *deltoides*  
*fragrans*  
*nitidus*  
*pallidiflorus*  
*petræus*  
*saxatilis*  
*superbus*

Lothian: Continued.



<b>DIELYTRA (Fumaria)</b> Cucullaria eximia spectabilis	<b>ERIGERON</b> acris alpinus glabellus Villarsi
<b>DIGITALIS, Farglove</b> lutea <i>b</i> purpurea <i>b</i> fl. albo <i>b</i>	<b>ERINUS</b> ‡ Hispanicus
<b>DIPHYLLEIA</b> cymosa	<b>ERIOPHORUM, Cotton-grass</b> alpinum polystachion vaginatum
<b>DONDIA (Astrantia)</b> epipactis	<b>ERIOPHYLLUM</b> lanatum
<b>DRABA</b> aizoides ciliaris incana muralis <i>a</i> pyrenaica † repens rupestris	<b>ERODIUM</b> maritimum <i>a</i> moschatum <i>a</i>
<b>DRACOCEPHALUM</b> botryodes grandiflorum nutans peregrinum	<b>ERPETION</b> reniforme
<b>DRUMMONDIA (Mitella)</b> mitelloides	<b>ERYNGIUM, Sea Holly</b> alpinum maritimum
<b>DRYAS</b> Drummondii integrifolia octopetala	<b>ERYTHRÆA</b> centaurium <i>a</i> littoralis <i>a</i>
<b>ELICHRYSUM, Everlasting</b> ‡ arenarium	<b>EUPHORBIA, Spurge</b> esula cyparissias exigua
<b>EPILOBIUM, Willow-herb</b> alpinum alsinifolium Dodonæi	<b>FEDIA</b> dentata <i>a</i> olitoria <i>a</i>
<b>EPIMEDIUM</b> alpinum diphyllum grandiflorum (macranthum) violaceum	<b>FRAGARIA</b> monophylla
<b>EPIPACTIS (Cephalanthera)</b> ‡ ensifolia ‡ grandiflora ‡ latifolia ‡ rubra	<b>FRANKENIA</b> lævis
<b>ERICA (Heath)</b> cinerea fl. albo ‡ ciliaris Mackaii tetralix fl. albo	<b>FUMARIA</b> parviflora <i>a</i>
	<b>GALIUM</b> saxatile
	<b>GALEOBDOLOM</b> luteum
	<b>GENTIANA, Gentian</b> ‡ acaulis alpina campestris <i>a</i> gelida divalis <i>a</i> pneunomanthe fl. albo ‡ verna fl. albo

Lothian: Continued.



<b>GERANIUM</b> altaicum argenteum columbinum a lancastricense lucidum a nepalense nodosum pyrenaicum rotundifolium, a sanguineum striatum wallichianum	<b>HERBERTIA</b> pulchella
<b>GEUM</b> album	<b>HERMINIUM</b> † monorchis
<b>GILIA</b> tenuiflora a	<b>HEUCHERA</b> americana cylindrica villosa
<b>GLAUX</b> maritima	<b>HIERACIUM, Hawkweed</b> alpinum ‡ pilosella pumilum rupestre
<b>GLECHOMA</b> † hederacea, <i>Ground Ivy</i>	<b>HIPPOCREPIS</b> † balearica † comosa † glauca humifusum elodes pulchrum
<b>GLOBULARIA</b> cordifolia nudicaulis	<b>HYDROPHYLLUM</b> canadense virginicum
<b>GOODYERA (Neottia)</b> † repens	<b>IBERIS, Candytuft</b> ‡ saxatilis sempervirens tenoreana
<b>GYPSOPHILA</b> elegans a prostrata repens viscosa a	<b>IRIS, Fleur-de-lis</b> cristata furcata pumila fl. luteo
<b>HABENARIA</b> † albida † bifolia † ciliaris † fimbriata† † viridis	<b>ISOTOMA</b> † axillaris
<b>HEDYSARUM</b> alpinum obscurum	<b>JASIONE</b> montana a perennis
<b>HELIANTHEMUM</b> ‡ guttatum a <i>Other species in great variety.</i>	<b>JEFFERSONIA</b> diphylla
<b>HELIOPHILA</b> araboides a	<b>KONIGA</b> ‡ maritima a
<b>HEPATICA</b> triloba caerulea fl. pleno rubra fl. pleno albo stam. rub.	<b>LAMIUM</b> maculatum orvala
	<b>LATHYRUS</b> maritimus nissolia tuberosus

Lothian: Continued.



<b>LEUCOIDIUM, Snowflake</b> æstivum * autumnale pulchellum vernum	<b>MELAMPYRUM, Cow Wheat</b> pratense sylvaticum
<b>LINARIA</b> † alpina chalepensis † cymbalaria, fol. varieg. fl. albo. elatine Perezii † pilosa organifolia spartea spuria † reflexa tristis vulgaris peloria	<b>MESEMBRYANTHEMUM</b> † cristallinum † tricolor <i>And several other species.</i>
<b>LINNEA</b> † borealis	<b>MEUM</b> athamanticum
<b>LINUM, Perennial Flax</b> flavum * monogynum	<b>MITCHELLA</b> repens
<b>LISTERA</b> † cordata † ovata	<b>MITELLA</b> diphylla nuda
<b>LITHOSPERMUM</b> maritimum purpureo-cœruleum	<b>MYOSOTIS, Forget-me-not</b> alpestris nana † palustris rosea versicolor
<b>LOBELIA</b> † begonifolia † erinus † erinoides inflata ramosa	<b>MYOSURUS</b> minimus
<b>LOTUS</b> † corniculatus, fl. pleno	<b>NEMESIA</b> floribunda
<b>LYCHNIS</b> alpina pyrenaica viscaria fl. albo fl. pleno	<b>NEOTTIA (Spiranthes)</b> † æstivalis † * autumnalis † * cernua † spiralis
<b>LYSIMACHIA</b> ciliata † nummularia vulgaris	<b>OMPHALODES</b> linifolia lucida verna
<b>LYTHRUM</b> triflorum roseum superbum virgatum	<b>ONOSMA</b> tauricum
<b>MATHIOLA</b> maritima	<b>OPHRYS</b> † apifera, Bee Orchis † aranifera, Spider O.
	<b>ORCHIS</b> † fusca † hircina † militaris † morio † pyramidalis † ustulata
	<b>ORNITHOPUS</b> † perpusillus
	<b>OROBUS</b> albus canescens niger sylvaticus vernus fl. albo

Lothian: Continued.



<b>OXALIS</b> acetosella †* Bowii corniculata * †* Deppei †* floribunda †* rosea †* tetraphylla †* versicolor	<b>PRIMULA, Primrose, &amp;c.</b> altaica carniolica ciliata cortusoides decora denticulata ‡ farinosa fl. albo helvetica integrifolia longifolia ‡ marginata minima ‡ nivalis Palinuri pusilla ‡ scotica sibirica stricta
<b>OXYBIA, Mountain Sorrel</b> reniformis	
<b>OXYTROPIS</b> campestris uralensis	
<b>PAPAVER, Poppy</b> alpinum cambricum nudicaule	
<b>PHLOX</b> nivalis setacea † stolonifera subulata suaveolens fol. variegatis †‡ verna purpurea	<b>PULICARIA</b> dysenterica vulgaris *
<b>PHYTEUMA</b> cordatum hemisphaericum	<b>PULMONARIA</b> daurica mollis officinalis virginica
<b>POLEMONIUM, Greek Valerian</b> gracile reptans	<b>PULSATILLA, Pasque flower</b> Halleri vulgaris
<b>POLYGONATUM, Solomon's Seal</b> verticillatum vulgare fl. pleno	<b>PYROLA, Wintergreen</b> minor rotundifolia secunda uniflora
<b>POLYGALA</b> vulgaris	<b>RAMONDA (Horminum)</b> pyrenica
<b>POLYGONUM</b> viviparum	<b>RANUNCULUS</b> alpestris amplexicaulis gramineus parnassifolius thora
<b>POTENTILLA, Cinquefoil</b> alba alpestris argentea Calabra † reptans fl. pleno rupestris sericea Tonqua tridentata verna	<b>RHODIOLA, Rose Root</b> rosea
	<b>RUBUS, Dwarf Bramble</b> arcticus chamaemorus
	<b>SANGUINARIA, Bloodwort</b> canadensis

Lothian: Continued.



<b>SANVITALIA</b> procumbens *	<b>SEDUM</b> caeruleum * dasyphyllum * Eversii Forsterianum monregalense populifolium roseum sexangulare * Sieboldii telephium
<b>SAPONARIA, Soapwort</b> ocymoides	<b>SEMPERVIVUM</b> arachnoideum ciliatum montanum tectorum
<b>SAUSSUREA</b> alpina	<b>SHORTEA</b> † c alifornica
<b>SAXIFRAGA</b> aizoides angustifolia aspera bryoides ceratophylla cernua crustata elongella † geum † granulata fl. pleno hirculus hypnoides irrigua ligulata lingulata moschata nivalis † † oppositifolia pedatifida propendens pygmæa † retusa rivularis rosularis sibirica stellaris tricuspidata tridactylites * † umbrosa	<b>SIBBALDIA</b> procumbens
<b>SCHIVEBECKIA (Alyssum)</b> podolica	<b>SIBTHORPIA</b> † europæa
<b>SCILLA</b> † autumnalis † bifolia † fl. albo † fl. roseo † verna † fl. albo	<b>SILENE, Catchfly</b> acaullis fl. albo alpestris chloræfolia conica * incarnata laciniata maritima fl. pleno quadridentata rubella * saxifraga
<b>SCUTELLARIA</b> alpina fol. varieg. galerculata minor	<b>SISTRINCHIUM</b> anceps Bermudianum * grandiflorum striatum
<b>SEDUM</b> acre album anglicum *	<b>SMILACINA</b> umbellata
	<b>SOLDANELLA</b> alpina Clusii crenata mjnima montana pusilla
	<b>SPERGULA</b> † nodosa fl. pleno saginoides

Lothian: Continued.



<b>STATICE</b> Gmelini sinuata	<b>TRIPTILION</b> * spinosum
<b>STELLARIA</b> cerastoides holostea nemorum	<b>TUSSILAGO</b> alpina fragrans nivea
<b>STIPA, Feather grass</b> pennata	<b>VACCINIUM</b> uliginosum vitis-idea
<b>SWERTIA</b> perennis	<b>VALERIANA</b> dioica
<b>TELLIMA</b> grandiflora	<b>VERONICA</b> alpina aphylla Buxbaumii * chamaedrys fl. albo fol. variegatis fruticulosa gentianoides humifusa † montana multifida † prostrata † repens saxatilis
<b>TEUCRIUM</b> chamaedrys montanum pyrenaicum	<b>VESICARIA</b> utriculata
<b>THALICTRUM</b> alpinum anemonoides	<b>VICIA</b> angustifolia * lutea lathyroides * sylvatica
<b>THLASPI</b> alpestre perfoliatum *	<b>VINCA, Periwinkle</b> herbacea
<b>THYMUS, Thyme</b> azorica † corsicus † lucidus † serpyllum, fl. albo tomentosus	<b>VIOLA, Violet</b> calcarata canadensis cornuta hirta lactea lutea * neapolitana palmata pedata primulaefolia pygmaea striata suavis
<b>TIARELLA</b> cordifolia	<b>WAHLENBERGIA (Campanula)</b> grandiflora
<b>TRICHONEMA</b> † * bulbocodium	<b>WALDSTENIA</b> geoides
<b>TRIENTALIS</b> americana europaea	
<b>TRIFOLIUM</b> arvense * † fragiferum repens fol. atro purp. † ornithopodioides * † uniflorum	
<b>TRILLIUM</b> * cernuum * erectum grandiflorum * pictum sessile	

Lothian: Continued.



## FERN S:

**ADIANTUM**, *Maiden hair Fern*  
capillus veneris  
pedatum

**ASPIDIUM**, *Shield Fern*  
aculeatum  
acrostichoides  
bulbiferum  
cristatum  
dilatatum  
filix mas  
Goldieanum  
lobatum  
lonchitis  
noveboracense  
oreopteris  
spinulosum  
thelypteris

**ASPLENIUM**, *Spleenwort*  
adiantum—nigrum  
alternifolium  
fontanum  
lanceolatum  
marinum  
ruta—muraria  
septentrionale  
trichomanes  
viride

**BLECHNUM**  
boreale

**BOTRYCHIUM**  
lunaria, *Moonwort*

**CETERACH** (*Grammitis*)  
officinarium

**CISTOPTERIS**, *Bladder Fern*  
dentata

**CRYPTOGRAMMA** (*Allosorus*)  
crispa, *Rock Brake*

**CYATHEA**  
alpina  
fragilis

**HYMENOPHYLLUM**  
Tunbridgense  
Wilsoni

**ONOCLEA**  
sensibilis

**OPHIOGLOSSUM**  
vulgatum, *Adder's tongue*

**OSMUNDA**  
regalis, *Royal Fern*

**POLYPODIUM**, *Polypody*  
calcareum  
dryopteris  
phegopteris  
vulgare  
vulgare cambricum

**PTERIS**  
crenata  
cretica

**SCOLOPENDRIUM**, *Hart's tongue*  
officinarium  
crispum  
undulatum  
furcatum

**STRUTHIOPTERIS**  
germanica

**TRICHOMANES**, *Bristle Fern*  
brevisetum (*speciosum*)

**WOODSIA**  
ilvensis  
hyperborea

## ALLIED PLANTS.

**LYCOPODIUM**, *Club moss*  
alpinum  
\* circinale  
\* cordifolium  
\* denticulatum  
inundatum  
selaginoides  
selago  
\* stoloniferum

**EQUISETUM**, *Horse tail*  
hyemale  
sylvaticum  
variegatum

Lothian: Continued.



<b>DICRANUM, Fork Moss</b> adiantoides bryoides cerviculatum flavescens heteromallum * squarrosum taxifolium varium	<b>HOOKEERIA</b> lucens
<b>DIDYMODON</b> capillaceus flexifolius purpureus	<b>HYPNUM, Feather Moss</b> denticulatum myosuroides pulchellum undulatum, &c.
<b>ENCALYPTA, Extinguisher Moss</b> ciliata vulgaris	<b>NECKERA</b> crispa
<b>FUNARIA, Cord Moss</b> hygrometrica	<b>POLYTRICHUM, Hair Moss</b> aloides undulatum
<b>GRIMMIA</b> apocarpa	<b>PTERIGONIUM</b> gracile
<b>GYMNOSTOMUM, Beardless Moss</b> * aestivum pyriforme * rupestre truncatulum	<b>TETRAPHIS</b> pellucida
	<b>TRICHOSTOMUM, Fringe Moss</b> * aciculare heterostichum polyphyllum
	<b>WEISSIA</b> acuta contraversa curvirostra * verticillata

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**HEPATICÆ (LIVERWORTS).**

**FEGATELLA**  
\* conica  
\* hemispherica

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**JUNGERMANNIA.**

The frondose species of this most extensive genus are those best suited for cultivation, as the foliose section, though the most extensive, contains generally such as are very minute, or of too rambling a habit to be kept within due bounds.

FRONDOSE SPECIES.	FOLIOSE SPECIES.
<b>JUNGERMANNIA</b> * Blasia * epiphylla furcata $\beta$ maxima * multifida, &c.	* asplenioides nemorosa * tomentella, &c., &c.
	<b>MARCHANTIA</b> * polymorpha

Lothian: Continued.



## II.—MARSH OR BOG PLANTS.

<p><b>ANAGALLIS</b> tenella .</p> <p><b>BIDENS</b> cernua a</p> <p><b>CAREX</b>, several interesting and curious species</p> <p><b>CARUM</b> verticillatum.</p> <p><b>CAMPANULA</b> hederacea</p> <p><b>CHRYSOSPLENIUM</b>, <i>Golden Saxifrage</i> alternifolium † oppositifolium.</p> <p><b>COMARUM</b> palustre</p> <p>‡ <b>CORALLORHIZA</b>, <i>Coral root</i> innata</p> <p><b>DROSERA</b>, <i>Sundew</i> anglica longifolia rotundifolia</p> <p><b>ELATINE</b> hexandra</p> <p><b>ELEOCHARIS</b> acicularis</p> <p><b>EPIACTIS</b> palustris</p> <p><b>GALIUM</b> uliginosum</p> <p><b>HELIOSCLADIUM</b> repens</p> <p><b>HYDROCOTYLE</b> vulgaris</p> <p><b>ILLECEBRUM</b> verticillatum</p> <p><b>LATHYRUS</b> palustris</p> <p><b>LIPARIS</b> ‡ <i>Loeselii</i></p>	<p><b>LYSIMACHIA</b> † nummularia</p> <p><b>MALAXIS</b> paludosa</p> <p><b>NASTURTIUM</b> terrestre</p> <p><b>OXYCOCCUS</b>, <i>Cranberry</i> † palustris</p> <p><b>PARNASSIA</b>, <i>Grass of Parnassus</i>. asarifolia palustris</p> <p><b>PEPLIS</b> portula</p> <p><b>PINGUICULA</b>, <i>Butterwort</i>. alpina grandiflora lusitanica lutea vulgaris</p> <p><b>SAMOLUS</b> valerandi</p> <p><b>RANUNCULUS</b> lingua</p> <p><b>SCIRPUS</b> Savii setaceus</p> <p><b>SEDUM</b>, <i>Stonewort</i> villosum</p> <p><b>SIMUM</b> angustifolium</p> <p><b>STELLARIA</b> glauca</p> <p><b>TOFIELDIA</b> palustris</p> <p><b>VALERIANA</b>, <i>Valerian</i> dioica</p> <p><b>VERONICA</b> scutellata</p> <p><b>VIOLA</b> palustris</p>
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Lothian: Continued.



### III—AQUATIC PLANTS FOR POND.

<p><b>ALISMA</b>  natans  ranunculoides</p> <p><b>APONOGETON</b>  distachyon</p> <p><b>BUTOMUS</b>  umbellatus</p> <p><b>CALTHA, Marsh Marigold</b>  palustris, fl. pleno</p> <p><b>CALLITRICHE</b>  autumnalis  verna</p> <p><b>CERATOPHYLLUM</b>  demersum</p> <p><b>ERIOCAULON</b>  septangulare</p> <p><b>HIPPURIS, Mare's tail</b>  vulgaris</p> <p><b>HOTTONIA, Water Violet</b>  palustris</p> <p><b>HYDROCHARIS, Frog bit.</b>  morsus—ranae</p> <p><b>HYDROPELTIS</b>  purpurea</p> <p><b>LIMOSSELLA</b>  aquatica</p> <p><b>LITTOBELLA, Shoreweed</b>  lacustris</p> <p><b>LOBELIA</b>  dortmanna</p> <p><b>MYRIOPHYLLUM</b>  spicatum  verticillatum</p> <p><b>NUPHAR, Yellow Water Lily</b>  advena  Kalmiana  lutea  pumila</p>	<p><b>NYMPHAEA, White Water Lily</b>  alba  odorata</p> <p><b>POLYGONUM</b>  amphibium</p> <p><b>PONTEDERIA</b>  angustifolia  cordata</p> <p><b>POTAMOGETON</b>  crispus  densus  lucens  perfoliatus  pusillus</p> <p><b>RANUNCULUS</b>  aquatilis  hederaceus</p> <p><b>SCIRPUS</b>  fluitans  lacustris</p> <p><b>SPARGANIUM</b>  natans  simplex</p> <p><b>SAGITTARIA, Arrowhead</b>  sagittifolia</p> <p><b>STRATIOTES, Water Soldier</b>  aloides</p> <p><b>SUBULARIA</b>  aquatica</p> <p><b>UTRICULARIA</b>  minor  vulgaris</p> <p><b>VERONICA</b>  anagallis  beccabunga  fl. albo  scutellata</p> <p><b>VILLARSIA</b>  nymphæoides</p>
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Lothian: Continued.



## IV.—AMERICAN SHRUBS.

THESE are mostly natives of North America, and, in general, require peat earth to grow them successfully. They are suitable neighbours to the Alpine-plants, and may be planted in the borders leading to, or in beds around the Rock-work. Those marked \* are evergreen.

**ANDROMEDA**

- \* acuminata
- \* arborea
- \* axillaris
- \* calyculata
- cassinefolia
- \* coriacea
- \* Drummondi
- \* floribunda
- \* hypnoides (Cassiope, h.)
- mariana
- \* paniculata, *several varieties*
- \* pulverulenta
- \* racemosa
- \* rosmarinifolia
- serratifolia
- \* speciosa
- ◊ tetragona (Cassiope t.)

**ARBUTUS, Strawberry Tree**

- \* Andrachne
- ◊ serratifolia
- \* hybrida
- \* procera
- \* sibirica
- \* unedo
- \* ruber (*Scarlet A.*)
- \* fl. pleno
- \* salicifolia
- \* tomentosa

**ARCTOSTAPHYLOS (Arbutus)**

- \* alpina
- ◊ nitida
- \* pungens
- ◊ uva-ursi

**AZALEA**

- calendulacea, *several varieties*
- canescens
- glauca
- ◊ fl. pleno
- grandiflora
- nudiflora, *several varieties*
- pontica, *several varieties*
- speciosa
- salicifolia
- viscosa
- ◊ crispa
- dealbata
- glauca
- odorata

**BUXUS, Box-tree,**

- \* balearica
- \* sempervirens

**CALLUNA**

- \* vulgaris (Erica)

**CALOPHACA**

- wolgarica
- \* albo.

Lothian: Continued.



<b>CALYCANTHUS, Allspice</b>	<b>ERICA, Heath</b>
† acuminatus	* † ramulosa
† floridus	* † scoparia
<b>CRANOTHUS</b>	* † stricta
† americanus	* † tetralix
† cœruleus	* † alba
<b>CEPHALANTHUS</b>	* † vagans, <i>Cornish Heath</i>
* † occidentalis	* † rubra
<b>CERCIS, Judas Tree</b>	* † alba
† canadensis	<b>FOTHERGILLA</b>
<b>CRIMONANTHUS</b>	† alnifolia
† fragrans	† speciosa
† grandiflora	<b>GAULTHERIA</b>
<b>CHIONANTHUS</b>	* † procumbens
maritima	* † shallon
† virginiana	* † serpyllifolia
<b>COMPTONIA, Fern-Gale</b>	<b>HALESIA, Snowdrop Tree</b>
† asplenifolia	† tetraptera
<b>COENUS, Dogwood</b>	<b>JUNIPERUS, Juniper, &amp;c.</b>
† canadensis	* alpina
<b>COTONEASTER</b>	* Bermudiana
† frigida	* † communis
† macrophylla	* excelsa
† microphylla	* † lycia
† tomentosa	* oxycedrus
<b>CUPRESSUS, Cypress</b>	* † Phœnicea
* † australis	* † Sabina, <i>Savin</i>
* † lusitanica, <i>Cedar of Goa</i>	* † variegata
* pendula	* † sinensis
* † sempervirens	* † succica, <i>Swedish J.</i>
* † horizontalis	* † thurifera
* † thyoides, <i>White Cedar</i>	* † virginiana, <i>Red Cedar</i>
* † variegata	<b>KALMIA</b>
* † torulosa	* † augustifolia, <i>several varieties</i>
<b>DAPHNE</b>	<b>KŒLREUTERIA</b>
Aucklandi	† paniculata
* † alpina	<b>MAGNOLIA</b>
* † altaica	* † grandiflora
* † Cneorum	<b>MEDICAGO, Medick</b>
* † collina	arborea
* † Neapolitana	<b>MENZIESIA, Irish Heath</b>
* † Laureola	* † cœrulea
<b>ERICA, Heath</b>	* † globularis
* † arborea	* † polifolia
* † ciliaris	* † alba
* † cinerea, <i>with several varieties</i>	<b>OXYCOCCUS, Cranberry</b>
* † herbacea	* † macrocarpus
* † carnea	* † palustris
* † mediterranea	<b>PERNETTIA</b>
* † Mackayana	* † mucronata
* † multiflora	* † pilosa
* † alba	

Lothian: Continued.



## V.—MOSSES.

THE following list of *Musci* and *Hepaticæ* (Mosses and Liverworts) is added, for the use of those who may wish to try their success in growing a few on the Rock-work, or in Wardian Cases, for the latter of which they are especially adapted. It comprises only such as are pretty generally distributed, and calculated to make some show by agreeable contrasts. Those who are Botanists will have no difficulty in augmenting the collection to an almost indefinite extent; as, in addition to those of our own country, there are many interesting exotic species, which might, with little trouble, be introduced, from their retaining their vitality when in a dried state.

The native *habitats* of these will form the best guide for placing them on the Rock-work as these will indicate the situations in which they thrive best. The majority, when once established, will succeed on the north side of the Rock-work.

Those distinguished by an asterisk will only succeed where a constant supply of moisture can be insured.

### MUSCI (MOSSES).

<p><b>BARTRAMIA, Apple Moss</b>            * fontana            pomiformis</p>	<p><b>BRYUM, Thread Moss</b>            hornum            ligulatum            nutans            roseum            punctatum            turbinatum            ventricosum</p>
<p><b>BRYUM, Thread Moss</b>            * androgynum            argenteum            cæspitium</p>	

Lothian: Continued.



<b>POLYGALA, Milkwort</b>	<b>SPIRÆA</b>
* ↓ Chamæbuxus	↓ bella
<b>RHODODENDRON</b>	↓ hypericifolia
* ↓ azaloides	↓ salicifolia alba
* ↓ campanulatum	↓ tomentosa
* ↓ catawbiense	<b>SYMPHORICARPUS, Snowberry</b>
* ↓ caucasicum	↓ montanus
* ↓ album	↓ racemosus
* ↓ Chamæcistus	↓ vulgaris, Common S.
* ↓ chrysanthum	<b>TAXODIUM, Deciduous Cypress</b>
↓ dahuricum	↓ distichum
↓ atrovirens	↓ pendulum
* ↓ ferrugineum	<b>THUJA, Arborvitæ</b>
* ↓ hirsutum	↓ * occidentalis, American A.
* ↓ lapponicum	↓ * orientalis, Chinese A.
* ↓ maximum	↓ * plicata
* ↓ album	<b>ULEX, Whin</b>
* ↓ odoratum	↓ * europæus fl. pl.
* ↓ ponticum	↓ * strictus, Irish U.
* ↓ album	<b>VACCINIUM, Bilberry, &amp;c.</b>
* ↓ fol. argent. var.	↓ amœnum
* ↓ fol. areis var.	↓ arctostaphylos
* ↓ Kalmianum	↓ buxifolium
* ↓ pumilum	↓ marianum
* ↓ punctatum	↓ myrtillus
* ↓ roseum	↓ stamineum
<b>RUSCUS, Butcher's Broom</b>	↓ uliginosum
* ↓ aculeatus	↓ vitis-idaea
* ↓ hypoglossum	<b>VINCA, Periwinkle</b>
<b>SPIRÆA</b>	↓ * major
↓ argentea	↓ * minor
↓ ariæfoliæ	

Lothian: Continued.



APPENDIX V

TABLE 1: PLANT NAMES

Plants names on this table appear on the eight lists of recommended alpine and rock plants discussed in Chapter 5. Here they are merged in alphabetical order. The first column shows the preferred name, or a synonym, which is cross-referenced to the preferred name. The second column lists the synonyms used on the lists, and the third shows the common name. The lists may be seen in their original states in Appendix IV.

KEY

[PF] Synonym listed under in *The Plant Finder*, 1993.

- a Annual
- b Biennial
- @ Bulb
- s Shrub
- f Fern
- ss Subshrub

TABLE 1.-- Preferred names, synonyms, and common names on the masterlist.

Preferred Name	Synonym	Common Name
<i>Achillea alpina</i> see <i>Achillea sibirica</i>		
<i>Achillea clavennae</i>		Clavenna's Millfoil; White Alpine Yarrow
<i>Achillea montana</i>		Mountain Millfoil
<i>Achillea millefolium</i> 'Rosea'	<i>Achillea rosea</i>	Roseate Millfoil
<i>Achillea sibirica</i>	<i>Achillea alpina</i>	
<i>Achillea tomentosa</i>		Downy Yarrow
<i>Adiantum capillus-</i> <i>veneris</i>	f	Common Maidenhair Fern
<i>Adonis vernalis</i>		Ox-eye; Perennial Pheasant's Eye
<i>Aeonium tabuliforme</i>	<i>Sempervivum tabuliforme</i>	



Preferred Name	Synonym	Common Name
<i>Aethionema saxatile</i> <sup>b</sup>	<i>Oethionema saxatile</i> ; <i>Thlaspi saxatile</i>	Rock Aethionoma; Stonecress
<i>Ajuga alpina</i> see <i>Ajuga genevensis</i>		
<i>Ajuga genevensis</i>	<i>Ajuga alpina</i>	Geneva Bugle; Upright Bugle; Blue Bugle
<i>Ajuga pyramidalis</i>		Pyramid Bugle
<i>Alchemilla alpina</i>		Alpine Lady's Mantle
<i>Alchemilla glabra</i>		Smooth Lady's Mantle
<i>Alchemilla pentaphylla</i>		Five-leaved Lady's Mantle
<i>Alkanna orientalis</i>	<i>Anchusa orientalis</i>	Eastern Bugloss
<i>Allium carinatum</i> <sup>@</sup>	<i>Allium flexum</i>	Keeled Garlic
<i>Alyssum alpestre</i>		Alpine Madwort
<i>Alyssum alyssoides</i> <sup>*</sup>	<i>Alyssum calycinum</i>	Calyxea Madwort
<i>Alyssum calycinum</i> see <i>Alyssum alyssoides</i>		
<i>Alyssum deltoidea</i> see <i>Aubrietia deltoidea</i>		
<i>Alyssum incana</i> see <i>Berteroa incana</i>		
<i>Alyssum halimifolium</i>		
<i>Alyssum hirsutum</i> <sup>*</sup>		Hairy Madwort
<i>Alyssum hyperboreum</i>		Northern Madwort
<i>Alyssum montanum</i>		Mountain Alyssum; Mountain Madwort
<i>Alyssum murale</i>		Yellow Tuft; Wall Madwort
<i>Alyssum podolica</i> see <i>Schevereckia podolica</i>		
<i>Alyssum saxatile</i> see <i>Aurinia saxatile</i>		
<i>Anagallis arvensis</i> var. <i>caerulea</i>	<i>Anagallis caerulea</i>	Blue Pimpernel; Shepherd's Clock; Poor Man's Weatherglass
<i>Anagallis caerulea</i> see <i>Anagallis arvensis</i> var. <i>caerulea</i>		



Preferred Name	Synonym	Common Name
<i>Anaphalis margaritacea</i>	<i>Gnaphalium margaritacea</i>	Pearly Everlasting
<i>Anchusa orientalis see Alkanna orientalis</i>		
<i>Androsace villosa</i>		Rock Jasmine
<i>Anemone alpina see Pulsatilla alpina</i>		
<i>Anemone apennina</i>		Apennine Windflower
<i>Anemone baldensis</i>		Mount Baldo Anemone
<i>Anemone pratensis see Pulsatilla pratensis</i>		
<i>Anemone pulsatilla see Pulsatilla vulgaris</i>		
<i>Anemone sibirica</i>		Siberian Anemone
<i>Anemone vitifolia</i>	<i>Anemone tormentosa</i> [PF]	
<i>Antennaria dioica</i>	<i>Gnaphalium dioica</i>	Cat's Ear; Mt. Cudweed; Sand Everlasting Cudweed; Cats-foot
<i>Antennaria plantaginifolia</i>	<i>Antennaria plantaginea</i>	
<i>Anthemis carpatica see Anthemis cretica ssp. cretica</i>		
<i>Anthemis cretica ssp. cretica</i>	<i>Anthemis montana</i> <i>Anthemis carpatica</i>	
<i>Anthemis montana see Anthemis cretica ssp. cretica</i>		
<i>Anthemis saxatilis</i>		Rock Camomile; Dog Fennel
<i>Anthyllis montana</i>		Mountain Kidney Vetch
<i>Antirrhinum alpine see Linaria alpina</i>		
<i>Antirrhinum chalepence see Linaria chalepence</i>		
<i>Antirrhinum majus</i>		Greater Snapdragon
<i>Aquilegia alpina</i>		Alpine Columbine



Preferred Name	Synonym	Common Name
<i>Aquilegia canadensis</i>		Canadian Columbine; Meeting Houses; Honeysuckle
<i>Aquilegia fragrans</i>		
<i>Aquilegia glandulosa</i>		
<i>Aquilegia pyrenaica</i>		Pyrenean Columbine
<i>Aquilegia sibirica</i>		Siberian Columbine
<i>Arabis albida</i> see <i>Arabis caucasica</i>		
<i>Arabis alpina</i>		Alpine Wallcress; Alpine Rock Cress; Alpine Bastard Flower Mustard
<i>Arabis bellidiflora</i> see <i>Arabis soyerii</i>		
<i>Arabis caerulea</i> see <i>Arabis caucasica</i>		
<i>Arabis caucasica</i>	<i>Arabis albida</i> ; <i>Arabis caerulea</i> ; <i>Arabis grandiflora</i>	White Rock Cress; Wall Rock Cress
<i>Arabis grandiflora</i> see <i>Arabis caucasica</i>		
<i>Arabis hispida</i> see <i>Cardaminopsis petraea</i>		
<i>Arabis lucida</i>		
<i>Arabis muralis</i>	<i>Arabis collina</i> [PF]	Murrale Wallcress
<i>Arabis petraea</i> see <i>Cardaminopsis petraea</i>		
<i>Arabis purpurea</i>	<i>Aubrietia purpurea</i>	Purple Aubrietia
<i>Arabis saxatilis</i>		Stone Wallcress
<i>Arabis sibirica</i>		
<i>Arabis soyeri</i>	<i>Arabis bellidiflora</i>	Daisy-leaved Wall Cress
<i>Arbutus uva-ursi</i> see <i>Arctosphylos uva-ursi</i>		



Preferred Name	Synonym	Common Name
<i>Arctostaphylos uva-ursi</i>	<i>Arbutus uva-ursi</i>	uva-ursi; Common Bearberry; Bear's Grape; Mealberry; Sandberry; Kinnikinick; Mountain Box;
<i>Arenaria montana</i>		Mountain Sandwort
<i>Arenaria saxatilis</i>		
<i>Arenaria tetraquetra</i>	<i>Gypsophila aggregata</i>	Montpellier Rock Pink
<i>Arenaria verna</i> see <i>Minuartia verna</i>		
<i>Aretia vitaliana</i> see <i>Vitaliana primulaflora</i>		
<i>Arnica glacialis</i> see <i>Doronicum glaciale</i>		
<i>Arnica helvetica</i> see <i>Arnica montana</i>		
<i>Arnica montana</i>	<i>Arnica helvetica</i>	Swiss Arnica; Mountain Arnica
<i>Artemisia groenlandica</i> see <i>Artemisia campestris</i> ssp. <i>borealis</i>		
<i>Artemisia campestris</i> ssp. <i>borealis</i>	<i>Artemisia groenlandica</i> <i>Artemisia borealis</i>	Greenland Wormwood
<i>Artemisia rupestris</i>		
<i>Asperula odorata</i> see <i>Galium odoratum</i>		
<i>Aspidium lonchitis</i> see <i>Polystichum lonchitis</i>		
<i>Asplenium adiantum-nigrum</i>		
<i>Asplenium ceterach</i>	<i>Ceterach officinarum</i>	
<i>Aster alpinus</i>		Alpine Aster; Starwort
<i>Astragalus alpinus</i>		Alpine Milk Vetch
<i>Astragalus campestris</i> see <i>Oxytropis campestris</i>		
<i>Astragalus canadensis</i>		Canadian Milk Vetch



Preferred Name	Synonym	Common Name
<i>Astragalus agrestis</i>	<i>Astragalus hypoglottis</i>	Purple Milk Vetch
<i>Astragalus massiliensis</i>	<i>Astragalus tragacantha</i>	Goat's Thorn
<i>Astragalus montana see Oxytropis jacquinii</i>		
<i>Astragalus tragacantha see Astragalus massiliensis</i>		
<i>Astragalus uralensis see Oxytropis uralensis</i>		
<i>Athamanta libanotis</i>		
<i>Aubrietia deltoidea</i> <sup>b</sup>	<i>Alyssum deltoidea</i>	Deltoid Aubrietia
<i>Aubrietia purpurea see Arabis purpurea</i>		
<i>Aurinia saxatile</i>	<i>Alyssum saxatile</i>	Rock Madwort; Rock Alyssum; Yellow Madwort
<i>Baptisia australis</i>	<i>Podalyria australis</i>	Blue False Indigo
<i>Bartsia alpina</i>		Velvet Bells
<i>Berberis aquifolium</i> <sup>a</sup>	<i>Mahonia aquifolium (PF)</i>	Mountain Grape; Holly Mahonia
<i>Berberis empetrifolia</i> <sup>a</sup>		
<i>Berberis glumacea see Berberis nervosa</i>		
<i>Berberis nervosa</i> <sup>a</sup>	<i>Berberis glumacea;</i> <i>Mahonia nervosa</i>	Oregon Grape
<i>Berteroa incana</i>	<i>Alyssum incana</i>	Hoary-leaved Madwort
<i>Betonica alopecuros see Stachys alopecuros</i>		
<i>Braya alpina</i>		Alpine Braya
<i>Calamintha nepeta see Nepeta catera</i>		
<i>Calluna vulgaris</i>	<i>Erica vulgaris</i>	Ling; Scots Heather
<i>Campanula alpina</i>		Alpine Bellflower
<i>Campanula carpatica</i>		Carpathian Harebell; Tussock Bellflower



Preferred Name	Synonym	Common Name
<i>Campanula cervicaria</i> <sup>b</sup>		Throatwort-like Bellflower
<i>Campanula cochlearifolia</i>	<i>Campanula pumila</i>	Dwarf Bellflower
<i>Campanula collina</i>		Hill Bellflower
<i>Campanula drabifolia</i> see <i>Campanula ramosissima</i>		
<i>Campanula garganica</i>		Garganian Bellflower
<i>Campanula grandis</i> see <i>Campanula latiloba</i>		
<i>Campanula hederacea</i>		Ivy-leaved Harebell
<i>Campanula latiloba</i>	<i>Campanula grandis</i>	
<i>Campanula nitida</i> see <i>Campanula persicifolia</i>		
<i>Campanula perfoliata</i> see <i>Specularia perfoliata</i>		
<i>Campanula persicifolia</i>	<i>Campanula nitida</i>	Peach-leaved Bellflower
<i>Campanula pulla</i>		Violet Harebell; Russet Bellflower
<i>Campanula pumila</i> see <i>Campanula cochlearifolia</i>		
<i>Campanula ramosissima</i> <sup>a</sup>	<i>Campanula drabifolia</i>	Nailwort-leaved Bellflower
<i>Campanula rapunculoides</i>		Rampion
<i>Campanula rotundifolia</i>		Bluebell; Harebell; Round-leaved Bellflower
<i>Campanula saxatilis</i>		Rock Bellflower
<i>Campanula thrysoides</i> <sup>b</sup>		Thrysoid Bellflower
<i>Campanula versicolor</i>		
<i>Cardamine asarifolia</i>	<i>Pachyphragmae macrophyllum</i> (PF)	Alpine Bittercress; Asarum-leaved Cardamine
<i>Cardamine bellidifolia</i>		Ladie's Smock



Preferred Name	Synonym	Common Name
<i>Cardaminopsis petraea</i>	<i>Nasturtium petraea</i> ; <i>Arabis hispida</i> ; <i>Arabis petraea</i>	Rock Wallcress
<i>Carduus marianus</i> see <i>Silybum marianum</i>		
<i>Carlina vulgaris</i> <sup>b</sup>		Common Carline Thistle
<i>Centurea montana</i>		Perennial Cornflower
<i>Cerastium alpinum</i>	<i>Cerastium latifolium</i>	Alpine Mouse-ear; Shaggy Chickweed; Broad-leaved Mouse-ear
<i>Cerastium latifolium</i> see <i>Cerastium alpinum</i>		
<i>Cerastium tomentosum</i>	<i>Cerastium repens</i>	Snow-in-Summer; Woolly Mouse-ear Chickweed
<i>Cerastium repens</i> see <i>Cerastium tomentosum</i>		
<i>Ceterach officinalis</i> see <i>Asplenium ceterach</i>		
<i>Chamaecytisus purpureus</i>	<i>Cytisus purpureus</i>	
<i>Chamaeledon procumbens</i> see <i>Loiseleuria procumbens</i>		
<i>Cheiranthus alpina</i>	Probably <i>Erysimum alpina</i> [PF]; now <i>Erysimum hieraciiifolium</i>	Wallflower
<i>Cheiranthus cheiri</i> see <i>Erysimum cheiri</i>		
<i>Cheiranthus incanus</i> see <i>Matthiola incana</i>		
<i>Cheiranthus helveticus</i> see <i>Erysimum murale</i>		
<i>Chelidonium majus</i>		Greater Celandine; Swallow Wort [Florepleno=Double Celandine]
<i>Cherleria sedoides</i> see <i>Minuartia sedoides</i>		



Preferred Name	Synonym	Common Name
<i>Chrysanthemum atratum</i> see <i>Leucanthemopsis atratum</i>		
<i>Chrysanthemum montanum</i> see <i>Leucanthemopsis alpina</i>		
<i>Chrysanthemum atratum</i> see <i>Leucanthemum atratum</i>		
<i>Cistus Helianthemum</i>	Possibly <i>Helianthemum nummularium</i>	Common Dwarf Cistus
<i>Cistus roseus</i> see <i>Helianthemum nummularium</i>		
<i>Clinopodium vulgare</i>		Wild Basil; Cushion Calamint; Common Field Basil
<i>Clypeola jonthlaspi</i> <sup>a</sup>	<i>Clypeola Ion Thlaspi</i>	Violet Thlaspi; Treacle Mustard
<i>Cochlearia anglica</i> <sup>b</sup>		English Scurvy Grass
<i>Cochlearia danica</i> <sup>b</sup>		Danish Scurvy Grass
<i>Cochlearia glastifolia</i> <sup>b</sup>		
<i>Cochlearia saxatilis</i> see <i>Kerneria saxatilis</i>		
<i>Cornus canadensis</i>		Canadian Cornel; Bunchberry
<i>Coronilla minima</i>		Dwarf Crown Vetch
<i>Corydalis capnoides</i> see <i>Corydalis lutea</i>		
<i>Corydalis lutea</i>	<i>Fumaria lutea</i> ; <i>Corydalis capnoides</i>	Yellow Fumatory; White Fumatory
<i>Corydalis nobilis</i>		
<i>Cotoneaster marginatus</i> <sup>*</sup>		
<i>Cotoneaster microphyllus</i> <sup>*</sup>		
<i>Cotyledon umbilicus</i> see <i>Umbilicus rupestris</i>		
<i>Cucubalus behen</i> see <i>Silene latifolia</i>		
<i>Cynoglossum omphalodes</i> see <i>Omphalodes cappadocica</i>		



Preferred Name	Synonym	Common Name
<i>Cymbalaria muralis</i>	<i>Linaria cymbalaria</i>	Kenilworth Ivy; Toad Flax Coliseum Ivy; Penny-wort; Ivy-leaved
<i>Cytisus purpureus</i> see <i>Chamaecytisus purpureus</i>		
<i>Daphne cneorum</i> *	<i>Daphne odorata</i>	Narrow-leaved laurel; Garland Flower; Spurge Laurel
<i>Dianthus alpester</i> see <i>Dianthus furcatus</i>		
<i>Dianthus alpinus</i>		Alpine Pink
<i>Dianthus arenarius</i>		Stone Pink
<i>Dianthus caesius</i> see <i>Dianthus gratianopolitanus</i>		
<i>Dianthus chinensis</i>	<i>Dianthus collinus</i> ; <i>Dianthus montanus</i>	China Pink; Mountain Pink
<i>Dianthus collinus</i> see <i>Dianthus chinensis</i>		
<i>Dianthus deltoides</i>	<i>Dianthus glaucus</i>	Maiden Pink; Mountain Pink
<i>Dianthus furcatus</i>	<i>Dianthus alpester</i>	
<i>Dianthus glaucus</i> see <i>Dianthus deltoides</i>		
<i>Dianthus gratianopolitanus</i>	<i>Dianthus caesius</i>	Cheddar Pink
<i>Dianthus hyssopifolius</i> see <i>Dianthus superbus</i>		
<i>Dianthus montanus</i> see <i>Dianthus chinensis</i>		
<i>Dianthus petraeus</i>	<i>Dianthus petrea</i>	Rock Pink
<i>Dianthus plumarius</i>		Clove Pink; Feathered Pink
<i>Dianthus superbus</i>	<i>Dianthus Hyssopifolius</i>	Hyssop-leaved Pink; Fringed Pink
<i>Dianthus virgineus</i>		
<i>Diapensia lapponica</i> **		Lapland Diapensia



Preferred Name	Synonym	Common Name
<i>Dicentra formosa</i>	<i>Fumaria formosa</i> ; <i>Dicentra eximia</i>	Red Fumatory
<i>Digitalis lutea</i>		Yellow Foxglove
<i>Digitalis purpurea</i> <sup>b</sup>		Common Purple Foxglove
<i>Doronicum glaciale</i>	<i>Arnica glaciale</i>	Icy Arnica
<i>Douglasia vitaliana see Vitaliana primulaflora</i>		
<i>Draba aizoides</i>	<i>Draba alpina</i>	Yellow or Seagreen Whitlow Grass; Alpine Madwort
<i>Draba alpina see Draba aizoides</i>		
<i>Draba ciliaris</i>		Ciliate-leaved Draba; Eye-lashed Whitlow Grass
<i>Draba cuspidata</i>		Pointed Whitlow Grass; Cuspidate Draba
<i>Draba norvegica</i>	<i>Draba rupestris</i>	Rock Draba
<i>Draba pyrenaica see Petrocallis pyrenaica</i>		
<i>Draba rupestris see Draba norvegica</i>		
<i>Draba stellata</i>		
<i>Dracocephalum grandiflorum</i>		Betony-leaved Dragon's Head
<i>Dryas drummondii</i>		Mountain Avens
<i>Dryas octopetala</i>		Mountain Avens
<i>Ecballium elaterium</i> <sup>a</sup>	<i>Momordica elaterium</i>	Squirting Cucumber Exploding Cucumber
<i>Echium vulgare</i> <sup>b</sup>		Common Viper's Bugloss
<i>Epilobium alpinum see Epilobium anagallidifolium</i>		



Preferred Name	Synonym	Common Name
<i>Epilobium anagallidifolium</i>	<i>Epilobium alpinum</i>	Bishop's Hat; Alpine Willow Herb
<i>Epilobium montanum</i>		Mountain Willow Herb
<i>Epimedium alpinum</i>		Alpine Barrenwort
<i>Epimedium montana</i>		
<i>Erica tetralix</i> *		Cross-leaved Heath; Marsh Heather; Bell Heather
<i>Erica vulgaris see Calluna vulgaris</i>		
<i>Erinus alpinus</i>	<i>Erinus hispanicus</i>	Wall Erinus; Alpine Balsam; Alpine Erinus; Liver Balsam
<i>Erodium moschatum</i> <sup>a or b</sup>	<i>Geranium moschatum</i>	Musk Heronsbill; Musk Clover; White stemmed Filaree
<i>Erodium reichardii</i>		Richard's Heronsbill; Alpine Geranium
<i>Erysimum alpinum see Erysimum hieraciiifolium</i>		
<i>Erysimum cheiri</i> <sup>b</sup>	<i>Cheiranthus cheiri</i>	Wallflower
<i>Erysimum hieraciiifolium</i>	<i>Erysimum alpinum</i>	Alpine Hedge Mustard
<i>Euphorbia myrsinites</i> *		Broad-leaved Myrtle; Dwarf Spurge
<i>Frankenia laevis</i> **		Sea Heath
<i>Fritillaria pyrenaica</i> @		Pyrenean Fritillary
<i>Fumaria capnoides see Corydalis lutea</i>		
<i>Fumaria formosa see Dicentra formosa</i>		
<i>Fumaria lutea see Corydalis lutea</i>		
<i>Galium cruciata</i>	<i>Valenta cruciata</i> ; <i>Cruciata laevipes</i>	Crosswort
<i>Galium odoratum</i>	<i>Asperula odorata</i>	Sweet Woodruff



Preferred Name	Synonym	Common Name
<i>Gaultheria phillyreifolia</i> *	<i>Pernettya phillyreifolia</i>	
<i>Genista lydia or janciensis</i> *	<i>Genista triquetra</i>	
<i>Genista sagittalis</i> *		
<i>Genista triquetra see Genista Lydia or janciensis</i>		
<i>Genista tinctoria</i> *		Dyer's Broom; Woodwaxen; Dyer's Greenweed
<i>Gentiana acaulis</i>		
<i>Gentiana asclepiadea</i>		Willow Gentian
<i>Gentiana verna</i>		Spring Gentian
<i>Geranium ibericum</i>		
<i>Geranium lancastriense see Geranium sanguineum var. striatum</i>		
<i>Geranium moschatum see Erodium moschatum</i>		
<i>Geranium pyrenaicum</i>		Pyrenean Crane's-bill
<i>Geranium sanguineum</i>		Crimson Crane's-bill
<i>Geranium sanguineum var. striatum</i>	<i>Geranium lancastriense</i>	Lancaster Crane's-bill
<i>Geum coccineum</i>		Scarlet Avens
<i>Geum montanum</i>		Alpine Avens
<i>Geum pyrenaicum</i>		Pyrenean Avens
<i>Geum radiatum</i>		Radiated Avens
<i>Gnaphalium arenarium see Helichysum arenarium</i>		
<i>Gnaphalium dioica see Antennaria dioica</i>		
<i>Gnaphalium luteo-album</i> <sup>b</sup>		
<i>Gnaphalium margaritacea see Anaphalus margaritacea</i>		
<i>Goniolimon tataricum</i>	<i>Limonium tatarium</i> ; <i>Statice tatarium</i>	Statice



<i>Genista sagittalis</i>	*	
<i>Gypsophila aggregata</i> see <i>Arenaria tetraquetra</i>		
<i>Gypsophila prostrata</i> see <i>Gypsophila repens</i>		
<i>Gypsophila repens</i>	<i>Gypsophila prostrata</i>	Creeping Rock Pink
<i>Hedysarum alpinum</i>		Alpine Hedysarum
<i>Hedysarum coronarium</i>	<sup>b</sup>	Garland Hedysarum
<i>Hedysarum hedysaroides</i>	<i>Hedysarum obscurum</i>	Creeping-rooted Hedysarum; Obscure Hedysarum
<i>Hedysarum obscurum</i> see <i>Hedysarum hedysaroides</i>		
<i>Hedysarum pallidum</i> see <i>Onobrychis arenaria</i>		
<i>Hedysarum saxatile</i>		Rock St. Foin
<i>Helianthemum nummularium</i>	* <i>Helianthemum vulgare</i> ; <i>Cistus roseus</i>	Common Rock Rose; Sun Rose
<i>Helianthemum vulgare</i> see <i>Helianthemum nummularium</i>		
<i>Helichysum arenarium</i>	<i>Gnaphalium arenarium</i>	Yellow Everlasting; Sand Cudweed; Cat's Ear
<i>Hippocrepis comosa</i>		Horse Shoe Vetch
<i>Horminum pyrenaicum</i>		Pyrenean Dead-Nettle; Dragon Mouth; Pyrenean Clary
<i>Hylotelephium anacampseros</i>	<i>Sedum anacampseros</i> (PF)	Love Restorer; Evergreen Orpine; Smaller Round-leaved Orpine
<i>Hylotelephium ewersii</i>	<i>Sedum azureum</i> ; <i>Sedum ewersii</i> (PF)	
<i>Hylotelephium populifolium</i>	<i>Sedum populifolium</i> (PF)	
<i>Hylotelephium telephium</i>	<i>Sedum telephium</i> (PF); <i>Sedum purpurea</i>	Orpine; Live Forever; Purple Orpine



<i>Genista sagittalis</i>	*		
<i>Hypericum montanum</i>			Mountain St. John's Wort
<i>Hypericum pulchrum</i>			Fair St. John's Wort; Upright St. John's Wort
<i>Iberis carnosa</i>	*	<i>Iberis tenoreana</i>	Tenore's Candytuft
<i>Iberis sempervirens</i>			Perennial Candytuft
<i>Iberis tenoreana see Iberis carnosa</i>			
<i>Illecebrum paronychia see Paronychia Cephalotes</i>			
<i>Juniperus nana see Juniperus procumbens 'Nana'</i>			
<i>Juniperus prostrata</i>	*		
<i>Juniperus procumbens</i> 'Nana'	*	<i>Juniperus nana</i>	
<i>Juniperus sabina</i>	*	<i>Juniperus repens</i>	Savin
<i>Kernera saxatilis</i>		<i>Cochlearia saxatilis</i>	Rock Scurvy-grass
<i>Lactuca muralis</i>		<i>Prenanthes muralis</i>	
<i>Lamium garganicum</i>		<i>Lamium garganicum ssp.</i> <i>garganicum (PF)</i>	Hoary Dead Nettle; Archangel
<i>Lamium maculatum</i>			Spotted Dead Nettle
<i>Lathyrus vernus</i>		<i>Orobus vernus</i>	Spring Vetch
<i>Leonurus cardiaca see Leonurus alpinum</i>			
<i>Leontopodium alpinum</i>		<i>Leontopodium cardiaca</i> (PF)	Edelweiss
<i>Leucanthemopsis alpina</i>		<i>Chrysanthemum montanum</i>	
<i>Leucanthemum atratum</i>		<i>Chrysanthemum atratum</i>	Feverfew; Dark-leaved Golden-flower
<i>Liatris pilosa see Liatris spicata</i>			
<i>Liatris spicata</i>		<i>Liatris pilosa</i>	Gay Feather



<i>Genista sagittalis</i>	*	
<i>Limonium bellidifolia</i>		<i>Statice bellidifolia</i>
<i>Limonium gmelinii</i>		<i>Statice gmelinii</i>
<i>Limonium latifolium</i>		<i>Statice latifolium</i>
<i>Linaria alpina</i>		<i>Antirrhinum alpina</i> Alpine Toadflax
<i>Linaria chalepence</i>	<sup>a</sup>	<i>Antirrhinum chalepence</i>
<i>Linaria cymbalaria</i> see <i>Cymbalaria muralis</i>		
<i>Linaria prostrata</i> see <i>Linaria vulgaris</i>		
<i>Linaria saxatilis</i>		Rock Toadflax
<i>Linaria vulgaris</i>	<i>Linaria prostrata</i>	Common Toadflax; Butter-and-eggs; Wild Snapdragon; Prostrate Toadflax
<i>Linum alpinum</i> see <i>Linum perenne</i> ssp. <i>alpinum</i>		
<i>Linum flavum</i>		Yellow-flowering Flax; Evergreen Flax
<i>Linum perenne</i> ssp. <i>alpinum</i>	<i>Linum alpinum</i>	
<i>Lithospermum officinale</i>		Greater Upright Gromwell
<i>Loiseleuria procumbens</i>	<i>Chamaeledon procumbens</i>	Alpine Azalea; Mountain Azalea; Minezno
<i>Lychnis alpina</i>		Alpine Lychnis; Alpine Catchfly
<i>Lysimachia nummularia</i>		Creeping Jenny; moneywort; Creeping Loosestrife
<i>Mahonia aquifolium</i> see <i>Berberis aquifolium</i>		
<i>Marrubium alysson</i>	<sup>b</sup>	Alyssum Horehound



<i>Genista sagittalis</i>	<sup>a</sup>		
<i>Matthiola incana</i>	<sup>b</sup>	<i>Cheiranthus incana</i>	Brompton Stock; Hoary Stock
<i>Meconopsis cambrica</i>		<i>Papaver cambrica</i>	Welsh Poppy; Yellow Welsh Poppy
<i>Medicago falcata</i>			Sickel Medick; Yellow Medicago
<i>Medicago ruthenica</i>		<i>Trigonella ruthenica</i>	Russian Fenugreek
<i>Melissa nepeta see Nepeta cataria</i>			
<i>Minuartia sedoides</i>		<i>Cherleria sedoides</i>	
<i>Minuartia verna</i>		<i>Arenaria verna</i>	Vernal Sandwort
<i>Momordica elaterium see Ecballium elaterium</i>			
<i>Nepeta cataria</i>		<i>Calamintha nepeta</i> ; <i>Melissa nepeta</i>	Catnip; catmint
<i>Oenothera fraseri see Oenothera fruticosa ssp glauca</i>			
<i>Oenothera fruticosa ssp glauca</i>		<i>Oenothera frazeri</i>	
<i>Oenothera perennis</i>		<i>Oenothera pumila</i>	Sundrops; Evening Primrose; Dwarf Perennial Primrose
<i>Oenothera pumila see Oenothera perennis</i>			
<i>Oenothera macrocarpa</i>			Ozark Sundrops
<i>Oenothera speciosa</i>			White Evening Primrose
<i>Oethionema saxatile see Aethionema saxatile</i>			
<i>Omphalodes cappadocica</i>		<i>Cynoglossum omphalodes</i>	Navelwort; Navel Seed; Comfrey-leaved Hound's Tongue
<i>Onobrychis arenaria</i>		<i>Hedysarum pallidum</i>	Pale Hedysarum
<i>Onoclea sensibilis</i>	<sup>f</sup>		Sensitive Fern; Bead Fern



<i>Genista sagittalis</i>	*	
<i>Onosma echioides</i>		Golden Drops; Smaller Yellow Bugloss
<i>Onosma simplicissimum</i>		Cretan's Bugloss
<i>Opuntia vulgaris</i>		Common Indian Fig
<i>Origanum xhybridum</i>	**	Oregano
<i>Origanum sipyleum</i>	**	Dittany of Mt. Sipylus
<i>Origanum vulgare</i>		Wild Marjoram; Pot Marjoram; Common Wild Origany
<i>Ornithogalum pyrenaicum</i>	@	Star of Bethlehem; Bath Asparagus; Prussian Asparagus
<i>Orobranche majus</i>	<sup>b</sup>	Broomrape
<i>Orobus vernus see Lathyrus vernus</i>		
<i>Oxalis acetosella</i>	@	Little Wood Sorrel; Shamrock; Cuckoo Bread; alleluia
<i>Oxalis rosea</i>	<sup>a</sup> @	Rose Wood Sorrel; Shamrock
<i>Oxalis violacea</i>	@	Violet Wood Sorrel
<i>Oxytropis campestris</i>		<i>Astragalus campestris</i> Meadow Milk Vetch; Yellow Oxytropis
<i>Oxytropis jacquini</i>		<i>Astragalus montana</i>
<i>Oxytropis uralensis</i>		<i>Astragalus uralensis</i> Purple Oxytropis
<i>Papaver cambrica see Meconopsis cambrica</i>		
<i>Parietaria diffusa see Parietaria officinalis</i>		
<i>Parietaria officinalis</i>		<i>Parietaria diffusa</i> ; <i>Parietaria judaica (PF)</i> Common Pelitory
<i>Paronychia cephalotes</i>		<i>Illecebrum paronychia</i> Mountain Knot-grass
<i>Pernettya phillyreifolia see Gaulthera phillyreifolia</i>		



<i>Genista sagittalis</i>	*		
<i>Pernettya pilosa</i>			
<i>Petrocallis pyrenaica</i>		<i>Draba pyrenaica</i>	Beauty of the Rocks; Pyrenean Madwort
<i>Phlox divaricata</i>		<i>Phlox vernalis</i>	Wild Sweet William; Blue Phlox; Early Blue Lychnoidea; Spring Phlox
<i>Phlox ovata</i>			Mountain Phlox
<i>Phlox xprocumbens</i>			
<i>Phlox nivalis see Phlox subulata</i>			
<i>Phlox reptans see Phlox stolonifera</i>			
<i>Phlox setacea see Phlox subulata</i>			
<i>Phlox stolonifera</i>		<i>Phlox reptans</i>	Creeping Phlox
<i>Phlox subulata</i>		<i>Phlox setacea; Phlox nivalis</i>	Moss Pinks; Trailing Phlox;
<i>Phlox vernalis see Phlox divaricata</i>			
<i>Phlox virginica</i>			
<i>Physalis alkenkengi</i>			Ground Cherry; Husk Tomato
<i>Picidium tingitanum see Reichardia tinganum</i>			
<i>Pimpinella saxifraga</i>		<i>Pimpinella saxatilis</i>	Burnet Saxifrage
<i>Podalyria australis see Baptisia australis</i>			
<i>Polygala chamaebuxus</i>	*		Rose-leaved Milkwort; Bow-leaved Milkwort
<i>Polypodium dropteris see Polypodium synaphea</i>			
<i>Polypodium synaphea</i>	f	<i>Polypodium dryopteris</i>	
<i>Polypodium vulgare- cambricum</i>	f		
<i>Polystichum lonchitis</i>	f	<i>Aspidium lonchitis</i>	Northern Holly Fern



<i>Genista sagittalis</i> *		
<i>Potentilla anglica</i>	<i>Tormentilla reptans</i>	Creeping Tormentil
<i>Potentilla argentea</i>		Silvery-leaved Cinquefoil; Hoary Cinquefoil; Tormentil Cinquefoil
<i>Potentilla heptaphylla</i>	<i>Potentilla opaca</i>	Small Rough Cinquefoil
<i>Potentilla nepalensis</i>	<i>Potentilla formosa</i>	Beautiful Cinquefoil
<i>Potentilla neumanniana</i>	<i>Potentilla tabernaemontani; Potentilla verna</i>	Spring Cinquefoil
<i>Potentilla opaca see Potentilla heptaphylla</i>		
<i>Potentilla petrea</i>		Rock Cinquefoil
<i>Potentilla recta</i>		Upright Yellow Cinquefoil
<i>Potentilla reptans</i>		Common Cinquefoil
<i>Potentilla rupestris</i>		Upright Cinquefoil; Rock Cinquefoil
<i>Potentilla tabernaemontani see Potentilla neumanniana</i>		
<i>Potentilla tridentata</i>		Spring Clinquefoil
<i>Potentilla verna see Potentilla neumanniana</i>		
<i>Prenanthes muralis see Lactuca muralis</i>		
<i>Prenanthes purpurea</i>		Rattlesnake Root
<i>Primula auricula</i>	<i>Primula ciliata</i>	Alpine Auricula
<i>Primula ciliata see Primula auricula</i>		
<i>Pteris caudata</i> †		Brake; Dish Fern; Table Fern
<i>Pulsatilla alpina</i>	<i>Anemone alpina</i>	
<i>Pulsatilla pratensis</i>	<i>Anemone pratensis</i>	Meadow Windflower
<i>Pulsatilla vulgaris</i>	<i>Anemone pulsatilla</i>	Pasque Flower



<i>Genista sagittalis</i>	*		
<i>Ramonda myconi</i>		<i>Ramonda pyrenaica</i>	
<i>Ramonda pyrenaica see Ramonda myconi</i>			
<i>Ranunculus amplexicaulis</i>			Stem Clasp Crowfoot; Plantain- leaved Crowfoot
<i>Reichardia picroides</i>	<sup>a</sup>	<i>Scorzonera picroides</i>	
<i>Reichardia tingitanum</i>	<sup>a</sup>	<i>Scorzonera tingitans</i> ; <i>Picidium tingitanum</i>	Tangier Pieridium
<i>Reseda odorata</i>	<sup>a</sup>		Mignonette, Sweet Reseda; Bastard Rocket
<i>Rhododendron ferrugineum</i>	*		
<i>Rhododendron hirsutum</i>	*		
<i>Rubus arcticus</i>			Crimson Bramble; Dwarf Crimson Raspberry; Arctic Bramble
<i>Rubus chamaemorus</i>			Cloudberry; Malka; Salmonberry; Yellow- berry; Bake(d)-Apple Berry
<i>Rubus rosifolius</i>			Mauritius Raspberry
<i>Rubus saxatilis</i>			Stone Bramble
<i>Saponaria ocymoides</i>			Alpine Soapwort
<i>Saxifraga aizoides</i>			Aizoon Saxifrage; Yellow Mountain Saxifrage
<i>Saxifraga ajugifolia see Saxifraga pedemontana</i>			
<i>Saxifraga caespitosa see Saxifraga hypnoides</i>			
<i>Saxifraga cherlerioides see Saxifraga tenella</i>			



<i>Genista sagittalis</i>		
<i>Saxifraga cotyledon</i>		Great Alpine Rockfoil; Greater Evergreen Saxifrage; Houseleek-leaved Saxifrage
<i>Saxifraga decipens see Saxifraga hypnoides</i>		
<i>Saxifraga densa see Saxifraga tenella</i>		
<i>Saxifraga elongella see Saxifraga hypnoides</i>		
<i>Saxifraga exarata</i>	<i>Saxifraga muscoides</i>	Furrowed Saxifrage
<i>Saxifraga granulata</i>		Meadow Saxifrage; Bulbose Saxifrage; Fair Maids of France [Double]; Grain-rooted Saxifrage
<i>Saxifraga hypnoides</i>	<i>Saxifraga caespitosa</i> ; <i>Saxifraga decipens</i> ; <i>Saxifraga elongella</i>	Mossy Saxifrage; Lady's Cushion; Feather Moss-leaved Saxifrage
<i>Saxifraga muscoides see Saxifraga exarata</i>		
<i>Saxifraga nitida see Saxifraga tenella</i>		
<i>Saxifraga nivalis</i>		
<i>Saxifraga oppositifolia</i>		Purple Saxifrage; opposite-leaved Saxifrage
<i>Saxifraga pedatifida see Saxifraga pedemontana</i>		
<i>Saxifraga pedemontana</i>	<i>Saxifraga ajugifolia</i> ; <i>Saxifraga pedatifida</i>	
<i>Saxifraga pennsylvanica</i>		Pennsylvanian Saxifrage
<i>Saxifraga petraea</i>		Rock Saxifrage
<i>Saxifraga retusa</i>		



<i>Genista sagittalis</i>		
<i>Saxifraga rotundifolia</i>		Round-leaved Saxifrage
<i>Saxifraga sarmentosa see Saxifraga stolonifera</i>		
<i>Saxifraga stellaris</i>		Starry Saxifrage
<i>Saxifraga stolonifera</i>	<i>Saxifraga sarmentosa</i>	Mother of Thousands; Strawberry Geranium
<i>Saxifraga tenella</i>	<i>Saxifraga cherlerioides</i> ; <i>Saxifraga densa</i> ; <i>Saxifraga nitida</i>	Snowy Saxifrage
<i>Scabiosa arvensis</i>		Pincushion Flower; Field Scabiosa
<i>Scabiosa columbaria</i>		Pincushion Flower; Feathered Scabiosa
<i>Schivereckia podolica</i>	<i>Alyssum podolica</i>	Podolian Schivereckia
<i>Scorzonera picoides see Reichardia picoides</i>		
<i>Scorzonera tingitans see Reichardia tingitans</i>		
<i>Sedum acre</i>		Stone Crop; Wall Pepper
<i>Sedum aizoon</i>		Yellow-flowering House Leek; Yellow Siberian Orpine
<i>Sedum album</i>		White Stone Crop
<i>Sedum anacampseros see Hylotelephium anacampseros</i>		
<i>Sedum anglicum</i>	<i>Sedum rupestre</i>	English Stone Crop; Rock Stone Crop
<i>Sedum azureum see Hylotelephium ewersii</i>		
<i>Sedum dasphyllum</i>		Round-leaved Stone Crop
<i>Sedum foresterianum</i>		
<i>Sedum glaucum see Sedum reflexum 'Minus'</i>		



<i>Genista sagittalis</i>	*	
<i>Sedum grandiflorum see Sedum reflectum</i>		
<i>Sedum hexangulare see Sedum sexangulare</i>		
<i>Sedum hybridum</i>		Bastard House Leek; Lesser Creeping Orpine
<i>Sedum populifolium see Hylotelephium populiifolium</i>		
<i>Sedum purpurea see Hylotelephium telephium</i>		
<i>Sedum reflexum</i>		Yellow Prick Madam
<i>Sedum reflexum 'Minus'</i>	<i>Sedum glaucum</i>	
<i>Sedum reflexum 'Monstrosum Cristatum'</i>	<i>Sedum monstrosum</i>	Stone Orpine
<i>Sedum rupestre see Sedum anglicum</i>		
<i>Sedum sexangulare</i>	<i>Sedum hexangulare</i>	Inspid Stone Crop
<i>Sedum telephium see Hylotelephium telephium</i>		
<i>Sedum villosum</i>		
<i>Sempervivum arachnoideum</i>		Cobweb House Leek
<i>Sempervivum globiferum</i>		Round-headed House Leek
<i>Sempervivum grandiflorum</i>		
<i>Sempervivum montanum</i>		Mountain House Leek
<i>Sempervivum tabuliforme see Aeonium tabuliforme</i>		
<i>Sempervivum tectorum</i>		Common House Leek
<i>Sibthorpia europaea</i>		Cornish Moneywort
<i>Silene acaulis</i>		Moss Campion
<i>Silene acteon</i>	<sup>a</sup>	
<i>Silene aegyptiaca</i>	<sup>a</sup>	<i>Silene atocion</i>
<i>Silene alpestris</i>		Alpine Catchfly
<i>Silene atocion see Silene aegyptiaca</i>		



<i>Genista sagittalis</i>	<sup>a</sup>		
<i>Silene behen</i>	<sup>a</sup>		
<i>Silene latifolia</i>		<i>Cucubalus behen</i>	Bladder Champion; Berry-bearing Catchfly
<i>Silene maritima see Silene uniflora</i>			
<i>Silene nutans</i>			Nodding Catchfly or Campion
<i>Silene plena</i>			
<i>Silene rubella</i>	<sup>a</sup>		
<i>Silene rupestris</i>			
<i>Silene saxifraga</i>			
<i>Silene saxatilis</i>			
<i>Silene uniflora</i>		<i>Silene maritima</i>	Sea Catchfly
<i>Silybum marianum</i>	<sup>b</sup>	<i>Carduus marianum</i>	Blessed Thistle; Holy Thistle; Our Lady's Milk Thistle
<i>Soldanella alpina</i>		<i>Soldanella clusii</i>	
<i>Soldanella clusii see Soldanella alpina</i>			
<i>Soldanella minima</i>			
<i>Specularia legousia</i>	<sup>a</sup>	<i>Campanula perfoliata</i> ; <i>Specularia perfoliata</i>	
<i>Stachys alopecuros</i>		<i>Betonica alopecuros</i>	Foxtail Betony
<i>Stachys corsica</i>			Corsican Betony; Corsican Hedge Nettle
<i>Statice bellidifolia see Limonium bellidifolia</i>			
<i>Statice gmelinii see Limonium gmelinii</i>			
<i>Statice latifolium see Limonium latifolium</i>			
<i>Statice tataricum see Goniolimon tataricum</i>			



<i>Genista sagittalis</i>	*		
<i>Telephium imperati</i>			Imperato's Orpine; True Orpine of Imperatus
<i>Teucrium montanum</i>	ssb		Wood Sage; Dwarf Mountain Germander; Mt. Lavender-leaved Poley
<i>Teucrium pyrenaicum</i>			Pyrenean Germander; Pyrenean Poley
<i>Thlaspi alpestre</i>	b		Showy Bastard Cress
<i>Thlaspi saxatile see Aethionema saxatile</i>			
<i>Thymus azorica see Thymus caespititius</i>			
<i>Thymus caespititius</i>	*	<i>Thymus azorica</i>	
<i>Thymus serpyllum</i>	*		Wild Thyme; Mother of Thyme
<i>Thymus vulgaris</i>	*		Common Thyme
<i>Tormentilla reptans see Potentilla angelica</i>			
<i>Trachelium caeruleum</i>			Blue Mt. Throatwort
<i>Trigonella ruthenica see Medicago ruthenica</i>			
<i>Trifolium alpestre</i>			Clover
<i>Trifolium cchinatum</i>	a		Prickly Trefoil
<i>Trifolium montanum</i>			
<i>Trifolium polonicum</i>	a		
<i>Trifolium repens</i>			Dutch Clover; Shamrock; White Clover
<i>Trifolium uniflorum</i>			
<i>Umbilicus rupestris</i>		<i>Cotyledon umbilicus</i>	Wall Navelwort; Pennywort; Venus' Navelwort



<i>Genista sagittalis</i>	<sup>a</sup>	
<i>Valeriana dioica</i>		
<i>Valeriana montana</i>		Mountain Valerian
<i>Valeriana pyrenaica</i>		
<i>Valeriana saxatilis</i>		Rock Valerian
<i>Verbascum lychnitis</i>		White-flowering Mullein
<i>Verbena canadensis</i>	<sup>b</sup>	<i>Verbena Lamberti</i> ; <i>Verbena Aubletia</i> Rose Vervain; Lambert's Vervain
<i>Verbena Lamberti see Verbena canadensis</i>		
<i>Verbena melindres see Verbena peruviana</i>		
<i>Valeriana officinalis</i>	<sup>b</sup>	Common Valerian; Garden Heliotrope
<i>Verbena chamaedrifolias see Verbena peruviana</i>		
<i>Verbena peruviana</i>	<i>Verbena chamaedryfolia</i> ; <i>Verbena melindres</i>	Scarlet Vervain
<i>Veronica fruticans</i>	<i>Veronica saxatilis</i>	Rock Speedwell
<i>Veronica montanum</i>		Mt. Speedwell
<i>Veronica prostrata</i>	<i>Veronica rupestris</i>	Trailing Speedwell; Prostrate Speedwell
<i>Veronica saxatilis see Veronica fruticans</i>		
<i>Veronica taurica see Veronica orientalis</i>		
<i>Vinca major</i>		
<i>Vinca minor</i>		Periwinkle
<i>Viola banatica see Viola tricolor</i>		
<i>Viola canina</i>	<i>Viola montana</i>	
<i>Viola cultivars</i>	<i>Viola grandiflora</i>	Large-flowered Violet
<i>Viola grandiflora see Viola cultivars</i>		
<i>Viola litoralis see Viola pratensis</i>		



<i>Genista sagittalis</i>	*		
<i>Viola lutea</i>			Mt. Pansy; Rock Violet
<i>Viola montana see Viola canina</i>			
<i>Viola pratensis</i>	<sup>a</sup>	<i>Viola litoralis</i>	Shore Violet
<i>Viola tricolor</i>	<sup>a</sup>	<i>Viola bantica</i>	Johnny-jump-up; Hearts Ease; Pink- of- my-John; Wild Pansy; Love-in-idleness; Banatian Violet
<i>Vitaliana primulaflora</i>		<i>Aretia vitaliana</i> ; <i>Douglasia vitaliana</i>	



TABLE 2: PLANT DATES

This table shows the dates and numbers of times that plants on the master list appear on lists of plants recommended for rock gardens. The lists are identified by publication date, and Lothian's 1845 list is added to the original eight. Those plants that appear in *The Plantfinder* (1993/4), and, are thus still in commerce, are noted.

COLUMN SOURCES  
CODE

- PF: *The Plantfinder*, 1993/4 ed.  
 1789: John Graefer, *Descriptive Catalogue*, 1789.  
 1822: John C. Loudon, *Encyclopedia of Gardening*, 1822, 884.  
 1835: "Flowering Plants Suitable for Ornamental Rockwork,"  
*Floricultural Cabinet*, 1835: 138-139.  
 1837: "Review of *The Flower Garden*," *Floricultural Cabinet* 5: 1837:  
 178-179.  
 1838: Patrick Neill, Appendix to *The Fruit, Flower and Kitchen  
 Garden*, 1838, 323.  
 1844A: *Gardeners' Chronicle*, 5 October 1844: 673.  
 1844Z: *Gardeners' Chronicle*, 9 May 1844: 152.  
 1845: James Lothian, *Practical Hints on the Cultivation of Alpine  
 and Rock Plants*, 1845, 68-84.  
 1856: Shirley Hibberd, *Rustic Adornments for Homes of Taste*, 1856,  
 423-424.

TABLE 2.-- Master List showing the lists on which the plants appear. (Shading for guidance only.)

<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Achillea clavennae</i>	*				*				*	
<i>Achillea millefolium</i> 'Rosea'					*					
<i>Achillea montana</i>			*		*					
<i>Achillea sibirica</i>	*		*							
<i>Achillea tomentosa</i>	*	*			*				*	



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Adiantum capillus-veneris</i>	*						*	*		
<i>Adonis vernalis</i>	*					*			*	
<i>Aeonium tabuliforme</i>	*									*
<i>Aethionema saxatile</i>			*		*					
<i>Ajuga genevensis</i>	*		*		*				*	*
<i>Ajuga pyramidalis</i>	*		*		*				*	
<i>Alchemilla alpina</i>	*		*		*				*	
<i>Alchemilla glabra</i>					*					
<i>Alchemilla pentaphylla</i>			*		*					
<i>Alkanna orientalis</i>	*	*								
<i>Allium carinatum</i>	*		*							
<i>Alyssum alpestre</i>					*					
<i>Alyssum alyssoides</i>			*		*			*		
<i>Alyssum halmifolium</i>		*								
<i>Alyssum hirsutum</i>					*					
<i>Alyssum hyperboreum</i>		*								
<i>Alyssum montanum</i>	*	*	*		*				*	
<i>Alyssum murale</i>	*		*		*					
<i>Anagallis arvensis var. caerulea</i>				*						
<i>Anaphalis margaritacea</i>	*		*							
<i>Androsace villosa</i>	*							*		
<i>Anemone apennina</i>	*		*						*	



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Anemone baldensis</i>	*		*		*				*	
<i>Anemone sibirica</i>					*					
<i>Anemone vitifolia</i>	S						*			
<i>Antennaria dioica</i>	*	*							*	
<i>Antennaria plantaginifolia</i>								*		
<i>Anthemis cretica ssp. cretica</i>	*		*						*	
<i>Anthemis saxatilis</i>					*					
<i>Anthyllis montana</i>	*		*		*				*	
<i>Antirrhinum majus</i>	*	*								
<i>Aquilegia alpina</i>	*		*		*				*	
<i>Aquilegia canadensis</i>	*				*		*			
<i>Aquilegia fragrans</i>	*						*			
<i>Aquilegia glandulosa</i>	*						*			
<i>Aquilegia pyrenaica</i>	*				*					
<i>Aquilegia sibirica</i>	*				*					
<i>Arabis alpina</i>	*	*	*		*			*	*	
<i>Arabis caucasica</i>	*			*					*	
<i>Arabis lucida</i>	*		*						*	*
<i>Arabis muralis</i>	*				*					
<i>Arabis purpurea</i>					*				*	
<i>Arabis saxatilis</i>					*					*
<i>Arabis sibirica</i>			*							



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Arabis soyeri</i>	*		*		*				*	
<i>Arctosphylos uva-ursi</i>	*						*	*	*	
<i>Arenaria montana</i>	*		*		*					
<i>Arenaria saxatilis</i>			*		*				*	
<i>Arenaria tetraquetra</i>		*							*	
<i>Arnica montana</i>	*		*		*				*	
<i>Artemisia campestris</i> <i>ssp. borealis</i>	*				*					
<i>Artemisia rupestris</i>	*		*							
<i>Asplenium adiantum-</i> <i>rigidum</i>								*		
<i>Asplenium ceterach</i>	*							*	*	
<i>Aster alpinus</i>	*					*			*	
<i>Astragalus agrestis</i>			*						*	
<i>Astragalus alpinus</i>			*						*	
<i>Astragalus canadensis</i>					*					
<i>Astragalus massiliensis</i>									*	
<i>Athamanta libanotis</i>			*							
<i>Aubrietia deltoidea</i>	+		*		*	*			*	
<i>Aurinia saxatile</i>	*	*	*	*	*		*		*	*
<i>Baptisia australis</i>	*		*							
<i>Bartsia alpina</i>			*						*	
<i>Berberis aquifolium</i>	+						*	*		
<i>Berberis empetrifolia</i>	*						*			



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Berberis nervosa</i>							*			
<i>Berteroa incana</i>		*								
<i>Braya alpina</i>	*				*					
<i>Campanula alpina</i>	*				*					
<i>Campanula carpatica</i>	*		*		*	*			*	
<i>Campanula cervicaria</i>	*		*		*					
<i>Campanula cochlearifolia</i>	*			*	*	*		*	*	*
<i>Campanula collina</i>	*		*		*				*	
<i>Campanula garganica</i>	*				*				*	
<i>Campanula hederacea</i>				*						
<i>Campanula latiloba</i>							*			
<i>Campanula persicifolia</i>	*					*			*	*
<i>Campanula pulla</i>	*			*	*		*		*	
<i>Campanula ramosissima</i>					*					
<i>Campanula rapunculoides</i>	*		*							
<i>Campanula rotundifolia</i>	*		*		*				*	
<i>Campanula saxatilis</i>	*		*		*				*	
<i>Campanula thrysoides</i>	*		*		*					
<i>Campanula versicolor</i>	*						*			
<i>Cardamine asarifolia</i>	S				*					
<i>Cardamine bellidifolia</i>						*			*	



Table 2: Dates that Plants appear on Lists

<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Cardaminopsis petraea</i>			*		*				*	
<i>Carlina vulgaris</i>	*		*		*					
<i>Centurea montana</i>	*		*							
<i>Cerastium alpinum</i>	*				*				*	
<i>Cerastium tomentosum</i>	*	*							*	
<i>Chamaecytisus purpureus</i>	*						*			
<i>Cheiranthus alpina</i>	S								*	*
<i>Chelidonium majus</i>	*	*								
<i>Cistus Helianthemum</i>				*						
<i>Clinopodium vulgare</i>	*	*								
<i>Clypeola jonthlaspi</i>					*					
<i>Cochlearia angelica</i>					*					
<i>Cochlearia danica</i>					*				*	
<i>Cochlearia glastifolia</i>	*		*							
<i>Cornus canadensis</i>	*								*	*
<i>Coronilla minima</i>	*								*	*
<i>Corydalis lutea</i>	*	*		*					*	
<i>Corydalis nobilis</i>	*							*		
<i>Cotoneaster marginatus</i>							*			
<i>Cotoneaster microphyllus</i>	*						*			
<i>Cymbalaria muralis</i>	*			*						*
<i>Daphne cneorum</i>	*			*			*		*	



Table 2: Dates that Plants appear on Lists

<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Dianthus alpinus</i>	*				*				*	
<i>Dianthus arenarius</i>	*	*							*	
<i>Dianthus chinensis</i>	*		*		*					
<i>Dianthus deltoides</i>	*	*							*	
<i>Dianthus furcatus</i>	*									*
<i>Dianthus gratianopolitanus</i>	*			*	*				*	
<i>Dianthus petraeus</i>	*				*				*	
<i>Dianthus plumarius</i>	*		*		*					
<i>Dianthus superbus</i>	*		*		*		*		*	
<i>Dianthus virginicus</i>			*							
<i>Diapensia lapponica</i>					*					
<i>Dicentra formosa</i>	*			*						
<i>Digitalis lutea</i>	*							*	*	
<i>Digitalis purpurea</i>	*		*						*	
<i>Doronicum glaciale</i>					*					
<i>Draba aizoides</i>	*	*	*	*	*			*	*	*
<i>Draba ciliaris</i>			*		*				*	
<i>Draba cuspidata</i>	*				*					
<i>Draba norvegica</i>	*				*				*	
<i>Draba stellata</i>			*							
<i>Dracocephalum grandiflorum</i>	*					*			*	
<i>Dryas drummondii</i>	*					*			*	



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Dryas octapetala</i>	*					*		*	*	
<i>Ecballium elaterium</i>	*		*							
<i>Echium vulgare</i>	*		*		*					
<i>Epilobium anagallidfolium</i>					*				*	
<i>Epilobium montanum</i>	*		*		*					
<i>Epimedium alpinum</i>	*		*	*	*	*			*	*
<i>Epimedium montanum</i>			*							*
<i>Erica tetralix</i>	*			*					*	
<i>Erinus alpinus</i>	*	*		*						*
<i>Erodium moschatum</i>	+		*		*				*	
<i>Erodium reichardii</i>	*				*					*
<i>Erysimum cheiri</i>	*		*		*					
<i>Erysimum hieracliifolium</i>	*				*					
<i>Euphorbia myrsinites</i>	*	*								
<i>Frankenia laevis</i>	*					*			*	
<i>Fritillaria pyrenaica</i>	*		*		*					
<i>Galium cruciata</i>		*			*					
<i>Galium odoratum</i>	*	*		*					*	
<i>Gaulthera phillyreifolia</i>	*				*			*		
<i>Genista lydia or janciensis</i>	*						*			
<i>Genista sagittalis</i>	*						*			



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Genista tinctoria</i>	*			*						
<i>Gentiana acaulis</i>	*						*		*	
<i>Gentiana asclepiadea</i>	*						*			
<i>Gentiana verna</i>	*							*	*	
<i>Geranium ibericum</i>	*						*			
<i>Geranium pyrenaicum</i>	*		*						*	
<i>Geranium sanguineum</i>	*				*		*		*	
<i>Geranium sanguineum</i> <i>var. striatum</i>	*				*				*	
<i>Geum coccineum</i>	*				*					
<i>Geum montanum</i>	*		*							
<i>Geum pyrenaicum</i>	*				*					
<i>Geum radiatum</i>					*					

<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Gnaphalium luteo-album</i>			*							
<i>Goniolimon tartaricum</i>	+						*			
<i>Gypsophila repens</i>	*	*							*	*
<i>Hedysarum album</i>					*					
<i>Hedysarum coronarium</i>	*		*		*					
<i>Hedysarum hedysaroides</i>					*				*	
<i>Hedysarum saxatile</i>		*	*							



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Helianthemum nummularium</i>	*			*		*				
<i>Helichysum arenarium</i>	*			*	*			*		
<i>Hippocrepis comosa</i>	*					*			*	
<i>Horminum pyrenaicum</i>	*	*								
<i>Hylotelephium anacampseros</i>	S	*								
<i>Hylotelephium ewersii</i>	S								*	*
<i>Hylotelephium populifolium</i>	*							*		
<i>Hylotelephium telephium</i>	S	*							*	
<i>Hypericum montanum</i>	*		*		*					
<i>Hypericum pulchrum</i>	*				*					
<i>Iberis carnosa</i>					*					
<i>Iberis sempervirens</i>	*						*		*	
<i>Juniperus procumbens 'Nana'</i>	*						*			
<i>Juniperus prostrata</i>							*			
<i>Kernera saxatilis</i>	*		*		*					
<i>Lactuca muralis</i>								*		
<i>Lamium garganicum</i>	S	*								
<i>Lamium maculatum</i>	*	*							*	
<i>Lathyrus vernus</i>	*			*					*	
<i>Leontopodium alpinum</i>	S	*								
<i>Leucanthemopsis alpina</i>	*		*							



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Leucanthemum atratum</i>					*					
<i>Liatris spicata</i>	*					*				
<i>Limonium bellidifolium</i>	*						*			
<i>Limonium gmelinii</i>	*						*		*	
<i>Limonium latifolium</i>	S						*			
<i>Linaria alpina</i>	*				*	*			*	*
<i>Linaria chalepence</i>			*							
<i>Linaria saxatilis</i>					*					
<i>Linaria vulgaris</i>	*				*					
<i>Linum flavum</i>	*	*							*	
<i>Linum perenne ssp. alpinum</i>	*			*						
<i>Lithospermum officinale</i>	*	*								
<i>Loiseleuria procumbens</i>								*	*	
<i>Lychnis alpina</i>	*					*			*	
<i>Lysimachia nummularia</i>	*			*					*	
<i>Marrubium alysson</i>			*		*					
<i>Matthoila incana</i>	*		*		*					
<i>Meconopsis cambrica</i>	*	*							*	
<i>Medicago falcata</i>		*								
<i>Medicago ruthenica</i>		*								
<i>Minuartia sedoides</i>			*		*				*	
<i>Minuartia verna</i>	*								*	*
<i>Nepeta cateria</i>	*	*								



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Oenothera fruticosa ssp glauca</i>	*						*			
<i>Oenothera perennis</i>	*	*								
<i>Oenothera macrocarpa</i>	*						*			
<i>Oenothera speciosa</i>	*						*			
<i>Omphalodes cappadocica</i>	*			*						
<i>Onobrychis arenaria</i>					*					
<i>Onoclea sensibilis</i>	*							*	*	
<i>Onosma echioides</i>	*	*								
<i>Onosma simplicissimum</i>		*								
<i>Opuntia vulgaris</i>					*					
<i>Origanum xhyridinum</i>	*	*								
<i>Origanum sipyleum</i>		*								
<i>Oreganum vulgare</i>	*	*								
<i>Ornithogalum pyrenaicum</i>	*		*		*					
<i>Orobancha majus</i>					*					*
<i>Oxalis acetosella</i>	*		*		*					
<i>Oxalis rosea</i>	+								*	*
<i>Oxalis violacea</i>			*		*					
<i>Oxytropis campestris</i>	+								*	
<i>Oxytropis jacquinii</i>	*		*							
<i>Oxytropis uralensis</i>			*			*			*	
<i>Parietaria officinalis</i>	S	*								
<i>Paronychia cephalotes</i>			*							



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Pernettya pilosa</i>								*	*	
<i>Petrocallis pyrenaica</i>	*	*			*					
<i>Phlox divaricata</i>	*			*	*					*
<i>Phlox ovata</i>								*		
<i>Phlox xprocumbens</i>	*			*			*			*
<i>Phlox stolonifera</i>	*					*			*	
<i>Phlox subulata</i>	*			*		*	*	*	*	*
<i>Phlox virginica</i>						*				
<i>Physalis alkenkengi</i>	*		*							
<i>Pimpinella saxifraga</i>	*		*							
<i>Polygala chamaebuxus</i>	*			*					*	
<i>Polypodium synaphea</i>								*	*	
<i>Polypodium vulgare-cambricum</i>	*						*	*	*	
<i>Polystichum lonchitis</i>	*							*	*	
<i>Potentilla anglica</i>			*							
<i>Potentilla argentea</i>	*	*							*	
<i>Potentilla heptaphylla</i>		*								
<i>Potentilla nepalensis</i>	*				*					
<i>Potentilla neumanniana</i>	*	*							*	
<i>Potentilla petrea</i>					*					
<i>Potentilla recta</i>	*	*								
<i>Potentilla reptans</i>	*								*	*
<i>Potentilla rupestris</i>	*	*	*		*				*	



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Potentilla tridentata</i>	*					*			*	
<i>Prenanthes purpurea</i>								*		
<i>Primula auricula</i>	*								*	*
<i>Pteris caudata</i>								*		
<i>Pulsatilla alpina</i>	*		*		*				*	
<i>Pulsatilla pratensis</i>	*				*				*	
<i>Pulsatilla vulgaris</i>	*		*	*		*			*	
<i>Ramondia myconi</i>	*							*	*	
<i>Ranunculus amplexicaulis</i>	*			*					*	
<i>Reichardia picroides</i>			*							
<i>Reichardia tingitanum</i>			*		*					
<i>Reseda odorata</i>			*		*					
<i>Rhododendron ferrugineum</i>	*							*	*	
<i>Rhododendron hirsutum</i>	*							*	*	
<i>Rubus arcticus</i>	*		*		*	*			*	
<i>Rubus chamaemorus</i>	*		*						*	
<i>Rubus rosifolius</i>	+		*							
<i>Rubus saxatilis</i>		*	*		*					
<i>Saponaria ocymoides</i>	*	*			*	*			*	
<i>Saxifraga aizoides</i>	+	*	*		*				*	
<i>Saxifraga cotyledon</i>	*	*								
<i>Saxifraga exarata</i>	*									*
<i>Saxifraga granulata</i>	*			*					*	*



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Saxifraga hypnoides</i>	*	*		*	*				*	
<i>Saxifraga nivalis</i>	*		*		*				*	*
<i>Saxifraga oppositifolia</i>	*	*	*	*	*				*	
<i>Saxifraga pedemontana</i>	*								*	*
<i>Saxifraga pennsylvanica</i>			*							
<i>Saxifraga petraea</i>	*		*		*					
<i>Saxifraga retusa</i>	*								*	
<i>Saxifraga rotundifolia</i>	*		*							
<i>Saxifraga stellaris</i>	*								*	*
<i>Saxifraga stolonifera</i>	*		*							
<i>Scabiosa arvensis</i>		*								
<i>Scabiosa columbaria</i>	*	*								
<i>Schivereckia podolica</i>	*				*				*	
<i>Sedum acre</i>	*	*							*	*
<i>Sedum aizoon</i>	*	*								
<i>Sedum album</i>	*	*		*	*				*	
<i>Sedum anglicum</i>	*	*	*	*	*			*	*	
<i>Sedum dasphyllum</i>	*	*							*	*
<i>Sedum foresterianum</i>	*		*					*	*	
<i>Sedum hybridum</i>	*	*	*							
<i>Sedum reflexum</i>	*	*								
<i>Sedum reflexum 'Minus'</i>	*		*							
<i>Sedum reflexum 'Monstrosum Cristatum'</i>										*



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Sedum sexangulare</i>	*	*	*					*	*	
<i>Sedum villosum</i>		*	*					*		
<i>Sempervivum arachnoideum</i>	*	*				*			*	*
<i>Sempervivum globiferum</i>		*								*
<i>Sempervivum grandiflorum</i>	*					*				
<i>Sempervivum montanum</i>	*	*							*	*
<i>Sempervivum tectorum</i>	*	*				*			*	
<i>Sibthorpia europaea</i>								*	*	
<i>Silene acaulis</i>	*					*			*	*
<i>Silene acteon</i>			*							
<i>Silene aegyptiaca</i>					*					
<i>Silene alpestris</i>	*		*						*	
<i>Silene behen</i>			*							
<i>Silene nutans</i>	*	*								
<i>Silene plena</i>						*				
<i>Silene rubella</i>					*				*	
<i>Silene rupestris</i>			*							
<i>Silene saxifraga</i>			*						*	
<i>Silene saxitilis</i>	*		*							
<i>Silene uniflora</i>	*					*			*	
<i>Silybum marianum</i>	*		*							
<i>Soldanella alpina</i>	*					*		*	*	*



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Soldanella minima</i>	*					*			*	*
<i>Specularia legousia</i>			*							
<i>Stachys alopecurus</i>	*		*		*					
<i>Stachys corsica</i>					*					
<i>Telephium imperati</i>		*	*		*					
<i>Teucrium montanum</i>	*	*	*		*				*	
<i>Teucrium pyrenaicum</i>	*	*							*	
<i>Thlaspi alpestre</i>			*						*	
<i>Thymus caespititius</i>	*								*	*
<i>Thymus serpyllum</i>	*								*	*
<i>Thymus vulgaris</i>	*		*							
<i>Trachelium caeruleum</i>	*	*								
<i>Trifolium alpestre</i>			*							
<i>Trifolium cchinatum</i>					*					
<i>Trifolium montanum</i>			*							
<i>Trifolium polonicum</i>			*							
<i>Trifolium repens</i>			*						*	
<i>Trifolium uniflorum</i>	*								*	
<i>Umbilicus rupestris</i>	*	*							*	
<i>Valeriana dioica</i>									*	
<i>Valeriana montana</i>			*		*				*	
<i>Valeriana pyrenaica</i>	*		*							
<i>Valeriana saxatilis</i>	*				*					
<i>Verbascum lychnitis</i>	*	*								



<i>Plant Name</i>	P F	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	1 8 4 4 A	1 8 4 4 Z	1 8 4 5	1 8 5 6
<i>Verbena canadensis</i>	*				*					
<i>Verbena officinalis</i>	*		*							
<i>Verbena peruviana</i>	*			*	*					
<i>Veronica fruticans</i>	*		*	*	*				*	*
<i>Veronica montanum</i>	*		*						*	*
<i>Veronica prostrata</i>	*			*					*	
<i>Vinca major</i>							*		*	
<i>Vinca minor</i>	*						*	*	*	*
<i>Viola canina</i>	*		*							
<i>Viola cultivars</i>	*				*					
<i>Viola lutea</i>	*		*		*				*	
<i>Viola pratensis</i>					*					
<i>Viola tricolor</i>	*				*					
<i>Vitaliana primulaflora</i>	*								*	*



### TABLE 3: PLANT CHARACTERISTICS

In this table plants that appear on three or more lists are selected and common characteristics are sought, including form, height, origin, and preferred soil condition. A discussion of Table 3 and the conclusions formed by a study of its content appears in Chapter 5 on pages 178 to 180.

#### COLUMN ORIGINS AND CHARACTERISTICS CODE

	<u>Origin</u>
A	Alpine, including alpine meadows and screes.
S	Sandy areas or Seashore.
R	Rocks and rocky areas.
W	Woodland.
X	Arctic and Sub-arctic.
	<u>Form</u>
M	Mat-forming, prostrate, or creeping.
E	Erect.
	<u>Height</u>
L	Low -- height to 30 cm.
M	Medium -- 31 to 60 cm.
T	Tall -- above 61 cm.
	<u>Preferred Soil Conditions</u>
W	Well-drained soil.
O	Ordinary garden soil.
Q	Woodland soil.
S	Well-drained soil with seepage.

#### SOURCES

- 1789: John Graefer, *Descriptive Catalogue*, 1789.  
 1822: John C. Loudon, *Encyclopedia of Gardening*, 1822, 884.  
 1835: "Flowering Plants Suitable for Ornamental Rockwork,"  
*Floricultural Cabinet*, 1835: 138-139.  
 1837: "Review of *The Flower Garden*," *Floricultural Cabinet*,  
 vol. 5:178-179.  
 1838: Patrick Neill, Appendix to *The Fruit, Flower and Kitchen  
 Garden*, 1838, 323.  
 1844A: *Gardeners' Chronicle*, 5 October 1844: 673.  
 1844Z: *Gardeners' Chronicle*, 9 May 1844: 152.



1845: James Lothian, *Practical Hints on the Cultivation of Alpine and Rock Plants*, 1845, 68-84.

1856: Shirley Hibberd, *Rustic Adornments for Homes of Taste*, 1856, 423-424.

Table 3.-- Rock plants that appear on three or more lists and their characteristics. (Shading for guidance only.)

Plant Name	O R I G	F O R M	H T	C U L T	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	18 44 A	18 44 Z	1 8 4 5	1 8 5 6
<i>Achillea tomentosa</i>	A	E	L	W	*			*				*	
<i>Ajuga genevensis</i>	W	M	L	O		*		*				*	*
<i>Ajuga pyramidalis</i>	R	M	L	O		*		*				*	
<i>Alchemilla alpina</i>	A	E	L	W		*		*				*	
<i>Alyssum alyssoides</i>		E	L	W		*		*			*		
<i>Alyssum montanum</i>	A	E	L	W	*	*		*				*	
<i>Anthyllis montana</i>	A	E	L	W		*		*				*	
<i>Aquilegia alpina</i>	A	E	M	O		*		*				*	
<i>Arabis alpina</i>	A	E	L	W	*	*		*				*	
<i>Arabis lucida</i>		M	L	W		*						*	*
<i>Arabis soyeri</i>	A	M	L	W		*		*				*	
<i>Arctosphylos uva-ursi</i>	A R	M	L	W						*	*	*	
<i>Arenaria saxatilis</i>		M	L	W		*		*				*	
<i>Arnica montana</i>	A	E	L	O		*		*				*	
<i>Aubrietia deltoidea</i>	R	M	L	W		*		*	*			*	
<i>Aurinia saxatile</i>	R	E	M	W	*	*	*	*		*		*	*
<i>Campanula carpatica</i>	A	E	L	W		*		*	*			*	



Plant Name	O R I G	F O R M	H T	C U L T	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	18 44 A	18 44 Z	1 8 4 5	1 8 5 6
<i>Campanula cochlearifolia</i>	A	M	L	W			*	*	*		*	*	*
<i>Campanula collina</i>	A	E	L	O		*		*				*	
<i>Campanula persicifolia</i>		E	M	O					*			*	*
<i>Campanula pulla</i>	A	M	L	W			*	*		*		*	
<i>Campanula rotundifolia</i>		M	M	W		*		*				*	
<i>Campanula saxatilis</i>	R	E	L	O		*		*				*	
<i>Cardaminopsis petraea</i>	A	M	L	W		*		*				*	
<i>Corydalis lutea</i>	R	E	L	O	*		*					*	
<i>Daphne cneorum</i>	A	M	L	W			*			*		*	
<i>Dianthus gratianopolitanus</i>	R	M	L	W			*	*				*	
<i>Dianthus superbus</i>	W	M	M	W		*		*		*		*	
<i>Draba aizodes</i>	A	M	L	W	*	*	*	*			*	*	*
<i>Draba ciliaris</i>	A	M	L	W		*		*				*	
<i>Dryas octapetala</i>	A	M	L	W					*		*	*	
<i>Epimedium alpinum</i>	A	M	L	Q		*	*	*	*			*	*
<i>Erinus alpinus</i>	A	M	L	W	*		*						*
<i>Erodium moschatum</i>	R	E	M	W		*		*				*	
<i>Galium odoratum</i>		E	L	O	*		*					*	
<i>Geranium sanguineum</i>		E	M	O				*		*		*	
<i>Gypsophila repens</i>	A	M	L	W	*							*	*
<i>Helichysum arenarium</i>	S	M	L	W			*	*			*		
<i>Linaria alpina</i>	A	M	L	W				*	*			*	*



Plant Name	O R I G	F O R M	H T	C U L T	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	18 44 A	18 44 Z	1 8 4 5	1 8 5 6
<i>Minuartia sedoides</i>	S	M	L	W		*		*				*	
<i>Oxytropis uralensis</i>	A	E	L	W		*			*			*	
<i>Phlox divaricata</i>	W	M	M	Q			*	*					*
<i>Phlox xprocumbens</i>	W	M	L	O			*			*			*
<i>Phlox subulata</i>	R S	M	L	O			*		*	*	*	*	*
<i>Potentilla rupestris</i>		E	M	W	*	*		*				*	
<i>Pulsatilla alpina</i>	A	E	M	W		*		*				*	
<i>Pulsatilla vulgaris</i>		E	L	W		*	*		*			*	
<i>Rubus arcticus</i>	X	M	L	Q		*		*	*			*	
<i>Rubus saxatilis</i>		M	M	O	*	*		*					
<i>Saponaria ocymoides</i>	A	M	L	W	*			*	*			*	
<i>Saxifraga aizoides</i>	A	M	L	S	*	*		*				*	
<i>Saxifraga granulata</i>		M	L	O			*					*	*
<i>Saxifraga hypnoides</i>		M	L	W	*		*	*	*			*	
<i>Saxifraga nivalis</i>		M	L	O		*		*				*	*
<i>Saxifraga oppositifolia</i>	A	M	L	S	*	*	*	*				*	
<i>Sedum acre</i>		M	L	O	*							*	*
<i>Sedum album</i>	R	M	L	O	*		*	*				*	
<i>Sedum anglicum</i>		M	L	W	*	*	*	*			*	*	
<i>Sedum dasphyllum</i>		M	L	W			*					*	*
<i>Sedum foresterianum</i>		M	L			*					*	*	
<i>Sedum sexangulare</i>			L	W	*	*					*	*	



Plant Name	O R I G	F O R M	H T	C U L T	1 7 8 9	1 8 2 2	1 8 3 5	1 8 3 7	1 8 3 8	18 44 A	18 44 Z	1 8 4 5	1 8 5 6
<i>Sedum villosum</i>		M	L		*	*						*	
<i>Sempervivum arachnoideum</i>	A	M	L	W	*				*			*	*
<i>Sempervivum montanum</i>	A	M	L	W	*							*	*
<i>Sempervivum tectorum</i>		M	L	W	*				*			*	
<i>Silene acaulis</i>	A X	M	L	W /S					*			*	*
<i>Soldanella alpina</i>	A	E	L	Q					*		*	*	*
<i>Soldanella minima</i>	A	E	L	Q					*			*	*
<i>Telephium imperati</i>	R S	M	M	W	*	*		*					
<i>Teucrium montanum</i>		M	L	W	*	*		*				*	
<i>Valeriana montana</i>	A	E	L	W		*		*				*	
<i>Veronica fruticans</i>		M	L	O		*	*	*				*	*
<i>Veronica montanum</i>	A	M	L	W		*						*	*
<i>Vinca minor</i>		E	L	O						*	*	*	*
<i>Viola lutea</i>	R	E	L	O		*		*				*	



## APPENDIX VI

### A GAZETTEER OF GARDENS IMPORTANT TO THIS STUDY

The gardens included in this section are important to this study for a variety of reasons. Primarily they were the sites of early rock gardens, or were associated with people involved in the collection and culture of alpine and rock plants. Some had rockwork, but no rock garden, or are seen as embodying ideals important to the development of the rock garden. The following comments may be from a referenced source or from observations made during a visit.

#### Eighteenth Century Gardens

**North Bierley Hall, Bradford, West Yorkshire. Bradford Metropolitan District Council.** Dr. Richard Richardson's (1663-1740) lifelong home and garden was destroyed in the 1960s, after being used as a hospital for many years. There are no remains of the walled garden where he grew his botanical collection, but a Druid's circle made by his son, exists in a tumbled down state. Although owned by the City of Bradford, which regards it as a park, the entire landscape is in a terrible state of neglect. The fish ponds (possibly Medieval) are the only part of it to receive any attention. They are still stocked and fished. [Lemmon, Kenneth. "North Bierley Hall: a Forgotten Garden," *Garden History* 1:3 (Summer 1976): 47-50; Cudworth, William, *Round About Bradford*, 1876; Holroyd, A. *Bradfordiana*, 1873; James, John, *History of Bradford*, 1841.]

**Orford Hall, Warrington, Lancaster. Warrington Council.** This unattractive park with its broad playing fields was once the home of John Blackburne, his daughter Anne, and grandson John, all noted botanists. Blackburne's extensive gardens were killed by pollution and the hall used as a school in the late nineteenth century. The seventeenth century house was destroyed after WWII, and only the entrance gate posts and a mound of stone marking the foundations of the house remain. Nothing is left of the gardens or the extensive canal system shown on local maps. [Wright, Letitia E. "Stenton." *Bulletin of the Garden Club of America* 11 (May 1923): 15-18; Pennant, T., *Tour in Scotland . . . 1772, 1776.*]

#### **Attre, Ath, Belgium.**

The grounds of this mid-eighteenth century Chateau, with its gardens and working farm, contain an immense, rustic pile of stones built between 1782 and 1788. This feature, which rises twenty-four metres and covers an acre, is riddled with tunnels, grottoes, and lookouts. There is little understanding of its purpose or meaning, but much speculation. [*Oxford Companion to Gardens*, "Belgium."]

#### **Boekenbergpark, Deurne, Antwerp, Belgium.**

The eighteenth century landscape exhibits rustic rockwork beside paths, ponds, and bridges. Although the rocks are small and cemented together, the intent was



naturalistic, but there is no sign they were ever planted. The unplanted rockwork is in excellent condition. [H. Van den Bossche, "Het Brockenbergpark te Deurne," *Monumenten En Landschappen* 6 (September 1982): 10-18; J. Slembrouck, P. Stryckers, P. Gillard, en H. Van den Bossche, "Het Brockenberpark in Deurne (Antwerpen)," *Monumenten En Landschappen* (January/February 1988): 12-15.]

**Plumpton Rocks, near Knaresborough, Yorkshire.**

In the mid-eighteenth century the stream was dammed to make a lake, and shrubberies and walks were created among the fascinating rock formations, perhaps an ancient quarry. The dam, walks, and many large hollies remain. It is operated as a fishing club. [Based primarily on observations made during several visits.]

**La Rocher, Chantilly, France.**

This conical pile of stone occupies a small island at the end of a canal. It was built in 1772, perhaps as a rock garden, but more likely as a dramatic feature, or a small mount. Steps to the top are still evident, although some of the stone was removed during the Revolution. [Visit made in 1990 and discussion with estate staff.]

**Chelsea Physic Garden, Chelsea, London.**

The rock garden, long believed to be the first, was built in 1773 for the Society of Apothecaries by William Curtis and Uriah Bristow out of lava from Greenland, stone from the Tower of London, and other materials. In 1848 a pool for aquatic plants was added to the top. Its form has been further altered by sinking and the removal of materials. Early rock garden: poor condition. [*Memoirs, Historical and Illustrative of the Botanic Garden at Chelsea belonging to the Society of Apothecaries of London*, 1820; Meynell, G., and C. Pulvertaft, "Hekla Lava Myth." *Geographical Magazine* 53:7 (April 1981): 433-436.]

**Ermenonville, France.**

Between 1766 and 1776, Girardin landscaped his estate in accordance with Jean Jacques Rousseau's philosophy and the concept of Arcadia. Rousseau died here, and his tomb is still a romantic feature, although he was removed to the Pantheon after the Revolution. Rousseau's writings are said to have encouraged an attitude toward nature that led to the creation of the rock garden. [There are many references for this site. Observations were made on a visit to Ermenonville and the Pantheon in 1990.]

**Bagatelle, Bois de Boulogne, France.**

This jardin anglais was designed in 1777 by F. J. Belanger and Thomas Blaikie. Blaikie wrote in his diary about building the approximately twenty foot tall "rocks," which still exist, moss-covered and seeping water, in a wooded dell.



[Blaikie, Thomas. *Diary of a Scotch Gardener in the French Court at the end of the Eighteenth Century*, 1931; Dora Wiebenson, *French Picturesque Garden*, 1976.]

**Monceau, Paris, France.**

This park was designed by Louis Carrogis de Carmontelle in 1773 as a series of scenes and novelties separated by plantings of trees to be viewed as one progressed along a walk. Monumental piles of rocks in the Chinese manner were a part of the scheme. Today this is a city park and some of the features, including rustic rockwork planted with ferns on the edge of a pool still exist, although their connection with the rest of the landscape has been lost.

[Wiebenson, *French Picturesque Garden*, 1976]

**Petit Trianon, Versailles, France.**

"Rocks," probably made by Thomas Blaikie, form sheer cliffs along a woodland walk in the natural part of the garden. The cement in the joints has cracked and been poorly repaired. [Wiebenson.]

**Ruined Arch, Royal Botanical Gardens, Kew.**

This monument to antiquity was designed in 1759 by Sir William Chambers. The steep banks, shown in contemporary prints, resembled a rock garden, but Chamber's *Buildings of Kew* described it as planted as a ruin. The rocks are now hidden by an overgrowth of shrubs. [Chambers, *Gardens and Buildings at Kew*, 1763; Harris, *Sir William Chambers*, 1970.]

**Abbotsbury Castle, Dorset. Strangeways-Fox Family.**

The grounds, including the approach roads and the walled garden, were laid out by the first Lady Ilchester in 1780. There is some question whether the rock garden, mentioned by Lady Rockley and Gloag, was inside the walls or out. The Castle was destroyed in 1936, and during WWII troops using the site to keep watch over the south coast began the process of leveling, using the walled garden as a dump. Much of the walls, part of one of the two gothic summer houses, and outlines of paths and beds near the outside wall remain, as do the tamerisk hedge and fig trees planted by Lady Ilchester. Many escaped garden flowers persist. This would be a good subject for an archeological dig and restoration, but it at least should be protected from further dumping. [Gloag, M. R., *Book of English Gardens*, 1906; The Lady Rockley, "Gardening of Different Periods in Different Countries" in *Rock Gardens and Rock Plants*, 1936, 11-18.]

**Mariamne's Garden, Hafod, Dyfed, Wales. Forestry Commission.**

Remnants of Mariamne's alpine garden, designed in 1794/5 by Dr. Anderson for her collections of plants, ferns, and shrubs, remain. Quartz paths, walls, and steps chiseled in banks may still be found, but since the late 1980s the Forestry Commission has cleared the garden and killed the overgrown shrubs without



identifying or dating them. In the interest of public access (a questionable objective), handrails and woodchip paths have been installed and a wall breached to put through a hiking trail. [Piper, John. "Decrepit Glory." *Architectural Review*, June 1940; Briggs, Stephen and Caroline Kerkham. "Review of the Archaeological Potential of the Hafod Landscape, Cardiganshire." *Garden Archaeology*. Council for British Archaeology Research Report 78: 1991, 160-174; Inglis-Jones, Elizabeth, *Peacocks in Paradise*, 1988; Malkin, Benjamin, *Scenery, Antiquity, and Biography of South Wales . . . 1803, 1804*; Smith, James, *Tour of Hafod*, 1810.]

**The Alpine Garden, Fonthill, Wiltshire. Fonthill Estate.**

Virtually nothing remains of the alpine garden designed by William Beckford and planted by his gardeners Vincent and Milne in 1796 except for a magnificent grotto by Josiah Lane, a chain of small ruined grottoes, and a boat landing. The large grotto appears to be in good condition. [Millington, Jon, *Beckford and his Tower*, 1983; Rutter, John, *Delineations of Fonthill*, 1823.]

**Dove Cottage, Grasmere, Cumbria.**

Much of the small cottage garden, where William, Dorothy, and Mary Wordsworth lived for a few years from 1799, is on a steep slope. Plants creep over the rock terracing and rocky steps. This, as one of three gardens designed by Wordsworth, is thought by Elliott [*Victorian Gardens*, 26] to represent some of Prices theories.

Nineteenth Century Gardens

**Woburn.**

A garden was designed by Repton for Woburn in 1802. This may have included the rock garden mentioned by Loudon (1822) as having too small stones. A rock garden still exists in the public grounds. [Repton, *Landscape Gardening and Landscape Architecture*, 559.]

**Redleaf, Penshurst, Kent. Mr. Gilbert.**

William Well's extensive landscape, begun about 1809, included a quarry garden, monumental piles of stone, and a rock garden containing a noted collection of alpine plants. The rockwork survives under mounds of overgrown, original rhododendrons. Many trees have been lost, but much of the garden still exists, including the magnificent walled kitchen garden. Its good condition and documentation make it a prime candidate for restoration. [*Gardener's Magazine*, "Redleaf, the Seat of William Wells," July 1839; Batey, Mavis, "Edward Cooke, Landscape Gardener," *Garden History* 11:1: 18-24; Loudon, J. C., *Villa Gardener*, 1850.]



**Ashridge, Hertfordshire.**

Repton made a design for this landscape in 1813, including a series of gardens on different themes. It is not known if the garden for rock plants was built. [Repton, *Landscape Gardening and Landscape Architecture*, 529.]

**Syon House, Brentford.**

The gardener Richard Forest built the rock garden as part of the botanical garden created here in 1826. It was criticised for being in sight of the conservatory, and Elliott (1986) says that it was dismantled, moved and rebuilt, but the estate agent says that it is intact, although overgrown. [Conversation with the estate agent in November 1992.]

**Endsleigh, Milton Abbot, Devon.**

Two important rock features exist here: the rock-studded bank for rock plants at the farther end of the terrace that was part of Repton's 1813 design; and an extensive but compactly built rock garden with a pond, raised beds, grottos and an arch that was built prior to 1839, according to a repair bill in the Endsleigh papers in the Devonshire Records Office. The rock bank is overgrown, and the rock garden is bare of plants, but both are in excellent condition. [Repton, *Landscape Gardening and Landscape Architecture*, 597.]

**Belsay Castle, Morpeth, Northumberland. English Heritage.**

The quarry garden was begun in about 1817 by Sir Charles Monck (1795-1867) as a picturesque feature in his extensive landscape, and a place in which to grow his collections of plants protected by the quarry's microclimate. Not a rock garden, but plantings included some rare and marginally hardy plants against sheer cliffs of stone. [Johnson, *Belsay Hall and Gardens* (1984); visit in 1989.]

**Blenheim Castle, Woodstock, Oxfordshire. Duke of Marlborough.**

The rock garden was created as part of the fifth Duke's botanic garden in the 1820s. Abandoned, adopted briefly by Gladys, the ninth Duchess, in the 1920s, and then abandoned again, its paths, steps, and structure may still be found near the river now overgrown by sizeable trees. [Bond, *Blenheim, Landscape for a Palace*, 1987; Green, *Blenheim Palace*, 1951; Mavor, *New Description of Blenheim*, 1846; Montgomery-Massinberd, *Blenheim Revisited*, 1985.]

**Knypersley, Near Biddulph, Staffordshire. Mr. Weaver.**

This was James Bateman's first garden, probably begun in the 1830s. The approach to the garden is through tunnels leading out of the kitchen garden, now Mr. Weaver's nursery, where Bateman continued to grow his orchids after moving to Biddulph. The garden is overgrown with reseeded or original shrubs, but the megalith-like stone structures and tunnels are still exciting, although it is difficult to tell how they related to each other or what the rest of the garden was like. [1991 visit and conversation with Mr. Weaver.]



**Chatsworth, Bakewell, Derbyshire. The Duke of Devonshire.**

The monumental rocks and replica of the Strid at Bolton Abbey were laid out in 1842 by Joseph Paxton for the sixth Duke of Devonshire. The massive rocks are mainly vertically oriented. The king of them all is the 40-foot-tall Wellington Rock, a conglomerate of smaller stones over which water trickles. Although it is grander, it strongly resembles Blaikie' rocks at the Bagatelle. The nearby replica of the Strid at Bolton Abbey was planted with low shrubs and native vegetation. [Chadwick, *Sir Joseph Paxton*, 1961.]

**Birkenhead Park, Mersyside. Metropolitan Borough of Wirral.**

This park, designed in 1842 by Joseph Paxton and installed by Edward Kemp, had considerable influence on the creation and design of American parks. Rockwork functioned to visually separate sections of the park and vary the surface of the flat site, and to grow rock plants for the interest of those botanically inclined. The bare, eroded rock mounds now crouch like dinosaur skeletons along the paths of the park. [Daniels, Howard. "European Parks, No. 1." *Magazine of Horticulture* 15 (1855); *Horticulturalist* "People's Park at Birkenhead," 1 May 1851; II (1855); Chadwick, *Park and the Town*, 1966.]

**Biddulph Grange, Staffordshire. National Trust.**

James Bateman's garden, begun in 1842, is heavily dependent on rock for its compartmentalized structure and dramatic effects. Toward the centre of the garden is a bed raised with tufa, that forms a concentric circle around a circular bed that once contained moutan peonies. The ring-shaped bed once contained alpine plants, but no list of plants has survived. [Hayden, *Biddulph Grange*, 1989.]

**Elvaston Castle, Elvaston, Derbyshire. Derbyshire County Council.**

The landscape at Elvaston was laid out in 1845 by William Barron for the third Earl of Huntington. Among its many features is a walk around a pond where a series of tufa arches and circles offer views of the pond and house. On the far side of the pond is a large rock with steps carved into it, that seems to follow the description of a Chinese rock in Chamber's *Dissertation on Oriental Gardens*. Elvaston is now a popular park, over-used and minimally maintained.

**Lamport Hall, Lamport, Northampton. Lamport Hall Trust.**

Sir Charles Isham created this unusual rockery between 1847 and 1870 in a small space (perhaps 50' x 30') near the house. Isham placed his miners, or gnomes, and planted bonsai into the craggy, miniaturized mountain scenery that rises to approximately 20' against a wall. Although it broke all the rules, it was much admired by William Robinson and Richard Potter, Foreman of the Backhouse Nursery Alpine Department, for its collection of alpine plants and its rugged surface. [Carter, Tom, *Victorian Garden*, 1984; *Country Life Illustrated*, "Lamport Hall," 30 April 1898: 518-520; *Journal of Horticulture and Cottage*



*Gardener*, "Lamport Hall" (20 June 1872): 501-503; *Lamport Hall, Past and Present*, Lamport Hall Trust, 1985.]

**Oakfield, Chudleigh, Near Exeter, Devon. Mr. and Mrs. Johnson-King.**  
This villa garden (c1850s) typifies the Victorian rock garden. Several rock-ringed raised beds (not pyramidal piles of stone) and a stone arch about occupy a small area thirty metres from the house. Overgrown trees are interfering with efforts to replant.

**Backhouse Nursery, West Bank Park, Acomb, York. City of York.**  
Perhaps the most famous rock garden in the world was built in the late 1850s by the Backhouse Nursery as a nursery display garden probably as the first of hundreds created by their alpine department throughout the United Kingdom. It was destroyed in the 1960s. [Robinson, Wm., "A Beautiful Rock Garden." *The Garden*, 12 June 1875; Robinson, Wm., "Notes on Gardens--No. VI: Backhouse's Nursery, York." *Gardener's Chronicle and Agricultural Gazette*, 19 March 1864; *York Illustrated*, "Messr. J. Backhouse and Son, York Nurseries," [1894-5]; *Yorkshire Gala Catalogue* (1908).]



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